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

2022-2024 Charter
Recommendations Package

1. Recommendation on Technical Exchanges and Market Intelligence Roundtables (June 2023)
2. Recommendations for U.S. Objectives in the UNEA Intergovernmental Negotiating Committee (INC) on Plastic Pollution (September 2023)
3. Recommendation on Engagement with the U.S. Trade and Development Agency (September 2023)
4. Recommendation on Low-Energy Water and Wastewater Treatment and Reuse (January 2024)
5. Recommendations for U.S. Government and Industry Support for the Fulfillment of the Global Methane Pledge (January 2024)
6. Recommendation on Carbon Management as it Pertains to 45Q Credits and Rules (January 2024)
7. Recommendation on Regulatory Trade Barriers Concerning PFAS (March 2024)
8. Follow-up Recommendations to the EXIM Bank Lending Terms for Climate Change Sector Understanding (CCSU) (May 2024)
9. Recommendation on Build America, Buy America (May 2024)
10. Recommendations Regarding Validation Services to Support U.S. Exports of Innovative Environmental Technologies (May 2024)

June 27, 2023

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

RE: Recommendation from the Environmental Technologies Trade Advisory Committee on Technical Exchanges and Market Intelligence Roundtables
ETTAC Recommendation 2023-1

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, the ETTAC is requesting that you convene the U.S. government interagency community and in-country experts to offer a series of technical exchanges and market intelligence roundtables with environmental technology sector companies. Such discussions would greatly bolster the competitive landscape for U.S. companies, which are often at a disadvantage with our international counterparts when entering foreign markets. Our sector is well-positioned to help the Administration meet our nation's ambitious climate and infrastructure agenda.

This effort should be a proactive follow-up from the *Environmental Technologies Top Markets Report* — turning research into action. U.S. companies could benefit from hearing about multiple U.S. government program opportunities within specific markets and be linked to potential customers and vice versa. The highest value top markets include Brazil, China, India, Indonesia, and Mexico. The recent trade mission to the UAE serves as an example and initial test of potential engagement among companies and U.S. government experts.

We urge you to work with the members of the Environmental Trade Promotion Working Group to address overall objectives for each roundtable:

- Explore the factors that have limited the engagement of U.S. environmental companies in providing solutions in key overseas markets.
- Highlight market opportunities for U.S. environmental companies and share U.S. government programs and projects to assist companies in engaging in the specific markets.
- Establish processes to better integrate data (e.g., Salesforce) on trade leads among multiple agencies (e.g., State and Commerce) to facilitate sharing prospects and opportunities at an earlier stage.
- Identify and compile current and needed U.S. company interests and actions in the market.

- Make recommendations for ways in which public and private sector participants can help address issues discussed.

The federal government has an appropriate convening role to ensure regular engagement to build U.S. trade opportunities in this space.

We appreciate the Administration's consideration of this recommendation and encourage you to act on the development of technical exchanges and roundtables immediately. We look forward to working with you to support their implementation and the growth of the U.S. environmental exports.

Sincerely,

Clare Schulzki

Clare Schulzki
ETTAC Chair

September 29, 2023

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

RE: Recommendations for the U.S. Objectives in the UNEA Intergovernmental Negotiating Committee (INC) on Plastic Pollution

ETTAC Recommendation 2023-2

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, trade associations and thought leaders. In this capacity, the ETTAC appreciates the opportunity to provide these comments and recommendations to help achieve policy goals that lead to more resilient, diverse and secure supply chains, including where the circular economy plays a key role, that are essential to U.S. environmental technology, goods and services providers and creates opportunities for their deployment in international markets.

The challenges related to plastic pollution are global issues, but their effects are widely felt across the United States. As companies and organizations that develop innovative solutions for sustainable product manufacturing and are providing leading-edge services, we have a great interest in seeing the global community come together to tackle plastic pollution, moving each and every nation up the waste hierarchy and expanding capacity and capabilities across all facets of a circular economy. No plastics should end up in the environment. For that reason, we support U.S. leadership in developing, and ultimately signing, an international instrument on plastic pollution. To make a real, positive and lasting impact on human and environmental health, we recommend that the international instrument combine binding and voluntary elements to tackle plastic pollution. This hybrid framework is essential to compelling all nations to take action while recognizing that no one-sized-fits-all approach can be obligated onto all nations.

Furthermore, industry must be a part of the dialogue. Industry currently provides the technology, goods and services to supply resources to manufacturers, deliver products to market, mitigate emissions, handle waste and recycle commodities. They are an essential partner in the international instruments implementation and ultimately cutting plastic pollution.

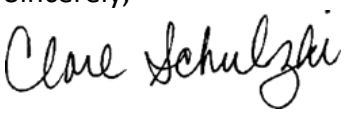
In light of the release of the agreement's "zero draft text," the ETTAC recommends the following provisions be included in the international instrument (in no particular order), which will not just meaningfully tackle plastic waste but also potentially create global market opportunities for U.S. exports of innovative know-how, goods and services, including new materials, materials management, and circular solutions:

- Develop national commitments to go along with processes to evaluate countries' implementation and compliance with the treaty. These commitments would outline national actions toward reducing plastic waste that include plans for implementing the treaty's binding provisions and voluntary commitments based on a country's unique circumstances. These action plans must incorporate input from sub-national governments as, for example, the United States' unique federalist system means the treaty's success depends upon federal, state and local cooperation.
    - Along with establishing commitments, governments (particularly developing and least developed countries) should outline technical and financial needs to implement the treaty, such as enhancements in waste management and recycling infrastructure.
- Create frameworks for mobilizing financing, technical assistance and capacity building within the international instrument to ensure an equitable implementation.
- Incorporate specific definitions of the key terms in the treaty, such as waste, non-waste, waste minimization, recycling, thermal destruction, open dumps, landfills, plastics, polymers, life-cycle analysis, etc. to ensure coherence with the treaty's obligations.
- Incorporate science- and evidence-based life-cycle analyses of plastics to ensure time and resources are spent tackling the most problematic plastics (*e.g.,* composition, performance, public awareness, available infrastructure, etc.) and mobilizing resources toward plastics and plastic product design innovation geared towards waste minimization and evaluation against alternative materials. That includes consideration of future product bans meant to solve one element of environmental harm but without consideration of the ban's broader economic and environmental impact (such as single-use plastics).
- Establish binding and voluntary terms of implementation, including timelines, public and private sector reporting requirements and measurements of progress/success.
- Integrate eco-design requirements for plastics and plastic goods that incorporate recyclability at the design phase and seek to maximize the use of recycled plastics and minimize the use of chemical additives and certain materials that inhibit or impair recyclability.
- Establish a framework for governments to set market demand signals through public procurement, such as opportunities to purchase goods for government use that are recyclable and made from post-consumer recycled plastic content and integrating government-led R&D with incentives to commercialize products that innovatively integrate recyclable plastics.

- Encourage the international standards development organizations to establish globally harmonized standards for processes and products that underlie the success of the international instrument. That begins with a stock-taking on standards already under development for circular economy frameworks, recycling technologies and processes, eco-design, product manufacturing and the upstream production of chemicals and plastics; and identifying needs for additional standards.
- Recognize that until all plastics can be recycled, a robust collection and landfill infrastructure is necessary and available to ensure that plastic that is not recycled will not leak into the environment.
- Identify international coordinating efforts necessary to remediate existing plastic pollution, such as infrastructure required to intercept litter before it enters major waterways and taking steps to eliminate open dump sites.

We appreciate the Administration's leadership in the INC process and the opportunity to present these comments and recommendations on behalf of the ETTAC.

Sincerely,



Clare Schulzki
ETTAC Chair

CC: Secretary of State Antony Blinken
Environmental Protection Agency Administrator Michael Regan
U.S. Trade Representative Katherine Tai
Energy Secretary Jennifer Granholm

September 29, 2023

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

RE: Recommendation from the Environmental Technologies Trade Advisory Committee on Engagement with U.S. Trade and Development Agency

ETTAC Recommendation 2023-3

Dear Secretary Raimondo:

The Environmental Technologies Trade Advisory Committee (ETTAC) recommends that you engage with the U.S. Trade and Development Agency (USTDA) to explore avenues to advance the export of U.S.-manufactured environmental technology solutions in emerging markets. Specifically, USTDA's Reverse Trade Missions (RTMs) present a unique ability to connect overseas buyers with American environmental technology solutions.

Our ambitious climate and infrastructure goals will require the innovation and knowhow led by the U.S. private sector. The International Trade Administration (ITA) is developing the Environmental Technologies *Top Markets* report in which your team of experts will provide key market intelligence on the most promising opportunities to increase U.S. exports of environmental technologies, products, and services. In addition, we appreciate all of the efforts of ITA to support and carry out traditional Trade Missions around the world in these critical areas. Based on experience of many ETTAC members, we believe that several countries, including Brazil, China, Mexico, and India, would benefit from additional direct engagement with U.S. companies to see firsthand capacity and capabilities to meet such market needs.

By working together with USTDA, Commerce can maximize the impact of ITA's *Top Markets* by identifying areas of specific opportunity for reverse trade missions. These visits by foreign decision-makers are a practical way to grow demand for U.S. environmental technology solutions and build relationships among public and private decisionmakers with U.S. companies. Accordingly, we suggest the following potential topics for the RTMs and as recommended in the *Top Markets report*:

- **Carbon capture, removal, utilization, and storage.**
- **New energy solutions, including hydrogen generation, transportation, storage, and usage.**
- **Solid waste management and recycling.**
- **Water treatment and reuse.**

Attached is more detailed background on each sector and solution set.

We urge that you swiftly direct ITA to engage USTDA and U.S. company executives to identify the most effective approach to operationalize the recommendations identified through the *Top Markets* report.

Please feel free to contact me if you wish to discuss it further.

Sincerely,

Clare Schulzki

Clare Schulzki
ETTAC Chair

CC: USTDA Director Ebong

Appendix A: More Detailed Background and Market Potential

1) Carbon Capture, Removal, Utilization, and Storage.

Achieving our ambitious climate goals requires that hard decarbonize sectors explore approaches to capture, remove, and/or store greenhouse gas emissions. The U.S. Department of Energy recently released its "Carbon Management Liftoff" report, which states "Modeling studies suggest reaching U.S. energy transition goals will require capturing and storing 400 to 1,800 million tonnes (MT) of carbon dioxide (CO_2) annually by 2050."[1] Storing CO2 in injection wells seems to provide near-term solutions. EPA is now considering as many as 120 Clean Water Act Class VI well permits for project proposals in Louisiana and Texas.

2) New Energy Solutions, Including Hydrogen Generation, Transportation, Storage, and Usage

Decarbonizing our global economy—our industries, utilities, personal transportation and the production and movement of goods—will require a united effort. Clean, sustainable hydrogen has the potential to reduce and replace our reliance on fossil fuels for heating, transport, production of green chemicals and fertilizer, storage, and electricity generation. A zero-carbon fuel that emits only water, hydrogen's role in the drive for sustainability can be accelerated by using or adapting significant parts of existing infrastructure to employ hydrogen as a fuel source. U.S. based companies are positioned well for and delivering progress today across green hydrogen for power generation and storage, advanced transportation, and fuel-cell technology, and as a feedstock for green chemicals, as well as the processing of blue hydrogen with carbon capture technology.

Storing excess renewable energy as hydrogen yields a long-term and long-duration energy storage solution, complementing battery energy storage solutions while allowing renewable energy to be deployed in times of highest demand.

3) Solid Water Collection and Recycling Infrastructure

Southeast Asian countries, including Indonesia, Malaysia, and the Philippines are considered significant contributors to the leakage of land-based plastic waste into the oceans, with a generation of 31 million tons of plastic waste annually (Julius and Trajano, 2022). Solutions for solid waste management and recycling infrastructure are needed, including advanced recycling. The EPA National Recycling Strategy calls for among other issues developing markets for recycled materials and life cycle innovation from product and package design through use and recycling. A materials neutral approach should be pursued. Los Angeles, San Francisco and Seattle are leaders.

[1] https://liftoff.energy.gov/carbon-management/

4) Water treatment and reuse

Growing water scarcity across the nation and the world requires companies and communities alike to consider water reuse and recycling as solutions. Wastewater should be seen as resource for generating energy and using nutrients. Colorado Springs, Loudon County, VA, San Diego, and San Antonio, among other municipalities have water reuse programs.

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January 31, 2024

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

RE: Recommendation from the Environmental Technologies Trade Advisory Committee on Low-Energy Water and Wastewater Treatment and Reuse

ETTAC Recommendation 2024-4

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. U.S. companies who deliver low-energy water and wastewater treatment and reuse technologies are often at a disadvantage with their international counterparts when entering international markets in this space.

We appreciate that the Department of Commerce has agreed in a previous recommendation to convene a series of technical and market-based exchanges and roundtables on U.S. technology exports. In this capacity, the ETTAC is requesting that you convene the U.S. government interagency community and in-country trade promotion experts to offer a series of technical exchanges focusing on low energy water reuse technologies so (1) U.S. companies can demonstrate technological solutions to top export markets and (2) glean market intelligence to advance export opportunities for U.S. companies. Such discussions would greatly enhance the exposure to the experience and capabilities of U.S. providers and developers in the global competitive landscape.

Water management is a common theme across the areas of concern related to climate impacts ranging from water scarcity to water security. It is also a vital element in the production of green hydrogen, substantiating the growth of this industry. Availability of water and water quality must be optimal to produce green hydrogen, ensure the process is efficient, and avoid contamination of the end product which can lead to the degradation of equipment. EPA reports that approximately two percent of energy use in the U.S. is used for drinking water and wastewater treatment. This adds an estimated 45 million tons of greenhouse gases (GHG) annually to the nation's contribution to climate change. Similarly, the International Energy Agency reports that four percent of worldwide electricity is consumed by the water sector. The resulting GHG emissions is estimated at three percent of total global emissions. The *Sixth Assessment Report from the Intergovernmental Panel on Climate Change* (IPCC) provides the clearest indication yet

of what climate scenarios can still be achieved given the current pace of global temperature increase. One approach for the immediate resolution of some of these water management challenges is the application of low-energy water and wastewater treatment and reuse technologies.

Opportunities to harness embedded energy in certain wastewater can help off-set consumption and associated emissions. By some estimates, as much as 30 percent of the energy use at water and wastewater treatment plants can be achieved by incorporating appropriate technologies and practices. Numerous low-energy water treatment/reuse technologies and practices are, for the most part, export-ready from U.S. manufacturers.

Billions of people worldwide lack access to water entirely or to inadequate water quality. Where water treatment systems exist – particularly in developing or underdeveloped countries – their climate change emissions can greatly exceed those of the U.S. due to outdated technology. The opportunity to provide water treatment and reuse solutions from manufacturers of low-energy water and wastewater treatment technologies in the U.S. could meet the needs of these burgeoning markets in a manner that does not disproportionately contribute to climate change emissions.

There are many examples of how these types of low-energy water treatment/reuse technologies are already being used and illustrate the export market opportunity for developers and manufacturers in the U.S. For example:

- Israel– Treats 80% of its sewage for reuse as irrigation water and public works.
- Namibia Windhoek – Has reclaimed wastewater for direct potable use since 1968.
- Singapore – Supplied over 40% of water demand via wastewater treatment with a portion added to drinking water reservoirs.
- India - – 28% of India's urban sewage is treated and reused today with plans to reach 80% re-use rates

Plans to convert millions of gallons of wastewater into direct potable reuse water supply and reusable biosolids are being developed by Los Angeles and other U.S. cities. These projects could serve as models for water-scarce regions around the world. One example of low-energy treatment is to use anaerobic digestion to produce methane gas from the biosolids in some wastewaters. This 'biogas' or 'Renewable Natural Gas (RNG)' can then be used for energy production at the treatment plant, sold to others for energy use, or sold as energy credits to other GHG emitters. Both approaches move the water treatment/reuse facility to an energy-positive operation, which is particularly important in areas of high-water stress since they can satisfy part of their own energy need and operate in a more economical manner for local communities.

Government funding through existing federal programs (e.g., Infrastructure Investment and Jobs Act, Inflation Reduction Act, etc.) or new programs for applied R&D and commercialization/trade promotion is needed by developers and manufacturers to accelerate and maximize the export potential of innovative low-energy water/wastewater treatment/reuse

technologies. The benefit of this funding would be a water-energy-climate sustainability nexus with high value delivered to all technology developers and manufacturers in the United States as well as the global markets that would implement these innovative technologies.

We appreciate the Administration's consideration of this recommendation and encourage you to take appropriate action at the earliest possible date. We look forward to working with you to support their implementation and the growth of the U.S. environmental exports.

Sincerely,

Clare Schulzki

Clare Schulzki
ETTAC Chair

January 31, 2024

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

RE: Recommendations for U.S. Government and Industry Support for the Fulfilment of the Global Methane Pledge

ETTAC Recommendation 2024-5

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 all facets of the environmental technologies industry, including the water and wastewater treatment; air pollution monitoring and control; composting and organics management; and recycling and solid waste management sectors. This includes small to large businesses, trade associations and thought leaders. In this capacity, the ETTAC appreciates the opportunity to provide these comments and recommendations to help achieve policy goals that lead to more resilient, diverse, and secure supply chains, including where the circular economy plays a key role, which are essential to U.S. environmental technology, goods and services providers and creates opportunities for their deployment in international markets.

The challenges related to climate change are global, and the U.S. Government played a pivotal role in developing the Global Methane Pledge, through which 155 countries have pledged to support a 30% reduction in global methane emissions by 2030 and committed more than $1 billion to catalyze action. We applaud the recent White House Methane Summit, the Cabinet-level Methane Task Force, and the U.S. Methane Action Plan. We have also seen individual agencies working to develop independent programming to support the Global Methane Pledge. However, we believe that more can be done by U.S. government and industry on Leading International Efforts on Methane Management. As companies and organizations that focus on environmental products and services, we have a great interest in seeing U.S. global leadership with respect to the implementation of the Global Methane Pledge, which is not only critical for the planet but offers opportunity for the export of U.S. goods, services, and ingenuity.

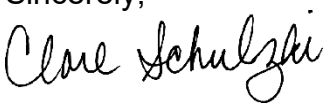
In order to advance U.S. global leadership on methane management, the ETTAC recommends the administration establish an interagency initiative (akin to Power Africa) to support the execution of the Global Methane Pledge. This initiative should include USAID, the State Department, Environmental Protection Agency, Department of

Commerce, Department of Energy, USTDA, Development Finance Corporation, U.S. Treasury, and other relevant agencies. Specifically:

- The administration should create a coherent interagency strategy, with access to appropriate resources, to support execution of the Global Methane Pledge across the U.S. and partner countries. This should focus on capacity building for methane management and measurement, monitoring, reporting, and verification (MMRV), mobilization of financial resources for methane management, and access to technology and services for methane management.
- Each agency should appoint a methane coordinator similar to the role that USAID has already created, working toward a common interagency strategy and key performance indicators, who has access to dedicated resources.
- U.S. EPA's deep technical expertise deployed through the Global Methane Initiative should be scaled to help develop capacity for countries methane management and MMRV.
- USAID should find every availability opportunity to integrate methane management into sectoral programs in energy (including Power Africa), agriculture (including Feed the Future), wastewater (within the Global Water Strategy), mining, and solid waste.
- USAID should design one or more global or regional programs to help countries who have joined the Global Methane Pledge develop national methane action plans and a viable, investable pipeline of projects for methane management.
- U.S. Department of Commerce and USTDA should continue to expand their work to help US companies be more competitive in international methane management markets. Specifically, U.S. expertise in engineering, oil and gas equipment, landfill and mine gas capture, organics and composting, anaerobic digestion, wastewater management, agricultural production, atmospheric methane capture, enteric fermentation, and other related areas could be brought to bear on methane management.
- The Development Finance Corporation, and the U.S. Executive Directors of the World Bank, EBRD, Interamerican Development Bank, African Development Bank, and Asian Development Bank should focus on making financial resources available for the execution of methane management projects at scale. While methane management projects are often economically viable, they are frequently executed at the subnational level and small to medium scale. Thus, a portfolio approach to financing can be advantageous, and prefeasibility screening tools such as those developed by EPA under the Global Methane Initiative could be useful. Furthermore, such programs can help to more rapidly scale adoption of technologies to deliver methane abatement at speeds better aligned with the Global Methane Pledge.

We appreciate the Administration's leadership in the Global Methane Pledge and the opportunity to present these comments and recommendations on behalf of the ETTAC.

Sincerely,



Clare Schulzki
ETTAC Chair

CC: Environmental Protection Agency Administrator Michael Regan
Secretary of State Antony Blinken
USAID Administrator Samantha Power
Development Finance Corporation CEO Scott Nathan
Secretary of the Treasury Janet Yellen
U.S. Trade and Development Agency Director Enoh Titilayo Ebong
Department of Energy Secretary Jennifer Granholm

January 31, 2024

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

RE: Recommendation from the Environmental Technologies Trade Advisory Committee on Carbon Management as it Pertains to 45Q Credits and Rules

Recommendation 2024-6

Dear Secretary Raimondo:

Global climate change remains a threat to economic growth as it puts pressure on our infrastructure, health, transportation, and other hard to decarbonize sectors. The U.S. is currently working with 20 countries through the Carbon Management Challenge. With your assistance, the U.S. can further lead the way in developing and deploying technologies and scaling carbon management solutions. Doing so will both reduce and manage domestic and global greenhouse gas emissions and make exportation of U.S. technologies more competitive with accompanying economic benefit.

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. We appreciate that the Department of Commerce has agreed to a previous ETTAC recommendation to convene a series of technical and market-based exchanges and roundtables on U.S. technology exports. As you convene these sessions, we ask that a discussion and study providing a comparative analysis between international and domestic carbon credits and funding be included with the objective of creating a roadmap for leveling the carbon capture, removal, and management field. This research should be shared with and include participation by the Department of Energy (DOE) and Department of Treasury's Internal Revenue Service (IRS).

The current assembly of voluntary, reimbursable credits in the U.S. ignores the beneficial practices involving circularity and other forms of sequestration in favor of traditional methods such as deep well injection, high parasitic load technologies, and enhanced oil recovery operations[1]. We suggest you promote the important additional pathways to store or reuse CO^2 in a circular fashion, that we believe can be eligible under the 45Q provision and Inflation

[1] Ssebadduka, R., Sasaki, K., Sugai, Y., An analysis of the possible financial savings of a carbon capture process through carbon dioxide absorption and geological dumping, International Journal of Energy Economics and Policy, 2020, 10(4), 266-270, doi.org/10.32479/ijeep.8800

Medina-Martos, E., Galvez-Martos, J.L., Almarza, J., Lirio, C., Iribarren, D., Valente, A., Dufour, J., Environmental and economic performance of carbon capture with sodium hydroxide; Journal of CO^2 Utilization, 2022 60(101991); doi.org/10.1016/j.jcou.2022.101991

Kramer, D., Carbon dioxide removal is suddenly obtaining credibility and support, Physics Today, 2022, 75(6) 26-29, doi.org/10.1063/PT.3.5017

Reduction Act (IRA) with your interagency colleagues. We also urge that flexibility be provided with this dated credit system, which is biased toward generating pure compressed CO^2 gases and liquified CO^2 streams into geological sequestered subsurface storage locations or future pipelines. U.S. companies entering international markets are at a disadvantage with their international counterparts. Leveling of current credit regimes will allow U.S. companies to compete globally in carbon capture, usage, and storage (CCUS), carbon removal technologies, and carbon management and foster the export of domestic technology.

Updating our credits program, which significantly drives the development and acceptance of new technologies, would make it more easily understood and properly supported. Recent inquiries as to the life-cycle assessment (LCA) program by third-party vendors are at a backlog (see addendum #4). Unless the process becomes more streamlined, our own domestic barriers to trade export will harm U.S. interests and have global implications. We encourage the Department of Commerce to work with the IRS so that 45Q standards are technology-neutral, while adhering to the rules required by law. Securities and Exchange Commission (SEC) and Internal Revenue Service (IRS) guidance on the increased tax credit program under section 45Q of the Internal Revenue Code needs to be updated.

In addition to the 45Q tax credit, government funding through existing federal programs (e.g., IRA, IIJA) or new programs for applied R&D and commercialization/trade promotion are needed to accelerate and maximize the export potential of innovative carbon reduction and management technologies. The benefits are multi-faceted: energy-climate sustainability, economic incentive to domestic technology development and manufacture, and global climate benefit.

We appreciate the consideration of this recommendation and encourage you to take appropriate action as soon as possible. Further concerns of the 45Q program are provided in the attached addendum. We look forward to working with you to support the implementation and the growth of the U.S. environmental exports.

Sincerely,

Clare Schulzki

Clare Schulzki
ETTAC Chair

CC: Department of Energy Secretary Jennifer Granholm
Treasury Secretary Janet Yellen
IRS Commissioner Daniel Werfel

Addendum

Additional Considerations:

The latest Sixth Assessment Report from the Intergovernmental Panel on Climate Change (IPCC) offers crucial insights into achievable climate scenarios amid the current pace of global temperature rise, specifically finding that gigatons of carbon management will be needed. Updating the U.S. CO^2 carbon capture and management policy, specifically 45Q, with more comprehensive enhancements and efficiency gains is vital to developing and accepting present and future climate technologies. Continued delays and confusion in the program will slow technology adoption and result in economic and environmental consequences.

Several published studies have shown (Ssebadduka, et al., 2020; Medinas-Martos, et al., 2022) that systems requiring compression, refrigeration, and pumping of pure CO^2 streams in any form will not be truly carbon negative due to parasitic energy loads. Parasitic energy is defined as the extra fuel necessary for combustion that provides the energy to implement additional hardware or practices. Eliminating these loads with other technologies, such as carbonate generation, can have truly net negative carbon intensity and generate useful products for reuse in a circular economy. Carbonate technologies can also be configured, for geological sequestration or ocean addition (current studies underway, Kramer, 2022) without negative parasitic energy losses.

45Q Concerns:

Historically, the U.S. has been a frontrunner in pioneering innovative and sophisticated technologies for global export. However, in the development of both point of use (POU) and direct air capture (DAC) carbon capture (CC), and additional carbon management technologies, the U.S. has encountered barriers to implementation. Europe has outpaced and overtaken the CC technology space due to favorable conditions for domestic companies and the unfavorable domestic rules for U.S. development and implementation of such technologies.

To develop, fund, pilot, and scale CC technologies, known requirements for federal incentives programs are paramount. Securities and Exchange Commission (SEC) and Internal Revenue Service (IRS) guidance on the increased tax credit program under section 45Q of the Internal Revenue Code has been delayed. Credits vary widely across different end states for the captured CO^2. Greater subsidies for geologic sequestration fail to recognize the higher parasitic loads associated with desorbing, compressing, and refrigerating the CO^2 into a liquid for storage and injection. The CO^2 processing results in higher carbon intensity than other novel approaches but at 41% higher credit rate. Ultimately, offering higher credits for geological sequestration deters development of novel uses for CO^2 generated end- or by-products and other promising carbon management pathways. This process also favors the use of captured CO^2 with preference given to the recovery of oil and gas from CO^2 injection into subsurface voids. There is presently a shortage of geographically located Class VI wells that may accept CO^2 injection. Location directly affects the overall carbon footprint from transport of CO^2 to these locations that require additional refrigeration and compression.

Several journal papers have shown that amines and other processes, like chilled ammonia, do not meet net carbon-negative operations and only reduce the carbon intensity (CI) instead of reversing the amount of CO^2 released into the atmosphere. This reversal is of the utmost importance, given the dire rise in global climate change and meeting the U.S.'s climate targets. A recent study of 18 different technologies at the pilot level and above demonstrate that very few of these are net carbon negative and most have a significant cost per metric ton of CO^2 captured from POU. As currently written under section 45Q, tax credits and direct pay subsidies will be offered for each metric ton of CO^2 captured according to the following categories:

Process Stack or Duct Point of Emission (POE):

- Utilization or "Circular Economy" (regardless of whether utilized product ever re-releases CO_2 into the atmosphere) – 60.00 USD
- Qualified for Oil and Gas Recovery – 60.00 USD
- Geologic Sequestration (Class VI well) – 85.00 USD

Direct Air Capture (DAC):

- $180 with Class VI Well Storage
- $130 a ton for utilization

European counterparts typically have CO_2 reimbursement at $150/mt. Unless the government programming addresses these imbalances and preferential treatment reimbursements, the U.S. technology offerings globally will be limited and out of date.

Additional barriers to U.S. CCUS technology and management development are requirements that need to be met to qualify for the 45Q credits program. Some of these barriers are listed herein.

1. DAC must meet a minimum CO_2 capture rate annually of 1000 metric tons. This may be too stringent. To remove CO_2 from the low concentrations found in ambient air (~420 ppmv), large volumes must be processed. Moving the volumes of air required to meet minimum thresholds involves high energy input (last calculated at 90 hp and 24/7 continuous operations). More passive systems (requiring less energy) are penalized from participating because of the minimal thresholds required.

2. POU capture minimums are 12,500 mts for industrial facilities. A similar issue exists with POU sources where CO_2 levels are typically orders of magnitude higher (1-100%) than ambient CO_2 concentrations (0.042% CO_2). An example is the recent law in Colorado that states that all CO_2 emissions from POU sources must reduce their 2005 CO_2 emissions levels by 26% by 2025 and staging up to100% by 2050. A company that may only want to reduce their CO_2 emissions by 26% due to funding will be forced to go without the Q45 credits program unless they purchase a much larger system to obtain 45Q credits.
3. Unknowns and needed clarification. An example of this is in the requirement of the program to have a technology have an overall capture efficiency >75% efficiency. It is assumed that this pertains to that portion of a gas stream treated and not the entire emissions from a site with potentially multiple emission sources. There is no formal

channel for raising such questions as final guidance has not been released as of this date. In our opinion, any mass of CO_2 removed permanently from the atmosphere is beneficial and should be considered as eligible for the 45Q program.

4. Informal guidance from DOE (ref National Energy Technology Laboratory 45Q Addendum to the CO2U LCA Guidance Toolkit) requires an annual approval process for the 45Q credit. It is our opinion that a one-time requirement is appropriate for continuous operating procedures without significant design modification from baseline conditions (e.g., 20%). Allowing for a one-time LCA verification will alleviate regulatory burden, save DOE and industry resources, and avoid delays in the credit approval process; in general, it will ease the pathway for implementation of carbon capture technology, which is a priority goal of the 45Q program.

5. It is our concern that the requirement of "actual" full-scale data to be used in granting 45Q credit will deter investors and industry from pursuing CC technologies. In our opinion, data from rigorous and well-designed pilot studies should be accepted for use in ISO-certified LCAs. Allowing estimates of future full-scale performance to qualify for 45Q credits will allow investors and industry to more confidently invest in these capital-intensive, multi-year, multi-million-dollar technologies. Without this assurance of tax credits, investment in carbon management will be severely impacted in a negative way. Audits can and should serve as checks to full-scale performance. Look-back provisions are currently in-place for previous versions of 45Q and should remain.

6. Although the NETL CO_2U LCA Guidance document has been published, it is also explicitly stated that support and training resources are not available for preparing LCAs for the purposes of 45Q. With the significant funding provided by the U.S. government for CC initiatives and the increasing interest in industry to implement technology to remove CO_2 from the atmosphere, we would like to express a concern for the amount of U.S. government resources allocated for granting 45Q credits with DOE-approved ISO-certified LCAs

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7. To qualify for the 45Q program, prevailing wage requirements and an apprenticeship program must be fulfilled and certified. While these programs are important, we assert they have no place in the 45Q program to foster innovation and development of novel technologies. Instead, when applied to the technology-focused objective intent, these provisions stunt innovation and investment. Start-ups often must run lean and invest in skilled labor and hardware. This requirement should be reserved for operations or staffing larger C management operations or after a certain time period. Enforced otherwise, these provisions add bureaucracy and create a delay in technology development. Time is of the essence in development of these technologies.

8. Eligible entities. Carbon Procurement Utilization Grants exist to promote technology development. To be eligible for recent funding announcement opportunities from the Department of Energy, the organization receiving the grant must be an "eligible entity." Eligible entities are defined as states, units of local governments, or public utilities and agencies. Preventing the commercial sector from accessing these funding mechanisms stifles development of novel technology. Requiring partnership with eligible entities introduces unneeded bureaucracy and slows progress.

9. Open the definition of geological sequestration: “A wide range of carbon removal technologies are rapidly advancing. Existing policies that limit tax credit eligibility to only a few technologies (e.g., § 45Q’s consideration of only direct air capture and point-source carbon capture technologies) fail to recognize the breadth of cutting-edge permanent carbon removal solutions that are being developed by U.S.-based Companies.” Many companies request opening circular economics of CO_2 reuse and allowing other products of CCUS and C management to be allowed credits for geological sequestration other than pure CO_2.

10. A recent review and parsing of letters to the IRS request for comment on the 45Q program had more than 100 submissions. The following supporting claims are made and requested: Ocean Sequestration: The National Academies 2021 Report, which documents that the potential for CO_2 sequestration in the ocean is far greater than any other opportunity available: https://www.nationalacademies.org/news/2021/12/new-report-assesses-the-feasibility-cost-and-potential-impacts-of-ocean-based-carbon-dioxide-removal-approaches-recommends-u-s-research-program. More than 10 companies submitted letters of support for ocean additions of carbonates to induce CO_2 uptake and sequester CO_2.

Summary:

Updating the U.S. CO_2 credits program with more comprehensive enhancements and efficiency gains is vital in driving the development and acceptance of present and future climate technologies. If developers and customers are limited to a subset of technologies and an outdated credit system using narrowly defined terms, development will be shunted. Continued delays and confusion in the program will slow technology adoption and result in economic and environmental consequences. We urge the Administration’s swift action and collaboration to support the growth of U.S. technology, exportation of these technologies.

March 19, 2024

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

RE: Recommendation from the Environmental Technologies Trade Advisory Committee on Regulatory Trade Barriers Concerning PFAS (perfluorinated and polyfluorinated alkyl substances)

ETTAC Recommendation 2024-7

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, the ETTAC is requesting that you engage with the European Chemicals Agency ("ECHA") which is considering restrictions on the import of products containing PFAS under the Registration, Evaluation, Authorization, and Restriction of Chemicals ("REACH") regulation in the EU market that will have a serious impact on the export of U.S. environmental technologies.

According to a recent economic analysis by the U.S. Chamber of Commerce, *"the total economic and fiscal impacts of goods exported from the U.S. to the EU that contain PFAS in 2022… supported 502,000 jobs domestically in 2022, $168 billion in sales output, $81 billion in U.S. gross domestic product ("GDP"), and $46 billion in labor.*[1]" Products containing PFAS span nearly every product category, from pharmaceuticals, automotive, medical, semiconductor, military and defense, hydraulic systems, protective gear, chemicals (coatings, adhesives and plastics) and analytical and industrial equipment used in a variety of manufacturing processes. Placing onerous import bans on products containing this critical chemistry inhibits free trade, places unnecessary burdens on U.S. manufacturing operations both here and abroad, impedes the creation of a circular economy by limiting recovery, recycling and disposal options at the end of life of these products and articles. The overly broad and practically unfeasible EU import ban of products and articles containing one of more than nearly 10,000 substances, creates more unintended negative consequences than advancements in public safety or environmental health.

ETTAC respectfully requests the U.S. Department of Commerce engage with ECHA, the U.S. EPA and other relevant bodies to encourage trade-enabling, pragmatic, science-based public policy that:

[1] U.S. Chamber of Commerce (September 2023) Impacts of the PFAS Restriction on Trade Between the U.S. and European Union.

- Establishes a focused, scientifically sound definition of PFAS that reflects the wide variation in environmental and health hazards associated with the nearly 10,000 unique substances in this proposed class.
    - A definition should exclude polymers due to their very limited biological activity, and instead focus on the small molecules that are known or predicted to be biologically active.
    - The definition supported by the U.S. Chamber of Commerce is a reasonable, science-based proposal and should be adopted by the U.S. EPA and EU for the purposes of enabling both interstate and international trade, enabling a circular economy and protecting public health and the environment.
- Preserves industrial uses of PFAS. Industrial applications should be exempted from the EU's restriction to ensure the free flow of trade and commerce around the world and protect U.S. investments in Europe.
- Establishes a risk-based *de miminus* level in products and articles that accounts for background levels of PFAS in various media.
- Adopts a sensible and standardized test method, such as is being developed in ASTM International[2], for identifying and quantifying PFAS in a product or article that is consistent and repeatable. The method should not be limited to total fluorine content.
- Determines a proper method for the safe disposal, complete destruction or long-term handling of products or articles containing PFAS Chemicals. Currently there is no widely accepted disposal method, and while some destruction technologies exist, others are still in various stages of development. An overbroad ban on PFAS would prohibit the recovery, international movement, and recycling of any product or article containing it.

Successful U.S. administration engagement will enable science to prevail in public policy, facilitate the export of products and articles containing PFAS where there is no significant risk to health or the environment, and protect the interests of American exporting companies and those operating abroad. We believe the Department of Commerce has an appropriate convening role to ensure regular engagement to protect U.S. trade opportunities in this space.

We appreciate the Administration's consideration of this recommendation and encourage you to engage with key stakeholders on this matter immediately. We look forward to working with you to support their implementation and the growth of the U.S. environmental exports.

Sincerely,

Clare Schulzki

Clare Schulzki
ETTAC Chair

CC: Environmental Protection Agency Administrator Michael Regan

[2] https://www.astm.org/workitem-wk88581

May 24, 2024

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

RE: Follow-up Recommendations to the EXIM Bank Lending Terms for Climate Change Sector Understanding (CCSU)

ETTAC Recommendation 2024-8

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 technologies, 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 recommendations to help support U.S. exports of environmental technologies for projects that might lack commercial financing viability.

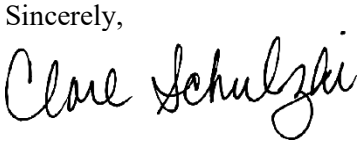
On May 20, 2022, ETTAC submitted a Recommendation Letter *(Recommended Changes to the Ex-Im Lending Terms for Climate Change Sector Understanding (CCSU) ETTAC Recommendation 2021-13)* to advise on the EXIM Bank Lending Criteria under the CCSU addendum to enhance the existing terms in order to increase export credit finance investment opportunities towards climate and environment related projects. ETTAC is pleased some of our recommendations were utilized in the eligibility criteria for climate change mitigation projects under the modernized OECD Arrangement on Officially Supported Export Credits. In response to a recent EXIM staff request, on behalf of the negotiating team from the U.S. Export-Import Bank and the U.S. Department of Treasury, ETTAC is providing additional recommendations to further expand upon the applicable environmental, climate mitigation and adaptation technologies list.

In order to better align applicable lending funds with current industry advancements and available technologies, ETTAC proposes updating the list of 'Project Classes' and corresponding technology 'Types' for consideration in the negotiations in the OECD Arrangement on Officially Supported Export Credits. Please see the attached addendum for ETTAC's recommendations to the CCSU APPENDIX I: ELIGIBILITY CRITERIA FOR CLIMATE CHANGE MITIGATION PROJECTS.

We believe these recommendations will expand the scope of EXIM Bank's financing to facilitate the competitive export of innovative U.S. environmental technologies for renewable energy and other climate change mitigation and adaptation projects and provide a platform for global adoption of emerging environmental technologies essential to global energy transition and decarbonization.

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

Sincerely,



Clare Schulzki
ETTAC Chair

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

APPENDIX

RECOMMENDATIONS ON ELIGIBILITY CRITERIA FOR CLIMATE CHANGE MITIGATION PROJECTS

For Consideration to Include in the Approved List for CCSU Funding

PROJECT CLASS A: Environmentally Sustainable Energy Production

Type 1: Renewable Energy

Type 2: Electricity Production from Clean Hydrogen

Additional Types for Consideration

TYPE 3: Efficiency projects that reduce overall energy demand and or produce circular economies should be included. Establish how carbon intensity and footprint is measured to account for parasitic loads. There is a framework for this, but it is contingent upon the extent of supply chain inputs and outputs.

PROJECT CLASS B: Remediation Projects in Fossil Fuel Plants, Fossil Fuel Substitution

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

- **Recommendation 1**: ETTAC suggests the EXIM Bank considers that any carbon capture that reduces the carbon footprint of a facility should qualify. The efficiency of the capture technology would determine the amount of financing available. For example, 20 percent carbon capture would qualify for 21 – 50 percent financing; 50 percent carbon capture would qualify for 50- 70 percent financing.
- **Recommendation 2**: Per Executive Order 14057, Section 603.d, the EPA should develop requirements for CCS. While such requirements have not yet been developed, the Department of Energy targets technologies that remove up to 90% CO2. That said, there are only a few CCS projects in the world at scale, and when one considers operational time, etc., these technologies capture approximately 50% of CO2 emissions.
- **Recommendation 3**: While Type 1 focuses on CCS or reuse, it does not address parasitic burn, i.e. extra fuel needed to generate energy to run a carbon capture system). The carbon intensity threshold refers to how many grams of CO2 are released to produce a kWh of electricity. However, 90% carbon capture may need to burn 25% more fuel. Subsequently, net reduction is only 67.5%. Carbon storage may require additional fuel, further reducing the carbon intensity. Point of Source carbon emission measurements (concentration reduction) is insufficient as it does not address parasitic burn. A Life Cycle Assessment (LCA) should be conducted to confirm the net carbon footprint (carbon capture, parasitic load, etc.) to determine financing eligibility.
- **Recommendation 4**: Establish how carbon intensity and footprint is measured to account for parasitic loads. This could be done following ISO LCA standards 14040/14044, which provides a broad framework for applying LCA to a wide range of applications to avoid inconsistencies in modeling choices and results interpretation.
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TYPE 2: Waste to Energy

- **Recommendation 1**: Irrespective of emissions specific thresholds, although energy conversion efficiency thresholds are attainable, there are multiple ways to calculate the carbon intensity (CI) and carbon savings of a facility. To facilitate the assessment

of projects, emissions, irrespective of the source, should be reported in terms of Carbon Equivalency (CO2e). If one has a process whereby one reduces CO2, but releases more methane, then one may end up releasing more GHG than one is capturing. This is because the GHG warming potential for methane can be 25-85 times higher than CO2 depending on the time frame calculation. Therefore, calculations based on a comparable number basis (CO2e) allows a reviewer to compare apples to apples across various sources of emissions.

- Identifying a particular technology from which to measure a direct GHG concentration reduction is not sufficient to quantifying emissions reductions or efficiency. To fully assess a project's impact on emissions, an LCA i.e. cradle to grave assessment of all raw materials, including extraction, transportation, and disposal is critical. A "standard" LCA does not exist for the industry, nor is there a framework for conducting an industry wide LCA. LCAs are plant specific. It can identify baseline emissions and measure the total impact of emissions reductions. All LCAs should be reported in terms of (CO2e).
- **Recommendation 2**: There needs to be clear rules on how to calculate CI and reductions, and eligibility of those performing the calculations. Presently Q45 does not accept pilot data for an LCA. Consequently, there is no clear pathway for financing approval, which can increase associated lending risk. Pilot data is required to identify the range of emissions reductions and approve the project. Later, once the plant is built, the project can be revisited to finalize emissions savings.

TYPE 3: Hybrid Power Plants

- **Recommendation 1**: Renewables are always a favorable technology to offset carbon. Two component financing with different terms for each component may be the most appropriate approach. However, it would be difficult to enforce Model 1 without significant data capture resources built into the system to record how much time the plant is utilizing a particular input. Without a data recording system, the process can be manipulated, resulting in increased emissions.
- **Recommendation 2**: ETTAC cautions against putting minimum thresholds on carbon capture to qualify, as any carbon reduction should be welcomed as long as it meets the definition of a reduction from current carbon output or negative carbon intensity. Unless data collection is able to clearly define which energy is used to produce energy at that time of day, then it will be difficult. A significant amount of regulation and ISO standards around calculation and methodology would be needed to prevent abuse of the credit regulation and avoid potential loopholes. In the meantime, it is recommended to have a single standard for minimum usage thresholds for both operating models.
- **Additional Types for Consideration**

TYPE 4: Hydrogen Production
TYPE 5: Syngas
TYPE 6: Biogas
TYPE 7: Methane Mitigation

PROJECT CLASS C: Energy Efficiency

TYPE 1: Combined Heat & Power Projects

- **Recommendation 1**: Combined heat & power systems (CHP) can approach 90% efficiency but are typically in the 65-80% range. The existing 75% standard is an efficient system. It is recommended to not impose strict minimums on existing CHP

systems, if the project is providing significant improvement in net carbon footprint. If it is a new CHP system, recommended minimum threshold should exceed 80%

- **Recommendation 2**: Establish how carbon intensity and footprint is measured to account for parasitic loads. There is a framework for this, but it is contingent upon the extent of supply chain inputs and outputs. This could be done following ISO LCA standards 14040/14044, which provides a broad framework for applying LCA to a wide range of applications to avoid inconsistencies in modeling choices and results interpretation.
- TYPE 3: Smart Grids
- **Recommendation 2**: There is a real need for this type of technology and upgrading of systems of distribution where funding is difficult to tap. However, it is recommended to recategorize it under PROJECT CLASS E as a TYPE 3 in order to have all grid related items in one place. Although Smart Grid facilitates minimizing costs and environmental impacts while maximizing system reliability, resiliency, flexibility, and stability it should not be grouped as an Energy Efficiency project. We agree with aligning maximum payment term with PROJECT CLASS E and 22 years, not 15.

PROJECT CLASS D: Carbon Capture, Utilization and Storage (CCUS)

- **Recommendation 1**: Solely focusing on direct air carbon capture does not allow for the scoping of other potential carbon removal pathways and may limit alternative and new innovative technologies. There is ample room for consideration of other diverse carbon removal projects, be it direct air capture, marine carbon removal, enhanced weathering, and more.
- **Recommendation 2**: Geological and permanent sequestrations also ignore products generated by carbon capture that will not be emitted into the atmosphere. ETTAC suggests including a definition for circular economies where CO2 is recaptured and reused in a closed loop, i.e. “any form of CO2 capture and sequestration into a position whereby it may not be re-introduced into the environment for a period of 20 years or more or reused and recaptured to prevent it from leaving the process.”
- **Recommendation 3**: The rationale column is currently focused on point source carbon capture. ETTAC suggests adding in something language about carbon removal as well, i.e. "To significantly reduce carbon emissions from existing sources and remove carbon from the atmosphere to be aligned with the Intergovernmental Panel on Climate Change's reports."
- **Recommendation 4**: To help encompass a range of promising carbon removal pathways like enhanced rock weathering, marine carbon removal, biochar, and more, the standards should include language such as, "Additional standards will be considered that adhere to the best available science as additional carbon removal pathways scale".

Additional Types for Consideration

TYPE 4: CCS for Natural Gas Fired Stationary RICE and Turbines for Compression or EGU

TYPE 5: Transport of captured carbon from source to storage

TYPE 6: Functional utilization of carbon dioxide (not limited to storage)

TYPE 7: Utilization at chemical and other industrial (e.g. steel and concrete) non-power generation facilities

TYPE 8: Direct air capture

TYPE 9: Bioenergy + CCS (BECCS)

PROJECT CLASS F: Clean Hydrogen and Ammonia

Type 1: Clean Hydrogen Production

- **Recommendation 1**: The first eligibility standard can only apply to green hydrogen. It is reasonable to believe that this standard is achievable for eligibility. Blue hydrogen would not be expected to meet this standard. The second eligibility standard could apply to blue hydrogen, and this standard is achievable for eligibility.

Type 2: Clean Ammonia Production

Type 3: Transmission, Distribution, and Storage of Hydrogen

PROJECT CLASS G: Low Emissions Manufacturing

Recommendation 1: The use of a carbon capture product that creates a circular economy should be included within this class. Some products permanently sequester CO2, while other raw products produced from CO2 capture may re-emit CO2 from their use. However, if the product is re-used and the CO2 is re-captured, it deserves an additional class. For example, the glass industry uses soda ash and natural gas to make glass. CO2 released from these two raw ingredients are emitted but recaptured and re-used over and over again. Subsequently, it is permanently sequestered. Additionally, every batch of soda ash that is not purchased and used, is an additional CO2 savings to the atmosphere.

Additional Types for Consideration

TYPE 4: Efficiency projects that reduce overall energy demand and or produce circular economies should be included. Establish how carbon intensity and footprint is measured to account for parasitic loads. There is a framework for this, but it is contingent upon the extent of supply chain inputs and outputs.

PROJECT CLASS J: Production of Clean Liquid and Gaseous Fuels

- **Recommendation 1**: On the definition of clean/renewable fuel, it is recommended to review this information from Clean Fuels Alliance America, the U.S. industry association: https://cleanfuels.org/clean-fuels-101/. Each tab (scroll down, see "Biodiesel, Renewable Diesel, sustainable aviation fuel (SAF), Bioheat") cites the ASTM international standards used by the industry: D975, D6751, D7467. As noted earlier, U.S. IRS uses ASTM D7566 and D1655 (Annex1) to define SAF Project Class 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)

Additional Classes or Types for Consideration

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

May 24, 2024

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

RE: Recommendation from the Environmental Technologies Trade Advisory Committee on Build America, Buy America

ETTAC Recommendation 2024-9

Dear Secretary Raimondo:

The Environmental Technologies Trade Advisory Committee (ETTAC) is a federally established committee focused on advising the U.S. government on policies impacting environmental technology exports. With representatives from various sectors and industries, ETTAC provides guidance on enhancing the competitiveness of U.S. environmental technology providers in global markets.

The enactment of the *Infrastructure Investment and Jobs Act* provided a historic opportunity to modernize our Nation's water infrastructure and improve the delivery of safe, reliable drinking and clean water services to all Americans. The *Infrastructure Investment and Jobs Act* included a new provision, the *Build America, Buy America Act* (BABA), which for the first time requires that all iron and steel, construction materials, and manufactured products used in federally funded infrastructure projects are produced in the United States. We understand that domestic content requirement policies such as BABA are designed to increase reliance on domestic supply chains and ultimately reduce the need to spend taxpayer dollars on foreign-made goods. However, there are several concerns we have identified that could have an adverse impact on our ability to expand U.S. exports of environmental technologies, goods, and services.

As we have addressed in the ETTAC Recommendation 2021-11, ETTAC acknowledges the fact that it is a priority for the Administration's climate policy to help promote the building of clean energy projects here in the United States. Given the evolving discussions around BABA, our concerns outlined in our recommendation last year appear to still be relevant. These include concerns about the effects BABA provisions could have on environmental exports, U.S. companies and effects on infrastructure project budgets, availability of materials, and impact on important infrastructure project schedules. We ask that you refer to last year's letter as the discussions around BABA continue.

One critical aspect we would like to raise is the fact that one cornerstone of the enactment of this legislation is the fact that it would create a historic opportunity to increase domestic manufacturing in communities across the country, which would include good-paying jobs for America's workers, including union jobs.

While the plain text of the legislation does not refer to labor, we understand that the Administration has interpreted the legislation to not include any costs associated with the manufacture of the manufactured products. Considering the fact that bolstering American manufacture requires creation and modernization of manufacturing facilities, upskilling and transforming skills in the workforce will be an essential part of the success of the onshoring of manufacture. Further, the exclusion of labor goes against Congress' intent to revitalize American industry.

Therefore, the Administration and federal inter-agencies should reconsider including labor (labor, R&D, and design) as a part of the calculation of the domestic component.

Other critical factors that require careful consideration from the Administration and the relevant agencies are the impact that the provisions will have on the Free Trade Agreements the United States of America currently have with trade partners, the World Trade Organization Agreement on Government Procurement, and Federal permitting processes on the operation of Buy American laws, including their impacts on implementation of domestic procurement preferences. (Sec. 7093474 in IIJA).

ETTAC is charged with advising the Secretary of the Department of Commerce on all matters concerning trade policy development and negotiations relating to U.S. environmental technologies exports. Therefore, we ask the Department of Commerce continue to actively work with the U.S. government interagency community to evaluate the impacts of BABA on our trade partners and consider products from countries with a Free Trade Agreement with the U.S to be considered as domestic products, to allow the U.S to preserve trade relations with important allies.

There also remains a critical need for additional guidance on compliance with BABA provisions, particularly concerning waivers and eligibility criteria for manufacturers and exporters. The ETTAC recommends that the Department of Commerce continue to collaborate with the U.S. government interagency community, along with representatives from the business sector, to facilitate discussions on the development or refinement of consistent and timely BABA provisions. This is especially important where there is lack of clarity, or potential enforcement implications with material consequences for non- compliance involved. We are apprehensive about possible impact of these provisions on environmental exports and domestic projects and advocate for proactive measures to address these concerns. Furthermore, we recommend the interagency community provide additional tools and incentives, such as grants, tax incentives, or preferential treatment in procurement processes, to companies that proactively prepare for compliance.

ETTAC is increasingly concerned about foreign governments enacting domestic laws and regulations to counter the impacts of BABA on their manufacturing base. This is particularly concerning among U.S. allies, such as members states in the European Union, that have high labor and environmental standards. As noted in a letter from Water Europe, "[t]he new domestic content requirement for the water infrastructure funded by the U.S. Government will disrupt the smooth collaboration between the U.S. and Europe by impacting up to 1 million jobs in the

European water sector and hinders access to the best available water technologies and scientific knowledge which is paramount to achieve a Water-Smart Society not only in Europe but also the United States". We recommend that the Department of Commerce continue to evaluate domestic content laws in foreign countries, including for alignment with free trade agreements, and provide the public with a transparent view about this growing movement towards manufacturing where a company operates.

Another aspect that the U.S export sector in the environmental industry is being forced to either maintain two sources of material or to pass along increases to our international customers. This coupled with the weakening of many currencies around the world is making U.S goods a lot less competitive in the global markets.

Furthermore, providing technical assistance and support to help companies navigate compliance complexities will ensure a smoother transition and foster the growth of domestic companies in the global market.

Thank you for your attention to these important matters. We look forward to your continued leadership in advancing our national interests and supporting American companies in the environmental sector.

Sincerely,

Clare Schulzki
ETTAC Chair

May 24, 2024

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

RE: Recommendations Regarding Validation Services to Support U.S. Exports of Innovative Environmental Technologies

ETTAC Recommendation 2024-10

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, trade associations and thought leaders. In this capacity, the ETTAC appreciates the opportunity to provide these comments and recommendations to help achieve policy goals that lead to more competitive U.S. environmental technology, goods and services providers and create opportunities for their success in international markets.

As many other U.S. exporters do, potential U.S. exporters of emerging environmental technologies (ETs) often look to the U.S. federal government's leadership in setting the floor with mandatory requirements, either through direct agency regulations or through the federal procurement process. A well-defined federal policy, coordinated and agreed among all interested agencies (and relying as appropriate on voluntary consensus technical standards per the National Technology Transfer and Advancement Act of 1995), sets a firm foundation for U.S. exporters on which to build their export prospects and competitiveness. Governments and economies across the globe recognize and respect U.S. leadership in environmental matters. Of course, the U.S. is not alone in exporting, either directly or indirectly (through exporting companies), its national or regional regulations around the world. The European Union, for example, is comfortable stating publicly and repeatedly that its environmental regulations and standards should be exported and should promote the competitiveness of EU exporters around the globe.

Reciprocity between US and European standards, particularly in the context of certifications like those provided by TUV or UL, is not automatic but may be facilitated through mutual recognition agreements (MRAs), harmonization of standards, or bilateral agreements. These arrangements can simplify the process for products and services to be accepted in both markets, although they may still require some additional local testing or certification. However, unlike sectors such as telecommunications and aerospace, equipment associated with environmental technologies lacks comprehensive MRAs between the U.S. and the EU. This gap

often results in duplicated testing and certification processes that are both costly and time-consuming. We are aware that the U.S. and EU, in the context of the Trade and Technology Council and the Transatlantic Initiative on Sustainable Trade, have broached the idea of an MRA for green technologies.

For companies manufacturing environmental monitoring equipment, navigating differing standards or certification requirements, which function as non-tariff trade barriers, requires careful planning and often involves obtaining multiple certifications to cover both U.S. and European markets. An example of this non-tariff trade barrier requirement is a U.S.-based technology corporation that manufactures high-end Fourier Transform Infrared Spectrometers (FTIR) to measure gaseous emissions from municipal waste incinerators and hundreds of other applications in emissions characterizations. The U.S.-based manufacturer sells tens of millions of dollars of FTIR equipment into the U.S., South American, Canadian and other markets that follow U.S.-based performance specifications to meet regulatory requirements for quality control and quality assurance according to U.S. EPA detailed reference methods and performance specifications. To sell into the EU, UK, and some Asian markets, a certificate published by either TÜV (Rhineland/DE) or MCERTS (UK) was required to make any data acceptable for regulatory purposes. The costs to perform the necessary testing and time frame were as follows: $150,000 (2010 prices) for two complete integrated continuous emission monitoring systems (CEMs) to be sent to Cologne, Germany for over one year plus associated travel costs ($50,000) to test the two complete integrated systems in their (TÜV) laboratories for six months followed by six months of a field installation at a similar facility with a municipal waste incinerator. As a further example, the export of regulatory-capable ambient air monitoring equipment significantly benefits from the U.S. EPA's existing standards designations of Federal Reference Method (FRM) and Federal Equivalent Method (FEM). These air monitoring standards are highly respected and regularly cited/requested by international clients. The existence of these standards greatly simplifies international procurements and improves export opportunities for U.S. manufacturers. Over the past 10 years low-cost air sensors emerged as a promising technology and have been increasingly adopted by government agencies throughout the U.S. and around the world. However, as the U.S. EPA has not pursued standards development for these emerging low-cost air sensors U.S. manufacturers are repeatedly beholden to diverse international standards and costly evaluation/verification processes.

As can be seen from the examples above, in the absence of a unified U.S. federal policy or MRAs – as well as regulations, tacit endorsement of compliant goods and services, and associated global leadership (whether intentional or not) – in many cases potential U.S. exporters of emerging or improved environmental technologies find themselves at a loss, without a firm U.S.-agency-endorsed hook or reciprocity arrangements on which to hang their exporting strategy. The U.S. Environmental Protection Agency formerly operated a Technical Verification

Program to accelerate "the acceptance and use of improved and cost-effective technologies"[1] but this service was dropped years ago. In contrast, to gain European verification and global acceptance for their innovative environmental technologies, companies have access to a one-stop private company whose services are trusted by EU authorities such as MCERTS and TUVs. It is unacceptable that U.S. companies should not have easy access to a globally trusted U.S. provider of environmental technology verification and reciprocity.

The recent Memorandum of Understanding (MOU) between the U.S. Environmental Protection Agency (EPA) and the U.S. Agency for International Development (USAID) underscores a shared commitment to leveraging American innovation in environmental technologies globally. This MOU facilitates cooperation on climate policy and environmental justice, aligning domestic missions with international development goals. Such cooperation is a prime example of how U.S. leadership can extend its influence and standards internationally, providing a foundation for advocating similar collaborative frameworks with European entities.

Moreover, the recent establishment of the Climate and Trade Task Force by the White House aims to address carbon emissions in global commerce and manufacturing. As outlined by White House senior adviser John Podesta, this task force will foster international collaboration on measuring and standardizing carbon emissions from production to delivery. This initiative aligns perfectly with the need for harmonized or mutually recognized performance standards for environmental equipment, to enable innovative U.S. technologies to be exportable worldwide.

To this end, we propose the following recommendations:

- Continue discussions with EU counterparts to explore MRAs specifically for technology/equipment exports in the environmental sector.
- Utilize insights from EPA-USAID cooperation under the new MOU to inform consideration of extending collaborative frameworks.
- Align the goals of the Climate and Trade Task Force with efforts to standardize environmental equipment certifications, facilitating a global approach to environmental health and safety standards.
- Consider the establishment of an entity in the U.S. that facilitates reciprocity between testing and certifying standards such as MCERTS and TUVs with American equivalents such as EPA, ANSI, ASTM, NELAP, UL, etc.
- Consider the reinstitution of the interagency Environmental Technology Verification (ETV) Program to better enable American exports of emerging environmental technologies.

The harmonization of these standards will not only enhance the deployment of U.S. technologies in Europe and elsewhere, but also foster a more unified global approach to

[1] https://www.epa.gov/lead/environmental-technology-verification-program-environmental-and-sustainable-technology

environmental management. We believe that your leadership can significantly impact achieving these goals, promoting a sustainable and economically beneficial approach to exports of environmental goods and services.

We appreciate the Administration's leadership and the opportunity to present these comments and recommendations on behalf of the ETTAC.

Sincerely,

Clare Schulzki

Clare Schulzki
ETTAC Chair

CC: Secretary of Energy Granholm
EPA Administrator Regan
NIST Director Locascio