$1.1 Million
IN REBATES PAID TO SUPPORT HOME UPGRADES AND ELECTRIFICATION PROJECTS

17,959 MMBTU
SAVINGS TO DATE

20%
GRID PEAK REDUCTIONS

43%
REDUCTION IN GAS CONSUMPTION

Residential Measured Pay-for-Performance **Delivers Grid Reliability**

When a California utility was ready for a whole-home retrofit and beneficial electrification program that delivered market-friendly innovation, they turned to Franklin Energy.

THE STORY

As one of the largest combined natural gas and electric energy companies in the United States, this California-based utility provides a variety of energy- and money-saving solutions for their 16 million statewide customers. With a large service territory and diverse customer base in a state with the most ambitious climate and energy goals in the nation, their offerings must extend beyond traditional energy efficiency.

THE GOAL

To align with California's goals of decarbonization and reduced system peaks to increase grid reliability, the utility set a goal of reducing residential energy usage and engaging in peak load-reduction strategies. They tasked Franklin Energy with designing a scalable whole-home program that paid for measured savings delivered at the meter, with a focus on peak energy reductions. Leveraging a new approach to energy efficiency based on measuring at the meter, created initially through SB-350 legislation designed to double the state's energy efficiency goals, Franklin Energy took on the challenge to prove how innovation through pay-for-performance can deliver results at scale.

THE SOLUTION AND RESULTS

With a focus on maximizing customer bill savings while delivering grid reliability and resilience, Franklin Energy developed and implemented a unique program built upon building science principles. The program emphasized deep whole-home retrofits alongside a measured pay-for-performance approach. Thanks to the flexibility this offered, the team delivered both savings and grid value by transitioning from traditional energy efficiency to electrification.

The resulting electrification projects, delivered by over 70 trade allies, include air source heat pumps, insulation, thermostats, heat pump water heaters, and duct sealing, which dramatically reduced gas consumption by an average of 43% per customer. By targeting customers with air-conditioning units installed in hotter climate zones, we delivered an average of 20% peak summer savings, shifting energy usage from natural gas to electricity. This reduced the most expensive time-of-use spikes for customers and dramatically lowered customer bills.

Due to the nature of electrification, these projects increased electricity consumption in terms of total kWh. However, because the summer peak season is vastly more GHG-intensive and costly, the value of peak savings outweighed the increase in electrical demand due to heating, which mostly occurred during off-peak periods in winter months. By implementing a combination of load-reduction strategies and whole-home retrofits, we demonstrated how electrification can increase total electric demand while simultaneously being beneficial to the grid.

Partnering with Recurve Analytics, Inc., a company that specializes in leveraging smart meter data and open-source advanced M&V analytics to accurately measure energy usage and the impact of efficiency and demand flexibility on the grid, Franklin Energy was able to demonstrate in-depth measured savings from the program.

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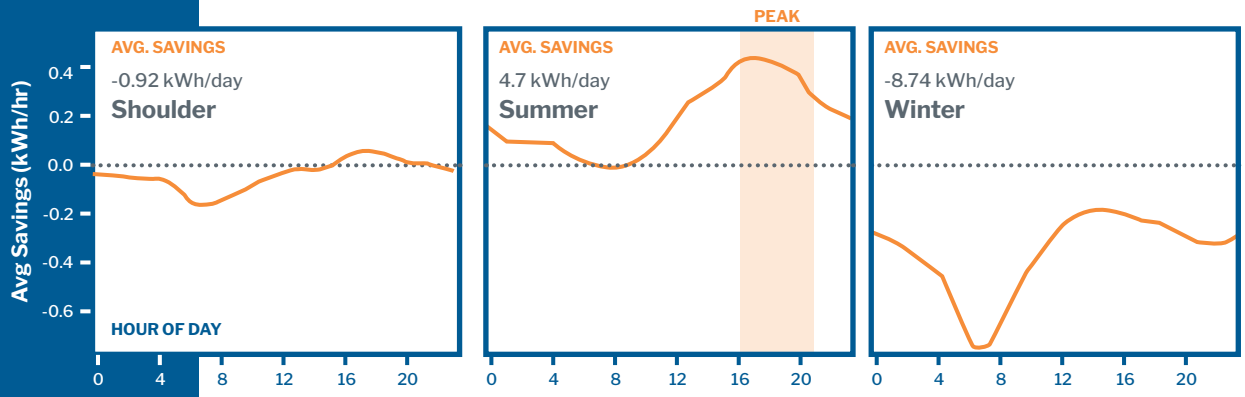
Delivers Grid Reliability

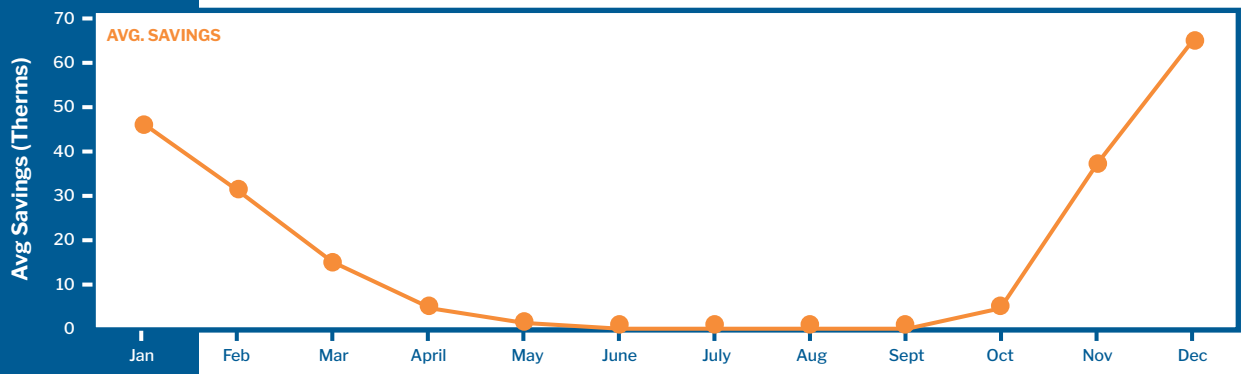
THE SOLUTION AND RESULTS (CONTINUED)

The chart below shows the hourly change in demand by season from these electrification projects and the corresponding value to the grid based on the Summer Reliability Market Access price signal. Because summer peak hours are vastly more costly and have higher GHG than winter and shoulder months, the value of summer peak savings exceeds the cost of winter and shoulder heating load, making the average project worth $4,039* to the grid, even though electrification increased overall consumption.

ELECTRIC HOURLY SAVINGS



GAS MONTHLY SAVINGS



ANNUAL PER-PROJECT SAVINGS

-437 kWh / -4%
194.1 therms/ 43%

ELECTRIC GRID VALUE

TSB: $730

GAS GRID VALUE

TSB: $3,309

TOTAL SYSTEM BENEFIT

$4,039*

*TSB is a per-project average

PROVIDING VALUE TO UTILITIES AND STATE ENERGY OFFICES

The Inflation Reduction Act (IRA) includes provisions for a measured performance program, like the one described in this case study, as part of the $4.3B Homeowner Managing Energy Savings (HOMES) whole-home residential rebate program. With the right energy efficiency program that aligns incentives through measured pay-for-performance, this innovative design can provide the simplicity homeowners need to engage while delivering measurable outcomes at the meter.

As states evaluate the IRA HOMES rebate program and how they choose to implement this new funding source, programs like this one are indicators that taking a measured approach can ensure savings, increased customer satisfaction, and boosted grid reliability.

Beyond the benefit to homeowners, paying for results instead of developing their own programs means that state energy offices can dramatically reduce overhead and implementation costs while enabling market innovation and ensuring real savings for every dollar spent.

Having been at the forefront of meter-based programs since they were approved by the California Public Utility Commission (CPUC), we are ready to help utilities take full advantage of the IRA HOMES Program. And with the support of Recurve, our residential measured performance programs can easily launch, scale, track program performance at the meter, and save customers energy and money on their bills.

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