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Fran Sant
GAP Rule Rulemaking Lead
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Subject: bp comments on the Proposed Greenhouse Gas Assessment for Projects Rulemaking (WAC 173-445)

Dear Ms. Sant:

On behalf of bp America ("bp"), thank you for the opportunity to provide comments on the Washington State Department of Ecology's ("Ecology's") Proposed Greenhouse Gas Assessment for Projects Rulemaking (the "GAP Rule"). This letter supplements our April 2, 2021 comment letter on the three documents Ecology released for an informal comment period on March 2, 2021. Specifically, in the attachment, bp offers recommendations regarding approaches to two important aspects of the GAP Rule: (1) the proposed applicability framework as applied to existing facilities, such as the Cherry Point refinery; and (2) key issues related to lifecycle analysis ("LCA") to ensure the environmental assessments mandated by the GAP Rule are technically sound and employ consistent approaches across industries and projects.

Please feel free to contact me at james.verburg@bp.com or 360-526-3901 if you would like to discuss further.

Sincerely,

James Verburg

Senior Environmental Engineer

Supplemental Technical Comments on GAP Rule Informal Comment Period Documents

Applicability

1. Applicability Test for New Projects at Existing Facilities

bp recommends that Ecology supplement the proposed applicability test to incorporate the New Source Review ("NSR") framework from Ecology's air permitting regulations for new projects at existing facilities. The proposed applicability test does not present a clear way to determine the GHG emissions increases associated with modified equipment at an existing facility, which is one of Ecology's stated purposes in the GAP Rule Conceptual Framework.[1] bp recommends that Ecology utilize the existing NSR applicability methodology in WAC 173-400-110 and relevant regulatory definitions, such as "modification" in WAC 173-400-030, for a proposed project at an existing facility to evaluate the potential emissions from modified or replacement equipment. This methodology is already well understood by parties that are likely to be subject to the GAP Rule and lends itself to ready application in this context.

For example, a facility proposes to make changes to an existing 15 million British thermal unit per hour (MMBtu/hr) natural gas-fired boiler to produce additional steam. The facility plans to increase the boiler's natural gas burner capacity from 15 MMBtu/hr to 25 MMBtu/hr. Following Ecology's existing NSR applicability regulations, the project proponent would evaluate only the 10 MMBtu/hr increase resulting from the proposed project, and compare that increase to the thresholds set forth in Table 1 of the Draft Regulations.[2] Utilizing this supplemental framework for modified equipment and assuming there are no increases in purchased electricity or process emissions, the proposed project would not pass the "organic compounds" screening test because the natural gas combustion increase of 10 MMBtu/hr is less than the corresponding natural gas applicability threshold (21.2 MMBtu/hr) set forth in Table 1.

2. Categories of GHG Emissions for Applicability Analysis

Below bp offers comments that will aid regulated parties' understanding of how to conduct an applicability analysis for the three identified categories of GHG emissions identified in the Draft Regulations.[3]

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[1] Draft GAP Rule Conceptual Framework for Informal Review 16 (March 2021) (hereinafter "Conceptual Framework").

[2] Draft GAP Rule Language for Informal Review (Definitions and Applicability) 7–9 (March 2021) (hereinafter "Draft Regulations").

[3] As addressed in our April 2, 2021 comment letter, bp recommends that Ecology consider focusing the applicability test on only scope 1 and 2 emissions to the exclusion of "outputs" (i.e., scope 3 emissions), which are included in the Draft Regulations as subset of "organic compounds."

Organic Compounds

The Draft Regulations require the summation of GHG emissions from combustion of organic compounds associated with both feedstocks and products, with the following instruction:

> Each unit of mass, volume, or rating of an organic compound should only be counted once if used for multiple purposes, *but if the project converts an organic compound into a different organic compound*, then *both* must be included in the organic compounds applicability level.[4]

bp is concerned that this approach could potentially lead to double-counting organic compound GHG emissions at a refinery because inputs/feedstocks are often converted or treated during the refining process and the resultant product may be a different organic compound, but it would not be logical for the GHG emissions of both the input and output to be additive.

For example, it is not clear whether the Draft Regulations would require accounting for the GHG emissions associated with diesel that is hydrotreated to remove sulfur compounds twice — once as a feedstock into the equipment, and a second time as an end-product. If 1,000 gallons of low sulfur diesel feedstock are processed into 1,000 gallons of ultra-low sulfur diesel product, the applicability test should be based on 1,000 gallons of diesel and not the sum of the input and output (2,000 gallons) because that would result in double-counting GHG emissions. Similarly, crude feedstocks can be converted into different organic products, but separately accounting for GHG emissions from both the crude input and the resultant product(s) would double-count emissions. bp recommends that the GAP Rule's applicability test allow for the use of a mass-balance approach with respect to feedstocks and products to avoid this issue. Under this approach, total carbon in the feedstock is equal to total carbon in the products, plus any carbon released/oxidized by the processing of the feedstock into a final product.

In addition, the GAP Rule indicates that the federal GHG reporting rule methodology in 40 CFR Part 98 should be used to calculate emissions of any organic compound not included in Table 1 of the Draft Regulations. It is important to recognize that 40 CFR Part 98 methodologies are based on ***actual*** GHG emissions by collecting monitoring data over the reporting year. For example, the 40 CFR Part 98, Subpart C, Tier 3 calculation methodology requires sampling fuel gas streams weekly to determine actual carbon content and actual higher heating value. In contrast, an applicability assessment under the GAP Rule would be based on ***projected*** GHG emissions because it will be applied before a project proponent implements the proposed project and is able to collect actual information. Accordingly, the GAP Rule should clarify how 40 CFR Part 98 methodologies should be adapted to the GAP Rule context. For example, at an existing facility, the project proponent may need to rely on data from existing equipment, which would be the

[4] Draft Regulations at 5 (emphasis added).

best available information, rather than relying on actual data. Ecology should confirm whether this is acceptable.

Purchased Electricity

To ensure the GAP Rule focuses on the changes associated with the proposed project, we recommend clarifying that project proponents need only evaluate the increase in electricity demand expected as a result of an equipment or process modification—not the potential demand of the equipment or process—when evaluating GHG emissions from purchased electricity (i.e., scope 2 emissions). For example, a facility proposing to replace a 40 horsepower electric pump with a 60 horsepower electric pump at an existing facility would evaluate the purchased electricity increase associated with the 20 horsepower increase in power demand from the project, not the potential demand of the new pump.

In addition, the Draft Regulations indicate that the emission factor provided in WAC 173-444-040(4), Equation 4 (i.e., 0.437 MT CO_2e/MWh) should be used to calculate estimated CO_2e emissions attributable to purchased electricity. Because this emission factor will change each year, the GAP Rule should provide flexibility to use the most current data in future years.

Process Emissions

It is unclear what equipment or operations would be addressed under process emissions using WAC 173-441-120 methodologies that are not already accounted for under the organic compound applicability section of the Draft Regulations. bp requests that Ecology provide examples of process emissions that will be covered by this applicability section.

Lifecycle Analysis ("LCA")

bp supports a tiered approach to environmental assessment as set forth in our April 2, 2021 letter. For projects exceeding a secondary screening threshold (e.g., 75,000 MT CO_2e/year scope 1 and 2 emissions), a requirement to conduct a full LCA of scope 1, 2, and 3 emissions associated with a proposed project may be appropriate. In the Conceptual Framework, Ecology refers to ISO 14040 and 14044 as providing the guideposts for LCAs, while acknowledging that additional detail to frame an LCA is necessary.[5] bp has noted that additional clarity beyond these protocols is required to ensure that (1) the results of LCAs are consistent across different projects and industries; and (2) the assessment effort is fit-for-purpose and focuses on key drivers of project lifecycle impacts.

The following table references aspects of the ISO 14044 standard and summarizes recommendations for clarifying or improving LCA-related aspects of the GAP Rule. These complex issues could be further addressed with the help of a

[5] Conceptual Framework at 21–22.

technical working group to ensure the LCA methodology meets the above goals and the goals of the GAP Rule and is feasible for project proponents to implement. In addition, below we offer recommendations to ensure the LCA framework Ecology adopts is consistent with the ISO 14040/14044 standards.

LCA Component (ISO 14044 Section)	**Recommendations**
Goal (4.2.2)	Per ISO 14044, the goal—including the reason for performing an LCA study, its intended uses, the intended audience, and whether the results are intended to be used in comparative assertions—must be unambiguously stated. bp recommends that Ecology specify the goal of LCA studies to be conducted under the GAP Rule. A clear purpose for the LCA is critical for ensuring the study is appropriately scoped and its results can be used as regulators intend. bp recommends that Ecology establish that the goal of an LCA under the GAP Rule is to inform project proponents, decision-makers, the public, and other stakeholders about the potential GHG emissions of a proposed project. bp also recommends that Ecology establish that the goal of the LCA is generally *neither* to (1) determine the extent of the mitigation responsibility (which will be based on actual, not projected, emissions); nor (2) compare GHG emissions results from different types of projects.
Functional Unit (4.2.3.2)	ISO 14044 defines the functional unit as the "quantified performance of a product system for use as a reference unit," and specifies that the functional unit should be consistent with the goal and scope of the study. In simpler terms, the functional unit serves as the denominator or reference unit to which inputs, outputs, and impacts are normalized (e.g., an LCA of diesel production might have a functional unit of gallons of diesel produced or of vehicle miles traveled, depending on the goal and scope of the study). The functional unit will determine other components in the LCA study, such as system boundary and allocation; therefore, it is critical to have a clearly defined functional unit. Assuming the goal of the LCA will be to understand the project's lifecycle GHG emissions, bp recommends that Ecology defines the functional unit as operation of the project for the project lifetime.
Comparisons between systems (4.2.3.7, 4.4.5)	For LCA studies intended to be used as ISO 14044-compliant publicly disclosed "comparative" studies, ISO 14044 provides additional, very specific requirements to avoid misinterpretation of results, as well as additional procedural hurdles (e.g., third-party review requirements) to ensure accuracy of results. As a simple example, for two projects evaluated in a "comparative"

	LCA by ISO 14044 requirements, the end functions of the project must be the same. The Conceptual Framework appears to propose that the proposed project's LCA results would be compared to the "baseline condition" and the "no action alternative."[6] However, these are not ISO 14044-compliant "comparative" studies because the functions of the compared projects are not the same (i.e., per the standard, the compared systems are not equivalent and do not have the same performance characteristics). For example, at an existing refinery with a proposed project that would produce an additional 10 million barrels of diesel, an LCA study comparing the proposed project to a "no action alternative" in which the additional fuel is *not* produced is not a "comparative" study. As such, specific requirements of comparative studies, such as additional reporting and third-party review requirements, under ISO 14040/14044 should not apply. Thus, while acknowledging that comparison of the GHG emissions of the baseline conditions, no action alternative, and action alternatives will be critical to informing the decision-making process, bp recommends that Ecology clarify it is not intending that these analyses be ISO 14044-compliant "comparative" studies to which the additional ISO 14044 requirements apply.
Types and sources of data (4.2.3.5) **Data quality requirements** (4.2.3.6)	bp recommends that Ecology provide guidance on data quality requirements to support consistent and fit-for-purpose LCA studies. Suggested guidance for two of the numerous data quality requirements listed in ISO 14040 and 14044 are described below as examples: • Guidance on sources of the data could address (1) the use of proxy data, which is acceptable when project-specific data is not available, as project-specific data is not an option for the majority of life cycle data, particularly when assessing potential impacts of an unbuilt project; (2) if the data used can be reasonably available recent data and not necessarily the most up-to-date data; (3) if the data sources can be scientific and not necessarily peer-reviewed; and (4) if the data should represent expected or reasonable values instead of conservative values. These data considerations are also dictated by the LCA's goal and scope. • Guidance on uncertainty of the data, models, and assumptions could address: (1) examples of acceptable databases and tools (e.g., GREET[7], ecoinvent[8], and

[6] Conceptual Framework at 18, 22.

[7] Argonne National Labs, *Greenhouse gases, Regulated Emissions, and Energy use in Transportation Model (GREET)*, https://greet.es.anl.gov.

[8] Gregor Wernet et al., *The ecoinvent database version 3 (part I): overview and methodology*, 21 Int'l J. Life Cycle Assessment 1218 (2016).

	openLCA[9]); and (2) how to handle unknowns such as grid intensity and fuel intensity that will change over a project lifetime. By providing data quality requirements, Ecology would help ensure that LCA studies done under the GAP Rule are consistent and designed to meet the GAP Rule's intended purpose.

Finally, bp suggests that a technical working group could aid Ecology in ensuring LCA guidance and regulatory language in the GAP Rule are consistent with ISO 14040/14044 protocols, where appropriate, while clarifying where Ecology intends for LCAs to depart from these standards. For instance, in the Conceptual Framework, there are numerous terms that have specific meanings in the LCA context in ISO 14040 and 14044, such as "comparative," "functional," "impact analysis," and "sensitivity analysis"; however, it is not clear whether Ecology intended for the prescriptive definitions in the ISO standards to apply broadly to the GAP Rule.

[9] openLCA 1.10.3, https://www.openlca.org/.