ENVIRONMENTAL FINANCIAL ADVISORY BOARD

November 1, 2024

The Honorable Michael S. Regan
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

Dear Administrator Regan:

The Environmental Financial Advisory Board (EFAB) is pleased to submit to EPA, the following recommendations and considerations pertaining to the *Investment Tax Incentive for Water Reuse Infrastructure*, developed by the EFAB's Water Reuse Workgroup. This charge was undertaken to respond to the Joint Explanatory Statement accompanying the Consolidated Appropriations Act, 2023, which included the following statement:

> *Given widescale deployment of private water reuse infrastructure at industrial facilities can be expensive for public utilities and local governments, the Committee directs the Agency, in coordination with the Water Reuse Interagency Working Group, to undertake a study on the public benefit of a potential federal investment tax credit to support private investment in water reuse and recycling systems. The Committee expects the Agency to report to the Committee within 180 days of enactment of this Act on planned actions to carry out this study.*

The primary focus of the workgroup was on evaluating the "public benefit" of a potential investment tax credit for privately owned industrial facilities, and specifically, how best to measure and quantity potential public benefits of an industrial reuse investment tax credit. Detailed metrics are part of the recommendation and included in the attached presentation.

Water Reuse Workgroup Charge Approach

After approval of the charge at the EPA EFAB October 23, 2023, Board Meeting, we held a Listening Session on May 21, 2024. The Framing Document, Listening Session Summary and Public Comments are documented on the EPA site:

https://www.epa.gov/waterfinancecenter/environmental-financial-advisory-board-efab-listening-session-materials-may-21

The Workgroup met regularly through 2024 to review relevant research, develop questions for the Listening Session, and write recommendations in the form of the attached presentation given at the October 15, 2024, EPA EFAB Board Meeting. The

presentation includes an Appendix which provides additional detail on the Charge questions from our research, Listening Session, and written comments.

Recommendations for determining public benefit of an investment tax credit:

1. To measure and quantify the public benefits of reuse, use an economic framework, such as An Economic Framework for Evaluating the Benefits and Costs of Water Reuse (Water Research Foundation (WRF) Project #1587), combined with metrics to calculate the public benefits of industrial reuse:
    - The WRF economic framework defines broad benefit and cost categories that apply to water reuse: direct and indirect financials, environmental, recreation, public health, economic, social and equity.
    - The WRF economic framework incorporates quantitative and qualitative measures to address the substantial environmental and social impacts of reuse.
2. Consider the various stakeholders and perspectives when determining the metrics for measurement of public benefits, e.g., benefits to the utility and industry, community, and environment.
3. Water quantity and quality benefits should be measured, and we included metrics for those in the attached presentation. In addition, benefits to the public at large should be considered and can be more qualitative if needed, e.g., resiliency during natural disasters, reducing security threats, increased recreational opportunities, increasing economic development, addressing environmental justice and equity concerns.
4. Build upon the 2006 WRF Project #1587, An Economic Framework for Evaluating the Benefits and Costs of Water Reuse, to incorporate the following:
    - Empirical investigations into the value of reliability that reuse provides;
    - Case studies that provide a robust and focused opportunity to thoroughly investigate the types and magnitudes of benefits and costs associated with actual past or anticipated water reuse projects, e.g., inclusion of wastewater recycling; and
    - Investigations of what happens if reuse is not available in several typical community water supply situations.

Considerations for development of investment tax credit:

- Aim incentives to attract a diverse range of participants including large scale users, e.g., stadiums, ballparks, and resorts.
- Tailor incentives to the challenge(s) being addressed by reuse, e.g., water scarcity versus water quality concerns.
- The drivers for treated municipal wastewater reuse may be different from onsite reuse, so the incentives may need to be different.
- The additional time it takes for permitting, complex local rules and a longer investment horizon are gaps to overcome with the credit.
- Tax incentives can support both centralized and decentralized reuse approaches, benefitting customers who pay for multiple water-related services.

- Consider the unique economic benefits and costs that municipal wastewater reuse providers could face if an industrial tax incentive is provided.
- From the EPA EFAB listening session, we documented a variety of externalities and unintended consequences from industry and utilities, along with research that could potentially mitigate concerns.

We hope the recommendations are helpful to EPA and we look forward to your submission to Congress on this important matter. The attached presentation incorporated by reference, comprises the full scope of our work. We thank you for the opportunity to be of service to the Water Reuse Interagency Working Group within EPA.

Kerry E. O'Neill
Chair
Environmental Financial Advisory Board

Angela Montoya Bricmont
Chair
EFAB Water Reuse Workgroup

Enclosure
cc: Edward H. Chu, Designated Federal Officer, Environmental Financial Advisory Board

Investment Tax Incentive for Water Reuse Infrastructure

October 2024 EFAB Board Meeting

EFAB Water Reuse Workgroup

EPA Office of Water, Water Reuse Program: Justin Mattingly, Sharon Nappier

EPA EFAB: Tara Johnson, Ed Chu

EFAB Board: Kerry O'Neill

EFAB Workgroup: Albert Cho, Janet Clements, Jeff Diehl, George Kelly, Cynthia Koehler, Dennis Randolph, David Wegner

Evaluate the public benefit of a potential investment tax credit for privately owned industrial facilities (Objective A)

1) How broad or narrow should the considerations for the public benefit of a tax credit be?
2) How can we best measure and quantify potential public benefits?
3) What externalities and unintended consequences should be taken into consideration?

How to measure and quantify public benefits of reuse[1]

A strictly financial analyses of reuse does not include the full value of the benefits of reuse (p.2-3,2-4)

A benefit-cost analysis can be used to evaluate projects like reuse, that have substantial environmental and social impacts (p.2-6)

A triple bottom line is another approach to evaluating the benefits of reuse that includes financial costs and revenues as well as social and environmental impacts (p.2-7)

Broad benefit and cost categories that can apply to reuse are: a) direct/internal/financial, b) environmental, c) recreation, d) public health, and e) economic, social and equity (p.3-10)

[1] Stratus Consulting Inc. (2006). An Economic Framework for Evaluating the Benefits and Costs of Water Reuse. WateReuse Research Foundation Project #1587. https://www.waterrf.org/research/projects/economic-framework-evaluation-benefits-and-costs-water-reuse

Context is important to costs and benefits

Onsite Water Reuse

- Industrial process water
- Other water sources

Centralized Water Reuse

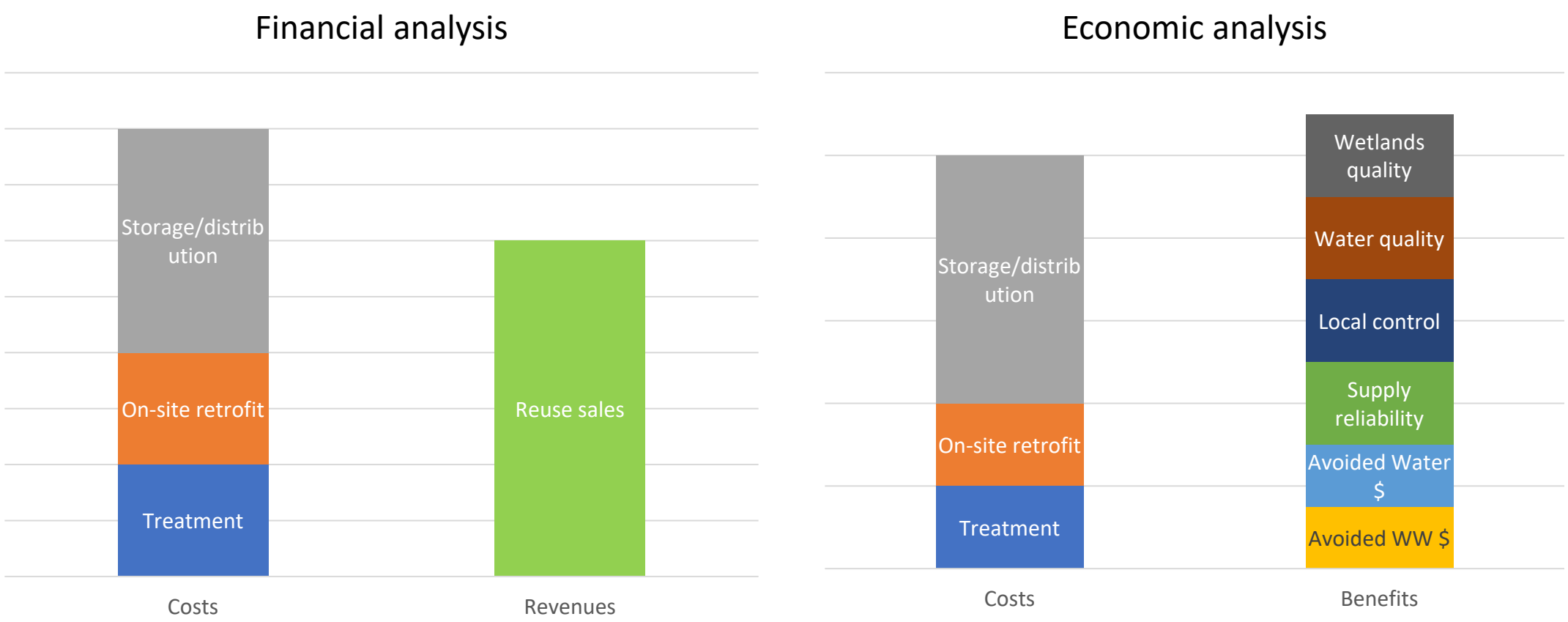
- Recycled municipal wastewater

Benefits and costs vary, from water supply, to wastewater discharge and stormwater management

Summary of Documents

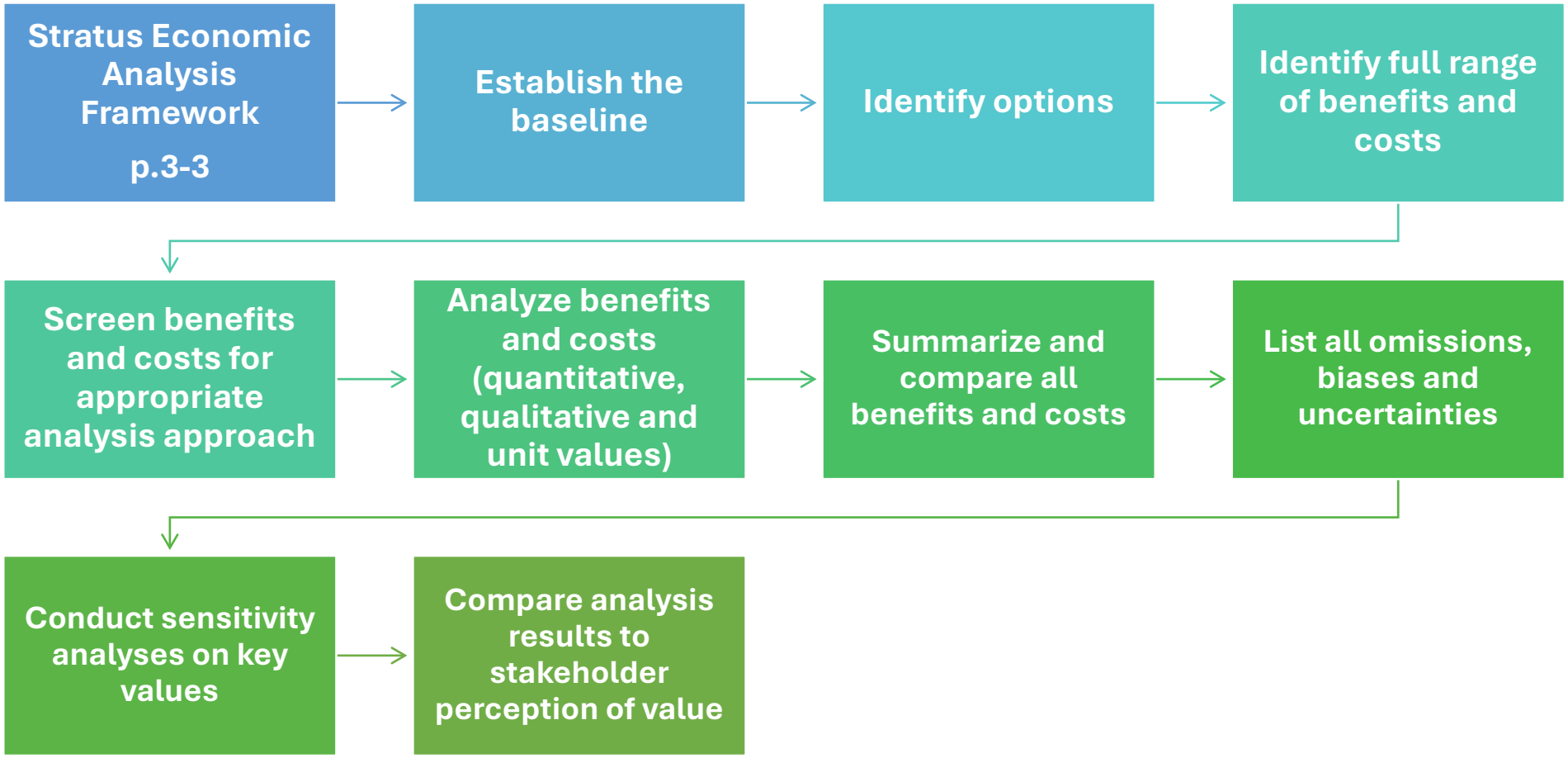
Date	Event or Entity	Event/document
10/23/23	EFAB Board Meeting	Approval of Charge
Jan 2024	National Water Reuse Action Plan	Collaborative Implementation Plan – Action 6.6
3/12/24	2024 WateReuse Symposium	Industrial Reuse Roundtable
5/17/24	Real Asset Advisors	Written comments
5/21/24	Public Listening Session	Minutes, agenda, framing document and questions
8/21/24	American Fuel & Petrochemical Manufacturers	Written comments
8/29/24	U.S. Chamber of Commerce	Written comments
10/1/24	WateReuse Association	Written comments

Economic analysis incorporates the varied benefits of reuse instead of focusing only on cash flows[1]



[1] Stratus Consulting Inc. (2006). An Economic Framework for Evaluating the Benefits and Costs of Water Reuse. WateReuse Research Foundation Project #1587. https://www.waterrf.org/research/projects/economic-framework-evaluation-benefits-and-costs-water-reuse

Use an economic framework for evaluating reuse benefits[1]



[1] Stratus Consulting Inc. (2006). An Economic Framework for Evaluating the Benefits and Costs of Water Reuse. WateReuse Research Foundation Project #1587. https://www.waterrf.org/research/projects/economic-framework-evaluation-benefits-and-costs-water-reuse

There are different perspectives to consider when measuring and quantifying public benefits

Utility/Industry

- Energy: consider net energy impacts of industrial reuse and how that interplays with water savings
- Water quality: Measure in-stream flows and water quality improvements tied to increased reuse
- Water quantity: Measure potable and freshwater offsets in context of water resources, especially in water-scarce areas
- Infrastructure cost: use cost accounting to provide an accurate picture of savings

Community

- Resiliency: onsite reuse limits disruption of critical services during natural disasters or security threats
- Equity: benefits to disadvantaged communities
- Economic: Quantify local impacts to community development including increased recreational opportunities

Environment

- Environmental justice: benefits to disadvantaged communities
- Energy: Measure reduced net energy consumption and lower net greenhouse gas emissions
- Water quantity and quality: Measure benefits such as reduced freshwater withdrawals and discharges of industrial effluent

Recommendations for how to measure and quantify public benefits

- Reuse provides significant benefits, especially in areas considered supply-constrained (e.g., increasing overall demand served) or wet and discharge-constrained
- Use a triple bottom line or benefit-cost analysis that reflects broad benefit and cost categories that apply to reuse
- Use metrics that consider a variety of perspectives and economic framework to provide a comprehensive model to measure the public benefits of industrial reuse
- Update the 2008 Stratus Research on measuring costs/benefits of reuse, e.g., to include wastewater recycling

Recommended updates to Stratus economic framework[1]

Additional research recommended by Stratus (pp. 6-1 and 6-2):

- Empirical investigations into the value of reliability that reuse provides
- Case studies that provide a robust and focused opportunity to properly investigate the types and magnitudes of benefits and costs associated with actual past or anticipated water reuse projects (for example, inclusion of wastewater recycling)
- Investigations of what happens if reuse is not available in several typical community water supply situations

[1] Stratus Consulting Inc. (2006). An Economic Framework for Evaluating the Benefits and Costs of Water Reuse. WateReuse Research Foundation Project #1587. https://www.waterrf.org/research/projects/economic-framework-evaluation-benefits-and-costs-water-reuse

What externalities and unintended consequences should be taken into consideration?

Utility comments

Utilities are pressured to keep rates low to ensure affordability – the budget to expand reuse systems is limited, especially for smaller utilities and tribes

Future threats to water rights administration, e.g., Colorado River Compact, may have broad implications for ability of some municipalities to reuse water

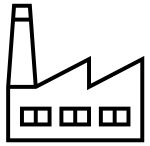
Successful scaling of water reuse could alter utility demand assumptions which could impact the utility's financials and business operations

Scaled up water reuse could impact the make-up of wastewater flowing to water resource recovery facilities and pose treatability challenges

Potential research to mitigate

- Share case studies of large and small utilities that have successfully implemented industrial reuse
- Identify the unique challenges/opportunities of reuse in the Southwest, especially states impacted by drought and diminishing Colorado River supplies
- Expand availability of tools for modeling and analyzing impact of reuse on utilities' operations and financials including utility pricing of recycled water
- Continue research on addressing changing make-up of wastewater from increased reuse, e.g., higher salt concentrations and disposal challenges

What externalities and unintended consequences should be taken into consideration?



Industry comments

The cost of water is often low when compared to other business expenses and does not drive the adoption of industrial reuse

ESG water positive goals are driving certain behaviors, but industry doesn't want to invest in complicated investment schemes that have overly complex barriers

Water is not the primary business of industry, which can lack in-house expertise in water management and operating reuse systems

Understand how energy costs and savings relate to water recycling and reuse

Potential research to mitigate

- Research adoption of reuse to achieve corporate stewardship goals, provide sustainable and resilient supplies and limit the impacts of reuse operations on local and regional water resources
- Identify the barriers to industrial reuse, e.g., varying regulations at state/local level or needed technical support and/or public-private partnerships for successful management of reuse systems
- Support research on the water/energy nexus in reuse, e.g., Nexterra indicated its research showed a small energy benefit or at least a neutral benefit to reuse

Evaluate optimal investment tax incentive to encourage innovation (Objective B)

1) What is the optimal rate for tax credit to encourage investment without being too generous?
2) Should this be a one-time or annual tax credit?
3) Should there be a limit on the industrial sectors eligible?
4) Are there differences between use of municipal recycled water, and the treatment and reuse of onsite wastewater that should be considered in incentive?

Recommended considerations in developing an industrial tax credit

- Incentives should aim to attract a diverse range of participants, e.g., large users, e.g., stadiums, ballparks and resorts
- Incentives should be tailored to the challenge(s) being addressed, e.g., water scarcity versus water quality concerns
- The drivers for recycled water are different from onsite, so the incentives need to be different
  - Benefits to water supply may be easier to track and justify financially
- The additional time it takes for permitting, complex local rules and a longer investment horizon are gaps to overcome with the credit
- Tax incentives can support both centralized and decentralized reuse approaches, benefitting customers who pay for multiple water-related services

Municipal utilities have unique economic benefits and costs that should be considered in an incentive

- Utilities typically price recycled water below treated drinking water and/or may have reduced impact fees
- Municipal utilities may need to retain capacity for large users in emergencies
- Utilities may experience a loss of revenue and/or the cost of treating higher concentrations
- Utilities that provide drinking and recycled water but not wastewater treatment face limitations in realizing the full benefits of reuse

Questions

Appendix

Research-A1

How broad or narrow should considerations for the public benefit of a tax credit be?

Utility

- Reuse programs need to be responsive to local contexts to be successful [1]
- Large industrial users can provide year-round demands on recycled water systems [1]
- Onsite systems can provide water supply, resilience, efficiency, environmental protections, and cost saving benefits to utilities [2]

Industry

- Opportunities for industrial reuse are context-specific and vary by region and industry type [3]
- Water is often viewed as “cheap” and cost of water efficient or water reuse systems lack the necessary return-on-investment (ROI) required by companies to justify their implementation [4]
- ROIs on commercial systems can be shorter but require potable water rates to be $7-9 per 1,000 gal to be cost competitive [5]
- Industrial water reuse retrofits are eligible for tax credits in New Jersey [6]

Community/Environment

- Industrial use of nonpotable water can free up potable water for other uses which could include environmental flows and other beneficial uses [1]
- Industrial reuse could result in reduced net energy consumption and lower net green house gas emission
- Onsite reuse has been shown to provide benefits across the United States, especially in areas considered wet, discharge-constrained and supply-constrained [5]

[1] AWWA Water Reuse Cost Allocation and Pricing Survey (2019)
[2] WateReuse Association Onsite Reuse Webpage
[3] WateReuse Association/Bluefield Research The Future of Water Reuse Factsheets for Midwest, Mountain West, Northeast, Southeast, South Central and Southwest
[4] WE&RF 14-04: A Framework for the Successful Implementation of On-site Industrial Water Reuse Final Report
[5] WRF 5040: Successful Implementation of Onsite and Distributed Water Reuse Systems Final Report
[6] New Jersey Treasury Corporation Business Tax Credits and Incentives Webpage

Listening Sessions-A1

How broad or narrow should considerations for the public benefit of a tax credit be?

Utility

- The investment tax credit should cover multiple forms of investment, including onsite water systems by private companies and co-investments with municipal agencies [1]
- Water quality, quantity, and infrastructure are all barriers to expanding reuse programs [1]
- An industrial tax credit would be helpful in expanding the scope of reuse, both for existing centralized non-potable recycled water systems and future decentralized reuse applications [2]

Industry

- Participants encouraged consideration of produced water from oil and gas operations as part of the incentive [1]
- Participants encouraged incentivizing companies to develop a private treatment facility that may sell recycled water to industrial users [2]
- Tax credits should be designed to encourage max interest in industrial reuse and recycling investment and promote innovative thinking and technological and operations applications [2]

Community/Environment

- Community groups are concerned over water unaffordability, environmental injustice, privatization, and ensuring this program would support public utilities in their endeavor to provide clean, safe, and affordable water [1]
- Community groups would like to ensure that tax incentive programs are created with environmental justice communities being able to weigh in, and that those considerations are not missed in the haste to create these programs [1]

[1] EPA EFAB Public Listening Session Minutes, May 21, 2024
[2] EPA EFAB Public Listening Session May 2024 submitted comments

What externalities and unintended consequences should be taken into consideration?

Utility

- Utilities are pressured to keep water rates low to ensure affordability for all customers – the ability to expand reuse systems is budget-limited
- Future threats to water rights administration, i.e., Colorado River Compact, may have broad implications for the ability for some municipalities to reuse water

Industry

- The cost of water is often low when compared to other business expenses and does not drive the adoption of industrial reuse
- Water is often not the primary business of industrial customers, and they can lack in-house expertise in water management and operating reuse systems
- Understand how energy costs and savings relate to water recycling and reuse

Community/Environment

- Privatization could lead to unaffordable water for communities and exacerbate inequities
- Tribes are important stakeholders but often underfunded in water reuse and recycling efforts
- Ensuring access to essential resources like water for all communities is a key component of environmental justice

Listening Sessions-A3

What externalities and unintended consequences should be taken into consideration?

Utility

- Successful scaling of water reuse could alter utility demand assumptions which could impact the utility's financials and business operations
- Scaled up water reuse could impact the make-up of wastewater flowing to water resource recovery facilities and pose treatability challenges
- Adoption of more water reuse could affect current utility rate-setting or impact fee models

Industry

- ESG water positive goals are driving certain behaviors, but industry doesn't want to invest in complicated investment schemes that have overly complex barriers

Community/Environment

- Large-scale water reuse could affect discharge into waterways, potentially impacting in-stream flow, especially during droughts
- By not promoting water reuse and water efficiency, water supply and security could be further threatened

Written Comment-B1

WateReuse letter on tax credit to encourage investment without being too generous[1]

30% federal investment tax credit for investments made by a manufacturer, data center, or other industrial user of water to:

- Construct or expand onsite water recycling systems;
- Construct or expand the water recycling infrastructure of a municipal water or wastewater authority; or
- Purchase municipally produced recycled water in lieu of using another freshwater source, where the former is more expensive than the later.[1]

Include an elective payment option allowing eligible investors to choose either a credit or payment for the value of the credit (some investors may already have excess tax credits)

Tax credits should be uncapped or capped high enough to encourage large projects and shared projects between multiple consumers that work together to reuse and share water

[1] October 1, 2024, WateReuse letter from Patricia Sinicropi, Executive Dir., to workgroup on Water Reuse Tax Credit, EPA EFAB

Listening Sessions-B1

What is the optimal rate for a tax credit to encourage investment without being too generous?

- Incentives should be tied to the public benefits of water recycling, particularly for rural and small systems
- Incentives could be designed as percent of capital costs of a reuse project based on the type of water reused
- Incentives should correlate to operating costs required to treat and discharge the waste stream
- Tax credits could be linked to a water quality credits-based system that provides additional support to centralized systems
- Tax credits should be clearly defined and easily transferable
- Incentive tied to % reduction in source water consumption or wastewater discharge
- A sliding scale based on volume or a de minimis threshold could ensure credit incentivizes water recycling while accommodating various industries

Listening Sessions-B1

What is the optimal rate for a tax credit to encourage investment without being too generous?

- Private infrastructure investors seek substantial returns on investment (pretax 8-10% for investment-grade and around 15% for non-investment-grade), influencing their decisions on water reuse projects
- Allowing flexibility in the administration of the tax credit could foster innovation and support multi-benefit projects
- Consider a bonus depreciation allowance
- A one-time up-front tax credit would be the most effective
- Tax credits should be scalable to accommodate different investment levels and infrastructure needs
- Matching credits to sector-specific needs and business opportunities, and establishing minimum volume thresholds, could improve their effectiveness
- The goal should be to distribute available funds equitably to ensure broad benefits
- Tax credit should be seen as offset in reuse investment to close gap between water utility and industry

Should there be a limit on the industrial sectors eligible?

- Consider produced water from oil and gas operation, process water from hydrogen production, heat recovery, and large commercial, irrigation, and agricultural users as potential recipients beyond conventional industrial users
- Credit should apply to evaluating and implementing internal process recycling systems, e.g., refineries stripping sour water
- Credit should promote overall efficiency from both a water and energy standpoint throughout drinking water, wastewater, and recycled water systems
- Corporations or other entities deemed eligible for this tax credit should show evidence of being involved in ongoing sustainable activities
- Recipients could include individual taxpayers and corporations

Listening Sessions-B4

Are there differences between use of municipal recycled water, and the treatment and reuse of onsite wastewater that should be considered?

- Centralized nonpotable recycled water systems provide different services than drinking water systems that protect public health
- Every industry is different and may require different recycled water quality for their end uses
- Using reclaimed water if it's not already available through a utility is 3-5x the cost of potable water
- Consider various types of water investment beyond just onsite systems including all the different types of investments a company can make
- Broader applications like treating and reusing produced water and assisting with groundwater recharge were mentioned