

## Part I

### Section 45Q.—Credit for Carbon Oxide Sequestration

#### 26 CFR 1.45Q-1: Credit for Carbon Oxide Sequestration

(Also: 26 CFR 1.45Q-2, 26 CFR 1.45Q-3, 26 CFR 1.45Q-4, 26 CFR 1.45Q-5)

Rev. Rul. 2021-13

#### ISSUES

(1) For purposes of section 45Q(a) of the Internal Revenue Code (Code), is the acid gas removal unit at Facility X carbon capture equipment within the meaning of § 1.45Q-2(c) of the Income Tax Regulations?

(2) Is Investor required to own every component of carbon capture equipment within a single process train at Facility X to be the person to whom the credit under § 45Q(a) (section 45Q credit) is attributable under § 1.45Q-1(h)?

(3) For purposes of § 45Q(a), what is the original placed-in-service date of the single process train of carbon capture equipment at Facility X that includes the existing acid gas removal unit and new components of carbon capture equipment?

(4) How, if at all, does the original placed-in-service date of the single process train affect the placed-in-service date of the existing acid gas removal unit for depreciation purposes under §§ 167 and 168 of the Code?

#### FACTS

Facility X, a methanol plant, produces methanol from petroleum coke in a multistep industrial process. First, the petroleum coke is gasified with very high temperature steam to create a raw synthesis gas (syngas). The raw syngas is a mixture of several components including carbon monoxide, carbon dioxide (CO<sub>2</sub>), methane, hydrogen, and hydrogen sulfide. Second, particulate matter and some sulfur is removed from the raw syngas. Third, the raw syngas is purified in an acid gas removal (AGR) unit. Fourth, the purified syngas, which is comprised of carbon monoxide, hydrogen, and methane, is converted into methanol in the methanol unit.

An AGR unit is commonly installed at any industrial facility that processes “sour gas” (that is, gas containing CO<sub>2</sub> and/or hydrogen sulfide) such as syngas from gasification of coal or coke and natural gas produced from certain deposits. The specific design of an AGR unit is based on the nature of the input gases and the desired final product of a particular industrial facility. A methanol unit installed at an industrial facility requires the input syngas to be of high purity and the proportions of the syngas components to be within certain ranges. An AGR unit installed at that industrial facility removes the unwanted components, including CO<sub>2</sub>, from the raw syngas stream with a process that uses chilled methanol as a physical solvent at low temperatures to absorb and then separate the gas constituents to specification. At the completion of the

purification process, nearly all hydrogen sulfide has been isolated, and CO<sub>2</sub> is either released into the atmosphere or captured.

The AGR unit at Facility X was placed in service on January 1, 2017, for purposes of §§ 167 and 168. Since January 1, 2017, the CO<sub>2</sub> separated by this AGR unit has been released into the atmosphere and no taxpayer has claimed a section 45Q credit regarding Facility X. In 2021, Investor purchased and installed new components of carbon capture equipment necessary to create a single process train capable of capturing, processing, and preparing for transport the CO<sub>2</sub> that was being released into the atmosphere at Facility X. Investor did not acquire an ownership interest in the AGR unit or Facility X.

#### LAW AND ANALYSIS

Section 45Q(a)(3) allows a credit of the applicable dollar amount (as determined under § 45Q(b)(1)) per metric ton of qualified carbon oxide (i) captured by the taxpayer using carbon capture equipment which is originally placed in service at a qualified facility on or after February 9, 2018, during the 12-year period beginning on the date the equipment was originally placed in service; (ii) disposed of by the taxpayer in secure geological storage; and (iii) neither used by the taxpayer as a tertiary injectant in a qualified enhanced oil or natural gas recovery project nor utilized in a manner described in § 45Q(f)(5).

Section 45Q(a)(4) allows a credit of the applicable dollar amount (as determined under § 45Q(b)(1)) per metric ton of qualified carbon oxide (i) captured by the taxpayer using carbon capture equipment which is originally placed in service at a qualified

facility on or after February 9, 2018, during the 12-year period beginning on the date the equipment was originally placed in service; and (ii) either (A) used by the taxpayer as a tertiary injectant in a qualified enhanced oil or natural gas recovery project and disposed of by the taxpayer in secure geological storage, or (B) utilized by the taxpayer in a manner described in § 45Q(f)(5).

Section 45Q(b)(1)(A)(i)(I) and (ii)(I) provides that the applicable dollar amount for activities under § 45Q(a)(3) for any taxable year beginning in a calendar year (1) after 2016 and before 2027, is an amount equal to the dollar amount established by linear interpolation between \$22.66 and \$50 for each calendar year during such period, and (2) after 2026 is an amount equal to the product of \$50 and the inflation adjustment factor for such calendar year determined under § 43(b)(3)(B) for such calendar year, determined by substituting “2025” for “1990.”

Section 45Q(b)(1)(A)(i)(II) and (ii)(II) provides that the applicable dollar amount for activities under § 45Q(a)(4) for any taxable year beginning in a calendar year (1) after 2016 and before 2027, is an amount equal to the dollar amount established by linear interpolation between \$12.83 and \$35 for each calendar year during such period, and (2) after 2026, is an amount equal to the product of \$35 and the inflation adjustment factor for such calendar year determined under § 43(b)(3)(B) for such calendar year, determined by substituting “2025” for “1990.”

For purposes of § 45Q and depreciation, property is considered placed in service in the taxable year in which the property is placed in a condition or state of readiness for

a specifically assigned function, whether in a trade or business, in the production of income, in a tax-exempt activity, or in a personal activity. See § 1.46-3(d)(1)(ii).

#### Carbon capture equipment

Under § 1.45Q-2(c), carbon capture equipment generally includes all components of property that are used to capture or process carbon oxide until the carbon oxide is transported for disposal, injection, or utilization. Except as described in § 1.45Q-2(c)(2), carbon capture equipment generally does not include components of property used for transporting qualified carbon oxide for disposal, injection, or utilization. Section 1.45Q-2(c)(1) provides that carbon capture equipment is equipment used for the purpose of (i) separating, purifying, drying, and/or capturing carbon oxide that would otherwise be released into the atmosphere from an industrial facility; (ii) removing carbon oxide from the atmosphere via direct air capture; or (iii) compressing or otherwise increasing the pressure of carbon oxide. Under § 1.45Q-2(c)(2), carbon capture equipment generally includes components of property necessary to compress, treat, process, liquefy, pump or perform some other physical action to capture qualified carbon oxide. For purposes of § 1.45Q-2(c), carbon capture equipment includes a system of gathering and distribution lines that collect carbon oxide captured from a qualified facility or multiple qualified facilities that constitute a single project (as described in section 8.01 of Notice 2020-12, 2020-11 I.R.B. 495) for the purpose of transporting that carbon oxide away from the qualified facility or single project to a pipeline used to transport carbon oxide to or from one or more taxpayers and projects.

Section 1.45Q-2(c)(3) provides that all components that make up an independently functioning process train capable of capturing, processing, and preparing carbon oxide for transport will be treated as a single unit of carbon capture equipment (single process train).

The preamble to TD 9944 (86 FR 4728, January 15, 2021) (final regulations) states that those regulations do not adopt a primary purpose test, and do not allow taxpayers to elect to exclude “dual purpose” property from the definition of carbon capture equipment. Instead, the final regulations provide a functionality-based definition of carbon capture equipment.

An AGR unit is characteristic of physical acid gas removal processes. It can purify the raw synthesis gas down to extremely low levels of total sulfur, including hydrogen sulfide, carbonyl sulfide, and carbon dioxide. It is also able to remove impurities such as hydrocarbons, ammonia, and hydrogen cyanide. Because one of the functions of the AGR unit is to separate CO<sub>2</sub> from a gas stream, it is carbon capture equipment for purposes of § 45Q.

#### Eligibility requirements for the credit

Section 45Q(f)(3)(A)(ii) and § 1.45Q-1(h)(1)(ii) provide that in the case of qualified carbon oxide captured using carbon capture equipment that is originally placed in service at a qualified facility on or after February 9, 2018, the section 45Q credit is attributable to the person that owns the carbon capture equipment and physically or contractually ensures the capture and disposal, injection, or utilization of such qualified carbon oxide.

The final regulations provide that for each single process train of carbon capture equipment (as described in § 1.45Q-2(c)(3)), only one taxpayer will be considered the person to whom the credit is attributable under § 1.45Q-1(h)(1)(ii). That person will be the taxpayer who either physically ensures the capture and disposal, injection, or utilization of such qualified carbon oxide or contracts with others to capture and dispose, inject, or utilize such qualified carbon oxide. This requirement, which ensures that only the person who is responsible for compliance with the requirements of § 45Q may be the person to whom the section 45Q credit is attributable, would be unnecessary if all components of carbon capture equipment within a single process train were required to be owned by the same person. Therefore, a person is not required to own every component of carbon capture equipment within a single process train to be the person to whom the section 45Q credit is attributable. However, to be the person to whom the section 45Q credit is attributable, a person must own at least one component of carbon capture equipment in the single process train of carbon capture equipment.

#### Carbon capture equipment placed-in-service dates

The credit period under § 45Q(a)(3)(A) and (4)(A) is the 12-year period beginning on the date the carbon capture equipment was originally placed in service. Under § 1.45Q-2(c)(3), all components that make up an independently functioning process train capable of capturing, processing, and preparing carbon oxide for transport will be treated as a single unit of carbon capture equipment. Accordingly, the relevant placed-in-service date for purposes of § 45Q is the original placed-in-service date of the single process train. That unit of carbon capture equipment will be considered originally

placed in service for purposes of § 45Q on the date that any person first places it in a condition or state of readiness and availability for the specifically designed function of capturing, processing, and preparing carbon oxide for transport for disposal, injection, or utilization. In the case of Facility X, that cannot occur until the new components of carbon capture equipment are added to allow Facility X to capture, process, and prepare carbon oxide for transport for disposal, injection, or utilization, rather than release it into the atmosphere.

However, the single process train as a unit of property and its original placed-in-service date for purposes of § 45Q are not relevant for depreciation purposes under §§167 and 168. For depreciation purposes, the single process train at Facility X consists of two separate assets: the existing AGR unit that was placed in service in January 1, 2017, and the new carbon capture equipment components purchased and installed in 2021 by Investor to complete the single process train. Because the AGR unit at Facility X continues to be used in the taxpayer's trade or business, this AGR unit is not yet disposed of. As a result, the AGR unit's placed-in-service date for depreciation purposes remains January 1, 2017. The new carbon capture equipment components purchased and installed in 2021 by Investor to complete the single process train are considered a separate asset for depreciation purposes and, consequently, will be placed in service by Investor for depreciation purposes when such components are placed in a condition or state of readiness and availability for the specifically designed function of capturing, processing, and preparing carbon oxide for transport for disposal, injection, or utilization.

## HOLDINGS

(1) For purposes of § 45Q(a), the acid gas removal unit at Facility X is carbon capture equipment within the meaning of § 1.45Q-2(c).

(2) Investor is not required to own every component of carbon capture equipment within a single process train at Facility X to be the person to whom the section 45Q credit is attributable under § 1.45Q-1(h). However, Investor must own at least one component of carbon capture equipment in the single process train of carbon capture equipment at Facility X.

(3) Solely for purposes of § 45Q(a), the original placed-in-service date of a single process train of carbon capture equipment at Facility X that includes the existing acid gas removal unit and new components of carbon capture equipment is the date that the single process train is placed in a condition or state of readiness and availability for the capture, processing, and preparation of carbon oxide for transport for disposal, injection, or utilization. Under the facts provided, this means that the placed-in-service date of the single process train would be 2021.

(4) The original placed-in-service date of the single process train for purposes of § 45Q has no effect on the placed-in-service date of the existing acid gas removal unit or new components of carbon capture equipment for depreciation purposes under §§ 167 and 168, although the placed-in-service date of the new components of carbon capture equipment for depreciation purposes under §§ 167 and 168 may be the same date as the original placed-in-service date of the single process train for purposes of § 45Q.

## DRAFTING INFORMATION

The principal author of this revenue ruling is David Selig of the Office of Associate Chief Counsel (Passthroughs & Special Industries). For further information regarding this revenue ruling, contact Mr. Selig at (202) 317-6853 (not a toll-free call).