INTERNAL REVENUE
BULLETIN

HIGHLIGHTS OF THIS ISSUE

Bulletin No. 2024–51
December 16, 2024

These synopses are intended only as aids to the reader in identifying the subject matter covered. They may not be relied upon as authoritative interpretations.

ADMINISTRATIVE

Notice 2024-85, page 1349.

Notice 2024-85 provides that calendar years 2024 and 2025 will be regarded as the final transition period for purposes of IRS enforcement and administration of the minimum reporting threshold for Form 1099-K, Payment Card and Third Party Network Transactions. Under Notice 2024-85, a third party settlement organization (TPSO) will be required to report payments in settlement of third party network transactions with respect to a participating payee when the amount of total payments for those transactions is more than $5,000 during calendar year 2024; more than $2,500 during calendar year 2025; and more than $600 during calendar year 2026 and after. Notice 2024-85 also provides that for calendar year 2024, the IRS will not assert penalties under section 6651 or 6656 for a TPSO's failure to withhold and pay backup withholding tax during the calendar year.

INCOME TAX

Announcement 2024-40, page 1352.

This announcement addresses the Federal income tax treatment of certain amounts paid or incurred pursuant to agreements with the Department of Commerce required under the CHIPS Act of 2022.

Rev. Rul. 2024-27, page 1240.

2024 Base Period T-Bill Rate. The "base period T-bill rate" for the period ending September 30, 2024 is published as required by section 995(f) of the Internal Revenue Code.

T.D. 10009, page 1251.

These final regulations provide guidance regarding the advanced manufacturing investment credit under section 48D of the Internal Revenue Code (Code) and the special rules for the investment credit in section 50(a) of the Code. The final regulations reflect changes made by the CHIPS Act of 2022. The section 48D credit may be claimed for qualified investments in an advanced manufacturing facility that engages in the manufacturing of semiconductors or semiconductor manufacturing equipment.

T.D. 10010, page 1286.

The final regulations provide the rules for claiming the Advanced Manufacturing Production Credit under section 45X of the Internal Revenue Code. The final regulations describe the requirements for the production of eligible components, including the domestic production requirement. The final regulations also provide rules regarding the sale of eligible components to unrelated persons, as well as special rules that apply to sales between related persons. Finally, the final regulations provide definitions of eligible components, rules related to calculating the credit, and specific recordkeeping and reporting requirements.

T.D. 10014, page 1340.

These final regulations provide guidance under § 752 of the Internal Revenue Code relating to a partner's share of a recourse partnership liability. A partner's share of a recourse partnership liability is the amount of a liability for which the partner or a related person bears the economic risk of loss. These final regulations clarify when a person is related to a partner, address how a liability is allocated when multiple partners bear the economic risk of loss for the same liability, and provide guidance regarding tiered partnerships when a partner that bears economic risk of loss is a partner in both an upper-tier and lower-tier partnership.

Finding Lists begin on page ii.

The IRS Mission

Provide America's taxpayers top-quality service by helping them understand and meet their tax responsibilities and enforce the law with integrity and fairness to all.

Introduction

The Internal Revenue Bulletin is the authoritative instrument of the Commissioner of Internal Revenue for announcing official rulings and procedures of the Internal Revenue Service and for publishing Treasury Decisions, Executive Orders, Tax Conventions, legislation, court decisions, and other items of general interest. It is published weekly.

It is the policy of the Service to publish in the Bulletin all substantive rulings necessary to promote a uniform application of the tax laws, including all rulings that supersede, revoke, modify, or amend any of those previously published in the Bulletin. All published rulings apply retroactively unless otherwise indicated. Procedures relating solely to matters of internal management are not published; however, statements of internal practices and procedures that affect the rights and duties of taxpayers are published.

Revenue rulings represent the conclusions of the Service on the application of the law to the pivotal facts stated in the revenue ruling. In those based on positions taken in rulings to taxpayers or technical advice to Service field offices, identifying details and information of a confidential nature are deleted to prevent unwarranted invasions of privacy and to comply with statutory requirements.

Rulings and procedures reported in the Bulletin do not have the force and effect of Treasury Department Regulations, but they may be used as precedents. Unpublished rulings will not be relied on, used, or cited as precedents by Service personnel in the disposition of other cases. In applying published rulings and procedures, the effect of subsequent legislation, regulations, court decisions, rulings, and procedures must be considered, and Service personnel and others concerned are cautioned against reaching the same conclusions in other cases unless the facts and circumstances are substantially the same.

The Bulletin is divided into four parts as follows:

Part I.—1986 Code.
This part includes rulings and decisions based on provisions of the Internal Revenue Code of 1986.

Part II.—Treaties and Tax Legislation.
This part is divided into two subparts as follows: Subpart A, Tax Conventions and Other Related Items, and Subpart B, Legislation and Related Committee Reports.

Part III.—Administrative, Procedural, and Miscellaneous.
To the extent practicable, pertinent cross references to these subjects are contained in the other Parts and Subparts. Also included in this part are Bank Secrecy Act Administrative Rulings. Bank Secrecy Act Administrative Rulings are issued by the Department of the Treasury's Office of the Assistant Secretary (Enforcement).

Part IV.—Items of General Interest.
This part includes notices of proposed rulemakings, disbarment and suspension lists, and announcements.

The last Bulletin for each month includes a cumulative index for the matters published during the preceding months. These monthly indexes are cumulated on a semiannual basis, and are published in the last Bulletin of each semiannual period.

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Part I

Section 995.—Taxation of DISC Income to Shareholders

2024 Base Period T-Bill Rate. The "base period T-bill rate" for the period ending September 30, 2024, is published as required by section 995(f) of the Internal Revenue Code.

Rev. Rul. 2024-27

Section 995(f)(1) of the Internal Revenue Code provides that a shareholder of a domestic international sales corporation ("DISC") shall pay interest for each taxable year in an amount equal to the product of the "shareholder's DISC-related deferred tax liability" for the year (as defined in section 995(f)(2)) and the "base period T-bill rate." Under section 995(f)(4), the base period T-bill rate is "the annual rate of interest determined by the Secretary to be equivalent to the average of the 1-year constant maturity Treasury yields, as published by the Board of Governors of the Federal Reserve System, for the 1-year period ending on September 30 of the calendar year ending with (or of the most recent calendar year ending before) the close of the taxable year of the shareholder."

The base period T-bill rate for the period ending September 30, 2024, is 4.93 percent.

Pursuant to section 6622 of the Internal Revenue Code, interest must be compounded daily. The table below provides factors for compounding the 2024 base period T-bill rate daily for any number of days in the shareholder's taxable year (including for a 52-53 week taxable year). To compute the amount of the interest charge for the shareholder's taxable year, multiply the amount of the shareholder's DISC-related deferred tax liability for that year by the base period T-bill rate factor corresponding to the number of days in the shareholder's taxable year for which the interest charge is being computed. Generally, one would use the factor for 365 days. One would use a different factor only if the shareholder's taxable year for which the interest charge is being determined is a short taxable year, if the shareholder uses a 52-53 week taxable year, or if the shareholder's taxable year is a leap year. As a 366-day year is used when calculating the daily factors for leap years such as 2024, the daily factors below diverge from Rev. Rul. 2023-23 despite the identical annual rate.

For the base period T-bill rates for periods ending in prior years, see Rev. Rul. 2023-23, 2023-51 I.R.B. 1472; Rev. Rul. 2022-21, 2022-47 I.R.B. 468; Rev. Rul. 2021-22, 2021-47 I.R.B. 726; Rev. Rul. 2020-25, 2020-48 I.R.B. 1109; Rev. Rul. 2019-27, 2019-51 I.R.B. 1378; and Rev. Rul. 2018-31, 2018-50 I.R.B. 848.

DRAFTING INFORMATION

The principal author of this revenue ruling is Stefan A. Pruessmann of the Office of Associate Chief Counsel (International). For further information regarding the revenue ruling, contact Mr. Pruessmann at (202) 317-3800 (not a toll-free number).

ANNUAL RATE (4.93%), COMPOUNDED DAILY

DAYS	FACTOR
1	0.000134699
2	0.000269417
3	0.000404153
4	0.000538907
5	0.000673679
6	0.000808469
7	0.000943277
8	0.001078104
9	0.001212948
10	0.001347811
11	0.001482692
12	0.001617591
13	0.001752509
14	0.001887444
15	0.002022398

ANNUAL RATE (4.93%), COMPOUNDED DAILY

DAYS	FACTOR
16	0.002157370
17	0.002292360
18	0.002427368
19	0.002562395
20	0.002697439
21	0.002832502
22	0.002967583
23	0.003102682
24	0.003237800
25	0.003372935
26	0.003508089
27	0.003643261
28	0.003778451
29	0.003913660
30	0.004048886
31	0.004184131
32	0.004319394
33	0.004454675
34	0.004589975
35	0.004725293
36	0.004860628
37	0.004995983
38	0.005131355
39	0.005266746
40	0.005402155
41	0.005537582
42	0.005673027
43	0.005808491
44	0.005943973
45	0.006079473
46	0.006214991
47	0.006350528
48	0.006486082
49	0.006621656
50	0.006757247

ANNUAL RATE (4.93%), COMPOUNDED DAILY

DAYS	FACTOR
51	0.006892857
52	0.007028485
53	0.007164131
54	0.007299795
55	0.007435478
56	0.007571179
57	0.007706898
58	0.007842636
59	0.007978392
60	0.008114166
61	0.008249958
62	0.008385769
63	0.008521598
64	0.008657445
65	0.008793311
66	0.008929195
67	0.009065097
68	0.009201017
69	0.009336956
70	0.009472913
71	0.009608889
72	0.009744883
73	0.009880895
74	0.010016925
75	0.010152974
76	0.010289041
77	0.010425126
78	0.010561230
79	0.010697352
80	0.010833492
81	0.010969651
82	0.011105828
83	0.011242024
84	0.011378237
85	0.011514469

ANNUAL RATE (4.93%), COMPOUNDED DAILY

DAYS	FACTOR
86	0.011650720
87	0.011786989
88	0.011923276
89	0.012059581
90	0.012195905
91	0.012332248
92	0.012468608
93	0.012604987
94	0.012741384
95	0.012877800
96	0.013014234
97	0.013150687
98	0.013287158
99	0.013423647
100	0.013560154
101	0.013696680
102	0.013833225
103	0.013969788
104	0.014106369
105	0.014242968
106	0.014379586
107	0.014516223
108	0.014652877
109	0.014789551
110	0.014926242
111	0.015062952
112	0.015199681
113	0.015336427
114	0.015473193
115	0.015609976
116	0.015746779
117	0.015883599
118	0.016020438
119	0.016157295
120	0.016294171

ANNUAL RATE (4.93%), COMPOUNDED DAILY

DAYS	FACTOR
121	0.016431066
122	0.016567978
123	0.016704909
124	0.016841859
125	0.016978827
126	0.017115814
127	0.017252818
128	0.017389842
129	0.017526884
130	0.017663944
131	0.017801023
132	0.017938120
133	0.018075236
134	0.018212370
135	0.018349523
136	0.018486694
137	0.018623883
138	0.018761091
139	0.018898318
140	0.019035563
141	0.019172827
142	0.019310109
143	0.019447409
144	0.019584728
145	0.019722066
146	0.019859422
147	0.019996796
148	0.020134189
149	0.020271601
150	0.020409031
151	0.020546479
152	0.020683946
153	0.020821432
154	0.020958936
155	0.021096459

ANNUAL RATE (4.93%), COMPOUNDED DAILY	
DAYS	FACTOR
156	0.021234000
157	0.021371559
158	0.021509138
159	0.021646734
160	0.021784349
161	0.021921983
162	0.022059636
163	0.022197306
164	0.022334996
165	0.022472704
166	0.022610430
167	0.022748175
168	0.022885939
169	0.023023721
170	0.023161522
171	0.023299341
172	0.023437179
173	0.023575036
174	0.023712911
175	0.023850804
176	0.023988716
177	0.024126647
178	0.024264596
179	0.024402564
180	0.024540551
181	0.024678556
182	0.024816579
183	0.024954622
184	0.025092682
185	0.025230762
186	0.025368860
187	0.025506976
188	0.025645112
189	0.025783266
190	0.025921438

ANNUAL RATE (4.93%), COMPOUNDED DAILY

DAYS	FACTOR
191	0.026059629
192	0.026197839
193	0.026336067
194	0.026474314
195	0.026612579
196	0.026750864
197	0.026889166
198	0.027027488
199	0.027165828
200	0.027304187
201	0.027442564
202	0.027580960
203	0.027719374
204	0.027857808
205	0.027996259
206	0.028134730
207	0.028273219
208	0.028411727
209	0.028550254
210	0.028688799
211	0.028827363
212	0.028965945
213	0.029104546
214	0.029243166
215	0.029381804
216	0.029520462
217	0.029659137
218	0.029797832
219	0.029936545
220	0.030075277
221	0.030214028
222	0.030352797
223	0.030491585
224	0.030630392
225	0.030769217

ANNUAL RATE (4.93%), COMPOUNDED DAILY

DAYS	FACTOR
226	0.030908061
227	0.031046924
228	0.031185805
229	0.031324705
230	0.031463624
231	0.031602562
232	0.031741518
233	0.031880493
234	0.032019487
235	0.032158499
236	0.032297530
237	0.032436580
238	0.032575649
239	0.032714736
240	0.032853843
241	0.032992967
242	0.033132111
243	0.033271273
244	0.033410454
245	0.033549654
246	0.033688873
247	0.033828110
248	0.033967366
249	0.034106641
250	0.034245935
251	0.034385247
252	0.034524578
253	0.034663928
254	0.034803297
255	0.034942684
256	0.035082090
257	0.035221515
258	0.035360959
259	0.035500422
260	0.035639903

ANNUAL RATE (4.93%), COMPOUNDED DAILY

DAYS	FACTOR
261	0.035779403
262	0.035918922
263	0.036058460
264	0.036198016
265	0.036337592
266	0.036477186
267	0.036616799
268	0.036756430
269	0.036896081
270	0.037035750
271	0.037175438
272	0.037315145
273	0.037454871
274	0.037594616
275	0.037734379
276	0.037874161
277	0.038013962
278	0.038153782
279	0.038293621
280	0.038433479
281	0.038573355
282	0.038713250
283	0.038853164
284	0.038993097
285	0.039133049
286	0.039273020
287	0.039413009
288	0.039553018
289	0.039693045
290	0.039833091
291	0.039973156
292	0.040113240
293	0.040253342
294	0.040393464
295	0.040533604

ANNUAL RATE (4.93%), COMPOUNDED DAILY

DAYS	FACTOR
296	0.040673764
297	0.040813942
298	0.040954139
299	0.041094355
300	0.041234590
301	0.041374844
302	0.041515116
303	0.041655408
304	0.041795718
305	0.041936047
306	0.042076396
307	0.042216763
308	0.042357149
309	0.042497554
310	0.042637978
311	0.042778420
312	0.042918882
313	0.043059363
314	0.043199862
315	0.043340381
316	0.043480918
317	0.043621474
318	0.043762050
319	0.043902644
320	0.044043257
321	0.044183889
322	0.044324540
323	0.044465210
324	0.044605899
325	0.044746607
326	0.044887333
327	0.045028079
328	0.045168844
329	0.045309628
330	0.045450430

ANNUAL RATE (4.93%), COMPOUNDED DAILY

DAYS	FACTOR
331	0.045591252
332	0.045732092
333	0.045872952
334	0.046013830
335	0.046154728
336	0.046295644
337	0.046436580
338	0.046577534
339	0.046718508
340	0.046859500
341	0.047000511
342	0.047141542
343	0.047282591
344	0.047423660
345	0.047564747
346	0.047705853
347	0.047846979
348	0.047988123
349	0.048129287
350	0.048270469
351	0.048411671
352	0.048552891
353	0.048694131
354	0.048835389
355	0.048976667
356	0.049117963
357	0.049259279
358	0.049400614
359	0.049541967
360	0.049683340
361	0.049824732
362	0.049966143
363	0.050107572
364	0.050249021
365	0.050390489

ANNUAL RATE (4.93%), COMPOUNDED DAILY

DAYS	FACTOR
366	0.050531976
367	0.050673482
368	0.050815008
369	0.050956552
370	0.051098115
371	0.051239697

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26 CFR 1.48D-0 through -5; 26 CFR 1.50-0 and -2

T.D. 10009

DEPARTMENT OF THE TREASURY
Internal Revenue Service
26 CFR Part 1

Advanced Manufacturing Investment Credit Rules under Sections 48D and 50

AGENCY: Internal Revenue Service (IRS), Treasury.

ACTION: Final rule.

SUMMARY: This document contains final regulations to implement the advanced manufacturing investment credit established by the CHIPS Act of 2022 to incentivize the manufacture of semiconductors and semiconductor manufacturing equipment within the United States. The final regulations adopt with certain modifications rules proposed in the first of two notices of proposed rulemaking to implement the credit, other than proposed rules regarding the elective payment election that were addressed in the final rule adopted in connection with the second notice of proposed rulemaking. The final regulations provide the eligibility requirements for the credit, and a special 10-year credit recapture rule that applies if there is a significant transaction involving the material expansion of semiconductor manufacturing capacity in a foreign country of concern. The final regulations affect taxpayers that claim the advanced manufacturing investment credit.

DATES: *Effective date*: These regulations are effective on December 23, 2024.

Applicability dates: For dates of applicability see §§1.48D-1(d), 1.48D-2(q), 1.48D-3(h), 1.48D-4(d), 1.48D-5(f) and 1.50-2(e).

FOR FURTHER INFORMATION CONTACT: Concerning these final regulations, contact Lani Sinfield of the Office of Associate Chief Counsel (Passthroughs and Special Industries), (202) 317-4137 (not a toll-free number).

SUPPLEMENTARY INFORMATION:

Authority

This document amends the Income Tax Regulations (26 CFR part 1) by adding regulations authorized to be issued by the Secretary of the Treasury or her delegate (Secretary) under sections 50(a) and 7805(a) of the Internal Revenue Code (Code) regarding the application of sections 48D and 50(a)(3) and (a)(6)(D) and (E) of the Code (final regulations).

Section 50(a)(3)(C) provides an express delegation of authority to the Secretary to provide guidance relating to the recapture requirement in section 50(a)(3) for the advanced manufacturing investment credit, stating, "The Secretary shall issue such regulations or other guidance as the Secretary determines necessary or appropriate to carry out the purposes of this paragraph, including regulations or other guidance which provide for requirements for recordkeeping or information reporting for purposes of administering the requirements of this paragraph."

In addition, section 50(a)(6)(D)(i) provides an express delegation of authority to the Secretary to determine, in coordination with the Secretary of Commerce and the Secretary of Defense, significant transactions, stating, "[t]he term 'applicable transaction' means, with respect to any applicable taxpayer, any significant transaction (as determined by the Secretary, in coordination with the Secretary of Commerce and the Secretary of Defense) involving the material expansion of semiconductor manufacturing capacity of such applicable taxpayer in the People's Republic of China or a foreign country of concern (as defined in section 9901(7) of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021)."

The final regulations are also issued under the express delegation of authority under section 7805(a), which provides that "[t]he Secretary shall prescribe all needful rules and regulations for the enforcement of [the Code], including all rules and regulations as may be necessary by reason of any alteration of law in relation to internal revenue."

Background

I. Overview

Section 107(a) of the CHIPS Act of 2022 (CHIPS Act), enacted as Division A of Public Law 117-167, 136 Stat. 1366, 1393 (August 9, 2022), added section 48D to the Code to establish the advanced

manufacturing investment credit (section 48D credit) as an investment credit for purposes of section 46 of the Code, which is a current year general business credit under section 38 of the Code.

Section 48D(a) provides that the section 48D credit is an amount equal to 25 percent of the qualified investment for any taxable year with respect to any advanced manufacturing facility of an eligible taxpayer. Section 48D(b)(1) provides that the "qualified investment" with respect to any advanced manufacturing facility for any taxable year is the basis of any qualified property placed in service by the taxpayer during such taxable year which is part of an advanced manufacturing facility. However, the section 48D credit only applies to property placed in service after December 31, 2022, and, for any property the construction of which begins prior to January 1, 2023, only to the extent of the basis thereof attributable to the construction, reconstruction, or erection after August 9, 2022 (the date of enactment of the CHIPS Act). *See* section 107(f)(1) of the CHIPS Act. In addition, the section 48D credit does not apply to property the construction of which begins after December 31, 2026. *See* section 48D(e).

Section 48D(b)(2) provides that, for purposes of section 48D(b), the term "qualified property" means tangible property with respect to which depreciation (or amortization in lieu of depreciation) is allowable that is integral to the operation of the advanced manufacturing facility if (I) constructed, reconstructed, or erected by the taxpayer, or (II) acquired by the taxpayer, if the original use of such property commences with the taxpayer. Qualified property includes any building or its structural components satisfying such requirements unless the building or portion of the building is used for offices, administrative services, or other functions unrelated to manufacturing.

Section 48D(b)(3) provides that the term "advanced manufacturing facility" means a facility for which the primary purpose is the manufacturing of semiconductors or semiconductor manufacturing equipment.

Section 48D(b)(4) provides that the qualified investment with respect to any advanced manufacturing facility for any taxable year shall not include the portion of the basis of any such property that is attributable to qualified rehabilitation expenditures (as defined in section 47(c)(2) of the Code).

Section 48D(b)(5) states that rules similar to the rules of subsections (c)(4) and (d) of section 46 (as in effect on the day before the date of the enactment of the Revenue Reconciliation Act of 1990) shall apply for purposes of section 48D(a).

Section 48D(c) provides that, for purposes of the section 48D credit, an "eligible taxpayer" is any taxpayer that (1) is not a foreign entity of concern (as defined in section 9901(6) of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, as amended by section 103 of the CHIPS Act), and (2) has not made an applicable transaction (as defined in section 50(a) of the Code) during the taxable year.

Section 107(b) of the CHIPS Act added new section 50(a)(3), (6)(D) and (E) to the Code to provide special recapture rules for certain expansions in connection with advanced manufacturing facilities. Under section 50(a)(3)(A), if there is an applicable transaction by an applicable taxpayer before the close of the 10-year period beginning on the date such taxpayer placed in service property that is eligible for the section 48D credit, then the taxpayer's Federal income tax liability under chapter 1 of the Code (chapter 1) for the taxable year in which such transaction occurs must be increased by 100 percent of the aggregate decrease in the credits allowed under section 38 for all prior taxable years which would have resulted solely from reducing to zero any investment credit determined under section 46 that is attributable to the section 48D credit with respect to such property (applicable transaction recapture rule). Section 50(a)(3)(B) provides an exception to the applicable transaction recapture rule for an applicable taxpayer that demonstrates to the satisfaction of the Secretary that the applicable transaction has been ceased or abandoned within 45 days of a determination and notice by the Secretary. Section 50(a)(3)(C) authorizes the Secretary to issue such regulations or other guidance as the Secretary determines necessary or appropriate to carry out the purposes of the applicable transaction recapture rule, including regulations or other guidance providing for recordkeeping requirements or information reporting for purposes of administering the requirements of section 50(a)(3).

As added to the Code by section 107(b)(2) of the CHIPS Act, section 50(a)(6)(D) provides that for purposes of section 50(a), the term "applicable transaction" means, with respect to any applicable taxpayer, any significant transaction (as determined by the Secretary, in coordination with the Secretary of Commerce and the Secretary of Defense) involving the material expansion of semiconductor manufacturing capacity of such applicable taxpayer in a foreign country of concern (as defined in section 9901(6) of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, as amended by section 103 of the CHIPS Act) other than certain transactions that primarily involve the expansion of manufacturing capacity for legacy semiconductors (as defined in section 9902(a)(6) of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, as amended by section 103 of the CHIPS Act).

Section 50(a)(6)(E) defines an "applicable taxpayer" for purposes of section 50(a) as any taxpayer who has been allowed a section 48D credit for any prior taxable year.

II. Proposed and Temporary Regulations

On March 23, 2023, the Department of the Treasury (Treasury Department) and the IRS published proposed regulations (REG-120653-22) in the ***Federal Register*** (88 FR 17451) related to the section 48D credit under the authority granted by sections 48D(d), 50(a), and 7805(a) (March 2023 proposed regulations). The March 2023 proposed regulations primarily would apply long-established credit mechanics and procedures common to all investment tax credits (including the section 48D credit) previously set forth in regulations and subregulatory guidance. In addition, the March 2023 proposed regulations included proposed definitions and rules that would apply for determining who is an eligible taxpayer, what qualifies as qualified property or an advanced manufacturing facility, whether the beginning of construction requirement is met,

and what qualifies as a significant transaction involving a material expansion of semiconductor manufacturing capacity in a foreign country of concern for purposes of the special 10-year recapture rule under section 50(a)(3). Consistent with the statutory directive in section 50(a)(6)(D)(i) to coordinate with the Department of Commerce and the Department of Defense regarding such significant transactions, the Treasury Department and the IRS, in coordination with the Department of Commerce and the Department of Defense, incorporated in the March 2023 proposed regulations definitional concepts set forth in proposed 15 CFR part 231 as contained in the proposed rule, *Preventing the Improper Use of CHIPS Act Funding*, published in the ***Federal Register*** (88 FR 17439) by the CHIPS Program Office, National Institute of Standards and Technology, Department of Commerce (Commerce Proposed Rule). The Commerce Proposed Rule would have provided guardrails to prevent the improper use of CHIPS Act funding overseen by the Department of Commerce. On September 25, 2023, the CHIPS Program Office, National Institute of Standards and Technology, Department of Commerce published the final rule, *Preventing the Improper Use of CHIPS Act Funding*, in the ***Federal Register*** (88 FR 65600) to add part 231, subchapter C, to 15 CFR chapter II (Commerce Final Rule).

In addition, §1.48D-6 of the March 2023 proposed regulations set forth the general requirements that would apply for making an elective payment election under section 48D(d), and the general requirement that an eligible taxpayer, partnership, or S corporation would need to comply with the registration procedures in proposed §1.48D-6(c)(2) as a condition of, and prior to, any amount being treated as a payment under section 48D(d)(1) or (d)(2)(A)(i)(I). However, the March 2023 proposed regulations under proposed §1.48D-6(c)(2) reserved on the procedures and additional information required for completing the pre-filing registration process.

On June 21, 2023, the Treasury Department and the IRS published proposed regulations (REG-105595-23) in the ***Federal Register*** (88 FR 40123) authorized by section 48D(d)(6) to update proposed §1.48D-6 of the March 2023 proposed regulations (June 2023 proposed regulations). Also on June 21, 2023, the Treasury Department and the IRS published temporary regulations (TD 9975) in the ***Federal Register*** (88 FR 40086) authorized by section 48D(d)(6) under §1.48D-6T to set forth mandatory information and registration requirements for taxpayers planning to make an elective payment election under section 48D(d) to treat the amount of the section 48D credit as a payment of Federal income tax, or in the case of a partnership or S corporation, to receive a payment in the amount of such credit. The temporary regulations are applicable to property placed in service on or after December 31, 2022, and during a taxable year ending on or after June 21, 2023, and will expire on June 12, 2026. A public hearing on the June 2023 proposed regulations was held on August 24, 2023. On March 11, 2024, the Treasury Department and the IRS published final regulations (TD 9989) in the ***Federal Register*** (89 FR 17596) authorized by section 48D(d)(6) under §1.48D-6 to remove the temporary regulations (TD 9975) and adopt the June 2023 proposed regulations with modifications in response to all comments received on the proposed rules and all testimony heard at the public hearings held on July 26, 2023 (March 2023 proposed regulations) and August 24, 2023 (June 2023 proposed regulations) (March 2024 final regulations).

The Treasury Department and the IRS received more than 40 comments responding to the March 2023 proposed regulations. A public hearing on the March 2023 proposed regulations was held on July 26, 2023. As described in the following Summary of Comments and Explanation of Revisions, this Treasury decision adopts §§1.48D-1 through 1.48D-5 and 1.50-2 of the March 2023 proposed regulations with certain modifications after full consideration of all comments received on those proposed rules and all testimony heard at the July 26, 2023, public hearing.

Summary of Comments and Explanation of Revisions

I. Overview

The final regulations set forth in §§1.48D-1 through 1.48D-5 and 1.50-2 retain the basic approach and structure of the March 2023 proposed regulations, with certain revisions in response to comments submitted by commenters in response to the March 2023 proposed regulations.

The Treasury Department and the IRS have refined and clarified certain aspects of the proposed regulations in these final regulations. Specifically, the definitions of "semiconductor manufacturing," "semiconductor manufacturing equipment," and "significant transaction" have been clarified. The final regulations do not set forth rules for §1.48D-6 of the March 2023 proposed regulations, because the June 2023 proposed regulations updated §1.48D-6 of the March 2023 proposed regulations and the June 2023 proposed regulations were finalized by the March 2024 final regulations. Consistent with the proposed regulations, the final regulations primarily apply long-established credit mechanics and procedures common to all investment tax credits (including the section 48D credit) previously set forth in regulations and subregulatory guidance. In addition, consistent with the statutory directive in section 50(a)(6)(D)(i) to coordinate with the Department of Commerce and the Department of Defense regarding the scope of significant transactions that are applicable transactions, the Treasury Department and the IRS, in coordination with the Department of Commerce and the Department of Defense, have incorporated in the final regulations definitional concepts, as determined by the Secretary of Commerce in the Commerce Final Rule in 15 CFR part 231, necessary to align the final regulations related to applicable transactions that result in the recapture of the section 48D credit with the provisions of the Commerce Final Rule.

II. Comments on and Changes to Proposed §1.48D-1

Commenters requested that the final regulations address whether the taxpayer in proposed §1.48D-1(c)(2) actually claims a rehabilitation credit. Proposed §1.48D-1(c)(2) includes an example (proposed example) in which a taxpayer incurred capital expenditures to reconstruct a building. The proposed example indicates that all of the expenditures are "qualified investment" for purposes of the

section 48D credit and a portion of those expenditures are also qualified rehabilitation expenditures (QREs) (as defined in section 47(c)(2) and §1.48-12(c)) for purposes of the rehabilitation credit. The proposed example concludes that the amount of the taxpayer's qualified investment does not include the portion of the basis of the property that is attributable to any QREs.

Section 48D(b)(4) and proposed §1.48D-1(c)(1) provide that qualified investment with respect to any advanced manufacturing facility for any taxable year does not include the portion of the basis of the property that is attributable to QREs. The Treasury Department and the IRS have determined that it would be inconsistent with section 48D(b)(4) to exclude from qualified basis the portion of the basis that is attributable to QREs only when a taxpayer actually claims a rehabilitation credit. Accordingly, the final regulations modify the proposed example to clarify that qualified investment does not include the basis of the property that is attributable to QREs even if the taxpayer does not determine a rehabilitation credit.

Commenters requested that the final regulations clarify whether the section 48D credit has an impact on any other credits established by the Code. The Treasury Department and the IRS note that section 48D(b)(4) provides a special rule for coordination with the rehabilitation credit but does not provide any special rules to coordinate section 48D with other credits established by the Code. Additionally, the Code includes numerous tax credits. Addressing the impact of the section 48D credit on every other credit established by the Code (if any) would require a careful examination of numerous provisions apart from those found in section 48D and the section 48D regulations. For these reasons, addressing whether the section 48D credit has an impact on other credits established by the Code is not necessary for purposes of the final regulations.

III. Comments on and Changes to Proposed §1.48D-2

A. Basis

Commenters requested clarification on the proper method for determining the portion of basis attributable to the construction, reconstruction, or erection after the date of enactment (August 9, 2022) for property the construction of which began prior to the effective date (January 1, 2023) of section 107 of the CHIPS Act. The commenters requested that the final regulations provide some flexibility to address the difficulties associated with tracking and allocating costs around a date occurring in the middle of the month (August 9, 2022). The commenters also requested that the final regulations allow for the use of any reasonable method and specifically provide that rules similar to the cost allocation rules in §§1.48-2(b)(2), 1.48-11(b)(5)(i), and 1.48-12(c)(1) are applicable. One commenter requested that the final regulations clarify that basis can be determined on the principles of section 461 of the Code. The commenter argued that this would clarify, for example, that in cases where a taxpayer has made a payment for construction services prior to August 10, 2022, such payment will be included in the basis of qualified property because the amount is incurred only when the service is performed.

For the avoidance of doubt, no provision of Federal law, including the CHIPS Act or the Code, permits determining any amount of a section 48D credit with respect to any basis in property attributable to construction, reconstruction, or erection that occurred before August 10, 2022 (the first day after the August 9, 2022, date of enactment of the CHIPS Act). However, a rule to address the proper method for allocating basis attributable to the period beginning on the day after the date of enactment (August 10, 2022) and ending on the day immediately before the effective date of section 48D (December 31, 2022) is consistent with the purpose and structure of the statute. Accordingly, the final regulations clarify that for property the construction of which began before January 1, 2023, the portion of basis of such property attributable to construction, reconstruction, or erection after August 9, 2022, the date of enactment of the CHIPS Act, (if any) must be allocated using any reasonable method, including by applying the principles of section 461. The final regulations further clarify that rules similar to the rules in §§1.48-2(b)(2), 1.48-11(b)(5)(i), and 1.48-12(c)(1) apply.

Commenters requested that the final regulations provide methods for allocating basis for dual-use property or property comprised of eligible and non-eligible components by square footage, cost, or allow the taxpayer to utilize any reasonable method for allocating cost among properties and time periods. Two commenters requested that the final regulations provide a percentage-based safe harbor rule that allows 100 percent of the basis to qualify if, for example, 80 or 90 percent of the basis is allocable to qualified basis. Commenters also requested that the Treasury Department and the IRS consider whether rules are needed to allocate basis in qualified property in the case of vertically integrated companies that manufacture, for example, ingots, wafers, and semiconductors. Section 48D does not address methods of allocating basis. Section 48D is an investment credit under section 46, and, thus, the investment credit rules for allocating the basis of qualified property apply. Further, the Code includes provisions that control for such purposes (*see*, for example, section 1012). For these reasons, the inclusion of special rules for allocating basis in qualified property as requested by the commenters is not necessary for purposes of the final regulations.

One commenter requested that the final regulations revise the definition of "basis" in proposed §1.48D-2(c) to allow capitalized costs incurred after the placed in service date of qualified property to qualify for the section 48D credit. Another commenter requested that the final regulations state that the basis of an item of qualified property or properties placed in service during the taxable year is the basis on which the credit is claimed for each year and provide examples illustrating this rule in the context of multi-unit or multiphase manufacturing projects. The Treasury Department and the IRS agree that a revision is needed and have removed from the final regulations the proposed requirement that basis is determined immediately before the qualified property is placed in service. The final regulations clarify that with respect to any qualified property, the term "basis" has the same meaning as provided in §1.46-3(c). Thus, if, for the first taxable year in which property is placed in service by the taxpayer, the property meets the definition of qualified prop-

erty but the basis of the property does not reflect its full cost for the reason that the total amount to be paid or incurred by the taxpayer for the property is indeterminate, a credit will be allowed to the taxpayer for such first taxable year with respect to so much of the cost as is reflected in the basis of the property as of the close of such taxable year, and a credit will be allowed to the taxpayer for any subsequent taxable year with respect to any additional cost paid or incurred during such subsequent taxable year and reflected in the basis of the property as of the close of such subsequent taxable year. The basis of property determined can include capital expenditures, as defined in section 263 of the Code and §§1.263(a)-1 through 1.263(f)-1, with respect to the property. Additionally, §1.48D-2(h) clarifies that the term "placed in service" has the same meaning as provided in §1.46-3(d). Because the revision made to the final regulations clarifies that the term "basis" has the same meaning as provided in §1.46-3(c), it is not necessary to provide specific examples of this rule as applied to qualified property placed in service during a taxable year.

B. Foreign Entity of Concern and Owned By, Controlled By, or Subject to the Jurisdiction or Direction of

Proposed §1.48D-2 defined the terms "foreign entity of concern" and "owned by, controlled by, or subject to the jurisdiction or direction of" to have the same meaning as those terms in the Commerce Proposed Rule. The Commerce Final Rule does not include a definition of "owned by, controlled by, or subject to the jurisdiction or direction of," but includes a revised definition of "foreign entity of concern." The Department of Commerce removed the definition of "owned by, controlled by, or subject to the jurisdiction or direction of" from the Commerce Final Rule to provide greater specificity and incorporated the definition of "owned by, controlled by, or subject to the jurisdiction of" into the definition of "foreign entity of concern" to clarify that the scope of the terms are limited to defining foreign entities of concern. To address the concern that foreign entities of concern could circumvent the restrictions of the rules by establishing entities for which multiple foreign entities of concern each have ownership below the 25 percent threshold, the Commerce Final Rule clarifies that, where at least 25 percent of the person's outstanding voting interest is held directly or indirectly by any combination of persons who would otherwise be foreign entities of concern themselves, that person is a foreign entity of concern.

As stated in the Background section of this preamble, consistent with the statutory authority provided under sections 50(a)(3) and (a)(6)(D)(i) and 7805(a), the Treasury Department and the IRS, in coordination with the Department of Commerce and the Department of Defense, have incorporated in the final regulations definitional concepts as determined by the Secretary of Commerce, and contained in the Commerce Final Rule, necessary for the determination of applicable transactions under section 50(a)(3) and (a)(6)(D). Section 48D(c)(1) defines the term "eligible taxpayer," in part, as any taxpayer that is not a foreign entity of concern (as defined in section 9901(6) of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (amending 15 U.S.C. 4651)). Section 50(a)(6)(D)(i) provides rules for when an advanced manufacturing investment credit allowable under section 48D is subject to recapture and defines a foreign entity of concern in the same manner as in section 48D(c)(1). Because section 48D(c)(1) provides rules for when a taxpayer is eligible to claim the advanced manufacturing investment credit, and section 50(a)(6)(D)(i) provides rules for when a taxpayer is no longer eligible for the credit, the statute requires the definition of "foreign entity of concern" in both sections to be synonymous. For these reasons, removing the term "owned by, controlled by, or subject to the jurisdiction or direction of" from the final regulations and defining the term "foreign entity of concern" in the final regulations as having the same meaning as that term as defined in the Commerce Final Rule is consistent with the language and purpose of the statute. The final regulations are revised accordingly.

C. Qualified Investment, Special Rules for Partnerships

Commenters requested a modification to §1.46-3(f) to permit a partner's share of the basis of qualified property to be determined independent of the ratio in which the partners divide the general profits of the partnership as required under §1.46-3(f). One of the commenters noted that section 48D is silent as to how a taxpayer's basis in qualified property should be allocated in the context of passthrough entities. Section 48D is among the investment credits listed under section 46. *See* section 46(6). The investment credit under section 46 is a business credit under section 38(b)(1). Thus, property with respect to which a section 48D credit is determined is section 38 property.

Section 1.704-1(b)(4)(ii), which requires allocations with respect to the investment credit provided by section 38(b)(1) to be made in accordance with the partners' interests in the partnership, provides that allocations of cost or qualified investment made in accordance with §1.46-3(f) are deemed to be made in accordance with the partners' interests in the partnership. Pursuant to §1.46-3(f)(1), in the case of a partnership that owns section 38 property, a partner in a partnership is treated as the taxpayer with respect to the partner's share of the basis of partnership section 38 property. Section 1.46-3(f)(2)(i) provides that a partner's share of basis is determined in accordance with the ratio in which the partners share general profits. Pursuant to §1.46-3(f)(2)(ii), if all related items of income, gain, loss, and deduction with respect to any item of partnership section 38 property are specially allocated in the same manner as if such special allocation is recognized under section 704(a) and (b) and §1.704-1(b), then each partner's share of the basis of such item of section 38 property is determined by reference to such special allocation effective for the date on which the property is placed in service, rather than in accordance with the ratio in which the partners share general profits. Thus, §1.46-3(f), as currently in effect already permits special allocations of a partner's share of the basis of an item of section 38 property independent of the ratio in which the partners divide the general profits of the partnership if all requirements under §1.46-3(f)(2)(ii) are met. Also, modifying the regulations under §1.46-3(f) to allow for allocations beyond what is already permitted under §1.46-3(f), including

§1.46-3(f)(2)(ii), would have broad implications beyond the application of section 48D, and for that reason, such modifications would not be appropriate to include in the final regulations. For the foregoing reasons, the final regulations do not incorporate the commenters' recommendations regarding §1.46-3(f).

D. Qualified Progress Expenditures Election

One commenter requested that the final regulations clarify whether an election for qualified progress expenditure can be made for expenses paid or incurred after August 9, 2022, through December 31, 2022. The Treasury Department and the IRS have determined that no further clarification is necessary concerning the availability of a progress expenditures election. Section 48D(b)(5) applies rules similar to the progress expenditures rules of section 46(c)(4) and (d) as in effect on the day before the date of enactment of the Revenue Reconciliation Act of 1990. Section 107(f)(1) of the CHIPS Act provides that the section 48D credit can be claimed for property placed in service after December 31, 2022, and for any property the construction of which began prior to January 1, 2023, only to the extent of the basis thereof attributable to the construction, reconstruction or erection after the date of enactment (August 9, 2022). Consistent with the statute, §1.48D-2(j)(3)(i) of the final regulations provides that the taxpayer may elect, as provided in §1.46-5, which provides the rules governing qualified progress expenditures, to increase the qualified investment with respect to an advanced manufacturing facility of an eligible taxpayer for the taxable year by any qualified progress expenditures made after August 9, 2022. Accordingly, an election for qualified progress expenditures can be made for expenses paid or incurred after August 9, 2022, and on or before December 31, 2022. In addition, the final regulations under §1.48D-2(j)(3)(ii) clarify that, if progress expenditure property is being constructed by or for a partnership or S corporation, the rules of §1.46-5(o)(1) and (p) do not prohibit a partnership or S corporation from making a qualified progress expenditure election under §1.46-5 if such partnership or S corporation intends to make an elective payment election under section 48D(d) and §1.48D-6 with respect to a section 48D credit determined with respect to such qualified property.

One commenter requested that the final regulations or other guidance provide guidance on the definitions of "self-constructed" versus "non-self-constructed property" and "integrated unit" for purposes of determining the construction period under §1.46-5. Pursuant to §1.46-5(d), whether a property, including qualified property under section 48D(b)(2) and the section 48D regulations, is progress expenditure property is determined based on the facts known at the close of the first taxable year in which construction begins, or if later, at the close of the first taxable year to which a progress expenditures election is made. Whether property is "self-constructed" versus "non-self-constructed property" or an "integrated unit" pursuant to §1.46-5(k), (l) and (e)(3), respectively, is also a factual determination. Additional guidance on the definitions of "self-constructed" versus "non-self-constructed property" and "integrated unit," would inject significant complexity into the final regulations and likely cause additional uncertainty regarding the scope of those terms. Such guidance would have implications for any investment tax credit, including, for example, the rehabilitation credit under section 47 and the energy credit under section 48, for which a taxpayer can make a qualified progress expenditures election. For these reasons, such guidance is not appropriate to be included in the final regulations. Accordingly, the final regulations do not address the modifications requested by the commenter.

One commenter requested that the final regulations provide that the percentage of completion limitation for non-self-constructed property under §1.46-5(j)(6) does not apply or that it be amended to allow for a greater percentage (up to 66 percent) of completion for semiconductor tooling equipment. The commenter argued that some tooling equipment manufacturers require a payment of as much as 90 percent of the total contract price in the first year the order is placed. Section 1.46-5(j)(6)(i) provides: (1) payments made in any taxable year may be considered qualified progress expenditures for non-self-constructed property only to the extent they are attributable to progress made in construction (percentage of completion limitation); (2) progress will generally be measured in terms of the manufacturer's incurred cost as a fraction of the anticipated cost (as adjusted from year to year); and (3) progress is presumed to occur not more rapidly than ratably over the normal construction period but the taxpayer may rebut the presumption by clear and convincing evidence of a greater percentage of completion. Section 1.46-5(j)(6)(i) provides sufficient flexibility for taxpayers that intend to claim a section 48D credit for qualified progress expenditures. The commenter requested a modification to the percentage of completion limitation for non-self-constructed property under §1.46-5(j)(6) for semiconductor tooling equipment only; however, such modification would require a careful examination of any implications for all other investment tax credits for which a taxpayer can make a qualified progress expenditures election, including, for example, the rehabilitation credit under section 47 and the energy credit under section 48. For these reasons, the final regulations do not adopt the commenter's recommendations.

E. Definitions of Semiconductor and Semiconductor Manufacturing

1. In General

Commenters requested that the final regulations expand the definition of "semiconductor" and "semiconductor manufacturing" to encompass additional products, substances, and processes. The commenters requested that, among other materials and substances, wafers, diamond wafer substrates, ingots, boules, high-purity silicon, silicon carbide, polysilicon, semiconductive substances, III-V compounds, ceramics, lithographic materials, specialty adhesives and cleaners, metals and dielectrics, and quantum electronics be included in the definition of "semiconductor." Commenters also requested that the final regulations modify the definition of "semiconductor manufacturing" if the definition of "semiconductor" is expanded to include additional products and substances.

Consistent with the statutory authority provided under sections 50(a)(3) and (a)(6)(D)(i) and 7805(a), the Treasury Department and the IRS, in coordination with the Department of Commerce and the Department of Defense, have incorporated in the final regulations definitional concepts that are consistent with the Commerce Final Rule and necessary for the determination of both eligibility for the section 48D credit and applicable transactions under section 50(a)(3) and (a)(6)(D).

Accordingly, the final regulations provide that a taxpayer may claim a section 48D credit for qualified property placed in service as part of an advanced manufacturing facility the primary purpose of which is semiconductor manufacturing. The final regulations define "semiconductor manufacturing" as semiconductor wafer production, semiconductor fabrication, and semiconductor packaging.

The remainder of this section III.E of this Summary of Comments and Explanation of Revisions discusses the definitions adopted in the final regulations of the terms "semiconductors," "semiconductor manufacturing," "semiconductor wafer production," "semiconductor fabrication," and "semiconductor packaging."

2. Semiconductors

The term "semiconductor" is among those definitional concepts necessary for the determination of whether a transaction is a significant transaction involving the material expansion of *semiconductor* manufacturing capacity in a foreign country of concern (*emphasis added*). Because the term "semiconductor" is also a definitional concept necessary for the determination of when a taxpayer is eligible to claim the advanced manufacturing investment credit, the statute requires the definition of "semiconductor" for purposes of sections 48D and 50(a)(6)(D)(i) to be synonymous. Moreover, failing to define the term "semiconductor" for purposes of the section 48D regulations would contravene the statutory directive under section 50(a)(6)(D)(i) to define what is a "significant transaction" for the expansion of semiconductor manufacturing capacity other than with regard to certain "legacy semiconductors." In addition, section 9901(9) of the William M. (Mac) Thornberry National Defense Authorization Act, as redesignated by section 103(a)(2) of the CHIPS Act, for Fiscal Year 2021 (15 U.S.C. 4651), provides that the term "semiconductor" has the same meaning given that term by the Secretary of Commerce. For these reasons, the Treasury Department and the IRS decline to expand the definition of "semiconductor" to include additional products and substances beyond what is provided in the Commerce Final Rule, as suggested by the commenters.

Consistent with the definition of "semiconductor" in the Commerce Final Rule (15 CFR 231.115), and pursuant to the statutory authority provided under sections 50(a)(3) and (a)(6)(D)(i) and 7805(a), the final regulations provide that a semiconductor is an integrated electronic device or system most commonly manufactured using materials such as, but not limited to, silicon, silicon carbide, or III-V compounds, and processes such as, but not limited to, lithography, deposition, and etching. Such devices and systems include, but are not limited to, analog and digital electronics, power electronics, and photonics, for memory, processing, sensing, actuation, and communications applications.

3. Definition of Semiconductor Manufacturing

One commenter requested that the final regulations expand the definition of "semiconductor manufacturing" to cover a broader space (aerospace) semiconductor manufacturing process. As noted in section IV.E of this Summary of Comments and Explanation of Revisions, section 48D is silent on the topic of semiconductor manufacturing in space or whether semiconductor manufacturing can occur in space. Whether semiconductor manufacturing can occur in space would require a careful examination of all relevant facts and circumstances, any applicable Code provisions and Federal income tax principles apart from those found in section 48D and the section 48D regulations. As such, changing the definition of semiconductor manufacturing to include an aerospace semiconductor manufacturing process, as requested by the commenter, is beyond the scope of section 48D and the section 48D regulations. Accordingly, the final regulations do not adopt rules to address semiconductor manufacturing in space.

4. Semiconductor Wafer Production

As previously discussed, commenters requested that the final regulations modify the definition of "semiconductor manufacturing" (and synonymously, the term "manufacturing of semiconductors") if the definition of "semiconductor" is expanded to include additional products and substances. Although the final regulations do not expand the definition of "semiconductor" beyond what is provided in the Commerce Final Rule, the final regulations clarify the definition of "semiconductor manufacturing" by specifying that it includes "semiconductor wafer production" but not further upstream production processes, pursuant to the statutory authority provided under sections 50(a)(3) and (a)(6)(D)(i) and 7805(a). The clarification that "semiconductor manufacturing" includes "semiconductor wafer production" is consistent with the definition of "semiconductor manufacturing" in the Commerce Final Rule (15 CFR 231.116) issued pursuant to section 103(b) of the CHIPS Act (15 USC 4652), which provides that, for purposes of the Expansion Clawback (described later), the term "semiconductor manufacturing" has the same meaning given that term by the Secretary of Commerce, in consultation with the Secretary of Defense and the Director of National Intelligence.

However, the production of additional products and substances requested by commenters to be included in "semiconductor manufacturing" would not be appropriate as those are materials that are consumed or substantially transformed during the semiconductor manufacturing processes, and not included in the definition of "semiconductor manufacturing" in the Commerce Final Rule. For these reasons, the final regulations clarify that the definition of the term "manufacturing of semiconductors" (and synonymously "semiconductor manufacturing") includes semiconductor wafer production but excludes the production of precursor materials such as polysilicon from the scope of the definition.

The final regulations define the term "semiconductor wafer production" to include "the processes of *growing single-crystal ingots and boules*, wafer slicing, *etching and* polishing, *bonding*, cleaning, epitaxial deposition, and metrology" (emphasis added). The Commerce Final Rule defines the term "semiconductor wafer production" to include the processes of wafer slicing, polishing, cleaning, epitaxial deposition, and metrology. The final regulations differ from the Commerce Final Rule by including "growing single-crystal ingots and boules," "etching," and "bonding" in the definition of "semiconductor wafer production" because the purposes of the relevant provisions in the Commerce Final Rule and those in the section 48D regulations differ.

The CHIPS Act established the section 48D credit for the purpose of incentivizing the manufacturing of semiconductors and semiconductor manufacturing equipment within the United States and amended section 50(a) to provide for recapture of the section 48D credit if an applicable taxpayer engages in an applicable transaction. Thus, the section 48D regulations include definitions and rules that apply for determining who is an eligible taxpayer, what qualifies as qualified property or an advanced manufacturing facility, and whether the beginning of construction requirement is met.

However, the purposes of relevant definitions and rules in the section 48D regulations differ from the purpose of the Commerce Final Rule, which relates to implementing the CHIPS Act's "Expansion Clawback." As a matter of United States national security interests, a funding recipient is required by statute to enter into an agreement with the Department of Commerce restricting engagement by the funding recipient or its affiliates in any significant transaction involving the material expansion of semiconductor manufacturing capacity in foreign countries of concern. Failure by a funding recipient (or its affiliate) to comply with the restriction on semiconductor manufacturing capacity expansion in foreign countries of concern may cause the Expansion Clawback to apply, resulting in recovery of the full amount of Federal financial assistance provided to the funding recipient.

The differences between the meaning of "semiconductor wafer production" in the Commerce Final Rule and in the final regulations reflects the difference between the purposes of the two rules as intended by Congress. The Expansion Clawback prohibits funding recipients from knowingly engaging in a significant transaction, and the section 48D credit incentivizes taxpayers to engage in the manufacturing of semiconductors and semiconductor manufacturing equipment in the United States, provided the applicable taxpayer does not also engage in an applicable transaction. For these reasons, the Treasury Department and the IRS, after consultation with the Department of Commerce and the Department of Defense pursuant to the statutory authority provided under sections 50(a)(3) and (a)(6)(D)(i) and 7805(a), have determined that a clarification is necessary to confirm that for purposes of the section 48D credit, "semiconductor wafer production" includes growing single-crystal ingots and boules, wafer slicing, etching and polishing, bonding, cleaning, epitaxial deposition, and metrology. The Treasury Department and the IRS note that the term "semiconductor wafer production" in the final regulations also includes growing single-crystal ingots and boules, wafer slicing, etching and polishing, bonding, cleaning, epitaxial deposition, and metrology as applied to the production of solar wafers. The Treasury Department and the IRS note this after coordination with the Department of Commerce and the Department of Defense due to specific supply chain and national security considerations regarding the production of solar wafers not present in the case of other related products.

5. Semiconductor Fabrication

The final regulations provide that the term "semiconductor fabrication" includes "the process of forming devices such as transistors, poly capacitors, non-metal resistors, and diodes, *as well as interconnects between such devices*, on a wafer of semiconductor material" (emphasis added). The Commerce Final Rule defines the term "semiconductor fabrication" to include the process of forming devices such as transistors, poly capacitors, non-metal resistors, and diodes on a wafer of semiconductor material. The final regulations differ from the Commerce final rule by including "interconnects between such devices."

The difference between the definition of "semiconductor fabrication" in the Commerce Final Rule and the final regulations with respect to "interconnects between such devices" reflects the difference between the purpose of the section 48D regulations and the Expansion Clawback. As explained in section III.E.4 of this Summary of Comments and Explanation of Revisions, the Expansion Clawback prohibits funding recipients from knowingly engaging in a significant transaction, whereas the section 48D credit incentivizes taxpayers to engage in the manufacturing of semiconductors and semiconductor manufacturing equipment in the United States, provided the applicable taxpayer does not also engage in an applicable transaction. For these reasons, the Treasury Department and the IRS, in coordination with the Department of Commerce and the Department of Defense, and pursuant to the statutory authority provided under sections 50(a)(3) and (a)(6)(D)(i) and 7805(a), have determined that a clarification is necessary to confirm that for purposes of the section 48D credit, "semiconductor fabrication" includes the process of forming interconnects between such devices.

6. Semiconductor Packaging

Several commenters requested that the definition of "semiconductor manufacturing" be revised to include assembly and testing within all stages of packaging. Commenters also requested that the final regulations provide definitions of the terms "assembly" and "testing." As previously noted, consistent with the statutory authority provided under sections 50(a)(3) and (a)(6)(D)(i) and 7805(a), the Treasury Department and the IRS, in coordination with the Department of Commerce and the Department of Defense, have incorporated in the final regulations definitional concepts as determined by the Secretary of Commerce, and contained in the Commerce Final Rule necessary for the determination of applicable transactions under section 50(a)(3) and (a)(6)(D). The pre-

amble to the Commerce Proposed Rule clarifies that "semiconductor manufacturing" includes both front-end fabrication as well as back-end manufacturing including assembly, testing, and packaging of semiconductors. Accordingly, revising the definition of "semiconductor manufacturing" to include "assembly" and "testing" and providing definitions of "assembly" and "testing" is consistent with the purpose of the section 48D credit to incentivize the manufacture of semiconductors within the United States. Accordingly, §1.48D-2(n) of the final regulations provides that semiconductor packaging includes assembly and testing. Section 1.48D-2(n)(4) and (5) of the final regulations provide definitions of "assembly" and "testing," respectively.

One commenter requested that the final regulations clarify that the term "semiconductor packaging" include the manufacturing of IC-substrates. As stated in the Background section of this preamble, consistent with the statutory authority provided under sections 50(a)(3) and (a)(6)(D)(i) and 7805(a), the Treasury Department and the IRS, in coordination with the Department of Commerce and the Department of Defense, have incorporated in the final regulations definitional concepts as determined by the Secretary of Commerce, and contained in the Commerce Final Rule necessary for the determination of applicable transactions under section 50(a)(3) and (a)(6)(D). Consistent with the Commerce Final Rule, the final regulations define the term "semiconductor packaging" as the process of enclosing a semiconductor in a protective container (package) and providing external connectivity for the assembled integrated circuit. The manufacturing of a substrate used during the semiconductor packaging process is not part of "semiconductor packaging" as defined under the final regulations. For the foregoing reason, the final regulations do not adopt the commenter's recommendation.

F. Definitions of Semiconductor Manufacturing Equipment, Subsystems, and Manufacturing Semiconductor Manufacturing Equipment

Commenters requested that the final regulations modify the definition of "semiconductor manufacturing equipment" to include direct and indirect materials integral to the semiconductor manufacturing equipment, such as, electronic grade isopropyl alcohol, precision bearings, industrial gases including high purity and general purpose nitrogen, chemicals such as fluoropolymers peroxides and fluorogases, lens and mirrors, and components. Commenters requested that the final regulations define the term "subsystem" as highly engineered and specialty equipment that is either sold directly to, or primarily produced for, a semiconductor fabricator or a third-party equipment manufacturer.

Among other requirements, section 48D(b)(2) and §1.48D-3(c) (referencing §1.48-1(c) and (d)) require that property be tangible depreciable property, for example, production machinery, to meet the definition of qualified property. Gases, chemicals, and materials, such as IC-substrates and diamond wafer substrates, and semiconductive substances, that are consumed, utilized, or substantially transformed in a similar manner during the manufacturing process does not meet the threshold requirement of section 48D(b)(2) and §1.48D-3(c) because they are not tangible depreciable property for purposes of the section 48D credit.

For the foregoing reason, the Treasury Department and the IRS decline to adopt the commenters' requests to modify the definition of "semiconductor manufacturing equipment" to include such materials. The final regulations clarify that "semiconductor manufacturing equipment" means the highly engineered specialized equipment used in the manufacturing of semiconductors as defined in §1.48D-2(g) and the subsystems that enable, or are incorporated into, the manufacturing equipment. This definition will eliminate uncertainty in determining whether property is semiconductor manufacturing equipment, as opposed to consumable materials, chemicals, or gases, that do not meet the definition of semiconductor manufacturing equipment.

The Treasury Department and the IRS decline to adopt the commenters' recommendations to define the term "subsystem" as highly engineered and specialty equipment that is either sold directly to, or is primarily produced for, a semiconductor fabricator or a third-party equipment manufacturer. Providing such a definition would inject significant complexity into the final regulations. Consistent with the definition of semiconductor manufacturing equipment in the proposed regulations, §1.48D-2(o) provides that the term "semiconductor manufacturing equipment" includes the subsystems that enable, or are incorporated into, the manufacturing equipment. Additionally, property that may be considered a subsystem must also meet the requirements of section 48D and the section 48D regulations.

Commenters also requested that the list of examples of "semiconductor manufacturing equipment" be expanded to include any property that is considered property integral to the operation of an advanced manufacturing facility under proposed §1.48D-3(f)(1). The Treasury Department and the IRS have determined that such a rule is inconsistent with the purpose and structure of the statute, which clearly contemplates that not all property integral to the operation of an advanced manufacturing facility be treated as semiconductor manufacturing equipment. Although certain property, such as a gas handling system, may be property integral to the operation of an advanced manufacturing facility under section 48D(b)(2)(A)(iv) and proposed §1.48D-3(f), that property does not, by application of the standard in section 48D(b)(2)(A)(iv) and proposed §1.48D-3(f), meet the definition of semiconductor manufacturing equipment under §1.48D-2(o) of the final regulations.

Commenters requested that the final regulations clarify that the list of examples of semiconductor manufacturing equipment is non-exclusive and provide an illustrative list of subsystems to include, items such as specialty glass lenses, photomasks, lenses and mirrors like those made of calcium fluoride or high-purity fused silica, lens assemblies for wafer defect inspection following wafer printing, light sources or other major components of photolithography systems, and advanced ceramic products. The Treasury Department and the IRS have determined that such clarifications are appropriate for defining "semiconductor manufacturing equipment." Accordingly, the final regulations clarify that the list of examples of semiconductor manufacturing equipment and subsystems is non-exclusive and

includes additional examples of property that may qualify as semiconductor manufacturing equipment and subsystems. The Treasury Department and the IRS again note that property that may be considered a subsystem must also meet the requirements of section 48D and the section 48D regulations.

Commenters further requested that the final regulations clarify that a component, part or subsystem may be considered semiconductor manufacturing equipment on a case-by-case basis, and provide factors that are persuasive, including industry definitions, CHIPS Act funding, complexity of part, or other United States Government Agency categorizations that define it as semiconductor equipment. As stated in the Background section of this preamble, consistent with the authority granted by sections 50(a)(3) and (a)(6)(D)(i) and 7805(a), the Treasury Department and the IRS, in coordination with the Department of Commerce and the Department of Defense, have incorporated in the final regulations definitional concepts as determined by the Secretary of Commerce, and contained in the Commerce Final Rule necessary for the determination of applicable transactions under section 50(a)(3) and (a)(6)(D). For this reason, the Treasury Department and the IRS have determined that incorporating definitions from other United States Government agencies that define semiconductor equipment for other purposes would not be appropriate. The Treasury Department and the IRS have further determined that including a case-by-case facts and circumstances rule as suggested by the commenters would inject significant complexity into the final regulations and likely cause additional uncertainty regarding the scope of the term "semiconductor manufacturing equipment" due to its inherently factual nature. As a result, the final regulations do not incorporate the commenters' recommendations.

The Treasury Department and the IRS note that proposed §1.48D-2(n) would define "manufacturing semiconductor manufacturing equipment" as the physical production of semiconductor manufacturing equipment in a manufacturing facility. As further described in section V.A. of this Summary of Comments and Explanation of Revisions, the final regulations modify the proposed definition of "advanced manufacturing facility" by removing the requirement that such a facility manufacture "finished" semiconductor manufacturing equipment. Consistent with the modification, the final regulations define the term "manufacturing of semiconductor manufacturing equipment" to require that that such semiconductor manufacturing equipment be used by an advanced manufacturing facility engaged in the manufacturing of semiconductors as defined in §1.48D-2(g) of the final regulations.

IV. Comments on and Changes to Proposed §1.48D-3

A. Part of an Advanced Manufacturing Facility

Commenters requested clarification that a taxpayer's ownership of an advanced manufacturing facility is not a prerequisite for claiming the section 48D credit when a taxpayer places in service qualified property that is co-located on an advanced manufacturing facility and otherwise meets the requirements of section 48D and the final regulations. One commenter requested that the final regulations provide that property that is physically located or co-located on an advanced manufacturing facility and integral to the operation of the advanced manufacturing facility be considered part of the advanced manufacturing facility. The Treasury Department and the IRS agree that neither section 48D(b)(1) and (2), nor any other provision under section 48D, require a taxpayer to own the advanced manufacturing facility as a prerequisite to determining a section 48D credit. Section 48D(b)(1) and (2) mandate that, among other requirements, property be placed in service as part of, and, integral to the operation of an advanced manufacturing facility to be "qualified property" for purposes of the section 48D credit. Therefore, the final regulations include a definition of "part of an advanced manufacturing facility" to clarify that property is part of the advanced manufacturing facility if the property is physically located or co-located either (1) at the advanced manufacturing facility, or (2) on a contiguous piece of land to the advanced manufacturing facility. The final regulations clarify that parcels or tracts of land are considered contiguous if they possess common boundaries and would be contiguous but for the interposition of a road, street, railroad, public utility, stream or similar property. Generally, property that is not physically located or co-located at the advanced manufacturing facility or on a piece of land contiguous to the advanced manufacturing facility is not part of an advanced manufacturing facility.

The Treasury Department and the IRS are aware that certain properties, for example, a water or wastewater treatment plant, may not be physically located or co-located at an advanced manufacturing facility or on a contiguous piece of land to the advanced manufacturing facility, but could be integral to the operation of the advanced manufacturing facility. For this reason, a rule allowing such properties in certain situations to be considered part of an advanced manufacturing facility is appropriate for purposes of the section 48D credit. Accordingly, the final regulations provide that property that is not located or co-located at an advanced manufacturing facility or on a contiguous piece of land to the advanced manufacturing facility may be considered part of an advanced manufacturing facility if the property is (1) owned by the same taxpayer as the entire advanced manufacturing facility, (2) connected to the advanced manufacturing facility (for example, via pipeline), and (3) the sole purpose, function, and output of the property is dedicated to the operation of the advanced manufacturing facility. However, such property must also meet the requirements of section 48D and the section 48D regulations. The final regulations include two examples to illustrate the application of section 48D(b) and §1.48D-3(f).

B. Buildings and Offices

Commenters requested that the final regulations expand the definition of "qualified property" to include an existing building that is purchased but not reconditioned or re-built by the taxpayer. It would be inconsistent with the statute to allow a building that is purchased but not reconstructed by the taxpayer to be "qualified property" for purposes of the section 48D credit. Section 48D(b)(2)(A)

(iii)(I) provides that the term "qualified property" means property that is, among meeting other requirements, "constructed, reconstructed, or erected by the taxpayer." Therefore, the final regulations retain the rule set forth in proposed §1.48D-3(b)(1).

Commenters requested that the final regulations remove "offices" from the exception to the definition of tangible depreciable property in §1.48D-3(c)(2) in order to allow certain office space within an advanced manufacturing facility to meet the definition of tangible depreciable property in §1.48D-3(c)(1). It would be inconsistent with the statute to omit "offices" from the exception to the definition of tangible depreciable property, but further clarification is necessary concerning the meaning of the term "office". Section 48D(b)(2)(B)(ii) excludes from the definition of "qualified property" "a building or portion of a building used for offices, administrative services, or other functions unrelated to manufacturing." Accordingly, the final regulations clarify that the term "tangible depreciable property" does not include a building and its structural components used for offices. But, in response to the comments received, the final regulations also provide a list of certain buildings or portions of a building within an advanced manufacturing facility that are considered related to manufacturing and not considered offices. However, whether a particular building or portion of a building is used as an office, for administrative services, or is unrelated to manufacturing is a factual determination.

C. Certain Leasing Transactions and Original Use

A commenter requested that the final regulations clarify that a lessor election under §1.48-4 to treat the lessee as having acquired investment credit property is permitted with respect to the section 48D credit. The commenter also requested that the final regulations address whether a lessor or lessee that purchases a previously leased advanced manufacturing facility and subsequently reconditions or rebuilds the facility is eligible to claim a section 48D credit. The Treasury Department and the IRS agree with the commenter that a lessor election under §1.48-4 to treat the lessee as having acquired investment credit property is permitted by operation of the statute. Section 48D is an investment credit under section 46. Section 50(d)(5) provides that, for purposes of computing the investment credit, rules similar to the rules of former section 48(d) (relating to certain leased property) (as in effect on the day before the date of the enactment of the Revenue Reconciliation Act of 1990 (Public Law 101-508, 104 Stat. 1388 (November 5, 1990)) apply. Section 1.48-4 provides the regulatory requirements for the time and manner for making an election to treat the lessee as having purchased the property for purpose of the credit allowed and the regulatory requirements, including for original use, that must be met and are applicable for purposes of the election. The Treasury Department and the IRS decline to address specific examples of leasing transactions in the final regulations and note that the investment credit recapture provisions under section 50(a) and regulations, including §§1.47-1 through 1.47-3 apply for purposes of the section 48D credit.

Commenters also requested that the definition of "original use" in proposed §1.48D-3(e) be modified in the final regulations to include acquired property that is reconditioned or rebuilt by a different taxpayer. Section 48D(b)(2)(A)(iii)(I) and (II) provide that "qualified property" includes property that is constructed, reconstructed, or erected by the taxpayer, or acquired by the taxpayer if the "original use" of such property begins with the taxpayer. Thus, the taxpayer must reconstruct or rebuild a property to meet the "original use" requirement under section 48D(b)(2)(A)(iii). Accordingly, the Treasury Department and the IRS decline to adopt this recommendation.

D. Property Integral to the Operation of an Advanced Manufacturing Facility

One commenter requested that the sentence in proposed §1.48D-3(f)(1) that states, "Materials, supplies, and other inventoriable items of property that are transformed into a finished semiconductor or into a finished unit of semiconductor manufacturing equipment are not considered property integral to the operation of manufacturing semiconductors or semiconductor manufacturing equipment" be modified to provide that such materials are integral to the operation of an advanced manufacturing facility. The Treasury Department and the IRS decline to adopt this recommendation. As noted in section III.F. of this Summary of Comments and Explanation of Revisions, among other requirements, section 48D(b)(2) and §1.48D-3(c) (referencing §1.48-1(c) and (d)) require that property be tangible depreciable property, for example, production machinery, to meet the definition of qualified property. Gases, chemicals, and materials, such as diamond wafer substrates, and other semiconductive substances, that are consumed, utilized, or substantially transformed during the manufacturing process, or any other inventoriable items of property do not meet the threshold requirement of section 48D(b)(2) and §1.48D-3(c) to be "qualified property" because they are not tangible depreciable property for purposes of the section 48D credit. Thus, such property would not be property "integral to the operation of an advanced manufacturing facility" under the statute.

Another commenter requested that the final regulations clarify that the term "transformed" in proposed §1.48D-3(f)(1) does not refer to the normal degradation of components of semiconductor manufacturing equipment. However, a clarification is appropriate for establishing whether property is integral to the operation of an advanced manufacturing facility. Accordingly, §1.48D-3(g)(1) of the final regulations clarifies that the term "transformed" does not include the normal degradation of components of semiconductor manufacturing equipment.

The final regulations include a special rule for purposes of establishing whether property is integral to the operation of a vertically integrated manufacturing facility. As discussed in section III.E. of this Summary of Comments and Explanation of Revisions, the final regulations clarify that the term "semiconductor manufacturing" includes semiconductor packaging, semiconductor fabrication, and semiconductor wafer production but excludes manufacturing processes related to precursor materials such as polysilicon. Consistent with this modification, the final regulations provide that, if an advanced manufacturing facility that is engaged

in the manufacturing of semiconductors within the meaning of §1.48D-2 also conducts vertically integrated activities (for example, producing raw materials and manufacturing ingots, wafers, and semiconductors), then property integral to the operation of such an advanced manufacturing facility includes only the property used in the manufacturing of semiconductors within the meaning of §1.48D-2.

Commenters requested that examples of property that would normally be integral to the operation of an advanced manufacturing facility in proposed §1.48D-3(f)(1) be modified to reflect any modifications to the definitions of "semiconductor" and "semiconductor manufacturing equipment" in the final regulations. Commenters also requested that the final regulations include additions to the list of specific property under §1.48D-3(f)(1) to provide certainty to taxpayers. The commenters requested that the list include, property such as electricity distribution equipment, industrial automation and control equipment, communications devices, lighting products, water management, conservation, water treatment equipment, materials, and technologies, and tooling equipment. The Treasury Department and the IRS have determined that adding to the list of specified property that would "normally be integral to the operation of an advanced manufacturing facility" consistent with the modification to the definitions of "semiconductor manufacturing" and "semiconductor manufacturing equipment" under §1.48D-2(n) and (o) of the final regulations is appropriate for determining whether property is "integral to the operation of an advanced manufacturing facility." Accordingly, §1.48D-3(g)(3) of the final regulations includes additional examples of such property.

One commenter requested that proposed §1.48D-3(f)(2) be modified to treat research facilities that do not manufacture any type of semiconductor or semiconductor manufacturing equipment to qualify as integral to the operation of an advanced manufacturing facility. The commenter further stated that the restriction in §1.48D-3(f)(2) of the March 2023 proposed regulations exceeds the statutory exclusions in section 48D(b)(2)(B)(ii) for a building or portion of a building used for offices, administrative services, or other functions unrelated to manufacturing. The statute is silent concerning the treatment of research facilities, but does require, pursuant to section 48D(b)(2)(A)(iv), that property be integral to the operation of an "advanced manufacturing facility" to meet the definition of "qualified property." As previously noted in the Background section of this preamble, the March 2023 proposed regulations primarily applied long-established credit mechanics and procedures common to all investment tax credits previously set forth in regulations and subregulatory guidance. Those long-established mechanics and procedures, including those set forth in §1.48-1 generally require that a research facility be used "in connection" with the qualifying activity to be considered used as integral part of the activity. Section 48D(b)(3) defines an "advanced manufacturing facility" as a "facility for which the primary purpose is the manufacturing of semiconductors or semiconductor manufacturing equipment." Under both the March 2023 proposed regulations and the final regulations, facilities built for pre-pilot production lines and the manufacture of prototypes would be qualified property integral to the operation of an advanced manufacturing facility. Based on the foregoing, a research facility that does not manufacture semiconductors or semiconductor manufacturing equipment is not used "in connection" with the manufacturing of semiconductors or semiconductor manufacturing equipment. For these reasons, the final regulations do not adopt the commenter's recommendation.

E. Semiconductor Manufacturing in Space

One commenter requested that the final regulations clarify that section 48D directly contemplates semiconductor manufacturing work in space and explicitly confirm that qualifying advanced manufacturing activity can occur in space, and on a low-earth orbiter, in particular. More specifically, the commenter requested that the final regulations: (1) provide an exception to the definition of buildings and structural components unrelated to manufacturing for functions that are critical for human habitation in space; and (2) expand the examples of property integral to the operations of an advanced manufacturing facility to include space delivery vehicles, as all of the examples currently describe either the facility itself or related infrastructure for land-based manufacturing (for example, docks, railroad tracks, and bridges).

Section 48D does not expressly address semiconductor manufacturing in space, or whether a "qualifying advanced manufacturing activity" can occur in space, and on a low-earth orbiter, in particular. Section 48D is among the investment credits under section 46. Section 50(b)(1)(A) makes ineligible for the investment credit property that is used predominantly outside the United States. However, section 50(b)(1)(B) provides an exception for property described in section 168(g)(4). Section 168(g)(4)(L) includes an exception for any satellite (not described in section 168(g)(4)(H), which applies to communication satellites) or other spacecraft (or any interest therein) held by a United States person if such satellite or other spacecraft was launched from within the United States. Whether a low-earth orbiter or property placed in service on a low-earth orbiter is described in section 168(g)(4)(L) would require a careful examination of all relevant facts and circumstances, any applicable Code sections and Federal income tax principles apart from those found in section 48D and the section 48D regulations. Whether "buildings" or structural components that are critical for human habitation in space are included among the exception for a building or portion of a building used for offices administrative services, or other functions unrelated to manufacturing pursuant to section 48D(b)(2)(B)(ii), also would require a careful examination of all relevant facts and circumstances, any applicable Code sections, and Federal income tax principles apart from those found in section 48D and the section 48D regulations. Similarly, whether property integral to the operation of an advanced manufacturing facility can include space delivery vehicles requires a careful examination of all relevant facts and circumstances. For these reasons, the issues addressed by the commenter are beyond the scope of the final regulations. Accordingly, the final regulations do not adopt rules to address semiconductor manufacturing in space.

V. Comments on and Changes to Proposed §1.48D-4

A. Definition of Advanced Manufacturing Facility

Section 1.48D-4(b) of the March 2023 proposed regulations would have provided that the term "advanced manufacturing facility" means a facility of an eligible taxpayer for which the primary purpose is the manufacturing of finished semiconductors or the manufacturing of finished semiconductor manufacturing equipment. Commenters requested that the final regulations omit the term "finished" from the definition of "advanced manufacturing facility," or, define the term "finished" if it is retained in the final regulations. Commenters also requested that conforming changes be made to the definition of "advanced manufacturing facility" if the definitions of "semiconductor," "semiconductor manufacturing equipment," or "subsystems" are modified by the final regulations.

The Treasury Department and the IRS agree with the commenters that the term "finished" should be removed from the definition of "advanced manufacturing facility" in the final regulations to reflect industry practice and the modifications to the definitions of "semiconductor manufacturing" and "semiconductor manufacturing equipment" under §1.48D-2(n) and (o) of the final regulations. Accordingly, the definition of "advanced manufacturing facility" is revised in the final regulations by removing the term "finished." Consistent with the revision to the definition of "advanced manufacturing facility," the term "finished" is also removed from §1.48D-4(b) and (c)(1) of the final regulations, for purposes of determining whether the primary purpose of a facility is the manufacturing of semiconductors or semiconductor manufacturing equipment.

Commenters requested that the definition of an advanced manufacturing facility be modified to ensure that industrial gas and other equipment qualifies when co-located on an advanced manufacturing facility, and, similarly, clarify what constitutes an advanced manufacturing facility when multiple taxpayers place in service qualified property at the same facility. Commenters also requested that the final regulations define the term "facility" as a reasonably identifiable space, an amenity, a piece of equipment, or an assembly line that can be distinguished from an entire campus or building where multiple activities are performed and would allow for bifurcation of manufacturing campuses or within buildings where certain facilities may be leveraging the section 48D credit while other facilities may be leveraging a different tax incentive. One commenter requested that the final regulations define an advanced manufacturing facility consistent with the definition of qualified property integral to the operation of an advanced manufacturing facility in proposed §1.48D-3(f). Another commenter requested that the final regulations provide that the definition of an advanced manufacturing facility include design facilities that are related to the semiconductor manufacturing process.

The Treasury Department and the IRS decline to adopt these recommendations by further modifying the definition of an "advanced manufacturing facility" or defining "facility" in the final regulations. Section 48D(b)(3) and §1.48D-4(b) of the final regulations define an advanced manufacturing facility as a facility for which the primary purpose is the manufacturing of semiconductors or the manufacturing of semiconductor manufacturing equipment within the meaning of §1.48D-2. Section 1.48D-2 defines the terms semiconductor, semiconductor manufacturing, semiconductor manufacturing equipment, manufacturing of semiconductors, and manufacturing of semiconductor manufacturing equipment. Taken together, the statutory and regulatory provisions define what constitutes an advanced manufacturing facility for purposes of the section 48D credit. For these reasons, the final regulations do not include a separate definition of "facility" as requested by the commenters. The treatment of co-located property is addressed in section IV.A of this Summary of Comments and Explanation of Revisions.

B. Primary Purpose

Commenters requested that the final regulations include a minimum threshold that would satisfy the "primary purpose" requirement. In proposed §1.48D-4(c)(3)(i) (Example 1), a taxpayer manufactures semiconductor manufacturing equipment that represents approximately 75 percent of the potential output of the taxpayer's facility by cost to produce such equipment. Section 1.48D-4(c)(3)(i) (*Example 1*) shows that the taxpayer satisfied the primary purpose test in proposed §1.48D-4(c). Proposed §1.48D-4(c)(3)(ii) (*Example 2*) reaches the same conclusion when the taxpayer manufactures certain microscopes for a semiconductor manufacturing facility and such equipment represents approximately 75 percent of the potential output (by cost) of the taxpayer's facility. Commenters requested that the final regulations state the minimum threshold that would satisfy the primary purpose test as more than 50 percent. One commenter requested that the final regulations specify the types of cost that should be considered in the output test and if research costs in connection with manufacturing semiconductor or semiconductor equipment should be considered in the numerator of output test. The commenter further requested that the regulations should clarify that the output capacity in the quantitative test should be measured at full life cycle instead of the year placed in service when the credit is determined. The commenter also requested that the threshold requirement rule be provided in the regulatory text. Another commenter requested that the final regulations include an example of a facility that does not meet the "primary purpose" requirement, especially for facilities that do not meet the 75 percent threshold.

The Treasury Department and the IRS have determined that the final regulations should include a minimum threshold that would satisfy the "primary purpose" requirement. Accordingly, §1.48D-4(c)(1) of the final regulations provides that a minimum threshold of more than 50 percent by cost of production, revenue received in an arm's length transaction, or units produced satisfies the "primary purpose" requirement. Section 1.48D-4(c)(3) of the final regulations include examples illustrating the application of this rule, including examples involving semiconductor wafer production and a vertically integrated manufacturer. However, property placed in service in a taxable year must still meet the definition of qualified property under section 48D(b)(2) and §1.48D-3 for its

basis to be included as part of the qualified investment in the advanced manufacturing facility eligible for the section 48D credit. Specifying the types of cost that should be considered in the output test and the time period for the measurement would require a careful examination of all relevant facts and circumstances, any applicable Code sections and Federal income tax principles apart from those found in section 48D and the section 48D regulations. For these reasons, specifying the types of costs that should be considered and the time period for measurement is not appropriate for purposes of the final regulations.

One commenter requested that the words "grows" and "grow wafers" in proposed §1.48D-4(c)(2) be removed in the final regulations if the definition of "semiconductor" is revised in the final regulations to include polysilicon, boules, wafers, and similar materials with electronic properties manufactured specifically for the purpose of semiconductor manufacturing. Another commenter requested that the final regulations clarify that "primary purpose" can include intermediate manufacturing steps or production of components for finished semiconductors. One commenter requested that the final regulations provide that, in the case of a vertically integrated company that manufactures semiconductors, property used in the crystal and boule growth be treated as property integral to the operation of an advanced manufacturing facility.

The Treasury Department and the IRS agree, in part, with commenters and the final regulations adopt, in part, the commenter's request for a modification to proposed §1.48D-4(c)(2) by removing "grows" and "grow wafers" from the final regulations, and providing that primary purpose can include certain intermediate manufacturing steps to conform with the definition of "semiconductor manufacturing" in §1.48D-2(n) of the final regulations. As previously described in section III.E. of this Summary of Comments and Explanation of Revisions, semiconductor wafer production includes the processes of growing single-crystal ingots and boules, as well as wafer slicing, bonding, etching and polishing, cleaning, epitaxial deposition, and metrology. Including property used in steps prior to growing single-crystal ingots and boules in the case of a vertically integrated semiconductor manufacturer is not consistent with the purpose and structure of the statute because the primary purpose of such property is not the manufacturing of semiconductors (as defined in §1.48D-2(g) of the final regulations) or the manufacturing of semiconductor manufacturing equipment (as defined in §1.48D-2(h) of the final regulations). Accordingly, the final regulations do not include such a rule for such vertically integrated businesses.

The final regulations provide examples to illustrate whether a facility has a primary purpose of manufacturing of semiconductors or manufacturing of semiconductor manufacturing equipment. The examples address whether the facility meets the primary purpose test in the taxable year the property is placed in service. Because the section 48D is an investment tax credit, and pursuant to §1.46-3(d)(4), the investment credit is allowed in the taxable year the property is placed in service. In addition, the investment tax credit recapture rules under section 50(a) apply to the section 48D credit. If the property for which the section 48D credit is claimed ceases to be investment credit property (as defined in section 50(a)(6)(A)) with respect to the taxpayer before the close of the 5-year recapture period, then all or a portion of the section 48D credit is recaptured. If a taxpayer fails to meet the primary purpose test during any of the years during the 5-year recapture period, then the facility is no longer an advanced manufacturing facility, as defined in section 48D(b)(3) and the final regulations. The property the taxpayer placed in service to claim the section 48D credit is no longer qualified property under section 48D(b)(2)(A)(iv), because such property is no longer integral to the operation of an advanced manufacturing facility. Thus, the property has ceased to be investment credit property with respect to the taxpayer and, pursuant to section 50(a)(1)(A) and (B), all or a portion of the section 48D credit claimed is recaptured.

VI. Comments on and Changes to Proposed §1.48D-5

A. Definition of Single Advanced Manufacturing Facility Project

Commenters requested that the final regulations expand the list of items of property that may be treated as a single item for purposes of the beginning of construction rules to include "tooling equipment" and "semiconductor manufacturing equipment." The list in proposed §1.48D-5(a)(3) is non-exclusive. However, the Treasury Department and the IRS have determined that a clarification is appropriate to clarify that "tooling equipment" and "semiconductor manufacturing equipment" can be treated as a single item for purposes of the beginning of construction. Accordingly, §1.48D-5(a)(3)(i) of the final regulations is revised to include "tooling equipment" and "semiconductor manufacturing equipment."

Commenters requested that the final regulations establish a safe harbor for satisfying the single advanced manufacturing facility project determination if a taxpayer meets at least four of the factors listed under proposed §1.48D-5(a)(3)(i). As noted in the Background section of this preamble, the final regulations primarily apply credit mechanics and procedures common to all investment credits. It is therefore appropriate for purposes of section 48D to provide a single project test similar to the test provided in other recent guidance applicable to investment credits. Accordingly, §1.48D-5(a)(3)(i) of the final regulations provides that multiple properties or facilities will be treated as a single project if, at any point during construction of the multiple properties or facilities, they are owned by a single taxpayer (subject to the related taxpayer rule discussed later in this section of this Summary of Comments and Explanation of Revisions), and any two or more of the factors listed in §1.48D-5(a)(3)(i) are met. Under §1.48D-5(a)(3)(ii) of the final regulations, related taxpayers would be treated as one taxpayer in determining whether multiple facilities or properties are treated as a single project. Related taxpayers would be defined as members of a group of trades or businesses that are under common control (as defined in §1.52-1(b)).

Commenters also requested that the final regulations modify proposed §1.48D-5(a)(3)(i)(F) by changing "single master construction contract" to a "single master construction plan," and add a new factor based on whether the properties or facilities achieve efficiencies and economies of scale through shared semiconductor man-

ufacturing resources. However, planning and designing are generally regarded as preliminary activities that would not satisfy the Physical Work Test, and treating multiple items of qualified property as a single item based on a "construction plan" as opposed to a "construction contract" would not inform whether construction has begun for purposes of section 48D. Including a factor based on whether the properties or facilities achieve efficiencies and economies of scale through shared semiconductor manufacturing resources would inject significant complexity into the final regulations and likely cause additional uncertainty regarding the scope of the term "single advanced manufacturing facility project" due to its inherently factual nature. Accordingly, the final regulations do not incorporate the commenters' recommendations.

One commenter requested that the final regulations clarify the disaggregation of a single advanced manufacturing facility project under proposed §1.48D-5(a)(3)(iv). The commenter requested that the final regulations clarify that the relevant facts and circumstances to satisfy the continuity requirement for disaggregated separate items of property or facilities should be the facts and circumstances from the time that the continuity safe harbor period ends until the property is placed in service. The Treasury Department and the IRS decline to adopt the recommendation because it would be inconsistent with the continuity requirement. Those disaggregated separate items of property or facilities were not placed in service prior to the continuity safe harbor deadline and therefore, the taxpayer is not deemed to satisfy the continuity requirement with respect to those items from the beginning of construction date through the end of the continuity safe harbor period. Accordingly, the final regulations do not incorporate the commenter's recommendation.

The commenter also requested that the final regulations address the time period for which the remaining disaggregated separate items of property or facilities may satisfy the continuity requirement under a facts and circumstances determination, pursuant to proposed §1.48D-5(a)(3)(iv). The commenter recommended that the period start when physical work of a significant nature begins with respect to the disaggregated separate item of property rather than when construction began based on the single advanced manufacturing facility project. The commenter recommended that, alternatively, a continuous construction or continuous effort for any one item of property within the single advanced manufacturing facility project be attributed to all properties within the project to satisfy the continuity requirement. The Treasury Department and the IRS have determined that the relevant facts and circumstances determination in proposed §1.48D-5(a)(3)(iv) is appropriate for determining whether a disaggregated separate item of property satisfies the continuity requirement. Accordingly, the final regulations do not incorporate the commenter's recommendation.

B. Beginning of Construction, In General

A commenter requested that the final regulation clarify whether a taxpayer applies the same test for all construction in progress at one contiguous location to determine whether construction began before December 31, 2026. Proposed §1.48D-5(b)(1) provides that a taxpayer may establish that construction of an item of property (defined as a single advanced manufacturing facility project under proposed §1.48D-5(a)(3), or an item of qualified property under proposed §1.48D-3(b)) of a taxpayer begins under either the Physical Work Test or the Five Percent Safe Harbor. Thus, whether a taxpayer applies the same test for all construction in progress at one contiguous location depends on the unit of property being measured. For this reason, the Treasury Department and the IRS have determined that a clarification is not necessary.

C. Physical Work Test

Commenters requested that the final regulations include examples of on-site and off-site physical work of a significant nature specific to the semiconductor industry. One commenter recommended, at a minimum, including on-site activities such as excavation for the foundation of a facility, pouring concrete into a foundation of a facility, and installing underground utilities, and including off-site activities such as the acquisition of key systems, manufacture of components, mounting equipment, and constructing support structures such as steel trusses. The Treasury Department and the IRS have determined that including certain examples of on-site and off-site work to provide additional certainty to taxpayers is appropriate for determining whether physical work of a significant nature has occurred. Accordingly, §1.48D-5(c)(2) of the final regulations includes a non-exclusive list of examples of on-site and off-site activities, consistent with IRS guidance pertaining to beginning of construction.

D. Five Percent Safe Harbor

One commenter requested that a payment made by the taxpayer for property that is manufactured, constructed, or produced for the taxpayer by another person under a binding written contract but is not yet provided to the taxpayer and is not yet incurred by the other person is considered paid or incurred with respect to the taxpayer for purposes of the Five Percent Safe Harbor. As noted, the section 48D regulations primarily apply long-established credit mechanics and procedures common to all investment credits, including application of the principles of section 461. Therefore, the final regulations retain the rule set forth in proposed §1.48D-5(d)(2).

E. Continuity Requirement

Commenters requested that the final regulations provide examples of the facts and circumstances that would support the conclusion that the taxpayer satisfied the continuity requirement. The Treasury Department and the IRS have determined that including an example of facts and circumstances that would support a particular factor being met under the continuity facts and circumstances test is appropriate for clarifying the continuity requirement in this context. Accordingly, the final regulations clarify that a taxpayer has met the factor of paying or incurring additional amounts included in the total cost of the property for a taxable year in which it pays or incurs (within the meaning of §1.461-1(a)(1) and (2)) five percent or more of the total cost of the property each calendar year after the calendar year

during which construction of the property began for purposes of section 48D and the section 48D regulations.

One commenter requested that the final regulations include "industry downturns" in the non-exclusive list of construction disruptions under proposed §1.48D-5(e)(4)(iii). The commenter explained that the semiconductor industry is highly cyclical in nature and semiconductor companies typically reduce capital expenditures and delay on-going construction of new semiconductor facilities during industry downturns. The commenter recommended defining "industry downturn" as a 20 percent reduction to publicly traded stock value during the preceding 12-month period. The commenter also requested that the final regulations include a provision that Treasury may exercise its authority to identify per se construction disruptions in future guidance. The Treasury Department and the IRS decline to adopt these recommendations, but will consider whether future guidance, specific to any market and construction disruptions, is necessary, as needed.

A commenter requested that the final regulations modify the continuity safe harbor in proposed §1.48D-5(e)(6) by creating a bright-line rule that all property placed in service before December 31, 2036, will be deemed to satisfy the continuity safe harbor. The commenter argued that the structure of a continuity safe harbor that measures from the beginning of construction, in the context of semiconductor manufacturing, creates an incentive to intentionally delay the beginning of construction date to as late in 2026 as possible to more closely align the time that construction begins to the beginning of the tolling of the 10-year safe harbor period. Section 48D(e) provides that a section 48D credit may not be claimed for property the construction of which begins after December 31, 2026. The March 2023 proposed regulations provide that a taxpayer can establish that construction of property has begun by meeting either the Physical Work Test or the Five Percent Safe Harbor. Under either test, a taxpayer must meet the Continuity Requirement by demonstrating continuous construction or continuous efforts based on the relevant facts and circumstances. In lieu of demonstrating continuous construction or continuous efforts, however, the taxpayer is deemed to satisfy the continuity requirement, under the continuity safe harbor, by placing the property in service within ten calendar years after the date that the Physical Work Test or the Five Percent Safe Harbor is first satisfied. Taxpayers are not obligated to satisfy the continuity safe harbor to meet the continuity requirement. For these reasons, the Treasury Department and the IRS decline to adopt the commenter's recommendation in the final regulations.

A commenter requested that the final regulations include a monetary safe harbor in which a taxpayer is deemed to satisfy the continuous construction test or continuous efforts test in the case an advanced manufacturing facility project if the taxpayer pays or incurs a certain dollar amount of the total cost of the property during each taxable year before the property is placed in service. Paying or incurring costs towards completion of a project is one of many factors that may indicate the continuity requirement is met. As such, the Treasury Department and the IRS decline to include an additional safe harbor in the final regulations that is solely dependent on the dollar amount of monetary spend in a given taxable year. However, as previously described, the final regulations clarify that a taxpayer has met the factor of paying or incurring additional amounts included in the total cost of the property for a taxable year in which it pays or incurs (within the meaning of §1.461-1(a)(1) and (2)) five percent or more of the total cost of the property each calendar year after the calendar year during which construction of the property began.

VII. Comments on and Changes to Proposed §1.50-2

A. Applicable Transaction

One commenter requested clarification of whether the term "applicable transaction" includes the expansion of manufacturing semiconductor manufacturing equipment in a foreign country of concern. Section 50(a)(6)(D) provides that "applicable transaction" means a "significant transaction" involving the material expansion of "semiconductor manufacturing capacity" in a foreign country of concern. Section 50(a)(6)(D) does not refer to manufacturing semiconductor manufacturing equipment. For that reason, the term "applicable transaction" does not include the expansion of manufacturing semiconductor manufacturing equipment in a foreign country of concern. Section 50(a)(6)(E), however, defines the term "applicable taxpayer" as any taxpayer who has been allowed a section 48D credit for any prior taxable year. Thus, a taxpayer that was allowed a section 48D credit for manufacturing semiconductor manufacturing equipment as defined in §1.48D-2(h) of the final regulations is an "applicable taxpayer" for purposes of section 50(a)(3) and (a)(6)(D) and would be subject to recapture under those provisions if the taxpayer engaged in an "applicable transaction" involving the material expansion of semiconductor manufacturing in a foreign country of concern.

Commenters suggested that the final regulations provide that a transaction does not trigger recapture under section 50(a)(3) if such transaction does not trigger a clawback under an entity's required agreement with the Department of Commerce. Consistent with section 50(a)(6)(D), if a taxpayer enters into a required agreement with the Secretary of Commerce, the final regulations define the term "significant transaction" to have the same meaning as provided in the required agreement for purposes of section 48D and the section 48D regulations.

B. Definition of Applicable Taxpayer

Several commenters requested that the final regulations treat only partners that actually claim a section 48D credit as an "applicable taxpayer," as opposed to all partners in the partnership as required under proposed §1.50-2(b)(2)(i)(C). Two of the commenters argued that activities undertaken outside the partnership by one partner should not trigger recapture of the section 48D credit claimed by another partner in the partnership. The Treasury Department and the IRS have determined that certain modifications are appropriate for defining "applicable taxpayer" in the context of qualified property owned by a partnership or S corporation. Accordingly, the final regulations retain the general

definition of "applicable taxpayer" from proposed §1.50-2(b)(2)(i)(A) and include special rules for partnerships and S corporations.

The final regulations clarify that in the case of property placed in service by a partnership, the term "applicable taxpayer" means any direct or indirect partner in a partnership: (1) who was allowed a section 48D credit for such property for any taxable year prior to when such partnership entered into an applicable transaction and includes such partnership; (2) with respect to the partner's share of any section 48D credit allowed for such property prior to when such partner entered into an applicable transaction; or (3) with respect to the partner's share of any tax-exempt income from a partnership that made an election under section 48D(d)(2) for any taxable year prior to when such partner entered into an applicable transaction. Consistent with proposed §1.50-2(b)(2)(i)(B), the final regulations provide that the term "applicable taxpayer" means a partnership that made an election under section 48D(d)(2) for any taxable year prior to the taxable year in which the partnership entered into an applicable transaction. The final regulations include similar rules for S corporations and shareholders. The final regulations also include additional examples to clarify the application of the rules regarding the term "applicable taxpayer."

C. Significant Transactions in General and Certain Required Agreements under Section 103(b) of the CHIPS Act

Section 50(a)(6)(D) requires that the meaning of the term "significant transaction" be determined by the Secretary in coordination with the Secretary of Commerce and the Secretary of Defense. Accordingly, the March 2023 proposed regulations defined the term "significant transaction" to align and harmonize the scope of applicable transactions under section 50(a)(3) with the scope of prohibited material expansion transactions within the meaning of proposed 15 CFR 231.121 (relating to the Prohibition on Certain Expansion Transactions) and included the definition of "significant transaction" in proposed 15 CFR 231.101 as contained in the Commerce Proposed Rule. However, unlike the Commerce Proposed Rule, the Commerce Final Rule does not include a definition of "significant transaction." Rather, pursuant to section 103(b) of the CHIPS Act, what constitutes a "significant transaction" is to be defined in the required agreement entered into between a funding recipient and the Secretary of Commerce. Accordingly, the Treasury Department and the IRS (in coordination with the Secretary of Commerce and the Secretary of Defense) have determined that, consistent with section 50(a)(6)(D), the term "significant transaction" means either a "significant transaction" as that term is generally defined in §1.50-2(b)(10)(i) of the final regulations, or, with respect to a taxpayer that has entered into a required agreement with the Secretary of Commerce, as the term "significant transaction" is defined in §1.50-2(b)(10)(ii) of the final regulations, in the required agreement with the Department of Commerce. Consistent with the definition of "significant transaction" in §1.50-2(b)(10)(ii) of the final regulations, the defined terms in the required agreement with the Department of Commerce control for purposes of determining the meaning of the term "significant transaction."

One commenter requested that the section 50(a)(3) and (a)(6)(D) recapture provisions and the Department of Commerce's award clawback rules should align the set of restrictions on transactions in foreign countries of concern to avoid disrupting ordinary business activities at existing legacy facilities, especially given the length of time of the advanced manufacturing investment credit recapture period. The Treasury Department and the IRS note that the final regulations harmonize the restrictions to the extent provided under the statute.

D. Definition of Significant Transaction

Several commenters requested modifications to the definition of "significant transaction" in the March 2023 proposed regulations. Some commenters requested the final regulations increase the $100,000 threshold for determining whether a transaction is a "significant transaction." Commenters also requested that the final regulations explicitly state that transactions with a principal purpose of funding ordinary course operations (for example, payroll, rent and utilities, marketing and advertising, and similar items) are not considered significant.

In response to comments, the Treasury Department and the IRS are removing the monetary threshold for "significant transaction", and, instead, the revised definition focuses on the type of transaction that could result in material expansion. This approach is consistent with the intent of the recapture rule in section 50(a)(3). Accordingly, the definition of "significant transaction" has been modified to include (1) an investment, whether proposed, pending, or completed, including any capital expenditure, loan, or gift; (2) the formation of a subsidiary, whether classified as a corporation or partnership for Federal tax purposes; (3) a merger, acquisition, or takeover, including (a) the acquisition of a new or additional ownership interest in an entity, (b) the acquisition of a material portion of the assets of an entity, or (c) a consolidation; (4) the formation of a joint venture; or (5) a long-term lease or concession arrangement under which a lessee (or equivalent) makes substantially all business decisions concerning the operation of a leased entity (or equivalent), as if it were the owner. This definition, coupled with the revision to the definition of material expansion, would clarify that transactions with a principal purpose of funding ordinary course operations are not significant transactions.

One commenter requested that the final regulations eliminate the 85 percent rule under proposed §1.50-2(b)(10)(iii) from the definition of "significant transaction" or replace it with a simpler metric based on the ratio of units an entity manufactures in a foreign country of concern to the units shipped into a foreign country of concern. Another commenter requested that the Treasury Department and the IRS coordinate with the Department of Commerce to finalize a single uniform standard to identify what is a "final product" for purposes of proposed §1.50-2(b)(10)(iii). The proposed definition of "significant transaction" was intended to align and harmonize with the scope of certain prohibited expansion transactions under the Commerce Proposed Rule, pursuant to the Secretary's authority under section 50(a)(6)(D)(i) to determine whether transactions are significant transactions.

Accordingly, to maintain this alignment, the final regulations retain the 85 percent threshold in its consideration of whether certain production of legacy semiconductors "predominately serves the market" in a foreign country of concern. Because the meaning of the term "predominately serves the market" is intended to be consistent with the Commerce Final Rule, the Treasury Department and the IRS decline to interpret "serves the market" to refer to the location to which the semiconductors are first shipped.

Two commenters requested that the prohibition on technology licensing and joint research be removed from the definition of significant transaction, noting that the CHIPS Act does not refer to "technology licensing." Several commenters suggested that the definition of "technology licensing" in proposed §1.50-2(b)(11) is overly broad and could include general business operations, nondisclosure agreements, the discussion of products or technology, patents, trade secrets, know-how, intraparty transfer agreements, or arrangements operating under current export control authorization. The commenters requested that the final regulations narrow the definition to focus on the actual licensing of the technology or products that are subject to restrictions rather than just the discussion of products or technology. One commenter suggested that taxpayers and their affiliate will be required to review and possibly terminate pre-existing agreements based on the proposed definition.

Removing the prohibition on joint research or technology licensing agreements with a foreign entity of concern would allow a taxpayer to circumvent section 50(a)(3) and (a)(6)(D) through the use of joint research or technology licensing transactions. However, the Treasury Department and the IRS agree with the commenter's suggestions concerning the scope of the term "technology licensing" in the March 2023 proposed regulations given that the definition of "technology licensing" in the Commerce Final Rule was modified, consistent with these comments. Accordingly, the final regulations provide that the terms "joint research" and "technology licensing" have the same meaning as provided in 15 CFR 231.105 and 231.120, respectively.

One commenter stated that the affiliated group rule under proposed §1.50-2(b)(10)(v) (establishing a 50 percent ownership test) is inconsistent with the reference in 15 U.S.C. 4652(a)(6)(C)(iii) to section 1504(a) of the Code. The Treasury Department and the IRS agree that the affiliated group rule is inconsistent with the reference in 15 U.S.C. 4652(a)(6)(C)(iii) to section 1504(a) and for that reason, the affiliate group rule has been removed from the final regulations.

E. Existing Facility

Commenters requested that the definition of an "existing facility" in proposed §1.50-2(b)(5) be revised in the final regulations to clarify whether the term includes a facility undergoing production ramp-up and thus, on the date on which qualified property was placed in service, was not operating at full production level for which it was designed. One commenter requested that the final regulations clarify that upgrades and productivity improvements made to a facility during the ordinary course of business operations is not considered a significant renovation and the date for measuring semiconductor manufacturing capacity is the placed in service date as intended by the statute. The Treasury Department and the IRS have determined that only facilities built, equipped, and operating prior to a taxpayer placing in service qualified property as defined in section 48D(b)(2) and §1.48D-3 are considered to be existing facilities. A facility that undergoes significant renovations as defined in §1.50-2(b)(9) of the final regulations would no longer qualify as an existing facility. The final regulations do not require the existing facility to be operating at the semiconductor manufacturing capacity for which it was designed, as required by the March 2023 proposed regulations. As noted in section VII.G of this Summary of Comments and Explanation of Revisions, the final regulations modify the definition of a "significant renovation" to mean building new cleanroom space or adding a production line or other physical space to an existing facility, such that upgrades and productivity improvements made to a facility during the ordinary course of business operations would not be considered a significant renovation.

F. Material Expansion

Commenters requested that the definition of "material expansion" in proposed §1.50-2(b)(7) be modified in the final regulations to allow for an increase of semiconductor manufacturing capacity greater than 5 percent. One commenter requested that the 5 percent increase in capacity be measured on an average basis over the course of a year. Commenters also requested that the final regulations provide a finite list specifying business activities, products and processes that constitute a material expansion of semiconductor manufacturing. The Treasury Department and the IRS have determined that raising the five percent threshold for allowable material expansions or measuring the five percent increase capacity on average over the course of a year would undermine the objective of the recapture rule under section 50(a)(3). The Treasury Department and the IRS have further determined that specifying business activities, products and process that constitute a material expansion of semiconductor manufacturing is consistent with the statute. Accordingly, the final regulations retain the five percent threshold and clarify that the increase in capacity is due to the addition of a cleanroom, production line or other physical space, or series of such additions during the applicable period. The final regulations clarify that the term "material expansion" includes any construction of a new facility for semiconductor manufacturing.

G. Significant Renovations and Semiconductor Manufacturing Capacity

Several commenters requested that the scope of the definition of "significant renovation" in proposed §1.50-2(b)(9) be modified to encompass only new cleanroom construction, production space, increase in the square footage of an existing facility by a specified percentage, or actual output of the facility. The commenters argued that the March 2023 proposed regulations unnecessarily narrowed the scope of the exemption for legacy semiconductors as enacted, noting that the CHIPS Act does not include the term "significant renovation." Some commenters also requested that the ten percent ceiling for increasing

semiconductor manufacturing capacity be increased to fifteen percent. The commenters further requested that the final regulations clarify that an operating facility that has not yet reached its full capacity will be considered an "existing facility." The Treasury Department and the IRS have considered the commenters' suggestions and have determined that the "significant renovation" and ten percent threshold provisions are necessary to prevent a taxpayer from circumventing the recapture provisions of section 50(a)(3)(A) by engaging in a "significant renovation" of an "existing facility." However, the Treasury Department and the IRS agree with the commenters that clarification is needed concerning what is the scope of a "significant renovation." Accordingly, the final regulations retain the rules for a "significant renovation" of an existing facility but clarify that a "significant renovation" means building new cleanroom space or adding a production line or other physical space to an existing facility that, in the aggregate during the applicable period, increases semiconductor manufacturing capacity by 10 percent or more.

One commenter requested that the final regulations clarify that, with respect to a specific facility, a taxpayer's semiconductor manufacturing capacity is measured by taking into account both (i) the taxpayer's own semiconductor manufacturing capacity in that facility, and (ii) any semiconductor manufacturing capacity of another party to the extent the other party's operations are carried on for the benefit of the taxpayer. The commenter noted that semiconductor fabrication companies commonly outsource assembly and test work to third parties referred to as outsourced semiconductor assembly and test providers, or "OSATs." The commenter further noted that semiconductor manufacturer may lease a portion of a facility in a foreign country of concern to an OSAT that performs assembly and test work for the benefit of the taxpayer within the same facility. One commenter, included as an attachment to its comments on the March 2023 proposed regulations, a letter that the commenter sent to the Department of Commerce concerning the Commerce Proposed Rule. The commenter requested that the Commerce Final Rule provide that semiconductor manufacturing capacity be measured in wafer starts per year, as opposed to wafer starts per month.

Consistent with the Commerce Final Rule in 15 CFR 231.117, the final regulations provide that semiconductor manufacturing capacity is appropriately measured in wafer starts per month not including OSAT production. Section 1.50-2(b)(8) of the final regulations include a rule for determining "semiconductor manufacturing capacity" in the case of semiconductor wafer production. The final regulations clarify that wafer production is measured in starts per month and in the case of a semiconductor wafer production facility that includes the processes of growing single-crystal ingots and boules, wafer slicing, etching and polishing, cleaning, epitaxial deposition, and metrology, manufacturing capacity is measured in wafer starts per month.

H. Technology or Product that Raises National Security Concerns

One commenter requested that the final regulations exclude from the definition of semiconductors critical to national security, any semiconductors that reduce carbon emissions because they enhance rather than reduce U.S. national security (specifically SiC power semiconductors). The Treasury Department and the IRS appreciate that the performance advantages offered by compound semiconductors over silicon semiconductors, such as wider bandgap, lower operating voltages, and higher electron mobility, are vital to many military applications. Moreover, the governments of some foreign countries of concern have identified compound semiconductors as a strategic emerging industry. They have set ambitious goals for acquisition and development of compound semiconductor technology and strive to become global leaders in the industry. However, while exports of certain semiconductors are not subject to national security or regional stability export controls, joint research, or technology licensing involving these products with foreign entities of concern can nevertheless pose a significant risk to national security. Taxpayers that claim a section 48D credit should not further that risk. For these reasons, the Treasury Department and the IRS decline to adopt the commenter's request.

I. Exception from the Definition of Applicable Transaction for the Manufacturing of Legacy Semiconductors

Several commenters requested that the final regulations specifically include assembly test manufacturing (ATM) that uses non-3D packaging in the definition of legacy semiconductor. The commenters argued that given that ATM is generally a back-end operation, with billions of pre-existing investments, it is appropriate for these operations to be viewed under the definition of legacy unless they specifically perform 3D integration. The Treasury Department and the IRS agree with the commenters' suggestion. Accordingly, the final regulations, consistent with 15 CFR 231.107, clarify that only semiconductors utilizing advanced 3D integration packaging such as by directly attaching one or more die or wafer, through silicon vias (TSV) or through mold vias (TMV), or other advanced methods are not considered to be legacy semiconductors.

Commenters requested that the final regulations conform the example of memory semiconductor under proposed §1.50-2(c)(2)(ii) to current export controls. Section 50(a)(6)(D)(ii) provides that the exception for legacy semiconductors applies as defined in section 9902(a)(6) of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, as amended by section 103 of the CHIPS Act. The example of a memory semiconductor in proposed §1.50-2(c)(2)(ii) is consisted with the statutory definition of a legacy semiconductor. Accordingly, the Treasury Department and the IRS decline to revise the example of a memory semiconductor in the final regulations.

Commenters requested that what is considered a leading or "legacy" semiconductor should be adjusted over the course of a 10-year period and should be connected to authorization permitted under export control licensing. Proposed §1.50-2(c)(2)(iii) includes among the definition of a "legacy semiconductor" a semiconductor identified by the Secretary of Commerce in a public notice issued under 15 U.S.C. 4652(a)(6)(A)(ii). The Secretary of Commerce is required, pursuant to 15 U.S.C. 4652(a)(6)(A)(ii), to update the

definition of "legacy semiconductor" on a regular basis and at least every two years. Thus, the definition of what is considered a leading or legacy semiconductor will be adjusted over the course of a 10-year period, as the Secretary of Commerce deems appropriate as reflected in §1.50-2(c)(2) of the final regulation.

One commenter requested that the final regulations provide that the exclusion of any technology from the definition of "legacy semiconductor" in the future pursuant to 15 U.S.C. 4652(a)(6)(A)(ii) be applied only prospectively and not to any transactions previously entered into. Section 50(a)(6)(D)(ii) provides that the exception for legacy semiconductors applies as defined in section 9902(a)(6) of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, as amended by section 103 of the CHIPS Act. Section 103(b) of the CHIPS Act added 15 U.S.C. 4652(a)(6)(A)(ii) and requires the Secretary of Commerce, after public notice and an opportunity for comment and if applicable and necessary, to issue a public notice identifying any additional semiconductor technology included in the meaning of the term "legacy semiconductor" on a regular basis, and at least every two years. The commenter's recommendation to apply only prospectively any technology excluded from the definition of "legacy semiconductor" by the Secretary of Commerce pursuant to 15 U.S.C. 4652(a)(6)(A)(ii) is beyond the application of sections 48D and 50 and the section 48D regulations. For that reason, the Treasury Department and the IRS decline to adopt the commenter's recommendation. One commenter requested that the final regulations modify the definition of legacy semiconductors that is of 28 nanometer generation or older under proposed §1.50-2(c)(2)(i) by deleting the reference to gate length and including technologies using the planar transistor architecture that should be considered the same as 28 nanometer generation technology. The Treasury Department and the IRS decline to adopt the commenter's recommendation. The proposed definition of legacy semiconductor with respect to 28 nanometer generation technology is consistent with the CHIPS Act and accurately captures the definition of legacy semiconductors. The proposed definition also prevents a company from using or creating a derivation of their existing 28 nanometer technology for use in a foreign country of concern that is inconsistent with the kind of material expansion of semiconductor manufacturing the CHIPS Act seeks to constrain.

Several commenters requested that the final regulations narrow the exception under proposed §1.50-2(c)(3)(iii) to "advanced" 3D packaging techniques, so that TSV and TMV are excluded from the definition of legacy semiconductor. In coordination with the Department of Commerce and the Department of Defense, the Treasury Department and the IRS have incorporated this recommendation in the final regulations. The Commerce Final Rule clarifies the meaning of the term "legacy semiconductor" with respect to a semiconductor wafer facility, a semiconductor fabrication facility, and a semiconductor packaging facility. Again, in coordination with the Department of Commerce and the Department of Defense, the Treasury Department and the IRS have incorporated this clarification in the final regulations.

The March 2023 proposed regulations provided a definition of "legacy semiconductor" that was identical to the definition in Commerce Proposed Rule. Consistent with section 50(a)(6)(D)(ii) of the Code and section 9902(a)(6) of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, as amended by section 103 of the CHIPS Act, the final regulations define the term "legacy semiconductor" as having the same meaning as that term is defined in the Commerce Final Rule, 15 CFR 231.107.

J. Standards for Determining the Satisfaction of the Commissioner

Commenters requested that the final regulations include standards for establishing what is considered to be to "the satisfaction of the Secretary" or "the satisfaction of the Commissioner" for purposes of section 50(a)(3)(B) and proposed §1.50-2(a)(2), respectively. Commenters suggested that the final regulations address how a taxpayer may demonstrate cessation or abandonment of a project, and further suggested that those actions could include proof of cancelled contracts, the withdrawal or cancellation of work permits, a board resolution that expressly cancels the applicable transaction, or the issuance of a public statement that expressly cancels the applicable transaction. Commenters also suggested that final regulations include a non-exhaustive list of documents that can be used to establish cessation or abandonment of a project. The Treasury Department and the IRS have determined that the rules suggested by the commenters, as well as similar provisions, would likely cause additional uncertainty regarding the scope of the term "to the satisfaction of the Commissioner" due to its inherently factual nature. As a result, the final regulations do not incorporate the commenters recommendations.

K. Records Retention

The Treasury Department and the IRS requested comments on the ability of applicable taxpayers to comply with potential record keeping requirements in addition to those required by current law and on what specific procedures should be considered to ensure that the IRS has sufficient information to determine whether an applicable taxpayer engages in an applicable transaction within the meaning of section 50(a)(3) and proposed §1.50-2. Several commenters suggested that any record retention should be limited to records obtained in the ordinary course of business. Another commenter suggested the IRS could include a form or attachment to annual tax returns with basic questions for the IRS to ascertain whether an applicable taxpayer may have engaged in an applicable transaction during the taxable year. Section 50(a)(3)(C) provides that the Secretary shall issue regulations or other guidance as the Secretary determines necessary or appropriate to carry out the purposes of section 50(a)(3), including regulations or other guidance which provides for requirements for recordkeeping or information reporting for purposes of administering the requirements of section 50(a)(3). The Treasury Department and the IRS have determined that records retained in a taxpayer's ordinary course of business, and as required under current applicable periods of limitations under section 6501 of the Code on assessment and collection of tax under chapter 1 with

respect to the applicable taxpayer's return filed for the taxable year that includes the close of the 10-year period beginning on the date such taxpayer placed in service investment credit property that is eligible for the section 48D credit, are sufficient. Accordingly, the final regulations do not incorporate any additional record keeping requirements.

Some commenters requested that the final regulations provide for more of an alignment of the section 48D credit requirements and the Department of Commerce grant regulatory requirements including standardizing the same 10-year recapture or clawback period and streamline reporting and recordkeeping requirements. The commenters also requested that responsibility for administering the various overlapping rules and taxpayer notification requirements be delegated to a single agency or an interagency body. Section 50(a)(3) provides for recapture of the section 48D credit if there is an applicable transaction by an applicable taxpayer before the close of the ten-year period beginning on the date such property is placed in service. Pursuant to 15 USC 4652(a)(6)(C)(i), the Commerce Final Rule, 15 CFR 231.202, provides that the 10-year period for the Expansion Clawback begins on the date of the award of Federal financial assistance under 15 USC 4652. The preamble to the Commerce Final Rule clarifies that the applicable term for the technology clawback (15 CFR 231.203) is defined in the relevant award documents. Pursuant to the relevant statutes, the recapture period for a section 48D credit begins on the date the qualified property is placed in service, and the Expansion Clawback and technology clawback periods begin on the date of the award of financial assistance and as defined in the award documents, respectively. For this reason, aligning the recapture period with the clawback period would be inconsistent with section 50(a)(3)(A).

Section 50(a)(6)(D)(i) requires that the Secretary (in coordination with the Secretary of Commerce and the Secretary of Defense) define the term "significant transaction" for purposes of section 50. Consistent with the statutory directive in section 50(a)(6)(D)(i), §1.50-2(b)(10) of the final regulations defines the term "significant transaction" as determined by the Treasury Department and the IRS in coordination with the Department of Commerce and the Department of Defense. Treasury regulations that otherwise would align or streamline the reporting and recordkeeping requirements or delegate the administrative functions to a single agency or interagency body are beyond the scope of the statute.

L. Private Letter Rulings

Commenters requested that the IRS grant private letter rulings or other determinations on the beginning of construction, effective date, costs, and or other matters relevant to section 48D. Consistent with guidance published in the Internal Revenue Bulletin, the IRS ordinarily will not issue private letter rulings to a taxpayer regarding the beginning of construction requirement under section 48D with respect to property placed in service after these final regulations are published in the ***Federal Register***. In addition, the IRS may decline to issue a letter ruling or a determination letter when appropriate in the interest of sound tax administration, including due to resource constraints, or on other grounds whenever warranted by the facts or circumstances of a particular case.

Applicability Date

The final regulations set forth in §§1.48D-1 through 1.48D-5, and 1.50-2 apply to property that is placed in service after December 31, 2022, and during a taxable year ending on or after October 23, 2024.

Special Analyses

I. Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (44 U.S.C. 3501-3520) (PRA) generally requires that a Federal agency obtain the approval of the Office of Management and Budget (OMB) before collecting information from the public, whether such collection of information is mandatory, voluntary, or required to obtain or retain a benefit. A Federal agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the collection of information displays a valid control number.

This regulation mentions elections that are made in accordance with section 48D(d)(1) and (d)(2) of the Code and §1.46-5 of the Treasury Regulations. These elections are made with Form 3468, *Investment Credit*, which are already approved by the OMB under 1545-0074 for individual/sole proprietor filers, 1545-0123 for business filers, and 1545-0155 for trust and estate filers. This regulation is not changing those election requirements; and is not telling taxpayers to make these elections but explaining their treatment for the credit if they have made these elections.

This regulation also describes recapture of the advanced manufacturing investment credit in the case of certain expansions, as detailed in §1.50-2(a). The reporting of the recapture event will still be required to be reported using Form 4255, *Recapture of Investment Credit.* This form is approved under OMB control numbers 1545–0074 for individuals/sole proprietors, 1545–0123 for business entities, and 1545–0166 for trust and estate filers. The final regulation is not changing or creating new collection requirements not already approved by OMB on Form 4255.

This regulation includes recordkeeping requirements outlined in §1.50-2 for recording transactions, investments, facilities information, and agreements with the Department of Commerce. The IRS expects that these records are usual and customary business records; however, the taxpayers will need to keep these records as long as they are admissible by the statute, typically for 10 years. Therefore, the IRS is considering these to be general tax records under §1.6001-1. These records are required for the IRS to validate that the taxpayers have met the regulatory requirements; and are required as proof that the taxpayer has not engaged in an applicable transaction or that the taxpayer has ceased or abandoned the applicable transaction within 45 days of a determination and notice by the Commissioner, pursuant to section 50(a)(3). For PRA purposes, general tax records are already approved by OMB under 1545-0074 for individual/sole proprietor filers, 1545-0123 for business filers, and 1545-0092 for trust and estate filers.

II. Regulatory Flexibility Act

The Treasury Department and the IRS determined the rule will not have a significant economic impact on a substantial number of small entities. Although the rules affect small entities, data are not readily available about the number of taxpayers affected. Section 48D affects the semiconductor manufacturing industry, and specifically, individuals and entities that make qualified investments in facilities engaged in the manufacturing of semiconductors and semiconductor manufacturing equipment. The economic impact of these regulations is not likely to be significant, because the regulations substantially incorporate statutory changes by the CHIPS Act in establishing section 48D and amending section 50(a). The regulations will also make it easier for taxpayers to comply with section 48D and the changes to section 50(a). Pursuant to the RFA (5 U.S.C. chapter 6), the Secretary hereby certifies that these regulations will not have a significant economic impact on a substantial number of small entities.

Pursuant to section 7805(f), the notice of proposed rulemaking has been submitted to the Chief Counsel for the Office of Advocacy of the Small Business Administration for comment on its impact on small business. The Chief Counsel for the Office of Advocacy of the SBA did not provide any comments on the March 2023 proposed regulations.

III. Unfunded Mandates Reform Act

Section 202 of the Unfunded Mandates Reform Act of 1995 (UMRA) requires that agencies assess anticipated costs and benefits and take certain other actions before issuing a final rule that includes any Federal mandate that may result in expenditures in any one year by a State, local, or Tribal government, in the aggregate, or by the private sector, of $100 million (updated annually for inflation). This rule does not include any Federal mandate that may result in expenditures by State, local, or Tribal governments, or by the private sector in excess of that threshold.

IV. Executive Order 13132: Federalism

Executive Order 13132 (Federalism) prohibits an agency from publishing any rule that has federalism implications if the rule either imposes substantial, direct compliance costs on State and local governments, and is not required by statute, or preempts State law, unless the agency meets the consultation and funding requirements of section 6 of the Executive order. This rule does not have federalism implications and does not impose substantial direct compliance costs on State and local governments or preempt State law within the meaning of the Executive order.

V. Regulatory Planning and Review

Pursuant to the Memorandum of Agreement, Review of Treasury Regulations under Executive Order 12866 (June 9, 2023), tax regulatory actions issued by the IRS are not subject to the requirements of section 6 of Executive Order 12866, as amended. Therefore, a regulatory impact assessment is not required.

VI. Congressional Review Act

Pursuant to the Congressional Review Act (5 U.S.C. 801 *et seq.*), the Office of Information and Regulatory Affairs has designated this rule as a major rule as defined by 5 U.S.C. 804(2).

Statement of Availability of IRS Documents

Guidance cited in this preamble is published in the Internal Revenue Bulletin and is available from the Superintendent of Documents, U.S. Government Publishing Office, Washington, DC 20402, or by visiting the IRS website at https://www.irs.gov.

Drafting Information

The principal author of these final regulations is Lani Sinfield, Office of the Associate Chief Counsel (Passthroughs and Special Industries), IRS. However, other personnel from the Treasury Department and the IRS participated in their development.

List of Subjects in 26 CFR Part 1

Income taxes, Reporting and recordkeeping requirements.

Amendments to the Regulations

Accordingly, the 26 CFR part 1 is amended as follows:

PART 1—INCOME TAXES

Paragraph 1. The authority citation for part 1 is amended by adding an entry, in numerical order, for §1.50-2 to read in part as follows:

Authority: 26 U.S.C. 7805 * * *

* * * * *

Section 1.50-2 also issued under 26 U.S.C. 50(a)(3)(C), and 50(a)(6).

* * * * *

Par. 2. Section 1.48D-0 is revised to read as follows:

§1.48D-0 Table of contents.

This section lists the table of contents for §§1.48D-1 through 1.48D-6.

§1.48D-1 Advanced manufacturing investment credit determined.

(a) Overview.
(b) Determination of credit.
(c) Coordination with section 47.
(1) In general.
(2) Example.
(d) Applicability date.

§1.48D-2 Definitions.

(a) In general.
(b) Applicable transaction.
(c) Basis.
(1) In general.
(2) Transition rule.
(d) Beginning of construction.
(e) Eligible taxpayer.
(f) Foreign entities.
(1) Foreign entity.
(2) Foreign entity of concern.
(g) Manufacturing of semiconductors.
(h) Manufacturing of semiconductor manufacturing equipment.
(i) Placed in service.
(j) Qualified investment.
(1) In general.
(2) Special rules for certain passthrough entities.
(i) Partnership.
(ii) S corporation.
(iii) Estate or trust.

(3) Qualified progress expenditures election.

(i) In general.

(ii) Special rules for certain passthrough entities.

(4) Examples.

(i) Example 1.

(ii) Example 2.

(k) Section 48D credit.

(l) Section 48D regulations.

(m) Semiconductor.

(n) Semiconductor manufacturing.

(1) Semiconductor wafer production.

(2) Semiconductor fabrication.

(3) Semiconductor packaging.

(4) Assembly.

(5) Testing.

(6) Advanced packaging.

(o) Semiconductor manufacturing equipment.

(p) Statutory references.

(1) Chapter 1.

(2) Code.

(3) Subtitle A.

(q) Applicability date.

§1.48D-3 Qualified property.

(a) In general.

(b) Qualified property.

(c) Tangible depreciable property.

(1) In general.

(2) Exception.

(3) Buildings or portions of a building not excluded by section 48D(b)(2)(B)(ii).

(d) Constructed, reconstructed, or erected by the taxpayer.

(e) Original use.

(1) In general.

(2) Treatment of inventory.

(f) Part of an advanced manufacturing facility.

(1) In general.

(2) Property that is not located or co-located at an advanced manufacturing facility or on a contiguous piece of land to the advanced manufacturing facility.

(g) Integral to the operation of an advanced manufacturing facility.

(1) In general.

(2) Vertically integrated manufacturers.

(3) Specific examples of integral property.

(4) Research or storage facilities.

(5) Examples.

(i) Example 1.

(ii) Example 2.

(h) Applicability date.

§1.48D-4 Advanced manufacturing facility of an eligible taxpayer.

(a) In general.

(b) Advanced manufacturing facility.

(c) Primary purpose.

(1) In general.

(2) No primary purpose.

(3) Examples.

(i) Example 1: Primary purpose; in general.

(ii) Example 2: Primary purpose; semiconductor wafer production.

(iii) Example 3: Primary purpose; vertically integrated manufacturer.

(iv) Example 4: No primary purpose; vertically integrated manufacturer.

(d) Applicability date.

§1.48D-5 Beginning of construction.

(a) Termination of credit.

(1) In general.

(2) Property.

(3) Single advanced manufacturing facility project.

(i) In general.

(ii) Related taxpayers.

(A) Definition.

(B) Related taxpayer rule.

(iii) Example.

(iv) Timing of single advanced manufacturing facility project determination.

(v) Disaggregation.

(vi) Example.

(b) Beginning of construction.

(1) In general.

(2) Continuity requirement.

(c) Physical work test.

(1) In general.

(2) Physical work of significant nature.

(i) In general.

(ii) Exceptions.

(d) Five percent safe harbor.

(1) In general.

(2) Costs.

(3) Cost overruns.

(i) Single advanced manufacturing facility project.

(ii) Example.

(iii) Single property.

(iv) Example.

(e) Continuity requirement.

(1) In general.

(2) Continuous construction.

(3) Continuous efforts.

(4) Excusable disruptions to continuous construction and continuous efforts tests.

(i) In general.

(ii) Effect of excusable disruptions on continuity safe harbor.

(iii) Non-exclusive list of construction disruptions.

(5) Timing of excusable disruption determination.

(6) Continuity safe harbor.

(i) In general.

(ii) Example.

(f) Applicability date.

§1.48D-6 Elective payment election.

(a) Elective payment election.

(1) In general.

(2) Partnerships and S corporations.

(3) Irrevocable.

(b) Pre-filing registration required.

(1) In general.

(2) Manner of registration.

(3) Members of a consolidated group.

(4) Timing of pre-filing registration.

(5) Each qualified investment in an advanced manufacturing facility must have its own registration number.

(6) Information required to complete the pre-filing registration process.

(7) Registration number.

(i) In general.

(ii) Registration number is only valid for one year.

(iii) Renewing registration numbers.

(iv) Amendment of previously submitted registration information if a change occurs before the registration number is used.

(v) Registration number is required to be reported on the return for the taxable year of the elective payment election.

(c) Time and manner of election.

(1) In general.

(2) Limitations.

(d) Special rules for partnerships and S corporations.

(1) In general.

(2) Election.

(i) Time and manner of election.

(ii) Effect of election.

(iii) Coordination with sections 705 and 1366.

(iv) Partner's distributive share.

(A) In general.

(B) Interim rule.
(C) Partnership requirements.
(v) S corporation shareholder's pro-rata share.
(vi) Timing of tax exempt income.
(3) Disregarded entity ownership.
(4) Electing partnerships in tiered structures.
(i) In general.
(ii) Electing partnerships in tiered structures; interim rule.
(5) Character of tax exempt income.
(6) Determination of amount of the section 48D credit.
(i) In general.
(ii) Application of section 49 at-risk rules to determination of section 48D credit for partnerships and S corporations.
(iii) Changes in at-risk amounts under section 49 at partner or shareholder level.
(7) Partnerships subject to subchapter C of chapter 63 of the Code.
(8) Example.
(e) Denial of double benefit.
(1) In general.
(2) Application of the denial of double benefit rule.
(3) Use of the section 48D credit for other purposes.
(4) Examples.
(i) Example 1.
(ii) Example 2.
(iii) Example 3.
(iv) Example 4.
(f) Excessive payment.
(1) In general.
(2) Reasonable cause.
(3) Excessive payment defined.
(4) Example.
(g) Basis reduction and recapture.
(1) In general.
(2) Basis adjustment.
(i) In general.
(ii) Basis adjustment by partnership or S corporation.
(iii) Basis adjustment of partners and S corporation shareholders.
(3) Recapture reporting.
(h) Applicability dates.
(1) In general.
(2) Prior taxable years.

Par. 3. Sections 1.48D-1 through 1.48D-5 are added to read as follows:

Sec.

* * * * *

1.48D-1 Advanced manufacturing investment credit determined.
1.48D-2 Definitions.
1.48D-3 Qualified property.
1.48D-4 Advanced manufacturing facility of an eligible taxpayer.
1.48D-5 Beginning of construction.

* * * * *

§1.48D-1 Advanced manufacturing investment credit determined.

(a) *Overview*. For purposes of section 46 of the Code, the amount of the advanced manufacturing investment credit under section 48D of the Code determined for any taxable year is the amount determined under section 48D and this section and §§1.48D-2 through 1.48D-6 and 1.50-2 (the section 48D regulations) (subject to any applicable provisions of the Code that may limit the amount determined under section 48D), for such taxable year with respect to any advanced manufacturing facility of an eligible taxpayer. Paragraph (b) of this section provides the general rules for determining the amount of a taxpayer's section 48D credit for a taxable year. Paragraph (c) of this section provides rules coordinating the section 48D credit with the rules of section 47 of the Code (relating to the rehabilitation credit). Section 1.48D-2 provides definitions that apply for purposes of section 48D and the section 48D regulations. Section 1.48D-3 provides rules relating to the definition of qualified property for purposes of the section 48D credit. Section 1.48D-4 provides rules relating to the definition of an advanced manufacturing facility of an eligible taxpayer for purposes of the section 48D credit. Section 1.48D-5 provides rules regarding the beginning of construction of property for purposes of the section 48D credit. Section 1.48D-6 provides rules related to the elective payment election of the section 48D credit. *See* §1.50-2 for additional rules under section 50(a)(3) and (6) of the Code relating to applicable transactions that result in the recapture of section 48D credits.

(b) *Determination of credit*. Subject to any applicable sections of the Code that may limit the credit determined under section 48D, the section 48D credit for any taxable year of an eligible taxpayer with respect to any advanced manufacturing facility is an amount equal to 25 percent of the taxpayer's qualified investment for the taxable year with respect to that advanced manufacturing facility. A section 48D credit is available only with respect to qualified property that a taxpayer places in service after December 31, 2022, and, for any qualified property the construction of which began prior to January 1, 2023, only to the extent of the basis of that property attributable to the construction, reconstruction, or erection of that property occurring after August 9, 2022. Under section 48D(e), no section 48D credit is allowed to a taxpayer for placing qualified property in service in any taxable year if the beginning of construction of that qualified property as determined under §1.48D-5 begins after December 31, 2026 (the date specified in section 48D(e)).

(c) *Coordination with section 47*—(1) *In general*. The qualified investment with respect to any advanced manufacturing facility of an eligible taxpayer for any taxable year does not include that portion of the basis of any property that is attributable to qualified rehabilitation expenditures, as defined in section 47(c)(2) and §1.48-12(c), with respect to a qualified rehabilitated building, as defined in section 47(c)(1) and §1.48-12(b).

(2) *Example: Coordination with section 47*. X Corp, a calendar-year C corporation, owns Building A, a certified historic structure. X Corp's adjusted basis in Building A is $100,000. Between August 1, 2024, and October 31, 2024, X Corp incurs $1 million to reconstruct, within the meaning of section 48D(b)(2)(A)(iii)(I) and §1.48-12(b)(2)(iv), Building A. X Corp places the reconstructed Building A, a qualified rehabilitated building, in service on November 15, 2024. Of the $1 million of capitalized expenditures incurred to reconstruct Building A (all of which would meet the definition of qualified investment), $250,000 also meets the definition of qualified rehabilitation expenditures (QREs). As such, X Corp's qualified investment in Building A is $750,000 ($1 million - $250,000). X Corp's qualified investment in Building A remains $750,000 even if X Corp does not determine a rehabilitation credit with respect to the $250,000 of QREs.

(d) *Applicability date*. This section applies to property that is placed in service after December 31, 2022, and during a taxable year ending on or after October 23, 2024.

§1.48D-2 Definitions.

(a) *In general*. The definitions in paragraphs (b) through (p) of this section

apply for purposes of sections 48D and 50 of the Code and §1.48D-1, this section and §§1.48D-3 through 1.48D-6 and 1.50-2 (the section 48D regulations).

(b) *Applicable transaction*. The term *applicable transaction* has the meaning provided in section 50(a)(6) and §1.50-2.

(c) *Basis*—(1) *In general*. With respect to any qualified property, the term *basis* has the same meaning as provided in §1.46-3(c). Thus, the basis of the qualified property generally is determined in accordance with the general rules of subtitle A for determining the basis of property (see subtitle A, subchapter O, part II of the Code). As such, the basis of qualified property would generally be the cost of that qualified property (*see* section 1012 of the Code) unreduced by any adjustments to basis and would include all items properly included by the taxpayer in the depreciable basis of the qualified property.

(2) *Transition rule*. For property the construction of which began prior to January 1, 2023, and is placed in service after December 31, 2022, the portion of the basis of such property attributable to construction, reconstruction, or erection after August 9, 2022, must be allocated using any reasonable method, including by applying the principles of section 461 of the Code. Rules similar to the rules in §§1.48-2(b)(2), 1.48-11(b)(5)(i), and 1.48-12(c)(1) are applicable.

(d) *Beginning of construction*. The term *beginning of construction* has the meaning provided in §1.48D-5.

(e) *Eligible taxpayer*. The term *eligible taxpayer* means any taxpayer that—

(1) Is not a foreign entity of concern; and

(2) Has not made an applicable transaction during the taxable year.

(f) *Foreign entities*—(1) *Foreign entity*. The term *foreign entity* has the same meaning as provided in 15 CFR 231.103.

(2) *Foreign entity of concern*. The term *foreign entity of concern* has the same meaning as provided in 15 CFR 231.104.

(g) *Manufacturing of semiconductors*. The term *manufacturing of semiconductors* and the term *semiconductor manufacturing* are synonymous.

(h) *Manufacturing of semiconductor manufacturing equipment*. The term *manufacturing of semiconductor manufacturing equipment* means the physical production (in a manufacturing facility) of semiconductor manufacturing equipment, which is used by an advanced manufacturing facility engaged in the manufacturing of semiconductors as defined in paragraph (g) of this section.

(i) *Placed in service*. The term *placed in service* has the same meaning as provided in §1.46-3(d).

(j) *Qualified investment*—(1) *In general*. Except as provided in paragraph (j)(2) and (3) of this section, the term *qualified investment* with respect to an advanced manufacturing facility means, for any taxable year, the basis of any qualified property that is part of an advanced manufacturing facility and placed in service by the taxpayer during the taxable year.

(2) *Special rules for certain passthrough entities*. In the case of any qualified property that is part of an advanced manufacturing facility of an eligible taxpayer and placed in service by an entity described in paragraphs (j)(2)(i) through (iii) of this section during a taxable year, the rules of this paragraph (j)(2) apply to determine the qualified investment for the taxable year with respect to the advanced manufacturing facility.

(i) *Partnership*. In the case of a partnership that places in service qualified property that is part of an advanced manufacturing facility of an eligible taxpayer, each partner in the partnership must take into account separately the partner's share of the basis of the qualified property placed in service by the partnership during the taxable year as provided in §1.46-3(f).

(ii) *S corporation*. The basis of qualified property that is part of an advanced manufacturing facility of an eligible taxpayer and placed in service during the taxable year by an S corporation (as defined in section 1361(a) of the Code) must be apportioned pro rata among the S corporation's shareholders on the last day of the S corporation's taxable year as provided in section 1366.

(iii) *Estate or trust*. The basis of qualified property that is part of an advanced manufacturing facility of an eligible taxpayer and placed in service during the taxable year by an estate or trust must be apportioned among the estate or trust and its beneficiaries on the basis of the income of the estate or trust allocable to each for that taxable year.

(3) *Qualified progress expenditures election*—(i) *In general*. A taxpayer may elect, as provided in §1.46-5, to increase the qualified investment with respect to any advanced manufacturing facility of an eligible taxpayer for the taxable year, by any qualified progress expenditures made after August 9, 2022.

(ii) *Special rules for certain passthrough entities*. Notwithstanding the provisions of §1.46-5, relating to elections of progress expenditure property being constructed by or for a partnership or S corporation, the rules of §1.46-5(o)(1) and (p) do not apply to prohibit a partnership or S corporation from making a progress expenditure election under §1.46-5 with respect to qualified property if the partnership or S corporation intends to make an elective payment election under section 48D(d) and §1.48D-6 with respect to a section 48D credit determined with respect to such qualified property.

(4) *Examples*. The provisions of this paragraph (j) are illustrated by the following examples.

(i) *Example 1: Advanced manufacturing investment credit: qualified investment in general*. On November 1, 2024, X, a calendar-year C corporation, places in service qualified property with a basis of $200,000, and on December 1, 2024, X places in service qualified property with a basis of $300,000. X's qualified investment for the taxable year is $500,000 ($200,000 + $300,000).

(ii) *Example 2: Advanced manufacturing investment credit: qualified investment for partnerships*. A, B, C, and D, all calendar-year C corporations, are partners in the ABCD partnership. Partners A, B, C, and D share partnership profits equally. On November 1, 2024, the ABCD partnership placed in service qualified property with a basis of $1 million. Each partner's share of the basis of the qualified property, as determined in §1.46-3(f)(2), is $250,000 ($1m x 0.25) and each partner's qualified investment is $250,000.

(k) *Section 48D credit*. The term *section 48D credit* means the advanced manufacturing investment credit determined under section 48D and the section 48D regulations.

(l) *Section 48D regulations*. The term *section 48D regulations* means §§1.48D-1 through 1.48D-6 and 1.50-2.

(m) *Semiconductor*. The term *semiconductor* means, consistent with 15 CFR 231.115, an integrated electronic device or system most commonly manufactured using materials such as, but not limited to, silicon, silicon carbide, or III-V compounds, and processes such as, but

not limited to, lithography, deposition, and etching. Such devices and systems include, but are not limited to, analog and digital electronics, power electronics, and photonics, for memory, processing, sensing, actuation, and communications applications.

(n) *Semiconductor manufacturing*. The term *semiconductor manufacturing* and the term *manufacturing of semiconductors* are synonymous and mean, consistent with 15 CFR 231.116, semiconductor wafer production, semiconductor fabrication, or semiconductor packaging. The following terms have the following meanings in connection with semiconductor wafer production, semiconductor fabrication, and semiconductor packaging for purposes of section 48D and the section 48D regulations:

(1) *Semiconductor wafer production* includes the processes of growing single-crystal ingots and boules, wafer slicing, etching and polishing, bonding, cleaning, epitaxial deposition, and metrology.

(2) *Semiconductor fabrication* includes the process of forming devices such as transistors, poly capacitors, non-metal resistors, and diodes, as well as interconnects between such devices, on a wafer of semiconductor material.

(3) *Semiconductor packaging* means the process of enclosing a semiconductor in a protective container (package) and providing external power and signal connectivity for the assembled integrated circuit and includes the process of assembly and testing of semiconductors and advanced packaging of semiconductors.

(4) *Assembly* includes, but is not limited to, wafer-dicing, die-bonding, wire bonding, solder bumping, and encapsulation.

(5) *Testing* includes, but is not limited to, probing, screening, and burn-in work.

(6) *Advanced packaging* means a subset of packaging technologies that uses novel techniques and materials to increase the performance, power, modularity, and/or durability of an integrated circuit. Advanced packaging technologies include flip-chip, 2D, 2.5D, and 3D stacking, fan-out and fan-in, and embedded die/system-in-package (SiP).

(o) *Semiconductor manufacturing equipment*. The term *semiconductor manufacturing equipment* means the highly engineered and specialized equipment used in the manufacturing of semiconductors as defined in paragraph (g) of this section and the subsystems that enable or are incorporated into the manufacturing equipment. Specific examples of semiconductor manufacturing equipment and subsystems that enable semiconductor manufacturing equipment include but are not limited to:

(1) Deposition equipment, including, Chemical Vapor Deposition (CVD), Physical Vapor Deposition (PVD), Electrodeposition, and Atomic Layer Deposition (ALD);

(2) Etching equipment (wet etch, dry etch);

(3) Equipment for epitaxial growth of transistor features;

(4) Chemical-mechanical polishing equipment to planarize layers through the semiconductor fabrication process;

(5) Lithography equipment (steppers and scanners of various light wavelengths, such as deep UV, extreme ultraviolet (EUV), photoresist coating, and developer tracks);

(6) Equipment for producing ingots and boules, wafer growth equipment, wafer slicing equipment, wafer dicing equipment, and wire bonders;

(7) Inspection and measuring equipment, including scanning electron microscopes, atomic force microscopes, optical inspection systems, wafer probes and optical scatterometer, EDS (Energy Dispersive Spectroscopy);

(8) Certain metrology and inspection systems to measure critical dimensions of the integrated circuit features throughout the fabrication process, detection and measurement of defects on the wafers during the fabrication process;

(9) Ion implantation and diffusion/oxidation furnaces;

(10) Specialty glass components including EUV mirrors and optical pathways, lenses and mirrors used in inspection equipment and other fabrication processes, and lens assemblies for wafer defect inspection;

(11) Electrostatic chucks;

(12) High performance pumps;

(13) High purity quartz devices;

(14) Ultra-high vacuum chamber components; and

(15) Photomasks and light sources used in photolithography.

(p) *Statutory references*—(1) *Chapter 1*. The term *chapter 1* means chapter 1 of the Code.

(2) *Code.* The term *Code* means the Internal Revenue Code.

(3) *Subtitle A.* The term *subtitle A* means subtitle A of the Code.

(q) *Applicability date*. This section applies to property that is placed in service after December 31, 2022, and during a taxable year ending on or after October 23, 2024.

§1.48D-3 Qualified property.

(a) *In general*. This section provides definitions and rules relating to qualified property for purposes of section 48D of the Code and the section 48D regulations.

(b) *Qualified property*. The term *qualified property* means tangible depreciable property that is part of, and integral to, the operation of an advanced manufacturing facility and that is either—

(1) Constructed, reconstructed, or erected by the taxpayer; or

(2) Acquired by the taxpayer if the original use of such property commences with the taxpayer.

(c) *Tangible depreciable property*—(1) *In general*. The term *tangible depreciable property* means tangible personal property (as defined in §1.48-1(c)), other tangible property (as defined in §1.48-1(d)), and building and structural components (as defined in §1.48-1(e), except as provided in paragraphs (c)(2) and (3) of this section) with respect to which depreciation (or amortization in lieu of depreciation) is allowable. The law of a State or local jurisdiction is not controlling for purposes of determining whether property is tangible property for purposes of section 48D or the section 48D regulations.

(2) *Exception*. Pursuant to section 48D(b)(2)(B)(ii), except as provided in paragraph (c)(3) of this section, the term *tangible depreciable property* does not include a building and its structural components, or a portion thereof, used for—

(i) Offices;

(ii) Administrative services such as human resources or personnel services, payroll services, legal and accounting services, and procurement services;

(iii) Sales or distribution functions;

(iv) Security services (not including cybersecurity operations); or

(v) Any other functions unrelated to manufacturing of semiconductors or semiconductor manufacturing equipment.

(3) *Buildings or portions of a building not excluded by section 48D(b)(2)(B)(ii)*. Buildings or portions of a building not treated as offices and that are considered related to manufacturing of semiconductors or semiconductor manufacturing equipment include buildings or portions of a building used for:

(i) Gowning to enter to and from a cleanroom environment;

(ii) Monitoring operations and remote access of equipment;

(iii) Functions performed by unit process engineers including developing, monitoring, updating and overseeing individual process recipes running on every tool in the facility to manufacture, measure and test wafers including access to relevant data, data analysis, modifications and updates to the process recipes on the tools;

(iv) Functions performed by equipment engineers including overseeing tools to ensure proper operation by accessing data about the tool health and performance remotely adjusting the tool at workstations, and issuing work orders to the equipment and maintenance technicians from the workstations;

(v) Functions performed by test engineers including monitoring the electrical test data being collected from the wafers at certain points in their processing;

(vi) Functions performed by yield and defect engineers including reviewing inspection data collected from wafers;

(vii) Functions performed by metrology engineers including reviewing physical measurement data collected from the wafers;

(viii) Functions performed by integration engineers that are responsible for the technology node and the end-to-end wafer process;

(ix) Functions performed by facilities engineers including monitoring and controlling facilities systems; and

(x) Functions related to central utilities buildings, material handling and ultrapure water generation facilities, and computing (data center).

(d) *Constructed, reconstructed, or erected by the taxpayer*. Property is considered constructed, reconstructed, or erected by the taxpayer if the work is done for the benefit of the taxpayer in accordance with the taxpayer's specifications.

(e) *Original use*—(1) *In general*. Except as provided in paragraph (e)(2) of this section, the term *original use* means with respect to any property the first use to which the property is put by any taxpayer in connection with a trade or business or for the production of income. Additional capital expenditures paid or incurred by a taxpayer to recondition or rebuild property acquired or owned by the taxpayer satisfy the original use requirement to the extent of the expenditures paid or incurred by a taxpayer. However, a taxpayer's cost to acquire property reconditioned or rebuilt by another taxpayer does not satisfy the original use requirement. Whether property is reconditioned or rebuilt property will be determined based on the facts and circumstances.

(2) *Treatment of inventory*. For purposes of paragraph (e)(1) of this section, if a taxpayer initially acquires new property and holds the property primarily for sale to customers in the ordinary course of the taxpayer's trade or business and subsequently withdraws the property from inventory and uses the property primarily in the taxpayer's trade or business or primarily for the taxpayer's production of income, the taxpayer is considered the original user of the property. If a person initially acquires new property and holds the property primarily for sale to customers in the ordinary course of the person's business and a taxpayer subsequently acquires the property from the person for use primarily in the taxpayer's trade or business or primarily for the taxpayer's production of income, the taxpayer is considered the original user of the property. For purposes of this paragraph (e), the original use of the property by the taxpayer commences on the date on which the taxpayer first uses the property primarily in the taxpayer's trade or business or primarily for the taxpayer's production of income.

(f) *Part of an advanced manufacturing facility*—(1) *In general*. To qualify for the section 48D credit, property must be part of the advanced manufacturing facility, as provided in this paragraph (f). Property is part of an advanced manufacturing facility if the property is physically located or co-located either at the advanced manufacturing facility, or on a contiguous piece of land to the advanced manufacturing facility. Parcels or tracts of land will be considered contiguous if they possess common boundaries, and would be contiguous but for the interposition of a road, street, railroad, public utility, stream or similar property.

(2) *Property that is not located or co-located at an advanced manufacturing facility or on a contiguous piece of land to the advanced manufacturing facility*. Property that is not located or co-located at an advanced manufacturing facility or on a contiguous piece of land to the advanced manufacturing facility may be considered part of the advanced manufacturing facility if the property is owned by the same taxpayer as the entire advanced manufacturing facility, connected to the advanced manufacturing facility (e.g., via pipeline) and the sole purpose, function, and output of the property is dedicated to the operation of the advanced manufacturing facility.

(g) *Integral to the operation of an advanced manufacturing facility*—(1) *In general*. To qualify for the section 48D credit, property must be integral to the operation of manufacturing of semiconductors or manufacturing of semiconductor manufacturing equipment, both as provided in §1.48D-2. Property is integral to the operation of manufacturing of semiconductors or manufacturing of semiconductor manufacturing equipment if such property is used directly in the manufacturing operation, is essential to the completeness of the manufacturing operation, and is not transformed in any material way as a result of the manufacturing operation. Materials, supplies, and other inventoriable items of property that are transformed during the manufacturing of semiconductors or into a unit of semiconductor manufacturing equipment are not considered property integral to the operation of an advanced manufacturing facility. For this purpose, the term *transform* does not include the normal degradation of components of semiconductor manufacturing equipment. In addition, property such as pavements, parking areas, inher-

ently permanent advertising displays, or inherently permanent outdoor lighting facilities, although used in the operation of a business, ordinarily are not integral to the operation of an advanced manufacturing facility. Thus, for example, all property used by the taxpayer to acquire or transport materials or supplies to the point where the actual manufacturing activity commences (such as docks, railroad tracks, and bridges), or all property (other than materials or supplies) used by the taxpayer during the manufacturing of semiconductors or during the manufacturing of semiconductor manufacturing equipment within the meaning of §1.48D-2, would be considered property integral to the operation of an advanced manufacturing facility of an eligible taxpayer. Property is considered integral to the operation of an advanced manufacturing facility of an eligible taxpayer if so used either by the owner of the property or by a lessee of the property.

(2) *Vertically integrated manufacturers*. If an advanced manufacturing facility that is engaged in the manufacturing of semiconductors within the meaning of §1.48D-2 also conducts vertically integrated activities (for example, producing raw materials and manufacturing, ingots, wafers, and semiconductors), then property integral to the operation of such an advanced manufacturing facility includes only the property used in the manufacturing of semiconductors within the meaning of §1.48D-2.

(3) *Specific examples of integral property*. Specific examples of property that normally would be integral to the operation of the advanced manufacturing facility of an eligible taxpayer are:

(i) Equipment and tools used in the processes of Chemical Vapor Deposition (CVD), and Physical Vapor Deposition (PVD), Atomic Layer deposition (ALD), oxidation, annealing, and epitaxy. Such equipment includes Deposition and thin-film growth equipment, etching equipment, and lithography equipment (including Extreme Ultraviolet Lithography (EUV));

(ii) Wet process tools, analytical tools, E-Beam operation tools (to repair masks), mask manufacturing equipment, chemical mechanical polishing equipment, reticle handlers, and stockers;

(iii) Inspection and metrology equipment, including scanning electron microscopes, atomic force microscopes, ion milling tools, optical inspection systems, wafer probes and optical scatterometer;

(iv) Clean room facilities, including locker and gowning rooms, specialized lighting systems, automated material systems for wafer handling, specialized recirculating air handlers, to maintain the cleanroom free from particles, control temperature and humidity levels, and specialized ceilings comprised of HEPA filters;

(v) Cleanroom equipment (including jogs, hand tools, calibration equipment, and temperature pollution monitoring tools) and specialty cleaning equipment;

(vi) Electrical power facilities, cooling facilities, chemical supply systems, and wastewater and wastewater treatment systems, including water management, water conservation, and water treatment equipment, materials and technologies;

(vii) Electricity distribution equipment including connectors, capacitors, meters and sockets, switchgear, surge arresters and transformers;

(viii) Sub-fab levels containing pumps, transformers, abatement systems, ultrapure water systems, uninterruptible power supply, and boilers, pipes, storage systems, wafer routing systems and databases, backup systems, quality assurance equipment, and computer data centers;

(ix) Utility level equipment including chillers, systems to handle nitrogen, argon, and other gases, compressor systems, and pipes;

(x) Industrial automation and control equipment (including, but not limited to, programmable logic controllers, process controllers, distributed control systems, human machine interface and motor controls and accessories);

(xi) Industrial automation communications devices, networks, and software for industrial automation control products and systems including automated material handling systems (AMHS) and advance wafer routing software systems and databases;

(xii) Tooling equipment;

(xiii) Back-end manufacturing equipment related to assembly, testing, and packaging;

(xiv) Photolithography tools;

(xv) Photomasks, reticles, pellicle, steppers, scanners, and photoresist related equipment;

(xvi) Emulation tools;

(xvii) Rapid thermal processing tools (annealing tubs and vacuum ovens), melting laser annealing (MLA) equipment, wafer bonding equipment, physical removal processing tools (flycutter Die-Saw and backgrind), and edge seal dispense;

(xviii) Site infrastructure including but limited to energy, water, natural gas, backup power generators, transformers, stormwater management and fire protection;

(xix) Equipment and installation (wipe-film evaporators);

(xx) Chemical and gas delivery systems (piping, storage, and waste systems including hazardous waste);

(xxi) Bulk chemical purification systems (Liquid N2, Ar, H2, etc.);

(xxii) HVAC air conditioning and air handling systems, critical cooling water systems and heating systems;

(xxiii) Wafer stockers with temperature and air quality control;

(xxiv) Temperature control systems;

(xxv) Security and monitoring system and devices;

(xxvi) Failure analysis labs and equipment;

(xxvii) Quality assurance equipment including incoming goods, in-process inspection, and finished-good inspection;

(xxviii) Transportation, trolleys and carts that are used to transport wafers or overhead conveyer systems to move the carts;

(xxxix) Lighting products;

(xxx) Industrial gas generation and/or handling systems, such as air separation units, including any associated backup and storage equipment;

(xxxi) Input shaping tooling;

(xxxii) Crystal formation and coating equipment;

(xxxiii) Mechanical equipment; and

(xxxiv) Polishing equipment.

(4) *Research or storage facilities*. If property, including a building and its structural components, constitutes a research or storage facility and is used in connection with the manufacturing of semiconductors or manufacturing of semiconductor manufacturing equipment, the property may

qualify as integral to the operation of the advanced manufacturing facility under section 48D(b)(2)(A)(iv). Specific examples of research facilities include research facilities that manufacture semiconductors in connection with research, such as pre-pilot production lines and prototypes, including semiconductor packaging. Specific examples of storage facilities are mineral or chemical storage equipment, gas storage tanks, including high pressure cylinders or specially designed tanks and drums, wastewater storage, and inventory and finished goods warehouses. A research facility that does not manufacture any type of semiconductor, as provided in §1.48D-2(m), or semiconductor manufacturing equipment, as provided in §1.48D-2(o), does not qualify.

(5) *Examples*. The following examples illustrate the rules of this paragraph (g):

(i) *Example 1*. X Corp, a calendar-year C corporation, is a manufacturer of air separation units that are designed to supply on demand nitrogen to an advanced manufacturing facility. In January 2025, X Corp places in service an air separation unit that is co-located at an advanced manufacturing facility on a contiguous piece of land to the advanced manufacturing facility. The air separation unit produces nitrogen on demand, and the nitrogen is used directly in the manufacturing of semiconductors. The air separation unit is part of the advanced manufacturing facility within the meaning of paragraph (f) of this section because the air separation unit is located on a contiguous piece of land to the advanced manufacturing facility. The air separation unit is property integral to the operation of an advanced manufacturing facility under this paragraph (g) because it is used directly in, and is essential to, the completeness of the semiconductor manufacturing operation, and is not transformed in any material way as a result of the semiconductor manufacturing operation.

(ii) *Example 2*. Y Corp, a calendar-year C corporation, is a manufacturer of specialty chemicals that are used in the manufacturing of semiconductors. In 2025, Y Corp places in service equipment at its facility that manufactures the specialty chemicals. The equipment is located five miles from the advanced manufacturing facility, but is not part of the advanced manufacturing facility within the meaning of paragraph (f) of this section because it is not located or co-located at the advanced manufacturing facility, or on a contiguous piece of land to the advanced manufacturing facility, and it is not connected to the advanced manufacturing facility. Also in 2025, Y Corp places in service chemical storage tanks that are part of the advanced manufacturing facility within the meaning of paragraph (f) of this section because the property is located on a contiguous piece of land to the advanced manufacturing facility. The chemical storage tanks are property integral to the operation of the advanced manufacturing facility pursuant to paragraph (g) of this section.

(h) *Applicability date*. This section applies to property that is placed in service after December 31, 2022, and during a taxable year ending on or after October 23, 2024.

§1.48D-4 Advanced manufacturing facility of an eligible taxpayer.

(a) *In general*. This section provides definitions and rules relating to advanced manufacturing facilities of eligible taxpayers for purposes of section 48D of the Code and the section 48D regulations.

(b) *Advanced manufacturing facility*. For purposes of section 48D(b)(3) and this section, the term *advanced manufacturing facility* means a facility of an eligible taxpayer for which the primary purpose, as determined under paragraph (c)(1) of this section, is the manufacturing of semiconductors or the manufacturing of semiconductor manufacturing equipment within the meaning of §1.48D-2.

(c) *Primary purpose*—(1) *In general*. The determination of the *primary purpose* of a facility will be made based on all the facts and circumstances surrounding the construction, reconstruction, or erection of the advanced manufacturing facility of an eligible taxpayer. Facts that may indicate a facility has a primary purpose of manufacturing of semiconductors or manufacturing of semiconductor manufacturing equipment include plans or other documents for the facility that demonstrate that the facility is designed for the manufacturing of semiconductors or manufacturing of semiconductor manufacturing equipment within the meaning of §1.48D-2. Facts may also include the possession of permits or licenses needed for the manufacturing of semiconductors or manufacturing of semiconductor manufacturing equipment; and executed contracts to a customer to supply such semiconductors or executed contracts to an advanced manufacturing facility as defined in paragraph (b) of this section to supply such semiconductor manufacturing equipment in place either before or within 6 months after the facility is placed in service. A facility has the primary purpose of manufacturing of semiconductors or manufacturing of semiconductor manufacturing equipment if more than 50 percent of its potential output, as measured by cost to produce, revenue received in an arm's length transaction, or units produced, constitutes manufacturing of semiconductors or manufacturing of semiconductor manufacturing equipment within the meaning of §1.48D-2. However, property placed in service in a taxable year must still meet the definition of qualified property under section 48D(b)(2) and §1.48D-3 for its basis to be included as part of the qualified investment in the advanced manufacturing facility eligible for the section 48D credit. For example, property that is not integral to the operation of an advanced manufacturing facility as provided in §1.48D-3(g) may not be included as a qualified investment in an advanced manufacturing facility.

(2) *No primary purpose*. A facility for which the primary purpose is the manufacturing, producing, growing, or extracting of materials or chemicals that are supplied to an advanced manufacturing facility is not a facility for which the primary purpose is the manufacturing of semiconductors or manufacturing of semiconductor manufacturing equipment. Thus, for example, facilities that exclusively produce semiconductor-grade polysilicon, or produce gases, or that manufacture components or parts, to supply to an advanced manufacturing facility engaged in the manufacturing of semiconductors or manufacturing of semiconductor manufacturing equipment are not facilities for which the primary purpose is the manufacturing of semiconductors or the manufacturing of semiconductor manufacturing equipment.

(3) *Examples*. The following examples illustrate the rules of this paragraph (c):

(i) *Example 1*: *Primary purpose; in general*. In January 2025, X Corp, a calendar-year C corporation, begins construction of a facility that will manufacture semiconductor manufacturing equipment that could be used in a facility that will engage in semiconductor fabrication (semiconductor fabrication facility). A portion of the equipment produced, however, could be used for manufacturing operations of a facility that is not engaged in semiconductor manufacturing. X Corp enters into a contract with Y Corp, which is building a semiconductor fabrication facility to be placed in service in July 2026, to supply Y Corp with equipment that is integral to semiconductor fabrication. Such equipment represents more than 50 percent of the potential output of X Corp's facility (by cost to produce such equipment) of X Corp's facility for the first year of operations. X Corp's facility will be considered as having a primary purpose of manufacturing of semi-

conductor manufacturing equipment for the first year of its operations.

(ii) *Example 2*: *Primary purpose; semiconductor wafer production*. X Corp, a calendar-year C corporation, is engaged in the production of solar wafers (that is, X Corp is engaged in semiconductor wafer production). In January 2025, X Corp receives the necessary permits to begin construction of a facility designed for semiconductor wafer production within the meaning of §1.48D-2. X Corp enters into a contract to supply such wafers to an unrelated person. Such contract represents more than 50 percent of X Corp's potential output (by revenue received) for the tax year that the facility is placed in service. Because the contract to sell wafers represents more than 50 percent of X Corp's potential output (by revenue received), X Corp's facility will be considered as having a primary purpose of semiconductor wafer production within the meaning of paragraph (c)(1) of this section.

(iii) *Example 3: Primary purpose; vertically integrated manufacturer*. Z Corp, a C corporation, is a vertically integrated manufacturer. In January 2025, Z Corp begins construction of a facility that will produce raw materials and other consumables for use in the manufacturing of semiconductors and such facility will also engage in semiconductor wafer production and semiconductor fabrication. Z Corp enters into separate sales contracts to sell units produced from the semiconductor fabrication with a variety of unrelated companies that are engaged in semiconductor packaging. Z Corp also enters into a sales contract with A Corp to sell raw materials that it produces at the facility to A Corp. Z Corp's production of units from its semiconductor fabrication sold to companies engaged in semiconductor packaging represents more than 50 percent of the potential output (by cost) of Z Corp's facility for the first year of operations; therefore, Z Corp's facility will be considered as having a primary purpose of manufacturing of semiconductors.

(iv) *Example 4: No primary purpose; vertically integrated manufacturer*. Assume the same facts as in paragraph (c)(3)(iii) of this section (*Example 3*), except that Z Corp's production of such raw materials represents more than 50 percent of the potential output of Z Corp's facility for the first year of operations. Z Corp's facility will not be considered as having a primary purpose of manufacturing of semiconductors.

(d) *Applicability date*. This section applies to property that is placed in service after December 31, 2022, and during a taxable year ending on or October 23, 2024.

§1.48D-5 Beginning of construction.

(a) *Termination of credit*—(1) *In general*. The credit allowed under section 48D of the Code and the section 48D regulations does not apply to property that is part of an advanced manufacturing facility of an eligible taxpayer if the beginning of construction of the property, as defined in paragraph (a)(2) of this section, begins after December 31, 2026 (the date specified in section 48D(e)).

(2) *Property*. For purposes of determining beginning of construction of property under this section, the unit of property is—

(i) A single advanced manufacturing facility project as described in paragraph (a)(3) of this section; or

(ii) An item of qualified property (as defined in §1.48D-3(b)).

(3) *Single advanced manufacturing facility project*—(i) *In general*. Solely for purposes of determining whether construction of a qualified property has begun for purposes of section 48D and the section 48D regulations, multiple items of qualified property or advanced manufacturing facilities that are operated as part of a single advanced manufacturing facility project (along with any items of property, such as clean rooms, chemical delivery systems, chemical storage facilities, temperature control systems, robotic handling systems, semiconductor manufacturing equipment, and tooling equipment (such as for deposition and etching) that are integral to the operation of the single advanced manufacturing facility project) will be treated as a single item of qualified property. Multiple qualified properties or advanced manufacturing facilities will be treated as operated as part of a single advanced manufacturing facility project, if at any point during construction of the multiple qualified properties or advanced manufacturing facilities, they are owned by a single taxpayer (subject to the related taxpayer rule provided in paragraph (a)(3)(ii) of this section) and any two or more of the following factors are present—

(A) The properties or facilities are owned by a single legal entity;

(B) The properties or facilities are constructed on contiguous pieces of land;

(C) The properties or facilities are described in a common supply contract or other type of relevant contract;

(D) The properties or facilities share a common electricity and/or water supply;

(E) The properties or facilities are described in one or more common environmental or other regulatory permits;

(F) The properties or facilities were constructed pursuant to a single master construction contract; or

(G) The construction of the properties or facilities was financed pursuant to the same loan agreement or other financing arrangement.

(ii) *Related taxpayers*—(A) *Definition*. For purposes of this section, the term *related taxpayers* means members of a group of trades or businesses that are under common control (as defined in §1.52-1(b)).

(B) *Related taxpayer rule*. For purposes of this section, related taxpayers are treated as one taxpayer in determining whether multiple qualified properties or advanced manufacturing facilities will be treated as operated as part of a single advanced manufacturing facility project.

(iii) *Example*. A single taxpayer is developing Project C, a project that will consist of 3 advanced manufacturing facilities constructed on the same campus. Project C will share a common electricity supply, and semiconductors manufactured by Project C will be sold to Buyer through a single supply contract. In 2023, for 1 of the 3 advanced manufacturing facilities, the taxpayer installs deposition equipment. Thereafter, the taxpayer completes the construction of all 3 advanced manufacturing facilities pursuant to a continuous program of construction. For purposes of the section 48D credit, Project C is a single advanced manufacturing facility project that will be treated as a single property, and the taxpayer performed physical work of a significant nature that constitutes the beginning of construction of Project C in 2023.

(iv) *Timing of single advanced manufacturing facility project determination*. Whether multiple properties or advanced manufacturing facilities are operated as part of a single advanced manufacturing facility project and are treated as a single item of property for purposes of the beginning of construction requirement of section 48D and the section 48D regulations is determined in the taxable year during which the last of the multiple properties or facilities is placed in service.

(v) *Disaggregation*. Multiple properties or advanced manufacturing facilities that are operated as part of a single advanced manufacturing facility project and treated as a single item of qualified property under this paragraph (a)(3) for purposes of determining whether construction of a qualified

property or advanced manufacturing facility has begun may be disaggregated and treated as separate items of qualified property for purposes of determining whether a separate advanced manufacturing facility or item of qualified property satisfies the continuity safe harbor (as defined in paragraph (e) of this section). Those disaggregated separate advanced manufacturing facilities or items of qualified property that are placed in service prior to the continuity safe harbor deadline will be eligible for the continuity safe harbor. The remaining disaggregated separate items of property or facilities may satisfy the continuity requirement under a facts and circumstances determination.

(vi) *Example*. A single taxpayer is developing Project D, a project that will consist of 4 separate properties. Project D will use the same water supply and each property within Project D will be constructed pursuant to a single master construction contract. Under the single project rule provided in this paragraph (a)(3), Project D is a single project that will be treated as a single property. In 2024, for 3 of the 4 separate properties, the taxpayer installs property integral to the operation of the advanced manufacturing facility. Accordingly, the taxpayer has performed physical work of a significant nature that constitutes the beginning of construction of Project D for purposes of section 48D(e). Thereafter, on the last day of the 10-year continuity safe harbor period, the taxpayer places in service only 3 of the 4 separate properties within Project D. The taxpayer disaggregates Project D under paragraph (a)(3)(v) of this section and accordingly, only 3 of the 4 separate properties satisfy the continuity safe harbor. For the remaining 1 separate property, the taxpayer may demonstrate that it satisfies the continuity requirement provided in paragraph (e) of this section based on the facts and circumstances, to enable the taxpayer to claim the section 48D credit.

(b) *Beginning of construction*—(1) *In general*. For purposes of section 48D, the section 48D regulations, and section 107(f)(1) of the CHIPS Act of 2022, Public Law 117-167, div. A, 136 Stat. 1366, 1399 (August 9, 2022), a taxpayer may establish that construction of an item of property (as defined in paragraph (a)(2) of this section) of the taxpayer begins under either:

(i) The physical work test of paragraph (c) of this section; or

(ii) The five percent safe harbor of paragraph (d) of this section.

(2) *Continuity requirement*. *See* paragraph (e) of this section for the continuity requirement applicable for purposes of the physical work test and the five percent safe harbor, which must be demonstrated either by maintaining continuous construction (as defined in paragraph (e)(2) of this section) or continuous efforts (as defined in paragraph (e)(3) of this section).

(c) *Physical work test*—(1) *In general*. Under the physical work test, construction of an item of property begins when physical work of a significant nature begins, provided thereafter that the taxpayer maintains continuous construction or continuous efforts. This test focuses on the nature of the work performed, not the amount of the costs. Assuming the work performed is of a significant nature, there is no fixed minimum amount of work, monetary or percentage threshold required to satisfy the physical work test.

(2) *Physical work of significant nature*—(i) *In general*. Work performed by the taxpayer and work performed for the taxpayer by other persons under a binding written contract that is entered into prior to the manufacture, construction, or production of the property for use by the taxpayer in the taxpayer's trade or business of manufacturing semiconductors or semiconductor manufacturing equipment is taken into account in determining whether physical work of a significant nature has begun. Both on-site and off-site work (performed either by the taxpayer or by another person under a binding written contract) may be taken into account for purposes of demonstrating that physical work of a significant nature has begun. A written contract is binding only if it is enforceable under local law against the taxpayer or a predecessor and does not limit damages to a specified amount (for example, by use of a liquidated damages provision). For this purpose, a contractual provision that limits damages to an amount equal to at least five percent of the total contract price will not be treated as limiting damages to a specified amount. For additional guidance regarding the definition of a binding written contract, *see* §1.168(k)-1(b)(4)(ii)(A) through (D). Specific examples of on-site physical work of a significant nature include the excavation for the foundation and the pouring of the concrete pads of the foundation. Specific examples of off-site physical work of a significant nature include the manufacture of semiconductor manufacturing equipment but only if the manufacturer's work is done pursuant to a binding written contract and the semiconductor manufacturing equipment is not held in the manufacturer's inventory.

(ii) *Exceptions*. Physical work of significant nature does not include preliminary activities, including but not limited to planning or designing, securing financing, exploring, researching, obtaining permits, licensing, conducting surveys, environmental and engineering studies, or clearing a site, even if the cost of those preliminary activities is properly included in the depreciable basis of the property. Physical work of a significant nature also does not include work (performed either by the taxpayer or by another person under a binding written contract) to produce property that is either in existing inventory or is normally held in inventory by a vendor.

(d) *Five percent safe harbor*—(1) *In general*. Construction of a property will be considered as having begun if:

(i) A taxpayer pays or incurs (within the meaning of §1.461-1(a)(1) and (2)) five percent or more of the total cost of the property; and

(ii) Thereafter, the taxpayer maintains continuous construction or continuous efforts.

(2) *Costs*. All costs properly included in the basis of the property are taken into account to determine whether the five percent safe harbor has been met. For property that is manufactured, constructed, or produced for the taxpayer by another person under a binding written contract with the taxpayer, costs incurred with respect to the property by the other person before the property is provided to the taxpayer are deemed incurred by the taxpayer when the costs are incurred by the other person under the principles of section 461 of the Code.

(3) *Cost overruns*—(i) *Single advanced manufacturing facility proj-*

ect. If the total cost of a property that is a single advanced manufacturing facility project comprised of multiple properties (as described in paragraph (a)(3) of this section) exceeds its anticipated total cost such that the amount the taxpayer actually paid or incurred with respect to the single advanced manufacturing facility project to establish the beginning of its construction under paragraph (b)(1)(ii) of this section is less than five percent of the total cost at the time it is placed in service, the five percent safe harbor is not fully satisfied. However, the five percent safe harbor will be satisfied with respect to some, but not all, of the separate properties or facilities (as described in paragraph (a)(3) of this section) comprising the single advanced manufacturing facility project, as long as the total aggregate cost of those properties is not more than twenty times greater than the amount the taxpayer paid or incurred.

(ii) *Example*. In 2023, taxpayer incurs $300,000 in costs to construct Project A, comprised of six advanced manufacturing facilities that will be operated as a single project. Taxpayer anticipates that each advanced manufacturing facility will cost $1,000,000 for a total cost for Project A of $6,000,000. Thereafter, the taxpayer makes continuous efforts to advance towards completion of Project A. The taxpayer timely places Project A in service in 2025. In 2025, the actual total cost of Project A amounts to $7,500,000, with each advanced manufacturing facility costing $1,250,000. Although the taxpayer did not pay or incur five percent of the actual total cost of Project A in 2023, the taxpayer will be treated as satisfying the Five Percent Safe Harbor in 2023 with respect to four of the advanced manufacturing facilities, as their actual total cost of $5,000,000 is not more than twenty times greater than the $300,000 in costs incurred by the taxpayer. The taxpayer will not be treated as satisfying the five percent safe harbor in 2023 with respect to two of the properties. Thus, the taxpayer may claim the section 48D credit based on $5,000,000, the cost of four of the properties.

(iii) *Single property*. If the total cost of a single property, which is not part of a single advanced manufacturing facility project comprised of multiple properties or facilities (as described in paragraph (a)(3) of this section) and cannot be separated into multiple properties or facilities, exceeds its anticipated total cost so that the amount a taxpayer actually paid or incurred with respect to the single property as of an earlier year is less than five percent of the total cost of the single property at the time it is placed in service, then the taxpayer will not satisfy the five percent safe harbor with respect to any portion of the single property in such earlier year.

(iv) *Example*. In 2023, a taxpayer incurs $250,000 in costs to construct Project B, a single property. The taxpayer anticipates that the total cost of Project B will be $5,000,000. Thereafter, the taxpayer makes continuous efforts to advance towards completion of Project B. The taxpayer places Project B in service in a later year. At that time, its actual total cost amounts to $6,000,000. Because Project B is a single property that is not a single project comprised of multiple properties, the taxpayer will not satisfy the five percent safe harbor as of 2023. However, if the construction of Project B satisfies the requirements of the physical work test by also beginning physical work of a significant nature in 2024, the taxpayer may be able to demonstrate that construction began in 2024.

(e) *Continuity requirement*—(1) *In general*. For purposes of the physical work test and five percent safe harbor, taxpayers must satisfy the *continuity requirement* by demonstrating either continuous construction or continuous efforts regardless of whether the physical work test or the five percent safe harbor was used to establish the beginning of construction. Whether a taxpayer meets the continuity requirement under either test is determined by the relevant facts and circumstances. The Commissioner will closely scrutinize a property and may determine that the beginning of construction is not satisfied with respect to a property if a taxpayer does not meet the continuity requirement.

(2) *Continuous construction*. The term *continuous construction* means a continuous program of construction that involves continuing physical work of a significant nature. Whether a taxpayer maintains a continuous program of construction to satisfy the continuity requirement will be determined based on all the relevant facts and circumstances.

(3) *Continuous efforts*. The term *continuous efforts* means continuous efforts to advance towards completion of a property to satisfy the continuity requirement. Whether a taxpayer makes continuous efforts to advance towards completion of a property will be determined by the relevant facts and circumstances. Facts and circumstances indicating continuous efforts to advance towards completion of a property may include:

(i) Paying or incurring additional amounts included in the total cost of the property. A taxpayer is considered to meet this factor for a taxable year in which it pays or incurs (within the meaning of §1.461-1(a)(1) and (2)) five percent or more of the total cost of the property each calendar year after the calendar year during which construction of the property began for purposes of section 48D and the section 48D regulations;

(ii) Entering into binding written contracts for the manufacture, construction, or production of the property or for future work to construct the property;

(iii) Obtaining necessary permits; and

(iv) Performing physical work of a significant nature.

(4) *Excusable disruptions to continuous construction and continuous efforts tests*—(i) *In general*. Certain disruptions in a taxpayer's continuous construction or continuous efforts to advance towards completion of a property that are beyond the taxpayer's control will not be considered as indicating that a taxpayer has failed to satisfy the continuity requirement.

(ii) *Effect of excusable disruptions on continuity safe harbor*. The excusable disruptions provided in this paragraph (e)(4) will not extend the continuity safe harbor deadline that is provided in paragraph (e)(6) of this section.

(iii) *Non-exclusive list of construction disruptions*. This paragraph (e)(4)(iii) provides a non-exclusive list of construction disruptions that will not be considered as indicating that a taxpayer has failed to satisfy the continuity requirement:

(A) Delays due to severe weather conditions.

(B) Delays due to natural disasters.

(C) Delays in obtaining permits or licenses from Federal, Indian Tribal, State, territorial, or local governments. Such delays include delays in obtaining

air emissions, water discharge, or hazardous waste management permits or chemical handling licenses from the Environmental Protection Agency (EPA) or another environmental protection authority. Such delays also include delays as a result of the review process under State, Tribal, local, or Federal environmental laws, for example, a review under the National Environmental Policy Act, as well as delays in obtaining construction permits.

(D) Delays at the written request of a Federal, State, local, or Indian Tribal government regarding matters of public health, public safety, security, or similar concerns, including hazardous chemical transport.

(E) Delays related to electrical or water supply, such as those relating to the completion of construction on a distribution line or water supply line that may be associated with a project's electrical and water needs, whether constructed by the eligible taxpayer that is the owner of the advanced manufacturing facility, a governmental entity, or another person.

(F) Delays in the manufacture of custom components or equipment.

(G) Delays due to the inability to obtain specialized equipment of limited availability.

(H) Delays due to supply shortages.

(I) Delays due to the presence of endangered species.

(J) Financing delays.

(K) Delays due to specialized labor shortages or labor stoppages.

(5) *Timing of excusable disruption determination*. In the case of a single advanced manufacturing facility project comprised of a single property, whether an excusable disruption has occurred for purposes of the beginning of construction requirement of section 48D and the section 48D regulations must be determined in the taxable year during which the property is placed in service. In the case of a single advanced manufacturing facility project comprised of multiple properties or facilities, whether an excusable disruption has occurred for purposes of the beginning of construction requirement of section 48D and the section 48D regulations must be determined in the taxable year during which the last of multiple properties or facilities is placed in service.

(6) *Continuity safe harbor*—(i) *In general*. A taxpayer will be deemed to satisfy the continuity requirement provided the property is placed in service no more than 10 calendar years after the calendar year during which construction of the property began for purposes of section 48D and the section 48D regulations.

(ii) *Example*. If construction begins on a property on January 15, 2023, and the property is placed in service by December 31, 2033, the property will be considered to satisfy the continuity safe harbor. If the property is not placed in service before January 1, 2034, whether the continuity requirement was satisfied will be determined based on all the relevant facts and circumstances.

(f) *Applicability date*. This section applies to property that is placed in service after December 31, 2022, and during a taxable year ending on or after October 23, 2024.

Par. 4. Section 1.50-0 is added to read as follows:

§1.50-0 Table of contents.

This section lists the table of contents for §§1.50-1 and 1.50-2.

§1.50-1 Lessee's income inclusion following election of lessor of investment credit property to treat lessee as acquirer.

(a) In general.
(b) Coordination with basis adjustment rules.
(1) Basis adjustment.
(2) Amount of credit included ratably in gross income.
(i) In general.
(ii) Special rule for the energy credit.
(3) Special rule for partnerships and S corporations.
(i) In general.
(ii) Definition of ultimate credit claimant.
(c) Coordination with the recapture rules.
(1) In general.
(2) Income inclusion exceeds unrecaptured credit.
(3) Special rule for the energy credit.
(4) Timing of income inclusion or reduction following recapture.
(d) Election to accelerate income inclusion outside of the recapture period.
(1) In general.
(2) Exceptions.
(3) Manner and time for making election.
(e) Examples.
(1) Example 1.
(2) Example 2.
(3) Example 3.
(4) Example 4.
(5) Example 5.
(6) Example 6.
(f) Applicability date.

§1.50-2 Recapture of the advanced manufacturing investment credit in the case of certain expansions.

(a) Recapture in connection with certain expansions.
(1) In general.
(2) Exception.
(3) Carrybacks and carryover adjusted.
(b) Definitions.
(1) Applicable period.
(2) Applicable taxpayer.
(i) In general.
(ii) Special rules for partnerships and S corporations and their partners and shareholders.
(iii) Examples.
(A) Example 1: Applicable taxpayer: In general.
(B) Example 2: Applicable taxpayer: In general.
(C) Example 3: Applicable taxpayer: Special rules for partnerships and S corporations and their partners and shareholders.
(D) Example 4: Applicable taxpayer: Special rules for partnerships and S corporations and their partners and shareholders.
(E) Example 5: Applicable taxpayer: Special rules for partnerships and S corporations and their partners and shareholders.
(F) Example 6: Applicable taxpayer: Special rules for partnerships and S corporations and their partners and shareholders.
(iv) Affiliated groups.
(3) Applicable transaction.
(4) Applicable transaction recapture amount.
(5) Existing facility.
(6) Foreign country of concern.
(7) Material expansion.

(8) Semiconductor manufacturing capacity.

(9) Significant renovations.

(10) Significant transaction.

(i) In general.

(ii) Required agreement.

(11) Technology licensing.

(12) Technology or product that raises national security concerns.

(c) Exception from the definition of applicable transaction for the manufacturing of legacy semiconductors.

(1) In general.

(2) Legacy semiconductor.

(d) Example: Applicable transaction credit claimed.

(e) Applicability date.

Par. 5. Section 1.50-2 is added to read as follows:

§1.50-2 Recapture of the advanced manufacturing investment credit in the case of certain expansions.

(a) *Recapture in connection with certain expansions*—(1) *In general*. Except as provided in section 50(a)(3)(B) of the Code and paragraph (a)(2) of this section, if an applicable taxpayer engages in an applicable transaction before the close of the applicable period, then the tax under chapter 1 for the taxable year in which such transaction occurs is increased by 100 percent of the applicable transaction recapture amount. Any taxpayer, including an applicable taxpayer, that engages in an applicable transaction during a taxable year does not meet the definition of an eligible taxpayer under section 48D(c) and the section 48D regulations and is ineligible for the section 48D credit for that taxable year. See paragraph (b) of this section for definitions of terms used in section 50(a)(3) and this section.

(2) *Exception*. Section 50(a)(3)(A) and paragraph (a)(1) of this section do not apply if the applicable taxpayer demonstrates to the satisfaction of the Commissioner that the applicable transaction has been ceased or abandoned within 45 days of a determination and notice by the Commissioner. A taxpayer that ceases or abandons a particular applicable transaction for a taxable year may still be treated as engaging in a different applicable transaction for a taxable year. A taxpayer may not circumvent the application of section 50(a)(3) and this section by engaging in a series of applicable transactions, multiple applicable transactions, or other similar arrangements.

(3) *Carrybacks and carryover adjusted*. In the case of any cessation described in section 50(a)(1) or (2), or any applicable transaction to which section 50(a)(3) and paragraph (a)(1) of this section apply, any carryback or carryover under section 39 of the Code is appropriately adjusted by reason of such cessation or applicable transaction.

(b) *Definitions*. The following definitions apply for purposes of section 50(a)(3) and this section.

(1) *Applicable period*. The term *applicable period* means the 10-year period beginning on the date that an applicable taxpayer placed in service property that is eligible for the section 48D credit.

(2) *Applicable taxpayer*—(i) *In general*. Except as provided in paragraph (b)(2)(ii) of this section, the term *applicable taxpayer* means any taxpayer who was allowed a section 48D credit or made an election under section 48D(d)(1) with respect to such credit, for any taxable year prior to the taxable year in which such taxpayer entered into an applicable transaction.

(ii) *Special rules for partnerships and S corporations and their partners and shareholders*. In the case of qualified property placed in service by a partnership or an S corporation for which a section 48D credit was determined, the term *applicable taxpayer* also means—

(A) The partnership and the partners of such partnership (directly or indirectly through one or more tiered partnerships) who were allowed a section 48D credit for such property, or S corporation and the shareholder(s) of such S corporation who were allowed a section 48D credit for such property, for any taxable year prior to the taxable year in which such partnership or S corporation entered into an applicable transaction;

(B) Any partner in a partnership (directly or indirectly through one or more tiered partnerships) or any shareholder in an S corporation with respect to the partner's or S corporation shareholder's share of any section 48D credit allowed for such property for any taxable year prior to when such partner or S corporation shareholder entered into an applicable transaction;

(C) Any partnership or S corporation that made an election under section 48D(d)(2) with respect to a credit determined under section 48D(a)(1) for any taxable year prior to the taxable year in which such partnership or S corporation entered into an applicable transaction; and

(D) Any partner in a partnership (directly or indirectly through one or more tiered partnerships) or shareholder in an S corporation with respect to the partner's or S corporation shareholder's share of any tax-exempt income from the partnership or S corporation that made an election under section 48D(d)(2) for any taxable year prior to when such partner or shareholder entered into an applicable transaction.

(iii) *Examples*. The following examples illustrate the rules of this paragraph (b)(2).

(A) *Example 1: Applicable taxpayer: In general*. On July 1, 2026, X Corp, a calendar-year C corporation, entered into an applicable transaction. In 2025, X Corp had placed in service qualified property that is part of an advanced manufacturing facility and was allowed a section 48D credit for its 2025 taxable year. X Corp is an applicable taxpayer when it entered into the applicable transaction.

(B) *Example 2: Applicable taxpayer: In general*. The facts are the same as in paragraph (b)(2)(iii)(A) of this section (*Example 1*), except that X timely filed its 2025 tax return properly making an election under section 48D(d)(1) with respect to the section 48D credit. X Corp is an applicable taxpayer when it entered into the applicable transaction.

(C) *Example 3: Applicable taxpayer: Special rules for partnerships and S corporations and their partners and shareholders*. A, B, C, and D, all calendar-year C corporations, are partners in the ABCD partnership. Partners A, B, C, and D share partnership profits equally. On May 1, 2027, the ABCD partnership engages in an applicable transaction. On November 1, 2025, the ABCD partnership had placed in service qualified property with a basis of $1 million. Each partner's share of the basis of the qualified property, as determined in §1.46-3(f)(2), is $250,000 ($1m x 0.25) and each partner's qualified investment is $250,000. A, B, C, and D each filed its 2025 tax return claiming a section 48D credit. The ABCD partnership and A, B, C, and D each are an applicable taxpayer when ABCD partnership enters into the applicable transaction.

(D) *Example 4: Applicable taxpayer: Special rules for partnerships and S corporations and their partners and shareholders*. The facts are the same as in paragraph (b)(2)(iii)(C) of this section (*Example 3*), except that on May 1, 2027, A, and not ABCD partnership, engages in an applicable transaction. A is an applicable taxpayer with respect to A's share of the section 48D credit when A enters into the applicable transaction. Neither the ABCD partnership nor partners B, C, nor D are an applicable taxpayer with respect to the applicable transaction entered into by A.

(E) *Example 5: Applicable taxpayer: Special rules for partnerships and S corporations and their partners and shareholders*. The facts are the same as in paragraph (b)(2)(iii)(C) of this section (*Example 3*), except that A, B, C and D do not claim a section 48D credit on their timely filed 2025 tax returns. Instead, the ABCD partnership makes an election pursuant to section 48D(d)(2) with respect to the section 48D credit determined under section 48D(a)(1). The ABCD partnership is an applicable taxpayer with respect to the elective payment to the ABCD partnership pursuant to section 48D(d)(2)(A)(i)(I).

(F) *Example 6: Applicable taxpayer: Special rules for partnerships and S corporations and their partners and shareholders*. The facts are the same as in paragraph (b)(2)(iii)(E) of this section (*Example 5*), except that the ABCD partnership did not engage in an applicable transaction. On May 1, 2027, A engages in an applicable transaction. A is an applicable taxpayer with respect to its share of tax-exempt income allocated to A pursuant to section 48D(d)(2)(A)(i)(II) and (IV). Neither the ABCD partnership nor partners B, C, or D are an applicable taxpayer with respect to the applicable transaction entered into by A.

(iv) *Affiliated groups*. For purposes of this paragraph (b)(2), all members of an affiliated group under section 1504(a) of the Code, determined without regard to section 1504(b)(3), are treated as one taxpayer.

(3) *Applicable transaction*. Except as provided in section 50(a)(6)(D)(ii) and paragraph (c)(1) of this section, the term *applicable transaction* means, with respect to any applicable taxpayer, any significant transaction involving the material expansion of semiconductor manufacturing capacity of such applicable taxpayer in any foreign country of concern.

(4) *Applicable transaction recapture amount*. The term *applicable transaction recapture amount* means, with respect to an applicable taxpayer, the aggregate decrease in the credits allowed under section 38 of the Code for all prior taxable years that would have resulted solely from reducing to zero any credit determined under section 46 of the Code that is attributable to the advanced manufacturing investment credit under section 48D(a), with respect to property that has been placed in service during the applicable period.

(5) *Existing facility*. The term *existing facility* means any facility built, equipped, and operating prior to a taxpayer placing in service qualified property as defined in section 48D(b)(2) and §1.48D-3. Existing facilities are defined by their semiconductor manufacturing capacity at the time the qualified property is placed in service; facilities that undergo significant renovations, as defined in paragraph (b)(9) of this section, will no longer qualify as existing facilities within the meaning of this paragraph (b)(5).

(6) *Foreign country of concern*. The term *foreign country of concern* has the same meaning as provided in 15 CFR 231.102.

(7) *Material expansion*. The term *material expansion* means –

(i) With respect to an existing facility, the increase of the semiconductor manufacturing capacity of that facility by more than five percent during the applicable period due to the addition of a cleanroom, production line or other physical space, or a series of such additions; or

(ii) Any construction of a new facility for semiconductor manufacturing.

(8) *Semiconductor manufacturing capacity*. The term *semiconductor manufacturing capacity* means, consistent with 15 CFR 231.117, the productive capacity of a semiconductor facility. In the case of a semiconductor wafer production facility that includes the processes of growing single-crystal ingots and boules, wafer slicing, wafer bonding, etching and polishing, cleaning, epitaxial deposition, and metrology, semiconductor manufacturing capacity is measured in wafer starts per month. In the case of a semiconductor fabrication facility, semiconductor manufacturing capacity is measured in wafer starts per year. In the case of a packaging facility, semiconductor manufacturing capacity is measured in packages per year.

(9) *Significant renovations*. The term *significant renovations* means building new cleanroom space or adding a production line or other physical space to an existing facility that, in the aggregate during the applicable period, increases semiconductor manufacturing capacity by 10 percent or more of the capacity.

(10) *Significant transaction*–(i) *In general.* As determined in coordination with the Secretary of Commerce and the Secretary of Defense and except as provided in paragraph (b)(10)(ii) of this section, the term *significant transaction* means any of the following:

(A) An investment, whether proposed, pending, or completed, including any capital expenditure, loan, or gift;

(B) The formation of a subsidiary, whether classified as a corporation or partnership for Federal tax purposes;

(C) A merger, acquisition, or takeover, including—

(1) The acquisition of a new or additional ownership interest in an entity;

(2) The acquisition of a material portion of the assets of an entity; or

(3) A consolidation;

(D) The formation of a joint venture; or

(E) A long-term lease or concession arrangement under which a lessee (or equivalent) makes substantially all business decisions concerning the operation of a leased entity (or equivalent), as if it were the owner.

(F) A transaction that involves the expansion of manufacturing capacity for legacy semiconductors (other than with respect to an existing facility or equipment of an applicable taxpayer for manufacturing legacy semiconductors) if less than 85 percent of the output of the semiconductor manufacturing facility (for example, wafers, semiconductor devices, or packages) by value, is incorporated into final products (that is, not an intermediate product that is used as factory inputs for producing other goods) that are used or consumed in the market of a foreign country of concern; or

(G) A transaction during the applicable period in which an applicable taxpayer knowingly (within the meaning of 15 CFR 231.106) engages in any joint research, as defined in 15 CFR 231.105, or technology licensing effort with a foreign entity of concern that relates to a technology or product that raises national security concerns.

(ii) *Required agreement*. If a taxpayer enters into a required agreement with the Secretary of Commerce pursuant to 15 U.S.C. 4652(a)(6)(C) and 15 CFR 231.112, then the term *significant transaction* for purposes of section 48D and the section 48D regulations has the meaning provided in the required agreement. Defined terms in the required agreement control only for purposes of determining the meaning of the term *significant transaction*. Thus, the effect of a significant transaction is determined under section 50(a)(3) and (6) during the applicable term defined under paragraph (b)(1) of this section.

(11) *Technology licensing*. The term *technology licensing* has the same meaning as provided in 15 CFR 231.120.

(12) *Technology or product that raises national security concerns*. The term *technology or product that raises national security concerns* has the same meaning as provided in 15 CFR 231.121.

(c) *Exception from the definition of applicable transaction for the manufacturing of legacy semiconductors*—(1) *In general*. The term *applicable transaction*, as defined in section 50(a)(6)(D) and paragraph (b)(3) of this section, does not include a transaction that primarily involves the expansion of manufacturing capacity for legacy semiconductors, but only to the extent not described in paragraph (b)(10)(i)(F) of this section.

(2) *Legacy semiconductor*. The term *legacy semiconductor* has the same meaning as provided in 15 CFR 231.107.

(d) *Example: Applicable transaction credit claimed*. On January 15, 2025, X Corp, a C corporation that is a calendar-year taxpayer, placed in service Property A, qualified property with a basis of $1 million. X Corp's qualified investment, as determined in §1.46-3(c), for the taxable year is $1 million. X Corp's advanced manufacturing investment credit for the taxable year is $250,000 ($1 million x 0.25) and, assume that X Corp's income tax liability is $400,000. X Corp does not determine any other credits in 2025. X claims an advanced manufacturing investment credit of $250,000 for its 2025 taxable year. On December 15, 2026, X Corp engages in an applicable transaction, as defined in section 50(a)(6)(D) and paragraph (b)(3) of this section and did not cease or abandon the transaction within 45 days of a determination and notice by the Commissioner. X Corp has not determined or claimed any general business credits since its 2025 taxable year. The aggregate decrease in credits allowed under section 38 for all prior years resulting from reducing to zero any credit determined under section 46 that is attributable to the advanced manufacturing investment credit is $250,000 ($250,000 (credit allowed) - $0 (credit that would have been allowed)). X Corp's tax under chapter 1 is increased by $250,000 (1.0 x $250,000) for the 2026 taxable year. Pursuant to section 48D(c), for the 2026 taxable year, X Corp is not an eligible taxpayer and is ineligible to claim or carryforward the advanced manufacturing investment credit.

(e) *Applicability date*. This section applies to property that is placed in service after December 31, 2022, and during a taxable year ending on or after October 23, 2024.

Douglas W. O'Donnell,
Deputy Commissioner.

Approved: October 8, 2024.

Aviva R. Aron-Dine,
Deputy Assistant Secretary of the Treasury (Tax Policy).

(Filed by the Office of the Federal Register October 22, 2024, 8:45 a.m., and published in the issue of the Federal Register for October 23, 2024, 89 FR 84732)

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26 CFR 1.45X-1 through 1.45X-4

TD 10010

DEPARTMENT OF THE TREASURY
Internal Revenue Service
26 CFR Part 1

Advanced Manufacturing Production Credit

AGENCY: Internal Revenue Service (IRS), Treasury.

ACTION: Final rule.

SUMMARY: This document sets forth final regulations regarding the advanced manufacturing production credit established by the Inflation Reduction Act of 2022 to incentivize the production of eligible components within the United States. Eligible components include certain solar energy components, wind energy components, inverters, qualifying battery components, and applicable critical minerals. These final regulations also address specific recordkeeping and reporting requirements. These final regulations affect eligible taxpayers who produce and sell eligible components and intend to claim the benefit of an advanced manufacturing production credit, including by making elective payment or credit transfer elections.

DATES: *Effective date*: These regulations are effective December 27, 2024.

Applicability date: For date of applicability, *see* §§1.45X-1(j), 1.45X-2(f), 1.45X-3(g), and 1.45X-4(d).

FOR FURTHER INFORMATION CONTACT: Mindy Chou, John Deininger, Derek Gimbel, or Alexander Scott at (202) 317-6853 (not a toll-free number).

SUPPLEMENTARY INFORMATION:

Authority

This document contains final regulations (final regulations) that amend the Income Tax Regulations (26 CFR part 1) to implement the statutory provisions of section 45X of the Internal Revenue Code (Code). The final regulations are issued by the Secretary of the Treasury or her delegate (Secretary) under the authority granted under sections 45X(a)(3)(B)(i) and (ii), 1502, 6001, 6417(h), 6418(h), and 7805(a) of the Code.

Section 45X(a)(3)(B)(i) of the Code provides a specific delegation of authority to the Secretary to prescribe the form and manner for a taxpayer to make an election such that "a sale of components by such taxpayer to a related person shall be deemed to have been made to an unrelated person." Section 45X(a)(3)(B)(ii) provides a specific delegation of authority to the Secretary, "[a]s a condition of, and prior to, any election described in [section 45X(a)(3)(B)(i)]," to "require such information or registration as the Secretary deems necessary for purposes of preventing duplication, fraud, or any improper or excessive amount determined under [section 45X(a)(1)]."

Section 1502 of the Code requires the Secretary to "prescribe such regulations as he may deem necessary in order that the tax liability of any affiliated group of corporations making a consolidated return and of each corporation in the group, both during and after the period of affiliation,

may be returned, determined, computed, assessed, collected, and adjusted, in such manner as clearly to reflect the income-tax liability and the various factors necessary for the determination of such liability, and in order to prevent avoidance of such tax liability." Section 1502 of the Code also provides that the Secretary "may prescribe rules that are different from the provisions of chapter 1 that would apply if such corporations filed separate returns."

Section 6001 of the Code provides an express delegation of authority to the Secretary, stating that, "[e]very person liable for any tax imposed by this title, or for the collection thereof, shall keep such records, render such statements, make such returns, and comply with such rules and regulations as the Secretary may from time to time prescribe. Whenever in the judgment of the Secretary it is necessary, [s]he may require any person, by notice served upon such person or by regulations, to make such returns, render such statements, or keep such records, as the Secretary deems sufficient to show whether or not such person is liable for tax under this title."

Sections 6417(h) and 6418(h) of the Code direct the Secretary to issue such regulations or other guidance as may be necessary to carry out the purposes of each section, respectively.

Finally, section 7805(a) of the Code authorizes the Secretary "to prescribe all needful rules and regulations for the enforcement of [the Code], including all rules and regulations as may be necessary by reason of any alteration of law in relation to internal revenue."

Background

I. *Overview of Section 45X*

Section 45X was added to the Code by section 13502(a) of Public Law 117-169, 136 Stat. 1818, 1971 (August 16, 2022), commonly known as the Inflation Reduction Act of 2022 (IRA). In general, for purposes of the general business credit under section 38 of the Code, section 45X provides for the advanced manufacturing production credit (section 45X credit) with respect to eligible components produced by the taxpayer and sold during the taxable year to an unrelated person. Section 45X applies to eligible components produced and sold after December 31, 2022.

Under section 45X(a)(1), the total section 45X credit amount for the taxable year equals the sum of the credit amounts determined under section 45X(b) with respect to each eligible component (as defined in section 45X(c)(1)). Under section 45X(a)(2), any eligible component produced and sold by the taxpayer is taken into account only if the production and sale is in a trade or business of the taxpayer.

Section 45X(a)(3) generally provides rules regarding the sale of eligible components to an unrelated person. However, section 45X(a)(3)(B) provides a special rule whereby if a taxpayer makes an election in the form and manner prescribed by the Secretary, a sale of eligible components by the taxpayer to a related person will be treated as if made to an unrelated person, referred to in these final regulations as the related person election (Related Person Election). As a condition of, and prior to, a taxpayer making the Related Person Election, the Secretary may require such information or registration as the Secretary deems necessary for purposes of preventing duplication, fraud, or any improper or excessive credit amount.

II. *Credit Amounts for Eligible Components*

Section 45X(b)(1) generally provides the credit amount determined with respect to any eligible component, including any other eligible component it incorporates, subject to the credit phase out rules provided at section 45X(b)(3). Section 45X(b)(1)(A) through (M) and section 45X(b)(2) set forth the credit amounts for each type of eligible component. The credit amounts are generally subject to phase out rules under section 45X(b)(3), but the phase out rules do not apply to any applicable critical mineral. For any eligible component (except applicable critical minerals) sold after December 31, 2029, the credit amount for such component equals the product of the amount determined under section 45X(b)(1) for such component multiplied by the applicable phase out percentage under section 45X(b)(3)(B)(i) through (iv). In the case of an eligible component sold during calendar year 2030, 2031, and 2032, the phase out percentages are 75 percent, 50 percent, and 25 percent, respectively. For any eligible component sold after December 31, 2032, the phase out percentage is zero percent, and no section 45X credit is allowed other than for applicable critical minerals.

Section 45X(b)(4) provides capacity limitations used to compute the credit amount for battery cells under section 45X(b)(1)(K)(ii) and battery modules under section 45(b)(1)(L)(ii). Section 45X(b)(4)(A) provides that the capacity determined with respect to a battery cell or battery module must not exceed a capacity-to-power-ratio of 100:1. Section 45X(b)(4)(B) defines "capacity-to-power-ratio" as the ratio of the capacity of a battery cell or battery module to the maximum discharge amount of such cell or module.

III. *Eligible Components*

Section 45X(c)(1)(A) defines an eligible component to mean any solar energy component, any wind energy component, any inverter described in section 45X(c)(2)(B) through (G), any qualifying battery component, and any applicable critical mineral. Section 45X(c)(1)(B) clarifies that eligible components do not include any property that is produced at a facility if the basis of any property that is part of such facility is taken into account for purposes of the qualifying advanced energy project credit allowed under section 48C after August 16, 2022 (the date of enactment of the IRA).

Section 45X(c)(2)(A) generally defines an inverter as an end product that is suitable to convert direct current (DC) electricity from one or more solar modules or certified distributed wind energy systems into alternating current (AC) electricity. Section 45X(c)(2)(B) through (G) defines the following different types of eligible inverters: central inverter, commercial inverter, distributed wind inverter, microinverter, residential inverter, and utility inverter.

Section 45X(c)(3)(A) defines a solar energy component as a solar module, photovoltaic cell, photovoltaic wafer, solar grade polysilicon, torque tube, structural fastener, or polymeric backsheet. Section 45X(c)(3)(B) defines these different types

of eligible solar energy components as well as a solar tracker.

Section 45X(c)(4)(A) defines a wind energy component as blades, nacelles, towers, offshore wind foundations, and related offshore wind vessels. Section 45X(c)(4)(B) defines these different types of eligible wind energy components.

Section 45X(c)(5)(A) defines a qualifying battery component as electrode active materials, battery cells, and battery modules. Section 45X(c)(5)(B) defines these different types of qualifying battery components.

Section 45X(c)(6) defines applicable critical minerals. The following minerals are eligible for the section 45X credit if converted or purified to specified purities or forms: aluminum, antimony, arsenic, barite, beryllium, bismuth, cerium, cesium, chromium, cobalt, dysprosium, erbium, europium, fluorspar, gadolinium, gallium, germanium, graphite, hafnium, holmium, indium, iridium, lanthanum, lithium, lutetium, magnesium, manganese, neodymium, nickel, niobium, palladium, platinum, praseodymium, rhodium, rubidium, ruthenium, samarium, scandium, tantalum, tellurium, terbium, thulium, tin, titanium, tungsten, vanadium, ytterbium, yttrium, zinc, and zirconium.

IV. *Special Rules*

Section 45X(d)(1) provides that persons are related to each other for purposes of the section 45X credit if they would be treated as a single employer under section 52(b) of the Code and §1.52-1(b). Section 52(b) and §1.52-1(b) generally provide that trades or businesses that are partnerships, trusts, estates, corporations, or sole proprietorships under common control are members of a controlled group and are treated as a single employer. Section 52(b) requires the regulations under section 52(b) to be based on principles similar to the principles that apply under section 52(a), which generally provide that corporations that are members of a controlled group of corporations are treated as a single employer. Section 52(a) provides that a controlled group of corporations is defined with reference to section 1563(a) of the Code. Section 52(b) and §1.52-1 provide rules based on principles similar to those under section 52(a), but with certain modifications to account for different types of ownership interests.

Section 45X(d)(2) provides that sales of eligible components are taken into account under section 45X only for eligible components that are produced within the United States (including continental shelf areas described in section 638(1) of the Code), or a U.S. territory (including continental shelf areas described in section 638(2)).[1]

Section 45X(d)(3) directs the Secretary to promulgate regulations adopting rules similar to the rules of section 52(d) to apportion credit amounts between estates or trusts and their beneficiaries on the basis of the income of the estates or trusts allocable to each, and to pass-thru any apportioned credit amounts to the beneficiaries.

Section 45X(d)(4) provides that a person is treated as having sold an eligible component to an unrelated person if such component is integrated, incorporated, or assembled into another eligible component that is sold to an unrelated person.

V. *Prior Guidance*

On October 24, 2022, the Department of the Treasury (Treasury Department) and the IRS published Notice 2022-47, 2022-43 IRB 312, requesting comments on issues arising under section 45X that may require guidance. On December 15, 2023, after full consideration of all the stakeholder input received in response to Notice 2022-47, the Treasury Department and the IRS published a notice of proposed rulemaking and a notice of public hearing (REG-107423-23) in the **Federal Register** (88 FR 86844) to provide guidance on the advanced manufacturing production credit under section 45X (Proposed Regulations). While the Proposed Regulations are summarized in the Summary of Contents and Explanation of Revisions portion of this preamble, the provisions of the Proposed Regulations are explained in greater detail in the preamble to the Proposed Regulations.

On March 6, 2023, the Treasury Department and the IRS published Notice 2023-18, 2023-10 IRB 508, establishing the qualifying advanced energy project allocation program (section 48C(e) program). On June 20, 2023, the Treasury Department and the IRS published Notice 2023-44, 2023-25 IRB 924, providing additional guidance on the section 48C(e) program, including rules for the interaction between sections 45X and 48C. The rules regarding the interaction between sections 45X and 48C provided in Notices 2023-18 and 2023-44 were addressed in the Proposed Regulations and have been incorporated into these final regulations. Section 5.05(2) of Notice 2023-18 and section 3 of Notice 2023-44 are superseded by these final regulations.

Summary of Comments and Explanation of Revisions

I. *Overview*

This Summary of Comments and Explanation of Revisions summarizes the Proposed Regulations, all substantive comments submitted in response to the Proposed Regulations, and revisions adopted by these final regulations. The Treasury Department and the IRS received 194 written comments in response to the Proposed Regulations. The comments are available for public inspection at *https://www.regulations.gov* or upon request. A public hearing was held in person and telephonically on February 22, 2024. After full consideration of the comments and testimony, these final regulations adopt the Proposed Regulations with modifications in response to the comments and testimony as described in this Summary of Comments and Explanation of Revisions.

Comments merely summarizing the statute or the Proposed Regulations, recommending statutory revisions to section 45X or other statutes, and addressing issues that are outside the scope of this rulemaking (such as revising other Federal regulations and recommending changes to IRS forms) are generally not addressed in this Summary of Comments and Explanation of Revisions or adopted

[1] *The preamble to these section 45X final regulations refers to U.S. territory to mean a possession as defined in section 638(2).*

in these final regulations. Some commenters requested additional time to submit comments. The Proposed Regulations required all comments to be received by February 13, 2024; however, comments received later but before these final regulations were substantially developed were carefully considered in drafting these final regulations. The final regulations retain the same basic structure as the Proposed Regulations with certain revisions.

II. *General rules applicable to the advanced manufacturing production credit*

A. *In General*

Proposed §1.45X-1 would have provided general rules regarding the section 45X credit including generally applicable definitions, rules regarding the computation of the credit amount, the definition of "produced by the taxpayer," the requirement to produce eligible components in the United States, the production and sale in a trade or business requirement, the sale of integrated components, the interaction between sections 45X and 48C, and an anti-abuse rule. Commenters addressed certain aspects of these proposed rules, as described in Part II. of this Summary of Comments and Explanation of Revisions. These final regulations generally adopt proposed §1.45X-1, with the modifications described in this Part II. of the Summary of Comments and Explanations of Revisions.

B. *Definition of produced by the taxpayer*

1. In General

Section 45X(a)(1) allows a section 45X credit with respect to each eligible component which is produced by the taxpayer and sold to an unrelated person during the taxable year. Proposed §1.45X-1(c)(1) would have defined "produced by the taxpayer" to mean a process conducted by the taxpayer that substantially transforms constituent elements, materials, or subcomponents into a complete and distinct eligible component that is functionally different from that which would result from mere assembly or superficial modification of the elements, materials, or subcomponents. Proposed §1.45X-1(c)(1)(i) would have provided that "produced by the taxpayer" does not include partial transformation that does not result in substantial transformation of constituent elements, materials, and subcomponents into a complete and distinct eligible component as described in proposed §1.45X-1(c)(1). Proposed §1.45X-1(c)(1)(ii) would have provided that "produced by the taxpayer" does not include minor assembly of two or more constituent elements, materials, or subcomponents, or superficial modification of the final eligible component, if the taxpayer does not also engage in the process resulting in a substantial transformation described in proposed §1.45X-1(c)(1). Proposed §1.45X-1(c)(1)(iii) would have provided examples illustrating the definition of "produced by the taxpayer."

Several commenters requested that the final regulations specifically state that taxpayers may produce eligible components using recycled materials. While the preamble to the Proposed Regulations stated that primary and secondary production are included in the definition of "produced by the taxpayer," that issue was not addressed in the text of the Proposed Regulations. The preamble to the Proposed Regulations further stated that primary production involves producing an eligible component using non-recycled materials while secondary production involves producing an eligible component using recycled materials.

The Treasury Department and the IRS agree with the request to clarify the general rule that production includes primary and secondary production, and these final regulations revise proposed §1.45X-1(c)(1) and (2) to add secondary production to the definition of produced by the taxpayer.

A few commenters stated the definition of "produced by the taxpayer" should be defined consistently with section 263A of the Code to the extent possible and expressed concern that using different definitions will cause "increased technical uncertainty, additional compliance burden, especially for small business taxpayers, and unnecessary litigation and controversy." Another commenter stated that the Proposed Regulations introduced new definitions, such as "substantial transformation" as production qualifiers, "raising concerns about its apparent conflict with the enacted statutes."

The term "produced by the taxpayer" is not defined in section 45X, nor is there any indication in section 45X suggesting that Congress intended the use of any existing statutory definition, such as the standard in section 263A. Section 45X provides a credit based on the production of numerous eligible components and a variety of production processes are utilized by manufacturers in the production of these eligible components.

Given the variety of production processes and the highly technical nature of production, the Treasury Department and the IRS, in close coordination with the Department of Energy, proposed a definition that would apply broadly to eligible components. In addition, the proposed definition of "produced by the taxpayer" focused on requiring production of a complete and distinct eligible component and, accordingly, introduces a substantial transformation requirement to distinguish production from partial transformation, mere assembly, and superficial modification. The proposed definition of "produced by the taxpayer" along with the amendment clarifying that production includes secondary production is the appropriate standard to implement the section 45X credit. The definition provides the necessary flexibility to account for the highly technical nature of the production processes associated with eligible components. This standard also ensures that the section 45X credit is claimed by the taxpayer responsible for the key production activity and that such activity occurs in the United States or a United States territory. In contrast to section 45X, section 263A is designed to ensure that taxpayers capture the direct and indirect costs associated with producing inventoriable goods for capitalization purposes. Moreover, in section 263A, the definition of production applies to a broad range of produced items, whereas the definition in section 45X applies to a limited number of statutorily enumerated eligible components. For these reasons, the Treasury Department and the IRS have concluded that the definition of "produced by the taxpayer" in the Proposed Regulations with the clarifying amendment addressing secondary production appropriately implements section 45X(a)(1)(A), and thus decline to

accept the commenter's recommendation to define "produced by the taxpayer" for purposes of section 45X consistent with the similar term under section 263A.

Several commenters requested that the final regulations provide more specific guidance for certain eligible components to illustrate whether certain activities or processes result in substantial transformation versus partial transformation, mere assembly, or superficial modification. One commenter, for example, requested that the final rules confirm that the term "produced" in the phrase "produced by the taxpayer" is applied within the context of the standard production process of each eligible component, such that the standard production process for each eligible component is deemed to be "substantial transformation" that meets the requirements of proposed §1.45X-1(c)(1). The commenter provided an example of the production of a solar module, which "involves the final assembly of the other solar components, many of which separately qualify for their own section 45X credit, into the overall module." The Treasury Department and the IRS recognize that certain eligible components, such as solar modules and battery modules using battery cells, are produced primarily by assembling other components. In these limited cases, the substantial transformation requirement is met by the taxpayer that assembles the constituent components to produce the solar module or battery module using battery cells. Because assembly is the activity that primarily produces these eligible components, the assembly necessary to achieve production of a solar module or battery module using battery cells should not generally be viewed as disqualifying "minor assembly." The Treasury Department and the IRS also recognize that certain eligible components, such as nacelles, that have undergone substantial transformation to be considered "produced by the taxpayer" may be produced and sold to a third party in a manner in which only minor assembly remains left to complete. In these cases, provided all other requirements of section 45X are met, the party that produces and sells the eligible components in such manner is not precluded from claiming the section 45X credit. The third party that completes the eligible component by performing minor assembly is not entitled to the section 45X credit because that third party is not considered to have produced the eligible component. For these reasons, and for clarity and consistency, the final regulations replace each instance of "mere assembly" in the Proposed Regulations, with "minor assembly."

A commenter suggested adding an additional example to proposed §1.45X-1(c)(1)(iii) to clarify whether the integration of electrical subcomponents and software necessary to enable the functionality of an inverter is disqualifying minor assembly, and another commenter requested clarification on whether the coating of a battery separator is "superficial modification" or "substantial transformation." A few commenters also requested that the final rules further clarify "substantial transformation" to ensure manufacturers claiming section 45X credits are actually producing an eligible component in the United States and suggested using examples to differentiate between substantial and partial transformation for specific components, such as inverters for solar energy.

As previously discussed, section 45X provides a credit based on the production of numerous eligible components and a variety of production processes are utilized by manufacturers in the production of these eligible components. Thus, listing specific production processes for each eligible component is not practicable and could also imply that other variations of production processes do not qualify as production. The Treasury Department and the IRS have determined that the inquiry into whether production activities or processes result in substantial transformation for a specific eligible component is highly fact dependent and conclude that the examples in proposed §1.45X-1(c)(1)(iii), which are included in the final regulations, provide sufficient guidance to determine what types of activities or production steps do not qualify as substantial transformation.

2. Special Rule for Production of Certain Eligible Components

Proposed §1.45X-1(c)(2) would have provided that for solar grade polysilicon, electrode active materials, and applicable critical minerals, "produced by the taxpayer" means processing, conversion, refinement, or purification of source materials, such as brines, ores, or waste streams, to derive a distinct eligible component. Several commenters requested that in addition to processing, conversion, refinement, and purification, the final regulations clarify that the production process includes extraction, while others requested maintaining the position in the Proposed Regulations to exclude costs of extraction. The Treasury Department and the IRS decline to amend the final regulations to expressly include the term "extraction," as the action of extraction alone does not produce an eligible component. For the discussion and analysis of whether extraction costs are includible as production costs in the production of electrode active materials or applicable critical minerals, see Part IV.E.1.e. of this Summary of Comments and Explanation of Revisions.

Another commenter asked whether recycling aluminum transformer wire (cleaning, melting, and bailing it) to send to an aluminum smelter constitutes "secondary aluminum production." The Treasury Department and the IRS note that under both proposed §1.45X-1(c)(2) and §1.45X-1(c)(2) of these final regulations, substantial transformation for an applicable critical mineral requires that the applicable critical mineral be "processed, converted, refined, or purified to derive a distinct eligible component." Because a taxpayer in these circumstances would not derive a distinct eligible component, this would not be an eligible component produced by the taxpayer within the meaning of section 45X(a)(1)(A).

These final regulations make a clarifying revision to the definition of produced by the taxpayer under proposed §1.45X-1(c)(2) so that it references substantial transformation. While no comments were received on this issue, this revision is needed to appropriately align the definition of "produced by the taxpayer" in §1.45X-1(c)(2) with the requirements to qualify as an eligible taxpayer in §1.45X-1(c)(3).

3. Eligible Taxpayer

a. In general

Proposed §1.45X-1(c)(3)(i) would have provided that the taxpayer claiming

a section 45X credit with respect to an eligible component must be the person that performs the actual production activities that bring about a substantial transformation resulting in the eligible component and that sells such eligible component to an unrelated person.

b. Contract manufacturing arrangement

Proposed §1.45X-1(c)(3)(ii)(A) would have provided that, if the production of an eligible component is performed in whole or in part subject to a contract that is a contract manufacturing arrangement, then the party to such contract that may claim the section 45X credit with respect to such eligible component, provided all other requirements in section 45X are met, is the taxpayer that performs the actual production activities that bring about a substantial transformation resulting in the eligible component. The preamble to the Proposed Regulations stated that this proposed rule was intended to provide an administrable rule that provides clarity and certainty in determining which taxpayer may claim the section 45X credit in a contract manufacturing arrangement.

c. Contract manufacturing defined

Proposed §1.45X-1(c)(3)(ii)(B) would have defined the term "contract manufacturing arrangement" to mean any agreement providing for the production of an eligible component if the agreement is entered into before the production of the eligible component to be delivered under the contract is completed. Proposed §1.45X-1(c)(3)(ii)(B) would have further provided that a routine purchase order for off-the-shelf property is not treated as a contract manufacturing arrangement. Proposed §1.45X-1(c)(3)(ii)(B) also would have provided that an agreement will be treated as a routine purchase order for off-the-shelf property if the contractor is required to make no more than *de minimis* modifications to the property to tailor it to the customer's specific needs, or if at the time the agreement is entered into, the contractor knows or has reason to know that the contractor can satisfy the agreement out of existing stocks or normal production of finished goods. This definition of the term "routine purchase order" is based on the definition found in §1.263A-2(a)(1)(ii)(B)(*2*)(*ii*). The Treasury Department and the IRS requested comments in the preamble to the Proposed Regulations on whether this definition should be further clarified or modified. Comments on the definition of manufacturing arrangements are discussed in Part II.B.3.d. of this Summary of Comments and Explanation of Revisions.

d. Special rule for contract manufacturing arrangements

Proposed §1.45X-1(c)(3)(iii) would have explained the special rule allowing parties to a contract manufacturing arrangement to agree on which party to the contract will claim the section 45X credit for eligible components produced subject to such contract. Proposed §1.45X-1(c)(3)(iv) would have explained the certification requirements for the special rule. Several commenters expressed support for the contract manufacturing rules, but one commenter expressed concern about the treatment of contract manufacturing arrangements in effect prior to the applicability date of the Proposed Regulations. This commenter recommended that the final regulations adopt a safe harbor rule that would function as an exception to the general rule and provide that when one party is contractually entitled to purchase all or substantially all (for example, at least 90 percent) of the output of the fabricator's production of a given component for the taxable year, the purchaser would be treated as the producer for purposes of section 45X. The Treasury Department and the IRS decline to adopt the commenter's request to add a safe harbor for contract manufacturing arrangements in place before the applicability date of the Proposed Regulations, but note that a taxpayer may still have the option of applying the special rule in §1.45X-1(c)(3)(iii) of these final regulations for contract manufacturing arrangements entered into before the applicability date, provided all requirements of the special rule are met.

The preamble to the Proposed Regulations stated that the Treasury Department and the IRS intend for the production cost incurred rules in proposed §1.45X–3(e)(2) to apply to a credit claimant in a contract manufacturing arrangement. The Treasury Department and the IRS requested comments on whether the proposed rules need further clarification or modification as applied to contract manufacturing arrangements. One commenter requested allowing taxpayers that extract and recycle raw materials and taxpayers that process such materials and incorporate them into applicable critical minerals to apply the contract manufacturing arrangement provisions, in the event that costs of extraction and direct and indirect material costs are not includible in the eligible production costs of producing an applicable critical mineral. The Treasury Department and the IRS think that the clarification requested by this commenter is no longer necessary because these final regulations permit the inclusion of extraction and certain material costs in the cost of producing an applicable critical mineral if certain requirements are met. See Parts IV.E.1.e. and V.C. of this Summary of Comments and Explanation of Revisions for further discussion.

Proposed §1.45X-1(c)(3)(v) would have provided examples illustrating the application of the special rule. One commenter requested that proposed §1.45X-1(c)(3)(v)(C) (*Example 3*) specifically state that the domestic production requirement requires that each wind tower section must be produced in the United States. Proposed §1.45X-(1)(c)(3)(v)(C) (*Example 3*) states that a taxpayer could claim a credit for a tower for which it had three different producers each produce one section, provided that the parties all agree that the taxpayer is the sole party that can claim the credit and "all other requirements of section 45X are met." The Treasury Department and the IRS have determined that the domestic production requirement is already included by this language and thus, additional clarification is not necessary.

Another commenter questioned whether, in proposed §1.45X-1(c)(3)(v)(C) (*Example 3*), V must sell the completed wind tower to Z for the special rule in proposed §1.45X-1(c)(3)(iii) to apply. In the example, V enters into a contract manufacturing arrangement with W, X, and Y to make the wind tower, which V sells to Z. All parties to the contract manufacturing arrangement and Z are unrelated. The commenter stated that if V, W, X, and Y

sign a certification statement and Y claims the section 45X credit, Y could claim the section 45X credit in 2025 because that is when it sold the eligible component to V. Contrary to the commenter's conclusion with respect to Y's ability to claim a section 45X credit in 2025, Y is not eligible for the section 45X credit until the eligible component, which is the wind tower comprised of all three wind tower sections, is produced and then sold to an unrelated person (in this case Z). Under the contract manufacturing arrangement, W, X, and Y are collectively viewed as producing the entire eligible component (wind tower) because all three sections together result in a single eligible component. Along with the production of the entire wind tower, V has to sell the completed wind tower to an unrelated person before the designated party is eligible for a section 45X credit.

A commenter suggested revisions to the proposed rules to allow an allocation of any portion of the credit to parties who extract the mineral and perform initial refining processes, rather than allowing a credit to the taxpayer that purifies the critical mineral to the statutory minimum. Section 45X(c)(6) defines a list of applicable critical minerals with specific minimum purity levels which must be met for the taxpayer to have produced an eligible component. The Treasury Department and the IRS do not have the authority to modify these statutory requirements. However, the Treasury Department and the IRS seek to clarify that a taxpayer who performs extracting and refining activities may benefit from the contract manufacturing provisions described in this section. The final regulations accordingly add §1.45X-1(c)(3)(v)(D) (*Example 4*) to demonstrate how the contract manufacturing provisions may apply in the situation described by the commenter.

4. Timing of Production and Sale

Proposed §1.45X-1(c)(4)(i) would have provided that production of eligible components for which a taxpayer is claiming a section 45X credit may begin before December 31, 2022, but production of eligible components must be completed, and the eligible components must be sold, after December 31, 2022. Proposed §1.45X-1(c)(4)(ii) would have provided an example illustrating the timing of the production and sale rule in proposed §1.45X-1(c)(4)(i).

Some commenters requested further clarity on when production and sale of an eligible component may take place. One commenter requested that the final rules provide that a specific minimum percentage of production of an eligible component must occur after 2022 and that no sale of the eligible component be reported by the taxpayer before 2023. The Treasury Department and the IRS decline to adopt these percentage test suggestions because Congress clearly recognized that some production could occur prior to 2023 but did not specify an exact amount of production that must occur in taxable years either before or after 2023. Moreover, if a sale occurred before 2023, which requires a facts and circumstances analysis based in part on contractual terms, the component sold is not eligible for the section 45X credit. Accordingly, the final regulations adopt proposed §1.45X-1(c)(4)(i) and the example in proposed §1.45X-1(c)(4)(ii) without modification.

Another commenter stated that the Proposed Regulations do not specify whether production activities that qualify for the section 45X credit have to occur after the effective date of the rule or whether the activities can be retroactive. The commenter suggests the final rule specify the applicable period for the production activities and provide a reasonable transition rule for taxpayers who produce eligible components before the effective date of the final regulations. The Treasury Department and the IRS have determined that the Proposed Regulations and these final regulations are clear as to the timing of production and sale requirements under section 45X. For clarification, and as described earlier, section 13502(c) of the IRA provides that section 45X applies to components produced and sold after December 31, 2022. The preamble to the Proposed Regulations clarified the application of the section 45X effective date, stating that each of proposed §§1.45X-1 through 1.45X-4 would have applied to eligible components for which production is "completed" and sales occur after December 31, 2022, and during taxable years ending on or after the date of publication of these final regulations. Proposed §1.45X-1(c)(4)(i) would have provided that production of eligible components may begin before December 31, 2022, and only required production of eligible components be completed, and sales must occur, after December 31, 2022. Proposed §1.45X-1(c)(4)(ii) would have provided an example illustrating proposed §1.45X-1(c)(4)(i). These final regulations adopt these proposed rules. The Treasury Department and the IRS do not have the statutory authority to provide for a section 45X credit in a situation in which production was completed on or before December 31, 2022.

C. *Produced in the United States*

Consistent with section 45X(d)(2), proposed §1.45X-1(d)(1) would have provided that sales are taken into account for purposes of the section 45X credit only for eligible components that are produced within the United States, including continental shelf areas as defined in section 638(1) of the Code, or a United States territory. Proposed §1.45X-1(d)(2) would have clarified that constituent elements, materials, and subcomponents used in the production of eligible components are not subject to the domestic production requirement provided in proposed §1.45X-1(d)(1). Thus, while the eligible component must be produced domestically, its constituent elements, materials, and subcomponents need not be.[2]

Some commenters agreed with this approach in the Proposed Regulations. According to these commenters, the Proposed Regulations appropriately allowed the credit for eligible components produced in the United States provided that the activities necessary to transform them into eligible components are conducted in the United States. Furthermore, these

[2] *See Joint Committee on Taxation, General Explanation of Tax Legislation Enacted in the 117th Congress, JCS-1-23 (December 21, 2023) at 267 ("The credit only applies to sales where the eligible components are produced within the United States or U.S. territories. This requirement is not intended to apply to subcomponents or materials used to produce eligible components.").*

commenters expressed concern that a contrary rule ignores the reality that some constituent elements, materials, and subcomponents cannot be sourced in the United States and would discourage investment in production activities that rely on foreign-sourced constituent elements, materials, and subcomponents. However, other commenters disagreed with the proposed approach, suggesting that allowing eligible components to be produced using foreign subcomponents is inconsistent with the section 45X credit's objective of incentivizing domestic production of eligible components.

The Treasury Department and the IRS note that, while section 45X specifically requires domestic production of an eligible component for credit eligibility, it is silent regarding the location of production or sourcing of constituent elements, materials, and subcomponents. Accordingly, imposing a domestic production requirement for constituent elements, materials, and subcomponents is not supported by the statutory language of section 45X. For these reasons, the Treasury Department and the IRS decline to adopt these suggestions and adopt the proposed rule without change.

Beyond agreement or disagreement with this proposed rule, some commenters inquired about its scope. One commenter asked whether the domestic production rule applicable to eligible components also applies to eligible components that are both an eligible component and a "constituent element, material or subcomponent" of another eligible component. Another commenter asked whether raw materials and intermediate products used to produce eligible components are included in the definition of "constituent elements, materials or subcomponents."

The Treasury Department and the IRS confirm that all three of these categories of items are included in the definition of "constituent elements, materials, and subcomponents." An eligible component that is a "constituent element, material or subcomponent" of another eligible component is not subject to the domestic production rule, and thus, an eligible component may incorporate another eligible component that is also a foreign-sourced "constituent element, material or subcomponent" and still be eligible for a section 45X credit. In addition, raw materials and intermediate products generally qualify as constituent elements, materials, or subcomponents.

A commenter also requested confirmation in the final regulations that there is no requirement that eligible components be *used* in the United States for section 45X credit eligibility. Consistent with section 45X(d)(2), proposed §1.45X-1(d)(1) would have provided that sales are taken into account for purposes of the section 45X credit only for eligible components that are produced within the United States (or a United States territory). Thus, the Proposed Regulations specify only the location of production of the eligible component, and not the location of the sale or the use of such eligible component. Accordingly, the Treasury Department and the IRS conclude that the additional confirmation requested by the commenter is unnecessary, as there would be no statutory basis for requiring domestic sale or use.

D. *Production and sale in a trade or business*

Proposed §1.45X-1(e) would have stated that an eligible component must be produced and sold in a trade or business of the taxpayer, with the term "trade or business" defined as a trade or business within the meaning of section 162 of the Code.

A commenter requested that proposed §1.45X-1(e) expressly include eligible components that are produced and then used to replace defective units pursuant to a contractual obligation entered into at the time of the original sale. The commenter stated that these warranty transactions do not appear to violate any of the anti-abuse provisions at proposed §1.45X-1(i). If an eligible component is produced and sold to an unrelated person in the normal course of a trade or business, and the eligible component is then replaced with a new eligible component produced by the same taxpayer, there is no new sale to an unrelated person for the replacement eligible component, but the replacement eligible component relates back to the original sales transaction. The precise issue is whether section 45X should be read to effectively incentivize the production of two eligible components where each is related to a single sales transaction. The Treasury Department and the IRS decline to adopt this suggestion because only one credit may be claimed with respect to the sale of an eligible component.

E. *Sale of integrated components*

1. In General

Section 45X(d)(4) provides that, for purposes of section 45X, a person is treated as having sold an eligible component to an unrelated person if such component is integrated, incorporated, or assembled into another eligible component which is sold to an unrelated person. Proposed §1.45X-1(f)(1) was intended to be consistent with section 45X(d)(4), and thus would have provided that a taxpayer is treated as having produced and sold an eligible component to an unrelated person if such component is integrated, incorporated, or assembled into another eligible component that is then sold to an unrelated person.

Although no comments were received regarding this general rule in the Proposed Regulations, the Treasury Department and the IRS want to clarify that section 45X(d)(4) provides only for deemed sale treatment and not deemed production. A taxpayer must produce (rather than merely purchase or acquire) an eligible component that is integrated, incorporated, or assembled into another eligible component that is then sold to an unrelated person in order for the deemed sale rule to apply. Thus, these final regulations clarify that a taxpayer is "treated as having sold" an eligible component to an unrelated person if the taxpayer produced such component and the component is integrated, incorporated, or assembled into another eligible component that is then sold to an unrelated person, rather than "treated as having produced and sold" an eligible component that the taxpayer did not itself produce that is then integrated, incorporated, or assembled into another eligible component and then sold to an unrelated person. Proposed §1.45X-1(f)(1) is clarified accordingly in these final regulations.

2. Application of Section 45X(d)(4) to Produced Products

Proposed §1.45X-1(f)(2)(i) would have clarified that a taxpayer may claim a

section 45X credit for each eligible component that the taxpayer produces and sells to an unrelated person, including any eligible component the taxpayer produces that was used as an element, material, or subcomponent and integrated, incorporated, or assembled into another complete and distinct eligible component or another complete and distinct product (that is not itself an eligible component) that the taxpayer also produces and sells to an unrelated person. Proposed §1.45X-1(f)(2)(ii) would have provided an example of the credit eligibility of a sale of a product with incorporated eligible components to a related person.

Commenters expressed agreement with proposed §1.45X-1(f)(2)(i). One commenter stated that the clarification in §1.45X-1(f)(2)(i) avoids the need for some vertically integrated producers of eligible components that incorporate the eligible components into another product that is not an eligible component to artificially restructure in order to create an intercompany sale. Another commenter requested a flexible interpretation of section 45X(d)(4) that would apply the section 45X credit as an additive credit across the supply chain to the final assembler. The commenter stated such an interpretation is consistent with the language in section 45X(b)(1), which provides that the section 45X credit amount is determined with respect to any eligible component, including any eligible component it incorporates. For example, in the commenter's view, a taxpayer that produces a structural fastener would be eligible to receive a credit for its production of an eligible component as would the integrator, incorporator, assembler of the structural fastener into another eligible component. Although the Treasury Department and the IRS agree that section 45X(b)(1) provides that the credit amount is determined with respect to any eligible component produced by the taxpayer, including any eligible component the taxpayer incorporates that was also produced by the taxpayer, the Treasury Department and the IRS disagree with the implication that the calculation of the section 45X credit should be additive based on the number of eligible components used to produce an item in a case in which each eligible component is not produced by the taxpayer. Only the producer of an eligible component would be eligible for a section 45X credit. Proposed §1.45X-1(f)(1) and (2) are finalized with no modifications because the Treasury Department and the IRS conclude the rules provide clarity as currently written.

F. *Interaction between sections 45X and 48C*

1. In General

Consistent with section 45X(c)(1)(B), proposed §1.45X-1(g)(1) would have provided that, for purposes of section 45X, an eligible component must be produced at a section 45X facility and does not include any property (produced property) that is produced at a facility if the basis of any property that is part of the production unit that produces the produced property is eligible property that is included in a section 48C facility and is taken into account for purposes of a credit allowed under section 48C (section 48C credit) after August 16, 2022.

Proposed §1.45X-1(g)(2)(i) would have provided that a section 45X facility includes all tangible property that comprises an independently functioning production unit that produces one or more eligible components. Proposed §1.45X-1(g)(2)(ii) would have provided that a production unit is comprised of the tangible property that substantially transforms material inputs to complete the production process of an eligible component.

Proposed §1.45X-1(g)(3)(i) would have provided that a section 48C facility includes all eligible property included in a qualifying advanced energy project for which a taxpayer receives an allocation of section 48C credits and claims such credits after August 16, 2022. Proposed §1.45X-1(g)(3)(ii) would have defined eligible property that is included in a section 48C facility.

With respect to the proposed rules on the interaction between sections 45X and 48C various comments were received. A commenter requested that the final rules not apply section 45X(c)(1)(B) to disallow the section 45X credit in the event that the taxpayer claiming the section 45X credit incorporates into its eligible component a subcomponent that was produced by a section 48C facility, as long as that same taxpayer was not eligible for the section 48C credit with respect to the section 48C facility that produced the subcomponent. Revisions were made to these final regulations to clarify that the only equipment, or other tangible property, that must be included in the section 45X facility is the equipment used by the taxpayer that is necessary to be considered the producer of the potential eligible component. As further explained later, if production of a subcomponent (or like property) is not a requirement to be considered the producer under section 45X, then the equipment that is part of that section 48C facility used to produce the subcomponent is not part of the section 45X facility. As a result, it is possible that the same taxpayer could receive a section 48C credit on equipment used to produce a subcomponent (or like property), and a section 45X credit on the production of an eligible component.

One commenter requested an example to help determine whether an eligible component produced at a facility located "adjacent" to a section 48C facility that received a section 48C credit impacts eligibility for the section 45X credit. The physical proximity of a section 45X facility to a section 48C facility does not determine whether a product may be an eligible component and revisions to these final regulations were made to clarify that point.

Another commenter requested more clarity to determine whether a facility that shares upstream raw materials and processes as a section 48C facility is still eligible for a section 45X credit and requested examples of upstream supply chains and processes that are eligible and ineligible for both sections 48C and 45X. Several commenters requested additional clarity regarding the meaning and extent of the term "production unit."

Based on the comments and further consideration of the Proposed Regulations, revisions were made in these final regulations to simplify the rules and examples in proposed §1.45X-1(g)(1) through (4). Specifically, these final regulations make clear that the general rule is that property that would otherwise qualify as an eligible component (otherwise qualified property) is only an eligible component if the property is produced at a section 45X facility and no part of that section 45X facility is

also a section 48C facility. These final regulations also revise the definition of section 45X facility, clarifying that a section 45X facility is the independently functioning tangible property used by the taxpayer that is necessary to be considered the producer of the otherwise qualified property within the meaning of §1.45X-1(c)(1) or (2), as applicable. The Proposed Regulations would have relied on the concept of a "production unit" to define the scope of a section 45X facility, but there was overlap between the term production unit as proposed and the definition of a section 45X facility. After careful consideration, the Treasury Department and the IRS determined that the proposed term "production unit" introduced unnecessary complexity, particularly in light of the revisions to the definition of section 45X facility in these final regulations. Accordingly, these final regulations do not use the term production unit.

The definition of section 45X facility in these final regulations includes independently functioning tangible property that is used and that is necessary for the otherwise qualified property to be considered produced by the taxpayer within the meaning of §1.45X-1(c)(1) or (2), as applicable. Accordingly, tangible property used to produce a subcomponent or other property which is later integrated, incorporated, or assembled into a distinct and final eligible component is not part of the section 45X facility. This rule, however, does not apply if the other property is of a type that the taxpayer must produce for the resulting eligible component to be considered produced by the taxpayer. This analysis can depend on the definition of the eligible component being ultimately produced. For example, section 45X(c)(3)(B)(ii)(I)(bb) requires a single manufacturer to produce a photovoltaic wafer through formation of an ingot from polysilicon and subsequent slicing. Thus, the section 45X facility with respect to the photovoltaic wafers would include any equipment that is tangible property that is used to produce the ingot and any equipment that is tangible property that is used to perform the subsequent slicing. In contrast, equipment used to produce front glass of a solar module under section 45X(c)(3)(B)(v) could be excluded from a section 45X facility because it is not necessary to use the front glass equipment to be considered the producer of the solar module for section 45X. This rule may benefit a taxpayer that produces a subcomponent or other property of an eligible component using equipment that is also eligible property for purposes of the section 48C credit, but uses other equipment not related to the section 48C credit to produce the eligible component.

Lastly, these final regulations add a specific rule for contract manufacturing arrangements in §1.45X-1(g)(2)(ii) to address any uncertainty with respect to how to determine a section 45X facility in that situation. This rule clarifies that the tangible property used to produce the otherwise qualified property (regardless of who claims the credit) must be considered.

4. Examples of Sections 45X and 48C Interaction

Proposed §1.45X-1(g)(4)(i) through (v) would have provided examples to illustrate the application of these rules. A few commenters requested that, contrary to proposed §1.45X-1(g)(4)(ii) (*Example 2*), ingot and wafer production should be treated as two separate manufacturing activities so that an ingot facility is eligible for the section 48C credit while a wafer facility is eligible for the section 45X credit. As required by section 45X(c)(3)(B)(ii)(I)(bb), however, a photovoltaic wafer must be produced by a single manufacturer either by forming an ingot from molten polysilicon (for example, Czochralski method) and then subsequently slicing it into wafers, or by forming molten or evaporated solar grade polysilicon or deposition into a sheet or layer (that is, thin-film deposition). As the statute requires production of a photovoltaic wafer by a single manufacturer that both forms an ingot and slices it into wafers, it is not appropriate to treat ingot and wafer production as two separate manufacturing activities. Rather, as both activities are necessary, it follows that the tangible property used to complete each activity must be within a single section 45X facility with respect to the eligible component produced. No comments were received on the other examples in proposed §1.45X-1(g)(4)(i) through (v). However, all of the examples in proposed §1.45X-1(g)(4)(i) through (v) were modified consistent with the revisions in §1.45X-1(g)(1) through (3).

A few commenters suggested that parties in a contract manufacturing arrangement under proposed §1.45X-1(c)(3)(iii) could circumvent the prohibition under section 45X(c)(1)(B) that disallows a section 45X credit for items produced at a section 48C facility. More specifically, commenters suggested that a taxpayer could enter into a contract manufacturing arrangement under proposed §1.45X-1(c)(3)(iii) to produce photovoltaic wafers that are then used to manufacture photovoltaic cells. If the taxpayer itself integrated, incorporated, or assembled the photovoltaic cells into solar modules, the taxpayer might claim a section 45X credit for all three products upon their sale, even though the photovoltaic wafers were manufactured by the contract manufacturer at a section 48C facility while the photovoltaic cells were manufactured at a section 45X facility, if the taxpayer was unaware that the contract manufacturer manufactured the photovoltaic wafers at a section 48C facility. The Proposed Regulations did not allow this, and the final regulations would continue to disallow a section 45X credit for the photovoltaic wafers in this scenario. To the extent that the photovoltaic wafers were produced at a section 48C facility, the photovoltaic wafers would not qualify as an eligible component to any party to the contract manufacturing arrangement. As described earlier, these final regulations add a rule in §1.45X-1(g)(2)(ii) to clarify the rules in a contract manufacturing arrangement situation, and the examples in §1.45X-1(g)(4) have also been modified.

G. *Anti-abuse rule*

As explained in the preamble to the Proposed Regulations, proposed §1.45X-1(i)(1) would have provided a general anti-abuse rule that would make the section 45X credit unavailable in extraordinary circumstances in which, based on a consideration of all the facts and circumstances, the primary purpose of the production and sale of an eligible component is to obtain the benefit of the section 45X credit in a manner that is wasteful, such as discarding, disposing of, or destroying the eligible component without putting it

to a productive use. Proposed §1.45X-1(i)(1) would have provided that the rules of section 45X and the section 45X regulations must be applied in a manner consistent with the purposes of section 45X and the section 45X regulations (and the regulations in this chapter under sections 6417 and 6418 related to the section 45X credit). A purpose of section 45X and the section 45X regulations (and the regulations in this chapter under sections 6417 and 6418 related to the section 45X credit) is to provide taxpayers an incentive to produce eligible components in a manner that contributes to the development of secure and resilient supply chains. Accordingly, the section 45X credit is not allowable if the primary purpose of the production and sale of an eligible component is to obtain the benefit of the section 45X credit in a manner that is wasteful, such as discarding, disposing of, or destroying the eligible component without putting it to a productive use. A determination of whether the production and sale of an eligible component is inconsistent with the purposes of section 45X and the section 45X regulations (and the regulations in this chapter under sections 6417 and 6418 related to the section 45X credit) is based on all facts and circumstances. Proposed §1.45X-1(i)(2) would have provided an example illustrating this anti-abuse rule.

One commenter suggested that, in applying the anti-abuse rule, the taxpayer claiming a section 45X credit should not be held responsible for the activities of the customer after a sale has occurred (unless the customer is a related entity); the determination of whether a component is defective should be made at the factory gate; and "productive use" should include the sale of an eligible component to an entity engaged in the business of directly (such as a utility) or indirectly (such as a project developer) deploying the eligible components. Proposed §1.45X-1(i)(1) provides that a determination of whether the production and sale of an eligible component is inconsistent with the purposes of section 45X and the section 45X regulations (and the regulations under sections 6417 and 6418 related to the section 45X credit) is based on all the facts and circumstances. Under a facts and circumstances analysis, no single factor is determinative, and the considerations listed by the commenter would have to be evaluated in the context of all other facts and circumstances. The Treasury Department and the IRS thus decline to list specific parameters that automatically result in a finding of a favorable or unfavorable primary purpose.

Another commenter suggested adding additional examples to proposed §1.45X-1(i) to make clear that the section 45X credit is never allowable with respect to any cost the primary purpose of which is to increase the amount of the section 45X credit. While the examples offered by the commenter involve possible abuses, the anti-abuse rule is intended to cover a broad range of abuses. Proposed §1.45X-1(i) would have provided that a determination of whether the production and sale of an eligible component is inconsistent with the purposes of section 45X and the section 45X regulations is based on all facts and circumstances, and no single factor is determinative. Accordingly, the Treasury Department and the IRS decline to adopt the commenter's suggestion.

III. *Sale to unrelated person*

A. *In general*

Proposed §1.45X-2(a) would have stated that the amount of the section 45X credit for any taxable year is equal to the sum of the credit amounts determined under section 45X(b) (and described in proposed §§1.45X-3 and 1.45X-4) with respect to each eligible component that is produced by the taxpayer and, during the taxable year, sold by the taxpayer to an unrelated person. Applicable Federal income tax principles apply to determine whether a transaction is in substance a sale (or the provision of a service, or some other disposition). Proposed §1.45X-2(a) also would have cross-referenced proposed §1.45X-1(d) and (e) for additional requirements relating to sales. Section 45X(d)(1) provides that persons are treated as related to each other if such persons would be treated as a single employer under the regulations prescribed under section 52(b). Proposed §1.45X-2(b) would have provided definitions of the terms "person," "related person," and "unrelated person" for purposes of the section 45X credit.

A few commenters requested additional clarity in the final rules on how a sale is defined and when a sale is determined for the purpose of section 45X. One commenter recommended that a sale be defined for 45X as the point when a taxpayer signs a binding contractual agreement with a buyer in the taxpayer's trade or business for the purchase of an eligible component. Section 45X provides special rules addressing sales of eligible components to related persons that may be treated as sales to unrelated persons, and a general rule that an eligible component produced and sold by the taxpayer is only taken into account if such production and sale is in a trade or business of the taxpayer, but otherwise does not provide any specific rules regarding whether and when a sale have occurred. Proposed §1.45X-2(a) would have provided that applicable Federal income tax principles apply to determine whether a transaction is in substance a sale (or the provision of a service, or some other disposition), and those same principles apply in determining when a transaction is a sale. More specific rules on the determination of whether and when a sale occurs is beyond the scope of these final regulations. Accordingly, the Treasury Department and the IRS maintain the standard in proposed §1.45X-2(a) and finalize the proposed rule without modification.

Another commenter requested further clarification on the sale of eligible components in two scenarios. In the first scenario, Company A is a U.S. based company producing eligible components that it sells to Company B, which is not directly using the eligible components but resells to Company C to use in a manufacturing process or otherwise in its trade or business. For this first scenario, the commenter requested clarification on whether Company A is eligible to claim the section 45X credit for the domestic production and sale of the eligible components. In the second scenario, the commenter assumed the same facts as in the first scenario, but Company B or Company C is using Company A's eligible component outside the United Sates. In this second scenario, the commenter requested clarification on whether Company A remains eligible to claim the section 45X credit for the domestic production and sale of the eligible components.

In both scenarios under the Proposed Regulations, Company A is eligible

to claim the section 45X credit for the domestic production and sale of the eligible components if the production and sale is in a trade or business of Company A, regardless of whether the first purchaser is using the eligible component in its trade or business or sells to a subsequent purchaser for use in the subsequent purchaser's trade or business, and regardless of whether the purchaser or subsequent purchaser uses the eligible component in the United States. Because the Proposed Regulations clearly provide this result, no further revision is necessary in these final regulations.

B. *Special rules for sales to a related person*

Consistent with section 45X(a)(3)(A), proposed §1.45X-2(c)(1) would have provided a special rule that, for purposes of section 45X(a), a taxpayer is treated as selling an eligible component to an unrelated person if such component is sold to such person by a person who is related to the taxpayer. Proposed §1.45X-2(c)(2) would have provided an example to illustrate this special rule.

Given the importance of whether parties are related persons or unrelated persons, a commenter proposed a particular fact pattern and requested clarification on who the purchaser is and whether they were related or unrelated to the producer and seller. In general, section 45X(d)(1) and proposed §1.45X-2(b)(2) provides that persons are treated as related to each other if such persons would be treated as a single employer under the regulations prescribed under section 52(b). A request for application of the section 52(b) regulations by the Treasury Department and the IRS to a particular fact pattern requiring a facts and circumstances analysis is outside the scope of these final regulations.

Another commenter requested that the final rules clarify whether a Related Person Election is necessary when eligible components are sold by the producer to an unrelated person, who subsequently sells them to a person related to the producer of such eligible components. The commenter proposes amending proposed §1.45X-2(c) to clarify that direct or indirect sales to a related person qualify if the producer knows or has reason to know the unrelated person is intending to sell the same eligible components to a person related to the producer. To provide assurance to commenter, a Related Person Election is not necessary in this situation because the first sale was to an unrelated party, but the Treasury Department and the IRS have determined that the rules as set out by proposed §1.45X-2(c) do not require further clarification on this point. In addition, if there are circumstances in which purported sales are made to unrelated persons to circumvent the requirements of section 45X, proposed §1.45X-2(a) provides that applicable Federal income tax principles apply to determine whether a transaction will be respected as a sale. Accordingly, the Treasury Department and the IRS decline to adopt the commenter's suggestion and finalize the proposed rule without modification.

C. *Related Person Election*

1. Availability of Election—In General

Proposed §1.45X-2(d)(1)(i) would have provided that a taxpayer may make a Related Person Election under section 45X(a)(3)(B) to treat a sale of eligible components by such taxpayer to a related person as if made to an unrelated person. As a condition of, and prior to, a taxpayer making a Related Person Election, the Secretary may require such information or registration as the Secretary deems necessary for purposes of preventing duplication, fraud, or any improper or excessive credit amount determined under section 45X(a)(1). Proposed §1.45X-2(d)(1)(ii) would have provided the rules regarding the Related Person Election for members of a consolidated group (as defined in §1.1502-1(h)).

One commenter requested that taxpayers be allowed to exercise the Related Person Election in situations where it is difficult for the taxpayer to determine whether two entities are related under the section 52(b) regulations. Allowing the exercise of the Related Person Election as the commenter requested would conflict with the language in section 45X(d)(1), which requires the parties be treated as a single employer under the section 52(b) regulations, not just that it be difficult to determine the status. Therefore, these final regulations do not adopt the commenter's request.

2. Anti-Abuse Rule

Proposed §1.45X-2(d)(4) would have provided an anti-abuse rule for the Related Person Election consistent with section 45X(a)(3)(B)(ii) for preventing duplication, fraud, or any improper or excessive amount of the section 45X credit. Proposed §1.45X-2(d)(4)(i) would have provided that a Related Person Election may not be made if the taxpayer fails to provide the information required by proposed §1.45X-2(d)(2) with respect to the relevant eligible components, the taxpayer provides information that shows such components were put to an improper use as defined in proposed §1.45X-2(d)(4)(ii) or were defective as defined in proposed §1.45X-2(d)(4)(iii), or such components were actually put to an improper use or were defective.

Proposed §1.45X-2(d)(4)(ii) would have provided that an eligible component is put to an improper use if it is so used by the related person to which the eligible component is sold. The term improper use would mean a use that is wasteful, such as discarding, disposing of, or destroying the eligible component without putting it to a productive use. The Treasury Department and the IRS requested comments in the preamble to the Proposed Regulations on the definition of the term improper use and whether any clarifications to its scope are necessary.

Proposed §1.45X-2(d)(4)(iii) would have provided that a defective component means a component that does not meet the requirements of section 45X and the section 45X regulations. The Treasury Department and the IRS requested comments in the preamble to the Proposed Regulations on the definition of defective components and whether clarifications to its scope are necessary.

In response to the Treasury Department and the IRS's request for comments, one commenter requested additional guidance regarding when an eligible component can be deemed defective under section 45X. The commenter recommended clarification that an eligible component can be deemed defective and therefore ineligible for a tax credit under section 45X

"up until the point of sale of the eligible component to an unrelated party." However, in circumstances where a taxpayer has made a valid Related Person Election, a sale of eligible components to a related person is treated as if made to an unrelated person, thus making a sale to an unrelated person not relevant for section 45X credit determination purposes. The preamble to the Proposed Regulations stated that the Treasury Department and the IRS are concerned that the Related Person Election may be used by taxpayers to claim a credit for eligible components that are defective, not capable of being used for its intended purpose, do not meet the requirements for the section 45X credit, and therefore are not eligible for the section 45X credit. The Treasury Department and the IRS agree that if an eligible component is not defective at the time of sale, defects arising after the point of sale may occur in the ordinary course of a business and do not generally raise the improper claim concerns regarding defective components described in the Preamble to the Proposed Regulations. Accordingly, the final rules modify proposed §1.45X-2(d)(4)(iii) to clarify that components with respect to which defects arise after the deemed sale are not considered defective components for purposes of the anti-abuse rule.

Another commenter suggested that the definitions of improper use and defective components should provide an exception for a defective component that can be sold or given to a related or unrelated person conducting legitimate recycling operations and allowing defective components to earn a section 45X credit provided they are properly recycled in the United States. The Treasury Department and the IRS decline to adopt this request because section 45X does not authorize allowing a section 45X credit for a defective component that does not meet the definition of an eligible component and is not capable of being used for its intended purpose without further substantial modification.

D. *Sales of integrated components to a related person*

1. In General

Section 45X(d)(4) provides that for purposes of section 45X, a person is treated as having sold an eligible component to an unrelated person if such component is integrated, incorporated, or assembled into another eligible component that is sold to an unrelated person. See Part II.E. of this Summary of Comments and Explanation of Revisions for rules applicable to eligible components that are integrated, incorporated, or assembled into other eligible components and sold to an unrelated person.

Proposed §1.45X-2(e)(1) would have provided that, for purposes of section 45X and the section 45X regulations (and the regulations in this chapter under sections 6417 and 6418 related to the section 45X credit), a taxpayer that produces and sells an eligible component to a related person who then integrates, incorporates, or assembles the taxpayer's eligible component into another complete and distinct eligible component that is subsequently sold to an unrelated person may claim a section 45X credit in the taxable year of the sale to the unrelated person.

Proposed §1.45X-2(e)(2) would have provided examples to illustrate the treatment of sales of multiple incorporated eligible components to related and unrelated persons. One commenter questioned the practical application of the requirements in proposed §1.45X-2(e)(2)(i) (*Example 1*) and expressed concern that although Company X and Y are related, the proposed rule would require a significant amount of coordination of information. This coordination would be necessary for the credit to be claimed in the proper tax year in which the ultimate product (photovoltaic cells produced by Y using photovoltaic wafers produced by X and purchased by Y) was sold to Company Z. Proposed §1.45X-2(e)(2)(i) (*Example 1*) illustrates the rule in section 45X(d)(4) requiring an ultimate actual sale to an unrelated person of an eligible component. Because section 45X(d)(4) expressly conditions the deemed sale on an actual subsequent sale to an unrelated person by the related person, the Treasury Department and the IRS do not have the authority to change this statutorily imposed conditional timing requirement despite any practical difficulties taxpayers may experience in obtaining such information. Taxpayers may, however, make a Related Person Election as illustrated in the example in §1.45X-2(e)(3)(ii) and claim the section 45X credit upon the sale to the related person. This would obviate the need for such taxpayer to know when the related person actually makes the subsequent sale to an unrelated person. For these reasons, the final regulations adopt proposed §1.45X-2(e)(2)(i) (*Example 1*) without modification.

2. Special Rules Applicable to Related Person Election

Proposed §1.45X-2(e)(3) would have provided that if a taxpayer makes a valid Related Person Election under section 45X(a)(3)(B)(i) and proposed §1.45X-2(d)(1), and the taxpayer produces and then sells an eligible component to a related person, who then integrates, incorporates, or assembles the taxpayer's eligible component into another complete and distinct eligible component that is subsequently sold to an unrelated person, the taxpayer's sale of the eligible component to the related person is treated (solely for purposes of the section 45X credit and the section 45X regulations, and the regulations in this chapter under sections 6417 and 6418 related to the section 45X credit) as if made to an unrelated person in the taxable year in which the sale to the related person occurs. One commenter expressed support for this proposed rule, as it applies thoughtfully to vertically integrated electric vehicle manufacturers engaging in sales of multiple integrated eligible components to related and unrelated persons (with a Related Person Election). No other comments were received on this special rule, so it is adopted in these final regulations without revision.

IV. *Eligible components*

A. *In general*

Proposed §1.45X-3(a) would have defined the term "eligible component" as any solar energy component, any wind energy component, any inverter, any qualifying battery component, and any applicable critical mineral, as each is respectively defined in the Proposed Regulations. For solar energy components, wind energy components, inverters, and qualifying battery components, proposed §1.45X-3(b) through (e) would have pro-

vided definitions, rules for determining the credit amount, and documentation requirements. Proposed §1.45X-3(f) would also have provided rules for applying the phase out of the section 45X credit. Proposed §1.45X-4 would have provided such information for applicable critical minerals (other than rules for applying the phase out, which does not apply to applicable critical minerals).

Commenters addressed certain aspects of these proposed rules, as described in this Part IV. of the Summary of Comments and Explanation of Revisions. These final regulations generally adopt the rules as proposed in §1.45X-3, with the modifications described in this Part IV. of the Summary of Comments and Explanation of Revisions.

B. *Solar energy components—in general*

Consistent with section 45X(c)(3), proposed §1.45X-3(b) would have provided that solar energy component means a solar module, photovoltaic cell, photovoltaic wafer, solar grade polysilicon, torque tube, structural fastener, or polymeric backsheet. Several commenters requested that the final regulations add other non-listed solar energy components (or alternatively, to provide a safe harbor) to allow for section 45X credit eligibility. Examples of other non-listed solar energy components commenters raised include the encapsulant used to protect the photovoltaic cells and hold the entire system together; charge transport materials used in photovoltaic cells; photovoltaic wire; solar mirror facets; and solar thermal receivers. A commenter also suggested adopting a functionally interdependent and integral part test analogous to section 48 of the Code to include additional solar energy components.

Section 45X(c)(3) expressly identifies the qualifying solar energy components that are eligible for the section 45X credit. The Treasury Department and the IRS do not have the authority to add to the set of solar energy components that are identified by statute, for example, by applying a functional interdependence or integral part test. For this reason, the Treasury Department and the IRS decline to adopt the commenters' requests in these final regulations.

1. Photovoltaic Cell

Proposed §1.45X-3(b)(1)(ii) would have provided that the credit amount for a photovoltaic cell is equal to the product of 4 cents multiplied by the capacity of such photovoltaic cell. The proposed rule provided that the capacity of each photovoltaic cell is expressed on a direct current watt basis and capacity is the nameplate capacity in direct current watts using Standard Test Conditions (STC), as defined by the International Electrotechnical Commission (IEC). The proposed rule further provided that in the case of a tandem technology produced in serial fashion, such as a monolithic multijunction cell composed of two or more sub-cells, capacity must be measured at the point of sale at the end of the single cell production unit; and, in the case of a four-terminal tandem technology produced by mechanically stacking two distinct cells or interconnected layers, capacity must be measured for each cell at each point of sale.

A few commenters expressed concern that the proposed rule treats two-terminal and four-terminal tandem technologies differently, and that by labeling a monolithic two-terminal configuration as composed of sub-cells, the proposed rule would require this technology to be measured as a single cell rather than two distinct tandem cells. In contrast, proposed §1.45X-3(b)(1)(ii) provides that mechanically stacked four-terminal tandem technology consists of "two distinct cells." In the commenters' view, the proposed rule would allow four-terminal cells to be measured before they are combined, while two-terminal cells would be measured after they are combined, resulting in higher capacity for four-terminal cells and increased credit amounts for four-terminal cells. A commenter also suggested that proposed §1.45X–3(b)(1)(ii) is currently problematic for future tandem technology cell production and, perhaps unintentionally, directs the development of certain tandem technologies.

The Treasury Department and the IRS agree with the commenters' concerns regarding disparate treatment between four-terminal and two-terminal cells and capacity and credit amounts. Accordingly, these final regulations revise proposed §1.45X-3(b)(1)(ii) to add additional text at the end as follows: "Where that cell is sold to a customer who will use it as the bottom cell in a tandem module, its capacity should be measured with the customer's intended top cell placed between the bottom cell and the one-sun light source."

2. Photovoltaic Wafer

Consistent with section 45X(c)(3)(B)(ii), proposed §1.45X-3(b)(2)(i) would have defined a photovoltaic wafer to mean a thin slice, sheet, or layer of semiconductor material of at least 240 square centimeters that comprises the substrate or absorber layer of one or more photovoltaic cells. A photovoltaic wafer must be produced by a single manufacturer by forming an ingot from molten polysilicon (for example, Czochralski method) and then subsequently slicing it into wafers, forming molten or evaporated polysilicon into a sheet or layer, or depositing a thin-film semiconductor photon absorber into a sheet or layer (that is, thin-film deposition).

Some commenters suggested revisions to the definition of a photovoltaic wafer to include non-traditional methods of producing wafers. For example, a commenter requested expanding the definition to include wafers produced by any of the emerging 'kerfless' or 'direct' wafer technologies, as well as the polysilicon used by these technologies. The Treasury Department and the IRS have determined that direct wafer technologies fall within the statutory definition of photovoltaic wafers, provided that they are produced directly from evaporated solar grade polysilicon, but disagree that any further clarification is needed in these final regulations.

A commenter requested that the final regulations clarify that ingots must be produced within the United States for solar wafers to be eligible for the section 45X credit. As required by section 45X(c)(3)(B)(ii)(I)(bb), to qualify for a section 45X credit, a photovoltaic wafer must be produced by a single manufacturer either by forming an ingot and then subsequently slicing it into wafers, or by forming molten or evaporated solar grade polysilicon or deposition into a sheet or layer. Thus, to qualify for a section 45X credit, both the ingot and the wafer must be produced

domestically in accordance with section 45X(d)(2). Proposed §1.45X-1(d)(2) would have clarified that constituent elements, materials, and subcomponents used in the production of eligible components are not subject to the domestic production requirement provided in proposed §1.45X-1(d)(1). Because the ingot production is part of the wafer production, ingots are not constituent elements, materials, or subcomponents. The Treasury Department and the IRS have determined it is unnecessary to specify that the ingot must be domestically produced as section 45X and proposed §1.45X-3(b)(2)(i) require the wafer to be domestically produced, which includes production of the ingot. See also Part II.F.2. of this Summary of Comments and Explanation of Revisions for a discussion of proposed §1.45X-1(g)(4)(ii) (*Example 2*) concerning the production of ingots and wafers.

3. Polymeric Backsheet

Consistent with section 45X(c)(3)(B)(iii), proposed §1.45X-3(b)(3) would have defined polymeric backsheet to mean a sheet on the back of a solar module that acts as an electric insulator and protects the inner components of such module from the surrounding environment.

Certain commenters recommended that the term be considered to include a product that qualifies solely based on the property's functionality and not the property's composition, in order for backsheets made of glass to be eligible components. One commenter stated that its product is used in solar panels and therefore its request is consistent with Congressional intent of expediting the transition to clean energy, the underlying intent of section 45X to create parity among technologies, and incentivizing the creation of a U.S.-based supply chain for current and future solar technologies. The commenter thought that other energy components were defined based on their function, not their "composition" (for example, inverter, photovoltaic cell, and solar module) and believes that glass performs the same function as a backsheet made of plastic. The commenter suggested that clarity on whether a backsheet made of glass is part of the definition of "polymeric backsheet" is important because it will help with decisions on pursuing a section 48C credit and for avoiding penalties under section 6694 of the Code (preparer penalty) or section 6662 of the Code (substantial understatement). Another commenter recommended adding back glass as a solar energy component because it is better for the environment in that a domestic facility that uses recycled glass from retired solar modules is "cleaner" than an overseas facility.

In considering these comments, the Treasury Department and the IRS determined that the best reading of the statute is that the term "polymeric backsheet" is limited to backsheets made of polymeric materials that also meet the functional definition provided in section 45X(c)(3)(B)(iii). This excludes most glass backsheets because they are typically not composed of a polymer, but of soda-lime glass. The final regulations add the word "polymeric" into the definition as a clarification. In reaching this determination, the Treasury Department and the IRS considered that when drafting the statute, Congress affirmatively included "polymeric" in the term and this inclusion should be given effect. Thus, the final regulations clarify that the definition is limited to a sheet on the back of solar modules composed, at least in part, of a polymer, that acts as an electric insulator and protects the inner components of such module from the surrounding environment.

4. Solar Grade Polysilicon

Consistent with section 45X(c)(3)(B)(iv), proposed §1.45X-3(b)(4) would have defined solar grade polysilicon to mean silicon that is suitable for use in photovoltaic manufacturing and purified to a minimum purity of 99.999999 percent silicon by mass. A commenter requested that the final rules state that the production of the silicon gas that is used for direct wafer production may receive the section 45X credit for polysilicon for the mass of silicon in the gas. The Treasury Department and the IRS have determined, in close consultation with the Department of Energy, that gas used for direct wafer production includes molecules of silicon contained within another substance. Accordingly, such gas is not a complete and distinct eligible component within the meaning of proposed §1.45X-1(c)(1)(i). For this reason, the Treasury Department and the IRS decline to adopt this request in these final regulations.

A few commenters requested guidance on how the purity level for solar grade polysilicon should be determined. One commenter requested that the final rules clarify that only impurities that are "material to the industry" should be counted in determining whether the minimum purity level is met. Because these final regulations add the purity standard in SEMI Specification PV17-1012 Category 1 to proposed §1.45X-3(b)(4), which distinguishes between material and immaterial impurities, the Treasury Department and the IRS decline to adopt the commenter's suggestion of clarifying that the statutory purity level refers only to impurity levels that are "material to the industry."

A commenter recommended adopting the standards for polysilicon feedstock in SEMI Specification PV17-1012. The Treasury Department and the IRS, in close consultation with the Department of Energy, have determined that SEMI Specification PV17-1012 Category 1 meets the purity standard of 99.999999 percent, while Categories 2 through 5 do not. The Treasury Department and the IRS thus agree with this request but only for Category 1, and these final regulations accordingly revise proposed §1.45X-3(b)(4) to add the purity standard in SEMI Specification PV17-1012 Category 1.

5. Solar Module

Proposed §1.45X-3(b)(5)(ii) would have stated that the credit amount for a solar module is equal to the product of 7 cents multiplied by the capacity of such module. The proposed rule also provided that the capacity of each solar module is expressed on a direct current watt basis, and that capacity is the nameplate capacity in direct current watts using STC, as defined by the IEC. A commenter requested producers be required to use "flash" values to determine the value of the tax credit for modules. The preamble to the Proposed Regulations explained that nameplate capacity is an appropriate, accurate, and consistent standard for the measurement of solar module capacity that can be used to measure the capacity of other eligible components. Using

an industry standard such as nameplate capacity that is widely applicable to various eligible components provides greater taxpayer certainty, reduces taxpayer compliance burdens, and aids IRS administration. For these reasons, the Treasury Department and the IRS have determined that the best application of the statute is to require the use of nameplate capacity to measure the capacity of a solar module. The Treasury Department and the IRS therefore decline to adopt this suggestion to permit the use of "flash" value capacity measurements in these final regulations.

6. Solar Tracker

Consistent with section 45X(c)(3)(B)(vi), proposed §1.45X-3(b)(6) would have provided that a solar tracker means a mechanical system that moves solar modules according to the position of the sun and to increase energy output. Section 45X(c)(3)(B)(vii) provides that torque tubes (as defined in proposed §1.45X-3(b)(7)) or structural fasteners (as defined in proposed §1.45X-3(b)(8)) are solar tracker components that are eligible components for purposes of the section 45X credit.

Commenters requested that the definition of a solar tracker (not an eligible component) in section 45X(c)(3)(B)(vi) be modified to allow solar thermal collectors, heliostats, and fixed tilt systems (additional items) to be solar tracker components as defined in section 45X(c)(3)(B)(vii). A solar tracker is defined in 45X(c)(3)(B)(vi) as a "mechanical system that moves solar modules according to the position of the sun to increase energy output." To be a solar tracker, a device must be a mechanical system that *moves* a solar module. The Treasury Department and the IRS do not have authority to expand the definition of solar tracker to include additional items such as the ones suggested that increase energy output without moving solar modules. Moreover, modification of the definition of a solar tracker in the manner the commenter requested would not result in such additional items qualifying as eligible components because a solar tracker is not a solar energy component that is an eligible component under section 45X(c)(1)(A)(i). Section 45X(c)(3)(B)(vii) provides that torque tubes and structural fasteners are the only two solar tracker components that may qualify as eligible components. The Treasury Department and the IRS do not have authority to expand the categories of eligible solar tracker components. For these reasons, the Treasury Department and the IRS decline to adopt this request in the final regulations.

7. Torque Tube

Consistent with section 45X(c)(3)(B)(vii)(I), proposed §1.45X-3(b)(7)(i) would have provided that torque tube means a structural steel support element (including longitudinal purlins) that: (i) is part of a solar tracker; (ii) is of any cross-sectional shape; (iii) may be assembled from individually manufactured segments; (iv) spans longitudinally between foundation posts; (v) supports solar panels and is connected to a mounting attachment for solar panels (with or without separate module interface rails); and (vi) is rotated by means of a drive system.

Commenters suggested various statutory revisions to the definition of torque tube in section 45X(c)(3)(B)(vii)(I). A commenter recommended replacing the definition with a more generalized term such as "Tracker Structural Frame" to allow for other common solar collector morphologies. Another commenter requested removing or revising section 45X(c)(3)(B)(vii)(I)(dd) to include single foundation mounted structures or ground-mounted carousel structures. One commenter proposed clarifying that aluminum bearings, steel damper arms, steel saddle brackets, and steel bottom brackets are included in the definition of torque tubes or structural fasteners. Alternatively, the commenter suggested providing either: (i) a non-exclusive list of items that are included in the definition of torque tube or structural fasteners, or (ii) a test similar to the functionally interdependent or integral part tests under proposed §1.48-9(f)(2)(ii) and (f)(3) to determine when a component is included in the definition of a torque tube or structural fastener.

Because section 45X(c)(3)(B)(vii)(I) specifically defines torque tube for purposes of section 45X, the Treasury Department and the IRS do not have the authority to expand the definition of torque tubes and solar tracker components in the final regulations to include additional solar energy components. As previously discussed, the Treasury Department and the IRS also lack authority to incorporate a functional interdependence or integral part tests that would allow other components not specified in the statute to qualify for the section 45X credit. For these reasons, the Treasury Department and the IRS decline to adopt these comments in the final regulations.

8. Structural Fastener

Consistent with section 45X(c)(3)(B)(vii)(II), proposed §1.45X-3(b)(8)(i) would have defined a structural fastener to mean a component that is used: (i) to connect the mechanical and drive system components of a solar tracker to the foundation of such solar tracker; (ii) to connect torque tubes to drive assemblies; or (iii) to connect segments of torque tubes to one another.

Several commenters requested revisions to the definition of structural fastener in proposed §1.45X-3(b)(8)(i). For example, commenters requested that the definition of structural fastener be extended "beyond steel and iron torque tubes to specifically allow for innovations made from other materials," such as durable plastic; that solar frames made from greenhouse gas reducing steel and roll-form fabricated frames (as opposed to the current industry standard, imported extruded aluminum frames) qualify as structural fasteners, solar modules, or torque tubes; and that the definition of structural fasteners be expanded to include those that secure the photovoltaic module to the torque tube or module interface rails. The Treasury Department and the IRS do not have the authority to expand the definition of structural fasteners and solar tracker components in the final regulations to include additional solar energy components. However, the Treasury Department and the IRS note that a component that is used for any of the functions described in section 45X(c)(3)(B)(vii)(II) would be considered a structural fastener for purposes of section 45X. The Treasury Department and the IRS think that proposed §1.45X-3(b)(8)(i) and the statutory definition of a structural fastener is sufficiently clear to address the requested clarifications.

Proposed §1.45X-3(b)(8)(i) is therefore adopted in these final regulations without revision.

Proposed §1.45X-3(b)(8)(iii) would have required that, for substantiation purposes, a taxpayer must document that a structural fastener is used in a manner described in proposed § 1.45X-3(b)(8)(i)(A), (B), or (C), with a bill of sale or other similar documentation that explicitly describes such use. One commenter specifically supported the substantiation requirement for structural fasteners in proposed §1.45X-3(b)(8)(iii). Another commenter requested the final rules require taxpayers to substantiate that the structural fasteners for which they are claiming the section 45X credit include only the manufactured component (bolt or rivet) itself. The Treasury Department and the IRS have determined there is no need for further clarification of the substantiation requirement for structural fasteners in addition to the specific requirements relating to use in proposed §1.45X-3(b)(8)(iii) and the general substantiation requirements in section 6001 of the Code. For this reason, the Treasury Department and the IRS decline to adopt this comment in the final regulations.

C. *Wind energy components*

1. In General

Consistent with section 45X(c)(4), proposed §1.45X-3(c) would have provided that a wind energy component means a blade, nacelle, tower, offshore wind foundation, or related offshore wind vessel. Commenters generally requested expanding proposed §1.45X-3(c) to include other non-listed wind energy components such as structural fasteners. Section 45X(c)(4) specifically provides a list of qualifying wind energy eligible components. The Treasury Department and the IRS do not have the authority to expand the statutorily enumerated list of wind energy components eligible for a section 45X credit. For this reason, the Treasury Department and the IRS decline to adopt the commenters request in these final regulations.

2. Nacelle

Consistent with section 45X(c)(4)(B)(iii), proposed §1.45-3(c)(3)(i) would have defined a nacelle to mean the assembly of the drivetrain and other tower-top components of a wind turbine (with the exception of the blades and the hub) within their cover housing.

A commenter stated that guidance should distinguish between manufacturing of eligible wind energy components (for example, in a manufacturing facility) from the installation of wind energy components at the relevant project site, as the latter does not constitute manufacturing or production of eligible components. The Treasury Department and the IRS have determined that the definition of "produced by the taxpayer" provided in proposed §1.45X-1(c)(1) is sufficient to clarify that production of an eligible component requires substantially transforming constituent elements, materials, or subcomponents into a complete and distinct eligible component that is functionally different from that which would result from disqualifying minor assembly or superficial modification of the elements, materials or subcomponents.

Another commenter requested that the final regulations recognize that, where a new drivetrain and associated equipment (the pitch bearing, pitch system, main shaft, main bearing, gearbox, flex coupling, and slip ring*)* are produced for use in repowering of existing wind turbines and installed into an existing nacelle cover housing with certain other used equipment (including yaw bearing and baseplate*),* the nacelle is eligible for the section 45X credit. Under this commenter's approach, the drivetrain of the nacelle must be new to be eligible for the section 45X credit. Another commenter also suggests inclusion of a "reasonable computation" of the section 45X credit for repowered eligible components.

The Treasury Department and the IRS note that repowering is a form of onsite re-manufacturing that is typically accomplished through a hybrid of primary and secondary production that utilizes a mix of existing and new components. To produce a nacelle within the definition of proposed §1.45X-3(c)(3)(i), the taxpayer would need to meet the requirements of the definition of "produced by the taxpayer" provided in proposed §1.45X-1(c)(1), including by substantially transforming the combination of existing and new subcomponents into a new nacelle that is distinct from the original nacelle. In some circumstances, nacelle repowering may constitute production of an eligible component. For example, a taxpayer that manufactures and installs a new drivetrain and associated subcomponents within housing atop a wind tower will be considered to have substantially transformed the combination of new and existing subcomponents, so that taxpayer will have produced an eligible nacelle. In contrast, a taxpayer that merely replaces the controller in a nacelle with a new one will not have substantially transformed the combination of new and existing subcomponents, so that taxpayer will not have produced an eligible nacelle. Routine maintenance or part replacement would fall under the definition of disqualifying minor assembly or "superficial modification."

3. Related Offshore Wind Vessel

Consistent with section 45X(c)(4)(B)(iv), proposed §1.45X-3(c)(4)(i) would have defined related offshore wind vessel to mean any vessel that is purpose-built or retrofitted for purposes of the development, transport, installation, operation, or maintenance of offshore wind energy components. Proposed §1.45X-3(c)(4)(i) would have clarified that a vessel is purpose-built for development, transport, installation, operation, or maintenance of offshore wind energy components if it is built to be capable of performing such functions and it is of a type that is commonly used in the offshore wind industry. Proposed §1.45X-3(c)(4)(i) would have further clarified that a vessel is retrofitted for development, transport, installation, operation, or maintenance of offshore wind energy components if such vessel was incapable of performing such functions prior to being retrofitted, the retrofit causes the vessel to be capable of performing such functions, and the retrofitted vessel is of a type that is commonly used in the offshore wind industry.

Under proposed §1.45X-3(c)(4)(ii), consistent with section 45X(b)(1)(F)(i), the credit amount for a related offshore wind vessel would have been equal to 10 percent of the sales price of the vessel. Under the Proposed Regulations the sales price of the vessel does not include the

price of maintenance, services, or other similar items that may be sold with the vessel. For a related offshore wind vessel with respect to which a Related Person Election under section 45X(a)(3)(B)(i) has been made, the election would not cause the sale price of such vessel to be treated as having been determined with respect to a transaction between uncontrolled taxpayers for purposes of section 482 of the Code and the regulations thereunder.

One commenter requested clarification on the valuation of retrofitted offshore wind vessels and requested guidance on whether the section 45X credit applies to the cost of the retrofit itself, the value-add of the retrofit, the cost of the final sale of a retrofitted vessel, or some other amount. The Treasury Department and the IRS confirm that the credit amount specified in section 45X(b)(1)(F)(i)—ten percent of the sales price of such vessel—specifically applies to any related offshore wind vessel which is purpose-built or retrofitted as provided in section 45X(c)(4)(B)(iv).

A commenter stated that the definition of an offshore wind vessel is too narrow and that more standard vessel types (for example, tugboats and barges) that are capable of doing offshore wind work should also be eligible for the section 45X credit if they are being constructed or retrofitted for the purpose of offshore wind work. The Treasury Department and the IRS note that section 45X(c)(4)(B)(iv) and proposed §1.45X-3(c)(4)(i) would have defined a related offshore wind vessel to mean "any vessel" that is purpose-built or retrofitted for purposes of the development, transport, installation, operation, or maintenance of offshore wind energy components. Proposed §1.45X-3(c)(4)(i) would have clarified that a vessel is purpose-built for development, transport, installation, operation, or maintenance of offshore wind energy components if it is built to be capable of performing such functions and it is of a type that is commonly used in the offshore wind industry. Proposed §1.45X-3(c)(4)(i) would have further clarified that a vessel is retrofitted for development, transport, installation, operation, or maintenance of offshore wind energy components if such vessel was incapable of performing such functions prior to being retrofitted, the retrofit causes the vessel to be capable of performing such functions, and the retrofitted vessel is of a type that is commonly used in the offshore wind industry. Thus, if a vessel meets the definition of a related offshore wind vessel in proposed §1.45X-3(c)(4)(i), there are no limitations as to the type of vessel that may be an eligible component.

The commenter's requested clarification would require an application of the standard in proposed §1.45X-3(c)(4)(i) to specific cases for which a categorical determination of eligibility for additional vessel types would not be appropriate in these final regulations because such a determination would depend on the specific facts of each case.

Although no comments were received on proposed §1.45X-3(c)(4)(i), the Treasury Department and the IRS revise proposed §1.45X-3(c)(4)(i) in these final regulations to clarify that Federal income tax principles apply in determining the accuracy of the sales price used to calculate the section 45X credit. This revision provides greater certainty as to what principles apply for purposes of the section 45X credit and is in addition to the specific exclusions from a vessel's sales price in proposed §1.45X-3(c)(4)(i), which included maintenance, services, or other similar items that may be sold with the vessel.

4. Total Rated Capacity of the Completed Wind Turbine

Proposed §1.45X-3(c)(6) would have provided that, for purposes of proposed §1.45X-3(c), the total rated capacity of the completed wind turbine means, for the completed wind turbine for which a blade, nacelle, offshore wind foundation, or tower was manufactured and sold, the nameplate capacity at the time of sale as certified to the relevant national or international standards, such as IEC 61400, or American National Standards Institute (ANSI)/American Clean Power Association (ACP) 101–1–2021, the Small Wind Turbine Standard. Under proposed §1.45X-3(c)(6), certification of the turbine to such standards must be documented by a certificate issued by an accredited certification body and the total rated capacity of a wind turbine must be expressed in watts.

One commenter expressed support for the proposal requiring that qualifying wind turbine components must be made and sold for use on certified wind turbines. Another commenter recommended including both American Wind Energy Association (AWEA) 9.1-2009 and ANSI/ACP 101-1-2021 as acceptable wind turbine certification standards. The commenter explained that ANSI/ACP 101-1-2021 is a revision of the AWEA standard (the original small wind certification standard, and all currently certified small wind systems are certified to this standard) that streamlines the certification process, but there is no requirement that turbines with the original certification must recertify to the new ANSI/ACP standard. Thus, the commenter states that including both standards in the final rules will allow currently certified turbines made in the United States to earn section 45X credits as well as new turbines currently in the certification process following the newer standard. The Treasury Department and the IRS agree with this request and these final regulations revise proposed §1.45X-3(c)(6) to add both AWEA 9.1-2009 and ANSI/ACP 101-1-2021 as acceptable wind turbine certification standards.

A commenter sought clarification as to whether a wind tower producer may rely on a certification of the total rated capacity of the turbine obtained from the original equipment manufacturer (OEM) that produces the completed wind turbine in which the wind tower is incorporated, provided the certificate was issued by an accredited certification body. The commenter noted that requiring wind tower producers to independently verify the capacity of the completed turbine would cause "undue expense and delay." To provide assurance to the commenter, a wind tower producer may rely on an OEM's certification of the total rated capacity of the completed wind turbine in which the tower was incorporated, but the Treasury Department and the IRS have determined that the rules as set out by proposed §1.45X-3(c)(6) and (7) do not require further clarification on this point.

D. *Inverters*

1. In General

Consistent with section 45X(c)(2), proposed §1.45X-3(d) would define an

inverter as an end product that is suitable to convert direct current (DC) electricity from one or more solar modules or certified distributed wind energy systems into alternating current (AC) electricity. Proposed §1.45X-3(d) would have further provided that an end product is suitable to convert DC electricity from one or more solar modules or certified distributed wind energy systems into AC electricity if, in the form sold by the manufacturer, it is able to connect with such modules or systems and convert DC electricity to AC electricity from such connected source. For purposes of section 45X, the term inverter includes a central inverter, commercial inverter, distributed wind inverter, microinverter, or residential inverter. Proposed §1.45X-3(d) would have clarified the definition of each of these types of inverters, including the required rated outputs.

The preamble to the Proposed Regulations stated that section 45X(c)(2) requires certain types of inverters be "suitable to" or "suitable for" a statutorily required use or application to be considered an eligible component. Proposed §1.45X-3(d) would also have provided the calculation of the credit amount for each type of inverter. In general, the credit amount for each type of inverter would be equal to the product of the inverter's total rated capacity and the amount prescribed in section 45X(b)(2)(B) for such inverter.

One commenter requested the final rules provide a credit for utility-scale power converters and that a "utility-scale power converter" be defined in a manner consistent with section 2.1.9 of Underwriters Laboratories Standard 1741 (2002). Specifically, the commenter requested modifying the final rules to provide a credit for products that only convert direct current to direct current or alternating current to direct current. Because section 45X(c)(2)(A) specifically defines the term inverter to mean "an end product which is suitable to convert direct current electricity . . . into alternating current electricity," the Treasury Department and the IRS do not have the authority to expand the definition of inverter in the final regulations to include these additional products. For this reason, the Treasury Department and the IRS decline to adopt this comment in the final regulations.

Another commenter requested that, for each type of inverter provided for under section 45X(c)(2), the rated output of alternating current power be defined as "the maximum continuous grid-tied power rating the inverter is capable of handling." The commenter asserts that the suggested change will "ensure consistent interpretation across technologies despite consumer-driven decisions impacting output." Section 45X(c)(2) uses the term "rated output" to define, in part, a commercial inverter, distributed wind inverter, microinverter, residential inverter, or utility inverter. The Treasury Department and the IRS decline to adopt this comment in the final regulations because the term rated output is in the statutory definition for these inverters.

Several commenters requested that the final rules provide a section 45X credit for inverters that convert direct current from sources other than solar modules or certified distributed wind energy systems as long as these inverters meet the technical requirements of an inverter defined under section 45X(c)(2). Section 45X(c)(2)(A) specifically defines the term inverter to mean "an end product which is suitable to convert direct current electricity from one or more solar modules or certified distributed wind energy systems into alternating current electricity." Other types of inverters such as bidirectional electric vehicle inverters or utility and commercial inverters that are in practice used with battery modules can meet the existing suitability standard within the definition without additional clarification required. For this reason, the Treasury Department and the IRS decline to adopt this comment in the final regulations.

2. Central Inverter

Consistent with section 45X(c)(2)(B), proposed §1.45X-3(d)(2)(i) would have defined a central inverter as an inverter that is suitable for large utility-scale systems and has a capacity that is greater than 1,000 kilowatts, expressed on an alternating current watt basis. Proposed §1.45X-3(d)(2)(i) would have further clarified that an inverter is suitable for large utility-scale systems if, in the form sold by the manufacturer, it is capable of serving as a component in a large utility-scale system and meets the core engineering specifications for such application. Proposed §1.45X-3(d)(2)(ii) would have provided a credit equal to the product of 0.25 cents multiplied by the total rated capacity of the central inverter where the total rated capacity is expressed on an alternating current watt basis.

One commenter requested the credit amount available for a central inverter be changed to match the credit available for utility inverters because utility inverters are eligible for a credit that is six times higher than central inverters. Because section 45X(b)(2)(B) provides the credit amounts available for central inverters and utility inverters, the Treasury Department and the IRS do not have the authority to make the requested change. For this reason, the Treasury Department and the IRS decline to adopt this comment in the final regulations.

3. Commercial Inverter

a. Definition

Consistent with section 45X(c)(2)(C), proposed §1.45X-3(d)(3)(i) would have provided that a commercial inverter means an inverter that is suitable for commercial or utility-scale applications, has a rated output of 208, 480, 600 or 800 volt three-phase power, and has a capacity expressed on an alternating current watt basis that is not less than 20 kilowatts and not greater than 125 kilowatts.

One commenter requested the definition of a commercial inverter be changed to provide a credit for inverters with a rated output greater than 800 volt three-phase power. Section 45X(c)(2)(C)(ii) defines a commercial inverter, in part, as having "a rated output of 208, 480, 600, or 800 volt three-phase power." The Treasury Department and the IRS do not have the authority to expand the definition of a commercial inverter in the final regulations to those with a rated output greater than 800 volt three-phase power. For this reason, the Treasury Department and the IRS decline to adopt this comment in the final regulations.

A few commenters requested that the final rules modify the definition of a commercial inverter to include a DC optimized commercial inverter system, and

that, when DC optimizers are paired with a commercial inverter, the credit amount available for commercial inverters should be determined in a manner similar to the credit computation for direct current optimized inverter systems (DC optimized inverter systems, as the term would have been defined in Proposed §1.45X-3(d)(5)(iii)(B) and discussed in Part IV.D.3.a. of this Summary of Comments and Explanation of Revisions). Generally, these commenters requested that, with the modified definition of commercial inverter, the available credit be computed as a product of $0.02 multiplied by the lesser of the sum of the alternating current capacity of each DC optimizer when paired with the inverter in the DC optimized inverter system or the alternating current capacity of the inverter in the DC optimized inverter system. No language in the statutory text or proposed rules prohibits the use of direct current optimizers with commercial inverters. Thus, it is unnecessary to modify the final rules to state that DC optimizers may be used with a commercial inverter.

Section 45X(b)(1)(I) provides that the amount of the section 45X credit for an inverter is equal to the applicable amount with respect to each type of inverter multiplied by the capacity of such inverter (expressed on a per alternating current watt basis). The Treasury Department and the IRS do not have the authority to change the method for computing the credit for commercial inverters. In contrast, language that appears only in the definition of "microinverter" in section 45X(c)(2)(E) ('suitable to connect to one solar module') does require clarification about how to apply the definition to DC optimized systems and multi-module microinverters. Because this language does not appear in the definition of "commercial inverter" in section 45X(c)(2)(C), there is no analogous need to clarify the application of the definition or credit calculation. For this reason, the Treasury Department and the IRS decline to adopt these requests pertaining to commercial inverters in the final regulations.

b. Credit amount

Proposed §1.45X-3(d)(3)(iii) would have provided a credit equal to the product of 2 cents multiplied by the total rated capacity of the commercial inverter where the total rated capacity is expressed on an alternating current watt basis.

Commenters requested that DC optimizers be allowed to be paired with commercial or utility scale system configurations, like microinverters. This comment is not adopted for the reasons provided in Part IV.D.3.a. of this Summary of Comments and Explanation of Revisions.

4. Microinverters

a. Definition

Consistent with section 45X(c)(2)(E), proposed §1.45X-3(d)(5)(i) would have defined a microinverter as an inverter that is suitable to connect with one solar module; has a rated output of 120 or 240 volt single-phase power, or 208 or 480 volt three-phase power; and has a capacity, expressed on an AC watt basis, that is not greater than 650 watts. One commenter requested the final rules change the maximum capacity limit for the microinverter from 650 watts to 700 watts to accommodate future technological advancements. Because section 45X(c)(2)(E)(iii) provides the maximum capacity of a microinverter, the Treasury Department and the IRS do not have the authority to make the requested change. For this reason, the Treasury Department and the IRS decline to adopt this comment in the final regulations.

b. Suitable to connect to one solar module—in general

Proposed §1.45X-3(d)(5)(iii)(A) would have clarified that an inverter is suitable to connect to one solar module if, in the form sold by the manufacturer, it is capable of connecting to one or more solar modules and regulating the DC electricity from each module independently before that electricity is converted into alternating current electricity.

Proposed §1.45X-3(d)(5)(iii)(B) would have clarified that a DC optimized inverter system may qualify as a microinverter. Proposed §1.45X-3(d)(5)(iii)(B) would have defined a DC optimized inverter system to mean an inverter that is comprised of an inverter connected to multiple DC optimizers that are each designed to connect to one solar module. Proposed §1.45X-3(d)(5)(iii)(B) would have provided that a DC optimized inverter system is suitable to connect with one solar module if, in the form sold by the manufacturer, it is capable of connecting to one or more solar modules and regulating the DC electricity from each module independently before that electricity is converted into alternating current electricity. Proposed §1.45X-3(d)(5)(iv)(B) would have provided that a DC optimized inverter system qualifies as a microinverter if each DC optimizer paired with the inverter in a DC optimized inverter system meets the requirements of section 45X(c)(2)(E) and a taxpayer must produce and sell the inverter and the DC optimizers in the DC optimized inverter system together as a combined end product.

Several commenters agreed with the proposed rule permitting DC optimizers paired with an inverter to qualify as microinverters and receive the corresponding credit amount. One commenter suggested revising the definition of a DC optimized inverter systems to more clearly define the qualifying system components of a DC optimized inverter system. This commenter proposed that qualifying system components include items that control the DC output of one or more solar modules and are integral to the function of the inverter and modules. The Treasury Department and the IRS, in consultation with the Department of Energy, conclude that the additional confirmation the commenter is requesting is not necessary as it would not provide additional clarity. For this reason, the Treasury Department and the IRS decline to adopt this suggestion in the final regulations.

Several commenters requested that the final rules remove the requirement that a taxpayer produce and sell both the inverter and the DC optimizers in the DC optimized inverter system as a combined end product. One commenter expressed the view that the requirement distorts the market, provides an unfair advantage to companies that already manufacture both items, and requires companies to seek out partnerships solely for the purpose of obtaining the section 45X credit. Other commenters that manufacture both products state that the proposed require-

ment is inconsistent with standard industry practices where a manufacturer sells the items separately. In contrast, one commenter supported the "combined end product" requirement and suggested it also be applied to multi-module inverters to prevent multiple entities from claiming section 45X credits for the same system. Section 45X(c)(2)(A) defines an inverter as an end product that is suitable to convert DC electricity from one or more solar modules or certified distributed wind energy systems into AC electricity. For each type of inverter listed under section 45X(c)(2), section 45X(b)(1)(I) provides the applicable credit is determined as an amount equal to the product of each inverter's applicable amount multiplied by the capacity of such inverter. The section 45X credit is separately computed for each inverter. The Treasury Department and the IRS do not have the authority to allow a credit solely for a DC optimizer, because it does not convert DC electricity into AC electricity as the definition of inverter in section 45X(c)(2) requires. The Treasury Department and the IRS also do not have the authority to change the number of inverter units used to compute the available credit amount. For these reasons, the Treasury Department and the IRS decline to adopt these comments in these final regulations. However, while proposed §1.45X-3(d)(5)(iv)(B) requires that the inverter and DC optimizer in the DC optimized inverter system must be produced and sold as a combined end product, the Treasury Department and the IRS clarify that the inverter and the DC optimizer do not need to be physically packaged together at sale, and the inverter and DC optimizer do not need to be fully interconnected and assembled at the time of sale.

Proposed §1.45X-3(d)(5) would have clarified that a multi-module inverter may also qualify as a microinverter. Proposed §1.45X-3(d)(5)(iii)(C) would have defined a multi-module inverter to mean an inverter that is comprised of an inverter with independent connections and DC optimizing components for two or more modules. Proposed §1.45X-3(d)(5)(iii)(C) would have further provided that a multi-module microinverter is suitable to connect with one solar module if it is capable of connecting to one or more solar modules and regulating the DC electricity from each module independently before that electricity is converted into alternating current electricity. Proposed §1.45X-3(d)(5)(iv)(C) would have provided that multimodule inverter qualifies as a microinverter if it meets the requirements of section 45X(c)(2)(E).

One commenter suggested revising the definition of a multi-module inverter to more clearly define the qualifying system components of a multi-module inverter. The commenter suggested that qualifying system components should be those items that control the DC output of one or more solar modules and are integral to the function of the inverter and modules. The same commenter also suggested revising the definition of a multi-module inverter to clarify that for a multi-module inverter to qualify as a microinverter, a taxpayer must produce and sell the inverter and the DC optimizers together as a combined end product. A different commenter agreed with this suggestion.

A few commenters suggested revising the definition of a multi-module inverter to provide that a multi-module inverter includes a DC optimized inverter system such that each DC optimizer may connect with more than one solar module and the credit amount in such a system is computed similarly to a DC optimized inverter system, except that the DC optimizers are not required to be sold with the inverter as a "combined end product." Other commenters disagreed with this suggestion and support the proposed rule that would not have allowed solar modules to share a connection to a multi-module inverter.

The reasons provided for retaining the rule for DC optimized inverter systems also apply to adopting the requirement for multi-module inverters. The Treasury Department and the IRS think that requiring taxpayers to produce and sell the inverter and the DC optimizers together as a combined end product will create parity with DC optimized inverter systems and avoid potential abuse. For these reasons, the Treasury Department and the IRS adopt these comments in the final regulations.

c. Credit amount

Proposed §1.45X-3(d)(5)(iv)(A) would have provided that, generally, the credit amount for a microinverter is equal to the product of 11 cents multiplied by the total rated capacity of the microinverter where the total rated capacity is expressed on an alternating current watt basis.

Proposed §1.45X-3(d)(5)(iv)(B) would have clarified how to determine the credit amount for a DC optimized inverter system that qualifies as a microinverter. Proposed §1.45X-3(d)(5)(iv)(B) would have provided that the credit amount for a DC optimized inverter system that qualifies as a microinverter is equal to the product of 11 cents multiplied by the lesser of the sum of the alternating current capacity of each DC optimizer when paired with the inverter in the DC optimized inverter system or the alternating current capacity of the inverter in the DC optimized inverter system where capacity is measured in watts of alternating current converted from DC electricity by the inverter in a DC optimized inverter system.

One commenter requested that the alternating current capacity of each DC optimizer when paired with the inverter in the DC optimized inverter system be calculated as the product of the optimizer's rated input power capacity, the optimizer's DC-to-DC conversion efficiency percentage, and the inverter's DC-to-AC conversion efficiency percentage. Section 45X(b)(1)(I) provides the applicable credit is determined as an amount equal to the product of each inverter's applicable amount multiplied by the capacity of such inverter (expressed on a per alternating current watt basis). The requirement that capacity is "expressed on an alternating current watt basis" already factors in any DC-to-DC conversion efficiency upstream of the DC-to-AC conversion, and the inverter's DC-to-AC conversion efficiency percentage is accounted for by the use of "capacity of such inverter" (expressed on a per alternating current watt basis). Therefore, these requirements are duplicative of rules contained in the statutory text. For this reason, the Treasury Department and the IRS decline to adopt this suggestion in the final regulations.

5. Utility Inverter

Consistent with section 45X(c)(2)(G), proposed §1.45X–3(d)(7)(i) would have

defined a utility inverter as an inverter that is suitable for commercial or utility-scale systems, has a rated output of not less than 600 volt three-phase power, and has a capacity expressed on an alternating current watt basis that is greater than 125 kilowatts and not greater than 1000 kilowatts.

One commenter requested reducing the required rated output from "not less than 600 volt three-phase power" to "not less than 480 volt three-phase power." Section 45X(c)(2)(G)(ii) defines a utility inverter, in part, as having "a rated output of not less than 600 volt three-phase power." The Treasury Department and the IRS decline to adopt the commenter's request because defining a utility inverter to include those with a rated output of not less than 480 volt three-phase power would be inconsistent with the statute.

E. *Qualifying battery components*

Proposed §1.45X-3(e)(1) would define a qualifying battery component as an electrode active material, a battery cell, or a battery module.

1. Electrode Active Materials

a. In general

Proposed §1.45X-3(e)(2)(i)(A) would have defined electrode active materials to include cathode electrode materials, anode electrode materials, and electrochemically active materials that contribute to the electrochemical processes necessary for energy storage. In general, electrode active materials are materials that are capable of being used within a battery for energy storage. Proposed §1.45X-3(e)(2)(i)(A) would also have provided that the following materials in a battery or vehicle would not qualify for the section 45X credit as an electrode active material: battery management systems, terminal assemblies, cell containments, gas release valves, module containments, module connectors, compression plates, straps, pack terminals, bus bars, thermal management systems, and pack jackets. Proposed §1.45X-3(e)(2)(v) would have clarified that a taxpayer may claim only one section 45X credit with respect to a material that qualifies as both an electrode active material and an applicable critical mineral.

Some commenters recommended altering the definition of electrode active materials as defined in section 45X(c)(5)(B)(i) and in proposed §1.45X-3(e)(2)(i)(A). The Treasury Department and the IRS do not have the authority to alter the definition of electrode active materials as provided by the statute. For this reason, the Treasury Department and the IRS decline to adopt these recommendations in the final regulations.

One commenter raised a concern that certain definitions in the Proposed Regulations applicable to electrode active materials would inadvertently exclude separators from being treated as an eligible component because those definitions do not include language specific to the separator production process. As proposed §1.45X-3(e)(2)(i)(D) specifically included separators in the definition of electrochemically active materials, such changes to definitions are unnecessary, and the Treasury Department and the IRS decline to adopt the commenter's recommendation.

b. Cathode Electrode Materials and Anode Electrode Materials

Proposed §1.45X-3(e)(2)(i)(B) would have defined "cathode electrode materials" to mean the materials that comprise the cathode of a commercial battery technology, such as binders, and current collectors (that is, cathode foils). Proposed §1.45X-3(e)(2)(i)(C) would have defined "anode electrode materials" to mean the materials that comprise the anode of a commercial battery technology, including anode foils.

A commenter recommended that the definition of cathode electrode materials in proposed §1.45-3(e)(2)(i)(B) and of anode electrode materials in proposed §1.45-3(e)(2)(i)(C) be clarified to specify that the materials be "battery-grade" so the precursor materials are eligible for the section 45X credit. Because these proposed definitions would require that the materials comprise the cathode or anode of a commercial battery technology, the Treasury Department and the IRS conclude that specifying that such materials be "battery-grade" would be redundant. For this reason, the Treasury Department and the IRS decline to adopt these recommendations in the final regulations.

Another commenter recommended that the definition of cathode electrode materials be clarified to address its concern that the qualifier "commercial battery technology" excludes hydrogen fuel cells contrary to the definition of the term in the statute, which contains no such qualifier. The Treasury Department and the IRS do not have the authority to alter the definition of electrode active materials as battery components as provided by the statute. For this reason, the Treasury Department and the IRS decline to adopt this recommendation in the final regulations. The Treasury Department and the IRS note, however, that although electrode active materials in general must be capable of being used within a battery for energy storage, such materials would still be eligible for the section 45X credit if they are also capable of being used in other applications, such as hydrogen fuel cells.

c. Electrochemically active materials

Proposed §1.45X-3(e)(2)(i)(D) would define "electrochemically active materials that contribute to the electrochemical processes necessary for energy storage" to mean the battery-grade materials that enable the electrochemical storage within a commercial battery technology. In addition to the list of electrochemically active materials provided in section 45X(c)(5)(B)(i) (that is, solvents, additives, and electrolytic salts), these may include electrolytes, catholytes, anolytes, separators, and metal salts and oxides.

One commenter requested the definition of electrochemically active materials explicitly include solid-state electrolytes. Solid-state electrolytes are included in the definition of electrochemically active materials because Proposed §1.45X 3(e)(2)(i)(D) includes "electrolytes," with no particular form required. The Treasury Department and the IRS conclude that specifying that such materials are included in this definition would be redundant. For this reason, the Treasury Department and the IRS decline to adopt these recommendations in the final regulations.

d. Battery grade materials

Proposed §1.45X-3(e)(2)(i)(F) would have defined "battery-grade materials" to mean the processed materials found in a

final battery cell or an analogous unit, or the direct battery-grade precursors to those processed materials. A few commenters requested the final rules clarify the meaning of direct battery-grade precursors. Commenters also requested the final rules provide that silane gas, ultra-high molecular weight polyethylene, and needle coke meet the definition of electrochemically active materials as direct battery-grade precursors. While the Treasury Department and the IRS understand the desire for assurance, listing specific precursors that qualify as electrochemically active materials would not be possible or advisable because it could imply that unlisted materials do not qualify as electrochemically active materials, particularly as battery technologies may evolve over time. For this reason, the Treasury Department and the IRS decline to adopt these recommendations in these final regulations.

e. Production costs incurred

Proposed § 1.45X-3(e)(2)(iv) would have provided that costs incurred for purposes of determining the credit amount includes costs as defined in §1.263A-1(e) that are paid or incurred within the meaning of section 461 of the Code by the taxpayer for the production of an electrode active material only. Thus, under the Proposed Regulations, production costs with respect to an electrode active material would not include any costs incurred after the production of the electrode active material.

The Proposed Regulations would not have allowed direct material costs as defined in §1.263A-1(e)(2)(i)(A), indirect material costs as defined in §1.263A-1(e)(3)(ii)(E), or any costs related to the extraction or acquisition of raw materials to be taken into account as production costs. This limitation disallowed, for purposes of calculating the credit: the inclusion of the cost of acquiring the raw material used to produce the electrode active materials; the cost of materials used for conversion, purification, or recycling of the raw material; and other material costs related to the production of electrode active materials. The Proposed Regulations applied section 263A and the regulations under section 263A (section 263A regulations) solely to identify the types of costs that are includible in production costs incurred for the purpose of computing the amount of the section 45X credit. The Proposed Regulations did not apply section 263A or the section 263A regulations for any other purposes, such as to determine whether a taxpayer is engaged in production activities.

The preamble to the Proposed Regulations explained that the rationale for the proposed rule was that the credit for the production of electrode active materials provides incentives for taxpayers to conduct activities that add value to the production of electrode active materials. Merely purchasing raw materials may enable a taxpayer to produce an electrode active material but it is not by itself an activity that adds value. In addition, excluding the costs of acquiring electrode active materials mitigates the risk of crediting the production costs for the same underlying material more than once as that material is used in various stages of the production process. For these reasons, material costs were not creditable costs under the Proposed Regulations.

The Treasury Department and the IRS requested comments on the proposed rule for determining the costs incurred with respect to the production of electrode active materials. Specifically, comments were sought as to whether and how extraction and other similar value-added activities in the production of raw materials used in electrode active materials should be taken into account and how extraction should be defined, including whether the term should be defined consistent with proposed §1.30D-3(c)(8). Comments were also requested with respect to applicable critical minerals, which are summarized in Part V.C. of this Summary of Comments and Explanation of Revisions. Many of these comments had similarities, and the reasoning and revisions in these final regulations are described in this Part IV.E.1.e. of this Summary of Comments and Explanation of Revisions and are adopted for both electrode active materials and applicable critical minerals.

Approximately 72 of the comments received addressed the definition and scope of production costs generally. Many commenters recommended that, contrary to the Proposed Regulations, all costs with respect to the production of electrode active materials be included in production costs for purpose of determining the credit, including direct material costs as defined in §1.263A-1(e)(2)(i)(A), indirect material costs as defined in §1.263A-1(e)(3)(ii)(E), and costs related to the extraction of raw materials.

A significant number of commenters focused their recommendations on material costs or the costs of extraction, but there was agreement among many of them that "costs of production" should be interpreted broadly to include all costs. In support of this position, commenters asserted that section 45X(b)(1)(J) and (M) do not place limits or otherwise qualify production costs eligible for the credit and that the regulations should not impose limitations not explicitly present in the Code itself. Some of these commenters also argued that, because the costs excluded from production costs in the Proposed Regulations are often a substantial or predominant portion of the total costs of producing some electrode active materials, substantial limitations on the inclusion of these costs would contradict Congress's goal of incentivizing the production of electrode active materials. Commenters also disputed that direct and indirect costs are not incurred in value-adding activities.

Some commenters also disagreed that the potential for over crediting (that is, crediting the same production costs multiple times) justifies denying a credit for these costs. A subset of these commenters disagreed that over crediting was a legitimate concern, arguing instead that section 45X provides a credit for costs incurred at different stages of production attributable to the same underlying material. Others agreed that over crediting might not be permissible but that the concern was insufficient to deny entirely credits for all costs that might be impermissibly claimed more than once for the same underlying material. In the view of these commenters, prohibiting crediting these same production costs multiple times would be the proper approach rather than entirely denying all credits for these costs. Some commenters noted that, in the case of certain specifically identified electrode active materials, there was no risk of crediting the same production costs multiple times and thus direct and indirect costs should be included in the costs of production for

these electrode active materials. A third set of commenters argued that credits should be permissible once under section 45X(b)(1)(M) for applicable critical minerals and again under section 45X(b)(1)(J) for electrode active materials.

In the case of electrode active materials that are precursors for the production of other electrode active materials, one commenter recommended that the cost of the precursor electrode active materials only be included in the cost of production for which a credit may be claimed if the precursor electrode active materials are completely consumed in the production process and are not used for any other commercial purpose.

A number of commenters proposed solutions to the problem of potentially crediting the same production costs multiple times. One solution commenters proposed was to reduce the basis of property for which a credit has been claimed by an upstream producer. Commenters also proposed a system under which a taxpayer would only be eligible for a credit on costs of material for which no other taxpayer had previously claimed a credit. This arrangement could be administered through a system of certifications in which taxpayers would be required to verify that its suppliers had not previously claimed credits for costs associated with the same materials for which the taxpayer is claiming credits. A commenter also urged that producers of electrode active materials be able to claim a credit if they can establish that the acquired electrode active materials and applicable critical minerals used in the production of electrode active materials were acquired from extraction or production outside the United States and thus were previously ineligible for a section 45X credit.

In addition to general comments regarding the inclusion of direct, indirect, and extraction costs, commenters recommended clarification about more specific costs, including costs associated with transportation. Another commenter requested the final rules be modified to include costs of the production of anodes used in the aluminum production to convert alumina into aluminum. Other commenters asserted that the costs of processing and purification of materials in the production of electrode active materials add value and should, on that basis, be included in the scope of the credit.

Several commenters recommended that the direct and indirect costs of the production of electrode active materials from recycled feedstock should be classified as production costs for purposes of the credit. According to one commenter, recycling processes begin with waste products at what is essentially a new supply chain.

A commenter supported the Proposed Regulations' exclusion of direct material, indirect material, and extraction costs from production costs eligible for the credit. This commenter was concerned that a contrary rule would invite fraud, waste, and abuse and that, in the case of extraction costs, would be difficult to administer without the creation of a tracing system.

With respect to costs related to extraction, the Proposed Regulations would have excluded extraction costs because extraction could be far removed, particularly in the case of electrode active materials, in the supply chain from the ultimate production of the eligible component. However, commenters highlighted the critical importance of extraction to the production of both applicable critical minerals and electrode active materials as well as the close connection these costs often have to the final production of these materials.

The Treasury Department and the IRS have reconsidered the treatment of extraction costs in these final regulations for taxpayers that extract raw materials domestically and for taxpayers that acquire either domestically or foreign-sourced extracted raw materials. For both electrode active materials and applicable critical minerals, the final regulations in §§1.45X-3(e)(2)(iv) and 1.45X-4(c)(3), respectively, allow taxpayers to include extraction costs related to the extraction of raw materials in the United States or a United States territory, but only if those costs are paid or incurred by the taxpayer that claims the section 45X credit with respect to the relevant electrode active material or applicable critical mineral. The Treasury Department and the IRS note that the section 45X credit is available only to taxpayers that produce and sell an eligible component. Thus, the final regulations provide that extraction costs may be included in production costs consistent with the rules provided under section 263A only if such costs are incurred by the taxpayer that claims the section 45X credit with respect to the relevant applicable critical mineral or electrode active material. The Treasury Department and the IRS have determined that this inclusion of extraction costs incurred by the taxpayer most accurately captures the meaning "the costs incurred by the taxpayer with respect to the production of" applicable critical minerals and electrode active materials under section 45X(b)(1)(J) and (M). If, however, a taxpayer acquires extracted raw material as a direct (or indirect) material cost, the material costs may be included as production costs consistent with the rules provided under section 263A regardless of whether the extracted material is domestically- or foreign-sourced.

With respect to direct and indirect material costs, the Proposed Regulations would have excluded direct and indirect material costs from production costs for both applicable critical minerals and electrode active materials. The Proposed Regulations excluded material costs from production costs based on an interpretation of the term "costs incurred by the taxpayer with respect to production" in section 45X(b)(1)(J) and (M) as being limited to value-added activities in the production process. Electrode active materials and applicable critical minerals differ from all other eligible components described in section 45X because their credit amounts are calculated as a percentage of production costs rather than specifying a fixed dollar amount or rate. The preamble to the Proposed Regulations stated that the mere purchase of materials does not itself add value in a production process despite being a necessary part of such process. Furthermore, it is unlikely that Congress intended to allow production costs associated with applicable critical minerals or electrode active materials to be credited multiple times, due to the high risk of fraud, waste, and abuse; the administrative burden of preventing these outcomes; and the limited effectiveness in supporting domestic production of new eligible components. The exclusion of direct and indirect material costs addressed these concerns.

Numerous commenters highlighted the importance and appropriateness of including material costs in production costs. There was, however, disagreement as to whether and to what extent the costs of non-U.S. produced constituent elements, materials, and subcomponents used in the production of electrode active materials should be included in production costs. Some commenters recommended that the costs of all materials be included while others urged limitations to only credit materials produced domestically. One commenter proposed that the final regulations modify the proposed rule regarding constituent elements, materials, and subcomponents used in the production of applicable critical minerals to distinguish between imports of materials otherwise available from domestic sources and imported materials that are not available from domestic sources.

The Treasury Department and the IRS, after consultation with the Department of Energy, have reconsidered the proposed exclusion of all material costs based on these comments. The final regulations adopt a rule allowing taxpayers that produce applicable critical minerals and electrode active materials as specified in the statute to include direct and indirect materials costs (as described in the referenced section 263A regulations) in production costs if certain conditions are met, but only if those direct or indirect material costs do not relate to the purchase of materials that are an eligible component at the time of acquisition (such as an electrode active material or applicable critical mineral). In addition, two examples illustrating the revised production costs rule are included in §1.45X-3(e)(2)(iv)(A)(*2*).

In finalizing this rule, the Treasury Department and the IRS considered the provisions of section 45X and determined this final rule appropriately implements the statute as a whole. Section 45X(a)(1) and (2) limit the section 45X credit to the sum of the credit amounts determined under section 45X(b) with respect to each eligible component that is produced by the taxpayer and, during such taxable year, sold to an unrelated person in the taxpayer's trade or business. The statute allows a section 45X credit for the sale of an applicable critical mineral or electrode active material produced and sold by the taxpayer in its business. The section 45X credit for an applicable critical mineral or electrode active material is equal to 10 percent of the costs incurred by the taxpayer with respect to production, under section 45X(b)(1)(M) and (J), respectively.

In calculating a taxpayer's costs incurred in the production of applicable critical minerals and electrode active materials, it is necessary to consider situations involving the integration of eligible components (whether directly made by the taxpayer or purchased from another taxpayer) in the course of producing an applicable critical mineral or electrode active material. Generally, integrating one eligible component into another produced eligible component results in two credits pursuant to section 45X(d)(4) if the taxpayer produced both, while integrating a purchased eligible component into another produced eligible component will only result in a credit for the eligible component produced by the taxpayer. In the case of an applicable critical mineral or electrode active material, however, the section 45X credit calculation differs from the other eligible components. Thus, further examination was needed to determine how a credit should be calculated in such a case.

The Treasury Department and the IRS considered the treatment of a vertically integrated taxpayer. For example, assume a taxpayer produced an applicable critical mineral or electrode active material and incurred $50X of costs with respect thereto (EC 1) and integrated EC 1 into a separate applicable critical mineral or electrode active material (EC 2), incurring an additional $100X of costs with respect to the production of EC 2 (total production costs of $150X), with EC 2 ultimately being sold by the taxpayer to an unrelated person. In calculating the section 45X credit, pursuant to section 45X(d)(4), taxpayer is treated as having sold an eligible component to an unrelated person if such component is integrated, incorporated, or assembled into another eligible component which is sold to an unrelated person. It is important to note that section 45X makes no distinction between integrated eligible components that were purchased or produced by the taxpayer. As section 45X(d)(4) directs the taxpayer to treat itself as selling both EC 1 and EC 2 to the unrelated person, it is necessary to determine a credit for each EC 1 and EC 2 when both were produced by the taxpayer.

In this example, the $50X of production costs attributable to EC 1 were not incurred with respect to the production of EC 2, since the production of EC 2 – in other words, the substantial transformation of EC 1 into EC 2 – does not include the production of EC 1. Thus, the taxpayer would be eligible for a total section 45X credit of $15X: $5X (10% of $50X) for EC 1 and $10X (10% of $100X) for EC 2. If the $50X of production costs attributable to EC 1 were included for both EC 1 and EC 2, then the same costs would be double credited. Double crediting would result in the taxpayer generating a $20X credit from the sale of EC 1 and EC2, which would provide an increased credit amount as compared to the credit amount that should result from the $150X of actual production costs incurred (or, stated differently, a section 45X credit that was 13.33 percent of the taxpayer's actual $150X of production costs in the example). The correct result is taxpayer should be viewed as having incurred $50X of production costs for EC 1 and $100X of production costs for EC 2, resulting in a $15X credit, which also matches 10 percent of the taxpayer's actual production costs ($150X) and does not create a double crediting of costs.

Alternatively, consider a taxpayer that, instead of producing EC 1, purchases EC 1 for $60X. The taxpayer then spends another $100X producing EC 2, using EC 1. Similar to the vertically integrated taxpayer, when the taxpayer sells EC 2, pursuant to section 45X(d)(4), the taxpayer is treated as having sold EC 1 and EC 2 to an unrelated person. The difference is that in this case the taxpayer did not produce EC 1, and therefore the taxpayer does not satisfy section 45X(a)(1)(A) for a section 45X credit for the sale of EC 1. If the taxpayer were permitted to include the costs for EC 1 ($60X) in calculating the credit for EC 2, then the taxpayer would receive a larger credit for producing EC 2 than if the taxpayer had produced both EC 1 and EC 2. Without a clearer indication in the statute that Congress intended to treat these two fact patterns differently, in a way that disadvantages vertically integrated production, the statute as a whole is appropriately implemented when the

result is the same credit amount for EC 2 ($10X in these examples) whether the taxpayer purchases or produces EC 1.

In comparing the two results of these examples under the final rule, the vertically integrated taxpayer gets a larger total section 45X credit by directly engaging in more credit generating activities, while the non-vertically integrated taxpayer receives a section 45X credit commensurate with its activities of producing EC 2, but no credit for integrated eligible components that it did not produce. These results are consistent with the general rule of section 45X(a)(1) and (2) and avoid allowing taxpayers to use the same cost in multiple credit calculations.

Section 45X(d)(2) provides that only sales of eligible components produced within the United States, or a United States territory, are taken into account for purposes of section 45X and is additional support for the rule that does not include foreign applicable critical minerals or electrode active materials in production costs, regardless of whether purchased or produced by the taxpayer. Allowing a foreign produced applicable critical mineral or electrode active material to increase the section 45X credit conflicts with section 45X(d)(2), particularly when considered with the rule under section 45X(d)(4). The Treasury Department and the IRS also note that section 45X(d)(2) confirms that treatment as an "eligible component" is not dependent on where production occurred, and so a foreign applicable critical mineral or electrode active material is an eligible component subject to the rule in section 45X(d)(4).

The final rule is also consistent with the overall purpose of section 45X and addresses the concerns described in the preamble of the Proposed Regulations. While the final rule adopts certain commenters' position that incurring material costs is necessary and may add value to a production process, the Treasury Department and IRS maintain that the inclusion of material costs must be balanced against the risk of multiple crediting of the same costs and the creation of incentives that are contrary to the purpose of section 45X. The final rule accomplishes this balance. Further, although applicable critical minerals and electrode active materials, or any other eligible component, produced outside the United States do not pose a risk of multiple crediting, permitting the production costs of a non-U.S. produced applicable critical mineral or electrode active material to be included in production costs would provide an incentive for the purchase of electrode active materials or applicable critical minerals produced abroad, which is inconsistent with the overall statutory scheme and purpose of section 45X (that is, to encourage domestic production of eligible components). Thus, excluding all costs of acquiring materials that are eligible components (for example, an applicable critical mineral or electrode active material at the time of acquisition) as a direct or indirect material cost with respect to the production of another applicable critical mineral or electrode active material appropriately implements the statute. It is also appropriate to have the same rules for applicable critical minerals and electrode active materials with respect to production costs, as the statutory language regarding calculation of the credit for applicable critical minerals and electrode active materials is the same.

These final regulations also include certain substantiation requirements for a taxpayer that is claiming a section 45X credit with respect to an applicable critical mineral or electrode active material. The preamble to the Proposed Regulations supported not including all direct and indirect material costs by referencing the possibility that the same production costs may be credited multiple times and the potential for increased fraud and abuse related to claiming the section 45X credit. Proposed §1.45X-4(c)(4) would have required the taxpayer to document that their product meets the criteria for an applicable critical mineral as described in section 45X(c)(6) with a certificate of analysis (COA) provided by the taxpayer to the person to which the taxpayer sold the applicable critical mineral. The Treasury Department and the IRS requested comments on this substantiation requirement, including whether a similar requirement should be applied to electrode active materials.

Based on a review of the comments, including comments specifically suggesting certification statements, and the need to balance the expansion of costs included as production costs with respect to the Proposed Regulations while mitigating the risk of fraud, waste and abuse, these final regulations revise the substantiation rules in proposed §1.45X-4(c)(4) for applicable critical minerals and added substantiation rules for electrode active materials in §1.45X-3(e)(2)(iv)(C). In order to include direct or indirect materials costs as defined in §1.263A-1(e)(2)(i)(A) and (e)(3)(ii)(E) as production costs when calculating a section 45X credit for the production and sale of an applicable critical mineral or electrode active material, a taxpayer must include, as an attachment to the return on which the section 45X credit is claimed, certifications from any supplier, including the supplier's employer identification number and that is signed under penalties of perjury, from which the taxpayer purchased any constituent elements, materials, or subcomponents of the taxpayer's eligible component, stating that the supplier is not claiming the section 45X credit with respect to any of the material acquired by the taxpayer, nor is the supplier aware that any prior supplier in the chain of production of that material claimed a section 45X credit for the material. A taxpayer must also prepare the following information, and maintain that information in the taxpayer's books and records: (1) a document that provides an analysis of any constituent elements, materials, or subcomponents that concludes the material did not meet the definition of an eligible component (for example, did not meet the definition of applicable critical mineral or electrode active material) at the time of acquisition by the taxpayer (the document may be prepared by the taxpayer or ideally by an independent third-party); (2) a list of all direct and indirect material costs and the amount of such costs that were included within the taxpayer's total production cost for each electrode active material or applicable critical mineral, as applicable; and (3) a document related to the taxpayer's production activities with respect to the direct and indirect material costs that establishes the materials were used in the production of the electrode active material or applicable critical mineral, as applicable (the document may be prepared by the taxpayer or ideally by an independent third-party). Finally, the taxpayer must provide any other information related to

the direct or indirect materials specified in guidance and comply with the directions for providing such information as specified in guidance. Failure to provide this documentation with the return filing, or providing a "available upon request" statement, will constitute a failure to substantiate the claim. The Treasury Department and the IRS have determined, in consultation with the Department of Energy, that these revisions to the Proposed Regulations are necessary in order to properly substantiate credit amounts claimed under section 45X for applicable critical minerals and electrode active materials.

2. Battery Cells—Definition

a. In general

Consistent with section 45X(c)(5)(B)(ii), proposed §1.45X-3(e)(3)(i) would have defined the term battery cell as an electrochemical cell comprised of one or more positive electrodes and one or more negative electrodes, with an energy density of not less than 100 watt-hours per liter, and capable of storing at least 12 watt-hours of energy.

Commenters asked for additional guidance clarifying the volumetric energy density calculation methodology given the variety of battery shapes, sizes, and construction methodologies that exist in the market. The Treasury Department and the IRS understand these comments to be made with respect to calculating energy density under proposed §1.45X-3(e)(3)(i)(B) and agree that clarification would be helpful. Energy density can refer to volumetric energy density but is commonly used to refer to gravimetric (mass-based) energy density. These final regulations clarify that energy density is referring to volumetric energy density in §1.45X-3(e)(3)(i)(B).

One commenter asked that the final rules provide that hydrogen fuel cells be included under the definition of battery cells by amending the definition of a battery cell to waive the requirement that a battery cell be capable of storing at least 12 watt-hours of energy and permitting this requirement to be met by "a large hydrogen storage tank." The Treasury Department and the IRS do not have the authority to amend the definition of a battery cell in the final regulations or to waive the requirement that it be capable of storing at least 12 watt-hours of energy. For this reason, the Treasury Department and the IRS decline to adopt this comment in the final regulations.

At least one commenter raised a matter involving a vertically integrated manufacturer of electric vehicles that, together with a related person, operates a battery cell production facility. According to the commenter, the commenter purchases battery cells from this production facility and assembles, integrates, and incorporates them into battery modules at battery assembly facilities located in other States. Modules produced at these assembly facilities are then shipped to various electric vehicle production facilities. As described by the commenter, the process of taking completed battery cells and integrating, incorporating, and assembling them into completed battery packs happens across several different facilities, all of which are operated by the commenter and its affiliates that are separate legal entities. Each facility is neither solely a battery module facility nor solely a battery pack facility. The commenter requested that the final regulations allow a vertically integrated manufacturer and related parties to elect which facility will receive the credit in situations where the manufacturer and related parties complete all stages of the production process and can substantiate that the corresponding credit will not be duplicated. The Treasury Department and the IRS appreciate the complex operations that may be inherent in battery production. However, the statute requires a determination of the taxpayer that produces an eligible component and does not authorize the relief requested by the commenter.

b. Capacity measurement

Proposed §1.45X-3(e)(3)(ii) would have provided that taxpayers must measure the capacity of a battery cell in accordance with a national or international standard, such as IEC 60086-1 (Primary Batteries), or an equivalent standard. Taxpayers can reference the United States Advanced Battery Consortium (USABC) Battery Test Manual for additional guidance.

Several commenters agreed with the proposed definition because it provided taxpayers the ability and needed flexibility to determine the appropriate standard, but others recommended additional guidance or information be included in these final regulations. A commenter requested that the final regulations "retain the criteria that the standard used by the taxpayer must be one issued by a recognized standards setting body." While not specifically using that language, these final regulations do maintain that concept by continuing to require measurement in accordance with a national or international standard.

Another commenter requested that the final regulations eliminate the reference to "an equivalent standard" to IEC 60068-1 because "IEC 60086-1 is not applicable to rechargeable battery chemistries, and it is unknown therefore what an equivalent standard would be." The Treasury Department and the IRS have determined that this clarification is unnecessary because the reference to IEC 60068-1 or "an equivalent standard" merely provides a non-exclusive example of an acceptable national or international standard for capacity measurement. These final regulations therefore do not adopt the commenter's suggestion.

Other commenters suggested the addition of various specific national or international standards to the language provided in proposed §1.45X-3(e)(3)(ii) regarding the standards to be used for battery cell capacity measurement. The Treasury Department and the IRS understand the desire for assurance but have determined that these proposed additions, if included as examples, will not add further clarity to the final regulations. The Treasury Department and the IRS further do not think that there is a basis to include any of these proposed additions as the exclusive standard or standards for capacity measurement. The final regulations therefore do not adopt these commenters' suggestions regarding particular national or international standards to be used for capacity measurement in §1.45X-3(e)(3)(ii).

Another commenter recommended that the final regulations require that battery cell "capacity" must be mathematically normalized to a 100-hour discharge time, regardless of the time otherwise dictated by the appropriate national or international standard. The Treasury Department and the IRS do not think there is a basis

to adopt this requirement, as this would displace other national or international standards with a new requirement that is not in the statute. Therefore, the Treasury Department and the IRS decline to adopt additional specific standards in these final regulations beyond those provided in the Proposed Regulations.

Some commenters noted that the USABC Battery Test Manual, which proposed §1.45X-3(e)(3)(ii) states may be used for additional guidance regarding measurement of the capacity of a battery cell, is not applicable to all battery cell applications and technologies that may be eligible for the section 45X credit. One commenter suggested removing the reference to the USABC Battery Test Manual for this reason. Because the inclusion of this reference is intended to inform taxpayers of a resource that may be helpful in some cases, even if it may not be applicable in all cases, the Treasury Department and the IRS decline to adopt this suggestion.

Another commenter suggested an additional requirement to conduct a performance test in a certified laboratory once every three years to verify the capacity of the battery cell. It was unclear from the comment when this performance testing would be required. Section 45X requires the production and sale of eligible components. Because an eligible component must meet the requirements under section 45X at the time of sale, it would be inappropriate to verify capacity once every three years. Thus, the Treasury Department and the IRS decline to adopt this additional capacity measurement requirement in the final regulations.

3. Battery Modules—Definition

Under section 45X(c)(5)(B)(iii), the term battery module, in the case of a module using battery cells, is a module with two or more battery cells which are configured electrically, in series or parallel, to create voltage or current, as appropriate, to a specified end use, with an aggregate capacity of not less than 7 kilowatt-hours (or, in the case of a module for a hydrogen fuel cell vehicle, not less than 1 kilowatt-hour). Similarly, under section 45X(c)(5)(B)(iii), a battery module with no cells means a module with an aggregate capacity of not less than 7 kilowatt-hours (or, in the case of a module for a hydrogen fuel cell vehicle, not less than 1 kilowatt-hour). Consistent with section 45X(c)(5)(B)(iii), proposed §1.45X-3(e)(4)(i) would have defined *battery module* to mean a module described in proposed §1.45X-3(e)(4)(i)(A) (with cells) or (B) (without cells) with an aggregate capacity of not less than 7 kilowatt-hours (or, in the case of a module for a hydrogen fuel cell vehicle, not less than 1 kilowatt-hour).

Some commenters suggested lowering the aggregate capacity limitation to incentivize domestic production of all battery types used in various industrial applications. One commenter recommended eliminating the capacity thresholds entirely for battery modules when used in medical or military applications. While the Treasury Department and the IRS appreciate commenters' desire to incentivize domestic battery manufacturing, section 45X(c)(5)(B)(iii)(II) provides the aggregate capacity thresholds that battery modules must meet in order to be eligible components. The Treasury Department and the IRS decline to adopt the commenters' request to alter or eliminate the aggregate capacity requirements for battery modules as such revisions would be inconsistent with the statute. Thus, these final regulations adopt proposed §1.45X-3(e)(4)(i) without change.

a. Modules using battery cells

Proposed §1.45X-3(e)(4)(i)(A) would have defined a module using battery cells as a module with two or more battery cells that are configured electrically, in series or parallel, to create voltage or current (as appropriate), to a specified end use, meaning an end-use configuration of battery technologies. Under the proposed rule, an end-use configuration is the product that ultimately serves a specified end use. It is the collection of interconnected cells, configured to that specific end-use and interconnected with the necessary hardware and software required to deliver the required energy and power (voltage and current) for that use. The preamble to the Proposed Regulations explained that, as applied to batteries commonly used in electric vehicles, proposed §1.45X-3(e)(4)(i)(A) would have permitted a credit for the production and sale of the battery pack in an electric vehicle, but it would not have permitted a credit for the production of a module that is not the end-use configuration. The Treasury Department and the IRS requested comments on this proposed interpretation of the phrase "to a specified end use" in section 45X(c)(5)(B)(iii)(I)(aa).

Many commenters raised concerns with the interpretation of the phrase "to a specified end use" in proposed §1.45X-3(e)(4)(i)(A). Some commenters asserted that requiring that modules be in an end-use configuration would be overly restrictive for certain product categories. For example, certain types of modules may be transported to the end-use site only partially assembled due to safety considerations, with final assembly performed by the battery manufacturer, the customer, or a third-party contractor.

Similarly, a few commenters expressed concern that no taxpayer may be eligible for the battery module credit in certain cases. One commenter suggested that this result might occur if module manufacturers do not manufacture a pack in its end-use configuration. Further, those who purchase such items and convert them to their end-use configuration may struggle to demonstrate their activities amount to substantial transformation. One commenter suggested changing proposed §1.45X-3(e)(4)(i)(A) to provide that "an end-use configuration is the product that ultimately serves a specified end use – whether delivered pre-assembled or assembled on-site." Further, the commenter recommended an additional sentence at the end of proposed §1.45X-3(e)(4)(i)(A) to identify the section 45X claimant in cases where assembly occurs by someone other than the taxpayer.

Several commenters stated that proposed §1.45X-3(e)(4)(i)(A) created confusion because the definition of battery module could, in some circumstances, include the items that are referred to in industry as "battery packs." One commenter noted that while battery cells and modules predominantly originate from battery manufacturers, battery packs are assembled by electric vehicle manufacturers before being installed in electric vehicles.

Some commenters requested that, if the definition of battery modules includes bat-

tery packs in the case of electric vehicle battery modules, the process to transform what is colloquially referred to in industry as a battery module into what is known as a "battery pack" be clarified in the final regulations to constitute disqualifying minor assembly or "partial transformation." Another commenter requested that the final regulations state that the rules are agnostic as to the form or manner in which a battery module with cells is incorporated into the electric vehicle.

Other commenters supported the proposed definition of battery module with cells, stating that this definition appropriately captures the intention of the section 45X credit. One commenter asserted that the battery pack production covered by the proposed definition is a more valuable activity than the production of a single battery module and is the activity closer to the downstream consumer.

The Treasury Department and the IRS appreciate the comments received regarding battery modules and have determined, in close consultation with the Department of Energy, that additional clarification is needed. Section 45X(c)(5)(B)(iii)(I)(aa) defines battery module using battery cells as "a module using battery cells, with two or more battery cells which are configured electrically, in series or parallel, to create voltage or current, as appropriate, to a specified end use[…]." Section 45X(c)(5)(B)(iii)(II) provides a capacity threshold limitation of "[an] aggregate capacity of not less than 7 kilowatt-hours (or, in the case of a module for a hydrogen fuel cell vehicle, not less than 1 kilowatt-hour)" that such battery module using battery cells (as defined in section 45X(c)(5)(B)(iii)(I)(aa)) must meet.

In reviewing comments, the Treasury Department and the IRS understand that the explanation in the preamble of the Proposed Regulations regarding application to electric vehicles may not have aligned with industry understanding and the statutory text. Upon review of the comments received, the Treasury Department and the IRS wish to restate that the requirement found in section 45X(c)(5)(B)(iii)(I)(aa), that battery modules using battery cells that contain battery cells configured to a specified end use, applies regardless whether the items are typically called "battery modules" or "battery packs" in industry practice. These final regulations are therefore clarified to provide that a battery module using battery cells becomes an eligible component upon first meeting the requirements of section 45X(c)(5)(B)(iii)(I)(aa) and (c)(5)(B)(iii)(II), notwithstanding when this transformation may occur in a manufacturing production chain.

At least one commenter requested a rule allowing the entity that assembles the pack to assign tax credits to the joint venture that manufactured the module. Alternatively, if the definition of specified end use is not adopted with respect to joint ventures, the regulations should instead allow for joint venture partners to assign battery-related section 45X credits to the joint venture as the parties see fit, or in cases where the parties do not choose to assign the credits to one of the parents, the joint venture itself. This comment is not adopted as issues specific to joint ventures are outside the scope of these final regulations. For discussion of "produced by the taxpayer" and the associated rules for who may claim the section 45X credit, see Part II.B. of this Summary of Comments and Explanation of Revisions.

b. Modules with no battery cells

Proposed §1.45X-3(e)(4)(i)(B) would have defined the term "module with no battery cells" as a product with a standardized manufacturing process and form that is capable of storing and dispatching useful energy; that contains an energy storage medium that remains in the module (for example, it is not consumed through combustion); and that is not a custom-built electricity generation or storage facility. This proposed definition would allow battery technologies, such as flow batteries and thermal batteries, to be eligible for the section 45X credit, but would not permit technologies that do not meet this definition, such as standalone fuel storage tanks or fuel tanks connected to engines or generation systems, to qualify as a module with no battery cells.

Several commenters supported the proposed definition of a battery module, and specifically the inclusion of thermal batteries. Commenters also asked for clarification regarding a technology-neutral application of the proposed definition of a battery module. Other commenters suggested specific clarifications to the final regulations regarding certain types of thermal battery systems, such as thermal ice storage or thermal bricks. Some commenters requested that the final regulations incorporate similar language used in the section 48 proposed regulations to facilitate this technology-neutral treatment. For example, these commenters suggested that the final regulations should adopt the language in proposed §1.48-9(e)(10)(ii) by specifically stating that "batteries of all types (such as lithium ion, vanadium flow, sodium sulfur, and lead-acid)" are eligible components. Commenters asserted that there is symmetry between the investment tax credits for energy storage property and advanced manufacturing credits for energy storage products. Additionally, commenters raised that technology-neutral treatment aligns with Congressional intent to establish eligibility criteria based on performance thresholds, not technology.

The Treasury Department and the IRS, in close consultation with the Department of Energy, agree with commenters that a battery module with no battery cells does not require a specific storage medium nor are there chemistry-based requirements for qualifying battery modules. However, the Treasury Department and the IRS decline to include specific language as a non-exhaustive list of possible storage mediums. Including a non-exhaustive list of current storage mediums on an industry-by-industry basis is not practical and may inadvertently create confusion for other emerging technologies on whether those mediums would qualify for the section 45X credit.

Some commenters disagreed with the requirement in proposed §1.45X-3(e)(4)(i)(B) that the storage medium remain in the module, asserting that the requirement "may inadvertently exclude technologies" such as compressed air "that can deliver on the intent of the regulations." The Treasury Department and the IRS decline to amend proposed §1.45X-3(e)(4)(i)(B) in response to this comment. The Treasury Department and the IRS, in consultation with the Department of Energy, have determined that the proposed rule appropriately implements the statute. The requirement that the storage medium remain in the module gives meaning to both "bat-

tery" and to "module." For batteries, this requirement describes a feature common to electrochemical and more nascent types of batteries and distinguishes batteries from technologies that rely on fuel. For modules, this requirement helps segregate qualifying technologies from those that are self-contained and not merely one component of a larger system.

Manufacturing the constituent components of battery modules without manufacturing the entire energy storage system does not result in the production of a module with no battery cells under the final regulations. For example, in thermal energy storage applications, the taxpayer must produce and sell the entire system and not just the storage medium. A manufacturer that only produces a thermal storage medium (for example, molten salt) in a thermal energy storage system would not be eligible for the credit. Requiring the production of the entire energy storage system from "energy in" through "energy out" provides similar treatment for purposes of the section 45X credit to the production of a battery module using battery cells.

Numerous comments requested additional clarification of "custom-built electricity…storage facility." Commenters noted that the definition in proposed §1.45X-3(e)(4)(i)(B) creates ambiguity as to which modifications made in order to meet site or use specifications would trigger the "custom-built" disqualifier. Several commenters asserted that the Proposed Regulations create additional limitations on battery modules without cells that do not apply to the other eligible components. Commenters contended that the terms in the Proposed Regulations, such as "manufacturing," "standardized," and "not custom-built," do not appear in the statutory text and diverge from the general approach taken by the Proposed Regulations with respect to other eligible components. Some commenters asserted that nearly all thermal battery implementations are associated with custom-built generation and storage facilities.

These commenters requested that the final regulations clarify that the eligible components may be assembled with other property to comprise a functioning energy generation or storage facility. Commenters also suggested additional clarity regarding the physical boundaries of a battery module and thought that using the proposed definition of "produced by the taxpayer" would allow for an eligible component to be assembled on-site, such as battery modules with no battery cells that are too heavy and large to transport fully assembled. Commenters asserted that most or all batteries will require some amount of on-site installation. Commenters generally requested that the final regulations provide a clear and principled definition of "custom-built" that continues to support a technology-neutral and inclusive implementation of section 45X.

Commenters provided various alternatives to further clarify the definition of "custom-built" in the Proposed Regulations. One commenter recommended clarifying the definition of "a custom-built electricity storage facility" as "a facility (1) that contains an energy storage medium and (2) of which all, or substantially all, of the integral components are designed specifically for the facility and are not interchangeable with components of other facilities that utilize the same or similar electricity storage technology." Another commenter asked that the final regulations clarify that a module with no battery cells is not treated as custom-built if modules are produced by the taxpayer using the same or similar components or property generally used by the taxpayer to produce such modules but in different configurations or amounts to accommodate the storage needs or the site layout applicable to the storage asset. A commenter recommended clarifying the definition that a module with modular components manufactured offsite may undergo final assembly at its installation site without being considered a custom-built facility and include an example regarding final assembly on site. Another suggestion included clarifying that modules with no cells are items of property that must be combined with other tangible personal property to store energy.

Separately, a commenter noted that for contract manufacturing arrangements, "a routine order for off-the-shelf-property" is not eligible for the section 45X credit. The commenter suggested the final regulations provide that an agreement will be treated as a routine purchase order for off-the-shelf property if the contractor is required to make no more than *de minimis* modifications to the property to tailor it to the customer's specific needs. However, if the manufacturer does make more than *de minimis* modifications, the module may be custom-built. The commenter asserted that the proposed rule sets up a complicated dichotomy under which manufacturers of modules with no battery cells who enter into contract manufacturing arrangements will have to establish an undefined standard that are neither off the shelf nor custom-built.

Commenters also provided specific examples regarding whether certain technologies or configurations would be considered custom-built. For example, physical site conditions at a customer's site may require that the same components used for one pumped heat energy storage (PHES) are differently arranged for another PHES. The use of the PHES by a customer may require modified storage durations (for example, 20 hours versus 10 hours), which would require additional storage media and vessels. The commenter asserted that this should not be considered custom-built. Commenters also noted that, for closed-loop pumped storage hydropower systems, pipes and other related components are otherwise produced in a standardized process, and neither resemble nor are functionally equivalent to standalone fuel storage tanks or fuel tanks connected to engines or generation systems custom-built electricity generation or storage facility. Commenters also raised that these differences are based on the topography of the site where the system is located and not on the intended function of these components or the system as a whole.

One commenter requested that the Treasury Department and the IRS include hydrogen fuel cell systems under the definition of a battery module using battery cells. Proposed § 1.45X-3(e)(4)(i)(B) would define the term "module with no battery cells" as a product with a standardized manufacturing process and form that is capable of storing and dispatching useful energy, that contains an energy storage medium that remains in the module (for example, it is not consumed through combustion), and that is not a custom-built electricity generation or storage facility.

In general, the Treasury Department and the IRS appreciate the complexity of the issues raised by commenters. Given the myriad of technologies, industry-specific applications, and customary business practices, the final regulations provide additional clarifications. The Treasury Department and the IRS understand the need for clear, administrable rules for both taxpayers and the IRS. The comments also illustrate the impracticality of providing rules to specifically address all situations. The Treasury Department and the IRS, in close consultation with the Department of Energy, have determined that the definition provided in proposed §1.45X-3(e)(4)(i)(B) strikes the appropriate balance between bright-line rules and the necessary flexibility for evolving industries. The Treasury Department and the IRS therefore decline to adopt suggested revisions to the definition of "module with no battery cells" in the final regulations.

The Treasury Department and the IRS, in close consultation with the Department of Energy, also have determined that requiring battery modules be modular in the sense that they are both self-contained and not highly customized appropriately implements the statutory definition provided in section 45X(c)(5)(B)(iii). Because of this, the preamble to the Proposed Regulations further clarified that this proposed definition would allow battery technologies such as flow batteries and thermal batteries to be eligible for the section 45X credit, but it would not permit technologies that do not meet this definition such as standalone fuel storage tanks or fuel tanks connected to engines or generation systems to qualify as a module with no battery cells. For these reasons, the Treasury Department and the IRS decline to adopt this comment in the final regulations.

One commenter recommended adopting the definition of modules using battery cells for the definition of modules with no battery cells, with the addition that the module should receive, store, and deliver energy for conversion to electricity. However, adopting the commenter's recommended definition would not be appropriate for modules with no battery cells because the definition of modules using battery cells requires the inclusion of battery cells in the module. Accordingly, The Treasury Department and the IRS decline to adopt the commenter's recommendation.

The Treasury Department and the IRS agree with commenters who suggest that the examples illustrating the contrast between "substantial transformation" and disqualifying minor assembly, explained in Part II.B. of this Summary of Comments and Explanation of Revisions provide useful guidelines for taxpayers and the IRS in determining what is a standardized manufacturing process and not a custom-built electricity generation or storage facility. Thus, incidental onsite assembly of prefabricated modular components for final assembly that are generally produced in the ordinary course of a taxpayer's trade or business would constitute a standardized manufacturing process for purposes of §1.45X-3(e)(4)(i)(B). Battery modules with no battery cells that undergo a substantial transformation onsite or are specially manufactured for a single customer would constitute a custom-built electricity generation or storage facility. The Treasury Department and the IRS decline to provide a *de minimis* threshold which would exclude certain manufacturing or configurations that would otherwise qualify for the section 45X credit using the principles described in Part II.B. of this Summary of Comments and Explanation of Revisions.

c. Capacity measurement

Proposed §1.45X-3(e)(4)(ii)(A) would have provided that, for modules using battery cells, taxpayers must measure the capacity of a module with a testing procedure that complies with a national or international standard published by a recognized standard setting organization. The capacity of a battery module using battery cells may not exceed the total capacity of the battery cells in the module. Proposed §1.45X-3(e)(4)(ii)(B) would have provided that, for modules with no battery cells, taxpayers must measure the capacity using a testing procedure that complies with a national or international standard published by a recognized standard setting organization. If no such standard applies to a type of module with no battery cells, taxpayers must measure the capacity of such module as the Secretary may prescribe in regulations or other guidance. The Treasury Department and the IRS requested comments on what recognized national or international standards are currently available for measuring capacity of modules with no battery cells and whether further guidance may be required.

One commenter suggested that the aggregate capacity measurement outlined in section 45X and the Proposed Regulations for battery modules is challenging to apply in the context of thermal battery modules with no cells. Another commenter explained that battery capacity measurements are subject to variations contingent upon environmental conditions during measurement and that capacity assessment for both battery cells and battery modules must occur within a standard testing environment. Some commenters agreed with the approach in the Proposed Regulations of allowing taxpayers to determine the appropriate national or international standards because taxpayers are in a better position to determine the appropriate standard. Moreover, this approach provides the flexibility necessary for emerging technologies to qualify for the credit. Such commenters requested that the final regulations retain the criteria that the taxpayer must use a testing procedure issued by a recognized standards setting body.

Other commenters explained that the Treasury Department and the IRS should prescribe a flexible approach to capacity measurement for battery modules with no battery cells such that different technologies are appropriately measured and provide alternative testing procedures that complies with a national or international standard published by a recognized standard setting organization that is relevant and applicable for the varying technologies. One commenter asserted that, in their view, such standards may include American Society of Mechanical Engineers (ASME) or International Standards Organization (ISO), but specifically recommended that capacity should be measured based on nameplate capacity as provided in 40 CFR 96.202 in the absence of a bright-line standard. Another commenter supported this approach because of alleged difficulties in determining the minimum capacity of battery modules with no cells before they are placed in service. Other

commenters suggested various standards, including ASME PTC 53; ANSI/ American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 94.2-2010; and ASHRAE 94 testing methods (specifically, 94.1,94.2, and 94.3). Another commenter recommended that the final regulations require use of a conversion factor of 1.16RT/kW = 14/12 and recommended that the regulations provide a capacity measure if there is no national or international standard for a given technology.

A different commenter raised concerns regarding capacity measurement for battery modules with no battery cells and suggested adding to proposed §1.45X-3(e)(4)(iii)(B), "… The capacity of each battery module is expressed on a kilowatt-hour basis in the actual useful energy unit that is specific to the battery module without cells. For example, both thermal and thermochemical battery modules have their capacity expressed on a kilowatt-hour-thermal basis."

The Treasury Department and the IRS, after consultation with the Department of Energy, have determined that taxpayers producing thermal and thermochemical battery modules with no battery cells must convert the energy storage to a kilowatt-hour basis and provide both methodology and testing regarding this conversion. Taxpayers must maintain this testing and methodology as part of books and records under section 6001. However, the kilowatt-hour conversion cannot exceed the direct conversion of the total nameplate capacity of the thermal battery module to kilowatt-hours (the capacity that is sold to the consumer). The taxpayer claiming the section 45X credit must use the same methodology consistently, subject to any updated standard of the same methodology and testing, for battery modules (with or without cells) sold in the taxpayer's trade or business. The final regulations incorporate these clarifications in §1.45X-3(e)(4)(ii) regarding testing and methodology with respect to battery modules.

One commenter requested the final rules remove the requirement that the capacity of a battery module not exceed the total capacity of the battery cells in the module because the different structures of each eligible component may affect the capacity measurement of the module. The Treasury Department and the IRS, in consultation with the Department of Energy, have determined that this rule serves an important function in reducing the potential to manipulate testing conditions in the measurement of capacity and in encouraging the application of reliable measurement standards for battery cells. The Treasury Department and the IRS therefore decline to remove the requirement that the capacity of a battery module not exceed the total capacity of the battery cells in the module.

Another commenter requested that the final regulations provide that the entity that manufactures a battery module that exceeds the statutory 7 kilowatt-hours threshold limitation in section 45X(c)(5)(B)(iii)(II) receives the $10/kWh module credit. As discussed in Part IV.E.3.a. of this Summary of Comments and Explanation of Revisions, the taxpayer that produces and sells the eligible component (when a battery module first becomes the eligible component) may claim the section 45X credit. Whether an eligible component is produced by the taxpayer is generally discussed in Part II.B. of this Summary of Comments and Explanation of Revisions.

A commenter noted that proposed §1.45X–3(e)(4)(i), which provides the definition for battery modules "with an aggregate capacity of not less than 7 kilowatt-hours," aligns with section 30D. The language in section 30D is based on the capacity of the complete battery installed on the vehicle. The commenter asserted that the parallel language describing the capacity threshold in section 45X and in section 30D indicates that the eligible component for the section 45X credit for battery modules are the items commonly referred to in industry as "battery packs." This comment is not adopted. As explained in Part IV.E.3.a. of this Summary of Comments and Explanation of Revisions, a battery module (within the meaning of section 45X) is an eligible component, regardless of whether industry nomenclature would describe that module as a "battery pack."

Proposed §1.45X-3(e)(5)(i) would have provided a special rule where the capacity determined with respect to a battery cell or battery module must not exceed a capacity-to-power ratio of 100:1. At least one commenter requested clarification on the definition of "capacity to power ratio." The commenter noted that term could mean either the maximum energy that the battery cell and module can hold or the maximum output that the battery cell and module can release instantaneously. The final regulations retain the proposed rule defining "capacity to power ratio" in §1.45X-3(e)(5). The Treasury Department and the IRS confirm that the rule, with respect to a battery cell or battery module, the capacity-to-power ratio refers to both the power and the capacity as a cap on the section 45X credit amount, rather than an eligibility criterion. Power is the battery cell's maximum rate of discharge; capacity is the maximum amount of energy the component can store.

F. *Phase-out rule*

Consistent with section 45X(b)(3), proposed §1.45X-3(f)(1) would have provided that, in the case of any eligible component sold after December 31, 2029, the amount of the section 45X credit determined with respect to such eligible component is equal to the product of the amount determined under proposed §1.45X-3(b) through (e) with respect to such eligible component, multiplied by the phase out percentage under proposed §1.45X-3(f)(2). Consistent with section 45X(b)(3)(C), proposed §1.45X-3(f)(3) would have provided that the phase out rules described in proposed §1.45X-3(f)(1) and (2) apply to all eligible components except applicable critical minerals. Proposed §1.45X-3(f)(2) would have provided the phase out percentage is equal to 75 percent for eligible components sold during calendar year 2030; 50 percent for eligible components sold during calendar year 2031; 25 percent for eligible components sold during calendar year 2032, and zero percent for eligible components sold after calendar year 2032.

A commenter expressed concern that the phase out rules create disparate treatment of an applicable critical mineral produced by a taxpayer that with further value-added processing would result in the production of an electrode active material and provided the example of the production of natural graphite active anode materials. The commenter stated that if the

production of the applicable critical mineral and production of the electrode active material occurs in a vertically integrated company, the taxpayer may only claim a section 45X credit for one component. Thus, the commenter requests the phase out rule be modified to not apply to electrode active materials.

The Treasury Department and the IRS decline to adopt the commenter's request. The Treasury Department and the IRS do not have the authority to allow a section 45X credit for the production of an electrode active material in amounts in excess of what is permitted under section 45X(b)(3).

For these reasons, these final regulations adopt proposed §1.45X-3(f) without modification.

V. *Applicable critical minerals*

Proposed §1.45X-4 would have provided definitions for the listed applicable critical minerals (generally in accordance with section 45X(c)(6)), the credit amounts, and rules regarding production costs for purposes of determining credit amounts. Commenters addressed certain aspects of these proposed rules, as described in this Part V. of the Summary of Comments and Explanation of Revisions. These final regulations generally adopt the rules as proposed in §1.45X-4, with the modifications described in this Part V. of the Summary of Comments and Explanation of Revisions.

A. *In general*

Section 45X(c)(6) defines applicable critical minerals that are eligible components for purposes of the section 45X credit. Consistent with section 45X(c)(6), proposed §1.45X-4 provides that an applicable critical mineral means any of the minerals that are listed in section 45X(c)(6) and defined in proposed §1.45X-4(b).

Several commenters requested that the final rules generally clarify and expand the eligibility of metals and metal alloys (including alloys made from primary and secondary metal production) under the purity requirements. Section 45X generally provides specific minimum purity requirements or forms for applicable critical minerals. Metals or metal alloys under the specified purity requirements that do not meet specified forms do not qualify for the section 45X credit. Thus, the Treasury Department and the IRS do not have the statutory authority to add additional metals and alloys to the list of applicable critical minerals in these final regulations.

B. *Definitions*

1. Aluminum

Section 45X(c)(6)(A) provides that aluminum that is converted from bauxite to a minimum purity of 99 percent alumina by mass or purified to a minimum purity of 99.9 percent aluminum by mass qualifies as an applicable critical mineral. Proposed §1.45X-4(b)(1) would have defined aluminum to mean aluminum that is converted from bauxite to a minimum purity of 99 percent alumina by mass or purified to a minimum purity of 99.9 percent aluminum by mass. The preamble to the Proposed Regulations stated that section 45X(c)(6)(A) should be interpreted in light of the dynamics of the aluminum industry and the role that critical materials like aluminum play in the renewable energy and energy storage industry. Proposed §1.45X-4(b)(1) would have interpreted section 45X(c)(6)(A) to mean aluminum, including commodity-grade aluminum, described in section 45X(c)(6)(A)(i) and (ii). Proposed §1.45X-4(b)(1) would have defined "commodity-grade aluminum" as aluminum that has been produced directly from aluminum that is described in proposed §1.45X-4(b)(1)(i) or (ii), is limited to primary production of unwrought forms, and is in a form that is sold on international commodity exchanges, which would include commercial grade aluminum that is 99.7 percent aluminum by mass.

A commenter expressed support for the definition of aluminum in the proposed rule, and stated that the statutory definition could be read to apply only to the refining of alumina and, as a result, not benefit domestic primary aluminum producers, nor achieve the spirit of the legislation to increase domestic manufacturing. The commenter noted confusion with the statutory definition, which stated in part, that aluminum "which is converted from bauxite to a minimum purity of 99 percent alumina by mass" meets the definition of aluminum—however, alumina is converted from bauxite, not aluminum. Thus, the commenter noted that the proposed rule correctly states the primary aluminum production process and will help United States primary aluminum producers bolster domestic operations and strengthen global competitiveness.

A commenter requested that the final regulations provide that aluminum oxide (alumina) is a form of aluminum for the purposes of section 45X(c)(6)(A)(i). The Treasury Department and the IRS note that section 45X(c)(6)(A)(i) provides eligibility for the credit for aluminum that is converted from bauxite to a minimum purity of 99 percent alumina by mass. One commenter requested that the definition of primary aluminum include molten metal. The Treasury Department and the IRS note that section 45X(c)(6)(A)(ii) does not restrict the form of aluminum purified to a minimum purity of 99.9 percent aluminum by mass. One commenter proposed lowering the eligible purity for aluminum to 96 percent. The Treasury Department and the IRS view this request as inconsistent with the statute.

A few commenters requested the definition of primary aluminum include all unwrought primary aluminum smelted from aluminum oxide (that is, alumina). One commenter requested that the final rules clarify that aluminum produced through secondary production is eligible for the section 45X credit. The preamble to the Proposed Regulations stated that proposed §1.45X-4(b)(1) clarifies that the term "commodity-grade aluminum" is limited to primary production of unwrought forms by specifying that commodity-grade aluminum must be "produced directly" from certain forms of aluminum. The Treasury Department and the IRS understand that the ability to ascertain and substantiate the process or processes used at an earlier point in the lifecycle of feedstock aluminum for secondary production is limited. The Treasury Department and the IRS are concerned that such limitations would pose significant substantiation and administrability issues if secondary production were permitted for commodity-grade aluminum under proposed §1.45X-4(b)(1).

A few commenters requested that the final rules replace the requirement that commodity-grade aluminum be "in a form sold on international commodity exchanges" with the requirement that such aluminum "has the ability to meet the chemical specifications of aluminum sold on international commodity exchanges," because not all aluminum sold to third-party customers is traded through the London Metal Exchange, which imposes the shape requirements. The commenters state that commercial grade aluminum is made into products that are alloyed to different specifications and shapes that are not traded through commodity markets, and the final rules should not distinguish among the end markets. Although the Treasury Department and the IRS view the requirement that commodity-grade aluminum be "in a form sold on international commodity exchanges" as providing important clarity and certainty for taxpayers and the IRS, as well as an objective and observable standard to determine eligibility, the Treasury Department and the IRS will continue to consider these comments as they work to finalize proposed §1.45X-4(b)(1).

One commenter requested the final regulations clarify "aluminum that is converted from alumina with a minimum purity of 99 percent on a fired basis should qualify as an applicable critical mineral." The Treasury Department and the IRS think that the additional language specifying whether the purity is measured on a fired basis or dried basis is not necessary due to the specific purity standards already listed in section 45X and the proposed rules. In addition, although these terms are often included on a Certificate of Analysis (COA), the Treasury Department and IRS anticipate that using these terms may cause confusion in circumstances in which these terms are not included on a COA.

With respect to all of the comments related to the definition of aluminum, the Treasury Department and the IRS have determined that additional consideration is necessary prior to finalizing proposed §1.45X-4(b)(1), which the Treasury Department and the IRS intend to do at a later date. For that reason, §1.45X-4(b)(1) is reserved in these final regulations.

2. Neodymium

Consistent with section 45X(c)(6)(R), proposed §1.45X-4(b)(18) would have provided that the term neodymium means neodymium that is converted to neodymium-praseodymium oxide that is purified to a minimum purity of 99 percent neodymium-praseodymium oxide by mass; converted to neodymium oxide that is purified to a minimum purity of 99.5 percent neodymium oxide by mass; or purified to a minimum purity of 99.9 percent neodymium by mass.

One commenter requested that the final rules provide that the following are eligible for the section 45X credit: (1) neodymium if purified to the industry standard minimum purity of 99.0 percent neodymium by mass; (2) neodymium converted to neodymium-praseodymium and purified to a minimum purity of 99.0 percent neodymium-praseodymium by mass; (3) neodymium-praseodymium that is purified to a minimum purity of 99.0 percent neodymium-praseodymium by mass; and (4) neodymium-iron-boron alloy or neodymium-praseodymium-iron-boron alloy purified to 99.0 percent by mass. The Treasury Department and the IRS do not have the statutory authority to modify the definition of neodymium or to modify purity percentages in proposed §1.45X-4(b)(18) and these final regulations adopt this proposed rule without change.

3. Vanadium

Consistent with section 45X(c)(6)(X), proposed §1.45X-4(b)(24) would have provided that the term vanadium means vanadium that is converted to ferrovanadium or vanadium pentoxide. One commenter requested that the definition of vanadium includes vanadium when it is purified to a minimum purity of 99 percent vanadium by mass. The Treasury Department and the IRS do not have the statutory authority to modify the definition of vanadium to include purity percentages, and these final regulations adopt this proposed rule without change.

4. Magnesium

Consistent with section 45X(c)(6)(Z)(x), proposed §1.45X-4(b)(26)(x) would have provided that the term magnesium means magnesium purified to a minimum purity of 99 percent by mass. One commenter requested that the definition of magnesium be expanded to include magnesium oxide and magnesium hydroxide at purity levels that range from 90-98 percent. The Treasury Department and the IRS do not have the statutory authority to modify the definition of magnesium or to modify purity percentages in proposed §1.45X-4(b)(26)(x), and these final regulations adopt this proposed rule without change.

C. *Credit amount—in general*

Section 45X(b)(1) generally provides the credit amount determined with respect to any eligible component, including any eligible component it incorporates, subject to the credit phase out provided at section 45X(b)(3). Section 45X(b)(3)(C) provides that the credit phase out does not apply with respect to any applicable critical mineral.

Section 45X(b)(1)(M) provides that, in the case of any applicable critical mineral, the credit amount is an amount equal to 10 percent of the costs incurred by the taxpayer with respect to production of such mineral. Proposed § 1.45X-4(c)(3) would have provided that the costs incurred for purposes of determining the credit amount includes costs as defined in §1.263A-1(e) that are paid or incurred within the meaning of section 461 of the Code by the taxpayer for the production of an applicable critical mineral only. As explained in the preamble to the Proposed Regulations, this rule has the effect of excluding any costs incurred after the production of the applicable critical mineral. The Proposed Regulations applied section 263A and the section 263A regulations solely to identify the types of costs that are includible in production costs incurred for purposes of computing the credit amount. The Proposed Regulations did not apply section 263A or the section 263A regulations for any other purposes, such as to determine whether a taxpayer is engaged in production activities.

Under the Proposed Regulations, direct or indirect materials costs, as defined in §1.263A-1(e)(2)(i)(A) and (e)(3)(ii)(E), respectively, and any costs related to the

extraction or acquisition of raw materials would not be taken into account as production costs. The Proposed Regulations would have attributed a wide range of costs to the production of an applicable critical mineral as costs incurred in producing the applicable critical mineral, including, but not limited to, labor, electricity used in the production of the applicable critical mineral, storage costs, depreciation or amortization, recycling, and overhead. However, the cost of acquiring the raw material used to produce the applicable critical mineral; the cost of materials used for conversion, purification, or recycling of the raw material; and other material costs related to the production of the applicable critical mineral were not taken into account.

The Proposed Regulations provided a credit for the costs associated with production activities that add value to the applicable critical mineral and are conducted by the taxpayer that produces the applicable critical mineral. Because purchasing raw materials may enable a taxpayer to produce an applicable critical mineral but it is not by itself an activity that adds value, the Proposed Regulations excluded material costs from creditable costs. This exclusion of material costs mitigates the risk of crediting the same costs multiple times.

Many commenters made similar arguments with respect applicable critical minerals and the inclusion of direct material costs as defined in §1.263A-1(e)(2)(i)(A), indirect material costs as defined in §1.263A-1(e)(3)(ii)(E), and costs related to the extraction of raw materials in their production costs for purposes of determining the credit. Commenters argued that there was insufficient textual support for a limitation, and any such limitation would work against the purposes of the credit. As with electrode active materials, commenters asserted that direct costs were often a substantial or predominant cost of producing applicable critical minerals. Denying credits for these costs would, in the opinion of commenters, be contrary to the goal of incentivizing extraction and production of applicable critical minerals. Commenters also disputed that direct and indirect costs are not incurred in value-adding activities.

A number of commenters also disputed that a credit should only be available once for the same material. Several commenters argued that the statutory language and structure did, at a minimum, give taxpayers credits for production of applicable critical minerals and, when those applicable critical minerals were used to produce electrode active materials, additional credits for the production of the electrode active materials. According to these commenters, the dual credits reflect the fact that these are separate productive activities for which section 45X provides separate credits. A commenter also urged that producers of applicable critical minerals be able to claim a credit if they can establish that the applicable critical minerals used in the production were acquired from production or extraction outside the United States and thus were previously ineligible for a section 45X credit. For applicable critical minerals that are produced using other precursor applicable critical minerals, a commenter recommended that the cost of the precursor applicable critical minerals be excluded from the cost of producing the applicable critical minerals.

A number of commenters proposed solutions to the problem of crediting the same production costs multiple times. One solution commenters proposed was to reduce the basis of property for which a credit has been claimed by an upstream producer. Commenters also proposed a system under which a taxpayer would only be eligible for a credit on costs of material for which no other taxpayer had previously claimed a credit. This arrangement could be administered through a system of certification or tracing in which taxpayers would be required to verify that its suppliers had not claimed previously claimed credits for costs associated with the same materials for which the taxpayer is claiming credits. Commenters generally agreed that producers should not need to be vertically integrated to claim credits. Instead, these commenters argued that each producer in the supply chain should be eligible to claim credits for, at a minimum, their addition to the value of the applicable critical minerals produced.

Some commenters addressed the requirement in section 45X(d)(2) that extraction or production of applicable critical minerals occur within the United States or a possession of the United States. A commenter urged that only the cost of extraction of applicable critical minerals occurring in the geology of the United States or its possessions should qualify for the section 45X credit in calculating the cost of production of such mineral. Other commenters urged that credits be permitted to taxpayers that process applicable critical minerals extracted outside the United States provided that the processing occurs within the United States or its possessions. One commenter proposed that the final regulations modify the proposed rule regarding constituent elements, materials, and subcomponents used in the production of applicable critical minerals to distinguish between imports of materials otherwise available from domestic sources and imported materials that are not available from domestic sources. Although this suggested proposal deviates from the Proposed Regulations, it would still allow for credits associated with costs of foreign-sourced constituent elements, materials, and subcomponents but only where domestic alternatives are not available.

Three commenters supported the Proposed Regulations' exclusion of direct, indirect, and extraction costs from production costs eligible for the credit. One commenter was concerned that a contrary rule would invite fraud, waste, and abuse and that, in the case of extraction costs, would be difficult to administer without the creation of a tracing system. Two commenters specifically identified extraction costs as something that should be excluded from the costs of production for the credit. One recommended more explicit clarification that the cost of the extraction of raw materials is excluded from creditable production costs.

With respect to these comments, refer to Part IV.E.1.e. of this Summary of Comments and Explanation of Revisions, which describes the revisions to the proposed rules for production costs of both electrode active materials and applicable critical minerals that are in these final regulations.

Proposed §1.45X-4(c)(4) would have required the taxpayer to document that their product meets the criteria for an applicable critical mineral as described in section 45X(c)(6) with a certificate of analysis provided by the taxpayer to the person to which the taxpayer sold the

applicable critical mineral. The Treasury Department and the IRS requested comments on this substantiation requirement, including whether a similar requirement should be applied to electrode active materials. With respect to this proposed rule, refer to Part IV.E.1.e. of this Summary of Comments and Explanation of Revisions, which describes the revisions to the proposed rules for substantiation of both electrode active materials and applicable critical minerals that are in these final regulations.

VI. *Other Comments Received Regarding Ancillary Issues*

In response to the Proposed Regulations, certain commenters responded concerning the application of sections 6417 and 6418. A commenter noted that the Proposed Regulations do not explain the process for making a section 6417 elective pay election for a section 45X credit and recommends the final regulations provide more details and guidance on the payment amount and potential considerations. Another commenter requested additional clarification on application procedures, methods, reporting items, refund/transfer periods, and other supplementary procedures relevant to the provisions of section 6417. Similar comments were received with respect to the transferability provisions of section 6418 that may apply to the section 45X credit. A separate commenter requested clarification regarding a transfer of tax credits from vessel manufacturer (shipyard) to vessel owner, and the possible effects of different ownership arrangements of related offshore wind vessels.

The comments related to sections 6417 and 6418 are outside the scope of these final regulations under section 45X, as the comments relate to rules under sections 6417 and 6418. Final regulations under sections 6417, 89 FR 17546 (March 11, 2024), corrected in 89 FR 26786 (April 16, 2024), and corrected in 89 FR 66562 (August 16, 2024) and 6418, 89 FR 34770 (April 30, 2024), corrected in 89 FR 67859 (August 22, 2024), are available and provide relevant information on the elective payment election under section 6417, making a transfer election under section 6418, and the impacts of various ownership structures on the ability and requirements when making an election under either section 6417 or section 6418.

A commenter suggested that the Proposed Regulations should have addressed whether the section 45X credit can be carried back to offset prior year tax liabilities or whether it can be transferred to other taxpayers. The commenter suggested that the final regulations allow the credit to be carried back for a reasonable period of time or to be transferred to other eligible taxpayers under certain conditions and limitations. This request is outside the scope of these final regulations, but as a clarification, section 39 of the Code describes rules related to the carryback and carryforward of unused credits, including section 39(a)(4) which provides a 3-year carryback period for any applicable credit (as defined in section 6417(b)). Section 1.6418-5(h) also provides a rule clarifying that a transferee of a specified credit portion under section 6418 can apply section 39(a)(4) to the extent the specified credit portion is described in section 6417(b) (list of applicable credits, taking into account any placed in service requirements in section 6417(b)(2), (3), and (5)).

A commenter requested that the final regulations define what constitutes a disposition or a cessation of eligibility for the purpose of recapturing the credit within five years of being placed in service. According to the commenter, the final rules should define the terms "disposition" and "cessation of eligibility" and provide examples and exceptions. As a clarification, the section 45X credit is not subject to the recapture provisions of section 50 of the Code because it is not an investment credit under section 46 of the Code. Further, there is no statutory authority under the provisions of section 45X to require recapture of the credit. Thus, these final regulations do not include any rules related to recapture.

A commenter noted that the Proposed Regulations do not address whether the section 45X credit can be specially allocated to certain partners or whether the credit can be modified by a partnership agreement for partnerships that produce and sell eligible components, possibly "creating inconsistencies or unfairness for some partners who may have different interests or expectations." The commenter requested that the final regulations include a rule allowing the section 45X credit to be specially allocated or modified by a partnership agreement. Because the commenter's request is addressed under section 704 and §1.704-1(b)(4)(ii) and does not relate to credit eligibility under section 45X, the Treasury Department and IRS decline to adopt a rule addressing partnership allocations in these final regulations.

VII. *Severability*

If any provision in this rulemaking is held to be invalid or unenforceable facially, or as applied to any person or circumstance, it shall be severable from the remainder of this rulemaking, and shall not affect the remainder thereof, or the application of the provision to other persons not similarly situated or to other dissimilar circumstances.

Applicability Dates

These regulations apply to eligible components for which production is completed and sales occur after December 31, 2022, and during taxable years ending on or after October 28, 2024. Taxpayers may choose to apply these regulations to eligible components for which production is completed and sales occur after December 31, 2022, and during taxable years ending before October 28, 2024, provided that taxpayers follow these regulations in their entirety and in a consistent manner.

Effect on Other Documents

Section 5.05(2) of Notice 2023-18 and section 3 of Notice 2023-44, which relate to the interaction between sections 45X and 48C, are superseded for eligible components for which production is completed and sales occur after October 28, 2024.

Special Analyses

I. *Regulatory Planning and Review*

Pursuant to the Memorandum of Agreement, Review of Treasury Regulations under Executive Order 12866 (June 9, 2023), tax regulatory actions issued by the IRS are not subject to the requirements of

section 6(b) of Executive Order 12866, as amended. Therefore, a regulatory impact assessment is not required.

II. *Paperwork Reduction Act*

The Paperwork Reduction Act of 1995 (44 U.S.C. 3501-3520) (PRA) generally requires that a Federal agency obtain the approval of the Office of Management and Budget (OMB) before collecting information from the public, whether such collection of information is mandatory, voluntary, or required to obtain or retain a benefit.

The collections of information in these final regulations contain reporting and recordkeeping requirements that are required to validate eligibility to claim a section 45X credit. These collections of information would generally be used by the IRS for tax compliance purposes and by taxpayers to facilitate proper reporting and compliance. The general recordkeeping requirements mentioned within these final regulations are considered general tax records under §1.6001-1(e). Specific certification statements under §1.45X-1(c)(3) and statements required in §§1.45X-3(e)(2)(iv)(C) and 1.45X-4(c)(4) are considered general tax records and are required for the IRS to validate the taxpayer that may claim a section 45X credit. For PRA purposes, general tax records are already approved by OMB under 1545-0074 for individuals, 1545-0123 for business entities, and under 1545-0092 for trust and estate filers.

These final regulations also provide reporting requirements related to making the Related Person Election as described in §1.45X-2(d) and calculating the section 45X credit amount as described in §1.45X-1. The Related Person Election will be made by taxpayers with Forms 1040, 1041, 1120-S, 1065, and 1120, on Form 7207, *Advanced Manufacturing Production Credit* (or any successor forms); and credit calculations will be made on Form 3800 and supporting forms including Form 7207 (and any successor forms). These forms are approved under 1545-0074 for individuals, 1545-0123 for business entities, 1545-2306 for trust and estate filers of Form 7207, and 1545-0895 for trust and estate filers of Form 3800. These final regulations are not changing or creating new collection requirements not already approved by OMB or will be approved under 5 CFR 1320.10 by OMB.

No public comments were received by the IRS directed specifically at the PRA or on the collection requirements, but commenters generally articulated the burdens associated with the documentation requirements contained in the Proposed Regulations. As described in the relevant portions of this preamble, the Treasury Department and the IRS have determined that the documentation requirements are necessary to administer the provisions of section 45X.

III. *Regulatory Flexibility Act*

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq*.) (RFA) imposes certain requirements with respect to Federal rules that are subject to the notice and comment requirements of section 553(b) of the Administrative Procedure Act (5 U.S.C. 551 *et seq*.) and that are likely to have a significant economic impact on a substantial number of small entities. Unless an agency determines that a proposal is not likely to have a significant economic impact on a substantial number of small entities, section 603 of the RFA requires the agency to present a final regulatory flexibility analysis (FRFA) of the final regulations. The Treasury Department and the IRS have not determined whether the final regulations will likely have a significant economic impact on a substantial number of small entities. This determination requires further study. Because there is a possibility of significant economic impact on a substantial number of small entities, a FRFA is provided in these final regulations.

Pursuant to section 7805(f) of the Code, the Proposed Regulations were submitted to the Chief Counsel of the Office of Advocacy of the Small Business Administration for comment on its impact on small business, and no comments were received.

A. *Need for and objectives of the rule*

The final regulations provide greater clarity to taxpayers that intend to claim a section 45X credit. The final regulations provide necessary definitions, the time and manner to make the Related Person Election and rules regarding the determination of credit amounts. The Treasury Department and the IRS intend and expect that giving taxpayers guidance that allows them to claim the section 45X credit will beneficially impact various industries. In particular, the section 45X credit encourages the domestic production of eligible components and incentivizes taxpayers to invest in clean energy projects that generate eligible credits.

B. *Affected small entities*

The RFA directs agencies to provide a description of, and if feasible, an estimate of, the number of small entities that may be affected by the proposed rules, if adopted. The Small Business Administration Office of Advocacy (SBA) estimates in its 2023 Frequently Asked Questions that 99.9 percent of American businesses meet its definition of a small business. The applicability of these final regulations does not depend on the size of the business, as defined by the SBA.

As described more fully in the preamble to this final regulation and in this initial regulatory flexibility analysis (IRFA), section 45X and these final regulations may affect a variety of different entities across several different clean energy industries as multiple types of eligible components are provided for under the statute and manufacturers may produce more than one type. Although there is uncertainty as to the exact number of small businesses within this group, the current estimated number of respondents to these final rules is 13,450 taxpayers. The estimated total annual reporting burden and estimated average annual burden per respondent will be computed when Form 7207 and the instructions to Form 7207 are updated to reflect these final regulations.

The Treasury Department and the IRS utilize tax data as the basis for its RFA analysis. Tax entities supply information on tax forms, which information is processed and recorded by the IRS. This data is then available to the IRS office of Research, Applied Analytics and Statistics and to the Treasury Department's Office of Tax Policy for use in estimating the impact of tax regulation on businesses. Tax data is the more appropriate

data as it provides nearly universal coverage of the entities that are affected by these tax regulations. All taxpayers and many potential taxpayers are represented in the universe of tax data. Second, the tax data more accurately reflect the level of organization to which tax regulations are applicable because tax data is collected on the entity rather than the enterprise level. Overwhelmingly, business tax regulations apply to the entity level making tax data a natural fit for the analysis of regulatory impact. Further, with limited exceptions, tax regulations apply to all entities organized in a particular manner regardless of industry or size. Finally, analysis of the implications of tax regulations for the purposes of the PRA and any Special Analyses, including the Regulatory Impact Analysis, are carried out using tax data. Generally, restricting analysis for the RFA to tax data prevents difficulties in reconciling the different analyses within a given regulation.

Reliance on tax data has some drawbacks. In general, tax forms do not collect information unless it is directly relevant to the calculation of tax liability. The Northern American Industry Classification System (NAICS) codes referenced by the Office of Advocacy of the Small Business Administration are included on tax forms for informational purposes and may not be reliable. For example, past the first two-digits of the NAICS code, economic sector level, entries may be left blank in the raw data. In addition, for a tax entity that is comprised of multiple different enterprises that each operate in a different industry, the NAICS code reported on a tax form may not reflect the appropriate industry for the regulation under analysis. Furthermore, most tax returns have no independent verification of the accuracy of NAICS codes. Notwithstanding this concern, tax data remains the most appropriate data for analysis of the implications of tax regulations.

The Treasury Department and the IRS have considered other data alternatives including Census data sources, such as the Statistics of U.S. Businesses (SUSB) suggested by SBA's Office of Advocacy. The 2020 SUSB includes only six million firms and eight million establishments while the proposed tax data includes approximately 18 million business entities. Unlike the SUSB data, the tax data includes more small businesses, not only ones with at least one employee. Tax data provides a more inclusive estimate of businesses affected by tax regulations. In conclusion, while tax data is an appropriate resource for evaluating the impact of tax regulations, this data does not permit some of the usual analysis presented to the SBA. Furthermore, since the NAICS codes reported on the tax return may not accurately reflect the industry of the entity, applying separate standards by industry is inadvisable.

Thus, the Treasury Department and the IRS have determined that reliance on NAICS codes would not accurately reflect the entities affected by these regulations. Further, the Treasury Department and the IRS currently do not have useable tax data that reflects the entities that will be affected by these regulations. While there is uncertainty as to the exact number of small businesses within this group, the Treasury Department and the IRS continue to estimate that approximately 13,450 taxpayers will be impacted.

The Treasury Department and the IRS expect to receive more information on the impact on small businesses after taxpayers start to claim the section 45X credit using the guidance and procedures provided in these final regulations.

C. *Impact of the rules*

The final regulations provide rules for how taxpayers can claim the section 45X credit. Taxpayers that claim the section 45X credit will have administrative costs related to reading and understanding the rules as well as recordkeeping and reporting requirements because of the Related Person Election, computation of the section 45X credit and tax return requirements. The costs will vary across different-sized entities and across the type of production activities in which such entities are engaged.

The Related Person Election allows a taxpayer to make an irrevocable election annually with their Federal income tax return by providing the information required on Form 7207 (or any successor form), including, for example, the name, EIN of the taxpayer; a description of the taxpayer's trade or business; the name, address and EINs of all related persons; a list of the eligible components that are sold, and the intended purpose of the eligible components sold by the related person. To make the Related Person Election and claim the section 45X credit, the taxpayer must file an annual Federal income tax return. The reporting and recordkeeping requirements for that Federal income tax return would be required for any taxpayer that is claiming a general business credit, regardless of whether the taxpayer was making a Related Person Election under section 45X.

D. *Alternatives considered*

The Treasury Department and the IRS considered alternatives to these final regulations. For example, the Treasury Department and the IRS considered whether to impose certain pre-return filing requirements as a condition of making the Related Person Election as authorized in section 45X(a)(3)(B)(ii) to prevent duplication, fraud, or improper or excessive credits. These final regulations were designed to minimize burdens for taxpayers while ensuring that the IRS has sufficient information to determine eligibility for the section 45X credit. The Treasury Department and the IRS determined that requiring registration before a taxpayer makes the Related Person Election is unnecessary at this time. These final regulations would allow taxpayers to make an irrevocable Related Person Election annually with their Federal income tax return by providing the information required on Form 7207 (or any successor form), which would provide the IRS with sufficient information to assist in preventing duplication, fraud, or the claiming of improper or excessive credits if eligible components are produced and then sold to related persons.

E. *Duplicative, overlapping, or conflicting Federal rules*

The final rule would not duplicate, overlap, or conflict with any relevant Federal rules. As discussed previously, the final rule would merely provide procedures and definitions to allow taxpayers to claim the section 45X credit. The Treasury Department and the IRS invite input from

interested members of the public about identifying and avoiding overlapping, duplicative, or conflicting requirements.

IV. *Unfunded Mandates Reform Act*

Section 202 of the Unfunded Mandates Reform Act of 1995 requires that agencies assess anticipated costs and benefits and take certain other actions before issuing a final rule that includes any Federal mandate that may result in expenditures in any one year by a State, local, or Tribal government, in the aggregate, or by the private sector, of $100 million (updated annually for inflation). These final regulations do not include any Federal mandate that may result in expenditures by State, local, or Tribal governments, or by the private sector in excess of that threshold.

V. *Executive Order 13132: Federalism*

Executive Order 13132 (Federalism) prohibits an agency from publishing any rule that has federalism implications if the rule either imposes substantial, direct compliance costs on State and local governments, and is not required by statute, or preempts State law, unless the agency meets the consultation and funding requirements of section 6 of the Executive order. These final regulations do not have federalism implications and do not impose substantial direct compliance costs on State and local governments or preempt State law within the meaning of the Executive order.

VI. *Executive Order 13175: Consultation and Coordination with Indian Tribal governments*

Executive Order 13175 (Consultation and Coordination with Indian Tribal governments) prohibits an agency from publishing any rule that has Tribal implications if the rule either imposes substantial, direct compliance costs on Indian Tribal governments, and is not required by statute, or preempts Tribal law, unless the agency meets the consultation and funding requirements of section 5 of the Executive order. This final rule does not have substantial direct effects on one or more federally recognized Indian tribes and does not impose substantial direct compliance costs on Indian Tribal governments within the meaning of the Executive order.

VII. *Congressional Review Act*

Pursuant to the Congressional Review Act (5 U.S.C. 801 *et seq.*), the Office of Information and Regulatory Affairs designated this rule as a major rule as defined by 5 U.S.C. 804(2).

Statement of Availability of IRS Documents

IRS notices and other guidance cited in this preamble are published in the Internal Revenue Bulletin (or Cumulative Bulletin) and are available from the Superintendent of Documents, U.S. Government Publishing Office, Washington, DC 20402, or by visiting the IRS website at *https://www.irs.gov*.

Drafting Information

The principal authors of these final regulations are Mindy Chou, John Deininger, Derek Gimbel, John Lovelace, and Alexander Scott. However, other personnel from the Office of Chief Counsel, the Treasury Department, and the IRS participated in the development of these regulations.

List of Subjects in 26 CFR Part 1

Income taxes, Reporting and recordkeeping requirements.

Adoption of Amendments to the Regulations

Accordingly, the Treasury Department and the IRS amend 26 CFR part 1 as follows:

PART 1—INCOME TAXES

Paragraph 1. The authority citation for part 1 is amended by adding entries in numerical order for §§1.45X-1 through 1.45X-4 to read in part as follows:

Authority: 26 U.S.C. 7805 * * *

Section 1.45X-1 also issued under 26 U.S.C. 45X, 6001, 6417(h) and 6418(h).

Section 1.45X-2 also issued under 26 U.S.C. 45X and 1502.

Section 1.45X-3 also issued under 26 U.S.C. 6001.

Section 1.45X-4 also issued under 26 U.S.C. 6001.

* * * * *

Par. 2. Sections 1.45X-0 through 1.45X-4 are added to read as follows:

Sec.

* * * * *

1.45X-0 Table of contents.

1.45X-1 General rules applicable to the advanced manufacturing production credit.

1.45X-2 Sale to unrelated person.

1.45X-3 Eligible components.

1.45X-4 Applicable critical minerals.

* * * * *

§1.45X-0 Table of contents.

This section lists the major captions contained in §§1.45X-1 through 1.45X-4.

§1.45X-1 General rules applicable to the advanced manufacturing production credit.

(a) Overview.

(b) Credit amount.

(c) Definition of produced by the taxpayer.

(d) Produced in the United States.

(e) Production and sale in a trade or business.

(f) Sale of integrated components.

(g) Interaction between sections 45X and 48C.

(h) [Reserved]

(i) Anti-abuse rule.

(j) Applicability date.

§1.45X-2 Sale to unrelated person.

(a) In general.

(b) Definitions.

(c) Special rule for sale to related person.

(d) Related person election.

(e) Sales of integrated components to related person.

(f) Applicability date.

§1.45X-3 Eligible components.

(a) In general.

(b) Solar energy components.

(c) Wind energy components.
(d) Inverters.
(e) Qualifying battery component.
(f) Phase out rule.
(g) Applicability date.

§1.45X-4 Applicable critical minerals.

(a) In general.
(b) Definitions.
(c) Credit amount.
(d) Applicability date.

§1.45X-1 General rules applicable to the advanced manufacturing production credit.

(a) *Overview*—(1) *In general*. This section provides general rules regarding the advanced manufacturing production credit determined under section 45X of the Code (section 45X credit). Paragraph (a)(2) of this section provides definitions of certain terms that apply for purposes of section 45X and the section 45X regulations (as defined in paragraph (a)(2)(xv) of this section). Paragraphs (b) through (j) of this section provide the basic rules regarding the section 45X credit, including the definition of the term *produced by the taxpayer*, and rules to determine the taxpayer that produces an eligible component and whether such taxpayer is entitled to claim a section 45X credit in contract manufacturing arrangements; where the production of eligible components must occur; the treatment of integrated, incorporated or assembled eligible components; and the interaction between sections 45X and 48C of the Code. *See* §1.45X-2 for rules regarding sales to unrelated persons, sales to related persons, and the related person election (Related Person Election), including rules regarding the time, place, and manner of making the Related Person Election. *See* §1.45X-3 for the definitions of all eligible components (except applicable critical minerals) and the credit amounts available for each of these eligible components, including certain phase-out percentages. *See* §1.45X-4 for the definitions of applicable critical minerals and the rules regarding the determination of the credit amount for applicable critical minerals.

(2) *Generally applicable definitions*. This paragraph (a)(2) provides definitions of terms that apply for purposes of section 45X and the section 45X regulations.

(i) *Applicable critical mineral.* The term *applicable critical mineral* means any of the minerals that are listed in section 45X(c)(6) and defined in §1.45X-4(b).

(ii) *Code*. The term *Code* means the Internal Revenue Code.

(iii) *Contract manufacturing arrangement*. The term *contract manufacturing arrangement* is defined in paragraph (c)(3)(ii)(B) of this section.

(iv) *Electrode active materials*. The term *electrode active materials* is defined in section 45X(c)(5)(B)(i) and described in §1.45X-3(e)(2).

(v) *Eligible component*. The term *eligible component* is defined in section 45X(c)(1)(A) and described in §§1.45X-3 and 1.45X-4.

(vi) *Eligible taxpayer*. The term *eligible taxpayer* is defined in paragraph (c)(3) of this section.

(vii) *Extraction*. The term *extraction* is defined in §1.45X-3(e)(2)(iv)(B).

(viii) *Guidance*. The term *guidance* means guidance published in the **Federal Register** or Internal Revenue Bulletin, as well as administrative guidance such as forms, instructions, publications, or other guidance on the IRS.gov website. *See* §§601.601 and 601.602 of this chapter.

(ix) *IRA*. The term *IRA* means Public Law 117-169, commonly known as the Inflation Reduction Act of 2022.

(x) *IRS*. The term *IRS* means the Internal Revenue Service.

(xi) *Produced by the taxpayer*. The term *produced by the taxpayer* is defined in paragraph (c) of this section.

(xii) *Related person*. The term *related person* is defined in §1.45X-2(b)(2).

(xiii) *Related Person Election*. The term *Related Person Election* is defined in §1.45X-2(d)(1).

(xiv) *Secretary*. The term *Secretary* means the Secretary of the Treasury or her delegate.

(xv) *Section 45X regulations.* The term *section 45X regulations* means the provisions of this section, §§1.45X-2 through 1.45X-4, and the regulations in this chapter under sections 6417 and 6418 of the Code that relate to the section 45X credit.

(xvi) *Unrelated person*. The term *unrelated person* is defined in section 45X(a)(3) and described in §1.45X-2(b)(3).

(b) *Credit amount*. Except as otherwise provided in section 45X(b)(3) and §1.45X-3(f), for purposes of section 38 of the Code, the amount of the section 45X credit for any taxable year is equal to the sum of the credit amounts provided under section 45X(b) and described in §§1.45X-3 and 1.45X-4 with respect to each eligible component that is produced by the taxpayer and, within the taxable year, sold by the taxpayer to an unrelated person. *See* §1.45X-2 for rules regarding sales of eligible components to related persons that may be treated as if sold to unrelated persons for purposes of section 45X(a).

(c) *Definition of produced by the taxpayer*—(1) *In general.* The term *produced by the taxpayer* means a process conducted by the taxpayer that substantially transforms constituent elements, materials, or subcomponents into a complete and distinct eligible component that is functionally different from that which would result from minor assembly or superficial modification of the elements, materials, or subcomponents, and includes both primary and secondary production. Primary production involves producing an eligible component using non-recycled materials while secondary production involves producing an eligible component using recycled materials.

(i) *Partial transformation*. The term *produced by the taxpayer* does not include partial transformation that does not result in substantial transformation of constituent elements, materials, or subcomponents into a complete and distinct eligible component as described in this paragraph (c)(1).

(ii) *Minor assembly or superficial modification*. The term *produced by the taxpayer* does not include minor assembly of two or more constituent elements, materials, or subcomponents, or superficial modification of the final eligible component, if the taxpayer does not also engage in the process resulting in a substantial transformation described in paragraph (c)(1) or (2) of this section.

(iii) *Examples.* The following examples illustrate the application of this paragraph (c)(1).

(A) *Example 1.* Taxpayers X, Y, and Z each produce one of three sections of a wind tower that together make up the wind tower. No taxpayer has produced an eligible component within the meaning of section 45X(a)(1)(A) because no taxpayer has produced all sections of the wind tower.

(B) *Example 2.* Same facts as paragraph (c)(1)(iii)(A) of this section (*Example 1*), but taxpayers X, Y, and Z instead form Partnership XYZ. Partnership XYZ produces all three sections of the wind tower. Partnership XYZ has produced an eligible component within the meaning of section 45X(a)(1)(A).

(C) *Example 3*. Taxpayer V puts the external casing on a battery module (within the meaning of §1.45X-3(e)(4)(i)(A)) that already had cells, battery management systems, and other components integrated into it. Taxpayer V has engaged in minor assembly and has not produced an eligible component within the meaning of section 45X(a)(1)(A).

(D) *Example 4.* Taxpayer U purchases two finished halves of a wind turbine nacelle and combines them into a single nacelle. Taxpayer U has engaged in minor assembly and has not produced an eligible component within the meaning of section 45X(a)(1)(A).

(E) *Example 5*. Taxpayer T purchases a dry cell battery and fills the electrolyte of the battery. Taxpayer T has engaged in minor assembly and has not produced an eligible component within the meaning of section 45X(a)(1)(A).

(F) *Example 6.* Taxpayer W purchases a prefabricated wind turbine blade and applies paint and finishes. Taxpayer W has engaged in superficial modification of the blade and has not produced an eligible component within the meaning of section 45X(a)(1)(A).

(2) *Special rule for certain eligible components*—(i) *In general.* For solar grade polysilicon, electrode active materials, and applicable critical minerals, the term *produced by the taxpayer* means processing, converting, refining, or purifying source materials, such as brines, ores, or waste streams, to substantially transform the source materials to derive a distinct eligible component, and includes both primary and secondary production. For the production process for electrode active materials and applicable critical minerals, the term *conversion* is defined in §1.45X-3(e)(2)(iii)(A) or §1.45X-4(c)(2)(i), respectively, and the term *purification* is defined in §1.45X-3(e)(2)(iii)(B) or §1.45X-4(c)(2)(ii), respectively.

(ii) *Example*. Taxpayers X, Y and Z are unrelated C corporations that have calendar year taxable years. In 2024, X extracts raw lithium from natural mineral deposits and purifies the extracted material to 90% lithium by mass. X subsequently hires Y to further purify the lithium material furnished by X to a purity of no less than 99.9% lithium by mass as required by section 45X(c)(6)(P)(ii) and §1.45X-4(b)(16)(ii). In 2025, Y purifies the material to 99.9% lithium by mass (qualifying lithium). X subsequently sells the qualifying lithium to Z in 2026. X may not claim a section 45X credit for the qualifying lithium sold to Z because the qualifying lithium was not produced by X within the meaning of this paragraph (c)(2) of this section, given that X did not transform the lithium material to derive a distinct eligible component (i.e., lithium which satisfies the minimum purity of 99.9% lithium by mass prescribed by section 45X(c)(6)(P)(ii)).

(3) *Eligible taxpayer*—(i) *In general*. Except as otherwise provided in paragraph (c)(3)(iii) of this section, a taxpayer claiming a section 45X credit with respect to an eligible component must be the taxpayer that directly performs the production activities that bring about a substantial transformation resulting in the eligible component and must sell such eligible component to an unrelated person.

(ii) *Contract manufacturing arrangement*—(A) *In general*. If the production of an eligible component is performed in whole or in part pursuant to a contract that is a contract manufacturing arrangement, then, provided the other requirements of section 45X are met, the party to such contract that may claim the section 45X credit with respect to such eligible component is the party that performs the actual production activities that bring about a substantial transformation resulting in the eligible component.

(B) *Contract manufacturing arrangement defined*. The term *contract manufacturing arrangement* means any agreement (or agreements) providing for the production of an eligible component if the agreement is entered into before the production of the eligible component to be delivered under the contract is completed. A routine purchase order for off-the-shelf property is not treated as a contract manufacturing arrangement for purposes of this paragraph (c)(3). An agreement will be treated as a routine purchase order for off-the-shelf property if the contractor is required to make no more than de minimis modifications to the property to tailor it to the customer's specific needs, or if at the time the agreement is entered into, the contractor knows or has reason to know that the contractor can satisfy the agreement out of existing stocks or normal production of finished goods.

(iii) *Special rule for contract manufacturing arrangements*. If an eligible component is produced by a taxpayer pursuant to a contract manufacturing arrangement, the parties to such agreement may determine by agreement the party that may claim the section 45X credit. If a taxpayer enters into contract manufacturing arrangements with multiple fabricators to produce an eligible component, the parties to such agreements may determine by agreement the party that may claim the section 45X credit. The IRS will not challenge the agreement of the parties provided all the parties submit signed certification statements in the manner required in Form 7207, *Advanced Manufacturing Production Credit*, or its instructions (as described in paragraph (c)(3)(iv) of this section) indicating that all parties agree as to the party that may claim the section 45X credit.

(iv) *Certification statement requirements.* A certification statement indicating that all parties to a contract manufacturing arrangement agree as to the party that will claim the section 45X credit must include—

(A) All required information set forth in guidance; and

(B) A properly signed penalty of perjury statement that includes the following: under penalties of perjury, I declare that I have examined this statement, including accompanying documents, and to the best of my knowledge and belief, the facts presented in support of this statement are true, correct, and complete.

(v) *Examples*. The following examples illustrate the application of this paragraph (c)(3).

(A) *Example 1*: *Contract manufacturing with sale*. Taxpayers X, Y and Z are unrelated C corporations that have calendar year taxable years. In 2024, pursuant to a contract manufacturing arrangement as described in paragraph (c)(3)(ii)(B) of this section, X hires Y to produce a solar module. The contract is a tolling arrangement and provides that Y will produce the solar module according to X's designs and specifications and using the materials and subcomponents that X provides. X and Y enter an agreement providing that X is the sole party that may claim a section 45X credit for the production and sale of the solar module, and X and Y each sign a certification statement as described in paragraph (c)(3)(iv) of this section reflecting this agreement. In 2025, Y produces and delivers the solar module to X, and in 2026, X

sells the solar module to Z. X may claim a section 45X credit in taxable year 2026 for the solar module it sold to Z provided all other requirements of section 45X are met and the certification statements signed by X and Y meet the requirements described in paragraph (c)(3)(iv) of this section and are properly submitted by X. Y could claim a section 45X credit if the agreement between X and Y had designated Y as the sole party that could claim a section 45X credit for the production and sale of the solar module provided all other requirements of section 45X are met and the certification statements signed by X and Y meet the requirements described in paragraph (c)(3)(iv) of this section and are properly submitted by Y.

(B) *Example 2*: *Contract manufacturing with no sale.* Assume the facts are the same as in paragraph (c)(3)(v)(A) of this section (*Example 1*), except that X does not sell the solar module and instead X uses it to generate electricity for use in X's trade or business. Because there has been no sale, neither X nor Y may claim a section 45X credit for the solar module regardless of whether X and Y submit signed certification statements described in paragraph (c)(3)(iv) of this section.

(C) *Example 3*: *Multiple contract manufacturing arrangements.* Taxpayers V, W, X, Y, and Z are unrelated C corporations that have calendar year taxable years. In 2024, pursuant to three separate contract manufacturing arrangements as described in paragraph (c)(3)(ii)(B) of this section, V hires W, X, and Y to produce the bottom, middle and top segments, respectively, of a single wind tower that V designed. W, X, Y, and V enter into an agreement providing that V is the sole party that may claim a section 45X credit for the production and sale of the wind tower, and W, X, Y, and V each sign a certification statement as described in paragraph (c)(3)(iv) of this section reflecting this agreement. In 2024, W and X both produce and deliver their respective wind tower segments to the installation site, and in 2025, Y produces and delivers its wind tower segment to the installation site. In 2026, V sells the completed wind tower to Z. V may claim a section 45X credit in taxable year 2026 for the wind tower it sold to Z provided all other requirements of section 45X are met and the certification statements signed by V, W, X, and Y meet the requirements described in paragraph (c)(3)(iv) of this section and are properly submitted by V. W or X or Y could be the party that could claim a section 45X credit if the agreement between V, W, X and Y had designated W or X or Y as the sole party that could claim a section 45X credit for the production and sale of the wind tower provided all other requirements of section 45X are met and the certification statements signed by V, W, X, and Y meet the requirements described in paragraph (c)(3)(iv) of this section and are properly submitted by the party designated as the sole party that could claim a section 45X credit.

(D) *Example 4*: *Applicable Critical Mineral Processing with Certification.* Taxpayers X, Y, and Z are unrelated C corporations that have calendar year taxable years. In 2024, X extracts raw lithium from natural mineral deposits and purifies the extracted material to 90% lithium by mass. X subsequently hires Y to further process the lithium material pursuant to a contract manufacturing arrangement as described in paragraph (c)(3)(ii)(B) of this section. Specifically, the contract is a tolling arrangement and provides that X remains the owner for Federal income tax purposes throughout the purification process and that Y will further purify the lithium material furnished by X to a purity of no less than 99.9% lithium by mass as required by section 45X(c)(6)(P) and §1.45X-4(b)(16)(ii). X and Y enter an agreement providing that X is the sole party that may claim a section 45X credit for the production and sale of the applicable critical mineral, and X and Y each sign a certification statement as described in paragraph (c)(3)(iv) of this section reflecting this agreement. In 2025, Y purifies the material to 99.9% lithium by mass (qualifying lithium) and delivers it to X. X subsequently sells the qualifying lithium to Z in 2026. X may claim a section 45X credit in taxable year 2026 for the qualifying lithium sold to Z, provided that all other requirements of section 45X are met, and the certification statements signed by X and Y meet the requirements described in paragraph (c)(3)(iv) of this section and are properly submitted by X. Y could claim a section 45X credit if the agreement between X and Y had designated Y as the sole party that could claim a section 45X credit for the qualifying lithium, provided that all other requirements of section 45X are met, and the certification statements signed by X and Y meet the requirements described in paragraph (c)(3)(iv) of this section and are properly submitted by Y. Neither X nor Y could claim a section 45X credit in the absence of a designating agreement and certification statement (described in paragraphs (c)(3)(iii) and (iv) of this section, respectively) for the reasons stated in paragraph (c)(3)(i) of this section.

(4) *Timing of production and sale*—(i) *In general*. Production of eligible components for which a taxpayer is claiming a section 45X credit may begin before December 31, 2022. Production of eligible components must be completed, and sales of eligible components must occur, after December 31, 2022.

(ii) *Example.* Taxpayer X has a calendar year taxable year. Taxpayer X begins production of a related offshore wind vessel (as defined in section 45X(c)(4)(B)(iv) and described in §1.45X-3(c)(4)) in January 2022. Production is completed in December 2024 and the sale to an unrelated person occurs in 2025. Taxpayer X is eligible to claim the section 45X credit in 2025, assuming that all other requirements of section 45X are met.

(d) *Produced in the United States*—(1) *In general*. Sales are taken into account for purposes of the section 45X credit only for eligible components that are produced within the United States, as defined in section 638(1) of the Code, or a United States territory, which for purposes of section 45X and the section 45X regulations has the meaning of the term *possession* provided in section 638(2).

(2) *Subcomponents*. Constituent elements, materials, and subcomponents used in the production of eligible components are not subject to the domestic production requirement provided in paragraph (d)(1) of this section.

(e) *Production and sale in a trade or business*. An eligible component produced and sold by the taxpayer is taken into account for purposes of the section 45X credit only if the production and sale are in a trade or business (within the meaning of section 162 of the Code) of the taxpayer.

(f) *Sale of integrated components*—(1) *In general.* For purposes of the section 45X credit, section 45X(d)(4) provides that a taxpayer that produces an eligible component is treated as having sold such eligible component to an unrelated person if such component is integrated, incorporated, or assembled into another eligible component that is then sold to an unrelated person.

(i) *Integrated, incorporated, or assembled.* The term *integrated*, *incorporated*, *or assembled* means the production activities by which an eligible component that is a constituent element, material, or subcomponent is substantially transformed into another complete and distinct eligible component that is not solar grade polysilicon, an electrode active material, or an applicable critical mineral. The term *integrated*, *incorporated*, *or assembled* does not mean the minor assembly or superficial modification of an eligible component used as an element, material, or subcomponent and other elements, materials, or subcomponents that results in a distinct product.

(ii) *Special rule for eligible components resulting in solar grade polysilicon, electrode active materials, or applicable critical minerals.* For solar grade polysilicon, electrode active materials, and applicable critical minerals, the term *integrated*, *incorporated*, *or assembled* means the production activities in which an eligible component is processed, converted, refined, or purified to derive a distinct eligible component that is solar grade polysilicon, an electrode active material, or an applicable critical mineral. The term *integrated*, *incorporated*, or *assembled* does not mean minor assembly or superficial modification of an eligible component used as an element, material, or subcom-

ponent and other elements, materials, or subcomponents that results in a distinct product.

(2) *Application*—(i) *In general*. A taxpayer may claim a section 45X credit for each eligible component the taxpayer produces and sells to an unrelated person, including any eligible component the taxpayer produces that was used as a constituent element, material, or subcomponent and integrated, incorporated, or assembled into another complete and distinct eligible component or another complete and distinct product (that is not itself an eligible component) that the taxpayer also produces and sells to an unrelated person.

(ii) *Example: Sale of product with incorporated eligible components to unrelated person*. In 2022, X, a domestic corporation that has a calendar year taxable year, begins production of electrode active materials (EAMs) that are completed in 2023 and incorporated into battery cells that X also produces. In 2024, X incorporates those battery cells into battery modules (within the meaning of §1.45X-3(e)(4)(i)(A)) and integrates the battery modules into electric vehicles. X sells the electric vehicles to Z, an unrelated person, in 2024. X may claim a section 45X credit for the EAMs, the battery cells, and the battery modules in 2024.

(g) *Interaction between sections 45X and 48C*—(1) *In general.* For purposes of the section 45X credit, consistent with section 45X(c)(1)(B), property that would otherwise qualify as an eligible component (otherwise qualified property) is only an eligible component if the property is produced at a section 45X facility (as defined in paragraph (g)(2) of this section) and no part of that section 45X facility is also a section 48C facility (as defined in paragraph (g)(3) of this section).

(2) *Section 45X facility*—(i) *In general*. A section 45X facility comprises the independently functioning tangible property used by the taxpayer that is necessary to be considered the producer of the otherwise qualified property within the meaning of paragraph (c)(1) or (2) of this section, as applicable. The tangible property that comprises a section 45X facility may be in more than one location.

(ii) *Special rule for contract manufacturing arrangement*. In the case of a contract manufacturing arrangement where the parties have agreed to who can claim a section 45X credit under paragraph (c)(3)(iii) of this section, the section 45X facility under paragraph (g)(2)(i) of this section is determined by taking into account the tangible property used to produce the otherwise qualified property, regardless of which party to the arrangement claims the credit.

(3) *Section 48C facility*—(i) *In general*. A *section 48C facility* includes all eligible property included in a qualifying advanced energy project for which a taxpayer receives an allocation of section 48C credits under the allocation program established under section 48C(e) and claims such credits after August 16, 2022.

(ii) *Eligible property. Eligible property* is property that—

(A) Is necessary for the production or recycling of property described in section 48C(c)(1)(A)(i), re-equipping an industrial or manufacturing facility described in section 48C(c)(1)(A)(ii), or re-equipping, expanding, or establishing an industrial facility described in section 48C(c)(1)(A)(iii);

(B) Is tangible personal property, or other tangible property (not including a building or its structural components), but only if such property is used as an integral part of the qualified investment credit facility; and

(C) With respect to which depreciation (or amortization in lieu of depreciation) is allowable.

(4) *Examples.* The following examples illustrate the application of this paragraph (g), and assume any other requirements of section 45X that are not described have been met:

(i) *Example 1*: *Two independent section 45X facilities*—(A) *Facts*. Taxpayer owns and operates a manufacturing site that contains tangible property made up of Equipment A and Equipment B, each set of which functions independently and which is arranged in serial fashion. Equipment A is used by the taxpayer to produce otherwise qualified property 1. Equipment B is used to produce otherwise qualified property 2, a different type of product than otherwise qualified property 1. Taxpayer was allocated a section 48C credit under the section 48C(e) program for a section 48C facility that includes Equipment A and subsequently placed the section 48C facility and Equipment A in service in taxable year 2026. Taxpayer claimed a section 48C credit related to Equipment A for taxable year 2026.

(B) *Analysis.* The section 45X facility with respect to otherwise qualified property 1 is the tangible property made up of Equipment A, which is the independently functioning tangible property used by the taxpayer that is necessary to be considered the producer of the otherwise qualified property within the meaning of paragraph (c)(1) or (2) of this section. However, Equipment A is also eligible property that is considered part of a section 48C facility as defined in paragraph (g)(3) of this section. Therefore, otherwise qualified property 1 is not an eligible component under paragraph (g)(1) of this section because part (all in this case) of the section 45X facility where otherwise qualified property 1 was produced is also considered a section 48C facility. There is a separate section 45X facility with respect to otherwise qualified property 2. That section 45X facility is the tangible property made up of Equipment B. Equipment A is not included in the section 45X facility as it is not used to produce otherwise qualified property 2. None of the tangible property comprising the section 45X facility with respect to otherwise qualified property 2 is considered part of a section 48C facility. Thus, otherwise qualified property 2 is an eligible component under paragraph (g)(1) of this section.

(ii) *Example 2*: *Single section 45X facility at different locations*—(A) *Facts*. Taxpayer owns and operates two manufacturing sites at different locations. The tangible property at manufacturing site 1 is Equipment A, which is used to continue and finish the first part of the production process for otherwise qualified property. The tangible property at manufacturing site 2 is Equipment B, which is used to complete the production process of the same otherwise qualified property. Taxpayer was allocated a section 48C credit under the section 48C(e) program for Equipment A.

(B) *Analysis.* Equipment A and B comprise a single section 45X facility regardless of location under paragraph (g)(2)(i) of this section because both Equipment A and B were used to produce the otherwise qualified property and the use of Equipment A and B are necessary to consider the taxpayer the producer, consistent with the meaning of produced by the taxpayer in paragraph (c)(1) or (2) of this section. However, part of the property comprising the section 45X facility is also a section 48C facility under paragraph (g)(3) of this section because Equipment A is eligible property that is part of a section 48C facility. As a result, the otherwise qualified property is not considered an eligible component, and the sale of the otherwise qualified property will not generate a section 45X credit.

(iii) *Example 3: Independent tangible property and production of component*—(A) *Facts*. Taxpayer owns and operates two manufacturing sites. Manufacturing Site 1 contains tangible property that is Equipment A, which is used to produce photovoltaic cells. Manufacturing Site 2 contains tangible property that is Equipment B and tangible property that is Equipment C, which are arranged in serial fashion. Equipment B is used to produce photovoltaic cells. Equipment C is used to produce solar modules, in part, by combining the photovoltaic cells produced by Equipment A and Equipment B. Taxpayer was allocated a section 48C credit under the section 48C(e) program for a section 48C facility that includes Equipment B. Subsequently, Taxpayer places the section 48C facility and Equipment B in service in taxable year 2026. Taxpayer claimed a

section 48C credit for Equipment B in taxable year 2026.

(B) *Analysis*. Equipment A and Equipment B each comprise a section 45X facility since each independently functions to produce otherwise qualified property, photovoltaic cells. No part of the section 45X facility comprised of Equipment A is eligible property that is included in a section 48C facility. Thus, the photovoltaic cells produced in the section 45X facility comprised of Equipment A are eligible components. The photovoltaic cells that are produced in the section 45X facility comprised of Equipment B are otherwise qualified property that cannot qualify as eligible components because part (all in this case) of the section 45X facility comprised of Equipment B where the photovoltaic cells are produced is also considered a section 48C facility. Solar modules, a different otherwise qualified property, are produced in using Equipment C, which is itself a separate section 45X facility. Equipment C does not have to include any of the tangible property included in Equipment A or B under paragraph (g)(2)(i) of this section because it is not necessary for the Taxpayer to use that equipment to be considered the producer of the solar modules for purposes of section 45X. As a result, no part of section 45X facility comprised of Equipment C where the solar modules are produced is considered a section 48C facility, and the solar modules are considered an eligible component for purposes of section 45X.

(iv) *Example 4: Manufacturing under a contract manufacturing arrangement*—(A) *Facts*. X is hired by Y to manufacture photovoltaic cells, but X and Y agree under paragraph (c)(3)(iii) of this section that Y will be the party to claim any section 45X credit resulting from the sale of the photovoltaic cells. X owns and operates a manufacturing site that contains equipment that is tangible property used to produce the photovoltaic cells. X was allocated a section 48C credit under the section 48C(e) program for a section 48C facility that includes the equipment used to produce the photovoltaic cells. The equipment is eligible property that is part of the section 48C facility that was placed in service in taxable year 2026. X claimed a section 48C credit for the equipment in taxable year 2026.

(B) *Analysis*. Under paragraph (g)(2)(ii) of this section, in determining the section 45X facility related to the photovoltaic cells (the otherwise qualified property), Y must consider the equipment that X used in producing the photovoltaic cells. In this case, that means that part of the section 45X facility is also considered a section 48C facility, as the equipment used to produce the photovoltaic cells is also eligible property that is part of a section 48C facility. Therefore, the photovoltaic cells are not eligible components for purposes of section 45X to X or Y, and there is no section 45X credit generated if the photovoltaic cells are sold.

(v) *Example 5*: *Multiple tangible property used to produce separate eligible components*—(A) *Facts*. Assume the facts are the same as in paragraph (g)(4)(iv) of this section (*Example 4*), except that Y and X also agreed for X to produce photovoltaic wafers using other equipment that is tangible property that is different than the equipment X uses to produce the photovoltaic cells.

(B) *Analysis.* While Y must consider the equipment that X uses to produce the photovoltaic wafers (the otherwise qualified property) under paragraph (g)(2)(ii) of this section to determine the section 45X facility associated with the photovoltaic wafer production, Y is not required to include any of the equipment used by X to produce the photovoltaic cells because it was not necessary to use that equipment to be considered the producer of the photovoltaic wafers. As a result, no part of the section 45X facility related to photovoltaic wafers is part of a section 48C facility. Therefore, the photovoltaic wafers are eligible components for purposes of section 45X and Y will be entitled to claim a section 45X credit upon the sale.

(h) [Reserved]

(i) *Anti-abuse rule*—(1) *In general.* The rules of section 45X and the section 45X regulations must be applied in a manner consistent with the purposes of section 45X and the section 45X regulations (and the regulations in this chapter under sections 6417 and 6418 related to the section 45X credit). A purpose of section 45X and the section 45X regulations (and the regulations in this chapter under sections 6417 and 6418 related to the section 45X credit) is to provide taxpayers an incentive to produce eligible components in a manner that contributes to the development of secure and resilient supply chains. Accordingly, the section 45X credit is not allowable if the primary purpose of the production and sale of an eligible component is to obtain the benefit of the section 45X credit in a manner that is wasteful, such as discarding, disposing of, or destroying the eligible component without putting it to a productive use. A determination of whether the production and sale of an eligible component is inconsistent with the purposes of section 45X and the section 45X regulations (and the regulations in this chapter under sections 6417 and 6418 related to the section 45X credit) is based on all facts and circumstances.

(2) *Example*—(i) *Facts.* Taxpayer is engaged in the activity of producing and selling multiple units of Eligible Component 1 (EC1). Taxpayer engages in no other activities. The cost of producing each unit of EC1 is less than the amount of the section 45X credit that would be available if each EC1 qualified for the section 45X credit. Taxpayer sells some of its units of EC1 to related persons and makes a Related Person Election pursuant to section 45X(a)(3)(B)(i). Taxpayer also sells some of its units of EC1 to unrelated persons. Taxpayer sells all units of EC1 at an amount equal to cost plus a markup to reflect an anticipated accommodation fee and establishes corresponding accounts receivable at the time of the respective sales. In addition, Taxpayer knows or reasonably expects that after acquiring the units of EC1, the related and unrelated transferees will not resell the units of EC1 or use them in their trades or businesses. Taxpayer intends to obtain the benefit from the section 45X credit by claiming such credits itself or monetizing such credits through an election under section 6417 or section 6418. Taxpayer eliminates the aforementioned accounts receivable at the time it claims the section 45X credit or receives related payments attributable to the section 45X credit, and further makes payments to the related and unrelated transferees as accommodation fees computed as a percentage of such benefits.

(ii) *Analysis.* Based on all of the facts and circumstances in paragraph (i)(2)(i) of this section, the primary purpose of Taxpayer's production and sale of EC1 is to obtain the benefit of the section 45X credit in a manner that is wasteful and will not be treated as the production and sale of eligible components in a trade or business of Taxpayer for purposes of section 45X(a)(1) and (2). Taxpayer is not eligible for the section 45X credit with respect to units of EC1 that it produced and sold. See sections 6417(d)(6) (excessive payments) and 6418(g)(2) (excessive credit transfer).

(j) *Applicability date*. This section applies to eligible components for which production is completed and sales occur after December 31, 2022, and during a taxable year ending on or after October 28, 2024.

§1.45X-2 Sale to unrelated person.

(a) *In general*. The amount of the section 45X credit for any taxable year is equal to the sum of the credit amounts determined under section 45X(b) (and described in §§1.45X-3 and 1.45X-4) with respect to each eligible component that is produced by the taxpayer and, during the taxable year, sold by the taxpayer to an unrelated person. Applicable Federal income tax principles apply to determine whether a transaction is in substance a sale (or the provision of a service, or some other disposition). *See* §1.45X-1(d) and (e) for additional requirements relating to sales.

(b) *Definitions*. This paragraph (b) provides definitions of terms that apply for purposes of this section.

(1) *Person*. The term *person* means an individual, a trust, estate, partnership, association, company, or corporation, as provided in section 7701(a)(1) of the Code. For purposes of this section, an entity disregarded as separate from a person (for example, under §301.7701-3 of this chapter) is not a person.

(2) *Related person*. The term *related person* means a person who is related to

another person if such persons would be treated as a single employer under the regulations in this chapter under section 52(b) of the Code.

(3) *Unrelated person*. The term *unrelated person* means a person who is not a related person as defined in paragraph (b)(2) of this section.

(c) *Special rule for sale to related person*—(1) *In general.* For purposes of section 45X(a), a taxpayer is treated as selling an eligible component to an unrelated person if such component is sold to such person by a person who is a related person with respect to the taxpayer.

(2) *Example*. X and Y are members of a group of trades or businesses under common control under section 52(b), and thus are related persons under section 45X(d)(1). Each of X and Y has a calendar year taxable year. Z is an unrelated person. X is in the trade or business of producing and selling solar modules. X produces and sells solar modules to Y in 2023. Y sells the solar modules to Z in 2024. X may claim a section 45X credit for the sale of the solar modules in 2024, the taxable year of X in which Y sells the solar modules to Z.

(d) *Related person election*—(1) *Availability of election*—(i) *In general.* In such form and manner as the Secretary may prescribe, a taxpayer may make an election under section 45X(a)(3)(B) (Related Person Election), to treat a sale of eligible components by such taxpayer to a related person as if made to an unrelated person. As a condition of, and prior to, a taxpayer making a Related Person Election (as described in paragraph (d)(2) of this section), the Secretary may require such information or registration as the Secretary deems necessary for purposes of preventing duplication, fraud, or any improper or excessive credit amount determined under section 45X(a)(1).

(ii) *Members of a consolidated group*. A Related Person Election is made by a member of a consolidated group (as defined in §1.1502-1(h)) in the manner described in paragraph (d)(3)(ii) of this section. A member of a consolidated group that sells eligible components in an intercompany transaction (as defined in §1.1502-13(b)(1)) may make the Related Person Election to claim the section 45X credit in the year of the intercompany sale. For the treatment of the selling member's gain or loss from that sale, *see* §1.1502-13.

(2) *Time and manner of making election*—(i) *In general*. A taxpayer must make an affirmative Related Person Election annually on the taxpayer's timely filed original Federal income tax return, including extensions in such form and in such manner as may be prescribed in guidance. The Related Person Election will be applicable to all sales of eligible components to related persons by the taxpayer for each trade or business that the taxpayer engages in during the taxable year that resulted in a credit claim and for which the taxpayer has made the Related Person Election.

(ii) *Required information*. For all sales of eligible components to related persons, the taxpayer must provide all required information set forth in guidance. Such information may include, for example, the taxpayer's name, employer identification number (EIN), a description of the taxpayer's trade or business (including principal business activity code); the name(s) and EINs of all related persons; a listing of the eligible components that are sold; and the intended purpose of any sales of eligible components to or from related persons.

(3) *Scope and effect of election*—(i) *In general*. A separate Related Person Election must be made with respect to related person sales made by a taxpayer for each eligible trade or business of the taxpayer. The election applies only to such trade or business for which the Related Person Election is made. An election under this section applies to all sales to related persons (including between members of the same consolidated group) of eligible components produced by the taxpayer during the taxable year with respect to each trade or business for which the Related Person Election is made and is irrevocable for the taxable year for which the election is made. An election under paragraph (d)(2)(i) of this section applies solely for purposes of the section 45X credit and the section 45X regulations (and the regulations in this chapter under sections 6417 and 6418 related to the section 45X credit).

(ii) *Application to consolidated groups*. For a trade or business of a consolidated group, a Related Person Election must be made by the agent for the group on behalf of the members claiming the section 45X credit and filed with the group's timely filed original Federal income tax return, including extensions, with respect to each trade or business that the consolidated group conducts. *See* §1.1502-77 (providing rules regarding the status of the common parent as agent for its members). A separate election must be filed on behalf of each member claiming the section 45X credit, and each election must include the name and EIN of the agent for the group and the member on whose behalf the election is being made.

(iii) *Application to partnerships*. The Related Person Election for a partnership must be made on the partnership's timely filed original Federal income tax return, including extensions, with respect to each trade or business that the partnership conducts. The election applies only to such trade or business for which the Related Person Election is made. An election by a partnership does not apply to any trade or business conducted by a partner outside the partnership.

(4) *Anti-abuse rule*—(i) *In general.* A Related Person Election may not be made if, with respect to the eligible components relevant to such election, the taxpayer fails to provide the information described in paragraph (d)(2) of this section, provides information described in paragraph (d)(2) of this section that shows that such components are described in paragraph (d)(4)(ii) or (iii) of this section, or such components are described in paragraph (d)(4)(ii) or (iii) of this section.

(ii) *Improper use*. For purposes of this paragraph (d)(4) the term *improper use* means a use that is wasteful, such as discarding, disposing of, or destroying the eligible component without putting it to a productive use by the related person to which the eligible component is sold.

(iii) *Defective components.* The term *defective component* means a component that does not meet the requirements of section 45X and the section 45X regulations.

(e) *Sales of integrated components to related person*—(1) *In general.* For purposes of section 45X and the section 45X regulations (and the regulations in this chapter under sections 6417 and 6418 related to the section 45X credit), a taxpayer that produces and then sells an eli-

gible component to a related person, who then integrates, incorporates, or assembles the taxpayer's eligible component into another complete and distinct eligible component that is subsequently sold to an unrelated person, may claim a section 45X credit (or make an election under section 6417 or section 6418) with respect to the taxable year in which the related person's sale to the unrelated person occurs.

(2) *Examples.* The following examples illustrate the rules provided in paragraph (e)(1) of this section.

(i) *Example 1*: *Sales of multiple incorporated eligible components to related persons.* X and Y are C corporations that are members of a group of trades or businesses under common control under section 52(b), and thus are related persons under section 45X(d)(1) and paragraph (b)(2) of this section. Each of X and Y has a calendar year taxable year. Z is an unrelated person. X and Y are in the trade or business of producing and selling photovoltaic wafers and cells. X produces and sells photovoltaic wafers to Y in 2023. Y incorporates the photovoltaic wafers into photovoltaic cells and sells the photovoltaic cells to Z in 2024. X may claim a section 45X credit for the sale of the photovoltaic wafers in 2024, the taxable year of X in which Y sells the photovoltaic cells to Z.

(ii) *Example 2: Sales of multiple incorporated eligible components to related and unrelated persons.* W, X, and Y are domestic C corporations that are members of a group of trades or businesses under common control under section 52(b), and thus are related persons under section 45X(d)(1) and paragraph (b)(2) of this section. Each of W, X, and Y has a calendar year taxable year. W produces electrode active materials (EAMs) and sells the EAMs to X in 2023. In 2024, X incorporates the EAMs into battery cells that it produces and sells the battery cells to Y. In 2025, Y incorporates the battery cells into battery modules (within the meaning of §1.45X-3(e)(4)(i)(A)) that it produces and sells the battery modules to Z, an unrelated person. W may claim a section 45X credit for EAMs sold to X, X may claim a section 45X credit for the battery cells sold to Y, and Y may claim a section 45X credit for the battery modules sold to Z in 2025, the taxable year of each of W, X, and Y in which the battery modules are sold to Z.

(3) *Special rules applicable to related person election*—(i) *In general.* If a taxpayer makes a valid Related Person Election under section 45X(a)(3)(B)(i) and paragraph (d)(1) of this section, and the taxpayer produces and then sells an eligible component to a related person, who then integrates, incorporates, or assembles the taxpayer's eligible component into another complete and distinct eligible component that is subsequently sold to an unrelated person, the taxpayer's sale of the eligible component to the related person is treated (solely for purposes of the section 45X credit and the section 45X regulations, and the regulations in this chapter under sections 6417 and 6418 related to the section 45X credit) as if made to an unrelated person in the taxable year in which the sale to the related person occurs.

(ii) *Example: Sales of multiple integrated eligible components to related and unrelated persons with a related person election*. W, X, and Y are domestic C corporations that are members of a group of trades or businesses under common control and thus are related persons under section 45X(d)(1) and paragraph (b)(2) of this section. Each of W, X, and Y has a calendar year taxable year. W produces electrode active materials (EAMs) and sells the EAMs to X in 2023. W makes a valid Related Person Election under paragraph (d)(1) of this section in 2023 with regard to the sale. In 2024, X incorporates the EAMs into battery cells that it produces and sells the battery cells to Y. X makes a valid Related Person Election under paragraph (d)(1) of this section in 2024 with regard to the sale. In 2025, Y incorporates the battery cells into battery modules that it produces and sells the battery modules to Z, an unrelated person. W may claim a section 45X credit for the sale of the EAMs in 2023 because the sale to X is treated as if made to an unrelated person solely for purposes of section 45X(a). X may claim a section 45X credit for the sale of the battery cells in 2024 because the sale to Y is treated as if made to an unrelated person solely for purposes of section 45X(a). Y may claim a section 45X credit for the sale of battery modules in 2025 because Z is an unrelated person.

(f) *Applicability date.* This section applies to eligible components for which production is completed and sales occur after December 31, 2022, and during a taxable year ending on or after October 28, 2024.

§1.45X-3 Eligible components.

(a) *In general*. For purposes of the section 45X credit, *eligible component* means any solar energy component (as defined in paragraph (b) of this section), any wind energy component (as defined in paragraph (c) of this section), any inverter (as defined in paragraph (d) of this section), any qualifying battery component (as defined in paragraph (e) of this section), and any applicable critical mineral (as defined in §1.45X-4(b)). See paragraph (f) of this section for certain phase-out rules applicable to eligible components other than applicable critical minerals.

(b) *Solar energy components*. *Solar energy component* means a solar module, photovoltaic cell, photovoltaic wafer, solar grade polysilicon, torque tube, structural fastener, or polymeric backsheet, each as defined in this paragraph (b).

(1) *Photovoltaic cell*—(i) *Definition*. *Photovoltaic cell* means the smallest semiconductor element of a solar module that performs the immediate conversion of light into electricity that is either a thin film photovoltaic cell or a crystalline photovoltaic cell.

(ii) *Credit amount*. For a photovoltaic cell, the credit amount is equal to the product of 4 cents multiplied by the capacity of such photovoltaic cell. The capacity of each photovoltaic cell is expressed on a direct current watt basis. Capacity is the nameplate capacity in direct current watts using Standard Test Conditions (STC), as defined by the International Electrotechnical Commission (IEC). In the case of a tandem technology produced in serial fashion, such as a monolithic multijunction cell composed of two or more subcells, capacity must be measured at the point of sale at the end of the single cell production unit. In the case of a four-terminal tandem technology produced by mechanically stacking two distinct cells or interconnected layers, capacity must be measured for each cell at each point of sale. If a cell is sold to a customer who will use it as the bottom cell in a tandem module, its capacity should be measured with the customer's intended top cell placed between the bottom cell and the one-sun light source.

(iii) *Substantiation*. The taxpayer must document the capacity of a photovoltaic cell in a bill of sale or design documentation, such as an IEC certification (for example, IEC 61215 or IEC 60904).

(2) *Photovoltaic wafer*—(i) *Definition*. *Photovoltaic wafer* means a thin slice, sheet, or layer of semiconductor material of at least 240 square centimeters that comprises the substrate or absorber layer of one or more photovoltaic cells. A photovoltaic wafer must be produced by a single man-

ufacturer by forming an ingot from molten polysilicon (for example, Czochralski method) and then subsequently slicing it into wafers, forming molten or evaporated polysilicon into a sheet or layer, or depositing a thin-film semiconductor photon absorber into a sheet or layer (that is, thin-film deposition).

(ii) *Credit amount*. For a photovoltaic wafer, the credit amount is $12 per square meter.

(3) *Polymeric backsheet*—(i) *Definition*. *Polymeric backsheet* means a sheet on the back of a solar module, composed, at least in part, of a polymer, that acts as an electric insulator and protects the inner components of such module from the surrounding environment.

(ii) *Credit amount*. For a polymeric backsheet, the credit amount is 40 cents per square meter.

(4) *Solar grade polysilicon*—(i) *Definition*. *Solar grade polysilicon* means silicon that is suitable for use in photovoltaic manufacturing and purified to a minimum purity of 99.999999 percent silicon by mass. Satisfaction of the minimum purity requirement will be determined in accordance with the standards provided in SEMI Specification PV17-1012, Category 1.

(ii) *Credit amount*. For solar grade polysilicon, the credit amount is $3 per kilogram.

(5) *Solar module*—(i) *Definition*. *Solar module* means the connection and lamination of photovoltaic cells into an environmentally protected final assembly that is—

(A) Suitable to generate electricity when exposed to sunlight; and

(B) Ready for installation without an additional manufacturing process.

(ii) *Credit amount*. For a solar module, the credit amount is equal to the product of 7 cents multiplied by the capacity of such module. The capacity of each solar module is expressed on a direct current watt basis. Capacity is the nameplate capacity in direct current watts using STC, as defined by the IEC.

(iii) *Substantiation.* The taxpayer must document the capacity of a solar module in a bill of sale or design documentation, such as an IEC certification (for example, IEC 61215 or IEC 61646).

(6) *Solar tracker*. *Solar tracker* means a mechanical system that moves solar modules according to the position of the sun and to increase energy output. A torque tube (as defined in paragraph (b)(7) of this section) or structural fastener (as defined in paragraph (b)(8) of this section) are solar tracker components that are eligible components for purposes of the section 45X credit.

(7) *Torque tube*—(i) *Definition*. *Torque tube* means a structural steel support element (including longitudinal purlins) that—

(A) Is part of a solar tracker;

(B) Is of any cross-sectional shape;

(C) May be assembled from individually manufactured segments;

(D) Spans longitudinally between foundation posts;

(E) Supports solar panels and is connected to a mounting attachment for solar panels (with or without separate module interface rails); and

(F) Is rotated by means of a drive system.

(ii) *Credit amount*. For a torque tube, the credit amount is 87 cents per kilogram.

(iii) *Substantiation*. The taxpayer must document that a torque tube is part of a solar tracker with a specification sheet, bill of sale, or other similar documentation that explicitly describes its application as part of a solar tracker.

(8) *Structural fastener*—(i) *Definition*. *Structural fastener* means a component that is used—

(A) To connect the mechanical and drive system components of a solar tracker to the foundation of such solar tracker;

(B) To connect torque tubes to drive assemblies; or

(C) To connect segments of torque tubes to one another.

(ii) *Credit amount*. For a structural fastener, the credit amount is $2.28 per kilogram.

(iii) *Substantiation*. The taxpayer must document that a structural fastener is used in a manner described in paragraph (b)(8)(i)(A), (B), or (C) of this section with a bill of sale or other similar documentation that explicitly describes such use.

(c) *Wind energy components*. *Wind energy component* means a blade, nacelle, tower, offshore wind foundation, or related offshore wind vessel, each as defined in this paragraph (c).

(1) *Blade*—(i) *Definition*. *Blade* means an airfoil-shaped blade that is responsible for converting wind energy to low-speed rotational energy.

(ii) *Credit amount.* For a blade, the credit amount is equal to the product of 2 cents multiplied by the total rated capacity of the completed wind turbine for which the blade is designed.

(2) *Offshore wind foundation*—(i) *Definition*. *Offshore wind foundation* means the component (including transition piece) that secures an offshore wind tower and any above-water turbine components to the seafloor using—

(A) Fixed platforms, such as offshore wind monopiles, jackets, or gravity-based foundations; or

(B) Floating platforms and associated mooring systems.

(ii) *Credit amount*. For a fixed offshore wind foundation platform, the credit amount is equal to the product of 2 cents multiplied by the total rated capacity of the completed wind turbine for which the fixed offshore wind foundation platform is designed. For a floating offshore wind foundation platform, the credit amount is equal to the product of 4 cents multiplied by the total rated capacity of the completed wind turbine for which the floating offshore wind foundation platform is designed.

(3) *Nacelle*—(i) *Definition*. *Nacelle* means the assembly of the drivetrain and other tower-top components of a wind turbine (with the exception of the blades and the hub) within their cover housing.

(ii) *Credit amount*. For a nacelle, the credit amount is equal to the product of 5 cents multiplied by the total rated capacity of the completed wind turbine for which the nacelle is designed.

(4) *Related offshore wind vessel*—(i) *Definition*. *Related offshore wind vessel* means any vessel that is purpose-built or retrofitted for purposes of the development, transport, installation, operation, or maintenance of offshore wind energy components. A vessel is purpose-built for development, transport, installation, operation, or maintenance of offshore wind energy components if it is built to be capable of performing such functions and it is of a type that is commonly used in the offshore wind industry. A vessel is retrofitted for development, transport,

installation, operation, or maintenance of offshore wind energy components if such vessel was incapable of performing such functions prior to being retrofitted, the retrofit causes the vessel to be capable of performing such functions, and the retrofitted vessel is of a type that is commonly used in the offshore wind industry.

(ii) *Credit amount*. For a related offshore wind vessel, the credit amount is equal to 10 percent of the sales price of the vessel. The sales price of the vessel, determined under Federal income tax principles, does not include the price of maintenance, services, or other similar items that may be sold with the vessel. For a related offshore wind vessel with respect to which an election under section 45X(a)(3)(B)(i) has been made, such election will not cause the sale price of such vessel to be treated as having been determined with respect to a transaction between uncontrolled taxpayers for purposes of section 482 of the Code and the regulations in this chapter.

(5) *Tower*—(i) *Definition*. *Tower* means a tubular or lattice structure that supports the nacelle and rotor of a wind turbine.

(ii) *Credit amount*. For a tower, the credit amount is equal to the product of 3 cents multiplied by the total rated capacity of the completed wind turbine for which the tower is designed.

(6) *Total rated capacity of the completed wind turbine.* For purposes of this section, *total rated capacity of the completed wind turbine* means, for the completed wind turbine for which a blade, nacelle, offshore wind foundation, or tower was manufactured and sold, the nameplate capacity at the time of sale as certified to the relevant national or international standards, such as IEC 61400, or ANSI/ACP 101-1-2021, the Small Wind Turbine Standard (Standard). Certification of the turbine to such Standards must be documented by a certificate issued by an accredited certification body. The total rated capacity of a wind turbine must be expressed in watts.

(7) *Substantiation.* Taxpayers must maintain specific documentation regarding wind energy components for which a section 45X credit is claimed. For blades, nacelles, offshore wind foundations, or towers, a taxpayer must document the turbine model for which such component is designed and the total rated capacity of the completed wind turbine in technical documentation associated with the sale of such component. For related offshore wind vessel, such documentation could include the contract to construct or retrofit (along with retrofit plans), sales contract, U.S. Coast Guard bill of sale, U.S. Coast Guard Certificate of Documentation (COD), and U.S. Coast Guard Certificate of Inspection (COI).

(d) *Inverters*—(1) *In general*. *Inverter* means an end product that is suitable to convert direct current (DC) electricity from one or more solar modules or certified distributed wind energy systems into alternating current electricity. An end product is suitable to convert DC electricity from one or more solar modules or certified distributed wind energy systems into alternating current electricity if, in the form sold by the manufacturer, it is able to connect with such modules or systems and convert DC electricity to alternating current electricity from such connected source. The term inverter includes a central inverter, commercial inverter, distributed wind inverter, microinverter, or residential inverter. Only an inverter that meets at least one of the requirements in paragraphs (d)(2) through (7) of this section is an eligible component for purposes of the section 45X credit.

(2) *Central inverter*—(i) *Definition. Central inverter* means an inverter that is suitable for large utility-scale systems and has a capacity that is greater than 1,000 kilowatts. The capacity of a central inverter is expressed on an alternating current watt basis. An inverter is suitable for large utility-scale systems if, in the form sold by the manufacturer, it is capable of serving as a component in a large utility-scale system and meets the core engineering specifications for such application.

(ii) *Credit amount*. For a central inverter the total rated capacity of which is expressed on an alternating current watt basis, the credit amount is equal to the product of 0.25 cents multiplied by the total rated capacity of the central inverter.

(iii) *Substantiation.* The taxpayer must document that a central inverter meets the core engineering specifications for use in a large utility-scale system and has a capacity that is greater than 1,000 kilowatts with a specification sheet, bill of sale, or other similar documentation that explicitly describes such specifications and capacity.

(3) *Commercial inverter*—(i) *Definition*. *Commercial inverter* means an inverter that—

(A) Is suitable for commercial or utility-scale applications;

(B) Has a rated output of 208, 480, 600, or 800 volt three-phase power; and

(C) Has a capacity expressed on an alternating current watt basis that is not less than 20 kilowatts and not greater than 125 kilowatts.

(ii) *Suitable for commercial or utility-scale applications*. An inverter is suitable for commercial or utility-scale applications if, in the form sold by the manufacturer, it is capable of serving as a component in commercial or utility-scale systems and meets the core engineering specifications for such application.

(iii) *Credit amount*. For a commercial inverter the total rated capacity of which is expressed on an alternating current watt basis, the credit amount is equal to the product of 2 cents multiplied by the total rated capacity of the commercial inverter.

(iv) *Substantiation.* The taxpayer must document that a commercial inverter meets the core engineering specifications for use in commercial or utility-scale applications, the inverter's rated output, and the inverter's capacity in a specification sheet, bill of sale, or other similar documentation.

(4) *Distributed wind inverter*—(i) *In general*. *Distributed wind inverter* means an inverter that is used in a residential or non-residential system that utilizes one or more certified distributed wind energy systems and has a total rated output, expressed on an alternating current watt basis, of not greater than 150 kilowatts.

(ii) *Certified distributed wind energy system*. *Certified distributed wind energy system* means a wind energy system that is certified by an accredited certification agency to meet Standard 9.1-2009 of the American Wind Energy Association; IEC 61400-1, 61400-2, 61400-11, 61400-12; or ANSI/ACP 101-1-2021, the Standard, including any subsequent revisions to or modifications of such Standard that have been approved by ANSI.

(iii) *Credit amount*. For a distributed wind inverter the total rated capacity of which is expressed on an alternating current watt basis, the credit amount is equal to the product of 11 cents multiplied by the total rated capacity of the distributed wind inverter.

(iv) *Substantiation.* The taxpayer must document that a distributed wind inverter is used in a residential or non-residential system that utilizes one or more certified distributed wind energy systems with a specification sheet, bill of sale, or other similar documentation that explicitly describes such use and the total rated output of the inverter on an alternating current watt basis.

(5) *Microinverter*—(i) *Definition*. *Microinverter* means an inverter that—

(A) Is suitable to connect with one solar module;

(B) Has a rated output described in paragraph (d)(5)(ii) of this section; and

(C) Has a capacity, expressed on an alternating current watt basis, that is not greater than 650 watts.

(ii) *Rated output*. For purposes of paragraph (d)(5)(i)(B) of this section, for an inverter to be a microinverter, the inverter must have a rated output of—

(A) 120 or 240 volt single-phase power; or

(B) 208 or 480 volt three-phase power.

(iii) *Suitable to connect to one solar module*—(A) *In general*. An inverter is suitable to connect to one solar module if, in the form sold by the manufacturer, it is capable of connecting to one or more solar modules and regulating the DC electricity from each module independently before that electricity is converted into alternating current electricity.

(B) *Application to direct current (DC) optimized inverter systems*. A *DC optimized inverter system* means an inverter that is comprised of an inverter connected to multiple DC optimizers that are each designed to connect to one solar module. A DC optimized inverter system is suitable to connect with one solar module if, in the form sold by the manufacturer, it is capable of connecting to one or more solar modules and regulating the DC electricity from each module independently before that electricity is converted into alternating current electricity.

(C) *Application to multi-module inverters*. A *multi-module inverter* means an inverter that is comprised of an inverter with independent connections and DC optimizing components for two or more modules. A multi-module microinverter is suitable to connect with one solar module if it is capable of connecting to one or more solar modules and regulating the DC electricity from each module independently before that electricity is converted into alternating current electricity.

(iv) *Credit amount*—(A) *In general.* For a microinverter the total rated capacity of which is expressed on an alternating current watt basis, the credit amount is equal to the product of 11 cents multiplied by the total rated capacity of the microinverter.

(B) *DC optimized inverter systems*. A DC optimized inverter system qualifies as a microinverter if it meets the requirements of paragraph (d)(5)(i) of this section. For purposes of paragraph (d)(5)(i)(C) of this section, a DC optimized inverter system's capacity is determined separately for each DC optimizer paired with the inverter in a DC optimized inverter system. If each DC optimizer paired with the inverter in a DC optimized inverter system meets the requirements of paragraph (d)(5)(i) of this section, then the DC optimized inverter system qualifies as a microinverter. The credit amount for a DC optimized inverter system that qualifies as a microinverter is equal to the product of 11 cents multiplied by the lesser of the sum of the alternating current capacity of each DC optimizer when paired with the inverter in the DC optimized inverter system or the alternating current capacity of the inverter in the DC optimized inverter system. For purposes of this paragraph (d)(5)(iv)(B), capacity must be measured in watts of alternating current converted from DC electricity by the inverter in a DC optimized inverter system. For a DC optimized inverter system to qualify as a microinverter, a taxpayer must produce and sell the inverter and the DC optimizers in the DC optimized inverter system together as a combined end product.

(C) *Multi-module inverters*. A multi-module inverter qualifies as a microinverter if it meets the requirements of paragraph (d)(5)(i) of this section. For purposes of paragraph (d)(5)(i)(C) of this section, a multi-module inverter's capacity is determined separately for each internal DC optimizer paired with the inverter. The credit amount for a multi-module inverter is equal to the product of 11 cents multiplied by the total alternating current capacity of the DC optimizers in the multi-module inverter when paired with the inverter in the system. For purposes of this paragraph (d)(5)(iv)(C), capacity must be measured in watts of alternating current converted from DC electricity by the inverter in a multi-module microinverter.

(v) *Substantiation.* The taxpayer must document that a microinverter meets the core engineering specifications to be suitable to connect with one solar module, the inverter's rated output, and the inverter's capacity in a specification sheet, bill of sale, or other similar documentation. In the case of a DC optimized inverter system, the taxpayer must also document that the DC optimizers and the inverter in such system were sold as a combined end product.

(6) *Residential inverter*—(i) *Definition*. *Residential inverter* means an inverter that—

(A) Is suitable for a residence;

(B) Has a rated output of 120 or 240 volt single-phase power; and

(C) Has a capacity expressed on an alternating current watt basis that is not greater than 20 kilowatts.

(ii) *Suitable for a residence*. An inverter is suitable for a residence if, in the form sold by the manufacturer, it is capable of serving as a component in a residential system and meets the core engineering specifications for such application.

(iii) *Credit amount*. For a residential inverter the total rated capacity of which is expressed on an alternating current watt basis, the credit amount is equal to the product of 6.5 cents multiplied by the total rated capacity of the residential inverter.

(iv) *Substantiation*. The taxpayer must document that a residential inverter meets the core engineering specifications for use in a residence, the inverter's rated output, and the inverter's capacity in a specification sheet, bill of sale, or other similar documentation.

(7) *Utility inverter*—(i) *Definition*. *Utility inverter* means an inverter that—

(A) Is suitable for commercial or utility-scale systems;

(B) Has a rated output of not less than 600 volt three-phase power; and

(C) Has a capacity expressed on an alternating current watt basis that is greater than 125 kilowatts and not greater than 1000 kilowatts.

(ii) *Suitable for commercial or utility-scale systems*. An inverter is suitable for commercial or utility-scale systems if, in the form sold by the manufacturer, it is capable of serving as a component in such systems and meets the core engineering specifications for such application.

(iii) *Credit amount*. For a utility inverter the total rated capacity of which is expressed on an alternating current watt basis, the credit amount is equal to the product of 1.5 cents multiplied by the total rated capacity of the utility inverter.

(iv) *Substantiation*. The taxpayer must document that a utility inverter meets the core engineering specifications for use in commercial or utility-scale systems, the inverter's rated output, and the inverter's capacity in a specification sheet, bill of sale, or other similar documentation.

(e) *Qualifying battery component*—(1) *In general*. *Qualifying battery component* means electrode active materials, battery cells, or battery modules, each as defined in this paragraph (e).

(2) *Electrode active materials*—(i) *Definitions*—(A) *Electrode active materials. Electrode active materials* means cathode electrode materials, anode electrode materials, and electrochemically active materials that contribute to the electrochemical processes necessary for energy storage. Electrode active materials do not include battery management systems, terminal assemblies, cell containments, gas release valves, module containments, module connectors, compression plates, straps, pack terminals, bus bars, thermal management systems, and pack jackets.

(B) *Cathode electrode materials. Cathode electrode materials* means the materials that comprise the cathode of a commercial battery technology, such as binders, and current collectors (for example, cathode foils).

(C) *Anode electrode materials. Anode electrode materials* means the materials that comprise the anode of a commercial battery technology, including anode foils.

(D) *Electrochemically active materials. Electrochemically active materials* that contribute to the electrochemical processes necessary for energy storage means battery-grade materials that enable the electrochemical storage within a commercial battery technology. In addition to solvents, additives, and electrolyte salts, electrochemically active materials that contribute to the electrochemical processes necessary for energy storage may include electrolytes, catholytes, anolytes, separators, and metal salts and oxides.

(E) *Example*. A commercial battery technology contains Cathode Active Material (CAM), which is a powder used in the battery that is made by processing and combining Battery-Grade Materials A and B. Battery-Grade Material A is a derivative of Material C, which has been refined to the necessary level to enable electrochemical storage. The production costs for CAM and its direct inputs (Battery-Grade Material A and Battery-Grade Material B) are eligible for the section 45X credit for electrode active materials, but the unrefined Material C is not.

(F) *Battery-grade materials.* Battery-grade materials means the processed materials found in a final battery cell or an analogous unit, or the direct battery-grade precursors to those processed materials.

(ii) *Credit amount*. For an electrode active material, the credit amount is equal to 10 percent of the costs incurred by the taxpayer with respect to production of such materials.

(iii) *Production processes for electrode active materials*—(A) *Conversion*. For purposes of section 45X, the term *conversion* means a chemical transformation from one species to another.

(B) *Purification*. For purposes of section 45X, the term *purification* means increasing the mass fraction of a certain element.

(iv) *Production costs incurred*—(A) *In general*—(*1*) *Definition of production costs incurred.* Costs incurred by the taxpayer with respect to production of an electrode active material includes all costs as defined in §1.263A-1(e) that are paid or incurred within the meaning of section 461 of the Code by the taxpayer for the production of such electrode active material only, including direct materials costs as defined in §1.263A-1(e)(2)(i)(A), or indirect materials costs as defined in §1.263A-1(e)(3)(ii)(E), but does not include direct or indirect materials costs that relate to the purchase of materials that are an eligible component at the time of acquisition (for example, an electrode active material as defined in paragraph (e)(2)(i) of this section or applicable critical mineral as defined in §1.45X-4(b)). This definition of production costs incurred also includes any costs incurred by the taxpayer related to the extraction, as defined in paragraph (e)(2)(iv)(B) of this section, of raw materials in the United States or a United States territory, but only if those costs are paid or incurred by the taxpayer that claims the section 45X credit with respect to the relevant electrode active material. Section 263A of the Code and the regulations in this chapter under section 263A apply solely to identify the types of costs that are includible in production costs incurred for purposes of computing the amount of the section 45X credit, but do not apply for any other purpose, such as to determine whether a taxpayer is engaged in production activities.

(2) *Production costs for production of incorporated eligible components*. The production costs that a taxpayer pays or incurs in the production of an eligible component (whether produced domestically or not) that the taxpayer then incorporates into a further distinct electrode active material within the meaning of §1.45X-1(f)(1) are not included in the costs incurred by the taxpayer in producing the further distinct electrode active material. A taxpayer may not include the same production costs in the calculation of the credit amount for more than one eligible component. For example, if the taxpayer pays or incurs production costs of $50X for eligible component 1 and an additional $100X of production costs for eligible component 2 that included integrating eligible component 1 within the meaning of §1.45X-1(f)(1), then the production costs for eligible component 1 equal $50X and the production costs for eligible component 2 equal $100X.

(3) *Examples*. The following examples illustrate the rules of this section:

(*i*) *Example 1*. Taxpayers X, Y and Z are unrelated C corporations that have calendar year taxable years. In 2024, X extracts raw nickel from natural mineral deposits located in the United States and purifies the extracted material to 99% nickel by mass (qualifying nickel) as required by section 45X(c)(6)(S) and §1.45X-4(b)(19)(ii). Y subsequently purchases the

qualifying nickel and uses the material to produce battery-grade nickel salts which qualify as electrode active materials within the meaning of paragraph (e)(2) of this section. Y sells the battery-grade nickel salts to Z in tax year 2026. Y may claim a section 45X credit for the battery-grade nickel salts in tax year 2026 because Y produced, within the meaning of §1.45X-1(c)(2), an eligible component. In calculating its production costs with respect to such credit, Y may not include the purchase price it paid to X for the qualifying nickel because the qualifying nickel met the minimum purity requirement prescribed by section 45X(c)(6)(S) such that the material constituted an applicable critical mineral (and, accordingly, an eligible component) at the time at which Y acquired the qualifying nickel.

(*ii*) *Example 2*. Assume the facts are the same as in paragraph (e)(2)(iv)(A)(*3*)(*i*) of this section (*Example 1*), except that X purifies the extracted raw nickel material to a purity of 90% nickel by mass, rather than 99% nickel by mass as required by section 45X(c)(6)(S) and §1.45X-4(b)(19)(ii). Y may claim a section 45X credit for the battery-grade nickel salts in tax year 2026 because Y produced, within the meaning of §1.45X-1(c)(2), an eligible component. In calculating its production costs with respect to such credit, Y may include the purchase price of the 90% nickel material among its production costs, provided that Y satisfies the substantiation requirements described in paragraph (e)(2)(iv)(C) of this section, because, at the time at which Y acquired such material, the material did not meet the minimum purity as required by section 45X(c)(6)(S) to constitute an applicable critical mineral.

(B) *Definition of extraction*. The term *extraction* means the activities performed to harvest minerals or natural resources from the ground or from a body of water. Extraction includes, but is not limited to, operating equipment to harvest minerals or natural resources from mines and wells and the physical processes involved in refining. Extraction also includes operating equipment to extract minerals or natural resources from the waste or residue of prior extraction, including crude oil extraction to the extent that processes applied to that crude oil yield an applicable critical mineral or an electrode active material as a byproduct. Extraction concludes when activities are performed to convert raw mined or harvested products or raw well effluent to substances that can be readily transported or stored for direct use in critical mineral or electrode active material processing. Extraction does not include activities that begin with a recyclable commodity (as such activities are recycling). Extraction does not include the chemical and thermal processes involved in refining.

(C*) Substantiation*. In order to include direct or indirect materials costs as defined in §1.263A-1(e)(2)(i)(A) and (e)(3)(ii)(E) as production costs when calculating a section 45X credit for the production and sale of an electrode active material, a taxpayer, as part of filing an annual tax return (or a return for a short year within the meaning of section 443 of the Code), must include the information in paragraph (e)(2)(iv)(C)(*1*) of this section as an attachment to that return, prepare the information required in paragraphs (e)(2)(iv)(C)(*2*) through (*4*) of this section and maintain that information in the taxpayer's books and records under section 6001, and comply with directions for the information required in paragraph (e)(2)(iv)(C)(*5*) of this section as specified in guidance:

(*1*) Certifications from any supplier, including the supplier's employer identification number and that is signed under penalties of perjury, from which the taxpayer purchased any constituent elements, materials, or subcomponents of the taxpayer's electrode active material, stating that the supplier is not claiming the section 45X credit with respect to any of the material acquired by the taxpayer, nor is the supplier aware that any prior supplier in the chain of production of that material claimed a section 45X credit for the material.

(*2*) A document that provides an analysis of any constituent elements, materials, or subcomponents that concludes the material did not meet the definition of an eligible component (for example, did not meet the definition of applicable critical mineral or electrode active material) at the time of acquisition by the taxpayer. The document may be prepared by the taxpayer or ideally by an independent third-party.

(*3*) A list of all direct and indirect material costs and the amount of such costs that were included within the taxpayer's total production cost for each electrode active material.

(*4*) A document related to the taxpayer's production activities with respect to the direct and indirect material costs that establishes the materials were used in the production of the electrode active material. The document may be prepared by the taxpayer or ideally by an independent third-party.

(*5*) Any other information related to the direct or indirect materials specified in guidance.

(D) Failure to provide the documentation described in paragraph (e)(2)(iv)(C) of this section with the return filing, or providing an available upon request statement, will constitute a failure to substantiate the claim.

(v) *Materials that are both electrode active materials and applicable critical minerals*—(A) *In general*. A material that qualifies as an electrode active material and an applicable critical material is eligible for the section 45X credit. A taxpayer may claim the section 45X credit with respect to such material either as an electrode active material or an applicable critical material, but not both.

(B) *Example.* Lithium carbonate is an electrode active material because it is a direct battery-grade precursor to electrolyte salts, which are processed materials found in a final battery cell. Lithium carbonate is also eligible for the 45X critical minerals credit. A taxpayer who produces and sells lithium carbonate may claim either the electrode active material credit or the critical mineral credit for its production and sale of lithium carbonate but may not take both credits.

(3) *Battery cells*—(i) *Definition*. *Battery cell* means an electrochemical cell—

(A) Comprised of one or more positive electrodes and one or more negative electrodes;

(B) With a volumetric energy density of not less than 100 watt-hours per liter; and

(C) Capable of storing at least 12 watt-hours of energy.

(ii) *Capacity measurement*. Taxpayers must measure the capacity of a battery cell in accordance with a national or international standard, such as IEC 60086-1 (Primary Batteries), or an equivalent standard. Taxpayers can reference the United States Advanced Battery Consortium (USABC) Battery Test Manual for additional guidance.

(iii) *Credit amount*. For a battery cell, the credit amount is equal to the product of $35 multiplied by the capacity of such battery cell, subject to the limitation provided in paragraph (e)(5) of this section. The capacity of a battery cell is expressed on a kilowatt-hour basis.

(4) *Battery module definitions and applicable rules*—(i) *Battery module defined*. The term *battery module* means

a module described in paragraph (e)(4)(i)(A) or (B) of this section with an aggregate capacity of not less than 7 kilowatt-hours (or, in the case of a module for a hydrogen fuel cell vehicle, not less than 1 kilowatt-hour).

(A) *Modules using battery cells.* A module using battery cells, is a module with two or more battery cells that are configured electrically, in series or parallel, to create voltage or current, as appropriate, to a specified end use, meaning an end-use configuration of battery technologies. An end-use configuration is the product that combines cells into a module such that any subsequent manufacturing is done to the module rather than to the cells. Where multiple points in a supply chain may be eligible under this section, the first module produced and sold that meets the requirements of this section and the kilowatt-hour requirement in paragraph (e)(4)(i) of this section will be the only module eligible.

(B) *Modules with no battery cells.* A *module with no battery cells* means a product with a standardized manufacturing process and form that is capable of storing and dispatching useful energy, that contains an energy storage medium that remains in the module (for example, it is not consumed through combustion), and that is not a custom-built electricity generation or storage facility. For example, neither standalone fuel storage tanks nor fuel tanks connected to engines or generation systems qualify as modules with no battery cells.

(ii) *Capacity measurement*—(A) *Modules using battery cells*. Taxpayers must measure the capacity of a module using battery cells with a testing procedure that complies with a national or international standard published by a recognized standard setting organization. The capacity of a battery module may not exceed the total nameplate capacity of the battery cells in the module. Taxpayers must measure the capacity of a battery cell in accordance with a national or international standard, such as IEC 60086-1 (Primary Batteries), or an equivalent standard. Taxpayers can reference the USABC Battery Test Manual for additional guidance.

(B) *Modules with no battery cells.* Taxpayers must measure the capacity of a module with no battery cells with a testing procedure that complies with a national or international standard published by a recognized standard setting organization. Taxpayers producing thermal and thermochemical battery modules described in paragraph (e)(4)(i)(B) of this section must convert the energy storage to a kilowatt-hour basis and provide both methodology and testing regarding this conversion. Such conversion of the kilowatt-hour basis cannot exceed the total direct conversion of the total nameplate capacity of the thermal battery module to kilowatt-hours.

(C) *Substantiation of capacity measurement*. Taxpayers must maintain the testing standard and methodology with respect to the capacity measurement described in paragraphs (e)(4)(ii)(A) and (B) of this section as part of books and records under section 6001 and §1.6001-1. The testing procedure and methodology must consistently be used, subject to any updated standard of the same methodology and testing, for battery modules (with or without cells) sold in the taxpayer's trade or business.

(iii) *Credit amount*—(A) *Modules using battery cells.* For a battery module with cells, the credit amount is equal to the product of $10 multiplied by the capacity of such battery module, subject to the limitation provided in paragraph (e)(5) of this section. The capacity of each battery module is expressed on a kilowatt-hour basis.

(B) *Modules with no battery cells*. For a battery module without cells, the credit amount is equal to the product of $45 multiplied by the capacity of such battery module, subject to the limitation provided in paragraph (e)(5) of this section. The capacity of each battery module is expressed on a kilowatt-hour basis.

(5) *Limitation on capacity of battery cells and battery modules*—(i) *In general*. For purposes of paragraphs (e)(3)(iii) and (e)(4)(iii) of this section, the capacity determined with respect to a battery cell or battery module must not exceed a capacity-to-power ratio of 100:1.

(ii) *Capacity to power ratio*. For purposes of paragraph (e)(5)(i) of this section, *capacity-to-power ratio* means, with respect to a battery cell or battery module, the ratio of the capacity of such cell or module to the maximum discharge amount of such cell or module.

(f) *Phase out rule*—(1) *In general.* Except as provided in paragraph (f)(3) of this section, in the case of any eligible component sold after December 31, 2029, the amount of the section 45X credit determined with respect to such eligible component must be equal to the product of—

(i) The amount determined under this section with respect to such eligible component, multiplied by

(ii) The phase out percentage under paragraph (f)(2) of this section.

(2) *Phase out percentages*. The phase out percentage is equal to—

(i) 75 percent for eligible components sold during calendar year 2030;

(ii) 50 percent for eligible components sold during calendar year 2031;

(iii) 25 percent for eligible components sold during calendar year 2032, and

(iv) Zero percent for eligible components sold after calendar year 2032.

(3) *Exception for applicable critical minerals*. The phase out rules described in paragraphs (f)(1) and (2) of this section apply to all eligible components except applicable critical minerals.

(g) *Applicability date.* This section applies to eligible components for which production is completed and sales occur after December 31, 2022, and during a taxable year ending on or after October 28, 2024.

§1.45X-4 Applicable critical minerals.

(a) *In general.* The term *applicable critical mineral* means any of the minerals that are listed in section 45X(c)(6) and defined in paragraph (b) of this section.

(b) *Definitions*. The following definitions apply for the purpose of this section—

(1) [Reserved]

(2) *Antimony*. The term *antimony* means antimony that is—

(i) Converted to antimony trisulfide concentrate with a minimum purity of 90 percent antimony trisulfide by mass; or

(ii) Purified to a minimum purity of 99.65 percent antimony by mass.

(3) *Barite*. The term *barite* means barite that is barium sulfate purified to a minimum purity of 80 percent barite by mass.

(4) *Beryllium*. The term *beryllium* means beryllium that is—

(i) Converted to copper-beryllium master alloy; or

(ii) Purified to a minimum purity of 99 percent beryllium by mass.

(5) *Cerium*. The term *cerium* means cerium that is—

(i) Converted to cerium oxide that is purified to a minimum purity of 99.9 percent cerium oxide by mass; or

(ii) Purified to a minimum purity of 99 percent cerium by mass.

(6) *Cesium*. The term *cesium* means cesium that is—

(i) Converted to cesium formate or cesium carbonate; or

(ii) Purified to a minimum purity of 99 percent cesium by mass.

(7) *Chromium*. The term *chromium* means chromium that is—

(i) Converted to ferrochromium consisting of not less than 60 percent chromium by mass; or

(ii) Purified to a minimum purity of 99 percent chromium by mass.

(8) *Cobalt*. The term *cobalt* means cobalt that is—

(i) Converted to cobalt sulfate; or

(ii) Purified to a minimum purity of 99.6 percent cobalt by mass.

(9) *Dysprosium*. The term *dysprosium* means dysprosium that is—

(i) Converted to not less than 99 percent pure dysprosium iron alloy by mass; or

(ii) Purified to a minimum purity of 99 percent dysprosium by mass.

(10) *Europium*. The term *europium* means europium that is—

(i) Converted to europium oxide that is purified to a minimum purity of 99.9 percent europium oxide by mass; or

(ii) Purified to a minimum purity of 99 percent of europium by mass.

(11) *Fluorspar*. The term *fluorspar* means fluorspar that is—

(i) Converted to fluorspar that is purified to a minimum purity of 97 percent calcium fluoride by mass; or

(ii) Purified to a minimum purity of 99 percent fluorspar by mass.

(12) *Gadolinium*. The term *gadolinium* means gadolinium that is—

(i) Converted to gadolinium oxide that is purified to a minimum purity of 99.9 percent gadolinium oxide by mass; or

(ii) Purified to a minimum purity of 99 percent gadolinium by mass.

(13) *Germanium*. The term *germanium* means germanium that is—

(i) Converted to germanium tetrachloride; or

(ii) Purified to a minimum purity of 99.99 percent germanium by mass.

(14) *Graphite*. The term *graphite* means natural or synthetic graphite that is purified to a minimum purity of 99.9 percent graphitic carbon by mass. The term *99.9 percent graphitic carbon by mass* means graphite that is 99.9 percent carbon by mass.

(15) *Indium*. The term *indium* means indium that is—

(i) Converted to—

(A) Indium tin oxide; or

(B) Indium oxide that is purified to a minimum purity of 99.9 percent indium oxide by mass; or

(ii) Purified to a minimum purity of 99 percent indium by mass.

(16) *Lithium.* The term *lithium* means lithium that is—

(i) Converted to lithium carbonate or lithium hydroxide; or

(ii) Purified to a minimum purity of 99.9 percent lithium by mass.

(17) *Manganese*. The term *manganese* means manganese that is—

(i) Converted to manganese sulphate; or

(ii) Purified to a minimum purity of 99.7 percent manganese by mass.

(18) *Neodymium*. The term *neodymium* means neodymium that is—

(i) Converted to neodymium-praseodymium oxide that is purified to a minimum purity of 99 percent neodymium-praseodymium oxide by mass;

(ii) Converted to neodymium oxide that is purified to a minimum purity of 99.5 percent neodymium oxide by mass; or

(iii) Purified to a minimum purity of 99.9 percent neodymium by mass.

(19) *Nickel*. The term *nickel* means nickel that is—

(i) Converted to nickel sulphate; or

(ii) Purified to a minimum purity of 99 percent nickel by mass.

(20) *Niobium*. The term *niobium* means niobium that is—

(i) Converted to ferronibium; or

(ii) Purified to a minimum purity of 99 percent niobium by mass.

(21) *Tellurium*. The term *tellurium* means tellurium that is—

(i) Converted to cadmium telluride; or

(ii) Purified to a minimum purity of 99 percent tellurium by mass.

(22) *Tin*. The term *tin* means tin that purified to low alpha emitting tin that—

(i) Has a purity of greater than 99.99 percent by mass; and

(ii) Possesses an alpha emission rate of not greater than 0.01 counts per hour per centimeter square.

(23) *Tungsten*. The term *tungsten* means tungsten that is converted to ammonium paratungstate or ferrotungsten.

(24) *Vanadium*. The term *vanadium* means vanadium that is converted to ferrovanadium or vanadium pentoxide.

(25) *Yttrium*. The term *yttrium* means yttrium that is—

(i) Converted to yttrium oxide that is purified to a minimum purity of 99.999 percent yttrium oxide by mass; or

(ii) Purified to a minimum purity of 99.9 percent yttrium by mass.

(26) *Other minerals*. The following minerals are also applicable critical minerals provided that such mineral is purified to a minimum purity of 99 percent by mass:

(i) Arsenic.

(ii) Bismuth.

(iii) Erbium.

(iv) Gallium.

(v) Hafnium.

(vi) Holmium.

(vii) Iridium.

(viii) Lanthanum.

(ix) Lutetium.

(x) Magnesium.

(xi) Palladium.

(xii) Platinum.

(xiii) Praseodymium.

(xiv) Rhodium.

(xv) Rubidium.

(xvi) Ruthemium.

(xvii) Samarium.

(xviii) Scandium.

(xix) Tantalum.

(xx) Terbium.

(xxi) Thulium.

(xxii) Titanium.

(xxiii) Ytterbium.

(xxiv) Zinc.

(xxv) Zirconium.

(c) *Credit amount*—(1) *In general.* For any applicable critical mineral, the credit amount is equal to 10 percent of the costs incurred by the taxpayer with respect to production of such mineral.

(2) *Production processes for applicable critical minerals*—(i) *Conversion*. For purposes of section 45X, the term *conversion* means a chemical transformation from one species to another.

(ii) *Purification*. For purposes of section 45X, the term *purification* means increasing the mass fraction of a certain element.

(3) *Production costs incurred*—(i) *In general*. Costs incurred by the taxpayer with respect to the production of applicable critical minerals includes all costs as defined in §1.263A-1(e) that are paid or incurred within the meaning of section 461 of the Code by the taxpayer for the production of an applicable critical mineral only, including direct or indirect materials costs as defined in §1.263A-1(e)(2)(i)(A) and (e)(3)(ii)(E), respectively, but only if those direct or indirect material costs do not relate to the purchase of materials that are an eligible component at the time of acquisition ~~(for example, an electrode active material as defined in §1.45X-3(e)(2)(i) or applicable critical mineral as defined in paragraph (b) of this section)~~. This definition of production costs incurred would include any costs incurred by the taxpayer related to the extraction of raw materials in the United States or a United States territory, but only if those costs are paid or incurred by the taxpayer that claims the section 45X credit with respect to the relevant applicable critical mineral. Section 263A of the Code and the regulations in this chapter under section 263A apply solely to identify the types of costs that are includible in production costs incurred for purposes of computing the amount of the section 45X credit, but do not apply for any other purpose, such as to determine whether a taxpayer is engaged in production activities.

(ii) *Production costs for production of incorporated eligible components*. The production costs that a taxpayer pays or incurs in the production of an eligible component (whether produced domestically or not) that the taxpayer then incorporates into a further distinct applicable critical mineral within the meaning of §1.45X-1(f)(1) are not included in the costs incurred by the taxpayer in producing the further distinct applicable critical mineral. A taxpayer may not include the same production costs in the calculation of the credit amount for more than one eligible component. For example, if the taxpayer pays or incurs production costs of $50X for eligible component 1 and an additional $100X of production costs for eligible component 2 that included integrating eligible component 1 within the meaning of §1.45X-1(f)(1), then the production costs for eligible component 1 equal $50X and the production costs for eligible component 2 equal $100X.

(4) *Substantiation*. In order to include direct or indirect materials costs as defined in §1.263A-1(e)(2)(i)(A) and (e)(3)(ii)(E) as production costs when calculating a section 45X credit for the production and sale of an applicable critical mineral, a taxpayer, as part of filing an annual tax return (or a return for a short year within the meaning of section 443 of the Code), must include the information in paragraph (c)(4)(i) of this section as an attachment to that return, prepare the information required in paragraph (c)(4)(ii) through (iv) of this section and maintain that information in the taxpayer's books and records under section 6001, and comply with directions for the information required in paragraph (c)(4)(v) of this section as specified in guidance:

(i) Certification from any supplier, including the supplier's employer identification number and that is signed under penalties of perjury, from which the taxpayer purchased any constituent elements, materials, or subcomponents of the taxpayer's applicable critical mineral, stating that the supplier is not claiming the section 45X credit with respect to any of the material acquired by the taxpayer, nor is the supplier aware that any prior supplier in the chain of production of that material claimed a section 45X credit for the material.

(ii) A document that provides an analysis of any constituent elements, materials, or subcomponents that concludes the material did not meet the definition of an eligible component (for example, an applicable critical mineral or electrode active material) at the time of acquisition by the taxpayer. The document may be prepared by the taxpayer or ideally by an independent third-party.

(iii) A list of all direct and indirect material costs and the amount of such costs that were included within the taxpayer's total production cost for each applicable critical mineral.

(iv) A document related to the taxpayer's production activities with respect to the direct and indirect material costs that establishes the materials were used in the production of the applicable critical mineral. The document may be prepared by the taxpayer or ideally by an independent third-party.

(v) Any other information related to the direct or indirect materials specified in guidance.

(5) Failure to provide the documentation described in paragraph (c)(4) of this section with the return filing, or providing an available upon request statement, will constitute a failure to substantiate the claim.

(d) *Applicability date*. This section applies to eligible components for which production is completed and sales occur after December 31, 2022, and during a taxable year ending on or after October 28, 2024.

Douglas W. O'Donnell,
Deputy Commissioner.

Approved: October 17, 2024.

Aviva R. Aron-Dine,
Deputy Assistant Secretary of the Treasury (Tax Policy).

(Filed by the Office of the Federal Register October 24, 2024, 8:45 a.m., and published in the issue of the Federal Register for October 28, 2024, 89 FR 85798)

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26 CFR 1.752-2: Partner's share of recourse liabilities

T.D. 10014

DEPARTMENT OF THE TREASURY
Internal Revenue Service
26 CFR Part 1

Recourse Partnership Liabilities and Related Party Rules

AGENCY: Internal Revenue Service (IRS), Treasury.

ACTION: Final rule.

SUMMARY: This document contains final regulations relating to recourse liabilities of a partnership and special rules for related persons. These regulations affect partnerships and their partners.

DATES: *Effective date*: These regulations are effective on December 2, 2024.

Applicability dates: For dates of applicability, *see* §§1.704-2(l)(1)(vi), 1.752-2(l)(4), and 1.752-5(a).

FOR FURTHER INFORMATION CONTACT: Concerning these final regulations, contact Caroline Hay of the Office of Associate Chief Counsel (Passthroughs and Special Industries), (202) 317-6850 (not a toll-free number).

SUPPLEMENTARY INFORMATION:

Authority

This document amends the Income Tax Regulations (26 CFR part 1) under section 752 of the Internal Revenue Code (Code) regarding a partner's share of a recourse partnership liability (final regulations).

The final regulations are issued under the express delegation of authority under section 7805(a) of the Code, which provides that "[t]he Secretary shall prescribe all needful rules and regulations for the enforcement of [the Code], including all rules and regulations as may be necessary by reason of any alteration of law in relation to internal revenue."

Background

Section 752(a) provides, in general, that an increase in a partner's share of partnership liabilities (or an increase in a partner's individual liabilities by reason of the assumption by the partner of partnership liabilities) will be considered a contribution of money by the partner to the partnership. Conversely, section 752(b) provides that a decrease in a partner's share of partnership liabilities (or a decrease in a partner's individual liabilities by reason of the assumption by the partnership of the individual liabilities) will be considered a distribution of money to the partner by the partnership.

When determining a partner's share of partnership liabilities, the existing regulations under section 752 (existing §§1.752-1 through 1.752-3) distinguish between two categories of liabilities—recourse and nonrecourse. In general, a partnership liability is recourse to the extent that a partner or related person bears the economic risk of loss (EROL) as provided in existing §1.752-2 and nonrecourse to the extent that no partner or related person bears the EROL under existing §1.752-2. *See* existing §1.752-1(a)(1) and (2). A partner bears the EROL for a partnership liability if the partner or related person: (1) has a payment obligation as provided in existing §1.752-2(b) (except as provided in existing §1.752-2(d)(2)); (2) is a lender to the partnership as provided in existing §1.752-2(c) (except as provided in existing §1.752-2(d)(1)); (3) guarantees payment of interest on a partnership nonrecourse liability as described in existing §1.752-2(e); or (4) pledges property as security for a partnership liability as provided in existing §1.752-2(h).

On December 16, 2013, the Department of the Treasury (Treasury Department) and the IRS published in the **Federal Register** (78 FR 76092) a notice of proposed rulemaking (REG-136984-12) that would amend the existing regulations under section 752 relating to a partner's share of a recourse partnership liability and the rules for related persons (proposed regulations). The provisions of the proposed regulations are explained in greater detail in the preamble to the proposed regulations. The Treasury Department and the IRS received two comments responding to the proposed regulations. A public hearing on the proposed regulations was not requested or held.

The Treasury Department and the IRS are mindful that the proposed regulations were issued approximately eleven years ago. However, no intervening legislative changes regarding allocations of partnership liabilities have been made, no subsequent changes to regulatory rules concerning allocations of partnership liabilities address the issues in the proposed regulations, and the issues raised by the commenters continue to remain relevant. For these reasons, the Treasury Department and the IRS have determined that a new notice of proposed rulemaking or a further opportunity for public comment would be unlikely to generate different comments. Furthermore, issuing the same rules again as a notice of proposed rulemaking would unnecessarily delay further this rulemaking to the continued detriment of taxpayers desiring to apply these rules to allocate their partnership liabilities.

Accordingly, after full consideration of the comments received, these final regulations adopt the proposed regulations with certain modifications in response to the comments described in the Summary of Comments and Explanation of Revisions.

Summary of Comments and Explanation of Revisions

I. *Overlapping Economic Risk of Loss*

Under existing §1.752-2(a), a partner's share of a recourse partnership liability equals the portion of that liability, if any, for which the partner or related person bears the EROL. The proposed regulations would have provided a proportionality rule to determine how partners share a partnership liability when multiple partners bear the EROL for the same liability (overlapping EROL). Under the proportionality rule, the EROL borne by a partner would be the amount of the partnership liability (or portion thereof) multiplied by a fraction obtained by dividing the amount of EROL borne by the partner by the sum of the EROL borne by all partners with respect to that liability.

One commenter suggested that the final regulations should not adopt the proportionality rule but should instead allocate

liabilities among partners with overlapping EROL in a manner analogous to the manner in which a nonrecourse liability is allocated under §1.752-3. Specifically, the commenter suggested that such liabilities should be allocated in a manner consistent with the partner's interest in partnership profits. The commenter stated that this allocation approach more closely reflects the partners' economic arrangements and permits losses attributable to the liability to be allocated among the partners without any of the losses being suspended under section 704(d) of the Code.

Under the existing section 752 regulations, a recourse partnership liability is shared among partners that bear the EROL for the liability. Conversely, with a nonrecourse partnership liability, no partner bears economic risk with respect to the liability; therefore, the liability is generally allocated in accordance with a partner's share of partnership profits. Adopting a framework applicable to a nonrecourse partnership liability for purposes of determining how a recourse partnership liability should be shared under section 752 could cause the liability to be allocated disproportionally among those partners depending upon their profit-sharing ratios even though the partners bear the same amount of EROL for the liability. The proportionality rule provides a reasonable approach in addressing how a recourse partnership liability should be shared when partners have overlapping EROL. Therefore, the final regulations do not adopt the commenter's suggestion.

Another commenter requested clarification on the effect of local law and separate agreements between partners in determining whether partners have overlapping EROL. Under existing §1.752-2(b)(3), all statutory and contractual obligations relating to a partnership liability are taken into account for purposes of determining a partner's EROL. Therefore, the proportionality rule applies to cases in which partners have overlapping EROL after taking into account all statutory and contractual obligations relating to the partnership liability. The final regulations illustrate in §1.752-2(f)(9) that these obligations are considered in determining whether the partners have overlapping EROL.

II. *Tiered Partnerships*

Another overlapping EROL issue under section 752 relates to tiered partnerships. The proposed regulations would have provided guidance on how a lower-tier partnership (LTP) must allocate a liability in cases in which a partner of an upper-tier partnership (UTP) is also a partner of the LTP and that partner bears the EROL with respect to the LTP's liability. Under the proposed regulations, the LTP would be required to allocate the liability directly to the partner.

One commenter, while acknowledging that the rule in the proposed regulations provides certainty and is administrable, expressed concerns that this rule could cause the partner in both the UTP and the LTP to recognize gain. The commenter recommended that the final regulations allow the LTP to allocate the liability in any reasonable manner between the partner and the UTP. The final regulations do not adopt this suggestion. The rule in the proposed regulations is the most administrable, especially in a case in which an LTP may not be aware that one of its partners is also a partner in a UTP that is removed from the LTP. Therefore, under the final regulations, an LTP must allocate the liability directly to the partner that bears the EROL with respect to the LTP's liability. Section §1.752-2(i)(2) of the final regulations also clarifies how the tiered partnership rule applies in a case in which there is overlapping EROL among unrelated partners as provided in §1.752-2(a)(2). Finally, the final regulations add an example to illustrate the application of the proportionality rule when there are tiered partnerships.

Another commenter suggested that a gap might exist between §§1.704-2 and 1.752-2 concerning partner nonrecourse deductions when a partner of a UTP (that is not also a partner of an LTP) bears the EROL for a liability of the LTP. Existing §1.704-2(i) requires the partnership to allocate partner nonrecourse deductions to the partner that bears the EROL. Existing §1.704-2(k)(5) treats an LTP's liability that is treated as a UTP's liability under §1.752-4(a) also as a liability of the UTP for purpose of applying the rules under §1.704-2(i). Under existing §1.752-2(i), the LTP allocates its liability to the UTP when a partner of the UTP bears the EROL for the LTP's liability. The commenter asserted that, although existing §1.752-2(i) requires the LTP to allocate the liability to the UTP, existing §1.704-2 does not explicitly direct the LTP to allocate partner nonrecourse deductions attributable to that liability to the UTP. Thus, in the commenter's view, the existing rules do not treat the UTP as bearing the EROL for the LTP's liability for purposes of §1.704-2(i). Contrary to this commenter's suggestion, existing §§1.704-2(i) and 1.704-2(k)(5) implicitly require an LTP to allocate partner nonrecourse deductions attributable to a liability of the LTP to a UTP if a partner in the UTP bears the EROL for the LTP's liability. To eliminate any uncertainty, the final regulations add a sentence to §1.704-2(k)(5) to clarify that a UTP is treated as bearing the EROL for an LTP's liability that is treated as the UTP's liability under §1.752-4(a). Therefore, partner nonrecourse deductions attributable to the LTP's liability are allocated to the UTP under §1.704-2(i).

III. *General Issues of EROL*

As previously stated, existing §1.752-2(a) generally provides that a partner's share of a recourse partnership liability equals the portion of that liability, if any, for which the partner or related person bears the EROL. A partner bears the EROL for a partnership liability if the partner or related person has a payment obligation under §1.752-2(b), is a lender as provided in §1.752-2(c), guarantees payment of interest on a partnership nonrecourse liability as described in §1.752-2(e), or pledges property as a security as provided in §1.752-2(h). In describing when a partner bears the EROL for a partnership liability, the proposed regulations inadvertently failed to include situations under §1.752-2(e) and (h). A commenter also suggested that references to §1.752-2(c) relating to when a partner or related person is the lender take into account a de minimis rule under §1.752-2(d)(1). Existing §1.752-2(d)(1) provides that the general rule in §1.752-2(c)(1) does not apply if a partner or related person whose interest (directly or indirectly through one or more partnerships and including the interest of any related person) in each item

of partnership income, gain, loss, deduction, or credit for every taxable year that the partner is a partner in the partnership is 10 percent or less, makes a loan to the partnership that constitutes qualified nonrecourse financing within the meaning of section 465(b)(6) (determined without regard to the type of activity financed). To incorporate the rules in §1.752-2(d)(1), the commenter suggested that the final regulations broadly refer to §1.752-2 when describing situations that give rise to EROL instead of listing specific applicable paragraphs in §1.752-2.

The final regulations correct the oversight in the proposed regulations by listing in one section of the regulations all the situations under §1.752-2 in which a person directly bears the EROL, including by taking into account the de minimis exceptions in §1.752-2(d). A person directly bears the EROL if that person, and not a related person, meets the requirements of the listed situations.

IV. *Related Party Rules*

A. Constructive Ownership Rules

Under existing §1.752-4(b)(1), a person is related to a partner if the person and the partner bear a relationship to each other that is specified in section 267(b) or section 707(b)(1) of the Code, except that "80 percent or more" is substituted for "more than 50 percent" in each of those sections, a person's family is determined by excluding siblings, and section 267(e)(1) and (f)(1)(A) are disregarded. In determining whether a partner and a person bear a relationship to each other that is specified in section 267(b) or section 707(b)(1), the constructive stock ownership rules in section 267(c) apply. *See* sections 267(c) and 707(b)(3). The proposed regulations would disregard the constructive stock ownership rules under section 267(c)(1) in determining whether to treat stock of a corporation owned, directly or indirectly, by or for a partnership as owned proportionately by or for its partners if the corporation is a lender under §1.752-2(c) or has a payment obligation with respect to a liability of its partnership owner. The preamble to the proposed regulations explained that a partner's EROL that is limited to the partner's equity investment in the partnership should be treated differently than the risk of loss beyond that investment.

Commenters agreed with the rationale underlying the proposed regulations and suggested that the final regulations disregard two other constructive ownership situations in determining relatedness under §1.752-4(b)(1). First, commenters suggested that the final regulations also disregard section 267(c)(1) in determining whether to treat a UTP's direct or indirect interest in an LTP as owned proportionately by or for the UTP's partners if the LTP is a lender or has a payment obligation with respect to a liability of the UTP. Commenters expressed the view that in this situation, like the one described in the proposed regulations, a partner should not be treated as bearing the EROL for a partnership liability merely as a result of the UTP's investment in an LTP that has a payment obligation with respect to a liability of the UTP.

Second, commenters suggested that the final regulations disregard section 1563(e)(2) of the Code in determining relatedness under §1.752-4(b)(1). For purposes of §1.752-4(b)(1), a person is related to a partner if the two parties bear a relationship to each other as described in section 267(b)(3). Under section 267(b)(3), a corporate partner and another corporation that are members of the same controlled group (as defined in section 267(f)) are treated as related for purposes of §1.752-4(b)(1). Section 267(f) gives "controlled group" the same meaning as in section 1563(a). Under section 1563(a), a controlled group of corporations includes a parent-subsidiary controlled group and a brother-sister controlled group. Section 1563(e) provides attribution rules that apply in determining whether a corporation is a member of a parent-subsidiary controlled group or of a brother-sister controlled group. Specific to partnerships, section 1563(e)(2) provides that stock owned, directly or indirectly, by or for a partnership is considered as owned by any partner having an interest of 5 percent or more in either the capital or profits of the partnership in proportion to the partner's interest in capital or profits, whichever is greater. Therefore, in applying the attribution rules under section 1563(e)(2), a corporate partner in a partnership could be treated as a member of a parent-subsidiary controlled group or of a brother-sister controlled group, and thus, related to a corporation in that group that is owned by the partnership. If the corporate subsidiary of the partnership has a payment obligation with respect to a liability of the partnership, the corporate partner is treated as bearing the EROL for that liability. Commenters recommended not treating the corporate partner as bearing the EROL merely as a result of applying the attribution rules under section 1563(e)(2) because the partner's risk is limited to the investment in the partnership.

The final regulations adopt these suggestions. Thus, in determining relatedness under §1.752-4(b)(1), the final regulations disregard: (1) section 267(c)(1) in determining whether a UTP's interest in an LTP is owned proportionately by or for the UTP's partners when an LTP directly bears the EROL for a liability of the UTP and (2) section 1563(e)(2) in determining whether a corporate partner in a partnership and a corporation owned by the partnership are members of the same controlled group when the corporation directly bears the EROL for a liability of the owner partnership. In both of these situations, a partner should not be treated as bearing the EROL when the partner's risk is limited to the partner's equity investment in the partnership.

B. Related Partner Exception to Related Party Rules

Under the proposed regulations, if a person who owns (directly or indirectly through one or more partnerships) an interest in a partnership is a lender or has a payment obligation with respect to a partnership liability, or portion thereof, then other persons owning interests directly or indirectly (through one or more partnerships) in that partnership would not be treated as related to that person for purposes of determining the EROL borne by each of them for the partnership liability, or portion thereof (related partner exception).

One commenter recommended that the final regulations clarify the meaning of the phrase "not treated as related" as used in proposed examples illustrating the related partner exception. The phrase "not treated as related" is intended to mean

that, under §1.752-4(b)(1), the partner and the other person are not treated as bearing a relationship to each other that is specified in section 267(b) or section 707(b)(1) (taking into account any applicable attribution rules). Accordingly, the phrase "not treated as related" should be broadly interpreted. For instance, in §1.752-4(b)(5)(iii) of the final regulations, A wholly owns corporations X and Y. X and Y are members of Partnership, an entity treated as a partnership for Federal tax purposes. The partnership agreement provides that X and Y share equally in all items of income, gain, loss, deduction, and credit of Partnership. X owns 79 percent of Z, a corporation, and Y owns 21 percent of Z. Each of X and Z guarantees the entire amount of a liability of Partnership. Under this example, X and Y are not treated as related for purposes of determining the EROL borne by each of them for the partnership's liability, and, because neither X nor Y owns an 80 percent or more interest in Z, X and Y are not treated as related to Z under §1.752-4(b)(1). In other words, X and Y are not related to Z within the meaning of §1.752-4(b)(1), which takes into account any applicable attribution rules.

Another commenter suggested that the related partner exception should apply only to turn off relatedness so that the direct EROL borne by one partner is not attributed to another partner. This commenter recommended that the rule should not turn off the relationship between a partner that directly bears the EROL for a partnership liability and another partner for purposes of determining whether those partners are related to a non-partner that also bears EROL for the partnership's liability. If the related partner exception did not apply in this situation, both partners would be treated as bearing the EROL for the partnership liability and share the liability under the proportionality rule.

The proposed regulations would implement the result in *IPO II v. Commissioner*, 122 T.C. 295 (2004), which applied the related partner exception to turn off the relationship between the partners and allocated the entirety of a partnership's liability to the partner that directly bore the EROL for the partnership's liability despite a non-partner related person also bearing the EROL. Therefore, the final regulations do not adopt this suggestion.

C. Person Related to Multiple Partners (Multiple Partner Rule)

The proposed regulations provide that if a person is a lender or has a payment obligation with respect to a partnership liability and is related to more than one partner, then those partners that are related to that person (related partners) share the liability equally. One commenter suggested that the multiple partner rule may be unnecessary and recommended that the final regulations only include the proportionality rule in proposed §1.752-2(a) to address how to allocate EROL when there is overlapping EROL, including because multiple partners are related to a person with a payment obligation. The final regulations do not adopt this suggestion. The multiple partner rule is necessary because, without this rule, the partners might share EROL incorrectly. For example, corporations X, Y, and Z are partners in an entity treated as a partnership for Federal tax purposes. The partnership agreement provides that the partners share equally in all items of income, gain, loss, deduction, and credit of XYZ partnership. A, an individual, wholly owns X and Y. Z is an unrelated third party. Partnership borrows $1,000 from a bank and A and Z both guarantee the entire amount of the liability. Without the multiple partner rule, each of X and Y has $1,000 of EROL from A's $1,000 guarantee and Z has $1,000 of EROL from its guarantee. Each would be allocated one-third of the liability under the proportionality rule. In contrast, by applying the multiple partner rule, each of X and Y has $500 of EROL. When the proportionality rule is applied, X and Y are each allocated one-fourth of the liability and Z is allocated one-half of the liability. This is the correct result because there is one guarantee from A's related group and one guarantee by Z.

The commenter also recommended that if the final regulations retain the multiple partner rule, the final regulations allow the related partners to agree among themselves how to allocate the liability, provided that the allocation is consistently applied. The commenter explained that allowing related partners to choose among themselves who receives the allocation could prevent related partners from recognizing an uneconomic gain. To address the commenter's underlying concern, the final regulations under §1.752-4(b)(3) treat related partners as bearing the EROL for a partnership liability in proportion to each related partner's interest in partnership profits.

V. *Ordering Rule*

The proposed regulations had different rules regarding allocations of partnership liabilities for related and unrelated parties. In particular, the proportionality rule in proposed §1.752-2(a) addressed when partners have overlapping EROL, the related partner exception in proposed §1.752-4(b)(2) described when partners with direct EROL are not treated as related to other partners, and the multiple partner rule in proposed §1.752-4(b)(3) provided how EROL is shared when multiple partners are related to a person that is a lender or has a payment obligation. One commenter expressed confusion regarding how these rules interact and suggested that the final regulations include an ordering rule.

The final regulations adopt this suggestion. An ordering rule is warranted to clarify how the proportionality rule interacts with the multiple partner rule and how the multiple partner rule interacts with the related partner exception. Therefore, under §1.752-4(e), the first step is to determine whether any partner (direct or indirect) directly bears the EROL for the partnership liability and apply the related partner exception in §1.752-4(b)(2). After applying the related partner exception (if applicable), the next step is to determine the amount of EROL each partner is considered to bear under §1.752-4(b)(3) when multiple partners are related to a person that directly bears the EROL for a partnership liability. The final step is to apply the proportionality rule in §1.752-2(a)(2) to determine the amount of EROL that each partner is considered to bear when the amount of EROL that multiple partners bear exceed the amount of the partnership liability. The final regulations include an example to illustrate the ordering rule in §1.752-4(e).

VI. *Liquidating Distributions of Partnership Interests*

The preamble to the proposed regulations requested comments concerning the

proper treatment of liabilities when a UTP bears the EROL for an LTP's liability and distributes, in a liquidating distribution, its interest in the LTP to one of its partners, but the transferee partner does not bear the EROL. As a result of this transaction, the LTP's recourse liability became a nonrecourse liability for purposes of section 752. The preamble requested comments specifically on the timing of the liability reallocation relative to the transaction that caused the liability to change from recourse to nonrecourse.

The Treasury Department and the IRS received thoughtful comments regarding this issue in response to the request for comments and are continuing to consider whether additional guidance regarding the issue is warranted.

VII. *Applicability Date*

Under the proposed regulations the rules would apply to any liability incurred or assumed by a partnership on or after the date the regulations are published as final regulations in the **Federal Register**. Commenters suggested that the final regulations allow a taxpayer to apply the final regulations to all liabilities incurred or assumed by a partnership (even liabilities incurred or assumed before the date of publication of these regulations), with respect to all returns, including amended returns, filed after the date these regulations are published. The final regulations adopt this suggestion, but clarify that a partnership must apply these rules consistently to all of its partnership liabilities and may not pick and choose which rules apply to them. Allowing taxpayers to apply these regulations before the publication date will provide greater certainty for partnerships and their partners and allow uniform rules to apply to all partnership liabilities. As a result, these final regulations allow a partnership to apply the rules to all liabilities with respect to returns filed on or after December 2, 2024, provided the partnership consistently applies all the rules in these final regulations to those liabilities.

A commenter also suggested that the final regulations permit partnership liabilities that are modified or refinanced and payment obligations that are modified to continue to be subject to the provisions of the regulations in effect prior to the applicability date of the final regulations, but only to the extent of the amount and duration of the pre-modification (or refinancing) liability or payment obligation. The commenter identified §1.707-5(c) as a model for a special refinancing rule. The commenter noted that without such a rule, the applicability date in the proposed regulations might discourage partnerships from refinancing debts or subject partners to unexpected adverse results.

The final regulations adopt this suggestion. Accordingly, the final regulations do not apply to refinanced debts to the extent of the amount and duration of the pre-modification liability. Instead, the rules in the regulations as in effect prior to December 2, 2024, continue to apply to those liabilities. For example, assume a partnership borrowed $1,000 on January 28, 2024, from Bank, and X, a person related to Partners A and B, guaranteed the entire amount of that liability. Further assume that this liability was refinanced after December 2, 2024, so that the liability is now $2,000 and X continues to guarantee the entire amount of the liability. The rules in effect prior to December 2, 2024, would continue to apply to the $1,000 of pre-modification liability and X's guarantee of the $1,000 when determining which partner bears the EROL. The rules in effect after December 2, 2024 would apply to the remaining $1,000.

Special Analyses

I. *Paperwork Reduction Act*

The Paperwork Reduction Act of 1995 (44 U.S.C. 3501-3520) (PRA) generally requires that a Federal agency obtain the approval of the Office of Management and Budget before collecting information from the public, whether such collection of information is mandatory, voluntary, or required to obtain or retain a benefit. These regulations do not impose a collection of information and, therefore, the PRA does not apply.

II. *Regulatory Flexibility Act*

The Treasury Department and the IRS have determined the rule will not have a significant economic impact on a substantial number of small entities. Although the rules affect small entities, data is not readily available about the number of taxpayers affected. Section 752 affects the allocation of partnership liabilities among partners in a partnership. The economic impact of these regulations is not likely to be significant, because the regulations will make it easier for taxpayers to comply with section 752. Pursuant to the Regulatory Flexibility Act (5 U.S.C. chapter 6), the Secretary hereby certifies that these regulations will not have a significant economic impact on a substantial number of small entities.

Pursuant to section 7805(f) of the Code, the proposed regulations that preceded these final regulations were submitted to the Chief Counsel for the Office of Advocacy of the Small Business Administration (SBA) for comment on its impact on small business. The Chief Counsel for the Office of Advocacy of the SBA did not provide any comments on the proposed regulations.

III. *Unfunded Mandates Reform Act*

Section 202 of the Unfunded Mandates Reform Act of 1995 requires that agencies assess anticipated costs and benefits and take certain other actions before issuing a final rule that includes any Federal mandate that may result in expenditures in any one year by a State, local, or Tribal government, in the aggregate, or by the private sector, of $100 million in 1995 dollars, updated annually for inflation. This rule does not include any Federal mandate that may result in expenditures by State, local, or Tribal governments, or by the private sector in excess of that threshold.

IV. *Executive Order 13132: Federalism*

Executive Order 13132 (Federalism) prohibits an agency from publishing any rule that has federalism implications if the rule either imposes substantial, direct compliance costs on State and local governments, and is not required by statute, or preempts State law, unless the agency meets the consultation and funding requirements of section 6 of the Executive order. These final regulations do not have federalism implications and do not impose substantial direct compliance costs on state and local governments or preempt

State law within the meaning of the Executive order.

V. *Regulatory Planning and Review*

Pursuant to the Memorandum of Agreement, Review of Treasury Regulations under Executive Order 12866 (June 9, 2023), tax regulatory actions issued by the IRS are not subject to the requirements of section 6 of Executive Order 12866, as amended. Therefore, a regulatory impact assessment is not required.

VI. *Congressional Review Act*

Pursuant to the Congressional Review Act (5 U.S.C. 801 et seq.), the Office of Information and Regulatory Affairs has designated this rule as not a "major rule," as defined by 5 U.S.C. 804(2).

Statement of Availability of IRS Documents

Guidance cited in this preamble is published in the Internal Revenue Bulletin and is available from the Superintendent of Documents, U.S. Government Publishing Office, Washington, DC 20402, or by visiting the IRS website at *https://www.irs.gov*.

Drafting Information

The principal author of these regulations is Caroline E. Hay, Office of the Associate Chief Counsel (Passthroughs and Special Industries). However, other personnel from the Treasury Department and the IRS participated in their development.

List of Subjects in 26 CFR Part 1

Income taxes, Reporting and recordkeeping requirements.

Adoption of Amendments to the Regulations

Accordingly, 26 CFR part 1 is amended as follows:

PART 1--INCOME TAXES

Paragraph 1. The authority citation for part 1 continues to read in part as follows:

Authority: 26 U.S.C. 7805 * * *

Par. 2. Section 1.704-2 is amended by:

1. Adding a sentence after the first sentence of paragraph (k)(5).
2. Adding paragraph (l)(1)(vi).

The additions read as follows:

§1.704-2 Allocations attributable to nonrecourse liabilities.

* * * * *

(k) * * *

(5) * * * In addition, for purposes of applying paragraph (i) of this section, the upper-tier partnership is treated as bearing the economic risk of loss for the lower-tier partnership's liabilities that are treated as the upper-tier partnership's liabilities under §1.752-4(a).* * *

(l) * * *

(1) * * *

(vi) The second sentence of paragraph (k)(5) of this section applies on or after December 2, 2024.

* * * * *

Par. 3. Section 1.752-0 is amended by:

1. In §1.752-2:
   i. Revising the entry (a); and
   ii. Adding entries (a)(1) through (3) and (i)(1) through (3).
2. In §1.752-4:
   i. Revising the entry (b)(2);
   ii. Removing the entries (b)(2)(i) though (iii);
   iii. Redesignating the entries (b)(2)(iv), (b)(2)(iv)(A) and (B) as (b)(4), (b)(4)(i) and (ii), respectively;
   iv. Removing the entry (b)(2)(iv)(C); and
   v. Adding the entries (b)(3) and (5), (e), and (f).

The revisions and additions read as follows:

1.752-0 Table of contents.

* * * * *

§1.752-2 Partner's share of recourse liabilities.

(a) Partner's share of recourse liabilities.

(1) In general.

(2) Overlapping economic risk of loss.

(3) Direct economic risk of loss.

* * * * *

(i) * * *

(1) In general.

(2) Coordination with overlapping economic risk of loss.

(3) Example.

* * * * *

§1.752-4 Special rules.

* * * * *

(b) * * *

(2) Related partner exception.

(3) Person related to more than one partner.

* * * * *

(5) Examples.

* * * * *

(e) Ordering rule.

(f) Example.

* * * * *

Par. 4. Section 1.752-2 is amended by:

1. Revising paragraphs (a).
2. Revising the headings for paragraphs (f)(1) through (8).
3. Revising paragraphs (f)(9), and (i).
4. In the first sentence of paragraph (l)(1), removing the language "Paragraphs (a)" and adding the language "Paragraphs (a)(1)" in its place.
5. In the first sentence of paragraph (l)(3), removing the language "§1.752-2(a)" and adding "§1.752-2(a)(1)" in its place.
6. Adding paragraph (l)(4).

The revisions and addition read as follows:

§1.752-2 Partner's share of recourse liabilities.

(a) *Partner's share of recourse liabilities*—(1) *In general.* A partner's share of recourse partnership liability equals the portion of that liability, if any, for which the partner or related person bears the economic risk of loss. The determination of the extent to which a partner bears the economic risk of loss for a partnership liability is made under the rules in paragraphs (b) through (k) of this section.

(2) *Overlapping economic risk of loss*. For purposes of determining a partner's share of a recourse partnership liability, the amount of the partnership liability is taken into account only once. If the aggregate amount of the economic risk of loss that all partners are determined to bear for

a partnership liability (or portion thereof) under paragraph (a)(1) of this section (without regard to this paragraph (a)(2)) exceeds the amount of such liability (or portion thereof), then the economic risk of loss borne by each partner for such liability equals the amount determined by multiplying—

(i) The amount of such liability (or portion thereof) by

(ii) The fraction obtained by dividing the amount of the economic risk of loss that such partner is determined to bear for that liability (or portion thereof) under paragraph (a)(1) of this section, by the sum of such amounts for all partners.

(3) *Direct economic risk of loss*. For purposes of this section and §1.752-4, a person directly bears the economic risk of loss for a partnership liability if that person has a payment obligation under paragraph (b) of this section (except as provided in paragraph (d)(2) of this section for certain partner guarantees), is a lender as provided in paragraph (c) of this section (except as provided in paragraph (d)(1) of this section for certain partner loans), guarantees payment of interest on a partnership nonrecourse liability as described in paragraph (e) of this section, or pledges property as a security as provided in paragraph (h) of this section.

* * * * *

(f) * * *

(1) *Example 1. Determining when a partner bears the economic risk of loss.* * * *

(2) *Example 2. Recourse liability; deficit restoration obligation.* * * *

(3) *Example 3. Guarantee by limited partner; partner deemed to satisfy obligation.* * * *

(4) *Example 4. Partner guarantee with right of subrogation.* * * *

(5) *Example 5. Bifurcation of partnership liability; guarantee of part of nonrecourse liability.* * * *

(6) *Example 6. Wrapped debt.* * * *

(7) *Example 7. Guarantee of interest by partner treated as part recourse and part nonrecourse.* * * *

(8) *Example 8. Continent obligation not recognized.* * * *

(9) *Example 9. Overlapping economic risk of loss*. (i) A and B are unrelated equal members of limited liability company, AB. AB is treated as a partnership for Federal tax purposes. AB borrows $1,000 from Bank. A guarantees payment for the entire amount of AB's $1,000 liability and B guarantees payment of up to $500 of the liability, if any amount of the full $1,000 liability is not recovered by Bank. Under paragraph (b)(1) of this section, A bears $1,000 of economic risk of loss for AB's liability and B bears $500 of economic risk of loss for AB's liability. A and B have not entered into a loss-sharing agreement addressing their status as co-guarantors, and local law does not clearly establish responsibility as between them for the liability.

(ii) Because the aggregate amount of A's and B's economic risk of loss under paragraph (a)(1) of this section ($1,500) exceeds the amount of AB's liability ($1,000), the economic risk of loss borne by each of A and B is determined under paragraph (a)(2) of this section. Under paragraph (a)(2) of this section, A's economic risk of loss equals $1,000 multiplied by $1,000/$1,500, or $667, and B's economic risk of loss equals $1,000 multiplied by $500/$1,500, or $333.

* * * * *

(i) *Treatment of recourse liabilities in tiered partnerships*—(1) *In general.* If a partnership (upper-tier partnership) owns (directly or indirectly through one or more partnerships) an interest in another partnership (lower-tier partnership), the liabilities of the lower-tier partnership are allocated to the upper-tier partnership in an amount equal to the sum of the following--

(i) The amount of liabilities with respect to which the upper-tier partnership directly bears the economic risk of loss as described in paragraph (a)(3) of this section; and

(ii) The amount of any other liabilities with respect to which a partner of the upper-tier partnership bears the economic risk of loss, provided the partner is not also a partner in the lower-tier partnership.

(2) *Coordination with overlapping economic risk of loss*. A lower-tier partnership takes into account paragraph (a)(2) of this section prior to the application of this paragraph (i).

(3) *Example*. (i) A and B (which is unrelated to A) contribute $810,000 and $90,000 to UTP, a limited liability company treated as a partnership for Federal tax purposes, in exchange for a 90 percent and 10 percent interest in UTP, respectively. UTP contributes the $900,000 to LTP, a partnership for Federal tax purposes, in exchange for a 90 percent interest in LTP and A contributes $100,000 directly to LTP in exchange for a 10 percent interest in LTP. UTP and LTP both reported losses in their initial years that reduced the partners' bases in UTP and LTP to zero. LTP borrows $10 million. UTP and LTP both had no income in the year at issue. At the request of the lender, A and B both provide their personal guaranty for the entire amount of LTP's liability.

(ii) Under paragraph (b)(1) of this section, A has $10 million of economic risk of loss for LTP's liability and B has $10 million of economic risk of loss for LTP's liability. Under paragraph (i)(2) of this section, LTP takes into account paragraph (a)(2) of this section prior to determining the amount of liabilities allocated to UTP under paragraph (i)(1) of this section. Under paragraph (a)(2) of this section, A is considered to bear $5 million (($10 million/$20 million) x $10 million) of economic risk of loss and B is considered to also bear $5 million (($10 million/$20 million) x $10 million) of economic risk of loss for LTP's liability. Pursuant to paragraph (a)(1) of this section, LTP allocates $5 million to A for A's direct interest in LTP's liability. Under paragraph (i)(1) of this section, LTP allocates $5 million to UTP ($5 million attributable to B's economic risk of loss for LTP's liability).

(iii) Pursuant to §1.752-4(a), UTP treats its share of LTP's liability ($5 million) as a liability of UTP. Because A bears the economic risk of loss for LTP's liability and is a partner in LTP, under paragraph (i)(1)(ii) of this section, UTP's share of LTP's liability ($5 million) only includes the amount of LTP's liabilities with respect to which B bears the economic risk of loss. Therefore, under paragraph (a)(1) of this section, UTP allocates $5 million of UTP's share of LTP's liability to B and none to A.

* * * * *

(l) * * *

(4) Paragraphs (a)(2) and (3), (f)(9), and (i) of this section apply to liabilities incurred or assumed by a partnership on or after December 2, 2024, other than liabilities incurred or assumed by a partnership pursuant to a written binding contract in effect prior to that date. To the extent that the proceeds of a partnership liability (refinancing debt) are allocable under the rules of §1.163-8T to payments discharging all or part of any other liability (pre-modification liability) of that partnership, the refinancing debt will be treated as though it was incurred or assumed by the partnership prior to December 2, 2024, to the extent of the amount and duration of the pre-modification liability. A partnership may apply paragraphs (a)(2) and (3), (f)(9), and (i) of this section to all of its liabilities (including liabilities incurred or assumed by a partnership prior to December 2, 2024), for any return filed on or after December 2, 2024 provided the partnership consistently applies all the rules in paragraphs (a)(2) and (3), (f)(9), and (i) of this section and §1.752-4(b)(1)(iv) and (v), (b)(2) and (3), (b)(5)(i) through (iv), (e), and (f) to those liabilities.

Par. 5. Section 1.752-4 is amended by:

1. In paragraph (b)(1)(i), removing the language "sections;" and adding the language "sections." in its place.

2. In paragraph (b)(1)(ii), removing the language "sisters; and" and adding the language "sisters." in its place.

3. Adding paragraphs (b)(1)(iv) and (v).

4. Revising paragraph (b)(2).

5. Adding paragraphs (b)(3) through (5), (e), and (f).

The additions and revision read as follows:

§1.752-4 Special rules.

* * * * *

(b) * * *

(1) * * *

(iv) Disregard section 267(c)(1) in determining whether—

(A) Stock of a corporation owned, directly or indirectly, by or for a partnership is considered as being owned proportionately by or for its partners when the corporation directly bears the economic risk of loss as described in §1.752-2(a)(3) for a liability of the partnership; and

(B) A capital interest or a profits interest in a partnership (lower-tier partnership) owned, directly or indirectly, by or for a partnership (upper-tier partnership) is considered as being owned proportionately by or for the upper-tier partnership's partners when the lower-tier partnership directly bears the economic risk of loss as described in §1.752-2(a)(3) for a liability of the upper-tier partnership.

(v) Disregard section 1563(e)(2) in determining whether a corporate partner and a corporation are members of the same controlled group (as defined in section 267(f)) under section 267(b)(3) when the corporation directly bears the economic risk of loss as described in §1.752-2(a)(3) for a liability of the partnership.

(2) *Related partner exception*. Notwithstanding paragraph (b)(1) of this section (which defines related person), if a person who owns (directly or indirectly through one or more partnerships) an interest in a partnership directly bears the economic risk of loss as described in §1.752-2(a)(3) for a partnership liability, or portion thereof, then other persons owning interests directly or indirectly (through one or more partnerships) in that partnership are not treated as related to that person for purposes of determining the economic risk of loss borne by each of them for such partnership liability, or portion thereof. This paragraph (b)(2) does not apply when determining a partner's interest under the de minimis rules in §1.752-2(d) and (e).

(3) *Person related to more than one partner*. For purposes of determining a partner's economic risk of loss for a partnership liability, or a portion thereof, when a person who directly bears the economic risk of loss as described in §1.752-2(a)(3) for the partnership liability is related to more than one partner under paragraph (b)(1) of this section, each partner that is related to such person is considered to bear the economic risk of loss for the partnership liability, or portion thereof, in proportion to the partner's interest in partnership profits.

(4) *Special rule where entity structured to avoid related person status*—(i) *In general*. If—

(A) A partnership liability is owed to or guaranteed by another entity that is a partnership, an S corporation, a C corporation, or a trust;

(B) A partner or related person owns (directly or indirectly) a 20 percent or more ownership interest in the other entity; and

(C) A principal purpose of having the other entity act as a lender or guarantor of the liability was to avoid the determination that the partner that owns the interest bears the economic risk of loss for federal income tax purposes for all or part of the liability; then the partner is treated as holding the other entity's interest as a creditor or guarantor to the extent of the partner's or related person's ownership interest in the entity.

(ii) *Ownership interest*. For purposes of paragraph (b)(4)(i) of this section, a person's ownership interest in—

(A) A partnership equals the partner's highest percentage interest in any item of partnership loss or deduction for any taxable year;

(B) An S corporation equals the percentage of the outstanding stock in the S corporation owned by the shareholder;

(C) A C corporation equals the percentage of the fair market value of the issued and outstanding stock owned by the shareholder; and

(D) A trust equals the percentage of the actuarial interests owned by the beneficial owner of the trust.

(5) *Examples*. The following examples illustrate the principles of paragraph (b) of this section.

(i) *Example 1: Person related to more than one partner*. A, an individual, owns 100 percent of X, a corporation. X owns 100 percent of Y, a corporation. A owns a 40 percent capital and profits interest and X owns a 60 percent capital and profits interest in P, a limited liability company treated as a partnership for Federal tax purposes. P borrows $1,000 from Bank. Y guarantees payment of the entire $1,000 debt owed to Bank. A and X do not directly bear the economic risk of loss as described in §1.752-2(a)(3) for the liability. Therefore, paragraph (b)(2) of this section does not apply for purposes of determining the economic risk of loss borne by A and X. Under paragraph (b)(1) of this section, Y is related to A and X. Therefore, under paragraph (b)(3) of this section, A bears the economic risk of loss of $400 and X bears the economic risk of loss of $600 for the $1,000 liability.

(ii) *Example 2: Related partner exception*. A, an individual, owns 100 percent of two corporations, X and Y. A and Y are members of P, a limited liability company treated as a partnership for Federal tax purposes. P borrows $1,000 from Bank. Each of A and X guarantees payment of the entire $1,000 debt owed to Bank. A and Y are not treated as related to each other pursuant to paragraph (b)(2) of this section because A directly bears the economic risk of loss as described in §1.752-2(a)(3) for the $1,000 liability. Y is therefore not treated as related to X. Because A is the only partner that bears the economic risk of loss for P's $1,000 liability, A's share of the liability is $1,000 under §1.752-2(a)(1).

(iii) *Example 3: Related partner exception*. A, an individual, owns 100 percent of two corporations, X and Y. X owns 79 percent of a corporation, Z, and Y owns the remaining 21 percent of Z. X and Y are members of P, a limited liability company treated as a partnership for Federal tax purposes. The partnership agreement provides that X and Y share equally in all items of income, gain, loss, deduction, and credit of P. P borrows $2,000 from Bank. Each of X and Z guarantees payment of the entire $2,000 debt owed to Bank. X directly bears the economic risk of loss as described in §1.752-2(a)(3) for P's $2,000 liability; therefore, paragraph (b)(2) of this section applies and X and Y are not treated as related for purposes of determining the economic risk of loss borne by each of them for P's $2,000 liability. Because X and Y are not treated as related and neither owns an 80 percent or more interest in Z, neither X nor Y is treated as related to Z under paragraph (b)(1) of this section. Because X bears the economic risk of loss for P's $2,000 liability, X's share of the liability is $2,000 under §1.752-2(a)(1).

(iv) *Example 4: Related partner exception and person related to more than one partner*. Same facts as in paragraph (b)(5)(iii) of this section (*Example 3*), but X guarantees payment of up to $1,200 of the debt owed to Bank if any amount of the full $2,000 is not recovered by Bank and Z guarantees payment of $2,000. Pursuant to paragraph (b)(2) of this section, X and Y are not treated as related to the extent of X's $1,200 guarantee because X directly bears the economic risk of loss as described in §1.752-2(a)(3) for $1,200 of P's $2,000 liability. X's share of the liability is $1,200 under §1.752-2(a)(1). In addition, because paragraph (b)(2) of this section does not apply to the remaining portion of the liability that X did not guarantee, X and Y are treated as related for purposes of the remaining $800 of the liability pursuant to paragraph (b)(1) of this section. Therefore, Z is treated as related to X and Y under paragraph (b)(1) of this section. Pursuant to paragraph (b)(3) of

this section, because X and Y each has a 50 percent interest in all items of income, gain, loss, deduction, and credit of P, X and Y each bear the economic risk of loss for $400 of the remaining $800 liability, and thus each has a $400 share of the liability under §1.752-2(a)(1). In sum, X's share of P's $2,000 liability is $1,600 ($1,200 plus $400) and Y's share of P's $2,000 liability is $400.

(v) *Example 5: Entity structured to avoid related person status*. A, B, and C form a general partnership, ABC. A, B, and C are equal partners, each contributing $1,000 to the partnership. A and B want to loan money to ABC and have the loan treated as nonrecourse for purposes of section 752. A and B form partnership AB to which each contributes $50,000. A and B share losses equally in partnership AB. Partnership AB loans partnership ABC $100,000 on a nonrecourse basis secured by the property ABC buys with the loan. Under these facts and circumstances, A and B bear the economic risk of loss with respect to the partnership liability equally based on their percentage interest in losses of partnership AB.

* * * * *

(e) *Ordering rule*. In determining a partner's share of a recourse partnership liability, the rules in paragraph (b)(2) of this section, if applicable, apply before the rules in paragraph (b)(3) of this section. The rules in paragraph (b)(3) of this section apply before the rules in §1.752-2(a)(2).

(f) *Example*. The following example illustrates the application of paragraph (e) of this section.

(1) *Facts*. A, an individual, owns 100 percent of two corporations, X and Y. X, Y, and Z, a corporation, are members of P, a limited liability company treated as a partnership for Federal tax purposes. The partnership agreement provides that the partners share equally in all items of income, gain, loss, deduction, and credit of P. Z is not related to A, X, or Y. P borrows $1,000 from Bank. Each of A, X, and Z guarantees payment for the entire amount of P's $1,000 liability. Each of A, X, and Z has a payment obligation of $1,000 under §1.752-2(b) for P's $1,000 liability.

(2) *Analysis*. (i) Under paragraph (e) of this section, first apply the rules under paragraph (b)(2) of this section, then apply the rules under paragraph (b)(3) of this section, and finally apply the rules under §1.752-2(a)(2) to determine how to allocate P's $1,000 liability among X, Y, and Z under §1.752-2(a)(1). Under paragraph (b)(2) of this section, X and Y are not treated as related to each other with respect to X's payment obligation for the $1,000 liability because X directly bears the economic risk of loss as described in §1.752-2(a)(3). Therefore, X is treated as bearing $1,000 of the economic risk of loss for P's liability.

(ii) Because the rules in paragraph (b)(2) of this section do not affect A's relationship to X and Y, X and Y are related to A under paragraph (b)(1) of this section. Because A is related to both X and Y, each of X and Y is considered to bear the economic risk of loss for P's liability in proportion to X's and Y's interests in P. Because they both have a one-third interest in all items of income, gain, loss, deduction, and credit of P, each of X and Y bears $500 of economic risk of loss under paragraph (b)(3) of this section with respect to A's $1,000 payment obligation for P's liability.

(iii) Z has a payment obligation with respect to the $1,000 liability under §1.752-2(b)(1) and thus, bears $1,000 of the economic risk of loss for P's liability.

(iv) After applying paragraphs (b)(2) and (3) of this section, X is considered to bear $1,500 of the economic risk of loss for P's liability and Y is considered to bear $500 of the economic risk of loss for P's liability. Z is considered to bear $1,000 of the economic risk of loss for P's liability. Because the aggregate amount of X's, Y's, and Z's economic risk of loss ($3,000) exceeds the amount of P's liability ($1,000), the economic risk of loss borne by X, Y, and Z is determined under §1.752-2(a)(2). Under §1.752-2(a)(2), X's economic risk of loss is $500 (($1,500/$3,000) x $1,000), Y's economic risk of loss is $167 (($500/$3,000) x $1,000), and Z's economic risk of loss is $333 (($1,000/$3,000) x $1,000). Therefore, under §1.752-2(a)(1), X's share of P's liability is $500, Y's share is $167, and Z's share is $333.

Par. 6. Section 1.752-5 is amended by:

1. Revising the section heading.

2. Adding three sentences after the first sentence in paragraph (a).

3. In paragraph (a), removing the word "However" at the beginning of the fifth sentence and adding "In addition" in its place.

The revision and additions read as follows:

§1.752-5 Applicability dates and transition rules.

(a) * * * However, §1.752-4(b)(1)(iv) and (v), (b)(2) and (3), (b)(5)(i) through (iv), (e), and (f) apply to any liability incurred or assumed by a partnership on or after December 2, 2024, other than a liability incurred or assumed by a partnership pursuant to a written binding contract in effect prior to that date. To the extent that the proceeds of a partnership liability (refinancing debt) are allocable under the rules of §1.163-8T to payments discharging all or part of any other liability (pre-modification liability) of that partnership, the refinancing debt will be treated as though it was incurred or assumed by the partnership prior to December 2 2024, to the extent of the amount and duration of the pre-modification liability. A partnership may apply §1.752-4(b)(1)(iv) and (v), (b)(2) and (3), (b)(5)(i) through (iv), (e), and (f) to all of its liabilities (including liabilities incurred or assumed by a partnership prior to December 2, 2024), for any return filed on or after December 2, 2024 provided the partnership consistently applies all the rules in §1.752-2(a)(2) and (3), (f)(9), and (i) and §1.752-4(b)(1)(iv) and (v), (b)(2) and (3), (b)(5)(i) through (iv), (e), and (f) to those liabilities.* * *

* * * * *

Douglas W. O'Donnell,
Deputy Commissioner.

Approved: October 30, 2024

Aviva R. Aron-Dine,
Deputy Assistant Secretary of the Treasury (Tax Policy).

(Filed by the Office of the Federal Register November 29, 2024, 8:45 a.m., and published in the issue of the Federal Register for December 02, 2024, 89 FR 95108)

Part III

Revised Timeline Regarding Implementation of Amended Section 6050W(e)

Notice 2024-85

SECTION 1. PURPOSE

This notice announces that calendar years 2024 and 2025 will be regarded as the final transition period for purposes of Internal Revenue Service (IRS) enforcement and administration with respect to the implementation of the amendments made to the minimum threshold for reporting by third party settlement organizations (TPSO) under section 6050W(e) of the Internal Revenue Code (Code)[1] by the American Rescue Plan Act of 2021 (ARP), Public Law 117-2, 135 Stat. 4 (March 11, 2021). In addition, this notice provides transitional relief from certain penalties for a TPSO making payments to a participating payee in settlement of third party network transactions who fails to pay backup withholding tax required to be withheld under section 3406 and its accompanying regulations during calendar year 2024. The transition period described in this notice is intended to facilitate an orderly transition for TPSO compliance with section 6050W(e) and participating payee compliance with income tax reporting.

SECTION 2. BACKGROUND

.01 Section 6050W, Returns relating to payments made in settlement of payment card and third party network transactions Section 6050W was added to the Code by section 3091 of the Housing Assistance Tax Act of 2008, Div. C of Public Law 110-289, 122 Stat. 2654, 2908, and requires payment settlement entities to file an information return for each calendar year with respect to payments made in settlement of certain reportable payment transactions. Under section 6050W(a), the annual information return must set forth (1) the name, address, and taxpayer identification number (TIN) of the participating payee to whom payments were made and (2) the gross amount of the reportable payment transactions with respect to that payee in that calendar year. Section 1.6050W-1(a)(6) defines "gross amount" to mean the total dollar amount of the aggregate reportable payment transactions for each participating payee, without regard to any adjustments for credits, cash equivalents, discount amounts, fees, refunded amounts, or any other amounts.

Payment settlement entities required to make annual information returns under section 6050W do so by filing Form 1099-K, *Payment Card and Third Party Network Transactions* with the IRS. They are also required to furnish Form 1099-K to the participating payee. Forms 1099-K must be furnished to the participating payees on or before January 31st of the year following the calendar year for which the return was made. Forms 1099-K must be filed with the IRS on or before February 28th (March 31st if filed electronically) of the year following the calendar year for which the return was made. *See* § 6050W(f); § 1.6050W-1(g).

Pursuant to section 6050W(c), section 6050W covers two types of reportable payment transactions: (1) payment card transactions and (2) third party network transactions. Section 6050W(c)(3) states that a third party network transaction is any transaction for the provision of goods or services that is settled through a third party payment network. Under section 6050W(b) and § 1.6050W-1(c)(2), a TPSO is the payment settlement entity that must report third party network transactions – that is, the transactions for goods or services that are settled through the TPSO's third party payment network – on Form 1099-K.

Section 6050W(b)(3) defines a TPSO as the central organization that has the contractual obligation to make payment to the participating payees of third party network transactions. Pursuant to section 6050W(d)(3), a third party payment network is any agreement or arrangement that (i) involves the establishment of accounts with a central organization by a substantial number of providers of goods or services who are unrelated to the central organization and who have agreed to settle transactions for the provision of goods and services with purchasers according to the terms of agreements; (ii) provides standards and mechanisms for settling such transactions; and (iii) guarantees payments to the providers of goods and services in settlement of transactions with the purchasers.

Under section 6050W(d)(1)(A)(ii), a participating payee, in the case of a third party network transaction, is any person who accepts payment from a TPSO in settlement of such transaction.

As originally enacted in 2008, section 6050W(e) provided that a TPSO is not required to report third party network transactions with respect to a participating payee unless the gross amount that would otherwise be reported exceeds $20,000 and the number of such transactions with that participating payee exceeds 200.

.02 Section 3406, Backup withholding

Section 3406(a) requires certain payors to perform backup withholding by deducting and withholding income tax from a reportable payment when, among other circumstances, the payee fails to furnish the payee's TIN to the payor or the IRS has notified the payor that the TIN furnished by the payee is incorrect. Pursuant to section 3406(b)(3)(F), a reportable payment includes payments made by a TPSO that are required to be shown under section 6050W on a Form 1099-K. Section 31.3406(b)(3)-5 provides that whether payments made in settlement of third party network transactions are subject to withholding under section 3406 is determined without regard to the statutory monetary or transactional thresholds found in section 6050W. Those monetary and transactional thresholds are considered solely for determining whether a

[1] *Unless otherwise specified, all "section" or "§" references are to sections of the Code or the Income Tax Regulations (26 CFR part 1), or to the Employment Taxes and Collection of Income Tax at Source Regulations (26 CFR part 31).*

TPSO has an information reporting obligation under section 6050W for payments made to a payee. Accordingly, under the regulations, TPSOs are required to obtain a TIN from every payee in a third party payment network, even the occasional small volume seller, to avoid backup withholding.

A payor is required to report the amount of deducted and withheld Federal income tax amounts on Form 945, *Annual Return of Withheld Federal Income Tax,* and on the information return filed with the IRS and furnished to the payee. In the case of the Form 1099-K, withheld income tax is reported in box 4. The payee may then claim credit for the amount of income tax withheld on the payee's Federal income tax return.

Notice 2011-42, 2011-23 I.R.B. 866 (June 6, 2011) provided interim guidance on backup withholding under section 3406 with respect to reportable payments made in settlement of third party network transactions that are required to be shown under section 6050W on a Form 1099-K. Specifically, the notice established that the section 6050W statutory transactional threshold for determining information reporting obligations should be met before any section 3406 withholding obligations arise with respect to TPSOs. In other words, section 3406 withholding obligations did not begin with respect to a particular payee until that payee received payments from a TPSO in more than 200 transactions within a calendar year.

.03 Section 6721, Failure to file correct information returns, and section 6722, Failure to furnish correct payee statements

Section 6721 imposes a penalty for any failure to file an information return on or before the required filing date, and for any failure to include all of the information required to be shown on the return or the inclusion of incorrect information.

Section 6722 imposes a penalty for failure to furnish a payee statement on or before the required furnishing date to the person to whom such statement is required to be furnished, and for any failure to include all of the information required to be shown on a payee statement or the inclusion of incorrect information.

.04 Sections 6651 and 6656

A payor who fails to withhold and pay backup withholding tax when required may be subject to civil penalties under sections 6651 and 6656. Section 6651 generally imposes an addition to the tax owed by a taxpayer for the failure to pay the amount shown as tax, including backup withholding tax, on a return required to be filed by the taxpayer unless the failure is due to reasonable cause and not due to willful neglect. Section 6656 provides that in the case of any failure by any person to deposit taxes on the prescribed date in an authorized government depository, a penalty applies unless the failure is due to reasonable cause and not due to willful neglect. A failure to deposit backup withholding tax as required under section 6302 would generally subject a payor to the section 6656 penalty.

.05 American Rescue Plan Act of 2021

Section 9674 of the ARP amended section 6050W(e) to provide that, for Forms 1099-K for calendar years beginning after December 31, 2021, a TPSO is required to report payments in settlement of third party network transactions with respect to any participating payee that exceed a minimum threshold of $600 in aggregate payments, regardless of the number of such transactions.

Notice 2023-10, 2023-3 I.R.B. 403 (January 17, 2023), delayed implementation of the reporting threshold for TPSOs in section 9674(a) of the ARP for Forms 1099-K for calendar years beginning before January 1, 2023. Notice 2023-10 also provided that the IRS would not assert penalties under section 6721 or section 6722 for TPSOs failing to file or failing to furnish Forms 1099-K unless the gross amount of aggregate payments required to be reported exceeded $20,000 and the number of transactions exceeded 200. Notice 2023-74, 2023-51 I.R.B. 1484 (December 18, 2023), further delayed implementation of the reporting threshold for TPSOs for calendar year 2023 and further provided that the IRS would not assert penalties under section 6721 or section 6722 for TPSOs failing to file or failing to furnish Forms 1099-K unless the gross amount of aggregate payments required to be reported exceeded $20,000 and the number of transactions exceeded 200.

SECTION 3. TRANSITION PERIOD FOR ENFORCEMENT AND ADMINISTRATION WITH RESPECT TO CALENDAR YEARS 2024 and 2025

Calendar year 2024 will be regarded as a further transition period for purposes of IRS enforcement and administration of the information reporting requirements under section 6050W(e), as amended by the ARP. For calendar year 2024, a TPSO is not required to report payments in settlement of third party network transactions with respect to a participating payee unless the gross amount of aggregate payments to be reported exceeds $5,000, regardless of the number of such transactions. The IRS will not assert penalties under section 6721 or section 6722 for a TPSO for failing to file or failing to furnish Forms 1099-K with respect to a payee unless the gross amount of aggregate payments to be reported exceeds $5,000, regardless of the number of such transactions.

In addition, calendar year 2025 will be regarded as the final transition period for purposes of IRS enforcement and administration of the information reporting requirements under section 6050W(e). For calendar year 2025, a TPSO is not required to report payments in settlement of third party network transactions with respect to a participating payee unless the gross amount of aggregate payments to be reported exceeds $2,500, regardless of the number of such transactions. The IRS will not assert penalties under section 6721 or section 6722 for a TPSO for failing to file or failing to furnish Forms 1099-K with respect to a payee unless the gross amount of aggregate payments to be reported exceeds $2,500, regardless of the number of such transactions.

For Forms 1099-K for calendar years beginning after December 31, 2025, a TPSO is required to report payments in settlement of third party network transactions with respect to any participating payee that exceed a minimum threshold of $600 in aggregate payments, regardless of the number of such transactions.

The IRS will not regard calendar year 2024 or 2025 as a transition period with respect to the requirements of section

6050W that were not modified by section 9674(a) of the ARP, such as provisions relating to payment card transactions.

SECTION 4. TRANSITION PERIOD FOR ENFORCEMENT AND ADMINISTRATION OF BACKUP WITHHOLDING WITH RESPECT TO CALENDAR YEAR 2024

For calendar year 2024, the IRS will not assert penalties under section 6651 or 6656 with respect to a TPSO's failure to withhold and pay backup withholding tax during the calendar year.

TPSOs that have performed backup withholding under section 3406(a) for a payee during calendar year 2024 must file a Form 945 and a Form 1099-K with the IRS and furnish a copy to the payee.

For calendar year 2025 and after, the IRS will assert penalties under section 6651 or 6656 with respect to a TPSO's failure to withhold and pay backup withholding tax.

SECTION 5. EFFECT ON OTHER DOCUMENTS

Notice 2011-42 is obsoleted.

SECTION 6. DRAFTING INFORMATION

The principal author of this notice is the Office of Associate Chief Counsel (Procedure and Administration).

Part IV

Federal Income Tax Treatment of Certain Amounts Paid or Incurred Pursuant to Agreements with the Department of Commerce Required Under the CHIPS Act of 2022

Announcement 2024-40

This announcement confirms for purposes of § 48D of the Internal Revenue Code (Code)[1] that amounts paid or incurred by a taxpayer for the construction, expansion, or modernization of advanced manufacturing facilities pursuant to an agreement entered into with the United States Department of Commerce (Commerce Department) under 15 U.S.C. 4652(a)(6)(C)[2] will not fail, solely by reason of such agreement, to constitute a "qualified investment" for purposes of determining the amount of any advanced manufacturing investment credit under § 48D (§ 48D credit).

Section 48D(a) provides that the § 48D credit is an amount equal to 25 percent of the qualified investment for any taxable year with respect to any advanced manufacturing facility of an eligible taxpayer. Section 48D(b)(1) provides that the "qualified investment" with respect to any advanced manufacturing facility for any taxable year is the basis of any qualified property placed in service by the taxpayer during such taxable year that is part of an advanced manufacturing facility. The basis determined with respect to any qualified property includes capital expenditures, as defined in § 263 and §§ 1.263(a)–1 through 1.263(f)–1, with respect to the qualified property.

The FY 2021 NDAA, as amended by the CHIPS Act, established a semiconductor incentives program administered by the Commerce Department (CHIPS Incentives Program) to incentivize investments in facilities and equipment in the United States for the fabrication, assembly, testing, advanced packaging, production, or research and development of semiconductors, materials used to manufacture semiconductors, or semiconductor manufacturing equipment.[3] To implement the CHIPS Incentives Program, Congress authorized the Department of Commerce to provide funding via grants, cooperative agreements, loans, loan guarantees, and other transactions, which are collectively referred to as "awards" in this announcement. A taxpayer receiving an award under the CHIPS Incentives Program must enter into an agreement with the Commerce Department to ensure that the requirements of 15 U.S.C. 4652(a)(6)(C) are satisfied. The agreement will specify the terms and conditions of the award, including the circumstances under which the award will be "clawed back" by the Commerce Department. The agreement will include the condition that the award be used for the construction, expansion, or modernization of a facility as well as performance milestones for the receipt of the award.

Agreements entered into with the Commerce Department for awards related to the construction, expansion, or modernization of facilities are not long-term contracts within the meaning of § 460(f)(1) and § 1.460-1(b)(1)[4] because § 460 and the regulations thereunder contemplate an agreement with a customer for the construction of the "subject matter" of the contract and payment of a "contract price" as compensation for the "subject matter" of the contract. *See* §§ 1.460-1(c)(3)(i) (date contract completed based in part on use of the subject matter of the contract by the customer for its intended purpose) and 1.460-4(b)(4) (definition of total contract price). A taxpayer that receives an award related to the construction of an advanced manufacturing facility under the CHIPS Incentives Program is constructing the facility on its own behalf. Moreover, the award does not purport to compensate the taxpayer for the cost of the project as the award amount typically does not approximate the project cost, much less provide the taxpayer a return. Consequently, grants and other taxable awards received,[5] and costs paid or incurred, for the construction, expansion, or modernization of facilities pursuant to agreements to effectuate the requirements of 15 U.S.C. 4652 are not subject to the PCM under § 460(a) and § 1.460-4(b).

In addition, § 263(a) and § 1.263(a)-1(a) provide that no deduction is allowed for capital expenditures, such as amounts paid for new buildings, or for permanent improvements or betterments made to increase the value of property. Section 1.263(a)-2(d)(1) provides that capital expenditures include amounts paid

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[1] Unless otherwise specified, all "section" or "§" references are to sections of the Code and the Income Tax Regulations.

[2] The CHIPS Act of 2022 (CHIPS Act), enacted as Division A of Public Law 117-167, 136 Stat. 1366, 1372-1399 (August 9, 2022), amended Division H of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (FY 2021 NDAA), Public Law 116-283, 134 Stat. 3388, 4843-4860 (January 1, 2021) (15 U.S.C. 4651, et seq).

[3] On September 25, 2023, the CHIPS Program Office, National Institute of Standards and Technology, Department of Commerce published a final rule, Preventing the Improper Use of CHIPS Act Funding, in the Federal Register (88 FR 65600) to add part 231, subchapter C, to 15 CFR chapter II to provide guidance under 15 USC 4651, et seq., including a clarification that semiconductor wafer production is included within the definition of semiconductor manufacturing.

[4] Section 460(f)(1) and § 1.460-1(b)(1) provide that the term "long-term contract" means any contract for the manufacture, building, installation, or construction of property if such contract is not completed within the taxable year in which such contract is entered into. Section 1.460-1(a)(1) provides, in part, that a taxpayer generally must determine the income from a long-term contract using the percentage-of-completion method (PCM) described in § 1.460-4(b) and the cost allocation rules described in § 1.460-5. Under § 1.460-4(b)(2), allocable contract costs are deducted as incurred. Under § 1.460-1(d), long-term contract methods of accounting apply only to the gross receipts and costs attributable to long-term contract activities. Gross receipts and costs attributable to non-long-term contract activities generally must be taken into account using a permissible method of accounting other than a long-term contract method.

[5] Government grants generally constitute gross income under § 61(a). See § 1.61-14 (clarifying that gross income encompasses various kinds of income not enumerated in the statute); Rev. Rul. 79-356, 1979-2 C.B. 28 (grants received from the Department of Housing and Urban Development for the installation of solar hot water systems are includible in gross income under § 61); see also § 118(a) and (b)(2) (providing that contributions to the capital of a corporation by any governmental entity (other than a contribution made by a shareholder as such) are not excludable from gross income under § 118(a)).

to acquire or produce buildings, machinery and equipment, and furniture and fixtures. Section 1.263(a)-1(b) provides that § 263A, which requires taxpayers to capitalize the direct and allocable indirect costs to property produced by the taxpayer and property acquired for resale, remains applicable.

Because agreements to effectuate the requirements of 15 U.S.C. 4652 are not long-term contracts subject to § 460, amounts paid or incurred for the construction, expansion, or modernization of advanced manufacturing facilities pursuant to such agreements that are capital expenditures under § 263(a) and the regulations thereunder may constitute qualified investment for purposes of the § 48D credit provided that the requirements of § 48D and the regulations thereunder are otherwise satisfied, including that amounts are paid or incurred for property constructed, reconstructed, or erected by the taxpayer, or acquired by the taxpayer, and the original use commences with the taxpayer.

The principal author of this announcement is Kyle C. Griffin of the Office of Associate Chief Counsel (Income Tax and Accounting). For further information regarding this announcement, please contact Laureen McCloskey of the Office of Associate Chief Counsel (Income Tax and Accounting) at (202) 317-7006 (not a toll-free number)

Definition of Terms

Revenue rulings and revenue procedures (hereinafter referred to as "rulings") that have an effect on previous rulings use the following defined terms to describe the effect:

Amplified describes a situation where no change is being made in a prior published position, but the prior position is being extended to apply to a variation of the fact situation set forth therein. Thus, if an earlier ruling held that a principle applied to A, and the new ruling holds that the same principle also applies to B, the earlier ruling is amplified. (Compare with *modified*, below).

Clarified is used in those instances where the language in a prior ruling is being made clear because the language has caused, or may cause, some confusion. It is not used where a position in a prior ruling is being changed.

Distinguished describes a situation where a ruling mentions a previously published ruling and points out an essential difference between them.

Modified is used where the substance of a previously published position is being changed. Thus, if a prior ruling held that a principle applied to A but not to B, and the new ruling holds that it applies to both A and B, the prior ruling is modified because it corrects a published position. (Compare with *amplified* and *clarified*, above).

Obsoleted describes a previously published ruling that is not considered determinative with respect to future transactions. This term is most commonly used in a ruling that lists previously published rulings that are obsoleted because of changes in laws or regulations. A ruling may also be obsoleted because the substance has been included in regulations subsequently adopted.

Revoked describes situations where the position in the previously published ruling is not correct and the correct position is being stated in a new ruling.

Superseded describes a situation where the new ruling does nothing more than restate the substance and situation of a previously published ruling (or rulings). Thus, the term is used to republish under the 1986 Code and regulations the same position published under the 1939 Code and regulations. The term is also used when it is desired to republish in a single ruling a series of situations, names, etc., that were previously published over a period of time in separate rulings. If the new ruling does more than restate the substance of a prior ruling, a combination of terms is used. For example, *modified* and *superseded* describes a situation where the substance of a previously published ruling is being changed in part and is continued without change in part and it is desired to restate the valid portion of the previously published ruling in a new ruling that is self contained. In this case, the previously published ruling is first modified and then, as modified, is superseded.

Supplemented is used in situations in which a list, such as a list of the names of countries, is published in a ruling and that list is expanded by adding further names in subsequent rulings. After the original ruling has been supplemented several times, a new ruling may be published that includes the list in the original ruling and the additions, and supersedes all prior rulings in the series.

Suspended is used in rare situations to show that the previous published rulings will not be applied pending some future action such as the issuance of new or amended regulations, the outcome of cases in litigation, or the outcome of a Service study.

Abbreviations

The following abbreviations in current use and formerly used will appear in material published in the Bulletin.

A—Individual.
Acq.—Acquiescence.
B—Individual.
BE—Beneficiary.
BK—Bank.
B.T.A.—Board of Tax Appeals.
C—Individual.
C.B.—Cumulative Bulletin.
CFR—Code of Federal Regulations.
CI—City.
COOP—Cooperative.
Ct.D.—Court Decision.
CY—County.
D—Decedent.
DC—Dummy Corporation.
DE—Donee.
Del. Order—Delegation Order.
DISC—Domestic International Sales Corporation.
DR—Donor.
E—Estate.
EE—Employee.
E.O.—Executive Order.
ER—Employer.
ERISA—Employee Retirement Income Security Act.
EX—Executor.
F—Fiduciary.
FC—Foreign Country.
FICA—Federal Insurance Contributions Act.
FISC—Foreign International Sales Company.
FPH—Foreign Personal Holding Company.
F.R.—Federal Register.
FUTA—Federal Unemployment Tax Act.
FX—Foreign corporation.
G.C.M.—Chief Counsel's Memorandum.
GE—Grantee.
GP—General Partner.
GR—Grantor.
IC—Insurance Company.
I.R.B.—Internal Revenue Bulletin.
LE—Lessee.
LP—Limited Partner.
LR—Lessor.
M—Minor.
Nonacq.—Nonacquiescence.
O—Organization.
P—Parent Corporation.
PHC—Personal Holding Company.
PO—Possession of the U.S.
PR—Partner.
PRS—Partnership.
PTE—Prohibited Transaction Exemption.
Pub. L.—Public Law.
REIT—Real Estate Investment Trust.
Rev. Proc.—Revenue Procedure.
Rev. Rul.—Revenue Ruling.
S—Subsidiary.
S.P.R.—Statement of Procedural Rules.
Stat.—Statutes at Large.
T—Target Corporation.
T.C.—Tax Court.
T.D.—Treasury Decision.
TFE—Transferee.
TFR—Transferor.
T.I.R.—Technical Information Release.
TP—Taxpayer.
TR—Trust.
TT—Trustee.
U.S.C.—United States Code.
X—Corporation.
Y—Corporation.
Z—Corporation.

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10012, 2024-50 I.R.B. *1207*
10013, 2024-50 I.R.B. *1220*
10009, 2024-51 I.R.B. *1251*
10010, 2024-51 I.R.B. *1286*
10014, 2024-51 I.R.B. *1340*

[1] A cumulative list of all revenue rulings, revenue procedures, Treasury decisions, etc., published in Internal Revenue Bulletins 2024–27 through 2024–52 is in Internal Revenue Bulletin 2024–52, dated December 30, 2024.

Finding List of Current Actions on Previously Published Items[1]

Bulletin 2024–51

[1] A cumulative list of all revenue rulings, revenue procedures, Treasury decisions, etc., published in Internal Revenue Bulletins 2024–27 through 2024–52 is in Internal Revenue Bulletin 2024–52, dated December 30, 2024.

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