

# Excellence in Energy Resourcefulness

## Grid Intelligence NORTH AMERICA



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## Background and Company Performance

### *Industry Challenges*

Recent Frost & Sullivan demand response market analysis shows that North America is the furthest along in terms of adopting and exhibiting successful advanced demand side management programs. This confidence has led many utilities to include demand side management as part of their future 10 to 15 year resource planning strategy with the goal of addressing new capacity needs with either clean power sources or non-wire alternatives. Non-wire alternatives in the form of distributed energy resources and demand response have started to experience success in terms of deferring investments for transmission and distribution equipment.

Maryland was among the first states to take a proactive approach to improving energy efficiency and curtailing electricity consumption by passing the Maryland Energy Efficiency and Conservation Act of 2008, also referred to as EmPower. The primary goal of this act is to reduce peak demand electricity by 15% by 2015 from 2007 levels. To achieve this goal, demand response was one of the many strategies and technologies deployed. Maryland is now considered one of the top 10 energy efficient states.

Until the last 6 to 7 years, residential customers were seldom considered as an opportunity to address peak power demand. This scenario changed after recognizing the advantages of modern Internet-enabled grid infrastructure technologies, which support advanced meter infrastructure build outs, smart thermostats, and other forms of remotely accessible and communication-enabled switches.

Demand response programs, such as direct load control, provide a utility or an aggregator access to a home appliance and enable it to remotely adjust settings. For instance, they could remotely adjust a Web-programmable thermostat for a central air conditioner unit during critical peak power periods. Customers can sign up to such programs on a volunteer basis and are notified when such an event is going to take place.

Being able to earn customer trust and be viewed a reliable energy partner are key ingredients for a successful demand side management program, as these programs fully depend on steady and consistent customer participation and retention. In return, utilities are not only able to reduce the burden on the electric grid, avoid interruptions caused peak power periods, and improve customer satisfaction, but they are also able empower the overall community to become energy resourceful.

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

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

This award recognizes Pepco Holding (PHI) for taking a pioneering and progressive approach to implementing an effective and result-oriented demand side management program tailored for both residential and small business customers.

PHI is one of the largest energy delivery companies in the Mid-Atlantic, serving nearly 2 million customers spread across Maryland, New Jersey, Delaware, and the District of Columbia.

The program, called Energy Wise Rewards, is part of a bigger strategy for optimizing energy efficiency and was originally introduced in support of Maryland's EmPower Act of 2008. It has since been rolled out in all of PHI's territories.

The Energy Wise Rewards program is a direct load control demand response program that allows utilities to remotely cycle air conditioners and heat pumps on and off for short periods during peak use times. Customers have the choice of taking part in either Web programmable thermostat or outdoor switch program. The Web-programmable thermostat can be programmed, controlled manually, or controlled remotely through a mobile app or via the Internet. The outdoor switch is a small device installed outside, near the customer's central air conditioner compressor. The program was rolled out with the support of Itron's turnkey demand response management system (DRMS), called IntelliSOURCE. Itron provided software, hardware, and installation services that support Energy Wise Rewards along with program and database management. The program was operational within 6 months of initiation.

The following table lists the key criteria used to measure Pepco Holdings’ 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 a successful strategy for sustainability				X
Strengthening a utility’s brand image as a leader for sustainability				X

**Societal Impact**

*Improving Customer Awareness and Participation*

To guarantee high customer satisfaction and a high participation rate, the utility collaborated with Itron and used a systematic approach for recruiting customers. This consisted of multi-channel outbound content and personalized content, such as mailing brochures, speaking on radio shows, running short TV ads, outbound calling, door to door solicitation, and community outreach programs. Initially, the promotion of Energy Wise was combined with other energy efficiency programs in order to emphasize the region’s and the utility’s overall energy conservation strategy goals.

Recruitment is further supported by PHI program managers, which are responsible for closely monitoring and refining all the program operations as needed. PHI staff is trained in all technical aspects of the program and make sure that customers are fully comfortable with the program. To keep an open line of dialogue and communication, the technicians are instructed to leave documentation with the customer upon completing the installation and the programs sends thank you letters for their participation. Furthermore, the staff follows up yearly to remind customers about the devices they have in their home and to provide options to change settings. Customers are also notified about how much they have saved and how their actions have contributed to overall conservation goals. This approach has not only led to a highly successful program roll out, but has also improved overall customer satisfaction.

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

The program continues to undergo constant improvement and refinements, such as upgrading all the original thermostats to Wi-Fi models in order to provide more programming options. This includes the ability to remotely manage energy usage via a mobile app on the customer's phone.

Through these improvements and refinements, Pepco was able to add a customer engagement component to the program. The utility anticipates completing all upgrades by end of 2018 while customers can continue to enroll through 2020.

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

The Energy Wise Rewards program has successfully installed more than 400,000 devices in more than 350,000 customers premises, making it one of the largest demand response programs in the country. In return, customers have specifically enjoyed three benefits through this program, also referred to as the triple bottom line:

1. Saving energy and lower bills
2. Doing good for the environment
3. Helping the utility avoid power outages

The program has already met the goals it set for New Jersey, Delaware, and DC, and it continues to strive to meet its annual goals set through 2020 in Maryland.

## **Business Impact**

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

This exemplary ongoing project is centered on optimizing energy efficiency by targeting usage of central air conditioning and/or heat pumps in residential homes. PHI's goal is to be on the forefront of managing climate change for the various states it operates in.

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

Through this initiative, Pepco has been able to improve cost effectiveness for its territory. Not only has it been able to monetize this in the Pennsylvania New Jersey Maryland Interconnection (PJM) capacity market, but it has also been able to use as this as resource for operating reserves and providing system relief, such as through targeted demand response (DR) events. On an annual basis, the utility is able to reduce more than 300 MW, much better than the initial goal of 200 MW.

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

The program has an astounding penetration rate, with 60% of eligible customers enrolled in Maryland against a national average of 13% for direct load control programs. This is particularly impressive because customers are enrolled on a completely voluntary basis. These results demonstrate Pepco Holding's true commitment to resourcefulness and the region's sustainability goals.

## Conclusion

The energy industry is continuing to undergo tremendous transformation, especially in terms of how it no longer thinks of electricity as mere commodity to be consumed. Energy Wise Rewards is one of the largest demand response programs in the country, and is offered by Pepco in Maryland, New Jersey, Delaware, and the District of Columbia. Its impressive penetration rate of 60% among eligible customers in Maryland is a true testament to the trust that PHI has gained with its customers. Through the Energy Wise Rewards program, PHI is walking the path to become the premier energy customer partner. With its strong overall performance, PHI has earned Frost & Sullivan's Excellence Award for Energy.

## Frost & Sullivan

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