

bp America Detailed Comments
IRS REG-112339-19
August 3, 2020

I. Utilization of “Qualified Carbon Oxide” (“QCO”) (Proposed Regulation Section 1.45Q-4)

Following bp’s prior submissions on Section 45Q¹, bp arranged several in-person meetings with senior U.S. Environmental Protection Agency (“EPA”) and U.S. Department of Energy (“DOE”) staff on issues unique to Section 45Q(f)(5) “Utilization Projects.” In addition, bp reviewed other public submissions made to the IRS in response to Notice 2019-32 that addressed issues specific to Utilization Projects and, in some cases, engaged in discussions with the commentators to further understand stakeholders’ views on Utilization Projects.

Those discussions and publicly available comment letters have highlighted some of the challenges facing the IRS and Treasury in promulgating guidance on Utilization Projects. For example, there are numerous potential current (and likely yet to be developed) means of utilizing “qualified carbon oxide” (“QCO”) and it is unclear from Section 45Q(f)(5)(A) whether all such uses should be treated as qualifying for Section 45Q tax credits.² If only certain projects are qualifying, it is unclear what standard will be applied in making such a determination (or whether such determination is one that can only be made by the IRS or one or more of the consulting agencies (EPA/DOE)).

Moving beyond qualification of a particular Utilization Project, the proper interpretation of Section 45Q(f)(5)(B) has raised difficult non-tax questions of methodology and measurement, including what the scope and boundaries of a life cycle analysis (“LCA”) should be. Finally, the statute and legislative history regarding Utilization Projects provides significant flexibility to guidance writers to achieve the statute’s broad goals of reducing carbon emissions through Utilization Project technologies.

While the NOPR attempts to provide clarity on certain of these matters, taxpayers and Utilization Project developers need more guidance on the core aspects of Section 45Q(f)(5). Notably, the portions of the NOPR addressing Utilization Projects could be improved by making the following changes:

- (a) Most problematic, a proposed “approval” process that will require “technical review” by not only the IRS but also by DOE (and possibly EPA) of LCAs prepared in support of Utilization Projects. Such an approval process is not required by the plain language of the statute and the NOPR fails to provide details on what this technical review and approval process will entail. Given the January 1, 2024 deadline for beginning construction on 45Q projects, this vague LCA review and approval process could prove fatal to many projects;
- (b) Add additional definitional and interpretive rules for key terms and concepts (e.g., “commercial markets”, projects that result in “isolation” vs. “displacement”, etc.); and

¹ BP previously submitted comments letters dated July 3, 2019 (regarding utilization generally) and March 6, 2020 (regarding secure geological storage in the context of enhanced oil recovery).

² Section 45Q(f)(5)(A) identifies three types of qualified Utilization Projects (i.e., (i) the fixation of QCO through photosynthesis or chemosynthesis, (ii) the chemical conversion of QCO to a material or chemical compound in which such QCO is securely stored, or (iii) the use of QCO for any other purpose for which a commercial market exists (but exempting usage of QCO for enhanced oil recovery)). See also Proposed Regulation Section 1.45Q-4(a).

- (c) Add details about what approach is to be taken in preparing the LCA, rather than simply requiring that the LCA report “must contain documentation consistent with the International Organization for Standardization (ISO) 14044:2006, “Environmental management—Life cycle assessment— Requirements and Guidelines,” without explicitly requiring that the LCA be prepared in accordance with the standard, or critically reviewed as consistent with the standard.

bp believes these shortcomings must be addressed in the final regulations for IRS and Treasury to enable the near-term development and deployment of CCUS technology. To that end, and as requested in the preamble to the NOPR, bp makes several proposals regarding Utilization Projects and the portions of the NOPR addressing Utilization Projects:

1. **Immediately Implement a Formal Interim Process Allowing Taxpayers to Work with the Agencies on Specific Utilization Project Details and Credit Claims:** To enable qualified Utilization Projects as broadly defined in Section 45Q(f)(5), we urge the IRS and Treasury to immediately establish, via published guidance in the form of a Notice or Revenue Procedure, an interim procedure allowing taxpayers to submit projects for non-binding review (i.e., no audit protection will be granted) by the IRS and its consulting agencies (DOE and EPA). This interim process would allow the IRS and taxpayers to discuss important issues related to what projects may qualify for the credit and the amount of credit that may be claimed. Critically, this interim process would not be a predicate to claiming the credit; rather, it would provide taxpayers an opportunity to test the merits of the earliest Utilization Projects.

bp envisions that this published, interim process would be open to all taxpayers, and would produce robust and usable results while providing important clarification for interested parties. Such a process would be attractive to parties interested in undertaking Utilization Projects, as it would provide critical insights regarding the potential viability of their Utilization Projects under Section 45Q, as well as the goals and concerns that the agencies are seeking to manage with respect to Utilization Projects. bp believes this process would give the IRS and Treasury valuable insights into the types of potential Utilization Projects industry is considering and the varying approaches to measuring the amount of QCO utilized under the unique measurement standard of Section 45Q(f)(5)(B).

Acknowledging that the contours of such a process will require definition through cross-agency collaboration³, some suggested key elements are outlined for your consideration in the attached Appendix I.

2. **If Technical Review of Utilization Projects is Deemed Necessary in All Cases, Remove the IRS LCA Approval Requirement:** While the need for robust and careful technical review of LCAs submitted in support of Utilization Projects is apparent, the IRS and Treasury should reconsider (or clarify the underlying intent of) the NOPR’s approach. Specifically, Proposed Regulation Section 1.45Q-4(c)(3) strongly suggests that advance approval of an LCA is required before a taxpayer may claim Section 45Q credits for a Utilization Project. Approval of an LCA is not explicitly provided for under the plain language of Section 45Q(f)(5).⁴ Preconditioning the claiming of Section 45Q

³ We expect that the details of this interim review and comment process will need to be socialized and developed by the IRS and Treasury in cooperation with EPA/DOE. bp would welcome the opportunity to participate in that effort.

⁴ Where IRS approval of incentives provided for under the IRC is required, we note that generally such approval is explicitly provided for in the enabling statute. See, e.g., Section 48A(e) and the “project program” detailed therein.

credits on an approval of a project LCA likely is contrary to statutory intent and the resulting delays will significantly dampen commercial interest in developing Utilization Projects, particularly when combined with a lack of transparency on the path to approval.

bp proposes that this blanket approval requirement be removed from the regulatory framework and replaced with a more nuanced approach to technical review. Such an alternative formulation would, at minimum, allow for fast-track review for standard utilization processes leveraging existing technologies, *without a need for IRS or DOE approval*. Indeed, as further discussed below, the NOPR's requirement that project developers contract with an independent third party to either perform or review the LCA for the Utilization Project will allow for "outsourcing" much of this technical review, thereby reducing the burden on the various governmental agencies. In these cases, requiring two rounds of third-party review, in addition to IRS approval, is an unduly burdensome process and likely will disincentive the rapid deployment of CCUS technologies and associated projects.

For nascent or more complex utilization processes (i.e., where there may be less willingness on the part of the taxpayer or the reviewing agencies to rely on the third party performed (or reviewed) LCA), taxpayers should be given the option of seeking advance approval of their LCA prior to claiming Section 45Q credits or be allowed to claim Section 45Q credits while expressly acknowledging and accepting that such Section 45Q credits may be deemed invalid in whole or in part depending on the outcome of the technical review process. In this regard, bp notes that its proposal for an interim proof of concept phase outlined above will help taxpayers to determine the right level of review and approval for various Utilization Projects.

If the IRS insists on maintaining an LCA pre-approval process, bp strongly suggests once the IRS approves an LCA, the taxpayer receives audit protection on matters covered by the LCA. Even more importantly, bp believes that the process should include a date by which an LCA is "deemed approved" if the IRS has not acted on a pending LCA. If an LCA is "deemed approved," we do not think the taxpayer should receive automatic audit protection. Finally, irrespective of whether the IRS and Treasury adopt bp's proposal to move away from a blanket technical review and approval process for Utilization Projects, clarity must be provided to developers regarding the practical contours of this technical review and/or approval process. We have included a suggested process in Appendix I.

3. Define the Following Key Terms:

- a. "Commercial Market" – consistent with other comments provided to the IRS and Treasury, clarity must be provided regarding what considerations will be viewed as relevant to whether a particular use case is qualified under Proposed Regulation Section 1.45Q-4(a)(3). bp proposes that the key term "commercial market" be defined (or interpreted) sufficiently broadly to encompass not only utilization processes resulting in consumer goods or products but also industrial-grade feedstocks, commodities, materials, chemicals, etc. that may be used as an input for any purpose.
- b. Displacement vs. Isolation – Proposed Regulation Section 1.45Q-4(b), subtitled "Measurement," distinguishes between Utilization Projects implicating so-called "isolation" versus "displacement" processes. It is not clear what import, if any, this distinction has for a given Utilization Project (or, for that matter, how one determines whether a particular use case is of one type versus the other). For example, would an LCA for an "isolation"-type Utilization

Project differ markedly from a “displacement”-type Utilization Project? If yes, how so? bp suggests that these terms either be dropped from the regulations or expressly defined, perhaps via regulatory examples that detail how the measurement of Section 45Q benefit for one type versus the other might differ.

4. **Measurement/Calculation of Allowable Section 45Q Credits:** Under Proposed Regulation Section 1.45Q-4(b), the amount of QCO utilized is “measured” to be “equal to the metric tons of qualified carbon oxide which the taxpayer demonstrates, based upon an analysis of lifecycle greenhouse gas emissions (LCA), were (1) Captured and permanently isolated from the atmosphere (isolated), or (2) Displaced from being emitted into the atmosphere through use of a process described in paragraph (a) of this section (displaced).” In turn, the NOPR provides that, for purposes of undertaking such “measurement,” the

term lifecycle greenhouse gas emissions means the aggregate quantity of greenhouse gas emissions (including direct emissions and significant indirect emissions such as significant emissions from land use changes) related to the full product lifecycle, including all stages of product and feedstock production and distribution, from feedstock generation or extraction through the distribution and delivery and use of the finished product to the ultimate consumer, where the mass values for all greenhouse gases are adjusted to account for their relative global warming potential according to Table A–1 of 40 CFR part 98 subpart A.

Proposed Regulation Section 1.45Q-4(c)(1). Lastly, the NOPR provides simply and without elaboration that “the taxpayer measures the amount of carbon oxide captured and utilized *through a combination of direct measurement and LCA.*” Proposed Regulation Section 1.45Q-4(c)(2) (emphasis added).

This regulatory framework for measuring QCO capture and utilization lacks specificity and is unclear in several ways:

(a) Clarify that Taxpayers Cannot Take Credit for GHGs that are not QCO:

The statutory language which draws upon subsections of the Clean Air Act requires non-QCO emissions to be accounted for under the LCA.⁵ While bp agrees that an LCA should consider all GHG impacts for all Utilization Projects, for purposes of calculating the Section 45Q credit, only QCO is relevant. In other words, the IRS should clarify that the taxpayer cannot take credit for GHGs that are not QCO, nor must the taxpayer subtract GHGs that are not QCO.

(b) LCA Scope – Rely on ISO standards to determine the “full product lifecycle”

The 45Q statute defines “lifecycle greenhouse gas emissions” by incorporating subparagraph (H) of section 211(o)(1) of the Clean Air Act (42 U.S.C. 7545(o)(1)), as in effect on the date of the enactment of the BBA, “except that ‘product’ shall be substituted for ‘fuel’ each place it appears in such subparagraph.”

⁵ We note further that the ISO Standard identified in the NOPR, ISO 14044:2006, seeks to quantify all GHG impacts, not solely impacts to QCO as defined for Section 45Q purposes.

That Clean Air Act provision reads as follows:

The term “lifecycle greenhouse gas emissions” means the aggregate quantity of greenhouse gas emissions (including direct emissions and significant indirect emissions such as significant emissions from land use changes), as determined by the Administrator, related to the full fuel lifecycle, including all stages of fuel and feedstock production and distribution, from feedstock generation or extraction through the distribution and delivery and use of the finished fuel to the ultimate consumer, where the mass values for all greenhouse gases are adjusted to account for their relative global warming potential.

The broad definition in the Clean Air Act may have raised questions about the proper scope of a 45Q LCA. Does it require a “cradle-to-grave” LCA or is a “gate-to-gate” LCA sufficient? Does an LCA need to go upstream all the way to the “extraction” of hydrocarbons that eventually resulted in the creation of the CO₂ gas that is sequestered?

bp believes that the proper scope should be determined in the context of a specific LCA when the “system boundary” is determined. The reference to LCA in 45Q should be read in the context of well-established standards that existed when Congress adopted the 45Q amendments in 2018. ISO Standards 14044 and 14067 identify the rules for establishing the boundary and that determination will be independently reviewed during the “critical review” discussed below. If an LCA is conducted consistent with ISO 14044/14067 and it has been critically reviewed, then the LCA should be deemed to satisfy the full product lifecycle analysis required under 45Q.

The ISO standards contemplate a “cradle-to-grave” assessment but the LCA will identify the “cradle” and the “grave” which will vary based on appropriate policy considerations as outlined in ISO 14044/14067. Requiring more than the ISO standards require would create an undefined and potentially overbroad LCA requirement which Congress likely did not intend.

(c) Clarify “Direct Measurement” and the Need for Verification of QCO Measurement

The direct measurement of captured and utilized QCO typically will be provided by metering devices installed at the point of capture and/or use. In most cases, it is unlikely that third party verifiers will be able to independently take direct measurements on-site. Moreover, such third party “direct measurements” seem unnecessarily duplicative. Additionally, it is not clear what “verification” of such “direct measurements” would entail. Will on-site visits by a third party to the capture facilities and/or use sites be required to enable such third party to check the accuracy of meter reads? If yes, how often must this be done? Is it permissible for this third party to be the same individual or firm that performs or reviews the LCA report?

As discussed above, the LCA will establish a “system boundary” and that boundary should establish the scope of independent third-party review. The direct measurements may or may not be within that boundary. Requiring verification beyond the system boundary may require a second verifier who will need access to equipment that may, in some cases, be outside the control of the taxpayer. We

note that this sort of verification of direct measurement is not required for other forms of sequestration under 45Q.

bp believes that IRS audit rights will provide a sufficient safeguard against fraud or misstatement. This approach is consistent with other volumetrically based tax credit programs (e.g., the Section 40A and Section 6426 fuel credit regimes which do not require any third-party measurement or verification for gallon-based tax credit claims). Furthermore, third party review of the LCA report (which bp supports) will include a detailed review of the inputs and outputs related to the utilization process. Accordingly, the final regulations should not require a third party to perform or verify direct measurements of QCO utilization.

(d) Clarify How Taxpayers Should Combine Direct Measurement and the GHG Accounting Contained in the LCA

The NOPR's reference to measuring "through a combination of direct measurement and LCA" leaves open the crucial question of how to combine these two approaches in measuring QCO utilization and the quantity of Section 45Q credits for any given Utilization Project. Are the numerical values resulting from direct measurement (i.e., via metered flows of QCO at the point of capture and subsequent use) properly viewed as a "ceiling" on allowed Section 45Q benefits, subject to netting as a result of the lifecycle impacts on QCO emissions as documented in the LCA report? bp believes that these questions can be resolved by following the principles set forth in ISO 14044 and 14067.

To further aid the IRS and Treasury in drafting final regulations that embody these principles, bp has set forth several examples in Appendix II. bp would support the inclusion of similar numerical examples for distinct utilization processes in the final regulations and believes the inclusion of such examples would significantly aid in taxpayer understanding of this complex but crucial issue.

5. Third-Party LCA Preparation and/or Verification:

Per Proposed Regulation Section 1.45Q-4(c)(2), the "direct measurement [of captured and utilized QCO] and written LCA report must be performed by or verified by an independent third-party." Additionally, the LCA report "must contain documentation consistent with the International Organization for Standardization (ISO) 14044:2006, "Environmental management—Life cycle assessment— Requirements and Guidelines," as well as a statement documenting the qualifications of the third party, including proof of appropriate U.S. or foreign professional license, and an affidavit from the third party stating that it is independent from the taxpayer."

bp generally supports this approach as it will provide a level of transparency and objective review of the underlying CCUS benefits of Utilization Projects that likely will build public confidence in the tax credit program. The final regulations should, however, clarify certain aspects of this third-party review and LCA documentation:

- a. **LCA Documentation and ISO Standard** – the NOPR is not clear on whether LCA reports are to be prepared in full conformity with the standards of ISO 14044:2006 as it simply refers to documentation that is "consistent" with such ISO standard. This should be clarified to avoid confusion; bp supports an approach that requires conformity with the ISO standard as this should more readily enable LCA review and comparison across LCAs. In addition, bp notes

that ISO 14044:2006 is a standard that provides the requirements and guidelines for LCA studies without being specific to beneficial use cases of the type contemplated under Section 45Q(f)(5). For Utilization Projects in particular, bp believes that ISO Standard 14067:2018 “Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification” should also be referred to in the final rule as the appropriate ISO standard to use in conducting LCAs. This ISO Standard has been recently updated to reflect consensus views by LCA experts and directly speaks to the proper boundaries for the LCA in connection with a Utilization Project.

- b. **Critical Review of LCA** – Proposed Regulation Section 1.45Q-4(c) requires a qualified third party to either perform or “verify” an LCA. However, ISO Standards 14044:2006 and 14067:2018, in combination with other LCA-related ISO Standards (e.g., ISO Standard 14071) do not invoke the concept of LCA “verification.” Instead, these ISO Standards provide direction to LCA preparers on when third party “critical review” of such LCAs is appropriate. These ISO Standards also provide detailed rules for undertaking so-called “critical reviews.” These standards of review prescribe the reviewing parties’ qualifications and the manner in which such review is to be carried out. bp supports an approach that would substitute this clearly defined concept of “critical review” for the otherwise undefined “verification” currently invoked under Proposed Regulation Section 1.45Q-4(c).

II. Transfer Elections (Proposed Regulation Section 1.45Q-1(h)(3))

bp supports the NOPR’s approach on the Section 45Q(f)(3)(B) election that allows the owner of “carbon capture equipment” to “transfer,” on an annual basis, in whole or in part, its entitlement to Section 45Q credits. bp believes that the ability to make partial elections on an annual basis will support deployment of CCUS technology by allowing for the tax credit to be claimed by parties in the value chain deriving the most value from the credit.

The NOPR is unclear on whether a Section 45Q(f)(3)(B) election may be made by a party claiming derivative rights to Section 45Q credits (i.e., by virtue of an upstream election for which they are a named beneficiary). bp believes there would be value in clarifying this issue in the final regulations and supports proposals other commentators have put forward that would allow multiple transfer elections among parties in the value chain, provided each beneficiary of an election meets the NOPR requirements (e.g., contractual assurances, reporting on Form 8933, etc.).

Additionally, the reporting rules regarding the transfer election are silent on what data, if any, is required in the case of a transfer election made in circumstances where some or all of the captured QCO is ultimately utilized for purposes other than enhanced oil/gas recovery (i.e., a Utilization Project). Specifically, Proposed Regulation Section 1.45Q-1(h)(3)(iv)-(v) requires both the electing taxpayer and the credit claimant to report locational information regarding the capture site(s) and the injection site(s) but provides no indication about what reporting, if any, is required for QCO that is beneficially used. To the extent the IRS and Treasury feel this information is important to ensuring auditability and transparency of Utilization Projects, the final regulations should specify what information is required to be reported on Form 8933 or otherwise. Alternatively, if the LCA report is intended to detail this information for a Utilization Project, bp recommends that IRS and Treasury specify what baseline information is required to be set forth in the LCA report.

III. Recapture of Previously Claimed Section 45Q Credits (Proposed Regulation Section 1.45Q-5)

bp supports the NOPR's approach on Section 45Q(f)(6) "recapture" of previously claimed Section 45Q credits. One point of clarification bp recommends the final regulations address is the relevance of recapture to Section 45Q(f)(5) Utilization Projects. The NOPR's text strongly suggests that the recapture rules are wholly inapplicable to such Utilization Projects; bp supports that approach and recommends that this be explicitly stated in the final regulations.

IV. Secure Geological Storage (Proposed Regulation Section 1.45Q-3)

Currently, the EPA's requirements in 40 CFR Part 98, Subpart RR are an appropriate pathway to demonstrate secure geological storage ("SGS") in deep saline formations. In terms of demonstrating SGS in EOR operations, bp supports the establishment of an effective and flexible framework and believes that multiple pathways should be established that would allow taxpayers to access Section 45Q tax credits subject to a robust implementation process. As proposed in the NOPR, bp supports the IRS proposal to rely on ISO Standard 27916, which creates another pathway that can provide a robust method for demonstrating SGS for EOR operations. In addition, bp agrees with the IRS that independent third-party validation or verification of SGS is appropriate, and we support the IRS's proposal. bp requests that the IRS clarify that when it uses the phrase "qualified independent engineer or geologist" it means a third-party who is not an employee of the taxpayer or any other entity in that CO₂ value chain. Confidence in safe, long-term containment of CO₂ is essential to build and maintain public support for CCUS.

V. Definitional Rules (Proposed Regulation Section 1.45Q-1)

1. Clarify the general definition of "Qualified Facility" – Section 45Q(d)(2)(A)-(C) and Proposed Regulation Section 1.45Q-1(g) prescribe emission and capture requirements that must be met in order to render a facility a "qualified facility" for Section 45Q purposes. The NOPR provides for three distinct facility types, each with differing emissions levels and/or capture requirements:

- a. "Section 45Q(d)(2)(A) Facility" - a facility, other than a direct air capture facility, which emits not more than 500,000 metric tons of carbon oxide into the atmosphere during the taxable year and which must capture at least 25,000 metric tons of qualified carbon oxide during the taxable year which is utilized in a manner consistent with Section 45Q(f)(5) and §1.45Q-4;
- b. "Section 45Q(d)(2)(B) Facility" - an electricity generating facility (as further defined in the NOPR) which is not a Section 45Q(d)(2)(A) Facility and which must capture not less than 500,000 metric tons of qualified carbon during the taxable year; and
- c. "Section 45Q(d)(2)(C) Facility" - a direct air capture facility or other facility that is not a Section 45Q(d)(2)(A) Facility or a Section 45Q(d)(2)(B) Facility and which must capture at least 100,000 metric tons of qualified carbon oxide during the taxable year.

These definitions leave open the question of whether a large facility (that is not an electricity generating facility) with annual emissions of QCO in excess of 500,000 metric tons may qualify as a Section 45Q(d)(2)(C) Facility if at least 100,000 metric tons of QCO are utilized in a manner consistent with Section 45Q(f)(5) and Proposed Regulation Section 1.45Q-4. One possible reading is that QCO emissions that are captured for purposes of qualifying beneficial use for Section 45Q(f)(5) must be

sourced from a Section 45Q(d)(2)(A) Facility⁶ and under the definitional rules such a facility may not emit “more than 500,000 metric tons of carbon oxide into the atmosphere during the taxable year.”⁷ This interpretation would disqualify the hypothetical large facility and associated Utilization Project posited here.

Such an interpretation is seemingly inconsistent with Section 45Q’s underlying policy goals. Indeed, if a project developer can capture and beneficially use at least 100,000 metric tons of QCO during a taxable year it would seem to run directly contrary to this legislative intent to disqualify such a facility and Utilization Project from claiming the Section 45Q benefit. bp recommends that this definitional ambiguity be resolved in the final regulations by expressly stating that a Section 45Q(d)(2)(C) Facility includes facilities in which captured QCO is beneficially used in a manner consistent with Section 45Q(f)(5) and Proposed Regulation Section 1.45Q-4.

2. Address the “Cliff” Approach to Emission/Capture Thresholds for Qualified Facilities

Another issue presented by the definition of “Qualified Facility” is increasingly apparent from the recent economic downturn that has followed the COVID-19 pandemic. Under the proposed definitional rule, it appears that a qualified facility must meet the emission and capture requirements on an annual basis. This creates a potential cliff effect which may present considerable challenges in financing and developing CCUS projects.

For example, assume a non-electricity generating facility has an operating history that suggests that emissions of QCO will average 110,000 metric tons per annum. Carbon capture equipment is installed that allows for 100% of such QCO to be captured and a developer identifies a party willing to contractually commit to dispose of such captured QCO in SGS. However, in future years, economic conditions are such that the facility is operating at only 50% of its normal capacity and emissions of QCO and capture levels are accordingly reduced to 50% of what was initially anticipated.

Under the proposed definition of “qualified facility,” no Section 45Q benefit will be allowable for this facility and intentional storage operation (apparently even if the QCO is captured and stored) until such time as operating conditions return to the status quo (if ever). Moreover, in what is surely an unintended consequence, the project

⁶ This reading flows from the reference at the end of the definition of “Section 45Q(d)(A) Facility” which states that a minimum 25,000 metric tons of QCO must be captured and “utilized in a manner consistent with section 45Q(f)(5) and §1.45Q-4.” No such proviso or conditioning on the intended use or disposal of the carbon captured from a Section 45Q(d)(2)(C) facility is provided for under the NOPR, thus apparently allowing QCO captured from such a facility to be disposed or used in any fashion qualifying under Section 45Q.

⁷ Example 3, in Proposed Regulation section 1.45Q-2(g)(2), does not conclusively resolve the treatment of the hypothetical facility posited here. However, it strongly suggests that the reading of the statutory language as advanced by bp herein is consistent with Congressional intent. In that example, the facility (a cement manufacturing plant) emits 110,000 metric tons of carbon dioxide. The carbon capture equipment at this assumed facility captures 100,000 metric tons, 10% (10,000 metric tons) of which is used in a qualified manner under section 45Q(f)(5) and 90% (90,000) of which is disposed of in secure geological storage. The example concludes that the facility is qualified under Proposed Regulation section 1.45Q-2(g)(2) but does not specify whether such qualification is as a “Section 45Q(d)(2)(A)” or “Section 45Q(d)(2)(C).” Considering that less than 25,000 metric tons of carbon dioxide is utilized in a qualified manner, the stricter reading of the regulatory definition of “Section 45Q(d)(2)(A)” facility might lead one to infer that the facility qualifies as a “Section 45Q(d)(2)(C)” facility. However, it is not clear whether this same conclusion would hold if all of the captured carbon dioxide were utilized in accordance with Section 45Q(f)(5) rather than majority disposed of in secure geological storage. This Example 3 should be clarified (or elaborated on) in the Final Regulations for the reasons noted.

developer may under this scenario be incentivized to cease the storage operation altogether (particularly in circumstances where the only value attributable to such storage operation are Section 45Q tax credits), pending resumption of normal operations. This result clearly undermines Congress's intention in enacting Section 45Q.

To address this issue, bp believes that a proration rule (similar in concept to the annualization concept provided in the NORP under Section 1.45Q-2(g)(3)) would provide a solution. Under this proration rule, a facility would be deemed a "qualified facility" if: (x) emissions and capture levels in any given year can be shown to have been reduced beyond historical baseline levels due to extenuating circumstances including, but not limited to, prevailing economic and market conditions, operational failures, and natural disasters; and (y) the facility owner can demonstrate that prior to such extenuating circumstances, projected emissions and capture levels were consistent with the minimum thresholds set forth in the current proposed definition of "qualified facility" (i.e., a technical demonstration that the facility would have met the emissions/capture thresholds to qualify as a Section 45Q(d)(2)(A), (B) or (C) facility under normal operating conditions).⁸

Where these facts can be demonstrated to the satisfaction of the IRS and Treasury, the facility will be deemed to remain a "qualified facility." Section 45Q credits will then be available to be claimed for whatever amount of QCO is captured and disposed or used in accordance with Section 45Q. This will properly limit allowable Section 45Q benefit (i.e., in line with actual emissions and capture levels) while providing some baseline level of certainty to project developers and addressing the potential disincentives resulting from the current proposed definition of "qualified facility."

3. The 80/20 Rule and Retrofitting Facilities with New Carbon Capture Equipment

bp supports the approach to retrofitting of facilities with new carbon capture equipment under the so-called "80/20" rule of Proposed Regulation Section 1.45Q-2(g)(5) and believes this will create a powerful incentive for wider deployment of carbon capture technologies that efficiently leverages existing infrastructure. Consistent with the IRS guidance that appears to have formed the precedent for the inclusion of the 80/20 rule in the regulations, the final regulations should clarify that in determining the value of "old" (or existing) equipment as compared to "new" equipment, the general principles of Rev. Rul. 94-31 will apply.

4. Technical Corrections to Qualified Facility Definitions

Also, bp notes that the terms "carbon oxide" and "qualified carbon" are used in defining a "Section 45Q(d)(2)(A) Facility" and a "Section 45Q(d)(2)(B) Facility" when presumably the intention was to refer throughout this definitional rule to the otherwise defined term of "qualified carbon oxide." This drafting issue should be corrected in the final regulations to avoid any ambiguity.

5. Determination of Placed-In-Service Date and Ramp-Up Period

bp recommends that IRS and Treasury incorporate into the final regulations a rule that clarifies when a qualified facility (or a unit of carbon capture equipment at such facility) is considered placed in service for purposes of the 12-year credit period under Section 45Q(a)(3)-(4). It is possible that capture equipment may technically meet the standard

⁸ For example, the factual demonstration underpinning this proposed proration rule could be based on average emission/capture levels over a 3 to 5-year period preceding the occurrence of the event that threatens the ability of the facility to meet the minimum thresholds. bp would welcome the opportunity to consult with IRS and Treasury on the appropriate length of such averaging period.

to be considered capable of being placed in service prior to full operation of such equipment. This “ramp-up” period may extend for several months as the equipment’s operation, capacity, etc. is tested and calibrated to the associated industrial components that sit upstream of the capture equipment as well as downstream transportation assets. Emissions of QCO may or may not be captured during such ramp-up period. Equally, based on the specifics of the project, the qualified disposal or use of such QCO may not occur until the conclusion of such ramp-up period or commencement of full operations. Starting the clock on the 12-year credit period at the outset of this ramp-up period may erode the total incentive of the Section 45Q program for a project with an extended ramp-up period.

To address this issue, bp proposes that a taxpayer be allowed to elect, at its discretion, one of two dates for deeming a facility or unit of capture equipment as being “placed in service” for purposes of Section 45Q:

- i. The date upon which the facility (or specific unit of carbon capture equipment) is capable of being placed in service, even if the facility or capture equipment is not actually fully operable as of such date; or
- ii. The earlier of (x) the conclusion of a reasonable ramp-up period (bp suggests 180 days) or (y) the date upon which the facility or capture equipment is fully operable.

This recommendation has precedent in EPA regulations.⁹

⁹ See, e.g., 40 CFR § 60.8 Performance tests. (“(a) Except as specified in paragraphs (a)(1),(a)(2), (a)(3), and (a)(4) of this section, within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility, or at such other times specified by this part, and at such other times as may be required by the Administrator under section 114 of the Act, the owner or operator of such facility shall conduct performance test(s) and furnish the Administrator a written report of the results of such performance test(s).”).

Appendix I

Proposed Interim Proof of Concept Review Process for Section 45Q(f)(5) Utilization Projects and Alternate Provisions in the Event LCA Pre-approval is Required

1. **Content of Submissions; Governmental Review and Comment** – Under the proposed process, interested parties would electronically submit projects for review by the IRS, DOE and EPA. The final rule must specify the details and logistics of submittal, including whether electronic signatures are acceptable and how confidential data will be protected.

Supporting documentation to be submitted may include, for example, a detailed summary of the contemplated Utilization Project(s), the anticipated amount of QCO to be utilized over the life of the project (and/or the 12-year period provided for in Section 45Q(a)), and an LCA based on clearly articulated assumptions and boundaries deemed appropriate by the submitting party.

bp believes that LCA approaches can vary based on the unique life cycle issues presented by different technologies. For example, a technology that is more standardized, and/or for which documentation or processes already exist in the public domain, may call for an LCA that is less tailored to a specific project and more limited in its scope. Other Utilization Projects may require more complex LCAs with a broader scope. These considerations should be addressed in any submission made as part of the proposed process.

2. **Milestones and Submission Deadlines** – The interim process bp suggests should be available for a limited time to help jump-start the program. bp proposes that a submission deadline should apply to applicants to limit the amount of resource burden placed on the IRS and the consulting agencies. It may also be appropriate to limit the number of projects a company (and its affiliates) may submit for review and comment as part of the proposed interim process.

Similarly, the consulting agency review period will need to be limited in duration in order to allow submitting parties to build such review time into their project development planning (and taking into consideration the “begin construction” deadline of January 1, 2024 in Section 45Q(d)). bp proposes that the reviewing agencies have no more than sixty (60) days in which to respond to the submitting party with their review commentary.

If the IRS decides to maintain a pre-approval program, bp believes the process needs to be more robust and should include the following milestones and deadlines:

- An application is deemed complete thirty (30) days after submittal unless an agency has officially requested more information, in which case it is deemed complete thirty (30) days after the taxpayer submits its response to the request for more information.
- No more than thirty (30) days after the application is complete, the agency must have scheduled and held a meeting with the taxpayer to review the application. This meeting can be virtual.
- No more than thirty (30) days following the meeting, the application is deemed approved unless the IRS provides the taxpayer a written, detailed explanation of why the application cannot be approved.
- Within thirty (30) days of receiving a notice of disapproval, the taxpayer may contest the denial by submitting a written notice to a higher official in the IRS to be designated in the final rule.
- These deadlines should be extended only at the request of the taxpayer. There may be some cases, on issues of first impression, that the taxpayer will want actual IRS approval before it is willing to claim the Section 45Q tax credit. In those

cases, the process should not have to end after the “deemed approved” date has passed.

3. **Nonbinding Review Commentary** - For clarity, bp is not proposing that this “proof of concept” phase will result in any government agency issuing a formal ruling or judgment on the qualification of the project under Section 45Q or the quantification of Section 45Q credits. Indeed, as discussed in bp’s August 2020 comment letter to which this Appendix is attached, no such governmental review or approval is explicitly required by Section 45Q. Requiring such review or approval likely would cause material and undue delay and significantly depress taxpayer interest in undertaking Utilization Projects. Thus, bp envisions that the EPA and DOE’s review comments during this proof of concept phase will be nonbinding in nature and will not ensure or provide audit protection for the submitting party. bp believes that nonbinding review will allow for a more expedited process.

If the IRS decides to include a pre-approval requirement, as discussed in the text of this letter, bp believes that an approved application must provide audit protection for matters covered in the LCA. If the LCA is “deemed approved” by passage of time, bp recognizes that audit protection is not as fully justified.

4. **Flexibility in Submissions** – bp is aware that there are several different methods and models currently available and in use for parties undertaking LCAs. Many of these have been put forward by commentators as appropriate methods and models for undertaking Utilization Project LCAs and several are noted in the preamble to the NOPR. Notably, there appears to be growing consensus that the IRS and Treasury should not limit project developers to particular LCA model(s). bp agrees and proposes that any LCA submitted as part of the proof of concept phase can be prepared under any LCA methodology and model that the submitting party believes to be appropriate.
5. **Processing Fees** – The IRS should specify whether any filing fees will be required to be paid by submitting parties and whether the reviewing agencies would be amenable to allowing for accelerated review/approval processes in exchange for higher filing fees. Given that time is of the essence, parties may need to expedite the review and approval process.

Appendix II

Indicative Examples for Section 45Q(f)(5) Utilization Projects

Example 1.

- (i) (General). Taxpayer X owns qualifying facility QF. In 2021, X places in service 1 newly constructed unit of carbon capture equipment (CCE) to capture carbon dioxide that would otherwise be emitted by QF. This CCE is capable of capturing 100,000 metric tons of carbon dioxide. Taxpayer Y owns and operates a distinct manufacturing facility (MF) that is located adjacent to QF; prior to 2021, MF manufactured an industrial product, P, for which a commercial market existed (and currently exists) and Y markets such product in the ordinary course of Y's trade or business.

In 2021, X enters into a binding written contract with Y to sell 100,000 metric tons of carbon dioxide annually to Y for a market price. Y utilizes this carbon dioxide as a feedstock to its manufacturing operations, substituting such carbon dioxide for one or more feedstocks historically sourced from other parties unrelated to X. Meters installed at QF measure the amount of carbon dioxide captured and sold to Y. Additionally, meters installed at MF measure the amount of carbon dioxide that is utilized in Y's manufacturing operations. Y performs a life cycle analysis (LCA) that satisfies the requirements of §1.45Q-4 and contracts an unrelated third party, Z, to review this LCA in accordance with the requirements of §1.45Q-4(c). Y's utilization of the carbon dioxide captured by X (and sold to Y) is a qualified usage under Section 45Q(f)(5) and §1.45Q-4(a) and X, as the owner of the CCE, is entitled to claim Section 45Q credits.

- (ii) (Direct Measurement). Assume the same facts as in subparagraph (i). Assume further that the meters installed at QF measure the amount of carbon dioxide captured during 2021 by the CCE installed by X at QF as 100,000 metric tons of carbon dioxide. Similarly, the meters installed at Y's facility, MF, measure the amount of carbon dioxide utilized in the manufacture of product P as 100,000 metric tons of carbon dioxide. The total amount of captured and utilized carbon dioxide for 2021 is therefore directly measured as 100,000 metric tons of carbon dioxide for purposes of the calculations required under §1.45Q-4.
- (iii) (LCA Quantification of GHG Emissions from Y's Manufacturing Operation). Assume the same facts as in subparagraphs (i)-(ii). Assume further that the LCA performed by Y calculates the greenhouse gas emissions (GHGs) of Y's manufacturing operation in accordance with §1.45Q-4(c)(1). The LCA demonstrates that the carbon dioxide captured at QF and sold for use by Y in the manufacturing of product P results in the permanent isolation (or displacement) of such carbon dioxides. In addition, the LCA demonstrates that as compared to Y's pre-2021 manufacturing operations (i.e., the baseline case), this utilization of carbon dioxide results in no additional emissions of qualified carbon oxides.
- (iv) (Combining Direct Measurement and LCA). Assume the same facts as in subparagraphs (i)-(iii). Based on these facts, X, as the owner of the CCE and party entitled to claim Section 45Q credits based on Y's qualified usage, would calculate the total amount of allowable Section 45Q credits as the product of (x) the relevant dollar amount (\$22.68) and (y) the total amount of captured and utilized QCO that is directly measured per subparagraph (ii). Notably, because the LCA performed for Y's

manufacturing process did not demonstrate any emissions of QCO above and beyond the baseline case, any GHG impacts documented in the LCA are not relevant to the calculation of X's allowable Section 45Q credits.

Example 2.

Assume the same facts as in Example 1 except for the fact that the LCA performed by Y demonstrates that Y's manufacturing operations during 2021 result in the emissions of 5,000 metric tons of QCO during the manufacturing process (i.e., this amount of carbon dioxides is not permanently isolated or displaced through the utilization process but instead emitted to the atmosphere). In this case, X, as the owner of the CCE and party entitled to claim section 45Q credits based on Y's qualified usage, would calculate the total amount of allowable section 45Q credits as the product of (x) the relevant dollar amount (\$22.68) and (y) the total amount of captured and utilized QCO that is directly measured per Example 1 *reduced* by the 5,000 metric tons of carbon dioxides that are emitted during the course of Y's manufacturing operation.

Example 3.

Assume the same facts as in the preceding Example 1. In addition, the LCA demonstrates that as compared to Y's pre-2021 manufacturing operations (i.e., the baseline case), this utilization of carbon dioxide results in emissions of GHGs other than qualified carbon oxides (e.g., methane). Although such GHG emissions are required to be documented under the LCA, they do not impact the total amount of Section 45Q credits that X is entitled to claim.

Example 4.

Assume the same facts as Example 3 except that the LCA demonstrates that the manufacturing process results in the permanent isolation (or displacement) of GHGs other than qualified carbon oxides (e.g., methane). Although such GHG emissions are required to be documented under the LCA, they do not impact the total amount of Section 45Q credits that X is entitled to claim.