Item 13: Silicon Valley Clean Water

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Solicitation Overview

Goal:

- Clean, dispatchable generation technologies
- 100% renewable fuels to provide stable power
- Reduce strain on the grid

Solicitation Funding:

- Two projects proposed for awards
- $8M with $3.62M in match funding

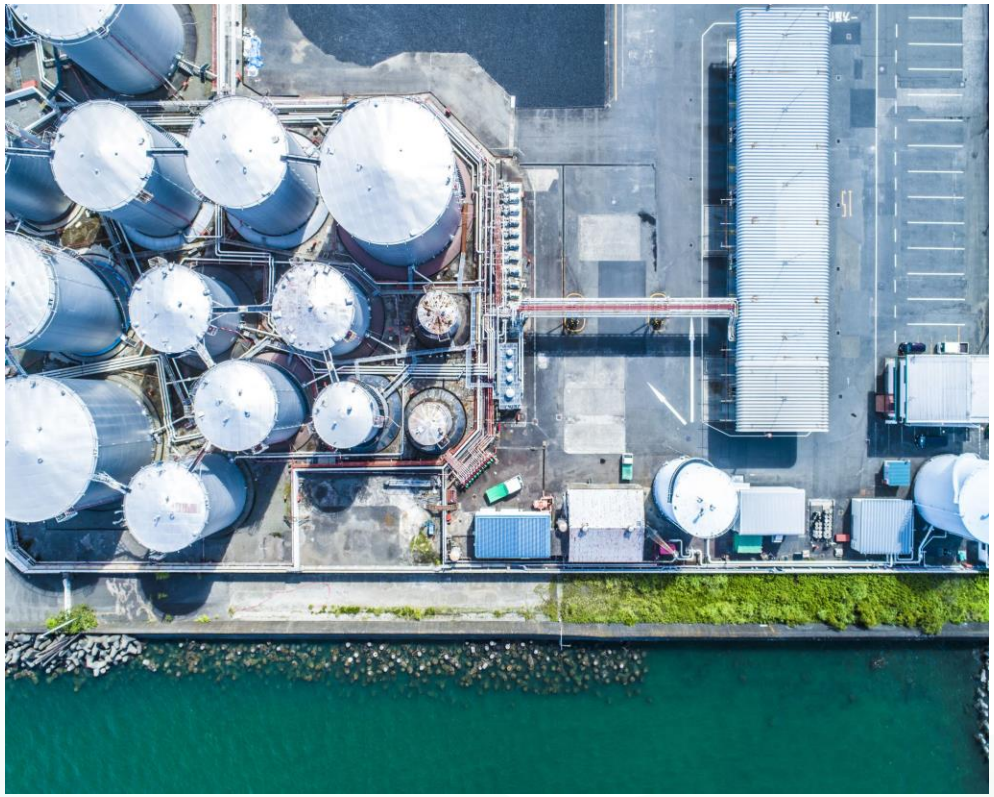

Figure: Industrial facility
Source: Power Point

Benefits to Californians

- Nimbler grid to maintain reliability as California transitions to 100% clean energy
- Reduce dependence on fossil gas
- Meet demands of facilities during peak periods
- Reduce emissions and improve air quality in local areas

Figure: Silicon Valley Clean Water – Water Resource Recovery Facility
Source: Phil Wartena via California Water Environment Association

Silicon Valley Clean Water

Biogas Microgrid for Clean Dispatchable Electricity from Linear Generators

- **Funding:** $4M with $2.53M in match
- **Location:** Redwood City
- **Size:** 730 kW
- **Deploy:** Integrated microgrid system using linear generators
- **Demonstrate:** Predictive Biogas Microgrid Controller to coordinate facility's energy system

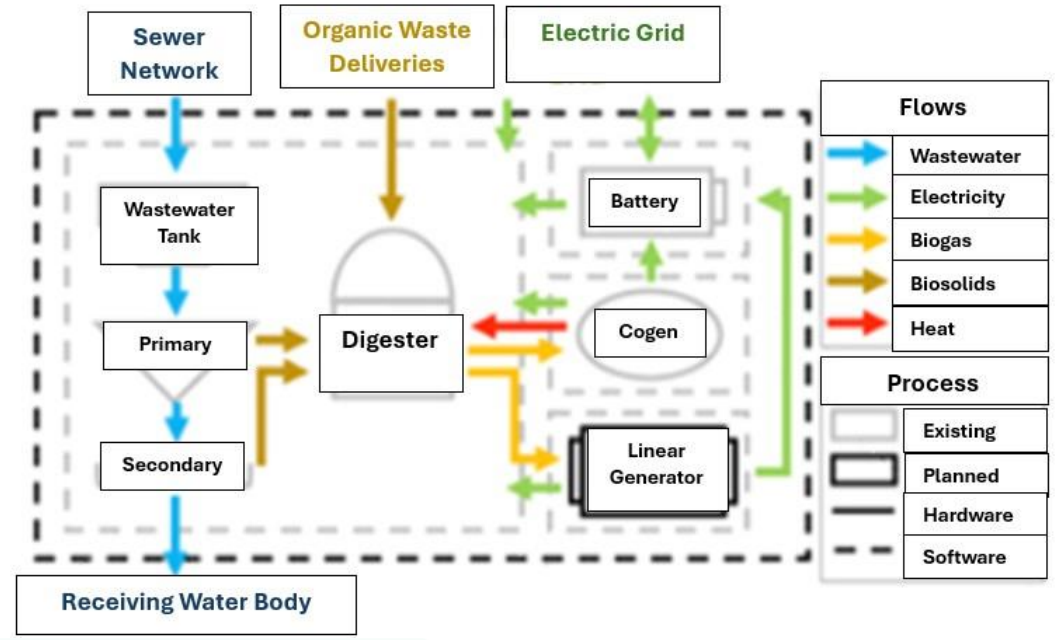

Figure: Process flow diagram of proposed project

Source: Silicon Valley Clean Water

Project Benefits

- Reduce facility's peak demand by 600 kW
- Increase renewable electricity by 5,200 MWh/year
- Add 100-250 kW of demand response capacity
- Cut GHG emissions by 1,230 tons/year
- Save $150,000/year in GHG damages
- Payback period under 10 years

Figure: Linear Generator
Source: Mainspring Energy

Market Potential

- Add 2.2 TWh/year
- Reduce GHG by 292,000 tons/year
- Reduce Criteria Pollutants by 190 tons/year
- Save approximately $40B/year in avoided damages

Figure: Linear Generator
Source: Mainspring Energy

Staff Recommendation

- Approve grant agreement with Silicon Valley Clean Water
- Adopt staff's recommendation that project is exempt from CEQA