



May 1, 2023

**To:** Office of Chemical Safety and Pollution Prevention, United States Environmental Protection Agency

**Re:** Request for Information (RFI) to Support New Inflation Reduction Act Programs to Lower Embodied Greenhouse Gas Emissions Associated with Construction Materials and Products (EPA-HQ-OPPT-2022-0924)

Sierra Club respectfully submits comments to the United States Environmental Protection Agency (EPA) in response to the request for information on deploying government resources to better support Inflation Reduction Act programs designed to spur the production of low carbon construction materials.

We support the EPA's efforts to provide assistance to manufacturers seeking to produce environmental product declarations (EPDs), expand digital resources available to industry for conducting life cycle analyses of their products, and establish standards for "low-carbon materials" in the government's green public procurement ("Buy Clean") efforts.

Sierra Club endorses the response to the request for information drafted principally by the Carbon Leadership Forum, Building Transparency, RMI, New Buildings Institute, and American Council for an Energy-Efficient Economy (ACEEE). We have included their response alongside our own in this submission.

In the present letter, Sierra Club examines in greater depth the EPA's query on how state and international actors have set thresholds for "substantially lower levels" of embodied greenhouse gas emissions in their green procurement policies (Question E25).

This document examines the above question from the EPA in the two sections below.

- First, Sierra Club outlines the main takeaways from its examination of the case studies.
- Second, we provide further depth to the three case studies of green public procurement policies it examined: The Netherlands, South Korea, and Colorado.

As the oldest and largest environmental organization in the United States, we are committed to ensuring climate, jobs, and justice for all. We appreciate this opportunity to provide comments.

For any questions or concerns regarding this letter, please contact Yong Kwon ([yong.kwon@sierraclub.org](mailto:yong.kwon@sierraclub.org)).

### **Main Takeaways**

In the implementation of state-level Buy Clean measures in the United States, industry actors have frequently raised concerns around the generation of EPDs. Conversations with these actors suggest that their concerns partly stem from anxiety that EPDs could be used to exclude their products from public procurement bids. Complaints around difficulty of identifying

appropriate EPDs and challenges of comparing different EPDs within a sector appear to be subsidiary concerns.

Given the potential pushback from industry, clarity around how green public procurement (Buy Clean) thresholds might be determined is intricately tied to cooperation and compliance around the generation of EPDs and labels.

Looking abroad, some of the ways different jurisdictions established green criteria in their green procurement policy include:

- ***Establishing multiple labels to capture different goals and levels of compliance:*** An effective green purchasing policy will take into account factors that go beyond embodied carbon emissions in a product. Examples from the Netherlands, South Korea, and Colorado include considerations on local biodiversity, toxic emissions, environmental justice, etc. Instead of changing the requirement for what variables need to be reflected in an EPD, some governments have opted to create new certifications that address expanding considerations as a means of protecting more communities while providing stability to existing EPDs. The challenge with executing this policy is creating state capacity to oversee, review, and manage additional labels and certifications. Some of the resources from the Bipartisan Infrastructure Law, Inflation Reduction Act, and other sources of funding going to the EPA should be allocated towards hiring new personnel and training to oversee the expanded procurement guidelines.
- ***Translating thresholds into monetary value:*** One method for providing a market advantage to green products while avoiding the potential political headwind that might accompany the exclusion of polluting market actors from the process is to provide bidders with a quantifiable reward in the selection process. In the case of the Netherlands (described in greater detail below), the environmental certifications held by bidders and lifecycle analysis for their products are translated into a monetary figure which is subtracted from the initial cost of the bid in the cost-competitive selection process. This method of assigning monetary figures to environmental performance also allows the procurement agent to calculate penalties for when the bidder is unable to meet the goals it claimed. Here, these hypothetical monetary rewards must be sufficiently high to properly award innovative green producers.
- ***Giving purchasing agents a standard but allowing them to determine individual goals:*** Another way to avoid the political pushback from manufacturers while setting a clear environmental standard is to identify a clear criteria for “green products” but give each agency the space to set their own goals for what share of their purchases will be made up of these products. In the case of South Korea (case study examined in greater detail below), the central government provides bonuses and rewards to agencies to further incentivize higher levels of commitment. This also creates an internal push for a wider range of products to be covered under a green procurement policy as different agencies and local authorities have different procurement needs and will be motivated to seek additional central government resources in making these acquisitions.

Additionally, key lessons from the execution of these green procurement policies include:

- ***Maintaining a central digital tool and depository of records:*** Digital tools like the Dutch DuboCalc and South Korea's PPS and KONEPS (these tools examined in greater detail in case studies below) offer several advantages in implementing green procurement policies. In addition to lowering the cost of doing business by providing services like calculating embodied carbon in its lifecycle usage, the use of a common tool (with transparency around its methodology) mitigates uncertainties that businesses face as a consequence of choosing an "unfavorable" calculation method vis-a-vis competitors. Moreover, South Korea's digital system also allows businesses to examine individual government agencies' green procurement goals and review records of their past acquisitions. This creates opportunities for individual suppliers to learn more about their market environment.
- ***Measuring success with the policy goal in mind:*** Most government bodies implementing green procurement measure success by examining what share of the public procurement is made up by products they define as a green product. However, this is a figure that is difficult to employ for measuring success - particularly as some of these governments are required to raise their purchasing standards if criteria become normalized in the market (ergo, it can never reach 100%; and 60% compliance one year cannot be compared to 60% in another year). One potential alternative measurement is how much of the products available in the total market meet the current environmental criteria laid out by the government. This is consistent with the theory of change for green procurement, which looks to leverage public purchasing power to transform the broader market environment.

These takeaways were drawn from real-world examples ranging from municipal-level to country-level policies. Three specific case studies are explored in greater depth below (Netherlands, South Korea, and Colorado):

## **Case Studies**

### The Netherlands

#### **Overview**

- While the Sustainable Public Procurement (SPP) looks to make clear the qualitative differences between winning and losing bids based on their environmental impact, it does not exclude products of any carbon intensity levels from the bidding process.
- The government assigns a hypothetical monetary value to bids based on the product's climate-friendly qualities. This monetary value is subtracted from the initial bid and the government uses these new figures to make a final decision based on cost competitiveness.
- The monetary value is assigned using a third-party certification program and a government-developed software tool. This process of converting climate implications into monetary value carries the benefit of creating an easy-to-understand process for bidders and the basis for the government to seek damages if the tenderer fails to fulfill their climate commitments.

- Simultaneously, the use of cost competitiveness as the final method of selection may be preventing a faster transition to sustainability as the assessment of the 2015–2020 plan found that cost still outweighs sustainability as the main driver for procurement decisions.<sup>1</sup>

### ***Implementation***

Two bodies in the Dutch government are critical to the implementation of the Dutch National Plan on Sustainable Public Procurement: the Ministry of Economic Affairs and Climate Policy (MiEACP) and the Directorate-General of the Ministry of Infrastructure and Water Management of the Netherlands (Rijkswaterstaat, or RWS).

MiEACP sets the standards for procurement with a focus on using sustainable acquisitions to advance innovation and responsible enterprise. RWS is the body responsible for making procurements on behalf of the public sector. The latter also plays a central role in fulfilling what the Dutch public has historically perceived as their government’s principal task: maintaining major water control structures.<sup>2</sup>

The Dutch public procurement standard set by the MiEACP does not impose a ceiling on greenhouse gas emissions embodied in the products that RWS purchases; however, products qualifying as good climate performers are extended new estimates on their bids that could deduct as much as 10-20% from their initial price. The RWS makes its procurement decisions on the basis of price competitiveness after these price deductions are in place.

The price deductions are made using two metrics: “CO2 Performance Ladder” and “DuboCalc.”

[The CO2 Performance Ladder](#) is a certification program developed by the Foundation for Climate Friendly Procurement and Business that identifies qualifying market actors as responsible tenderers in public projects. The certification distinguishes 5 levels of performance, which ranges from measuring emissions to taking tangible steps towards reducing the carbon footprint of their products. Each of the 5 levels correspond with 1% deduction in the assessment of the bid price, making possible the maximum possible deduction of 5%.

DuboCalc is an open digital tool developed by RWS to assist tenderers with calculating the sustainability value of the bid based on the lifecycle analysis of the proposed materials and the required energy use of the design. In addition to global warming potential, this tool uses a built-in database to assess a broad range of environmental impact parameters. These include:

- ozone layer depletion;
- toxicity to humans;
- ecotoxicity to fresh water, marine, and terrestrial environments;
- photochemical oxidation;
- abiotic depletion;
- depletion of fossil energy sources;

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<sup>1</sup> In 2010, the Dutch House of Commons ruled that the Dutch public authorities must implement 100% sustainable procurement as of 2015. The RWS has not achieved this goal as of April 2023.

<sup>2</sup> Simon Kuper. “Can the Dutch save the world from the danger of rising sea levels?” Financial Times, January 30, 2020. <https://www.ft.com/content/44c2d2ee-422c-11ea-bdb5-169ba7be433d>

- eutrophication;
- acidification;
- and carbon emissions.

DuboCalc produces a single monetary value based on these factors, which RWS uses in conjunction with relevant CO2 Performance Ladder certification to deduct the initial bid price of the tenderer in their decision-making process.

Following the completion of the public project, the tenderer faces monetary sanction if the quality of the product does not comply with environmental standards claimed in the bid or fails to fulfill commitments under the CO2 Performance Ladder. The loss is calculated at 1.5 times the virtual deduction. For instance, the tenderer would receive EUR 7.5 million less from RWS if EUR 5 million had been deducted in the final bid assessment.

A key future goal that the Dutch procurement policy seeks to accomplish is CO2 neutral and circular concrete sector by 2030.

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3. Astrid Nilsson Lewis, Magdalena Machlowska. "Decarbonizing the EU's road and construction sectors through green public procurement: The case of Sweden and the Netherlands." Stockholm Environment Institute, July 2022.  
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### South Korea

#### **Overview**

- In contrast to the Dutch Sustainable Public Procurement, South Korea's Ministry of Environment (MOE) sets a specific performance standard for bids that qualify under Green Public Procurement. However, each state body (both central government agencies and local governments) is responsible for deciding what share of its total purchase is made up of products that are certified as a "green product."
- This approach takes into consideration that different agencies and regions consume different products and face different challenges with acquiring appropriate products. The central government incentivizes these entities to reach higher levels of green procurement by offering a larger budget or a performance bonus when goals are met.
- A key feature of the Korean system is the centralized digital system for procurement, which helps different agencies easily assess what certified products are available and

lowers the cost of entry for qualifying vendors in the bidding process. This also makes possible more rapid analysis of how the plan is performing.

- The private market sale of products certified by the MOE increased from USD 3 billion in 2005 to USD 34 billion in 2013, suggesting steady diffusion of public standards in the broader market.

### ***Implementation***

The Korean Ministry of Environment (MOE) establishes an “Action Plan for Promotion of Purchase of Green Products” every five years. Three types of goods are certified as green:

- Products that received the Good Recycled Mark from the Ministry of Trade, Industry and Energy (MOTIE). This criteria focuses on a narrow range of products in 15 categories that reuse waste products.
- Products that received the Korea Eco-label from the Korea Environmental Industry & Technology Institute (KEITI), an office under the MOE. This certification requires the product to not only meet or exceed the Korean Industrial Standards (overseen by an agency under MOTIE) for criteria such as biological safety and product quality, but also attain top 20-30% of environment-related standards among products of the same category.
- Products that are in compliance with specific criteria identified by the MOE in consultation with relevant ministries.

After MOE and MOTIE identify what products qualify as green goods, all government agencies (including local governments and public corporations) must submit to KEITI an annual green procurement implementation plan. While the targets are voluntary, these bodies receive monetary rewards from the central government for growing their share of green procurements.

KEITI will periodically revise the Korea Eco-label criteria if:

- A stakeholder submits a request for the revision of criteria, together with details of the reason for revision and proposal for revision;
- The regulation criteria established by other relevant laws have become more stringent than the ecolabel criteria;
- The certified product has lost its distinctive feature or market share;
- Innovations are made in the technologies that are relevant to the product's environmental and quality aspects; or,
- The current ecolabel criteria are required to be harmonized with international standards or other relevant regulations, including agreements on mutual recognition with foreign certification agencies.

A distinctive feature of the Korean Green Public Procurement is its extensive digitization of the process. 30% of all public procurements are executed through the central government's online Public Procurement Service (PPS). This system is integrated with KEITI's online Green Procurement Information System (GPIS-I), which includes different government bodies' mandatory green procurement plans.

Remaining “decentralized procurement” are still recorded through the Korean Online E-Procurement System (KONEPS) and automatically archived in GPIS-I. This digital integration not only lowers the labor burden on individual government offices, but also allows KEITI to constantly monitor the state of green procurements.

The existence of a centralized online portal for public procurement also means that PPS itself can be used to promote green technology products in the market based on existing evaluations such as life-cycle consumption of energy, etc.

The impact of MOE’s action plan on green public procurement is measured on criteria that go beyond carbon emissions, including decreased use of hazardous substances; decreased ambient noise; decreased ecological toxicity; decreased emission of indoor air pollutants; decreased human toxicity, etc.

### **Sources**

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### Colorado

#### **Overview**

- The Colorado Office of the State Architect (OSA) and the Colorado Department of Transportation (CDOT) have not yet determined a maximum acceptable global warming potential (GWP) limit for materials that the state government is permitted to purchase for public construction projects. Implementation will follow an initial period of the state government collecting Environmental Product Declaration (EPD) from suppliers, which will help set targets.
- Colorado’s implementation sequence follows that of California’s Buy Clean, which used EPDs to determine industry averages for select materials and set carbon intensity thresholds below these figures.

- Unlike the model used in the Netherlands and South Korea, Colorado (similar to federal Buy Clean initiative) narrowly targets carbon-intensive construction materials and focuses on reducing their embodied emissions.
- The Buy Clean Colorado Act works alongside a broader [state goal](#) to reduce total greenhouse gas emissions from the manufacturing sector by at least 20% from their 2015 reported releases by 2030. This complementary law has further requirements regarding pollution abatement co-benefits.

### ***Implementation***

Once the threshold is determined, legislation ([HB21-1303](#)) allows OSA to review the maximum acceptable greenhouse warming potential for each eligible material every four years. The office is however forbidden from allowing more intensive carbon emissions. Targeted materials include:

- Post-tension steel
- Reinforcing steel
- Structural steel
- Cement and concrete mixtures
- Asphalt and asphalt mixtures
- Glass
- Wood structural elements

OSA's consideration on the final threshold determination will be impacted by the state government's statutory commitment to reduce its greenhouse gas emissions from the manufacturing sector. This serves as a push factor in Colorado's path towards decarbonization that complements the "pull" from Buy Clean. Therefore, establishing complementary standards (20% reduction in manufacturing sector by 2030) would bolster both efforts.

Colorado is currently drafting appropriate rules that would achieve this complementary carbon reduction statute. However, this has proven difficult to draft. Some areas that have been particular challenging include:

- Gaps in enforcement: Acknowledging the challenge of reducing carbon emissions while competing with facilities in regions with weaker regulation, Colorado permitted some of the most carbon-intensive manufacturing facilities to aim for a lower emissions reduction than the statute mandates for their sector.<sup>3</sup> However, this was contingent on the facilities conducting an audit to prove that they are currently using the most advanced carbon-efficient technologies available. However, facilities were allowed to hire their own external auditors. This creates a conflict of interest as auditors may be motivated by their desire to maintain client-contractor relations to deliver a more favorable report. This is one potential pitfall of not having a central government body or an independent actor

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<sup>3</sup> "Colorado agreed to cut greenhouse gas emissions. But first they exempted the biggest polluters." Colorado Sun, November 9, 2021. <https://coloradosun.com/2021/11/09/exempting-big-polluters-greenhouse-gas-cuts-colorado/>



certify the facilities with an independent label as in the case of the Dutch CO2 Performance Ladder and Korea Eco-label.

- Questions on penalties for non-compliance: The rule has not yet determined an appropriate punishment for non-compliance. Setting penalties too low might induce facilities to purchase their compliance instead of making costly investments in new equipment, manpower, and processes. Current proposals include using the social cost of carbon; however, these would not address situations where facilities are in compliance with greenhouse gas reduction but not co-pollutant reduction. A tool like the Dutch DuboCalc that monetizes intermediary achievements could help address the issue of penalties.

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