

Proposed Agreement for Microgrid Project Removal at Laguna Treatment Plant

Board of Public Utilities Meeting

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Background



(2015) Trane secures a ~\$5M California Energy Commission grant to “pilot” a microgrid (selects LTP for siting)

Grant Project Goals:

- 1) fund testing and demonstrate operation of microgrid utilizing renewable energy,
- 2) evaluate opportunities for participation in energy markets utilizing microgrid

(2017) City signs agreement for design and construction of microgrid

(2019) Construction concluded, testing begins

Project Elements

- The Project consisted of three elements:
- 1) A 2.2 MW/480 kWh battery array, controller, appurtenances
- 2) Two Selective Catalytic Reducers (SCR) installed on two of four existing combined heat and power (CHP) units
- 3) 125 kW solar array at LTP admin parking









Project Outcomes

- In 2019, on-site testing and simulations occurred for 30 days proving the microgrid could deliver power to the day-ahead market
- Study of the project concluded that revenue opportunities from the day-ahead and spot markets were limited
- PG&E would not accept full interconnection due to compatibility of inverter design. Full interconnection is not possible without significant capital investment
 - Grant funds fully expended
 - No additional funding available from Trane or Santa Rosa Water
- Trane completed all grant requirements and submitted final report to the California Energy Commission

Demand Response Market

- UC Davis hired to evaluate Santa Rosa Water's Pilot Project
 - Evaluated the Proxy Demand Resource Program, otherwise referred to as "day-ahead" and "real-time" market
 - Identified limited times of the year when this program could be utilized (LTP Operations must be prioritized)
 - Could shift energy load and generate saving from 1% to 7% of energy costs (2017 dollars) through combination of demand response programs
- Ability to shift energy loads and still meet regulatory and treatment plant operation requirements is challenging

PG&Es Base Interruptible Program

- Santa Rosa Water is now participating
- A scheduler notifies LTP staff of an opportunity to reduce load and receive payment when demands are high
- Participation is elective, no penalty for not participating in the events (minimal risk)
- LTP has certain elements of the plant that can be manipulated to temporarily reduce electrical load from the facilities
- Estimate \$40,000 to \$80,000 annually for participation

Proposed Agreement with Trane

- Operations of the pilot project have concluded, and due to costs and capital investment needed, interconnection with the grid is not recommended
- Trane and Santa Rosa Water staff recommend termination of the project and removal of the microgrid, transformer, and inverter
- Trane responsible for all permits and necessary approvals to complete work
- Trane will remove these project elements at no cost to Santa Rosa Water, return site to satisfactory conditions
- Ownership of solar array and SCRs remains with Santa Rosa Water

Ongoing Benefits to Santa Rosa Water

- No longer need to perform maintenance on Microgrid
- The installation of two SCRs (for the price of one)
 - Further maximized CHP operations, increased production
- The completion of the 125 kW Solar Array
 - Offset some electrical demand, shade in parking area

Recommendation

Santa Rosa Water staff recommends that the Board of Public Utilities, by motion, approve the Right of Entry and Access Agreement for Removal of the Microgrid Demonstration Project Battery, Transformer, and Inverter at the Santa Rosa Laguna Treatment Plant between the City of Santa Rosa and Trane U.S., Inc.