Case Study

Beneficial Electrification

A Custom Electrotechnology Program for JEA

ICF Advantage

Wide range of technologies: ICF provided a suite of five complementary electric-powered technologies, giving JEA's customers more options.

Custom applications: JEA's NRE program includes custom incentives for retrofits, infrastructure upgrades, and unique technologies or conversion opportunities. Completed custom projects included electric welders, boom lifts, scissor lifts, silo equipment, and generator test beds.

Local expertise: With locally based expertise, ICF was able to provide in-person consultation and deeply rooted knowledge of the local industry.

ICF has been a pioneer in addressing the growth needs of electric utilities. Providing local expertise and a proven model of both evaluation and implementation, ICF facilitated the creation of JEA's highly successful non-road electrotechnology (NRE) program.

In its first **18 months,** the program engaged more than **450 customers**, resulting in **156 completed projects** and generating **$2,645,742** in **annual revenue** for JEA. The electrotechnology conversions will also **reduce local site emissions by 360,000 tons of carbon dioxide** over the life of the equipment.

The Challenge

In today's energy market, many utilities are experiencing flat or declining electricity sales resulting from efficiency programs, adoption of distributed energy resources, and other economic factors. These utilities face the dual challenge of increasing revenue while also implementing programs that benefit the industry and the community with cleaner technologies that can reduce air pollution and provide a positive overall environmental impact. Utilities like JEA need innovative programs that boost electricity sales during off-peak hours to minimize the need for more generation, while also satisfying environmental and regulatory requirements. To be effective, programs must engage hard-to-reach commercial customer segments and overcome longstanding attitudes about converting traditional, propane- and diesel-powered equipment to more environmentally friendly electric-powered alternatives.

The Solution

ICF worked with JEA to develop a turnkey NRE program that supports improved revenue generation. ICF's program provides a wide range of electrotechnologies and custom electric conversion applications. With ICF's help, JEA is successfully promoting electrically powered equipment within its service area. In turn, JEA's customers are realizing reduced operating costs and healthier and more efficient work environments.

A clear view of customer needs

In 2014, ICF conducted a thorough market assessment and gained a detailed understanding of JEA's service territory and customers. ICF identified five high-potential electrotechnologies that were targeted for JEA's unique market needs: forklifts, truck refrigeration units, airport ground support equipment (ground power units, baggage tow tractors, belt loaders, and pushbacks), golf carts, and cranes. ICF analyzed and optimized rebate and incentive amounts to maximize the cost effectiveness of the program. Custom incentives were also available for retrofits, infrastructure upgrades, and alternative technologies. Equipment buying cycles also were factored into the schedule, thus optimizing the rollout timing.

From assessment to implementation—in less time

ICF's unique end-to-end NRE program solution provides the ability to move seamlessly through technological and market-based assessments and on into program implementation. With ICF's Quick Start approach, JEA initiated the startup phase in October 2014 and had new technology conversions beginning in January 2015. ICF helped JEA and its customers achieve an efficient rollout through expert knowledge of the industry, including an advanced approach using a combination of custom technologies requiring a detailed assessment and readily available solutions that customers could convert to and begin using quickly. ICF's locally based account manager provided JEA customers in-person equipment consultations and application assistance to maximize and expedite customer rebates.

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Case Study

The Client

JEA, located in Jacksonville, Florida, is the eighth largest community-owned electric utility company in the United States and the largest in Florida. JEA serves an estimated 447,000 electric, 329,000 water, and 254,000 sewer customers.

"This program benefits us, our customers, and the environment."
~Peter King, Program Manager, JEA

The Results

As a result of the NRE program, JEA experienced an improvement in its electricity revenues and load growth. Specifically, the program increased JEA's annual load by more than 26,500 MWh by May 2016 by converting 856 pieces of equipment, with an estimated additional 257,000 MWh increase expected during the lifetime of the equipment. About 70% of this additional load is anticipated during off-peak generation hours. This load results in $2,645,742 in added annual revenue for JEA or a NPV benefit of more than $11 million over the lifetime of the equipment.

Unique custom opportunities

ICF's local account manager offered on-site consultations to evaluate JEA customers' potential for prescriptive and custom rebate applications. During these visits, his training and expertise helped him uncover unique electrotechnology conversion opportunities. Some common custom opportunities have the potential to be added as prescriptive rebate options, should the program be expanded in the future, such as electric:

- Welders
- Boom lifts
- Scissor lifts

Other larger custom opportunities that are specific to the individual customers' operations can provide significant load growth opportunities for JEA. For example, the Dupuy Group, a leading warehouse and logistics provider, received a custom rebate for their recently installed electric soft starter and processing equipment on their green coffee silo. Together, these two pieces of equipment will contribute an additional 573,000 kWh annually to JEA's load. ICF also conducted a metering study on the soft starter to confirm their load impact calculations.

CUSTOM EQUIPMENT APPLICATIONS (AS OF MAY 2016)

Equipment	Quantity	Unit kW	Unit Annual kWh	Total Annual kWh
Boom Lift	3	11.5	5,974	17,921
Generator Test Bed	1	150.0	187,714	187,714
Processing Equipment Motor	1	45.0	96,086	96,086
Soft Starter	1	223.7	477,676	477,676
Scissor Lift	2	11.5	5,974	11,947
Welders	63	20.0	102,175	3,867,951

Emission reductions

JEA serves as a leader in the Jacksonville community by taking the initiative to reduce local emissions through the NRE program. By May 2016, the program reduced local site emissions by 350,000 tons of carbon dioxide, 1,350 tons of nitrogen oxides, and 1,329 tons of hydrocarbons over the life of the equipment. This is equivalent to the emission reductions of converting more than 11 million incandescent lamps to LEDs.

Case Study

"We're very proud to engage with ICF to make the most of the available program. With ongoing support from both sides, we were able to obtain a significant return on the electrical equipment purchased, which further enhanced our business model for electric over diesel equipment."

~Ben Jones, CEO and president, Hitzinger USA

About ICF

ICF (NASDAQ:ICFI) is a global consulting and technology services provider with more than 5,000 professionals focused on making big things possible for our clients. We are business analysts, policy specialists, technologists, researchers, digital strategists, social scientists and creatives. Since 1969, government and commercial clients have worked with ICF to overcome their toughest challenges on issues that matter profoundly to their success. Come engage with us at **icf.com**.

For more information, contact:

ICF Beneficial Electrification Services

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Increased Customer Satisfaction

The NRE program has been highly successful for JEA, with benefits directly impacting its customers, including:

- Reduced equipment lifecycle costs
- Lower fuel consumption
- Safer and more efficient work atmosphere
- Cleaner and healthier work environment
- Financial incentives for equipment purchase and conversion

J.D. Power business customers ranked JEA the "Highest Customer Satisfaction with Business Electric Service in the South among Midsize Utilities" at the end of 2015. The NRE program is just one of JEA's customer offerings, but it caters to their major and minor commercial and industrial customers, which make up 44 percent of their annual electric revenues and 46 percent of their annual megawatt hour sales. Of program participants who responded to a program survey, 97 percent said they agreed or strongly agreed that their experience with the JEA NRE program increased their overall satisfaction with the utility.

JEA customer experience: Wagner Logistics

In 2015, Wagner Logistics replaced its entire propane-powered fleet with six electric-powered forklifts. The company received an incentive payment of $3000 for participating in the program. The company expects to save about $8,000 annually per lift in reduced fuel and maintenance costs. The company already is reporting a much cleaner work environment as a result of its greener fleet.

JEA customer experience: Hitzinger

Hitzinger USA also has benefitted from JEA's NRE program. An international power solutions manufacturer, the company manufactures industrial equipment such as diesel generators in its Jacksonville branch. Hitzinger improved its operations by implementing a combination of measures, including two electric forklifts, an electric crane, and a custom project involving a critical piece of process equipment. Through the custom project, Hitzinger was able to improve their quality control process by installing an electric generator test bed and eliminating the need to power up and run a diesel generator to conduct the test.

Hitzinger benefitted from a total incentive package of $6,500. Ben Jones, the CEO and president of Hitzinger USA, said, "We're very proud to engage with ICF to make the most of the available program. With ongoing support from both sides, we were able to obtain a significant return on the electrical equipment purchased, which further enhanced our business model for electric over diesel equipment."

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