Wastewater Treatment as a Service

The Case for an Off-Balance Sheet Solution

Abstract

With increasing water scarcity and declining municipal infrastructure, industrial facilities reliant on large volumes of freshwater and responsible for the production and discharge of high-cost high-strength wastewater need to proactively manage water to limit operating, supply chain, and cost risks. By leveraging wastewater as a resource for value recovery and implementing onsite wastewater treatment and industrial reuse systems, these facilities can save on costs, cut environmental liabilities, and improve sustainability outcomes.

Traditionally, these companies prioritize investing capital in core capabilities and focus on topline growth. However, with a creative financial approach and the right onsite wastewater treatment and industrial reuse system working in tandem, industrial facilities can sustainably turn their wastewater into clean energy and clean water with no capital commitment. That's why Cambrian Innovation developed the WEPA (Water-Energy Purchase Agreement)®: an accessible, service-based wastewater-to-resources solution with no upfront cost and complete operational risk transfer for facilities that are reserving capital for topline growth, unwilling to devote the time to operate a system, or averse to the risk of equipment ownership and operation outside of their core competency.

Problem

Water is essential to the food and beverage industry both as a production input and as a by-product liability. Many food and beverage manufacturers have embraced onsite wastewater treatment and resource recovery to offset or eliminate the water and wastewater costs associated with manufacturing their products. Cutting-edge onsite wastewater treatment has historically required up-front capital investment, presenting a hurdle to food and beverage facilities with other, more top-line-focused goals for their capital. However, many of these facilities have still identified responsible water and wastewater management as an operational priority due to the costs, the environmental and operational liability, and the increased premium earned by sustainable business practices in the market. As many industrial facilities likely know, water rates and surcharges will continue to escalate as aging municipal infrastructure requires upkeep and improvement. Many municipalities already cap water withdrawal as climate change continues to impact the availability of freshwater. Finally, corporate social responsibility is increasingly valued by both consumers and investors in purchasing behavior as well as enterprise valuation. As a result, facilities can find themselves faced with a distressing choice between 1) sending a constant flow of cash down the drain by paying ongoing and costly utility surcharges, missing the opportunity to turn their wastestream into a resource, or 2) foregoing investment in production and revenue growth by sinking capital into much needed onsite wastewater infrastructure.

Solution

For over a decade, Cambrian has successfully offered a cost-effective and sustainable solution to high wastewater costs, growing utility bills, and hours lost to operational inefficiency for food and beverage manufacturers across the United States. A majority of these partnerships, however, were the products of capital investments. By applying the "everything-as-a-service" (XaaS) model proliferating across industries to the infrastructure-as-a-service approach in water and wastewater, Cambrian is not just democratizing its disruptive approach to wastewater infrastructure, but also providing a creative financing platform that can make a sustainable waste-to-resources project even more financially advantageous. With the WEPA, more industrial food and beverage facilities can take advantage of Cambrian's sustainable, modular micro-utilities to eliminate wastewater costs, reduce environmental impact, and alleviate capped production at no upfront cost or operational risk. With more time and capital available, companies can pour more energy and more money back into their core business.

The Benefits of the WEPA

In addition to providing cost savings in water, wastewater, and energy by recovering resources from wastewater, implementing a treatment solution under a WEPA provides other benefits to industrial facilities, including:

1) Eliminating an up-front capital investment to reap the cost savings offered by the treatment solution while freeing up capital for other investments central to the growth of their business;
2) Securing long-term, predictable, fixed costs, to insulate from volatile price escalations in utility markets; and
3) Offloading operational and compliance risk to guarantee long-term operational security while ensuring internal resources are fully dedicated to their core business.

1. Eliminating an Upfront Capital Investment

With limited capital resources to allocate, many industrial facilities are faced with a difficult choice: should they invest in growing their core business or implement onsite treatment to reduce their utility bill and carbon footprint. Under the WEPA, the answer to this question is simple: invest in both—eliminate liabilities and grow.

By implementing onsite treatment under the WEPA, facilities can reduce their bottom-line operating costs and wipe out water- and wastewater-related production caps while retaining capital for strategic investment to help topline growth of their business. The financial benefits of this service- based model can be substantial, as seen by the following example:

> *Let's say that a craft brewery is thinking of investing in a new taproom at their flagship location, but the wastewater bills are piling up and starting to impact the profitability of the business.*

Under the WEPA, the brewery is able to reduce the cumbersome wastewater bills while retaining capital to invest in their taproom. Taprooms are profitcenters for craft breweries, with typical return on equity (ROE) figures in the range of 45%. Assuming that a Cambrian system under the WEPA allows the brewery to retain $1.00 MM in capital to invest into ***the taproom, the brewery will realize a lifetime after-tax net present value (NPV) benefit of over $1.95 MM, assuming average industry cost of capital.***

2. Securing Long-Term Utility Costs

According to the U.S. Department of Energy, wastewater fees are increasing at a rate of 6% year-over-year and rising with increasing volatility. Under a WEPA, facilities can lock in a long-term, performance-based monthly fee escalated at a lower fixed rate (typically tied to inflation).

Securing long-term, fixed rates enables businesses to accurately budget for operating costs, enabling for more strategic, forward-looking investments. Furthermore, hedging against utility rate volatility can result in substantial lifecycle savings, as represented by the shaded green area in Figure 1, below.

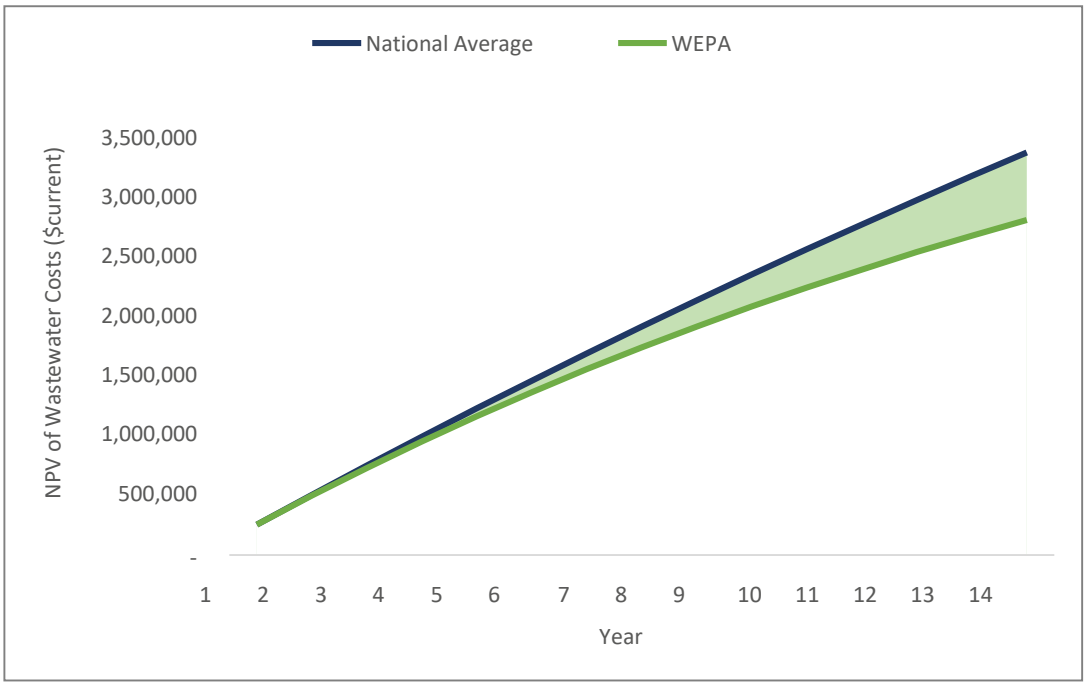

Figure 1: Example of lifetime savings of hedging against utility rate volatility through a WEPA

3. **Offloading Operational and Compliance Risk**

Under the service-based WEPA, the facility is completely insulated from operational and compliance risk in two key ways: 1) Cambrian shoulders the full operational burden, ensuring that the effluent from the system always meets discharge requirements and 2) The facility only pays their monthly WEPA fee if the solution performs as guaranteed.

With guaranteed operational performance, facilities are no longer required to sink internal resources into wastewater management activities including asset management, treatment solution operation and maintenance, wastewater sampling and reporting to government agencies, and much more. Instead, these resources can be dedicated to high-value activities which grow the business.

Conclusion

Under the WEPA, facilities are not investing in wastewater treatment infrastructure—they are investing in growing their business while capturing clean water and clean energy by turning wastewater into a resource. Put simply, the WEPA is a partnership designed to maximize top-line growth, minimize risk, and guarantee long-term security for industrial manufacturers dependent on increasingly scarce water resources and frustrated with the costly and heavily regulated liability of wastewater management.