

March 24, 2021

Fran Sant
GAP Rule Rulemaking Lead
Washington State Department of Ecology
gap-rule@ecy.wa.gov

Subject: Kaiser Aluminum Comments on the Greenhouse Gas Assessment for Projects (GAP) Rule Framework and Related Materials

Dear Fran:

Kaiser Aluminum welcomes the opportunity to comment on the framework for the Washington State Department of Ecology's (Ecology) proposed GAP Rule and related materials. Kaiser provided comments on Ecology's informational presentations and questions by letter dated December 14, 2020. I reattach Kaiser's technical comments, which apply equally to the draft framework and provide Kaiser's recommendations for Ecology's development of the GAP Rule.

Significant plant improvements since 2011 have increased the operational efficiency and capacity of the Kaiser's Trentwood facility in Spokane Valley. Between 2011 and 2019, Kaiser's investments in operational efficiency improvements have allowed Trentwood to reduce its carbon dioxide equivalent (CO₂e) emissions from natural gas combustion per pound of product by 10.8% and to reduce electricity consumption per million pounds of product by 24.8%. Kaiser has invested in efficiency improvements that are good for the environment.

Kaiser plays an important role in a low-carbon future. Trentwood's premium aluminum products for aerospace and general engineering applications are a critical component of the state's supply chain and help make transportation modes lighter and more fuel-efficient. Trentwood's products are also infinitely recyclable. Moreover, Trentwood increased its already-significant use of recycled aluminum by 6.1% between 2011 and 2019 through improvements in raw material management.

As an energy-intensive and trade-exposed (EITE) facility that faces competitive pressures from domestic and international facility, Trentwood relies upon continuously improving not only operational efficiencies but also raw materials management. Trentwood's competitors are not obligated to install the same control technologies and do not face the same regulatory pressures. Any market share that an EITE facility loses to a less-efficient competitor means that the same products are made with a higher carbon-intensity. The proposed GAP Rule, as envisioned in Ecology's current framework, could lead to the

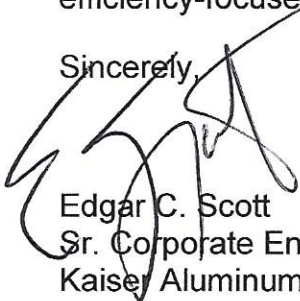
leakage of emissions from Washington to other jurisdictions, resulting in greater net global emissions.

The proposed GAP Rule should incentivize EITE's investments in carbon-intensity improvements. As explained in more detail in the attached technical comments, the GAP Rule framework proposed by Ecology does not incentivize investments in efficiency improvements. First, the framework proposes an artificially low threshold for application of the GAP Rule. Under the proposed threshold of 10,000 metric tons CO₂e, even minor plant upgrades will trigger burdensome administrative and mitigation requirements. Second, the proposed GAP Rule's environmental assessment requirements must account for the risk of emissions leakage. If the goal is global greenhouse gas emissions reductions, then the environmental assessment of covered projects should consider the risk of leakage in its analysis of baseline and "no action alternative" conditions. The current framework ignores the likelihood that discouraging new or upgraded manufacturing projects in Washington could increase global emissions. Finally, any mitigation requirement should take into account leakage and the proposed project's role in the low-carbon economy, including the project's use of recycled materials, the recyclability of the project's end product, and the project's contribution to fuel-efficiency improvements throughout the supply chain. Any mitigation requirement should also incentivize further on-site efficiency and emission reduction improvements.

Kaiser provides approximately 750 family-wage manufacturing jobs at Trentwood. Kaiser looks forward to further investments in Trentwood, its employees, and the state economy. Any rule regulating greenhouse gas assessment or mitigation should consider capital investments in energy equipment and facilities. A rule that incentivizes these investments will lead to greater carbon-intensity improvements, reduce the export or leakage of emissions, and support manufacturing in Washington.

Kaiser appreciates the opportunity to provide input on the proposed GAP rule. We look forward to engaging with Ecology staff throughout the rulemaking process and would be happy to review an early draft of the proposed rule to provide feedback from an EITE and efficiency-focused manufacturer.

Sincerely,



Edgar C. Scott
Sr. Corporate Environmental Engineer
Kaiser Aluminum

Attachment A**Applicability Screening**

The proposed applicability screening threshold of 10,000 annual metric tons of CO₂e is unreasonably low. Ecology has explained that the proposed GAP rule would be applicable to certain new facilities or changes to existing facilities if a project's potential direct emissions are equal to or greater than 10,000 metric tons of CO₂e per year.¹ Alternatively, the proposed GAP rule would apply to new facilities or facility changes with potential direct emissions less than 10,000 metric tons of CO₂e per year if the project's emissions exceed 10,000 metric tons of CO₂e per year when the inputs (feedstocks) or outputs (products) are added to the project's potential direct emissions.

The applicability screening threshold should be set no lower than 25,000 metric tons of CO₂e per year. A threshold of 25,000 annual metric tons of CO₂e would allow manufacturers greater opportunity to explore and implement innovations and efficiencies during the project scoping process to potentially avoid the additional regulatory burden of the proposed GAP rule and to lower the emissions resulting from the project. Realistically, almost any manufacturing facility upgrade will result in emissions above the proposed 10,000 annual metric tons of CO₂e threshold, even if the upgrade will improve the carbon intensity of the facility's product or create a fully recyclable product. A reasonable threshold, however, would incentivize manufacturers to evaluate process and energy efficiencies during the project planning stage and to devote resources to efficiency upgrades rather than additional regulatory activities. Moreover, a higher threshold would still capture the vast majority of new industrial facilities or modifications to existing facilities. Projects with the potential to emit between 10,000 and 25,000 metric tons of CO₂e per year are generally minor source permit projects involving relatively small boilers and heaters. SEPA could still require evaluation of emissions from those projects on a case-by-case basis.

When Washington manufacturers develop and implement projects using new technologies, the carbon intensity of products made in Washington is lowered. However, if the applicability threshold of the proposed GAP rule is set artificially low, the rule could inadvertently discourage the completion of projects that reduce carbon intensity and result in the continued operation of older, less efficient technologies.

To simplify the applicability screening process, applicability should be based on potential direct emissions only. Potential emissions should be evaluated following a two-step process:

Step 1 – Estimate gross potential direct emissions for the proposed project.

- If direct, gross emissions are less than 25,000 annual metric tons CO₂e, the GAP rule does not apply.
- If direct, gross emissions are greater than 25,000 annual metric tons CO₂e, go to step 2.

¹ Despite the Governor's directive's acknowledgment that infrastructure project siting should also be informed by climate change impacts, the Ecology has stated that the proposed GAP rule will not apply to highway, road, or housing projects, even if those projects' emissions will be greater than the applicability threshold of the rule.

Step 2 – Estimate net potential direct emissions for the project. The GAP rule would apply only if the direct, net emissions for the project are greater than 25,000 annual metric tons CO₂e. This procedure would be similar to a PSD netting analysis (40 CFR Part 52.21) and should include allowances for on-site emissions reductions. Examples of emission reductions would include:

- Replacement of existing equipment with more efficient equipment.
- Modernization of existing equipment.

The proposed GAP rule's applicability screening threshold should not include construction emissions and decommissioning emissions for existing facilities. These emissions can be significant for new highways or pipelines, however for existing manufacturing facilities these emissions are temporary and insignificant and can be controlled by requiring best practices during project construction and decommissioning. The applicability screening threshold should also not consider upstream or downstream emissions—a lifecycle emissions analysis should be part of the assessment phase, not the applicability screening phase of the proposed rule.

Environmental Assessment

If a project's emissions potential exceeds the applicability threshold, the proposed GAP rule should evaluate projects uniformly across an industry and encourage projects that will reduce global emissions.

Uniform evaluation of manufacturing projects requires a lifecycle emissions analysis on a global basis. A lifecycle emissions analysis that evaluates upstream emissions in Washington and outside of Washington would ensure that manufacturers processing raw materials on-site are not penalized relative to manufacturers who import raw materials from out of state suppliers with greater carbon emissions. The proposed GAP rule should encourage on-site processing of raw materials that utilizes process and energy efficiencies and results in lower carbon intensity for the final product.

The lifecycle emissions analysis should not consider construction emissions and decommissioning emissions for modifications to existing facilities because these emissions are temporary and insignificant. Estimating these emissions in the early planning and permitting phase of a project (when the GAP rule would apply) is difficult and requires an unnecessary level of complexity.

To have a positive impact on global greenhouse gas emissions, the rule must evaluate the potential leakage of greenhouse gas emissions to other states or countries and acknowledge the positive global role of EITE manufacturers in Washington. An entity is "trade exposed" when domestic and international competitors offer the same products made with less efficient processes and less effective control technologies (i.e., greater carbon intensity). Ecology should acknowledge that the GAP rule could unintentionally increase the operating costs of Washington's EITEs and, thus, make them less competitive in the global market. The GAP rule should evaluate EITEs' net, actual emissions based on the carbon intensity resulting from the proposed project.

As an EITE, Kaiser remains competitive in the global market by continually identifying and implementing projects to manufacture products as efficiently as possible. The GAP rule should evaluate the net emissions of a proposed EITE project to encourage projects that increase efficiency and decrease the

carbon intensity of products made in Washington. Discouraging responsible and efficient manufacturing in Washington would result in an increase of global greenhouse gas emissions.

In addition to evaluating the project emissions relative to alternative market scenarios (i.e., evaluating the potential for leakage), the proposed rule should assess the impacts of not doing the project and the effect of continuing to operate older, less efficient technology.

Mitigation

The proposed GAP rule's mitigation requirements should address only a project's net, actual emissions, not gross or potential emissions, and should encourage on-site emissions reductions that improve a facility's efficiency and sustainability. Examples of on-site reduction activities could include:

- Replacement of existing equipment with more efficient equipment.
- Modernization of existing equipment.
- Increases in energy and process efficiency, on a carbon intensity basis.
- Benefits from moving a process from a different location to on-site.
- Relocation of byproduct processing from one site to another.
- Manufacturing of raw materials onsite rather than purchasing off-site.

The proposed GAP rule should encourage manufacturing facilities to find opportunities to mitigate a project's net, actual emissions with on-site activities that reduce the facility's carbon intensity, improve operational efficiencies, and strengthen the long-term success of responsible manufacturing in Washington. To assist with avoiding the leakage of emissions to other regions, the rule needs to not just look at mitigating new emissions of greenhouse gases but also acknowledge those projects that reduce the carbon intensity associated with producing a product as form of mitigation. For example, a new project, like a new re-melt furnace or new burners, may add greenhouse gas emissions to the facility but may also improve the efficiency of the entire production process and result in a lower carbon intensity for every product that goes through the new project's equipment.

The proposed GAP rule should encourage responsible manufacturing of products that will improve downstream carbon intensity and end-use efficiency. Downstream emissions may be difficult to evaluate quantitatively; however, the proposed GAP rule should distinguish, on a qualitative basis, between the downstream emissions of an EITE project that will manufacture fully recyclable products as part of the green economy supply chain and the downstream emissions of non-recyclable, non-EITE projects. The lifecycle emissions analysis should take into account whether the products manufactured by a proposed project will reduce carbon emissions or improve the fuel efficiency of downstream products or customers.

Ecology Question and Responses

The following sections respond to Ecology's questions regarding emission methodologies, environmental assessment, lifecycle analysis, economic and energy analysis, and mitigation.

Emission Methodologies Questions

Question: What are best practices in estimating construction-related emissions from SEPA or NEPA that we should consider for the rule?

Response: For projects involving modifications to an existing facility, construction emissions and decommissioning emissions are temporary and insignificant. Estimating the emissions early in the planning/permitting phase for a project is difficult and requires an unnecessary level of complexity.

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

Response: The proposed GAP rule should evaluate projects that modify an existing facility to determine the likely net emissions increase, if any, from the proposed project. Kaiser is continuously exploring and implementing projects that improve process and energy efficiencies, and the GAP rule should not discourage projects that result in lower carbon intensity of products made in Washington. For simplicity and to reduce the compliance burden of a new rule, methodologies to calculate net emissions should be consistent with existing methodologies currently used to estimate greenhouse gas emissions in other regulatory programs such as the greenhouse gas reporting program.

In addition, there are fundamental differences between project-based greenhouse gas accounting and normal "corporate" accounting. Ecology needs to develop a credible and transparent methodology to determine the "baseline" or "base case" against which the project case is compared, for determining emission increases or benefits.

Question: What should the time period for the assessment be? Under SEPA, the analysis usually considers the typical operational lifespan of a project and construction, but the time period could be longer to align with the GHG emission limits, or for other reasons.

Response: The proposed GAP rule should evaluate emissions based on carbon intensity (emissions/unit of production); therefore, a set timeline is not necessary. It will be important to develop a procedure to establish a credible baseline carbon intensity to use when assessing reductions in carbon intensity for new projects.

Questions on Environmental Assessment

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

Response: The proposed GAP rule should incorporate a netting analysis into the applicability test. If, after netting, emissions are over the applicability threshold, then mitigation should compensate for the net increase. This analysis will require a procedure to establish a credible baseline to determine net increase.

Question: 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?

Response: The proposed GAP rule should evaluate net emissions because a project that upgrades and expands a facility's energy and process efficiencies with new technology will reduce the carbon intensity of the facility's product. Evaluating gross emissions of a project would disincentivize upgrade projects that would replace older and less efficient technology. EITEs compete in national and global marketplaces, and the rule should recognize that increasing operating costs in Washington will increase the market share of competitors in other states or countries, causing emissions leakage and greater global emissions when customers purchase the same product manufactured with higher carbon intensity.

Question: At what point should the analysis terminate downstream? Should the first potential use be included in the life cycle analysis as the end point?

Response: The endpoint and level of review for the downstream lifecycle analysis should be industry-specific. The proposed GAP rule should not consider the downstream emissions after the first potential use of a product because the analysis would be speculative and arbitrary. Kaiser's products are fully recyclable and increase the energy efficiency of its customers' products. The rule should consider these downstream benefits in any lifecycle analysis.

Lifecycle Analysis Questions

Question: 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.

Response: If the potential emissions of a project triggers the GAP rule, then a lifecycle analysis should evaluate upstream impacts of the inputs to the proposed project. Otherwise, a manufacturer who processes its own materials onsite could be unfairly penalized compared to a manufacturer who exports those emissions out of state or overseas by purchasing only pre-processed raw materials. The lifecycle analysis should also consider downstream impacts at a high level and consider whether the outputs of a proposed project are recyclable and increase the end-use product's energy efficiency.

Question: Have you used the ISO 14040/44 standards to conduct a life cycle analysis? If so, where do you believe the rule needs additional specificity to make implementing the standards practical or feasible?

Response: Like most ISO standards, 14040 and 14044 provide a framework by which skilled and experienced lifecycle analysis practitioners can credibly and transparently perform an evaluation. Most detailed lifecycle analysis calculations, and the software tools available to perform them, are based in part on ISO 14040. The ISO documents describes the overall process, factors to consider, various impacts, comparison and interpretation of dissimilar impact on different media (e.g., air vs water), quality control criteria, special requirements for comparative assertions, and other relevant issues. The ISO standards describe the processes for determining boundaries, data sources, calculation methods, and other technical details. The ISO standards and supporting materials provide a framework to assist a qualified team with making decisions on how to set up a lifecycle analysis, but it is not a step by step

cookbook. In order for Ecology to evaluate and compare lifecycle analyses from different facilities, Ecology should use the ISO standards as a basis to develop specific guidance.

The ISO standards' lifecycle analysis involves four primary steps. Only two are necessary for a reasonable and relevant evaluation of emissions under the proposed GAP rule, and Ecology should explain these steps in guidance documents:

- Step 1 - Goal and Scope Definition - Ecology should define this step in guidance, with specific descriptions of analysis boundaries, calculation methods, and processes to be used to evaluate projects in each regulated industry.
- Step 2 - Life Cycle Inventory (LCI) Analysis – This step calculates the net total greenhouse gas emission increases and decreases. This is the key to the emissions analysis, with results reported in absolute and normalized terms.
- Step 3 - Life Cycle Impact Assessment (LCIA) - In a multi-aspect environmental lifecycle analysis, this step estimates human health or ecological impacts from toxic air or water emissions from a process or determines whether the consumption of finite natural resources is an important issue to carry through in the analysis. , a facility uses the LCIA to estimate the impact of a pollutant being released into the environment on the concentration of that pollutant on a waterbody downstream and how toxic the compound is compared to the other pollutants released.

For greenhouse gas emissions, impacts are already expressed in CO2 equivalent, and it would be impossible to develop a global circulation model to determine the net climate change effect (in °C) from a particular project, however large. Thus, it is generally accepted to simply report tons of greenhouse gas emissions as a proxy for the measure of the impact of that release on the environment. Thus, for a lifecycle analysis focused only on carbon, there is no need for the LCIA after the LCI. This step in the ISO standard is unnecessary for the proposed GAP rule.

- Step 4 - Life Cycle Interpretation - This step is also unnecessary to incorporate into a proposed rule that only address greenhouse gas emissions. Typically, the interpretation step of an ISO-standardized lifecycle analysis attempts to compare and assess impacts to different environmental media. In an analysis focused only on carbon, all options can be directly compared based on the proxy indicator of total net greenhouse gas emissions, and the interpretation phase is unnecessary.

If Ecology adopts streamlined ISO 14040/44 standards to conduct a lifecycle analysis, the proposed GAP rule should provide more detail about how the standard applies between different projects within an industry and how the standard yields fair comparisons between different industries.

Question: At what point should the analysis terminate downstream? Should the first potential use be included in the life cycle analysis as the end point?

- a. 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?
- b. 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?

Response: The proposed GAP rule should evaluate downstream impacts at a high level. For example, the rule should not discourage projects that will increase the energy or process efficiency of a manufacturing facility or add to the cost of products that are recyclable or obviously reduce the emissions of the first-use customer of a non-fossil fuel product.

Economic and Energy Analysis Questions

Question: 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)?

Response: Many of the projects potentially covered by the GAP rule compete in the global marketplace. Understanding the dynamics of the global market may require an economic analysis tied in with other modeling efforts. These analyses are typically time and resource intensive. The mitigation process should allow a project proponent to conduct an economic analysis to evaluate mitigation requirements, but it should not be required.

If the overall goal of the rule is to have a positive impact on global greenhouse gas emissions, the rule must acknowledge the potential leakage of emissions to other states or countries. The net actual emissions from EITE facilities need to be evaluated based on carbon intensity. A project may result in an on-site increase in emissions, but it may result in lowering the carbon intensity for producing the product and, on a global basis, result in an overall reduction in global emissions. To assist with avoiding the leakage of emissions to other regions, the rule needs to not just look at mitigating new emissions of greenhouse gases but also acknowledge that projects that reduce the carbon intensity associated with producing a product are a form of mitigation.

In addition to evaluating the project emissions relative to alternative market scenarios (leakage), the impact on greenhouse gas emissions created by not doing the project should be evaluated. If the cost of a potential project is too high due to burdensome permitting and regulatory requirements, older and less efficient technology will continue to operate.

Questions about Mitigation

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

Response: The proposed GAP rule should assess mitigation based on net actual emissions, not gross or potential emissions. Emission estimates should include allowances for on-site projects that result in emission reductions. A lifecycle analysis (LCA) perspective that includes upstream impacts on a global basis and a qualitative evaluation of downstream impacts seems appropriate.

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

Response: The net actual emissions from EITE facilities need to be evaluated based on carbon intensity. A new project or modification to an existing facility may result in an increase in on-site greenhouse gas emissions, but it also may lower the carbon intensity of the entire facility's production.

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

Response: For projects involving modifications to an existing facility, construction emissions and decommissioning emissions are temporary and insignificant. Estimating the emissions early in the planning/permitting phase for a project is difficult and requires an unnecessary level of complexity. For similar reasons, construction and decommissioning emissions for projects that modify an existing facility should not require mitigation.