ESG CASE STUDY

City of Montpelier Organics-to-Energy Project

Montpelier, Vermont

Project Size

$16.5 million

Savings Information

$550,000 annual revenue and savings guarantee

Project Background

The City of Montpelier's Water Resource Recovery Facility (WRRF) is a 50-year-old facility that has undergone periodic partial upgrades over its lifetime. The facility has significant aging infrastructure that is in need of repair or replacement, including anaerobic digestion systems that no longer function properly. Operational issues include limited digester capacity and mixing performance, low biogas production, high sludge disposal volume, and limited organic waste receiving capacity.

Strategies & Solutions

To solve these problems, ESG is implementing an Aging Infrastructure/ Organics-to-Energy project — a comprehensive upgrade of the WRRF's solids treatment train and related aging infrastructure that will enable the City to lower operating costs and increase tipping fee revenues through increased digester capacity and improved organic waste co-digestion.

By enhancing the WRRF biosolids processing systems and increasing organics receiving capacity and biogas production, the project provides an opportunity for the City to improve the performance and reliability of the WRRF while simultaneously reducing the financial burden and carbon footprint of the facility. Over the long term, the project will enable the WRRF to produce more than enough biogas to meet its energy needs, setting the stage for it to become a green, net zero energy facility. Phase 1 of the project is 75 percent complete and includes the following key project features:

- Improved receiving stations to allow an increase in volume and diversity of hauled wastes
- Development and guarantee of organic waste feedstock supplies including nationally recognized dairy producers, FOG, and food waste
- Upgraded dewatering and anaerobic digestion systems to increase capacity, enable the co-digestion of sludge and high strength organic waste streams, increase gas production, and reduce sludge disposal costs
- The replacement of fuel oil with biogas to reduce energy costs
- Upgrade to UV system to allow for automated operation to reduce power consumption
- Replacement of grit classifier, grit pumps and grit washer
- Replacement of primary clarifier internals
- Upgrades to SCADA system

Phase 2, currently in the design and permitting stage, includes a 1 MW biogas CHP system that will export power under a VT PUC renewab le feed-in tarrif standard offer program.

ESG

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