

LARGE FILING SEPARATOR SHEET

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DESCRIPTION OF DOCUMENT:

APPLICATION

Targeted Load Commitment. Customers can choose to reduce energy to a firm load level or by a fixed amount, against their proforma baseline. A firm level reduction commitment is a commitment to reduce down to a specific kW usage (e.g. customers may commit to reduce energy usage to a firm level of 600 kW or below). A fixed level reduction commitment is a commitment to reduce a certain kW relative to the customer's load shape (e.g. customers may commit to reducing energy usage by a fixed 400 kW, against their proforma). The proforma baseline load shape is calculated based upon past energy usage.

An account manager explains that some customers have difficulty understanding how the proforma baseline is calculated. For example, PJM requires the customer's Peak Load Contribution (PLC) to be calculated using their load on the five peak heat days the previous year. However, depending on the load, the customer's monthly premium credit may change from year to year, which sometimes appears as if Duke had decreased the premium.

Marketing

PowerShare is marketed mainly by Duke Energy account managers to their large commercial and industrial customers. Marketing collateral is available on the Duke Energy website. In 2014, Duke Energy also launched a small marketing effort to enroll the previously untapped small and medium business customer segment.

Website and Brochure. Duke Energy provides a website with a downloadable brochure about the PowerShare program. Interested customers are directed to contact their account representative, or, email Duke Energy's customer account services, at the provided email address.

Marketing to Large Business Customers. Duke Energy account managers take the lead role in PowerShare marketing efforts. In the Midwest states, marketing for PowerShare starts with training of account managers in October and enrollment by mid-January.

The account managers help the customers determine whether or not PowerShare is appropriate for their company. An account manager reports that there is regular communication with the customer about the suitability of the program for their company's particular business, but that *"They are trying to get a product out the door, that's their main focus, not on trying to reduce load to help us out."*

An account manager says that it is clear that the event credit only constitutes a small percentage of the PowerShare incentive, much less than the monthly premium credit. Customers are told, *"the value of [having your company participate] is really in the option, you need to be able to be there and you need to be able to respond."*

The account managers also discuss with the customers the specifics of what they will do at their facility to reduce the requisite load, and note this in the customer's PowerShare contract. Account managers generally will also explain the history of the program and share the PowerShare brochure that is available on the website, along with a matrix showing program requirements. See Figure 1 below.

PowerShare Reference and Comparison Chart			
	CallOption Economic	CallOption Emergency	QuoteOption
Program Description	Customer may elect to curtail load to a contracted Firm Demand level or to the Proforma less Fixed Demand Reduction level during any Curtailment Period.	Customer agrees to curtail load to a contracted Firm Demand level or to the Proforma less Fixed Demand Reduction level during all Curtailment Periods.	By electing to participate in a Curtailment Event, a customer will receive credits by curtailing load to a Fixed Demand reduction below the Proforma load level.
Contract Term	1 year		1 year with automatic 1-year renewals.
Curtailment Minimums	Curtail a minimum of 100 kW		
Monthly Capacity/ Premium Credit Rate	PS-Q/10 PS-5/10 PS-10/10 PS-Q/10 GEN	\$15 / kW / Year \$21 / kW / Year \$28 / kW / Year \$9 / kW / Year - 1-year term	\$0
Reason for Curtailment	For Duke Energy capacity constraints or mutual economic opportunities.	For PJM capacity constraints only.	For Duke Energy capacity constraints or mutual economic opportunities.
Max Number of Curtailment Periods	PS-Q/10 0 events PS-5/10 5 events PS-10/10 10 events	PS-Q/10 10 events PS-5/10 10 events PS-10/10 10 events	At Duke Energy's discretion.
Max Number of Curtailment Periods	PS-Q/10 GEN – 1-year term – 0 events	PS-Q/10 GEN – 1-year term – 10 events	None
Curtailment Period Times	Any non-holiday weekday. Summer: 1 p.m. – 7 p.m. Non-summer: any period up to six hours.	Any day, any time. Limited to six hours per day.	Any day, any time.
Curtailment Period Notification Procedures	Notification sent one day in advance using office phone, cellphone, email and fax.	Advanced notification sent using office phone, cellphone, email and fax.	Invitations sent morning of the event using office phone, cellphone, email and fax.
Penalty or Buy-through Charges	Buy-through	Penalty	None

Figure 1. 2013-2014 PowerShare OH Reference and Comparison Chart (from Duke Energy's PowerShare brochure)

One account manager mentioned that the normal sales cycle for PowerShare meant that most of the program outreach was conducted between October and January prior to the summer season. However sometimes customers are not available to meet during that time. This account manager suggested that there are still some companies that can be signed outside of that time frame, if they could determine what the premium would be for the following event season. The premium offered to customers depends upon PJM market prices, and can not be predicted for the following season.

Customer Awareness of PowerShare. Findings from the participant survey showed that over half of the respondents (16 of 26) first heard about the PowerShare program through a Duke

Energy representative. Four others learned about it through colleagues, two learned through Duke Energy events, and one each learned through word of mouth and the Duke Energy website. Respondents found the information very useful, rating the information of 8.76 (S.D.=1.33) on a scale of 1 ("Almost nothing I needed") to 10 ("Everything I needed"). Respondents also reported that they sought out additional information after the initial introduction (usually from their Duke Energy representative), in order to get more details about their load history, program benefits, and their feasibility to curtail load. One participant also wanted to find out information about air quality regulations. All but one reported they were successful in obtaining the additional information.

Marketing to Small and Medium Business Customers. In OH, PowerShare has started a small-scale marketing effort conducted by internal staff to reach unassigned customers. The program manager expects this to yield about 1 – 2 MW, because the unassigned customers are likely to only have 100-200 kW of capacity to offer. These marketing efforts are expected to take place late winter/ early spring, and to cover other non-residential programs that normally rely on mass marketing to the unassigned customers.

Customer Motivation

The account manager says that the program is well-liked by the participants: *"My customers like that they are doing something to help and that they are getting nice premium for participation in this program."*

In the participant survey, respondents reported that their company's primary reason for participating in PowerShare was financial, cited by 18 of the 25 respondents. Of the remaining six, three cited reasons concerning support for their community (*"We're trying to be a good corporate citizen, which is one of our main company goals and objectives."*) and three more said they wanted to help avoid outages and brownouts. One respondent admitted that their primary reason for participating was *"We thought there would be very little risk of an emergency event even occurring, much less in winter."* When prompted for a secondary reason, six of the 26 cited supporting the community, two said they had corporate sustainability goals, three said they wanted to help avoid outages, and four (who had not done so before) said they participated for the financial incentive. From the variety of reasons given, it seems that these respondents have a fairly good grasp of the non-financial benefits of participating in an emergency demand response program.

Enrollment and Renewal

Once a customer has agreed to enroll, the account manager enters the terms of the contract, including the targeted load, into Duke Energy's customer database. Using that information a contract is then created that can be mailed or emailed to the customer for their signature.

In Ohio, marketing and outreach is conducted in coordination across the Midwest service territories, primarily in the fall, towards a January deadline. A product manager reports that one reason for this timeline is to allow account managers enough time to conduct outreach for Duke Energy's other customer programs, rather than conducting PowerShare outreach for six months out of the year.

In Ohio, Duke Energy offered an early signing bonus of \$1/kW for the 2013-2014 agreements. By obtaining contracts early, Duke Energy is able to bid capacity resources into the PJM capacity market. The program manager reports that this helps Duke Energy obtain more money from PJM, benefitting PowerShare participants that sign early as well as Duke Energy. An account manager adds that the bonus helps from a sales perspective: *"It's good to have a carrot, it helps move things along, so that we are getting things done and not dragging things out. The bonus gives it a higher priority."*

At the time of these interviews in late January of 2014, the program manager reports they had only reached half of their goal for early enrollments, whereas last year at the same time they had reached 90% of their goal. The program manager reports that while the winter events may have affected the early enrollment numbers, customers may have also chosen a competing energy supplier.

During the participant surveys, respondents were asked about the appeal of the early renewal bonus. Of the 21 respondents, 14 did renew early, and 7 did not. When asked why they did not renew early, one said it was an upper management decision. Two companies said they were on a three-year contract, but four reported that they were discontinuing their participating in PowerShare. Of these four, two companies chose to participate in another curtailment service provider's program, with one saying that their decision was due in part to the winter events: *"...we were surprised at any events occurring, much less in the winter... Just last week, we had an event and ... if it could happen under these conditions, we need another program."*

Another of the four had to discontinue because they would otherwise be in violation of new EPA regulations. The last respondent reported that they have continued to have difficulty aligning the their internal load profile with the one calculated by Duke Energy, and will instead reduce load internally when necessary. This last respondent suggested that one thing that Duke Energy could have is *"a clear, concise program that helps the customer to understand how the load reduction is calculated, so that we can meet expectations. It would also be good to have the profile information sooner for evaluation purposes, to decide whether or not to participate."*

These findings will not surprise the PowerShare program staff, who are already aware that many PowerShare participants were caught by surprise by the winter events.

Concerns during enrollment. In the participant surveys, respondents were asked what their concerns were during the time their companies were deciding to enroll. They had a number of varying concerns. The most frequent concern (as reported by 7 of 21 respondents) was that they would not be able to meet their commitment, and be penalized. Another 5 companies were concerned that events would interrupt production. Four others were most concerned about air quality and comfort for their customers. The remainder each had different concerns, including how the events would be communicated to key staff, the frequency of the events, the incentive amount, EPA regulations, and for one customer, simple unfamiliarity with PowerShare.

The respondents were asked whether their experience during the past event season decreased any of their concerns. Only about a quarter (7 of 26) said their concerns were decreased, and for the most part their original concern stemmed from never having experienced an event. The majority, however had continuing concerns. When asked what Duke Energy could do to decrease those

concerns, participants had differing responses: Three would like more advance notice. Three had concerns about the timing of events, each mentioning either the difficulty with winter events, early morning events, or multiple events in one day. Two were concerned with how their targeted load was calculated, with one saying *"The biggest change for the future that they could do is to change the actual PLC. The way they calculate the PLC is different for us; it's not aligning for us. Our internal evaluation of load reduction is very different from that of Duke Energy."* One respondent had a request for Duke Energy to provide a real-time energy readout.

There were only two concerns about incentives: one respondent wanted Duke Energy to raise incentives, another said his most recent incentive was not paid on time. The remaining concerns were specific to the respondent's business:

- *Duke Energy could help facilitate a dialog between us and the EPA.*
- *Duke could better understand our needs as a school.*

There was one suggestion that indicated the respondent didn't fully understand the purpose of this program: *"Buy more generators. Duke Energy has us doing this program to try to avoid purchasing more generators. They're more concerned with capital gains."*

Event Calls

Emergency events are determined entirely by PJM. Once called, Duke Energy Ohio has two hours to curtail load. Within 30 minutes, Duke relays the event notification to companies participating in PowerShare, who then have 90 minutes to complete load curtailment to their targeted load. Duke sends the notification by entering information in a notification system developed by Varolii. Varolii contacts customers through a series of escalation rules for which method of communication to use. Notifications are sent via phone, text, email and fax. Notifications cease as soon as the customer responds. Notifications are sent to everyone on a contact list provided by the company.

A Duke Energy product manager reports that they are aware of some minor issues with automating information updates between their customer relationship management system and the PowerShare communication tool; in some cases customers need to be manually removed from the database.

Winter events. The winter events in 2014 posed a challenge to the program staff. The program manager reports that their normal workplan does not plan for winter events, and they have not had a winter event since 2003. Compared with summer load shapes, the winter load shape is bimodal, with a peak in the morning from 6:30 am to 9:30 am, and in the evening from 5:00 pm to 9:00 pm.

In Ohio, PJM called emergency events for the first time since PowerShare's migration from MISO. PJM had informed Duke Energy that emergency events would last from 2 to 6 hours. Since the beginning of the year, PJM has called a total of four emergency events.

- January 7: 6:30 am to 11:00 am
- January 7: 5:00 pm to 6:15 pm (but Duke Energy gave customers the 2 hour minimum)
- January 8: called an emergency event to begin at 7:00 am but cancelled it at 6:35 am

- March 4: 6:30 am to 8:30 am

PJM Cancellation of Emergency Event. The cancellation of one of the emergency events caused concern. Cancellation of events is not trivial. Duke Energy had long been cognizant of the fact that different customer segments have different curtailment processes. Commercial customers may only need to turn their HVAC systems back on, but some industrial customers may have had to shut down processing equipment and send staff home.

Duke Energy relayed the notification that PJM had cancelled the event, but were aware that customers were not happy. However, PJM has informed Duke Energy that they would honor the event, and would pay credits for that time period.

Responding to Winter Events. Survey respondents were asked if their company's ability to respond to winter events differed from their ability to respond to summer events. Of the 21 that responded, 13 companies said they could not respond with the same ability. However, eight companies said they could. The winter emergency events were notable for many reasons, including the following three: 1) the early morning timing of the events and thus the notifications, 2) the company's load profile during the winter, which may be very different than in the summer and 3) the sheer surprise factor, of needing an emergency event in the winter. It is possible for a company's ability to respond to be due to the timing and not the load profile. In these cases, once the difficulties with early morning notification (and lack of experience with winter events) have been resolved, these companies could be ideal candidates for winter emergency events.

Lessons Learned from Winter Events. The program manager recognizes that these unexpected winter emergency events were learning experiences, and has developed several new procedures to address for future winter events:

If a regional emergency has ended, customers with emergency generators will have to stop generating. Under the new EPA rules for reciprocating internal combustion engines (RICE), customers with emergency generators were not permitted to run the generators unless there was an Emergency Alert Level 2.

For those curtailing energy use, Duke Energy will continue to pay curtailment credits until the end of the time period that was originally communicated. However, during this period, customers who choose to stop curtailing will not incur any buy-through charges.

Event notifications. In the participant surveys, respondents were asked if, in addition to the texts, fax and emails, if there was another way in which they would like to receive event notifications. None of them had additional suggestions, with many saying, "*What they do now is pretty good*", "*They do a really good job of notifying me*," and facetiously, "*Smoke signals? I don't know*." In particular, participants appreciate advance notice, rating its usefulness as 9.9 on a scale 1 ("useless") to 10 ("useful"), S.D. = .44.

When asked what other feedback they would like to provide Duke about the event notifications, 9 of 26 said they had no feedback, and an additional 6 mentioned they thought Duke was doing a good job. A typical comment would be, "*I think their notification process is pretty robust*."

Multiple people are notified via phone and email. If someone is on vacation, there's many people notified. “ There were also several comments that were not related to the event notifications, regarding the inconvenience caused by cancelling an event on short notice (4 respondents). Two respondents suggested improvements to the content of these notifications, namely by adding a notification about the end of the event, and by ensuring that the event times were accurate: In one case, a typographical error caused a participant to believe the event would last until 12 a.m. (instead of 12 p.m., the correct time) causing them to call in additional contractors to staff their facility. No respondents mentioned a need to change the contact list, and an additional two mentioned that the early morning emergency event calls went unheeded because no one was at work to receive them.

We can conclude that PowerShare’s methods for event notifications is comprehensive, but the unusual early morning winter emergency events created unanticipated challenges for the notification process. It would be easy for Duke to develop a protocol for reaching contacts on their cell phones for events that take place outside of normal business hours. However, there does seem to be a need to let customers know when an event has ended.

RECOMMENDATION: Duke Energy should explore whether there is indeed a real need to notify customers about the end of a curtailment event, either in the next satisfaction survey or by asking account managers to poll their companies. In addition to allowing customers to salvage their work day if an event ends early, this additional communication may decrease overall customer uncertainty about the event experience.

Curtailing Load

Over half of the companies (17 of 25 respondents) said they successfully reduced load for all the events called in 2013-2014. The others reported that they either had to pay a penalty, or have yet to hear about whether they would receive a penalty. One respondent reported that they “*worked it out with...our account manager, so we had minimal negative consequences*”. It was unclear whether this respondent was actually penalized, or if his account manager merely was able to determine that no penalty was warranted.

In the participant surveys, the majority of the respondents (15 of 23) felt that their load reduction commitment was appropriate for their company, but almost a third (7 respondents) felt that the load was either “more” or “much more” than they wanted to provide (see Figure 2). While this is a small sample, this number seems higher than the program might desire. While this might suggest that the calculations of customer load profiles need review, this finding is more likely due to the fact that for some customer segments, their winter load shape is very different from their summer load shape. Of 21 respondents, 13 said that their company’s ability to respond to events was different in the summer than in the winter.

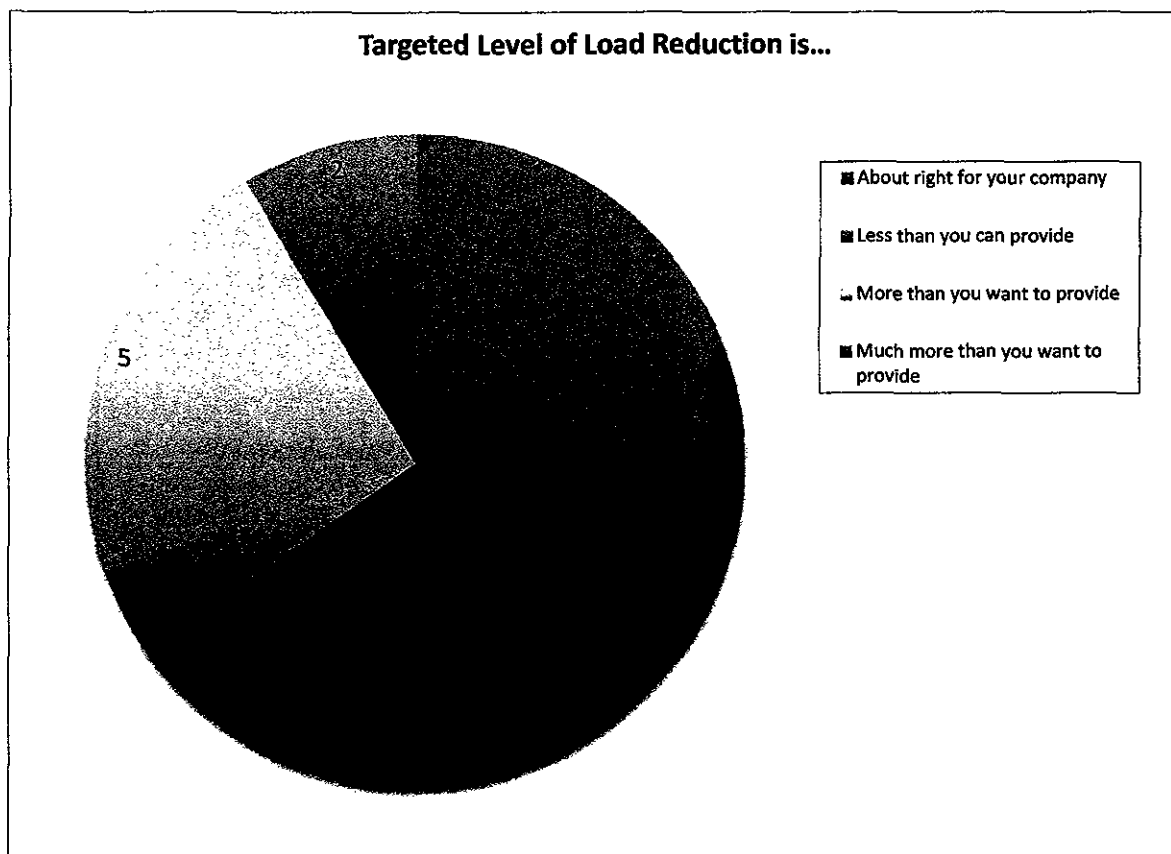


Figure 2. Targeted Level of Load Reduction

Because Duke Energy has already indicated that PowerShare will only offer summer contracts, the evaluation team expects that in the future, a higher proportion of participants will feel that their targeted load reduction is appropriate. No recommendations are warranted at this time.

Use of Energy Profiler Online. Respondents were asked to rate how easy it was for them to use Energy Profiler Online (EPO), a secure web portal through which customers can access their energy usage information. Only eight people responded, with an average rating of 7.38 (S.D.=2.06) on a scale of 1 ("very difficult") to 10 ("very easy"). This rating shows that EPO is moderately easy to use. More importantly, 18 companies responded with either a "Don't know / not sure" or a "Not applicable". It seems that PowerShare Ohio customers are not regularly using EPO, most likely because they do not participate in a PowerShare Economic option.

Automated Demand Response Pilot

Ohio also has three customers on an automated demand response economic program. These customers were called twice in July of 2013, and once in September of 2013. In the prior program year, they were called a total of 5 times. The program is still operating, though PowerShare's priorities are focused on the larger manufacturers with more load at this time. Duke Energy does not have immediate plans to expand the Auto DR program due to the costs of the technology. However, the program manager can foresee a greater need for automated demand response if PJM receives approval to change their default emergency notification time

from two hours to 30 minutes. As of the time of this report, this request is still undergoing review by the Federal Energy Regulatory Commission (FERC).

Settlement

Settlement for each month's events are paid to the customer as a credit on their bill within one or two billing cycles, depending on the billing dates. There are separate line items for the capacity premium and for the event credit. *"The settlement engine, EPO, is working out well."*

Participant Satisfaction Ratings

Figure 3 shows respondents' satisfaction with the enrollment process, and the understanding, amount and time to receive incentives. Respondents were highly satisfied with the enrollment process, rating it a 9 on a 10-point scale, where 1 indicates "very dissatisfied" and 10 indicates "very satisfied". Likewise, they have high satisfaction with the usefulness of the information they received that explained the program (8.76). When specifically asked how clear the PowerShare incentive structure was, satisfaction dropped slightly to 7.78. Satisfaction with the amount of the monthly premium credit and the event credit were both moderate (7.2 and 7.1, respectively), but satisfaction with the time it took to receive the event credit was moderately high (8.4).

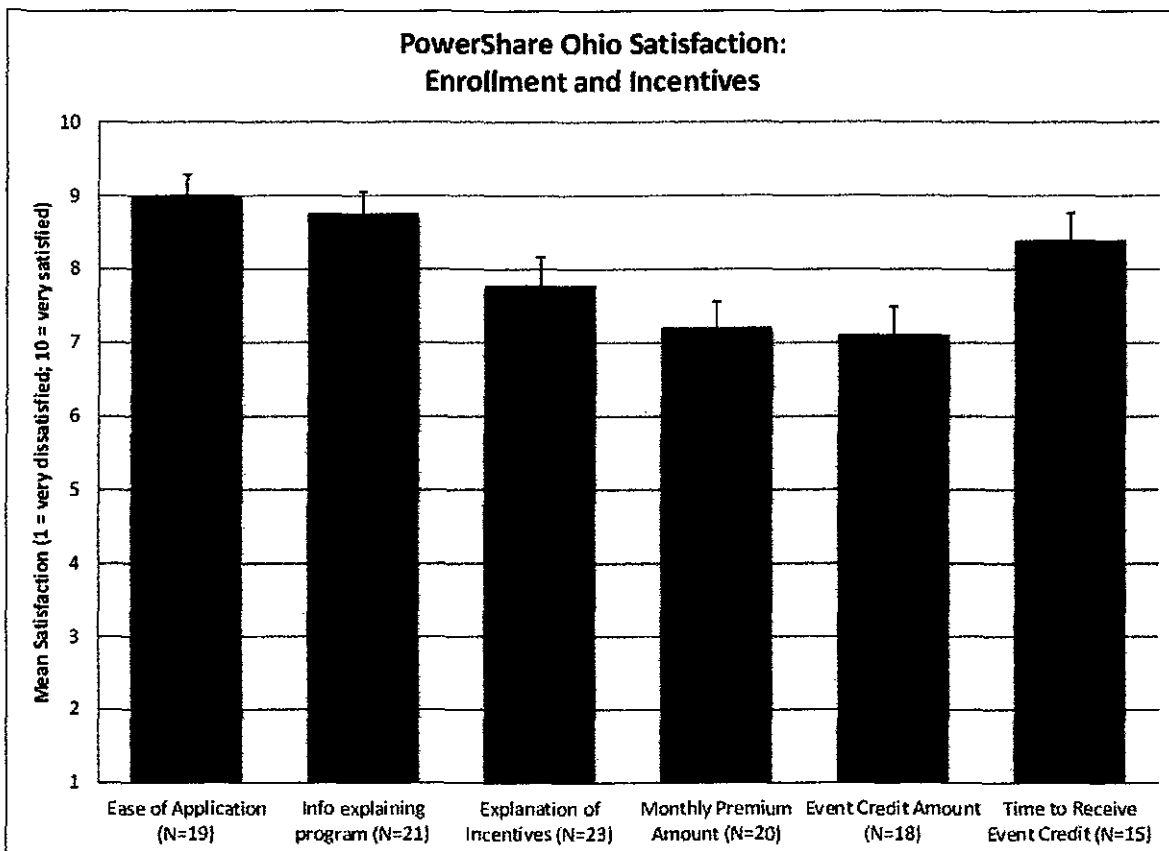


Figure 3. PowerShare Ohio Satisfaction: Enrollment and Incentives

Not unexpectedly, given the winter events, satisfaction⁶ was rated lowest for the amount of advance notice (6.54) and the time companies had to reduce load (6.36), as shown in Figure 4. Participants were moderately satisfied with Duke Energy's method for confirming how much load was reduced (7.09).

⁶ Note that one of the three Emergency events was called in Ohio on March 4, from 6:30 to 8:30 am, one week the week before the survey was fielded, which likely affected participant responses. There were three emergency events in Winter 2014, January 7, 8, and March 4.

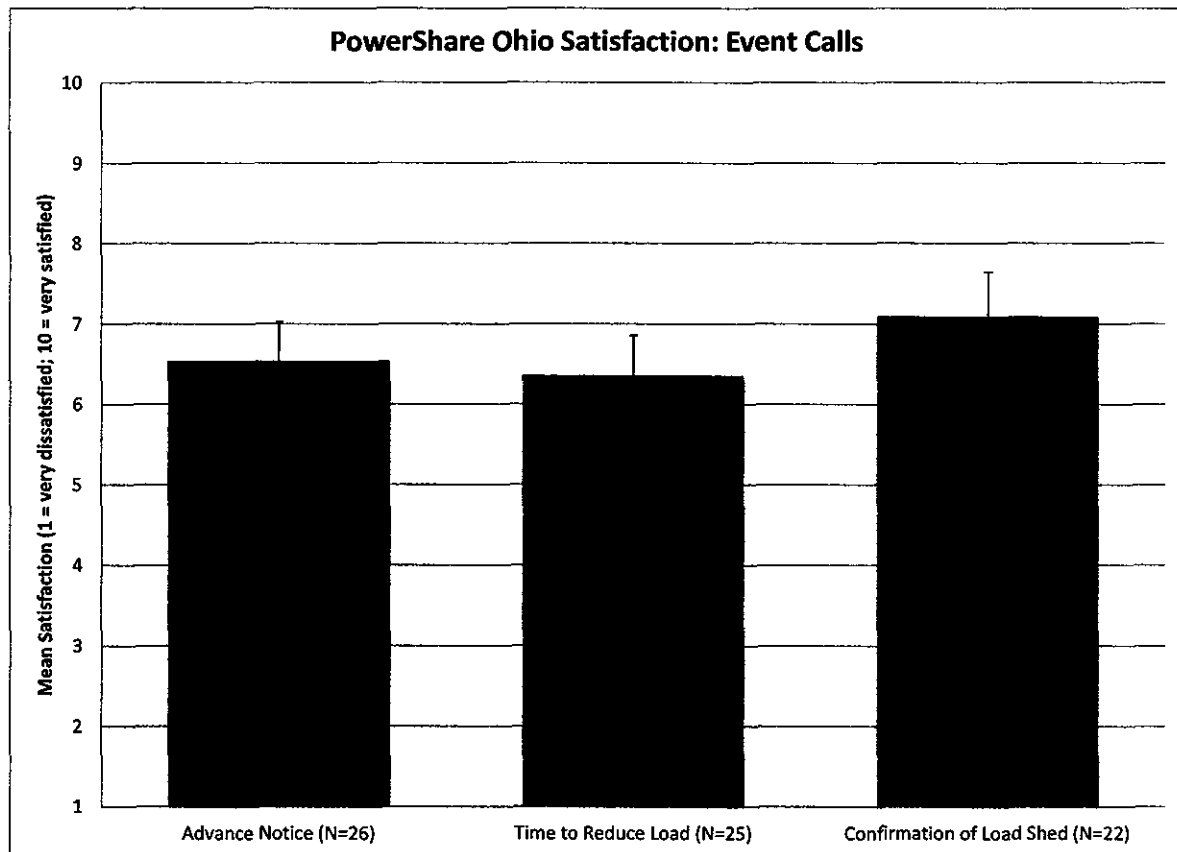


Figure 4. PowerShare Ohio Satisfaction: Event Calls

Overall satisfaction ratings, as shown in Figure 5, was moderately high for the technical expertise of Duke Energy representatives (8.65), and for the time it took for Duke Energy staff to respond to concerns (8.57). And, despite customer's concerns about the winter emergency events, satisfaction with the PowerShare program and with Duke Energy overall were still moderate (7.2 and 7.8, respectively).

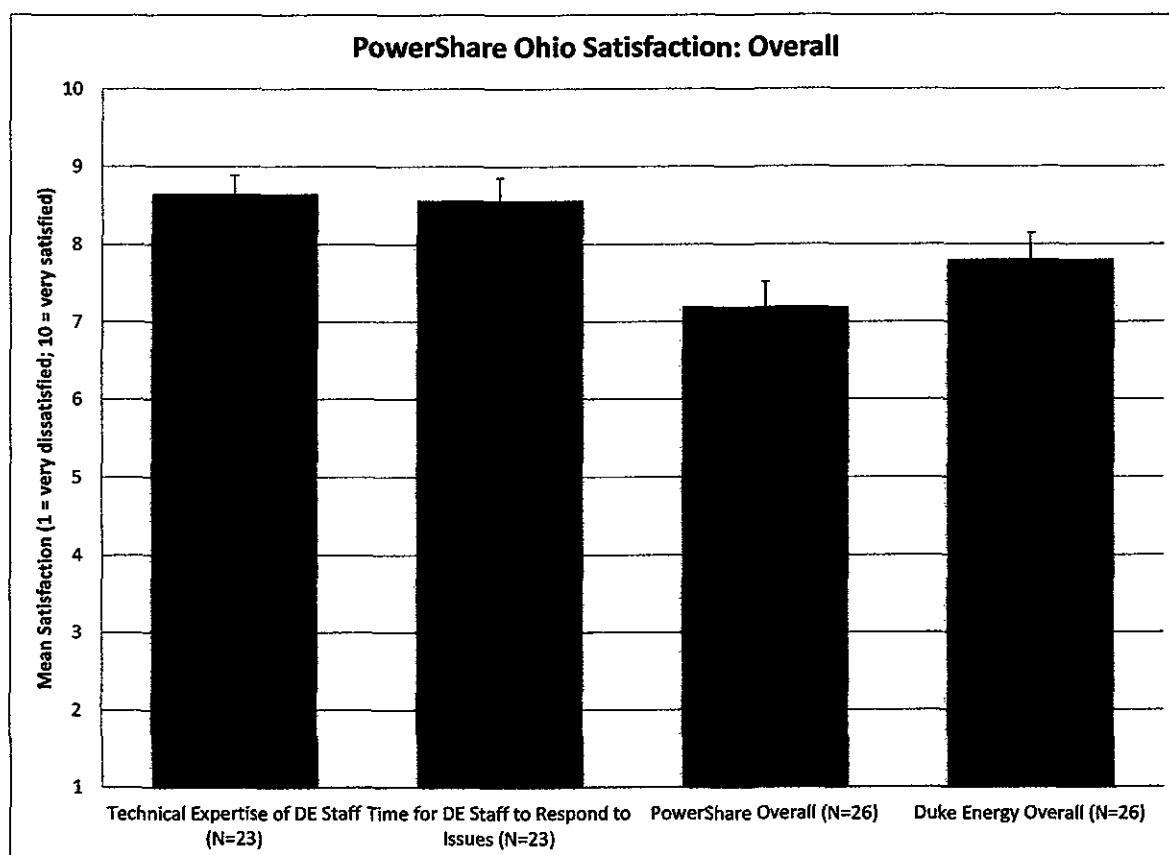


Figure 5. PowerShare Ohio Satisfaction Overall

Change in Satisfaction over Time

Nowhere is the effect of the winter events more apparent than when one compares the satisfaction ratings from 2011 to current ratings, as can be seen in Figure 6. Overall satisfaction ratings dropped for the PowerShare program itself, and for Duke Energy. This difference was significant for PowerShare satisfaction ($p \leq .05$, indicated with a "***" in the figure) and marginal for Duke Energy satisfaction ($p < .10$, indicated with a "*" in the figure). Because the survey was administered within two weeks of the March 4th 2014 winter emergency event, it is not surprising that participants might still be experiencing the stress of that event, and thus given both PowerShare and Duke Energy lower overall satisfaction ratings.

Strikingly, however, there is no decrease in satisfaction for the fundamental program activities, including enrollment, incentive levels, responsiveness and expertise of Duke Energy staff. In Figure 6, one can see that satisfaction levels for all program elements have, for the most part, remained the same as they were two years ago, the time of the previous process evaluation⁷. The

⁷ Of the 12 satisfaction rating questions, 8 were administered in the process evaluation of the 2011 program as well as this year. There are some minor improvements in wording that we do not expect would invalidate a comparison.

evaluation team interprets this pattern of results as indicating that the program has maintained its level of success from 2011, when there had been no emergency events at all⁸.

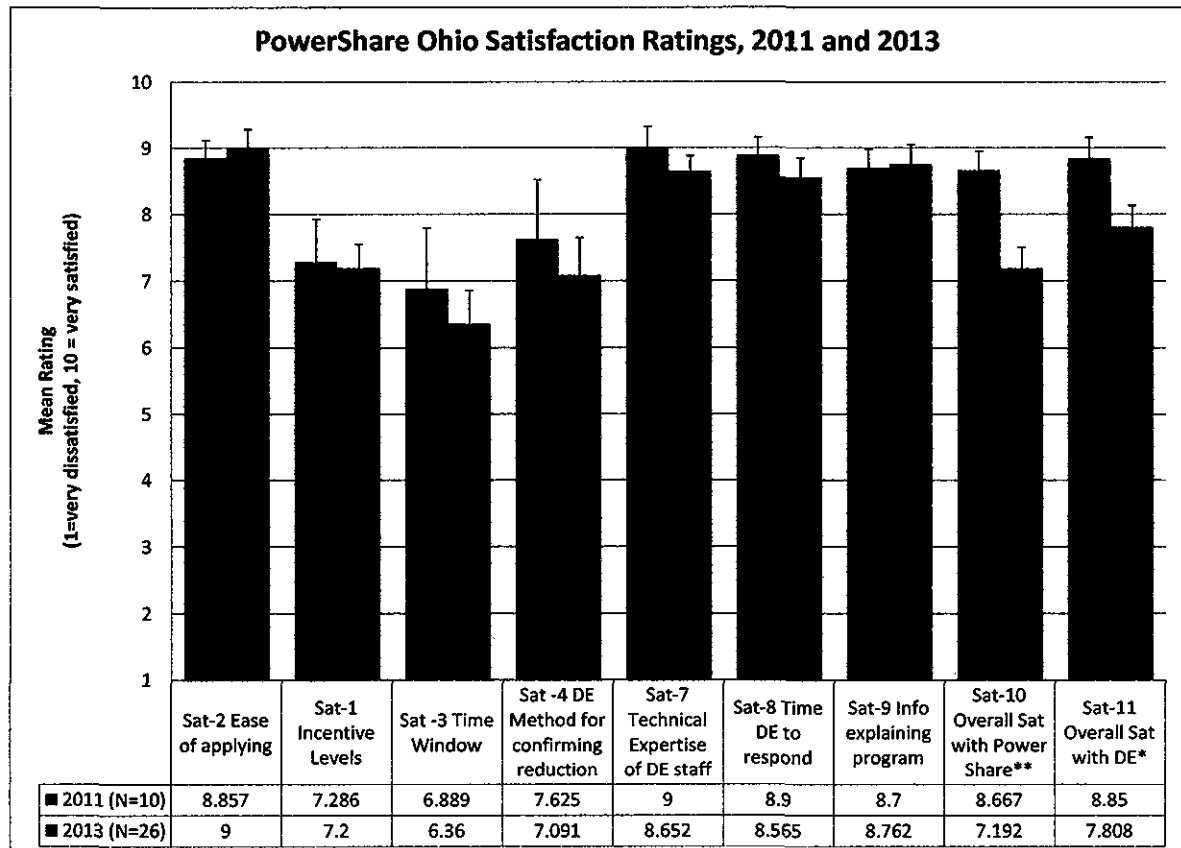


Figure 6. PowerShare Ohio Satisfaction Ratings, 2011 and 2013

Even though a product manager reported that Duke Energy has already decided that PowerShare Ohio will only offer a summer contract starting in 2014-2015, Duke Energy may wish to revisit this decision in future years. The survey data suggests that, despite the fact that customers were vocal about their dislike of the winter events, their satisfaction ratings with the program showed there were no specific program areas with which they had decreased satisfaction. This suggests that some customers may be reacting in part out of inexperience with winter events.

RECOMMENDATION: Duke Energy should not rule out offering winter contracts in the future. Duke Energy's decision to offer a summer contract for PowerShare Ohio a summer-only program will undoubtedly make customers more relieved, but based on the absence of decreased satisfaction ratings with program specifics, this decision should be revisited in the future, perhaps by offering a winter-only contract to complement the summer-only contract. This will allow Duke Energy to continue to meet the needs of those customers for whom winter events do not cause a hardship.

⁸ It is also possible that satisfaction ratings have themselves suffered a "fixed reduction" in response to the winter events, and that in the absence of any winter events there would have been a significant *increase* in satisfaction ratings across the board.

Program Strengths and Suggestions for Improvement

The PowerShare program has been traditionally a popular one for commercial and industrial customers. It offers Duke Energy another channel through which to meet customer needs. As one account manager says, *"It's a blessing to have that door because that leads to other opportunities"*.

The program manager is also pleased with the level of engagement with customers, *"Customers get it, they are on the program, the account managers are very engaged with them, it's been positive."* A product manager reports that despite the unusual winter events, PowerShare has performed well, with customers responding successfully to the event calls.

It is clear that the PowerShare program managers work closely and well with the account managers. The account managers play a critical role in the customer's satisfaction with and understanding of the program. A Duke Energy product manager reports, *"They contribute a lot to the success of the program."* Likewise, an account manager shared, *"[the product managers] have done a phenomenal job with this program and they have been more than fair in working with us and our customers. They have been very available."*

When asked if they thought the PowerShare Ohio program was working particularly well, survey respondents offered the following:

- *PowerShare helps keep the electrical grid functioning.*
- *PowerShare helps ensure that our facility receives reliable power.*
- *I like the idea that you can see on a line item where we save on our bill.*
- *I noticed they raised the credits, so that's a good thing. They also do a pretty good job with notification methods.*
- *The mechanics of how the program is operated are pretty good.*
- *Our Duke rep has done a great job with communication, information, and follow up.*
- *It seems like a good program and I'm happy to be a part of it. I know they saved a considerable amount of money.*

Program Improvement Suggestions

When asked what was not working well, the winter events were mentioned specifically by a quarter of the respondents (6 of 24), and indirectly by another 4, who mentioned difficulty with the timing of the morning alerts, and with PJM cancelling an emergency event. One participant, however, did volunteer, *"Last week, they said we could either stop it or run it out the time originally called for the event. They gave you a choice and gave you credit for finishing it out or shutting it down; that's the first time I've heard it, giving us a choice. That's very good and they should have that option every time."* By choosing to honor their commitment to their customers in the event of the cancelled emergency, Duke Energy likely avoided a lot of dissatisfaction and negative comments about deviating from the terms of the PowerShare contract, and at least one customer noted and appreciated this.

Two customers mentioned that the 90-minute window in which to reach their curtailment target was too short. One respondent seemed to believe that participation in the PowerShare Emergency program itself was mandatory, but that some companies were unfairly exempted: *"There seems*

to be something unfair about the program. Some companies receive preferential treatment and a free pass on participation... Why are some companies compelled to participate while others are not?"

Future Program Changes

The program manager reports that there are a number of changes to the 2014-2015 PowerShare program. Duke Energy believes these changes will make the program better and more competitive, and that Duke has already gotten feedback from customers to that effect.

Changes due to regulations. Due to recent changes in EPA regulations, Duke Energy will no longer offer the Generator program. The 2013-2014 PowerShare Ohio program received an exemption for emergency generators so that they could be used, but only if an Emergency Alert Level 2 had been called by PJM.

Changes influenced by the Polar Vortex winter events. Starting June 1, 2014, the PowerShare program will only offer summer contracts, running from June 1 to September 30. This aligns with PJM's Limited Demand Response program window.

In Ohio, recent regulatory approvals make it possible for the PowerShare program to offer multi-year contracts; the next contract period (starting in 2014) can extend through the summer of 2016. While there are benefits associated with having a long term commitment to participate, a Duke Energy product manager also pointed out that future changes from PJM may require that Duke Energy break those contracts and get new ones signed, with new PJM requirements.

PJM. In Ohio, PJM has asked FERC for approval to change their default notification time from 2 hours to 30 minutes. While exceptions to this can be requested, many current PowerShare participants would not be able to curtail load within 30 minutes. Should PJM's request be approved, the program manager anticipates that the PowerShare program will need to undergo major modifications prior to the 2015-2016 program year. An account manager agrees that a shorter advance notice time may not be feasible: *"A 90-min notification is doable. I think if we made it less that would be difficult. I have some customers who are changing their HVAC, and sometimes it takes an hour for HVAC load to come down."*

In 2014-2015, the capacity credit for PowerShare Ohio will also be increased to \$36/kW, in keeping with energy auction prices for PJM. The event credit will be increased as well. In past years, the energy credit for each event was paid based upon a flat fee depending on the option load that they contracted to provide. This fee was paid regardless of the load reduced during an event. In 2014-2015, PowerShare will pay a slightly larger credit of \$0.055 per kW (up from the previous \$0.04) but only pay for the load that was curtailed. This increases a customer's incentive to reduce more load. This also reduces Duke Energy's uncertainty by tying the cost to the load curtailed, rather than having a fixed cost for an uncertain load.

Impact of improving economic conditions. One change that may affect PowerShare participation is the improving economic climate. As business picks up, it may become more difficult for companies to curtail energy use and still meet their customers' needs. As one account manager explains, *"I think because the economy is improving some, there are some customers that participated that don't have the flexibility anymore."*

Summary

It is clear that the recent winter events (with one emergency event called less than two weeks before participants had been surveyed) had a negative impact on the overall satisfaction with the PowerShare program and with Duke Energy itself. However, none of this dissatisfaction seemed to affect customer's views on the individual activities and processes within PowerShare, as compared to ratings in the process evaluation of the 2010-2011 PowerShare program, when there was no experience with emergency events (see Figure 6). This pattern of results, in the context of the recent winter events, suggests that the PowerShare Ohio program is in actuality performing well. The Duke Energy program manager noted that despite the unexpectedness of the winter events, they received no customer complaints or concerns about why these events were called. *"Customers know that 14 below was not normal."*

The PowerShare Ohio program has a number of challenges ahead: The improving economic conditions, while good for customers, also may mean that customers will not be as willing to participate in the PJM emergency demand response program. In addition, PJM's recent proposal to provide only 30 minutes of advance notice for emergency events, even though exemptions would be allowed, may make participation even less attractive to customers.

Duke Energy has proactively begun to address some of these issues. The increased premium credit will increase the attractiveness of the Emergency Only program to customers, and the new event credit that is tied to actual load during an event will reinforce the importance of achieving the targeted load. The new marketing efforts targeting the unassigned Small and Medium Business customer segment will also provide Duke with additional capacity, as well as increase their ability to meet the needs of more Ohio customers, more efficiently. The evaluation team concludes that while PowerShare Ohio is a complex program facing both environmental and political challenges beyond Duke Energy's control, the seasoned program staff at the helm is initiating proactive efforts that should allow them to address these challenges.

Appendix A: Management Interview Protocol

Interviewer: _____ Date of Interview: _____ Interview method: _____

Name: _____

Title: _____

Position description and general responsibilities:

We are conducting this interview to obtain your opinions about and experiences with the PowerShare Program for the state of OH as it was implemented between the dates of January 1, 2012 and December 31, 2013. We'll talk about the Program and its objectives, your thoughts on improving the program and its participation rates. Today's interview will take about an hour to complete. May we begin?

Program Overview

1. In your own words, please briefly describe the PowerShare Ohio Program's goals.
2. Please describe your role and scope of responsibility in detail. What is it that you are responsible for as it relates to this program? When did you take on this role?
3. Would you please tell me the history of the PowerShare program in Ohio?
4. In your own words please describe how the PowerShare Program works and go over its design, marketing and operational approaches. Walk us through the participatory steps starting with a customer who knows nothing about the program.
5. Please describe for me the roles and responsibilities of vendors that are supporting Duke Energy's PowerShare program in the state of Ohio?
6. Are there any changes you would like to see in the vendors' roles or responsibilities that would improve the PowerShare program's operations?
7. How does PowerShare fit into Duke Energy's demand response portfolio?
8. What other demand response programs does Duke offer to either residential or nonresidential customers?

9. How does Duke Energy prioritize use of the capacity provided by each of these demand response programs?

Objectives

10. Were there any quantitative targets in terms of participant enrollments? If yes, what were they in 2012? In 2013?

11. Were there any quantitative targets in terms of demand response capacity? If yes, what were they in 2012? In 2013?

12. Where there separate quantitative targets for each of the four participation options?

13. How do you set these objectives?

14. Please explain SB 221 and its influence on PowerShare program objectives.

15. How well has Duke Energy been meeting the capacity goals set by SB 221?

16. Did you meet those objectives? Exceed them?

17. Since the program objectives were devised, have there been any changes in external influences (such as market conditions or new regulations) or internal influences that have affected the PowerShare program's operations?

18. Should the current objectives be revised in any way because of these changes that developed since the program objectives were devised?

19. From the 2012 & 2013 participant lists requested for OH, it looks like all but one of the companies have signed up for the emergency only option, is this correct?

20. What are Duke Energy's plans for enrolling more participants in CallOption?

21. What is Duke Energy's need for having an economic demand response program in OH?

22. Please tell me about the Auto Demand Response program in OH?

23. Can you please provide me with a list of the companies that are participating in the pilot?

24. What information do you need that would help you with program design in the future?

Incentives

25. What were the incentives for the PowerShare program in 2012 & 2013? Do you expect that these will change in the future?

26. How do customers receive the monthly premium credit?

27. How do customers receive the load reduction credit for the events in which they participated?
28. Are these two credits reported separately on their invoice?
29. Do you think the incentives offered through the PowerShare Program are adequate enough to entice the C&I community to enroll in the program? Why or why not?
30. Do you think the customers understand the incentive levels and how they are calculated? Have there been any issues relating to the customers understanding the incentive approach or confusion over what they are paid? What can be done to minimize this confusion?
31. Do you think customers have additional ability to shed load that could be tapped if the incentives were increased?

Marketing

32. What kinds of marketing, outreach and customer contact approaches do you use to make your customers aware of the program? Are there any changes to the program marketing that you think would increase participation?
33. Do you think the materials and information presented to the C&I community about the PowerShare Program provides a complete enough picture for them to understand the participatory benefits of the program? How might they be improved?
34. Are there specific customer types (business types) or market segments that you think Duke Energy should focus more effort on enrolling? What are they? How should PowerShare approach them with this program?
35. What market information, research or market assessments are you using to determine the best target markets or market segments on which to focus?
36. What are the key barriers to more efficient program operation?
37. What are the key barriers to achieving greater load reduction?
38. Are there any steps of the enrollment process that is more difficult for the customer? How does PowerShare plan to address these issues.
39. How many customers have unenrolled from the program, in 2012 and 2013, for each of the four options? How many MW does this represent?
40. What are most common reasons for unenrolling?
41. Describe the use of any internal or outside program advisors, technical groups or organizations that have in the past or are currently helping you think through the program's approach or methods. How often do you use these resources? What do you use them for?
42. Do you think there should be changes made to the structure of the participation options?

Event calls

43. How many and what types of events were called in 2012, and in 2013?
44. What are the steps customers must go through to participate in the voluntary and economic events?
45. How do you track, manage, and monitor or evaluate customer response to the event calls? How do you know if they reached their load shifting objectives?
46. For customers who do not shed as much load as anticipated, how do you find out why customers did not shed enough load?
47. Can you describe for me your understanding of how customers react to a call? How quickly do they learn of a call, what determines what they can do, how quickly can they react?
48. Given that PowerShare customers have different capabilities to react to an event depending upon their work volumes, production schedules, etc., how does PowerShare capture needed savings within the different customer conditions and capabilities in the market?
49. What is the quality control, tracking and accounting process for determining how well control and control strategies work at the customer level and at the program level?
50. Are there any market segments or customer types that the program is now serving that consistently are not able to provide the load shed within the timelines and notification systems used today? What would you suggest should be done about this customer segment?
51. Overall, what about the PowerShare Program works well and why?
52. What doesn't work well and why? Do you think this discourages participation?
53. In what ways can the PowerShare Program's operations be improved?
54. Are there any other issues or topics you think we should know about and discuss for this evaluation?
55. How did PowerShare Carolinas System respond to the following recommendations, that were made in the previous evaluation study?
 - a) **RECOMMENDATION:** Duke Energy should consider providing a summary sheet for all PowerShare customers in the Midwest region that highlights the program's key components, and their company's specific commitment in their agreement. Duke Energy should also consider developing a process flow chart that illustrates the sequence of events during an event day, starting with the identification of event conditions, notification of customers, and the different paths to settlement should the customer choose to reduce load or buy through. Because events are relatively rare, this would provide a quick refresher for customers in preparation for an upcoming event season.

a. Duke Energy's response and any actions taken:

i. _____

b) **RECOMMENDATION:** Duke Energy should obtain more data from customers on whether technical assistance with developing a curtailment plan and schedule would encourage more customers to participate in PowerShare Ohio. This may be accomplished informally by the Duke Energy account managers, or more formally with a telephone survey of customers whose main strategy is curtailment.

a. Duke Energy's response and any actions taken:

i. _____

c) **RECOMMENDATION:** Duke Energy should consider the feasibility of offering a renewal system online. This may be an option that is only offered to experienced program participants, who have had the experience of responding to event calls and know whether their capacity commitment is achievable without modification. Due to the complexity of calculating baselines, an online renewal system should not be offered to customers who need to modify their capacity commitment. An online renewal system may be more convenient for customers by reducing paperwork and may also help reduce the workload of the account managers.

a. Duke Energy's response and any actions taken:

Appendix B: Participant Survey Protocol

Survey ID _____
Surveyor Name _____

State
☐ Ohio

Participant Info

Name: _____
Company: _____
Title: _____

Hello, my name is _____. I am calling on behalf of Duke Energy to conduct a customer satisfaction interview about the PowerShare Program. May I speak with _____ please?

We need your help. Duke Energy has given us your name as someone who might be able to share some of your experiences with the PowerShare Program. We are not selling anything. We would like to conduct a short interview that will take about 15 minutes and all your answers will be kept confidential. This information will enable Duke to make improvements to the program and the application process.

Message for voicemail

Hello, my name is _____ from TecMarket Works. I am calling on behalf of Duke Energy to conduct a customer satisfaction interview about the PowerShare Program. Duke Energy has given us your name as someone who might be able to share some of your experiences with the PowerShare Program. We are an independent evaluation firm and we are not selling anything. We would like to conduct a short interview that will take about 15 minutes. All your answers will be kept confidential. This information will enable Duke to make improvements to the program and the application process.
If you can help, please call me at _____. If there is someone at your company who would be more appropriate for us to speak to, we would appreciate if you could let us know that as well.

OPTIONAL - only If the customer wishes confirmation from Duke.

If you would like to verify this request, please contact your account manager. Or, you can contact *****, Manager of Measurement and Verification Ops, at Duke Energy. She can be reached at (***) ***-**** or *****@duke-energy.com.

IN-1. Would you be able to help us?

- ☐ Yes
☐ No

(If no)

IN-2. Can you please give me the name of someone else who might be the more appropriate person to tell us about your company's participation in PowerShare?

ESTABLISHING QUESTIONS

ES-1. Would you please tell me what your company does and what your role is in your company? _____

ES-2a. Do you manage more than one site that participates in PowerShare for your company?

- ☐ Yes
☐ No

If yes,

ES-2b. How many sites? _____

Most of the questions you will be answering today are about PowerShare in general, but if you manage sites that participate in PowerShare differently from one another, please answer for your company's facility that is listed as ...
[Please fill in facility name from info sheet].

ES-5. How long has your company been participating in the PowerShare Program?

INFORMATION-GATHERING PHASE

INFO-1. How did you first become aware of the PowerShare Program?

- ☐ Duke Energy sent me a brochure
☐ A Duke Energy representative told me about it
☐ Duke Energy website
☐ I saw an ad in: _____
☐ Other: _____
☐ Don't know

INFO-2. Please tell me how useful that source was in providing the information you needed to decide whether or not to participate. Please rate the usefulness of that source on a scale of 1 to 10, with 1 meaning "Almost nothing I needed", and 10 meaning "Everything I needed".

- ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐
DK/NS

TecMarket Works

(If INFO-2 was less than 10, ask questions INFO-3a, 3b and 3c)

INFO-3a Where else did you go to get information? _____

INFO-3b. What additional information were you seeking? _____

INFO-3c. Were you able to get the information you needed about the program's participation requirements and benefits?

- ☐ Yes
- ☐ No
- ☐ DK/NS

OHIO: AUTO DR PILOT

CODR-1. Are you, or were you, a participant in the Automated Demand Response pilot, which is also known as Auto DR?

- ☐ Yes
- ☐ No
- ☐ DK/NS

(If yes, ask CODR-2, CODR-3 and CODR-4)

CODR-2. What do you like most about Auto DR?

CODR-3. What do you like the least about Auto DR?

CODR-4. Please rate your overall satisfaction with the Auto DR pilot, on a scale of 1 to 10, where 1 means that you are very dissatisfied and 10 means that you are very satisfied.

- ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐
DK/NS

If rating is less than 8:

CODR-5. What can be improved about the Auto DR program?

DECISION MAKING

DM-1. What was the primary reason that you decided to participate in the PowerShare Program?

DM-2. Was there a secondary reason that your company decided to enroll?

DM-3a. Duke Energy offered an early enrollment period with a bonus if your company renewed their contract in January. Did your company renew under this early enrollment period?

- ☐ Yes
- ☐ No
- ☐ DK/NS

If "No"

DM-3b. What were some of the reasons why your company did not renew under the early enrollment period.

If "No"

DM-3c. Is there anything Duke Energy can do to help your company make a decision early?

EVENT PARTICIPATION

EV-1. We understand no PowerShare emergency events were called in 2013. How many Power Share emergency events has your business been asked to respond to in 2014 so far?

- ☐ 0
- ☐ 1 or more (*enter number*): _____
- ☐ DK/NS
- ☐ No emergency events but we did have a test event. (*enter number*) _____

(For the Ohio Auto DR participants)

EV-3a. How many Power Share economic events has your business been asked to respond to in 2013?

- ☐ 0
- ☐ 1 or more (*enter number*): _____
- ☐ DK/NS

(For the Ohio Auto DR participants)

EV-3b. How many Power Share economic events has your business been asked to respond to in 2014 so far?

- ☐ 0
- ☐ 1 or more (*enter number*): _____
- ☐ DK/NS

EV-4a. In addition to phone calls, texts, fax and emails, is there another way in which you would like to be notified of events?

EV-4b. For some events Duke Energy is able to send out a notice a day ahead of the event, to warn of the possibility that an event may occur. Can you please rate how useful it is for you to receive the "day ahead" notices, on a scale of 1 to 10, where 1 means "Useless" and 10 means "Useful".

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA

EV-4c. Do you have any other feedback for Duke Energy on their event communication efforts?

EV-5d What did you need to do at your facility to reduce load?

EV-6a Was your company successful in reducing load?

- ☐ Yes
- ☐ No
- ☐ DK/NS

If No,

EV 6b. Were there any negative consequences of not reducing enough load?

EV-8. Please rate how easy is it for you to use the Energy Profiler Online, or EPO, on a scale of 1 to 10, where 1 means very difficult and 10 means very easy.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐
DK/NS

(If rating was less than 8)

EV-9. What can be done to make using EPO easier for you?

EV-10 Would you say the targeted level of load reduction you currently have with Duke Energy is

- ☐ Much less than you can provide
- ☐ Less than you can provide
- ☐ About right for your company
- ☐ More than you want to provide
- ☐ Much more than you want to provide
- ☐ DK/NS

EV-12. For winter events that were called recently, were there any differences in your company's ability to respond compared to summer events?

TecMarket Works

IMPROVEMENTS

IMPR-1. While your company was deciding whether or not to enroll, what was the biggest concern about participating in PowerShare?

IMPR-2a. During the past season, did anything happen to decrease your concern?

- ☐ Yes
☐ No

If YES

IMPR-2b. What happened?

If NO

IMPR-2c. What can Duke Energy do that would decrease your concern?

IMPR-4. Is there anything about PowerShare you would say was working exceptionally well? It's fine if there isn't.

IMPR-5. What doesn't work well and why?

SATISFACTION

We would like to ask you a few questions about your satisfaction with various aspects of the program. For these questions, we would like you to rate your satisfaction using a 1 to 10 scale where a 1 means that you are very dissatisfied with that aspect and a 10 means that you are very satisfied.

SAT-1. How would you rate your satisfaction with: The ease of applying for the program?

- ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐
DK/NS

If rating was less than 8

SAT-1a. How can this be improved?

SAT-2. How would you rate your satisfaction with: The amount of the monthly premium credit provided by the program?

- ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐
DK/NS

TecMarket Works

If rating was less than 8

SAT-2a. How can this be improved?

SAT-3. How would you rate your satisfaction with: The amount of the load reduction credit for the events in which you participated?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐
DK/NS

If rating was less than 8

SAT-3a. How can this be improved?

SAT-4. How would you rate your satisfaction with: The time it took for you to receive your load reduction credit?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐
DK/NS

If rating was less than 8

SAT-4a. How can this be improved?

SAT-5. How would you rate your satisfaction with: How clear the explanation of the PowerShare incentive structure was?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐
DK/NS

If rating was less than 8

SAT-5a. How can this be improved?

SAT-6. How would you rate your satisfaction with: The amount of advance notice you had about the events

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐
DK/NS

If rating was less than 8

SAT-6a. How can this be improved?

SAT-7. How would you rate your satisfaction with: The time window in which you were required to reduce your load once you had received notification about the start of the event?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐
DK/NS

TecMarket Works

*If rating was less than 8***SAT-7a. How can this be improved?**

SAT-8. How would you rate your satisfaction with: Duke Energy's method for confirming how much load you reduced?☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐

DK/NS

*If rating was less than 8***SAT-8a. How can this be improved?**

SAT-9. How would you rate your satisfaction with: The technical expertise of Duke Energy staff☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐

DK/NS

*If rating was less than 8***SAT-9a. How can this be improved?**

SAT-10. How would you rate your satisfaction with: The time it took for Duke Energy staff to respond to any questions or address any issues.☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐

DK/NS

*If rating was less than 8***SAT-10a. How can this be improved?**

Sat-11. Considering all aspects of the program, how would you rate your overall satisfaction with the PowerShare Program?☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐

DK/NS

*If rating was less than 8***SAT-11a. How can this be improved?**

SAT-12. How would you rate your overall satisfaction with Duke Energy?☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐

DK/NS

*If rating was less than 8***SAT-12a. How can this be improved?**

TecMarket Works

SAT-13. Are there any other thoughts or comments you would like to share with Duke management about the PowerShare Program that we have not discussed already?

Thank you for taking this time to share your thoughts! We appreciate it very much.

BEFORE THE
PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Duke)
Energy Ohio, Inc., for Recovery of)
Program Costs, Lost Distribution) Case No.15-534-EL-RDR
Revenue and Performance Incentives)
Related to its Energy Efficiency and)
Demand Response Programs.

DIRECT TESTIMONY OF
TRISHA A. HAEMMERLE
ON BEHALF OF
DUKE ENERGY OHIO, INC.

March 30, 2015

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I. INTRODUCTION

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is Trisha A. Haemmerle. My business address is 139 East Fourth
3 Street, Cincinnati, Ohio 45230

4 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5 A. I am employed by Duke Energy Business Services, LLC (DEBS), as Senior
6 Manager, Strategy and Collaboration. DEBS provides various administrative and
7 other services to Duke Energy Ohio, Inc., (Duke Energy Ohio or the Company)
8 and other affiliated companies of Duke Energy Corporation (Duke Energy).

9 **Q. PLEASE SUMMARIZE YOUR EDUCATION AND PROFESSIONAL**
10 **QUALIFICATIONS.**

11 A. I graduated from Ohio University with a Bachelor's Degree in Marketing. I
12 started my career with Cinergy in 1997. I worked for Cinergy and Duke Energy
13 from 1997 to 2010 developing, managing, and analyzing survey activities, as well
14 as market research projects. Starting in 2009 I also managed the coordination of
15 verification for the energy efficiency and demand response programs. I assumed
16 my current position in 2010.

17 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PUBLIC**
18 **UTILITIES COMMISSION OF OHIO?**

19 A. Yes, I submitted testimony in support of Duke Energy Ohio's application for
20 recovery of program costs, lost distribution revenue and performance incentives
21 related to its Energy Efficiency (EE) and Demand Response (DR) programs, Case
22 No. 14-457-EL-RDR.

1 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS
2 PROCEEDING?

3 A. The purpose of my testimony in this proceeding is to discuss the history of Rider
4 Energy Efficiency-Peak Demand Response (EE-PDR), Duke Energy Ohio's
5 energy efficiency programs, and the successful achievement Duke Energy Ohio
6 has had with its current portfolio of programs. Duke Energy Ohio witness
7 Roshena Ham will discuss how the Company determines program cost-
8 effectiveness and explain the Company's evaluation, measurement and
9 verification process used to verify the results of its portfolio of programs, and
10 Duke Energy Ohio witness James E. Ziolkowski will explain Rider EE-PDR and
11 how it is applied to the programs to determine cost recovery.

II. HISTORY OF RIDER EE-PDR

12 Q. PLEASE EXPLAIN THE HISTORY OF RIDER EE-PDR.

13 A. Duke Energy Ohio proposed the Rider EE-PDR energy efficiency and peak
14 demand cost recovery mechanism in its application in Case No. 11-4393-EL-RDR
15 that was filed on July 20, 2011. The Company's application requested approval
16 to implement Rider EE-PDR to replace Rider DR-SAW, which was due to expire
17 on December 31, 2011. The application also proposed a mechanism by which to
18 recover the costs it incurs in achieving the energy efficiency and peak demand
19 reduction targets set by SB 221, and to provide the Company with an incentive to
20 exceed the targets. The Public Utilities Commission of Ohio (Commission)
21 approved a Stipulation and Recommendation resolving intervening parties'
22 concerns and establishing Rider EE-PDR on August 15, 2012. In compliance with

1 the Order, Duke Energy Ohio submitted an updated portfolio filing, Case No. 13-
2 0431-EL-POR, to align the cost recovery mechanism with the portfolio of programs
3 on April 15, 2013. The case was approved on December 4, 2013. The Company
4 also filed and received approval for a new non-residential program, Small Business
5 Energy Saver.¹

6 **Q. PLEASE SUMMARIZE THE COST RECOVERY AND INCENTIVE**
7 **MECHANISM UNDERLYING RIDER EE-PDR THAT WAS APPROVED**
8 **IN CASE NO. 13-0431-EL-POR.**

9 A. Under the Commission-approved Rider EE-PDR, the Company is entitled to
10 recover the costs prudently incurred to deliver energy efficiency and peak demand
11 reduction programs. Additionally, under Rider EE-PDR, the Company is entitled
12 to earn a shared savings incentive based upon its ability to *exceed* its annual
13 efficiency savings benchmark targets that are mandated by Ohio law. In Case No.
14 13-0431-EL-POR, Duke Energy Ohio was also given the ability to recover lost
15 distribution margins from all customer classes not included in the Company's
16 pilot distribution decoupling rider (i.e., those customers receiving service under
17 Rates DS, DP, and TS).

18 **Q. PLEASE DESCRIBE HOW THE COMPANY'S APPROVED SHARED**
19 **SAVINGS MECHANISM WORKS.**

20 A. The Company's shared savings incentive structure is designed to incentivize the
21 Company for exceeding its annual energy efficiency targets in the most cost-
22 effective manner possible. Under this incentive structure, the level of incentive,
23 or the magnitude of the percentage of the net system benefits (avoided costs less

¹ Case No. 14-964-EL-POR approved on September 10, 2014.

1 the costs of delivering the efficiency) that the Company may earn, is tiered and
2 can range from 5.0% up to 13.0%, depending on the degree by which the actual
3 efficiency savings exceed the annual target. Please see Table 1 below.

Table 1	
Achievment of Annual Target	After-Tax Shared Savings
≤ 100	0.0%
$\geq 100 - 105$	5.0%
$\geq 105 - 110$	7.5%
$\geq 110 - 115$	10.0%
≥ 115	13.0%

4 This shared savings mechanism allows Duke Energy Ohio an opportunity to
5 recover its costs and earn an incentive for exceeding the mandated benchmarks.

6 **Q. DOES THE SHARED SAVINGS CALCULATION INCLUDE COST**
7 **INCURRED FOR MEASUREMENT AND VERIFICATION?**

8 A. Yes, consistent with the Commission's Order in Case No. 13-753-EL-RDR, the
9 shared savings calculation includes cost incurred for Measurement and
10 Verification (M&V).

11 **Q. PLEASE DESCRIBE THE LOST DISTRIBUTION REVENUE**
12 **RECOVERY ELEMENT CONTAINED IN THE CALCULATION OF**
13 **RIDER EE-PDR.**

14 A. The calculation of Rider EE-PDR includes the recovery of lost distribution
15 revenue for customers billed under schedules Rate DP, Rate DS, and Rate TS.
16 Unlike all other customers being billed under Rider EE-PDR, the customers under
17 these three rate schedules were excluded from the distribution revenue decoupling
18 pilot being recovered through Rider DDR. In order to eliminate the disincentive
19 created by the under-recovery of fixed costs from the customers who are not

1 served under the decoupling pilot, the Commission's order in Case No. 11-5905-
2 EL-RDR authorized the Company to collect thirty-six months of lost distribution
3 margins associated with the impacts of its energy efficiency programs for these
4 customers.

5 **Q. DID THE COMMISSION'S ORDER INCLUDE A PROVISION FOR**
6 **RECEIVING CARRYING COSTS FOR OVER- OR UNDER-**
7 **COLLECTION OF LOST MARGINS?**

8 A. No. Any over- or under-collection of lost margins is to be determined without
9 including carrying costs.

10 **III. OVERVIEW OF PORTFOLIO PERFORMANCE**

11 **Q. WHAT ENERGY EFFICIENCY AND DEMAND RESPONSE PROGRAMS**
12 **WERE ULTIMATELY OFFERED TO DUKE ENERGY OHIO**
13 **CUSTOMERS UNDER RIDER EE-PDR IN 2014?**

14 A. The portfolio of programs approved for inclusion in Rider EE-PDR included the
15 following programs:

- 16 ○ Residential Energy Assessments
- 17 ○ Smart Saver[®] for Residential Customers
- 18 ○ Low Income Services
- 19 ○ Energy Efficiency Education Program for Schools
- 20 ○ Power Manager for Residential Customers
- 21 ○ Home Energy Comparison Report
- 22 ○ Nonresidential Energy Assessments
- Smart Saver[®] for Nonresidential Customers

- 1 ○ Power Share for Nonresidential Customers
- 2 ○ Low Income Neighborhood Program
- 3 ○ Low Income PWC Pilot
- 4 ○ Appliance Recycling Program
- 5 ○ Home Energy Solutions

6 The non-residential Energy Management and Information Services pilot,
7 which was approved as part of the portfolio of programs after the Commission's
8 December 4, 2013, Opinion and Order in Case No. 13-0431-EL-POR, was not
9 offered to customers in 2014. Due to limited customer interest, Duke Energy
10 Ohio evaluated the pilot in order to determine if proceeding with a lower overall
11 customer base than anticipated will allow the program to be cost-effective. The
12 decision was made to terminate the pilot.

13 **Q. WILL DUKE ENERGY OHIO BE OFFERING ANY NEW PROGRAMS**
14 **OR MEASURES IN 2015?**

15 A. Yes, as approved in Case No. 13-0431-EL-POR, Duke Energy Ohio will be
16 offering new measures through the Smart Saver[®] for Residential customers and
17 Smart Saver[®] Prescriptive for Nonresidential customers. The Company received
18 approval to offer Small Business Energy Saver. Duke Energy Ohio also
19 submitted an application for approval of the Smart Energy in Offices² program in
20 2014. The Commission has not yet ruled upon that application.

21 **Q. DID DUKE ENERGY OHIO OFFER ANY OTHER PROGRAMS DURING**
22 **2014 THAT WERE NOT INCLUDED IN CASE NO. 13-0431-EL-POR?**

² Case No. 14-1575-EL-POR

1 A. Yes. Consistent with Rule 4901:1-39-05(G), and the Commission's Opinion and
2 Order in Case No. 10-834-EL-POR, Duke Energy Ohio has offered eligible
3 customers the opportunity to participate in the Ohio Mercantile Self-Direct Rebate
4 Program.

5 Duke Energy Ohio also has an electric pilot program offered to customers
6 residing in the Duke Energy Ohio service territory. The program is offered
7 through a partnership with People Working Cooperatively (PWC).³ The program
8 targets low income customers and focuses on energy efficiency. Customers
9 receive whole-house weatherization services which include installation of energy
10 efficiency measures and education. Duke Energy Ohio will purchase and
11 recognize the energy and demand savings achieved through the whole-home
12 weatherization in the Duke Energy Ohio service territory that are currently funded
13 by leveraged funds, funding from sources other than Duke that are not explicitly
14 tied to efficiency. The pilot is intended to allow the Company to recognize
15 efficiency impacts that were previously unrecognized, achieve these impacts in a
16 cost-effective manner, and create a new funding stream for additional whole-
17 home weatherization to be performed in the Duke Energy Ohio Service Territory.

18 **Q. DID DUKE ENERGY OHIO PARTICIPATE IN THE PJM**
19 **INTERCONNECTION, INC. BASE RESIDUAL AUCTION?**

20 A. As agreed to by the signatory parties in the Stipulation and Recommendation for
21 Case No. 13-0431-EL-POR, Duke Energy Ohio created a PJM Interconnection,
22 Inc. (PJM) Pilot program capturing all the costs and benefits of PJM Reliability
23 Pricing Model (RPM) participation. Duke Energy Ohio agreed to bid at least 80%

³ Approved in Case No. 13-662-EL-UNC

1 of eligible⁴, projected cost effective⁵, approved Program Portfolio resources⁶ into
2 the PJM Base Residual Auctions (BRA) occurring during the term of the 2014 –
3 2016 Program Portfolio.

4 All cost effective, PJM approved MW resources were bid into the 2017/2018
5 BRA. This resulted in 59.2 MWs from Demand Response and 16.4 MWs from
6 energy efficiency for a total of 75.6 MWs clearing in the 2017/2018 auction.

7 At the time clearing MW revenue is collected, it will be allocated back to
8 programs after all administrative and M&V costs are covered. Revenue offset is
9 allocated back to program based on percentage of MWs clearing each auction and
10 customer class and the net offset will be shared with the Company at its approved
11 shared savings percentage.

12 Duke Energy Ohio continued to keep the Duke Energy Community Partnership
13 (the Collaborative) updated throughout 2014 regarding the auction process.

14 **Q. HAS DUKE ENERGY OHIO BEEN SUCCESSFUL IN MEETING ITS**
15 **TARGETED MANDATES FOR ENERGY EFFICIENCY AND PEAK**
16 **DEMAND REDUCTION?**

17 A. In 2014, Duke Energy Ohio was successful in meeting its annual targeted
18 mandates for energy efficiency and peak demand reduction with continued
19 participation in the approved programs and by using prior years' banked energy

⁴ "Eligible" is defined for purposes for the Stipulation as existing and planned energy efficiency savings and demand response that comply with PJM Manuals 18 and 18b.

⁵ "Cost effective" is defined for purposes of Duke Energy Ohio's PJM Pilot Program as the projected auction revenues are greater than the projected costs for existing and planned energy efficiency and demand response, where the phrase "projected auction revenues" is defined as the estimated kW multiplied by the previous BRA clearing price for the Duke zone and "projected costs" are defined as the costs necessary to fully qualify and bid the resources into the PJM capacity auctions.

⁶ "Program Portfolio resources" is defined as the energy efficiency and demand response resources, both existing and planned, that are expected to be created under Duke's 2014 – 2016 Program Portfolio application in Case No. 13-0431-EL-POR. Program Portfolio resources specifically exclude mercantile self-direct resources, unless a self-direct mercantile customer affirmatively and explicitly chooses to grant its energy efficiency capacity resources to Duke Energy Ohio, by separate agreement.

1 efficiency impacts. Including the impacts from its base rate weatherization
2 programs, its Mercantile Self Direct Rebate Program, the Company met its annual
3 energy efficiency mandate of 200,066 MWh and exceeded its annual peak
4 reduction mandate of 32.1 MW by over 29 MW.

5 **Q. WHAT PROGRAMS WERE THE PRIMARY CONTRIBUTORS TO THE**
6 **COMPANY'S SUCCESS DURING 2014?**

7 A. While the Company is pleased with the performance of its overall portfolio of
8 programs that were deemed cost effective by the total resource cost test, two
9 programs that continue to prove most successful are the two Smart Saver®
10 Programs: Smart Saver® for Residential Customers and Smart Saver® for
11 Nonresidential Customers. Together these two programs accounted for over
12 102,000 MWh, 67%, of the total impacts recognized in 2014. These programs
13 continued to flourish in large part due to the attractiveness of lighting measures
14 and the Duke Energy, Energy Efficiency Online Store.

15 **Q. IS DUKE ENERGY OHIO'S ACHIEVEMENT LEVEL VERSUS ITS**
16 **ANNUAL TARGETED BENCHMARKS THE SAME ACHIEVEMENT**
17 **THAT THE COMPANY IS USING TO CALCULATE ITS ANNUAL**
18 **PERFORMANCE FOR THE PURPOSES OF CALCULATING ITS**
19 **EARNED INCENTIVE LEVEL?**

20 A. No, the Company's calculation of its annual energy efficiency achievement level
21 versus its annual mandates for the purposes of determining its level of shared
22 savings incentive is performed consistent with the methodology adopted and
23 approved by the Commission in Case No. 11-4393-EL-RDR and in Case No. 13-

1 0431-EL-POR. For the purposes of determining its annual earned incentive level,
2 the Company excludes annual impacts achieved through its Mercantile Self-
3 Direct Rebate Program (7,508 MWh) and base rate-funded low income
4 weatherization programs (701 MWh). After making the agreed upon adjustments
5 to the annual impacts, the Company has recognized an annual impact achievement
6 of 222,852 MWh to determine its shared savings percentage incentive. In
7 addition to adjusting the annual impact achievements, consistent with the
8 Stipulation that was adopted and approved by the Commission, the Company also
9 adjusted its annual mandated target by reducing its three-year average annual
10 sales baseline for the load of the customers participating in the Mercantile Self-
11 Direct Rebate Program. This adjustment to the three-year average sales baseline
12 reduces its annual mandate by 7,953 MWh to establish an annual mandate for
13 determining the incentive of 192,113. After making the appropriate adjustments
14 to both the annual impacts and annual mandate target and utilizing banked energy
15 efficiency impacts eligible for incentive, the Company calculated an annual
16 achievement of 116%, which equates to allowing the Company to earn a 13%
17 after-tax shared savings incentive.

18 **Q. GIVEN THE LEVEL OF ACHIEVEMENT FOR THE PURPOSES OF**
19 **DETERMINING DUKE ENERGY OHIO'S INCENTIVE PREVIOUSLY**
20 **DISCUSSED, WHAT INCENTIVE LEVEL WAS DUKE ENTITLED TO**
21 **UNDER RIDER EE-PDR FOR 2014?**

22 **A.** During 2014, the Company overachieved utilizing banked energy efficiency
23 impacts versus its annual mandates by over 16%, which entitles it to have the

1 ability to collect an incentive of 13% of the net benefit achieved through its
2 programs.

3 **Q. IS DUKE ENERGY OHIO PERMITTED TO UTILIZE BANKED**
4 **ENERGY EFFICIENCY IMPACTS TO DETERMINE ITS ALLOWED**
5 **SHARED SAVINGS INCENTIVE OF 13% OF THE NET BENEFITS**
6 **ACHIEVED THROUGH ITS PROGRAMS?**

7 **A.** Yes, consistent with the Stipulations in Case No. 11-4393-EL-RDR and Case No.
8 13-0431-EL-POR that were adopted and approved by the Commission, Duke
9 Energy Ohio has recognized banked impacts in the determination of its shared
10 savings incentive. It is important to note that the banked impacts utilized by the
11 Company to determine its 13% shared savings incentive have not previously been
12 recognized in any prior year for the purpose of determining its incentive level and
13 the costs and benefits from the banked impacts are not included in the calculation
14 of the shared savings incentive.

15 **Q. PLEASE DESCRIBE HOW THE COMPANY'S MERCANTILE SELF-**
16 **DIRECT REBATE PROGRAM HAS BEEN FACTORED INTO THE**
17 **CALCULATION OF RIDER EE-PDR.**

18 **A.** As previously mentioned, 7,508 MWh of energy savings and 1.8 MW of capacity
19 savings achieved through the Company's Mercantile Self-Direct Rebate Program
20 have been excluded from the 144,060 MWh energy savings recognized for
21 determining the Company's performance versus its annual statutory benchmarks.
22 Additionally, consistent with the approved Stipulation in Case No. 13-0431-EL-
23 POR, the avoided cost savings associated with the Mercantile Self-Direct Rebate

1 Program have not been included in the calculation of its shared savings incentive.
2 While the impacts and associated avoided cost from the Mercantile Self-Direct
3 Rebate Program have been excluded from the calculation of the Company's
4 shared savings incentive, the program costs associated with Mercantile Self-
5 Direct Rebate Program are included for recovery in the calculation of Rider EE-
6 PDR.

7 **Q. HAS THE COMPANY INCLUDED ANY COSTS OR IMPACTS FROM**
8 **TRANSMISSION AND DISTRIBUTION INVESTMENTS THAT REDUCE**
9 **LINE LOSSES IN THE CALCULATION OF ITS SHARED SAVINGS**
10 **INCENTIVE IN RIDER EE-PDR?**

11 A. No, consistent with the terms included in Stipulation approved in Case No. 13-
12 0431-EL-POR, Duke Energy Ohio has not counted any impacts from investments
13 in transmission and distribution systems that reduce line losses in the calculation
14 of its annual performance, or in the calculation of avoided costs for the purposes
15 of calculating its shared savings incentive.

16 **Q. HAS THE COMPANY COMPLIED WITH ALL OF THE DIRECTIVES**
17 **FROM THE COMMISSION IN ITS OPINION AND ORDER IN THE 13-**
18 **0431-EL-POR CASE?**

19 A. Yes. Duke Energy Ohio believes that it has complied with the directives set forth
20 in that Opinion and Order. For example, the Commission directed the Company
21 to continue to work with its Collaborative and to file specific information in its
22 status reports. The Company has held Collaborative meetings, with significant
23 participation on 02/06/14, 06/05/14, 08/28/14, and 11/12/14. .

1 Additionally, the Company has filed full and complete status reports in Case Nos.
2 10-0317-EL-EEC, 11-1311-EL-EEC, 12-1477-EL-EEC, 13-1129-EL-EEC and
3 14-456-EL-EEC, and 15-454-EL-EEC. Finally, the Company is filing this true-
4 up in accordance with the Stipulation and Recommendation and the
5 Commission's Order in Case No. 13-0431-EL-POR.

IV. CONCLUSION

6 **Q. PLEASE DESCRIBE THE COMPANY'S OVERALL ENERGY**
7 **EFFICIENCY AND PEAK DEMAND REDUCTION PORTFOLIO**
8 **PERFORMANCE IN 2014.**

9 A. Duke Energy Ohio's portfolio of programs continued to perform exceptionally
10 well in 2014 and exceeded the projected impacts included in Case No. 14-457-
11 EL-RDR by over 31%. The Company was able to achieve this tremendous
12 success while actually spending only 97% of the projected cost in Case No. 14-
13 457-EL-RDR. The success has allowed customers that participated in its
14 programs to take control of their energy usage and realize significant bill savings,
15 as well as allowing all Duke Energy Ohio customers to realize the benefits of
16 millions of dollars of avoided system costs. In fact, the net present value of the
17 system avoided costs associated with the 2014 energy and capacity achievements
18 from its portfolio of programs is over three times the program cost incurred to
19 achieve the impacts.

20 Despite the tremendous success of Duke Energy Ohio's Portfolio in 2014,
21 as anticipated at the time of its portfolio filing (forecasted impacts 2014 of the
22 approved portfolio were less than the 2014 forecasted mandate levels), the

1 Company, as permitted by the Commission's rules, needed to recognize banked
2 impacts to meet its annual compliance benchmark. Because the annual benchmark
3 mandate continued to increase in 2014 and the Company has experienced
4 significant success in getting customers to become more efficient earlier than
5 required and hence reaped much of the low hanging efficiency savings; meeting
6 the mandates on an annual basis has been challenging. Duke Energy Ohio is
7 confident that with its strong portfolio and sizeable bank of impacts, that it will
8 continue to be in compliance with its annual benchmarks, but recognizes that it
9 will need to continue to evaluate and add new cost effective energy efficiency and
10 demand response programs to enhance the existing portfolio.

11 **Q. HAS DUKE ENERGY PROPOSED ANY NEW PROGRAMS TO ASSIST**
12 **IN MEETING THE INCREASING ANNUAL BENCHMARK?**

13 A. Yes. The Company filed and received approval for a new non-residential program,
14 Small Business Energy Saver. Due to the timing of the approval, the program did
15 not have 2014 participation. Duke Energy Ohio also filed the Smart Energy in
16 Offices program in 2014. The Commission has not yet ruled upon that
17 application.

18 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

19 A. Yes, it does.