

U.S. Department of Commerce
Environmental Technologies Trade Advisory
Committee (ETTAC)

2020-2022 Charter
Recommendations Package

1. Closing Dumpsites (November 2021)
2. Increased U.S. Participation in Global Environmental Procurement (November 2021)
3. Kigali Amendment (January 2022)
4. Environmental Sector Workforce Development to Enhance U.S. Export Opportunities (January 2022)
5. Basel Convention and the Circular Economy (January 2022)
6. Marine Litter and Ocean Plastic (January 2022)
7. Energy Transition Metals (January 2022)
8. Multilateral Development Bank Procurement Barriers and Transaction Cost Questions (March 2022)
9. Project Finance (March 2022)
10. The Indo-Pacific Economic Framework (May 2022)
11. Buy America Implications on Environmental Technology Sector (May 2022)
12. Environmental Technology, Goods and Services Industry Supply Chain Discussions (May 2022)
13. Recommended Changes to the Ex-Im Lending Terms for Climate Change Sector Understanding (CCSU) (May 2022)

November 17, 2021

The Honorable Gina M. Raimondo
Secretary
Department of Commerce
1401 Constitution Ave, N.W.
Washington, D.C. 20230

**Re: Closing Dumpsites
ETTAC Recommendation 2021-01**

Dear Secretary Raimondo:

The Environmental Technologies Trade Advisory Committee (ETTAC) is a federally-established committee whose purpose is to advise on the policies and procedures of the U.S. government that affect environmental technologies, goods, and services exports.

ETTAC recommends the United States support initiatives, policies, and programs that encourage the closure of dumpsites in developing countries. Dumpsites are waste disposal facilities that do not include environmental controls such as daily cover, leachate management, surface water controls, groundwater monitoring, or emissions controls. These facilities emit methane¹, carbon dioxide, and other gases and therefore contribute to climate change, have frequent slides that result in deaths² and off-site contamination, and contribute to waste in waterways and the oceans. They also pose serious health risks to those who work at them or live on or nearby.³ Reduced methane emissions are key to achieving ambitious global climate goals.

The closure of dumpsites is a complex process which needs to be properly planned, including technical, environmental, economic, and social considerations. It also requires an alternative waste management system, adequate institutional capacity, and community support.

The closure of dumpsites in developing countries provides substantial commercial opportunities for U.S. companies. In addition to planning for the proper closure, which requires substantial technical expertise, dumpsites are typically replaced by more modern solid waste

¹ <https://www.sciencedirect.com/science/article/abs/pii/S0960852418315013> Landfills and dumpsites contribute 12 percent of the world's methane emissions. https://www.c40knowledgehub.org/s/article/Financing-landfill-gas-projects-in-developing-countries?language=en_US. This percentage will likely increase in future years unless dumpsites in developing countries are closed.

² <https://www.cnn.com/2017/03/15/africa/ethiopia-trash-landslide-death-toll/index.html> (Ethiopia dumpsite slide killed 133 in 2017); <https://geoenvironmental-disasters.springeropen.com/articles/10.1186/s40677-014-0010-5> (Indonesia dumpsite slide killed 143 people in 2005); <https://www.wastedive.com/news/report-global-dumpsite-hazards-led-to-750-deaths-in-7-months/426647/>

³ <https://rtfd.rt.com/stories/worlds-most-dangerous-dumps/>

processing and disposal facilities, including recycling centers, anaerobic digesters, transfer stations, sanitary landfills, and waste-to-energy (WTE) facilities. These new disposal facilities all use sophisticated waste sorting and management equipment, and have advanced combustion and/or emissions controls. In addition, new landfills provide opportunities to site landfill gas facilities which convert methane into renewable energy, and WTE facilities generate baseload renewable electricity to power the grid or steam for manufacturing.

The International Solid Waste Association (ISWA)⁴ and other organizations have initiated a global campaign to close dumpsites. This campaign has the support of major U.S.-based solid waste associations. A similar effort was recently launched on a regional basis in Latin America and the Caribbean.⁵ The U.S. government should support these organizations and these efforts.

Specifically, the United States should offer technical assistance and capacity building on how to properly close a dumpsite and provide for post-closure care, as well as expand its programs on how to plan for and properly construct and operate modern disposal, material recovery, and energy recovery facilities. The United States should also assist efforts that quantify the health and environmental consequences of improper waste management and provide innovative financing options to expedite the transition from open dumpsites to more modern and environmentally protective solid waste management facilities. Further, the United States should support efforts by all levels of government to establish the policies and infrastructure required for investment in a broad range of advanced solid waste management and processing, energy, and material recovery facilities, including regular curbside collection of both waste and recycling. Collectively, these facilities also contribute to a reduction in greenhouse gas emissions.

Thank you for your consideration of this recommendation and the Administration's efforts to reduce GHG emissions and marine litter, which would be advanced by implementation of this recommendation.

Sincerely,



William Decker
ETTAC Chair

CC: EPA Administrator Michael Regan

⁴ ISWA started the campaign in 2017 and has established a Task Force to manage it. <https://www.iswa.org/closing-the-worlds-biggest-dumpsites-task-force/?v=7516fd43adaa>.

⁵ <https://www.unep.org/events/publication-launch/high-level-launch-roadmap-closure-dumpsites-latin-america-and-caribbean>

November 17, 2021

The Honorable Gina Raimondo
Secretary
U.S. Department of Commerce
1401 Constitution Ave., NW
Washington, DC 20230

**RE: Increased U.S. Participation in Global Environmental Procurement
ETTAC Recommendation 2021-02**

Dear Secretary Raimondo:

The Environmental Technologies Trade Advisory Committee (ETTAC) has identified a need to engage the U.S. Government (USG) Interagency community in order to foster greater collaboration among the World Bank, other multi-lateral lending institutions, and the U.S.-based providers of environmental goods and services.

We respectfully request your leadership in convening an executive-level roundtable discussion that would include major stakeholders, including U.S. companies, associations, representatives from the World Bank and other institutions, and relevant USG agencies (e.g., Departments of Commerce, Treasury, Defense, and State, Environmental Protection Agency, U.S. Agency for International Development, U.S. Trade and Development Agency, U.S. Export-Import Bank).

We envision the outcome of this roundtable to be a roadmap for greater U.S. business participation in global environmental procurement. As you may know, U.S. companies currently receive a very small share of available World Bank opportunities although the U.S. contributes 16.32 percent of the Bank's overall budget. Consequently, there is clear opportunity for growth should more U.S. firms choose to compete for World Bank and other funded projects.

The agenda for the roundtable should cover each stage of the procurement process, including tender, contract award, and implementation. Specific topics for discussion would include promoting greater transparency about the contract award process, establishing improved communications channels, and reducing project transaction costs for the U.S. environmental solutions providers. One additional suggestion highlighted in our deliberations was the provision of routine and timely debriefs to non-selected bidders at the end of procurement process.

We would also like to discuss the desirability of accelerated access to upcoming tenders and funding, as well as new and more effective advocacy on behalf of U.S. companies, either from the World Bank and other institutions directly or through the existing Advocacy Center.

We recommend that this roundtable be held on March 9, 2022 (either virtually or in-person) in conjunction with our Committee's schedule meeting in Washington, DC. This timing will facilitate participation from a wide array of U.S, environmental technology company representatives, including those who already be in town for the scheduled ETTAC meeting. Having the roundtable in Washington should also be convenient for the World Bank and other multilateral lending institutions.

The ETTAC members stand ready to assist you and your Department in planning and executing this meeting. However, we strongly believe that a meeting convened by the Secretary will be vital in attracting the appropriate executive, e.g. vice-president level representation from the World Bank and other institutions.

Thank you for your consideration.

Respectfully,

A handwritten signature in black ink, appearing to read 'W. Decker', with a long horizontal line extending to the right.

William Decker,
ETTAC Chair

January 19, 2022

The Honorable Gina M. Raimondo
Secretary
Department of Commerce
1401 Constitution Ave, N.W.
Washington, D.C. 20230

RE: Kigali Amendment
ETTAC Recommendation 2021-03

Dear Secretary Raimondo:

The Environmental Technologies Trade Advisory Committee (ETTAC) is a federally established committee whose purpose is to advise on the policies and procedures of the U.S. government that affect environmental technology, goods, and services exports. In this capacity, we appreciate the opportunity to provide these comments and suggestions regarding the Administration support for the Kigali amendment to the Montreal Protocol to phasedown hydrofluorocarbons (HFCs).

We commend the Administration for sending the amendment to the Senate for ratification. Ratification would help secure America's place as the global leader transitioning to lower global warming potential (GWP) technologies, provide access to global markets, and give American workers an advantage against global competitors.

HFCs are compounds typically used as refrigerants, foam-blowing agents, etchants, solvents, propellants, and fire suppressants, providing critical services to communities across our nation.

American companies have been active participants in the evolution of the Montreal Protocol and its implementation in the United States for more than 30 years through Presidential Administrations of both parties. Implementation of the Kigali amendment worldwide is projected to increase U.S. manufacturing jobs by 33,000, stimulate \$12.5 billion in new investment in the U.S. economy, and boost HVACR exports by 25 percent.¹ A growing recycling sector for current products also underscores the potential long-term value to consumers.

In addition to ratifying the treaty, we must address the current unfair and potentially illegal trade practices involving the dumping of products and equipment in U.S. markets priced below the cost of manufacturing.

1

https://www.ahrinet.org/App_Content/ahri/files/Resources/Economic_Impacts_of_US_Ratification_of_the_Kigali_Amendment.pdf

Therefore, we urge the Department to work with your interagency colleagues and members of the U.S. Senate to ensure timely ratification of the Kigali amendment.

Sincerely,

A handwritten signature in black ink, appearing to read 'W. Decker', with a long horizontal flourish extending to the right.

William Decker
ETTAC Chair

January 19, 2022

The Honorable Gina M. Raimondo
Secretary
Department of Commerce
1401 Constitution Ave, N.W.
Washington, D.C. 20230

RE: Environmental Sector Workforce Development to Enhance U.S. Export Opportunities
ETTAC Recommendation 2021-04

Dear Secretary Raimondo:

The Environmental Technologies Trade Advisory Committee (ETTAC) is a federally established committee whose purpose is to advise on the policies and procedures of the U.S. government that affect environmental technology, goods, and services exports. This letter is to urge you to collaborate across U.S. government agencies to address significant challenges related to the aging environmental services and technology sector workforce. This issue is directly linked to our capabilities to develop, deploy, and adopt innovation in the communities across our nation and the world.

Similar to many technology-based fields, the growing environmental technology and services sector faces significant challenges in recruiting, training, and retaining employees. These challenges are made more significant by the aging professional workforce and lack of technical training and certifications to build key skills and competencies to attract younger workers.

Here are several suggestions to improve and leverage the private sector's environmental technologies and services sector workforce priorities to more fully realize the export objectives of the United States:

- Build on the Memorandum of Understanding between EPA and USDA on water workforce issues to include other environmental media and disciplines (e.g., air, climate, resilience, and waste) and USG partners, such as Department of Commerce, U.S. Army Corps of Engineers, U.S. Department of the Interior and its agencies to leverage expertise and collaboration in growing and integrating programs on sustainability and the federal and private workforce that can be deployed across the U.S. and as well as export markets.
- Partner with EPA and the U.S. Department of Labor to broaden the current technical training and community college degrees' programs to improve the skills and competencies for a successful environmental services and technologies workforce transition that promotes more innovation and effective sustainability and environmental management that can enhance the export of environmental technologies and services.
- Engage the Department of Homeland Security to discuss approaches to increasing available visas (e.g., H1B and others) to bring required technical experts from the international community, as domestic workers are trained to establish export business collaborations with the home countries of the technical experts.
- Identify priority markets and associated workforce needs for which the private environmental technology and services sector can contribute to building smart, modern, resilient infrastructure

and provide market intelligence to ease market entry and bolster exports for U.S. environmental technology companies in specific international markets of interest.

- Expand federal funding to accomplish the above objectives.

We recommend scheduling a roundtable with industry leaders and the interagency community to outline approaches to begin to propose solutions to these issues and stand ready to assist you in this effort.

Sincerely,

A handwritten signature in black ink, appearing to read 'W. Decker', with a long horizontal flourish extending to the right.

William Decker

ETTAC Chair

January 19, 2022

The Honorable Gina M. Raimondo
Secretary
Department of Commerce
1401 Constitution Ave, N.W.
Washington, D.C. 20230

RE: Basel Convention and the Circular Economy
ETTAC Recommendation 2021-05

Dear Secretary Raimondo:

The Environmental Technologies Trade Advisory Committee (ETTAC) is a Federally-established committee whose purpose is to advise on the policies and procedures of the U.S. government that affect environmental technology, goods, and services exports. In this capacity, we appreciate the opportunity to provide these comments and suggestions regarding the Basel Convention.

Although the U.S. signed the Convention in 1990 and received Senate advice and consent for ratification in 1992, it was never implemented. Currently, there are 188 Parties to the Convention. ETTAC recommends that the United States formally join the Basel Convention and pass needed implementing legislation.

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal controls the international trade in hazardous wastes and certain other wastes through a "notice and consent" or prior informed consent (PIC) process for the export of applicable waste. As such, trade in such wastes cannot take place without the importing country's consent or when the wastes will not be handled in an environmentally sound manner.

In general, the U.S. does not engage in exporting large amount of hazardous wastes to other countries. However, it does engage in the trade of recyclable materials, often termed "waste." These recyclable materials are key to a circular economy and provide important inputs into many final U.S. technologies, products, and services. However, in 2019, the Basel Convention was amended in a way that subject the majority of exports of non-hazardous plastic recyclables and electronic wastes to the Convention's PIC requirement beginning in 2021. Even worse, the Convention's restrictions on non-party trade essentially eliminates the possibility for U.S. exporters to trade with most other countries. Limited exceptions exist under Article 11 of the Convention.

Article 11 of the Basel Convention provides that Parties may enter into agreements or arrangements allowing transboundary movement of applicable materials with non-

Parties provided that they maintain environmentally sound management similar to those provided for by the Convention.

An example of such an arrangement includes the 2020 Arrangement Between the Government of the United States of America and the Government of Canada Concerning the Environmentally Sound Management of Non-Hazardous Waste and Scrap Subject to Transboundary Movement which addresses the non-hazardous plastic recyclables recently added to the Basel Convention.

Currently, EPA has authority under the U.S. Resource Conservation and Recovery Act to control transboundary movements of most hazardous recyclables and waste, but not all Basel-controlled waste, under the amended Convention.

The United States Interagency Community should work with Congress to pass Basel Convention implementation legislation and explore other options for strengthening U.S. participation in the Convention.

Marine litter and ocean plastics pollution is a global challenge that requires a comprehensive internationally recognized instrument providing guidance to all nations. As such, we had previously recommended that the U.S. support calls for such an instrument, as progress continues in the United Nations Environment Assembly.

We also encourage environmentally sound management practices to support protection of human health and the environment including a circular economy that reuses valuable resources and promotes free market solutions. Supporting a circular economy and protecting the ocean from marine litter should not be mutually exclusive activities. To that end, we encourage the U.S. to consider options for strengthening U.S. participation in the Basel Convention while identifying ways to enhance practices to ensure that environmentally sound management of scrap and recyclable materials can benefit circular economy approaches.

We appreciate the Administration's consideration of these comments and suggestions.

Sincerely,

A handwritten signature in black ink, appearing to read 'W. Decker', with a long horizontal flourish extending to the right.

William Decker
ETTAC Chair

January 19, 2022

The Honorable Gina M. Raimondo
Secretary
Department of Commerce
1401 Constitution Ave, N.W.
Washington, D.C. 20230

RE: Marine Litter and Ocean Plastic
ETTAC Recommendation 2021-06

Dear Secretary Raimondo:

The Environmental Technologies Trade Advisory Committee (ETTAC) is a Federally-established committee whose purpose is to advise on the policies and procedures of the U.S. government that affect environmental technology, goods, and services exports. In this capacity, we appreciate the opportunity to provide these comments and suggestions regarding a future international treaty addressing marine litter and ocean plastics, which will be discussed at the United Nations Environmental Assembly (UNEA) meeting next month in Nairobi.

ETTAC is pleased that Secretary of State Blinken announced in November 2021 that the United States will support the development of a global instrument governing marine litter and ocean plastic pollution. The amount of plastic in the oceans is unacceptable from both a human health and environmental perspective and global plastic production is expected to increase significantly in coming decades.

In August 2021, the State Department hosted a stakeholders' meeting to obtain input on whether the United States should support the development of such an instrument. Several members of the ETTAC participated in the State Department's stakeholders' meeting.

In consideration of the questions posed at the stakeholders' meeting and after additional review and discussion, ETTAC offers the following recommendations:

1. The instrument should contain both binding and non-binding provisions, and should establish impactful roles for stakeholders other than national governments, including sub-national governments, industry, non-governmental organizations, and others.
2. The scope of this instrument should:
 - i. Comprehensively assess the current scope of the issue, including reviewing current literature, assessing impacts, identifying potential obstacles, and identifying future challenges that could exacerbate the problems (e.g., extreme weather);
 - ii. Establish short term, mid-term and long-term targets;

- iii. Reduce the disposal of discarded plastic and other waste materials into waterways by encouraging the development of modern solid waste management systems that capture discarded materials, including mixed plastics, before they enter the environment. Most land-based plastic entering the marine environment is the result of poor solid waste infrastructure. In order to combat this issue, each country needs to have adequate systems in place. Resources should be explicitly allocated to ensure that adequate infrastructure is available to manage this material. This includes intercepting waste that does enter waterways, as well as:
 - a. Collection systems (i.e., trucks, containers)
 - b. Transfer stations
 - c. Sanitary landfills with environmental controls, including greenhouse gas emissions controls;
- iv. Encourage alternative management options for discarded plastics, including:
 - 1. Improving recycling
 - 2. Increasing recycled content in plastics
 - 3. Eliminating unnecessary use of packaging
 - 4. Reducing virgin plastic consumption;
- v. Provide for capacity building and technical assistance to assist developing countries and others;
- vi. Consider innovative financing mechanisms to expedite implementation of modern waste management systems;
- vii. Call for research on microplastics and mechanisms to address their impacts, including filtration devices at wastewater treatment facilities and on washing machines; and
- viii. Explore techniques that can remove plastics from the ocean and other waterways in an environmentally sound manner.

Marine litter and ocean plastics pollution is a global problem that requires a comprehensive internationally recognized instrument providing guidance to all nations. We fully support the United States' efforts to combat this challenge.

We appreciate the Administration's consideration of these comments and suggestions.

Sincerely,



William Decker
ETTAC Chair

CC: Secretary of State Antony Blinken
EPA Administrator Michael Regan

January 19, 2022

The Honorable Gina M. Raimondo
Secretary
Department of Commerce
1401 Constitution Ave, N.W.
Washington, D.C. 20230

RE: Energy Transition Metals
ETTAC Recommendation 2021-07

The Environmental Technologies Trade Advisory Committee (ETTAC) is a federally established committee whose purpose is to advise on the policies and procedures of the U.S. government that affect exports of U.S. environmental technology and services. In this capacity, we appreciate the opportunity to provide the following recommendations to support securing U.S. access to raw materials for the energy transition by incentivizing growth in safe, equitable, and sustainable domestic mining and recycling ventures while leveraging partnerships with allies and partners to establish a diversified supply.

We are writing to support the Administration's agenda, which seeks to address the climate crisis and build a clean and equitable energy economy and puts the United States and its partners on a path that will establish a secure battery materials and technology supply chain. As countries across the globe look to meet decarbonization goals, both access to critical energy transition metals and an ability to purify and refine these metals either domestically or via our international partners, is essential for supporting long-term U.S. economic competitiveness and equitable job creation, enabling decarbonization, advancing social justice, supporting the export of US Environmental technologies and services, and meeting national security requirements.¹ The Administration could take actions that would greatly bolster the competitive landscape for the U.S. environmental technology sector by improving access to a domestic supply of critical metals required for this energy transition.

The ETTAC recommends:

- Providing expanded incentives and investment in public private partnerships aimed at enabling domestic mining, processing and refining ventures that are focused on energy transition metals to rapidly adopt advanced, environmentally sound technologies and methods that will:
 - Enable new mines, processing plants and refineries to be permitted quickly and responsibly.

¹ National Blueprint for Lithium Batteries: Jennifer M. Granholm, Secretary of Energy U.S. Department of Energy, June 2021

- Ensure the communities in which they operate that the mines and facilities will be operating at the highest possible environmental standards so that the communities can confidently award them a social license to operate.
- Continue to strengthen bilateral trade agreements with key partner nations around the energy transition and its supply chain.

The impact of these measures would be to help:

- Ensure global market competitiveness of domestic critical minerals processing and refining facilities.
- Mitigate reliance on imports from non-allied countries and facilitate long term access to stable domestic supplies of critical minerals
- Increase domestic employment in the mining and minerals industries, offsetting reductions stemming from the energy transition.
- Develop and enforce global supply chain visibility requirements that are designed to ensure domestic production and imports are utilizing responsibly sourced metals that are produced in a manner consistent with the environmental, health and safety standards expected of domestic producers.
- Establishing and supporting U.S. industry to rapidly implement a secure domestic energy metals recycling ecosystem to reduce constraints imposed by materials scarcity, enhance environmental sustainability, and support a U.S.-based circular materials supply chain. This support should include:
 - Investment in research, development, demonstration and scaling of technologies to more efficiently and economically collect, recycle and reuse critical metals at end of life.
 - Incentives to stimulate the use of recycled critical metals into the production of new products and technologies.
- We further recommend expanded and enhanced government subsidies and tax incentives to further promote U.S. business activities during the energy transition.

In conjunction with these recommendations, the ETTAC expresses its support of the following as expressed in the Administration’s 100 Day Report:

“The U.S. Government, working in partnership with the private sector and other stakeholders, should encourage the development of new sustainability standards for designated strategic and critical materials to conduct due diligence, eliminate sources of unsustainable production, and accelerate Federal and commercial purchasing of sustainable products. A recognized sustainability standard, potentially backed by legislation, and coordinated with trading partners, would encourage private sector investment in sustainable sources and increase supply chain resilience.”

We value your commitment to these issues and look forward to working closely with you to support the Administration’s efforts to address the climate crisis and build a clean and

equitable energy economy that enables responsible growth of U.S. environmental exports
advancing the global energy transition.

Sincerely,

A handwritten signature in black ink, appearing to read 'W. Decker', with a long horizontal flourish extending to the right.

William Decker
ETTAC Chair

The ETTAC makes these recommendations in recognition of and in context of the following facts:

- The global energy transition is dependent on a selection of metals and minerals that are exhaustible and often scarce.
 - Key technologies that are the foundation for the energy transition include: Wind, solar photovoltaic, concentrated solar power, hydro, geothermal, energy storage (including batteries and charging infrastructure), nuclear, coal, gas, carbon capture and storage.
 - These energy transition technologies require the following minerals and metals: aluminum, chromium, cobalt, copper, graphite, indium, iron, lead, lithium, manganese, molybdenum, neodymium, nickel, silver, titanium, vanadium and zinc.
 - All these minerals and metals are exhaustible and non-renewable resources, rapidly depleting against the background of consumption intensity and the increasing demands of the energy transition.
- The Asia-Pacific region has dominated the battery metals market and accounts for up to 90% of its value.
 - Over the past decade, China has cut off the supply of critical minerals twice, such as rare earth and its concentrates, to Japan and the United States.
 - To the extent that these critical minerals are imported to the U.S. and our allies as part of products or as raw material, having the capacity to recycle these metals domestically would enable the U.S. to expand its access to these minerals without having to mine or re-import them.
- New or expanded domestic production must be held to modern standards for environmental protection, best-practice labor conditions, and rigorous community consultation, including with tribal nations.
 - The time to begin commercial mine production after successful exploration (the so-called “lead time III”) has significantly increased during the last two decades. Cobalt mines, for example have shifted this time frame from a medium of 8 years to 12 years.²
 - Continuing to rely on importation of these metals means U.S. supply chains are dependent on resources from countries who may be associated with low environmental standards, child labor, indigenous rights abuses, and/or geopolitical challenges.

² Assessing the adequacy of the global land-based mine development pipeline in the light of future high-demand scenarios: The case of the battery-metals nickel (Ni) and cobalt (Co).

March 09, 2022

The Honorable Gina Raimondo
Secretary
U.S. Department of Commerce
1401 Constitution Ave., N.W.
Washington, DC 20230

RE: Multilateral Development Bank Procurement Barriers and Transaction Cost Questions
ETTAC Recommendation 2021-08

Dear Secretary Raimondo:

We appreciate your positive response to our recommendation to convene multilateral development banks with the interagency and business communities to address barriers to U.S. firms pursuing procurements. We are writing to highlight key barriers facing U.S. companies and request that you work with your team to push our questions and suggestions forward that can help prepare for implementation of this important and timely session.

The Environmental Technologies Trade Advisory Committee (ETTAC) is a federally established committee whose purpose is to advise on the policies and procedures of the U.S. government that affect U.S. environmental technology exports. The U.S. environmental industry supports over 1.6 million jobs and generates over \$345 billion in revenue annually. In this capacity, we appreciate the opportunity to provide the following recommendations:

Barriers

The following are examples of barriers that discourage U.S. business engagement in multilateral banks procurements:

- **Cost**

Labor is more expensive in the U.S. than in other countries. When procurements are based on the lowest cost or a percentage of a technical proposal evaluation, U.S. firms will not qualify.

To be technically competitive, companies must not only be experts in the subject matter but also knowledgeable in the country context. This issue requires significant investments in information gathering and travel to the country for several weeks to meet with stakeholders. The cost for international travel, lodging, meals, in-country travel, and identifying the right in-country experts is prohibitive.

- **Risk**
 - Perceived corruption with foreign-led procurements, albeit funded by the World Bank.
 - Not being paid.
 - Governing laws (e.g., U.S. or host country).
 - Complexity of setting up local operations.
 - The potential for debarment for the entire company.
 - Finding trusted local partners qualified to implement projects.

A discussion on the role various stakeholders (e.g., World Bank and host country) play in procurement and contract implementation would be beneficial.

Risks regarding the clarification process for the host country are often not addressed.

- **Limited information**

The World Bank project cycle consists of five phases.

- Identification
- Preparation
- Appraisal
- Negotiations
- Implementation

The World Bank for instance suggests that contractors begin to make contacts with country officials during the Preparation stage, but often there is not enough information about the project to justify the expense for international travel and local engagement until much later in the process.

- **Time value of money**

For the majority of U.S. firms, the domestic market is the primary market. There is an opportunity to establish trusted client relationships that are built through ongoing interaction and communication. Significant time and resources are dedicated to cultivating these relationships. World Bank procurements do not lend themselves to the same long-term relationship-building environment, unless a firm has an existing presence in a project country. There is little benefit to expending resources to establish the same degree of relationship for a project that may only last 5 years, especially when one considers the dollar value of the procurement.

Possible Questions

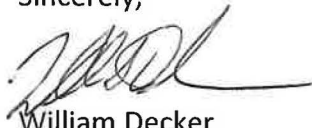
- What are the strategies to increase participation of U.S. environmental technology firms in multilateral tenders?

- How can we reduce transaction costs associated with multilateral tenders, including possible fast-track approaches for international bidders?
- What are near-term solutions such as a potential pilot program to explore implementation options?
 - Shortlisting a group of firms to submit proposals for the set of international procurements would narrow the playing field and allow U.S. firms to more confidently pursue multiple procurements under one project.
 - Issue a framework contract for a project or technical field (e.g., road safety).

One possible opportunity is to convene a regular, annual Reverse Industry Day (RID) to provide World Bank/multi-lateral bank professionals with opportunities to learn about the issues/concerns that are most important to industry when doing business with them. During these events, panels could feature industry leaders addressing audiences of acquisition professionals who can further learn how to enhance the multi-lateral business environment and address the challenges faced.

We look forward to providing additional detail in advance of any discussions with the World Bank. Please feel free to contact us if you require additional information.

Sincerely,



William Decker

ETTAC Chair

March 09, 2022

The Honorable Gina M. Raimondo
Secretary
Department of Commerce
1401 Constitution Ave, N.W.
Washington, D.C. 20230

Re: Project Finance
ETTAC Recommendation 2021-09

Dear Secretary Raimondo:

The Environmental Technologies Trade Advisory Committee (ETTAC) is a federally-established committee whose purpose is to advise on the policies and procedures of the U.S. government that affect environmental technologies, goods, and services exports.

ETTAC recommends that United States government agencies that provide assistance regarding project financing of environmental projects in other countries, including the Treasury Department, the Development Finance Corporation, and the Export-Import Bank, support clarity, transparency, and best practices for project finance of solid waste projects. The U.S. government's engagement in developing nations to facilitate and shape solid waste policy and the impacts it has on the environment, economy, and economic development is critical for meaningful participation by U.S. companies providing solid waste management goods and services across technologies. This guidance should include fundamentals including the need for consistent, convenient access to solid waste and recycling collection programs at affordable rates with actionable milestones and deadlines.

Sustainable solid waste management technologies and systems including waste-to-energy facilities, landfills and recycling can each have a positive impact beyond the climate benefits of advanced solid waste management. They also can provide renewable energy sources, while mitigating or reducing methane emissions. The benefits of these facilities are significant and can help developing economies achieve greater, sustained climate reductions while building critical and resilient municipal infrastructure.

A key component in delivering sustainable solid waste management projects, is the availability and utilization of project finance as the primary debt financing tool. Based on experience financing solid waste projects and review of project finance feasibility issues, it is evident that successful projects will need to address and fulfill a number of key criteria. These criteria include:

- **The provision of a clearly defined legislative and contractual risk allocation for the duration of the concession agreement.** Successful project finance relies on the clarity of the underlying contracts/concessions more than any other type of finance. This

reality is because the primary security of project finance lenders is endowed by the rights afforded by the relevant concession and project contracts. In addition to contractual clarity, the credit behind governmental entities' contractual undertakings is of high concern to US companies and their lenders. Acceptable credit enhancement could take one of several forms, including a guaranty of performance from another governmental entity with a higher credit rating.

- **The provision of a direct agreement between the key public sector counter parties and the project finance lenders.** In limited recourse/non-recourse project finance, the principal form of security for the lenders for developer default is to have a direct agreement with the key public sector counterparty(s) which sets out a process whereby the lenders can assess and step-in to rescue a project prior to the procuring authority exercising its rights to terminate the concession and related agreements.
- **An exhaustive list of events which may lead to withdrawal of the concession agreement.** These events need to be capable of withstanding objective evaluation, thereby ensuring that withdrawal is regarded by all parties as an proportionate response to the relevant event, given the level of equity and debt finance that will be committed to the project. Similarly, the relevant remedial rights and associated rectification periods should be clearly defined in order to provide further certainty for all concerned.
- **Provisions allowing for compensation upon termination of the concession agreement following: (i) Key public sector counterparty default; (ii) concession holder default; (iii) force majeure termination; and (iv) planning/permitting/consent failure termination.** Lenders will be keen to ensure that the compensation is payable in these circumstances to reflect benefits that have resulted to date from the provision of project finance debt.
- **A detailed list of "supervening events" that will provide relief from liability and termination for poor performance during construction and operations.** Such events would include storms, bursting pipes/tanks, earthquakes, utility company failure, power or fuel shortages, blockades/embargoes, strikes, loss of goods/materials and others typically seen in project financings for waste projects. Supply chain disruptions resulting from the COVID-19 pandemic fall into this category.
- **Protections against future unforeseeable changes in law or to the concession agreement given the proposed duration of the concession agreement.** This is typical for infrastructure project financings where changes in law could have a significant impact, including on the underlying operating costs of the project.
- **In the event a governmental entity is not the counterparty to a solid waste-related agreement, clarity concerning how the concession and related contracts will deal with circumstances where the counterparty is no longer able to perform as purchaser of the energy under the agreement (for example, because the counterparty's concession has expired or been withdrawn).**
- **Confirmation as to the exclusivity over waste to be granted to the project developer and the extent to which minimum tonnages of waste will be provided by the government counterparty under any proposed structure.**

Thank you for your consideration of this recommendation.

Sincerely,

A handwritten signature in black ink, appearing to read 'W. Decker', with a long horizontal flourish extending to the right.

William Decker
ETTAC Chair

May 17, 2022

The Honorable Gina Raimondo
Secretary
U.S. Department of Commerce
1401 Constitution Ave, NW
Washington, DC 20230

RE: Recommendation from the Environmental Technologies Trade Advisory Committee on the Indo-Pacific Economic Framework
ETTAC Recommendation 2021-10

Dear Secretary Raimondo:

The Environmental Technologies Trade Advisory Committee (ETTAC) is a federally established committee whose purpose is to advise on the policies and procedures of the U.S. government that affect environmental technology, goods, and services exports. In this capacity, we appreciate the opportunity to provide the following recommendations to support U.S. goals and objectives in conceiving, launching, and advancing negotiations under the Indo-Pacific Economic Framework (IPEF).

We are writing to support the Administration's agenda, which we understand aims to secure meaningful commitments from IPEF partners that are commercially significant and that reflect the Administration's emphasis on pursuing trade policy strategies and approaches that promote the global competitiveness of American workers and businesses, while advancing decarbonization and promoting sound environmental practices. The Indo-Pacific region is dynamic, economically vital, and strategically important. Strengthening economic engagement with IPEF partner countries can have myriad positive effects across the 4 pillars identified by the Administration¹ and deep impacts in priority areas, such as but not limited to supply chains, climate mitigation and environmental protection.

Although high customs tariffs are an impediment in our sectors, we recognize that the Administration is focused in the IPEF on addressing other types of market barriers that prevent U.S. business and workers from competing effectively in the region. Working with like-minded countries, the Administration is well positioned to secure IPEF commitments that encourage free trade and lower tariffs and will improve supply chain resiliency and export prospects for U.S. companies and workers in the environmental technology sector.

The ETTAC recommends:

- Climate:
 - Collaborate on and coordinate initiatives and programs to support timely and meaningful progress on IPEF members' COP26 commitments and provide opportunities for ETTAC and other environmental technology sector companies to engage in support of solutions.

¹ Fair and resilient trade; supply chain resilience; infrastructure, clean energy, and decarbonization; and tax and anti-corruption.

- Ensure access to opensource climate related data, models, and tools from global and developing countries.
- Provide capacity building in the region to strengthen knowledge, abilities, and skills of individual companies and improve institutional structures and processes around emission reduction targets on which companies can contribute.
- Circular economy, recycling, resource recovery, and waste management:
 - Pursue commitments that reduce waste, improve recyclability, and support development and execution of circular economy strategies.
 - Address regulatory barriers to capitalizing on – at scale, as raw materials to be recovered and fed into production process for new goods – stores of critical minerals embedded in used technology and consumer products, such as electronics, batteries, and other key high-technology products. This workstream includes addressing international rules that limit the safe and lawful transboundary movement of “waste” materials between trusted partners in order to create “resource recovery lanes” among trusted partners overseen by willing governments, including actions consistent with the Basel convention.
 - Build on and extend good work from existing regional initiatives, including the recyclable plastic materials program from APEC
- Digital services:
 - Recognize that agreement on digital trade principles (cross-border data flows, etc.) supports effective deployment of many environmental technologies.
- Local content requirements:
 - Seek to remove such requirements for environmental technologies. If this is not possible, seek a commitment from IPEF members that local content requirements for environmental projects can be met by cumulation of IPEF member that goods and services (e.g., content or value added by any other IPEF members used on an environmental project will be counted toward meeting any existing “local/domestic content” requirements).
- Government procurement:
 - Promote transparency and decision-making based on best-value and life cycle costs rather than first-cost, lowest bid.
- Technical standards:
 - Advance acceptance by IPEF members of standards that will open the markets of participating economies to environmental technologies.
 - Achieve acceptance of U.S.-developed international standards by proliferating the USMCA TBT chapter definition of international standards, which clarifies the CPTPP definition.
 - Promote wider involvement by IPEF members in standards development
- Good regulatory practices:
 - Build on USMCA GRP chapter.
- Multilateral Environmental Agreements (MEAs):
 - Enforce and support capacity building to enable compliance with MEAs.
 - Take measures to build capacity for future and emerging agreements such the United Nations Environment Assembly legal instrument to combat plastic pollution.

- Sustainability principles
 - Develop common and shared principles to ensure that national and regional approaches to sustainability to reach regional environmental goals and targets (e.g., emissions, waste, and water reduced, and increased circularity) are consistent with the international rules-based trading systems.
- Water
 - Promote water reuse and recycling and technology innovation to address water scarcity challenges in the region.

We look forward to working with you to implement these recommendations and stand ready to assist you.

Sincerely,

A handwritten signature in black ink, appearing to read 'W. Decker', with a long horizontal flourish extending to the right.

William Decker
ETTAC Chair

CC: Antony Blinken, Secretary of State
Ambassador Tai, U.S. Trade Representative

May 17, 2022

The Honorable Gina Raimondo
Secretary
U.S. Department of Commerce
1401 Constitution Ave., N.W.
Washington, DC 20230

RE: Buy America Implications on Environmental Technology Sector
ETTAC Recommendation 2021-11

Dear Secretary Raimondo:

We are writing to request that you convene the U.S. government interagency community with programs related to implementation of the Infrastructure Investment and Jobs Act or Bipartisan Infrastructure Law (BIL) with the business community to discuss consistent and timely development of the Buy America provisions.

The Environmental Technologies Trade Advisory Committee (ETTAC) is a federally established committee whose purpose is to advise on the policies and procedures of the U.S. government that affect U.S. environmental technology exports. The U.S. environmental industry supports over 1.6 million jobs and generates over \$345 billion in revenue annually.

The ETTAC appreciates and agrees with the Administration's efforts to build our domestic manufacturing base including onshoring key technical sectors and supported the additional funding provided by the BIL that will catalyze modern, resilient infrastructure. However, we are concerned over the implementation of the law and the effect the Buy America provisions could have on environmental exports as well as domestic projects.

The BIL took effect on May 14, 2022, and we are currently waiting on the EPA implementation procedures, which are not expected to be released until subsequent to the statutory deadline. As implementation proceeds, we encourage that products from countries with free trade agreements with the U.S. to be considered as domestic products. Many U.S. manufacturers have spent the last twenty years or more globalizing our supply chains to enhance our competitiveness in U.S. and global markets; and to increase our supply chain resiliency. In some limited cases, we can onshore production that was moved offshore or we can shift our supply chains for domestic production in lieu of lesser expensive offshore fabrication, but both of those depend on availability of domestic capacity and adequate time to ramp-up production. In other cases, we have businesses that manufacture technologies developed abroad that have been introduced into the domestic market but were never manufactured in the U.S.

As we strive to increase our domestic content, we are forced to either maintain two sources for materials or to pass along increases to our international customers. Both of these options present

serious challenges as inflation increases and will decrease our global competitiveness. In many cases, these additional costs will be passed along to customers in the U.S., and these costs will remain high until such time as sufficient factory capacity is brought online within the U.S. Examples of this scenario are foundries, motor manufacturers, electronics, steel mills, and many others. In some cases, these businesses will face long environmental review/approval processes for permitting further deterring domestic onshoring. This is a serious concern for the environmental industry especially water and energy where this rapid schedule seems impractical without some additional waivers. We understand that some are being considered but do not have transparency on the details at this time.

Additionally, as we currently understand the OMB guidance, labor is to be excluded from the calculations of the 55% domestic content for the end manufacturer although it can be included for products made downstream and sold to the end manufacturer. Many of our products are labor intensive and involve skilled trades at various steps in our manufacturing process from design through manufacturing to final assembly. These jobs are the reason that the bill was passed and are the value that American manufacturers bring to the market through product innovation, efficiency, etc. We believe this guidance of 55% on our material costs without the inclusion of labor at the point of final manufacturing sends the wrong message to tradespeople, is not in the spirit of the law, and will hurt commerce both domestically and internationally.

We applaud the EPA's efforts to conduct listening sessions to address stakeholder concerns in their yet to be released implementation documentation, but we remain concerned about the unintended consequences of this mandate while the industry already faces massive supply chain disruptions in the short term. We believe the whole of government should carefully examine the extension of the already broad reach of domestic procurement rules to maintain the global competitiveness of U.S. industry, including innovations that reduce emissions and improve energy efficiency, and facilitate the infrastructure expansions contemplated within the BIL.

Stakeholder engagement and the strategic evaluation of Buy America requirements, as applied to specific sectors and products, should guide their implementation. The blanket application of Buy America across all infrastructure investments and critical industries will unnecessarily increase costs and force delays in execution. Short term waivers to Buy America requirements should be readily available, including in project categories such as EPA's recent announcement around WIFIA projects, to support project delivery and maintain domestic competitiveness where the onshoring of production capacity is not a national security imperative.

Given the rapidly approaching implementation deadline and the uncertainty created by Office of Management and Budget's recent guidance, we again ask that you expeditiously convene an interagency dialogue that includes impacted sector stakeholders most affected by Buy America implementation. This calls for more flexible implementation taking into account the pandemic, economic, energy, and supply chain challenges that have been further exacerbated in recent months. The dialogue should be structured to ensure a more open and transparent discussion

focused on a risk-based and strategic application of Buy America principles under manageable timeframes that account for industry, economic, environmental, and practical realities.

Please feel free to contact us if you require additional information.

Sincerely,

A handwritten signature in black ink, appearing to read 'W. Decker', with a long horizontal flourish extending to the right.

William Decker
ETTAC Chair

CC: Celeste Drake, Director, Made in America Office, OMB
Radhika Fox, Assistant Administrator for Water, EPA

May 20, 2022

The Honorable Gina M. Raimondo
Secretary
Department of Commerce
1401 Constitution Avenue, N.W.
Washington, D.C. 20230

RE: Environmental Technology, Goods and Services Industry Supply Chain Discussions
ETTAC Recommendation 2021-12

Dear Secretary Raimondo:

The Environmental Technologies Trade Advisory Committee (ETTAC) is a federally-established committee whose purpose is to advise on the policies and procedures of the U.S. government that affect exports of environmental technology, goods and services in the air, water, solid waste and recycling sectors. This includes small to large businesses and, trade associations. In this capacity, the ETTAC appreciates the opportunity to provide these comments and recommendations to help achieve policy goals of a more resilient, diverse and secure supply chain essential to U.S. environmental technology, goods and services providers.

U.S. manufacturers already understand too well the challenging global nature of current supply chains and they need support, including labor and infrastructure development, to overcome these challenges in order to expand domestic capabilities. Executive Order 14017 on America's Supply Chains, the subsequent 100-Day Reviews, a Capstone report including One-year Sectoral Assessments, reflect the initial efforts in identifying some supply chain vulnerabilities for key U.S. manufacturers. We strongly support the initiative, but this is only a start. Effective long-term solutions for improving the supply chain should be expanded.

Reflecting the fact that air, water, natural resources, solid waste and recycling sectors provide the foundation for all industry production, services, and commerce, as well as the fundamental basis for a circular economy essential to long-term human existence, these sectors must be included in the dialog around supply chain issues and solutions. Inclusion of these sectors is critical to meeting global climate goals.

The ETTAC recommends:

- Include representatives of the environmental technology, goods and services from the air, water, natural resources, waste, and recycling sectors in the future multi-stakeholder global summit identified in the 100-Day Supply Chain Report, to be organized by Department of Commerce and Department of State, and held in late 2022.
- The Department of Commerce, along with the Department of Energy, should hold one or more roundtable discussions on the effects of the supply chain on the environmental

technology, goods and services in the air, water, natural resources, solid waste and recycling sectors. We recommend interagency dialog with key industry representatives to understand the impact of the supply chain on achieving climate goals and the energy sector transition, as well as to collaboratively identify solutions to the challenges highlighted by the dialog.

- The Capstone report recommends a quadrennial report due in 2025 to look at the industrial bases outlined in the initial report as directed by Executive Order 14017. We recommend that the quadrennial report be more inclusive and representative of environmental technology, goods and services for air, water, natural resources, solid waste and recycling sectors in future assessments.
- Timely development of new processing and manufacturing facilities are needed to support the global energy transition and US competitiveness in environmental technology goods and services, reducing supply chain bottlenecks. To support these new facilities, we recommend applicable U.S. Government agencies (e.g. GSA, EPA, Army Corp of Engineers, CEQ) work with local and state governments to help them improve and streamline permitting and regulatory processes for construction sites, as well as develop incentives or dedicated program funds for infrastructure development (e.g. port access, roads, water supply, wastewater treatment, power, etc.) needed for such facilities.

We appreciate the Administration's consideration of these comments and suggestions.

Sincerely,



William Decker
ETTAC Chair

CC: Secretary of State Antony Blinken
Secretary of U.S. Department of Energy Jennifer Granholm
Army Corps of Engineers
Environmental Protection Agency
GSA
CEQ

May 20, 2022

The Honorable Gina M. Raimondo
Secretary
Department of Commerce
1401 Constitution Avenue, N.W.
Washington, D.C. 20230

RE: Recommended Changes to the Ex-Im Lending Terms for Climate Change Sector Understanding (CCSU)

ETTAC Recommendation 2021-13

Dear Secretary Raimondo:

The Environmental Technologies Trade Advisory Committee (ETTAC) is a federally-established committee whose purpose is to advise on the policies and procedures of the U.S. government that affect exports of environmental technology, goods and services in the air, water, waste and recycling sectors. This includes small to large businesses and, trade associations. In this capacity, the ETTAC appreciates the opportunity to provide these comments and recommendations to help achieve policy goals of a more resilient, diverse and secure supply chain essential to U.S. environmental technology, goods and services providers.

The CCSU lending terms, originally established for Ex-Im Bank Lending Criteria in early 2000's is currently under review by the U.S. delegation to the upcoming OECD meetings for potential renegotiation to allow for more flexible lending terms to increase export credit finance towards investments in climate and environment related projects.

Clean technologies, including renewables, energy transition, and other technologies, only comprise around 5 percent of all OECD ECA financing portfolios of over \$60 billion in annual exports, with Ex-Im lending representing even less. Ex-Im financing can not only increase competitiveness of US exports, counterbalancing other nations' international governmental funding programs, but also support US environmental exports to developing economies that that lack commercial financing viability, as well as provide more impetus for global adoption of emerging environmental technologies essential to global energy transition and de-carbonization.

The ETTAC recommends:

1) Revision of CCSU Lending Terms

Currently, the main incentive that the CCSU offers to qualifying transactions is an extension of Ex-Im maximum repayment term from 8-10 years, to up to 15 and 18 years, with Commercial Interest Rates ranging from 2.65-3.43%, and a 2% principal repayment within 18 months.

- We recommend the CCSU terms current extended repayment length remain intact, and that the premium rate be lowered below the current range, as well as consider reducing the down payment requirements, reflecting the fact that CCSU is incentivizing exports that would be burdened by too much risk (e.g. geopolitical, financial, emerging technology) for traditional commercial lenders.

- To facilitate projects exports to developing countries and emerging markets, the CCSU should have a separate set of lending terms. These terms should be even more flexible, offering reductions and extensions beyond the recommended CCSU terms outlined above in order to further incentivize transactions in these markets.

2) Expansion of Adaptation & Mitigation Project Terms

Since the CCSU amendment and inclusion in 2012, there have been no adaptation or mitigation projects funded under the current terms.

- The current list of project classes and mitigation technologies is too narrow. We recommend it be updated and expanded to include broader project types, including but not limited to those listed in appendix. This list should evolve consistent with technological advancements and market developments, and should have an annual process for reviewing and updating.
- Climate mitigation and adaptation technologies are often part of larger infrastructure project scopes and not stand-alone projects, such as how a new infrastructure project could be designed and built to withstand climate impact or facilitate human evacuation needed in a climate induced disaster. We recommend that the qualifications for adaptation project lending be expanded to allow for an allocated or attributable prorated percentage of project funding, based on a submission of measurement and calculations, to grant CCSU funding.

The ETTAC recommends these revisions to the CCSU eligibility criteria and lending terms to facilitate the exportation of innovative U.S. environmental technology for renewable energy and other climate change mitigation and adaptation projects, and increase Ex-Im financing gaps for U.S. investments in climate and environment related projects and exports.

We appreciate the Administration's consideration of these comments and suggestions.

Sincerely,



William Decker
ETTAC Chair

CC: Department of the Treasury
Export-Import Bank of the United States

APPENDIX

ADDITIONAL MITIGATION TECHNOLOGIES

For Consideration to Include in the Approved List for CCSU Funding

Project Class A: Carbon Capture, Utilization and Storage (CCUS)

TYPE 1: Fossil Fuel Power Plants with Operational Carbon Capture and Storage (CCS)

TYPE 2: CCS Projects as such

TYPE 3: CCS for Nat Gas Fired Stationary RICE and Turbines for Compression or EGU

TYPE 4 : Transport of captured carbon from source to storage

TYPE 5: Functional Utilization of Carbon Dioxide (not limited to storage)

TYPE 6: Utilization at chemical and other industrial (e.g. steel and concrete) non power generation facilities

TYPE 7: Direct Air Capture

TYPE 8: Bioenergy + CCS (BECCS)

TYPE 9: Criteria Pollutants, HAPS and GHG (carbon dioxide, methane, NOx, fluorinated gases) Measurement and Control

Project Class B: Fossil Fuel Substitution

TYPE 1: Waste to Energy

- Definition should be revised to “Unit dedicated to generating energy by treatment (including gasification) of solid waste and methane generated from waste.”

TYPE 2: Hybrid Power Plants

TYPE 3: Hydrogen Production

TYPE 4: Syngas

Project Class C: Energy Efficiency

TYPE 1: Combined Heat & Power Projects

TYPE 2: District heating and/or cooling

TYPE 3: Smart Grids

TYPE 4: Efficiency projects that reduce overall energy demand should be included

Project D: Decarbonizing Sectors

TYPE 1: High Temperature Industrial Processes (e.g. hydrogen production, cement production)

TYPE 2: Power Generation

TYPE 3: Transportation

TYPE 4: Marine and Ports

TYPE 5: Manufacturing (e.g. chemical, cement, steel, pulp & paper)

TYPE 6: Energy Storage (e.g. battery alternatives, pumped hydro storage)