

# Excellence in Energy Resourcefulness

## Grid Intelligence NORTH AMERICA



# Contents

- Industry Challenges*.....3
- Focus on the Future and Best Practices Implementation* .....3
- Conclusion*.....6
- Frost & Sullivan.....7
- Copyright .....7

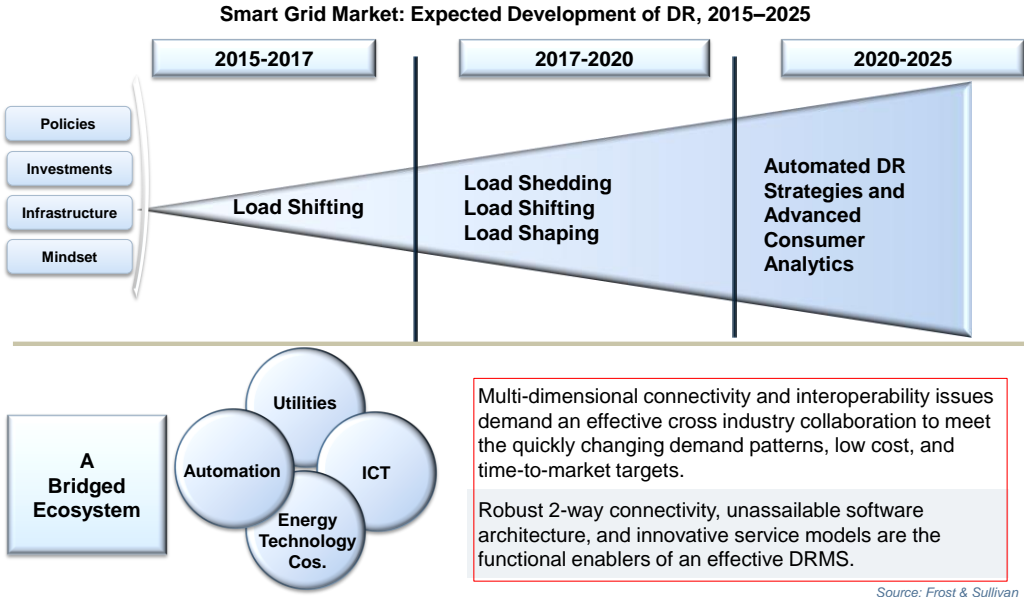
# Background and Company Performance

## Industry Challenges

Aging infrastructure and growing concerns about peak power load and greenhouse gas emissions are prompting many utilities to take an alternative approach to pure equipment replacement by combining advanced demand response data analytics with distributed energy resources.

Historically, demand response was considered an effective tool for interruptible load and capacity bidding. However, with the help of smart appliances, smart meters, and data analytics, the role of demand response is evolving.

### Evolution of Demand Response



Notable state-level initiatives in New York, Texas, Michigan, California, and the PJM territory have started to see the results of demand response programs and other forms of distributed energy resources as a successful method to defer investments for transmission and distribution (T&D) infrastructure. Michigan has been able to reduce 3GW of peak demand with demand response implementation; similarly, PG&E has canceled a \$192 million investment for low-voltage T&D upgrades as a result of distributed energy resources and energy-efficiency based programs.

This Excellence in Resourcefulness award recognizes either an investor owned utility (IOU) or municipal utility ability to successfully implement technology and behavioral change to significantly reduce waste of electricity.

## *Focus on the Future and Best Practices Implementation*

This award recognizes Central Hudson for implementing a creative, well-crafted, and successful demand response program that not only has demonstrated positive results in a short period of time but provides a perfect template for other demand response programs to follow. A key differentiating component of this rollout has been its unique compensation program, which shares savings with customers.

The program, called CenHub Peak Perks, is part of a 10-year plan to address future capacity issues by considering non-wires alternatives. The program targets three distinct zones in Central Hudson's service territory that were selected based on anticipated requirements for infrastructure upgrades and peak power load issues. The program's long-term goal is to defer or completely avoid T&D upgrades in peak load-prone, mission-critical areas. This program also fulfills a broader customer initiative aimed at achieving New York's Reforming the Energy Vision (REV) goals for reducing carbon emissions and improving efficiency and customer engagement.

Central Hudson is a regulated electric and natural gas T&D utility company that serves 300,000 electric and 80,000 natural gas customers in eight New York counties, from suburban New York City to Albany. The carefully crafted program targets residential and small business customers and consists of a Wi-Fi-enabled smart thermostat for managing central air conditioning or a load control switch for controlling a swimming pool pump or high-energy-usage appliances. The program is further supported by smartphone apps and a customer portal.

Central Hudson also partnered with Itron to deliver a customer engagement portal that allows the customer to closely monitor electricity usage and obtain tools to lower overall consumption.

The utility worked with regulators to develop a shared compensation model that is financially beneficial to both the utility and its customers. The compensation plan calculates what it would have cost to use traditional T&D solutions versus the cost to deploy demand response and its actual capacity savings. The difference between the two is the financial benefit.

Estimated Cost of Traditional T&D Solutions

- Actual Cost of Demand Response Solution

+ Actual Wholesale Capacity Savings

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= Program Financial Benefits

Through this compensation model 70% of benefit goes to ratepayers through natural rate moderation and the remaining 30% is provided back to the utility as an incentive to run the program effectively. The following list key criteria, which were used to measure Central Hudson’s success for achieving Energy Resourcefulness Excellence Best Practice.

Societal Impact	1-3 Poor	4-6 Fair	7-8 Good	9-10 Excellent
Improving customer awareness and participation				X
Enabling behavioral change for reducing waste through customer engagement and technology-driven programs				X
Yielding impressive waste reduction that benefits the overall served community				X
Business Impact	1-3 Poor	4-6 Fair	7-8 Good	9-10 Excellent
Drafting a clear vision to address excessive waste through technology implementation				X
Achieving operational efficiency as a result of successful strategy for sustainability				X
Strengthening utility’s brand image as a leader for sustainability				X

**Societal Impact**

*Improving Customer Awareness and Participation*

Central Hudson scores top points for executing a successful customer participation and awareness program, starting with its tagline: “Good for you. Good for Hudson Valley.”

To maximize participation the utility applied a multi-channel and multi-tiered approach that started with mail alerts followed by outbound calls. The message was carefully crafted based on information about customers.

The utility also provides educational material online to inform customers about the program benefits, which resulted in customers approaching the utility directly to learn more about it.

In the first 6 months of the program, which was launched April, 2016, the utility achieved more than 30% participation of eligible customers, and by February 2017 it achieved 36% penetration in the targeted zones against the target of 30%.

The goal is to achieve 16MW of load reduction by 2019 and up to 50% participation rate. Central Hudson’s success is part of its long-term strategy to improve overall customer engagement and understanding. This is a crucial component for guaranteeing successful demand-side management programs.

*Enabling Behavioral Change for Reducing Waste through Customer Engagement and Technology-Driven Programs*

Central Hudson was quick to recognize the benefits of applying advanced technologies to enable a successful demand response program, including DRMS software, Wi-Fi-enabled smart thermostats, and other forms of direct load control devices. To further encourage customer participation, the utility features a web portal that allows customers with smart thermostats to manage their HVAC system.

#### *Yielding Impressive Waste Reduction that Benefits the Overall Served Community*

To date the utility has been able to connect 2,900 devices and 9 large commercial and industrial participants, surpassing its goals in terms of load reduction and customer participation. Central Hudson met its target of 7.5 MW within the first year.

### **Business Impact**

#### *Drafting a Clear Vision to Address Excessive Waste through Technology Implementation*

A clear vision was essential for successful deployment. The program demonstrates a strong understanding of customers' needs and the type of program that resonates with them, which has been evident in the shared compensation rollout and the acceptance of the program.

#### *Achieving Operational Efficiency as a Result of Successful Strategy for Sustainability*

The project consisted of a comprehensive plan that automates every phase of the demand response program, resulting in not only operational efficiencies but also a speedy deployment. Central Hudson decided to work with market veteran Itron to deliver an integrated and advanced demand response program consisting of cloud based DRMS software (IntelliSOURCE Enterprise), a customer engagement portal, IntelliMARKET participant requirement service, IntelliSUPPORT program administration service, and a customer care and work management system. As a result, the program was operational within 6 months.

#### *Strengthen Utility's Brand Image as a Leader for Sustainability*

Peak Perks is the first production "non-wire" alternative project developed in response to NY REV's Track 1 Order. The success of this innovative compensation model is expected to drive adoption in other areas as well.

### **Conclusion**

Central Hudson has demonstrated an exemplary project that is based on a comprehensive vision, the identification of strong technology partners, and automated technologies. Through careful planning and execution, the program became fully operational within 6 months of partnering with Itron and aims to achieve 50% participation by year 3. With its strong overall performance, Central Hudson has earned Frost & Sullivan's Excellence Award for Energy.

## Frost & Sullivan

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