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,

Clore Schulzki

Clare Schulzki ETTAC Chair