



CALIFORNIA LOW INCOME WEATHERIZATION PROGRAM

FOR MULTIFAMILY PROPERTIES



2020 Beneficial Electrification Case Study: SOMA STUDIO & FAMILY APARTMENTS

LIWP helps TNDC electrify the SOMA community, saving costs and contributing to California's sustainability goals

San Francisco, CA | 88 SRO studios and 74 family units | Built in 2003

The Tenderloin Neighborhood Development Corporation (TNDC) helps people thrive in San Francisco by building affordable homes, offering services that support well-being, and amplifying the voice of the communities they serve. TNDC is rooted in the Tenderloin, but works across seven neighborhoods, including SOMA. TNDC prioritized resident needs and benefits as part of energy work completed at its SOMA Studio and Family Apartments. Built in 2003, SOMA provides 162 homes with more than 60% of its households classified as extremely low-income (earning less than 30% of the Area Median Income). With the Low Income Weatherization Program (LIWP) for Multifamily, TNDC electrified key major central building systems while promoting resident benefits and helping meet the state's goals to decarbonize and reduce greenhouse gas (GHG) emissions in buildings.

TNDC kept costs low by co-leveraging other Energy Efficiency (EE) programs which LIWP managed on the back-end as a single point of contact. Without LIWP, the project scope would have been limited to lighting upgrades, but instead, TNDC was able to take a whole-building approach and broaden the scope to integrate various electrification measures as part of the stand-alone energy retrofit.

TNDC has committed to reducing carbon emissions by 50% by 2028 compared to a 2018 baseline, and building electrification and decarbonization are key strategies for meeting this goal. Further, SOMA gets 100% clean electricity through Clean Power SF's Clean Power Super Green program, making the Scope 2 emissions for the site zero.

SCOPE OF WORK

- Low-flow aerators and showerheads
- In-unit LED lighting
- Common area and exterior LED lighting and controls
- High-efficiency washing machines
- Heat pump domestic hot water heater
- Condensing hydronic heating boilers
- Heat exchanger for backup domestic hot water
- Variable-speed heating and domestic hot water pumps
- Hydronic and domestic hot water heating pipe insulation
- Make-up air systems for common area corridors
- Variable speed corridor exhaust fans
- Garage exhaust fans retro-commissioning
- Solar photovoltaics (PV)

PROJECTED ANNUAL GHG SAVINGS & EQUIVALENCIES



186
Metric tons of CO₂



219
Acres of U.S. forest



455,960
Average vehicle miles saved

CO-LEVERAGED PROGRAM RESOURCES

TNDC combined funding from Bay Area Multifamily Building Enhancements (BAMBE) and Bay Area Air Quality Management District (BAAQMD), and received free in-unit measures from Energy Savings Assistance (ESA) programs.

Through LIWP, they also installed a 74.0 kW-DC common area solar PV system and co-leveraged the GoSolarSF solar program in 2019, which helped offset part of the common area electricity load.

Total Project Cost for EE*	\$959,421
BAMBE+BAAQMD	\$258,000
LIWP EE Incentive	\$562,980
Owner out-of-pocket costs	\$138,441

*ESA measures are free and are not part of the project costs.

Total Project Cost for PV	\$236,120
GoSolar SF	\$50,000
LIWP PV Incentive	\$67,410
Owner out-of-pocket costs	\$118,710

PROJECTED TOTAL ANNUAL SAVINGS



26.9%
Estimated Annual
Cost Savings
\$48,115



40.9%
Estimated Site
Energy Savings
3,178,326 kBTU

Electrifying the SOMA community

With LIWP technical support, TNDC was guided through available technologies and solutions to undertake its first existing-building electrification project. Ruchi Shah, Senior Sustainability Manager at TNDC, says, *“When we started this project, LIWP was the only program that funded electrification and fuel-switching measures. They provided an exhaustive list of measures and more importantly, their team spent three to four months coming up with preliminary pricing to help identify a contractor, an offering no other energy program has provided.”*

TNDC, like several other affordable housing developers, has highlighted the need for flexibility and robust technical assistance (TA) with the state’s move towards electrifying end uses. LIWP phased in the incentive payments which gave TNDC flexibility and helped them maintain cash flow.

LIWP TA work included support with:

- Scoping and design alongside contractor’s engineers
- Specification development and submittal review
- Coordination with and leveraging of other funding sources
- Value engineering and scope optimization

Resident Benefits:

At SOMA, tenants only pay for in-unit electricity, which is limited to lighting and appliances. However, lighting was an expense for the tenants and TNDC wanted to help reduce tenant utility bills. LIWP and ESA covered in-unit light bulb replacements at no cost, thus providing direct savings to tenants. Common area light replacements are also making tenants feel safer at the property and brightening up common spaces. To prevent passing on electrical load to tenants, TNDC retained its central systems and continues to pay for water and central heating.

By electrifying the majority of the central domestic hot water systems, TNDC has begun exploring these technologies and the associated savings to scale electrification work to the rest of its portfolio, including over 70% of its new construction pipeline which is slated to be all-electric.

“LIWP provides quality service and has a dedicated team looking at our WegoWise data. This data-driven approach feels reassuring and reminds us that we are not forgotten after incentives are paid out. Without LIWP, this work would have been challenging, if not impossible.”

—Ruchi Shah, TNDC



Photos courtesy of TNDC:

1. SOMA Studio & Family Apartments
2. Hydronic heating system (post-LIWP)
3. Hydronic heating system (pre-LIWP)
4. Solar PVs (post-LIWP)