1402 Third Avenue, Suite 900
Seattle, WA 98101

December 15, 2020

Via Public Comment Portal, ecology.wa.gov

Diane Butorac and Fran Sant
Department of Ecology
PO Box 47775
Olympia, WA 98504-7775

Dear Department of Ecology GAP Rulemaking Team:

We write to provide input to the Department of Ecology's Greenhouse Gas Assessment for Projects (GAP) Rulemaking process. In particular, below we respond to some of the questions posed in your November 17, 2020 webinar.

One theme of our comments is on the importance of appropriate greenhouse gas emissions baseline scenarios against which a project's emissions are analyzed. Our expertise on baselines for greenhouse gas emission reduction analysis derives from nearly two decades of research and analysis, including serving on some of the foundational expert committees devoted to the topic: The Greenhouse Gas Protocol Project Standard, the Greenhouse Gas Protocol Policy and Action Standard, and the Clean Development Mechanism's Methodologies Panel.

We are grateful for the opportunity to provide these comments and would be happy to answer any questions about them.

Sincerely,

Peter Erickson, Michael Lazarus, and Derik Broekhoff
Senior scientists
Stockholm Environment Institute, U.S.

SEI comments on Greenhouse Gas Assessment for Projects Rulemaking

Peter Erickson, Michael Lazarus, and Derik Broekhoff, SEI U.S. Center
December 15, 2020

The Washington Department of Ecology (Ecology) has started a rulemaking process, as directed by Governor Inslee in 2019,[1] to set forth methods for analyzing the greenhouse gas emissions of industrial and fossil fuel projects.

As part of that process, Ecology is now seeking feedback on questions related to environmental assessments and mitigation of greenhouse gas emissions. We offer our comments on several of these questions below.

Questions about Environmental Assessment

Is it more important to focus on the net emissions or on the gross emissions of a project? What should be the role of global economic analysis (e.g., developing a project global supply and demand curve) in the assessment?

Based on Ecology's November 17, 2020 webinar, we understand the term *gross emissions* to mean "emissions associated only with the project", and *net emissions* to mean "project emissions relative to alternative market scenarios."

Both gross and net greenhouse gas (GHG) emissions are important to include in the GAP rule, even as the two types of emissions have different contexts and interpretations.

Gross emissions (on-site, in-state, and out-of-state) are important to understand the absolute contribution of a project to global greenhouse gas emissions and, by extension, global climate change[2]. Gross emissions – especially the portion of gross emissions that are emitted on-site and in-state – are important for purposes of assessing potential contributions to Washington State's own greenhouse gas inventory and the emission-reduction goals in state law[3]. By looking at gross emissions on-site and in-state, Ecology and other stakeholders can answer questions such as, *how much further will this project take the State away from its emission reduction goals* and, relatedly, *how much* more *in-state emission reductions will be needed because of this project*?

As these question suggest, gross emissions could be used as one metric in determining whether the impacts of a facility are "significant." One caveat is that, because climate change arises from the accumulated emissions from billions of individual, diverse sources, the fact that gross emissions from any one project in Washington State represent an apparently small fraction of global greenhouse gas emissions should not be justification for determining that the project's emissions are not significant.[4] By contrast, holding warming to internationally agreed temperature goals – the same goals codified in Washington State Law – will require dramatic reductions in greenhouse gas emissions from all major world economies and sectors of the economy.

Net emissions can be useful to evaluate the incremental, global GHG emissions effects of a project relative to one or more baseline scenarios, sometimes called *no action* or *without-project* scenarios. Net emissions arise because the construction of an industrial or fossil fuel project will create ripple effects in each project's market that are not captured in the calculation of gross emissions. Furthermore, these "ripple effects" may reduce – or increase – global emissions to the extent that the project's product (whether an industrial material or a fossil fuel) displaces some other product that is also associated with GHG emissions.

An example of net emissions may be helpful. Suppose a new industrial facility was proposed in Washington that would make a product with very low emissions *intensity* (emissions per unit of product). As consequence, if the facility were to displace construction of another, higher-emitting facility (in Washington or somewhere else in the world) and/or its product were able to out-compete other, higher emissions intensity products produced at other existing facilities, then there could be an incremental reduction in global GHG emissions, regardless of the project's gross emissions.

The challenge with adopting a net emissions approach is that it can be difficult to evaluate what production (at new or existing facilities), if any, would be displaced by a new facility in Washington, and perhaps even more difficult to evaluate the plausibility of claims made by private actors who have more information on their production practices and markets than do government regulators tasked with reviewing their claims. At a minimum, it is important for applicants to provide a cogent economic analysis, sharing transparent cost curve data where relevant and available, but other factors need to be assessed as well. Some higher-cost producers may produce at above an expected equilibrium (market-clearing) price due to strategic behavior or government policies, such as subsidies, mandates, or take-or-pay contracts, and these considerations should be discussed. Furthermore, when measuring net emissions relative to any alternative market scenario, analysts should be cautious about assuming "perfect substitution", i.e. the assumption that the project's product will perfectly displace, one-for-one, another product in the market. We discuss this issue in response to the next question.

In evaluating net emissions, the choice and use of alternative market scenarios is very important, and we appreciate Ecology's focus on this concept. It is tempting to focus on possible "business as usual" baseline scenarios (consistent with current trends and policies), as these scenarios can indicate whether a facility might reduce global net emissions. However, if the "significance" of a new facility from a climate change perspective is being considered, **the primary market scenario should be one that is as consistent as possible with the intent of the State's GHG emissions reduction limits and "pathways to limit global warming to one and one-half degrees.**"[3] In short, even if the facility is making a product that would *reduce* emissions relative to a "business as usual" baseline, it should nevertheless be considered to have a significant impact if it *increases* emissions relative to a low-carbon scenario. Such a scenario could be defined in a number of ways, but at a minimum should comport with climate objectives codified in Washington statute (HB 2311 and RCW 70.235.020). As much as possible, scenarios should be adapted from independent, international institutions such as the Intergovernmental Panel on Climate on Climate Change (IPCC) or International Energy Agency (IEA).

What should the role of economics play in the Energy Analysis? Is it enough to note where supplies of energy will change, or should the price effects of those changes feed into a dynamic price model (or similar analyses)?

A new industrial or fossil fuel project in Washington would be adding a new supply of some product to an existing marketplace. In most marketplaces, both producers and consumers are at least somewhat price sensitive. In other words, how much of a product is purchased by consumers depends, at least partially, on the product's price. Likewise, how much of a product is made by producers also depends on how much each producer can sell it for. As long as this is true, then it is not reasonable to assume that the proposed project's product will perfectly substitute for another product in the market, one-for one; the assumption of perfect substitution would seem to defy textbook economics[5], and therefore be "irrational"[2].

Reasonable assumptions can be made, such as by using simple economic elasticities of supply and demand, to estimate how adding new supply to a market may increase the net consumption of that product[6]. The GAP rule could require reporting of plausible (in most cases non-zero) elasticities of supply and demand, and use those to estimate the net increase in consumption of that product and

associated greenhouse gas emissions. This could be done even where more sophisticated models are also applied, and if results differ significantly, the analysts can be required provide an explanation. In all cases, model assumptions, relationships, and calculations can and should be made fully transparent.

Should the rule identify starting and ending points of the life cycle analysis for project inputs and outputs? This could be at specific points, or the rule could provide more general direction, depending on the project type.

A new industrial or fossil fuel project in Washington could lead to emissions far "upstream" (the life-cycle analysis "starting point") as well as "downstream" (the life-cycle analysis "ending point) from the project site itself. Our suggestion is that the rule provide general guidance that any and all possible GHG emissions that are causally related to the project should be quantified in the analysis. This recommendation is consistent with that of the GHG Protocol *Policy and Action Standard*, the standard that the GHG Protocol recommends be applied to "provision of (or granting a government permit for) infrastructure", such as being considered here under the GAP rule.[7] (The Greenhouse Gas Protocol effort is a multi-stakeholder partnership designed to create internationally accepted GHG accounting and reporting standards.) The rule could then provide specific examples, such as that for fossil fuel projects, there is a clear causal connection to upstream emissions at the point of extraction, and that those must be quantified.

At what point should the analysis terminate downstream? Should the first potential use be included in the life cycle analysis as the end point? For example, in the case of fossil fuels the combustion of that fuel if some other use is not known, or if the first potential use is not demonstrable? For non-fossil fuel products should the first potential use be considered to be the first use, or analyzed as multiple uses, or a final end use of the product?

As described above, we recommend that all likely or possible GHG emissions that are causally linked to the project be included (above some *de minimis* threshold). This criterion suggests that the analysis boundary should extend further downstream than just "first potential use", and instead be inclusive of any and all likely or possible uses. A project may make a product that has multiple potential uses, and for which those uses may themselves have GHG emissions effects. For example, suppose a project makes a certain chemical that could possibly be used either directly as a fuel or as a building block of plastics. The fuel use has GHG emissions effects (both gross emissions due to burning the fuel, as well as potential net emissions from displacing other fuels), and so does the building block of plastics use (both gross emissions, e.g. if a portion of the feedstock or plastic itself is combusted, as well as net effects, to the extent the resulting plastic product displaces other sources of plastics and also adds to overall plastic consumption). Gross and net emissions from both such uses should be included. These considerations should generally apply similarly to both fossil fuel and non-fossil fuel products.

Questions about Mitigation

What types of emission should mitigation address? On-site emissions, in-state emissions (on-site, upstream and downstream), upstream out-of-state emissions?

Based on the October 29, 2020 webinar, we understand that Ecology's intent is that "the rule would require the applicant develop a mitigation plan to address the GHG emissions of a project." As we described above, we believe that all possible GHG emissions causally related to the project should be

quantified. That same standards – regardless of whether the emissions are released on-site, elsewhere in-state, or out-of state – should apply to the emissions addressed by mitigation.

The Washington State Legislature has established GHG reduction goals for the future; how should these GHG reduction goals influence the mitigation plan?

This depends in part on what must be mitigated, and how.

One option could be a "tiered" mitigation strategy, where a) emissions above a low-carbon baseline (see above) must be mitigated using in-state mitigation strategies, and b) any remaining gross emissions must be mitigated using high-quality offset strategies regardless of location. In this case, the low-carbon baseline – reflecting state GHG reduction goals – would be applied for both determining facility net emissions (as described in our response to Questions About Environmental Assessment) *and* for quantifying valid in-state GHG reductions or removals associated with mitigation. In other words, valid in-state mitigation (for net emissions) would consist only of mitigation that would enable the state to reduce emissions below state GHG reduction limits. This is critically important, since mitigation that merely helps the state *meet* its emissions limits (not go below) would not meaningfully offset any of the net emissions of the project: either this would lead the state to miss its emissions target, or force the state to find an equivalent amount of extra emissions reductions elsewhere, potentially at significant cost to the state.

Other options are possible as well, including using state GHG reduction goals as a benchmark for out-of-state mitigation. The pros, cons, and feasibility of different options will need to be further examined.

Should mitigation vary for different types of projects, such as factories, export facilities, or linear projects like pipelines or electricity lines?

We do not see why mitigation should vary by types of projects, other than as already addressed under the quantification of GHG emissions under Environmental Assessment.

If the environmental assessment includes a net emissions analysis, how should this be treated in the mitigation plan?

This will depend on how the net emissions analysis is done and what sorts of mitigation would be allowed. If net emissions are relative to a 1.5 degree (or state reduction-goal) baseline AND mitigation can be clearly defined as going beyond this threshold (i.e. reducing emissions that would not otherwise be reduced on 1.5 degree pathway) then net emissions could play a role in the mitigation plan. See options for a "tiered" mitigation strategy, described above.

How should emissions involving projects that modify an existing facility be calculated?

Emissions that modify an existing facility should be treated just as any other described under the Environmental Analysis section: emissions that are causally related to the facility modification should be included.

How should mitigation projects be prioritized?

A number of different criteria could be used. A previous report co-authored by two of us provides a general overview of considerations in prioritizing mitigation investments, many of which could be relevant for facility-specific mitigation activities[8].

If the goal of mitigation is to precisely compensate for a facility's emissions, then it will be important to prioritize types of mitigation activities that meet standards for high-quality "offsets." Annex 1 of the SEI/GHGMI "Guide to Using Carbon Offsets" (www.offsetguide.org) provides a starting point for considering and prioritizing different types of mitigation activities according to their ability to meet key criteria[9].

Note that simply relying on carbon credits issued by existing carbon offset programs may not reliably deliver mitigation in line with what is needed for the GAP mitigation. This is partly because some programs issue credits for "lower quality" project types (as identified at offsetguide.org), which Ecology may wish to exclude. The larger reason is that these programs typically use "business as usual" (BAU) baselines for quantifying emission reductions, which may not align with mitigation requirements. For example, if a Washington facility's emissions were to exceed a 1.5 degree-consistent baseline, any mitigation for those excess emissions should arguably consist of GHG reductions *below* a 1.5 degree-consistent baseline, not a BAU baseline.

Another issue – especially for mitigation that may occur in other countries – is that existing offset programs currently have no procedures in place to ensure that mitigation is not double counted by national governments when they report progress on their pledges under the Paris Agreement[10]. Such procedures may be developed in the future, for example, by requiring "corresponding adjustments" for carbon credits that are used as offsets[11]. If Ecology allows the use of carbon credits to mitigate a facility's emissions, it must ensure that double counting is avoided by ensuring that credits are backed by appropriate guarantees (see e.g., https://www.adc-wg.org/).

Are there types of mitigation projects which should or should not be included?

As noted in the prior answer, there are certain types of mitigation activities that fare much better as strict emissions offsets than others. Ecology should limit eligibility to higher-confidence project types, as outlined in Annex 1 of the offset guide referenced above[9]. In addition, priority mitigation options should evolve over time, from an emphasis on avoided emissions to a focus on "hard" carbon-dioxide removal (CDR) technologies with reliable permanence guarantees over the long run. The Oxford Principles for Net Zero Aligned Carbon Offsetting provide a useful framework for considering which types of mitigation to emphasize or avoid over time[12].

References

1. Inslee, J. *Directive of the Governor 19-18*. https://www.governor.wa.gov/sites/default/files/images/19-18%20-%20ECY%20Climate%20Rules%20%28signed%29.pdf (2019).
2. Burger, M. & Wentz, J. Evaluating the Effects of Fossil Fuel Supply Projects on Greenhouse Gas Emissions and Climate Change under NEPA. *William Mary Environ. Law Policy Rev.* **44**, 423–530 (2019).
3. Slatter, Fitzgibbon & et al. *Greenhouse Gas Emissions Limits -- Amendment*. *Chapter 79, Laws of 2020* (2020).
4. Goldfuss, C. *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*. https://ceq.doe.gov/docs/ceq-regulations-and-guidance/nepa_final_ghg_guidance.pdf (2016).
5. Perloff, J. M. *Microeconomics*. (Pearson, 2007).
6. Erickson, P. & Lazarus, M. Impact of the Keystone XL pipeline on global oil markets and greenhouse gas emissions. *Nat. Clim. Change* **4**, 778–781 (2014).
7. GHG Protocol. *Policy and Action Standard: An accounting and reporting standard for estimating the greenhouse gas effects of policies and actions*. (World Resources Institute, 2014).
8. Broekhoff, D., Down, A. & Lazarus, M. *Using carbon tax revenues to help attain climate goals: Insights for Washington State from existing programs*. https://www.sei.org/publications/carbon-tax-revenues-washington/ (2017).
9. Broekhoff, D., Gillenwater, M., Colbert-Sangree, T. & Cage, P. *Securing Climate Benefit: A Guide to Using Carbon Offsets*. http://www.offsetguide.org/pdf-download/ (2019).
10. Fearnehough, H., Kachi, A., Mooldijk, S., Warnecke, C. & Schneider, L. *Future role for voluntary carbon markets in the Paris era*. (Umweltbundesamt, 2020).
11. Schneider, L. *et al.* Double counting and the Paris Agreement rulebook. *Science* **366**, 180–183 (2019).

12. Allen, M. & et al. *The Oxford Principles for Net Zero Aligned Carbon Offsetting*. https://www.smithschool.ox.ac.uk/publications/reports/Oxford-Offsetting-Principles-2020.pdf (2020).