

Formal Case No. 1130: Rate Design Working Group First Meeting
1325 G Street, N.W., Suite 800
Washington, D.C. 20005



**FORMAL CASE NO. 1130, IN THE MATTER OF THE INVESTIGATION INTO
MODERNIZING THE ENERGY DELIVERY SYSTEM FOR INCREASED
SUSTAINABILITY**

FIRST RATE DESIGN WORKING GROUP
MEETING MINUTES

Meeting Commencement

By Order No. 20286,¹ the Commission directed the Rate Design Working Group (“RDWG”) to reconvene to review a holistic evaluation and assessment of current rate designs in the District of Columbia and other jurisdictions in order to propose best practice rate design solutions including a new residential Dynamic Pricing program. Therefore, the RDWG commenced its first working group meeting via conference call, on May 12, 2020, from 10am to approximately 12:30pm.

Attendees

Sign-in Sheet (see Attachment No. 1)

Issues Discussed

Agenda (see Attachment No. 2)

Synopsis of Issues Discussed

- **Introduction and Scope of Working Group**
 - Commission staff commenced the RDWG by taking attendance. Staff mentioned that the scope of the RDWG is set forth in detail in Order No. 20286 and the Commission’s March 27, 2020, Notice scheduling the meeting. The objective of the RDWG is to propose within the next 12 months best practice rate designs, including a new residential Dynamic Pricing Program, for Commission consideration. Staff indicated that the presenters for this meeting will be Pepco and PJM.
- **Presentations**

¹ *Formal Case No. 1130, In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability*, Order No. 20286, ¶ 54, rel. January 24, 2020.

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- **PJM’s presentation (Attachment No. 3)** focused on price responsive demand (“PRD”), the ability of consumers to control their energy expenditures by changing their electricity use in response to wholesale electricity prices. Commission Staff asked PJM, when did PJM make its PRD proposed changes filing to FERC? PJM noted that they filed in March, and it was under normal timing. WGL referring to the first slide asked how is the PRD demand curve determined? PJM noted that the Load Serving Entity (“LSE”) determines the curve, and it depends on the rate structure. Staff, referring to slide 6, asked whether PJM’s bill credit is a savings credit or is it reflected as dollars on a bill? PJM stated that the bill credit is savings, but it also translates to a dollar amount on the bill. Namely, if original capacity payment is \$100 and PRD leads to \$10 saving the \$10 will be listed as a bill credit. Staff further noted that currently there are about 78 to 80 MW demand response in the District provided by the unregulated entities, and asked whether any of that falls under PRD? PJM responded that there is 0 PRD in the District for the 19/20 deliver year. Pepco concurred noting that they do not have PRD sponsored by the utility. Staff also asked, how many pnodes are in the District? PJM noted that it does not know but will look into this information and report back. WGL asked, as to the District’s pnodes, is that taken into account in the Locational Marginal Price (“LMP”)? PJM noted that they look at the price and may consider it in the LMP if it is marginal. OPC noted its concern over load in terms of PRD and how credits are handled? PJM noted that in terms of PRD, it does not think there is any impact if their forecast goes down. Staff asked whether PJM knows which states submit PRD to PJM and whether Illinois is one of those states? PJM noted that for the upcoming delivery years, they have three zones and will send a link to the group to review those zones. Staff asked whether PRD is submitted mainly by Maryland and Delaware. PJM said yes. OPC asked PJM whether they have a sense of the emergencies in the Pepco zones? And while PRD is not the subject of the FERC MOPR, does PJM think the MOPR proceeding may have any impact on PRD? PJM noted that in terms of max generation events, there have not been any recently. And in terms of the MOPR, they do not expect any impact from the MOPR on PRD. Staff asked, in the case where there is not a PJM emergency event, does PJM reduce the demand and give bill credits? PJM noted that the bill credits still accrue with a prior commitment even without max generation event.
- **Pepco’s presentation (Attachment No. 4)** focused on its recommended Dynamic Pricing Proposal for the District. Staff asked Pepco whether there is a significant difference between the Delaware and Maryland Demand Response (“DR”) programs? Pepco noted that in MD, it is focused only on residential customers, so all residential distribution service customers are enrolled in the rate. While in DE, the standard offer service is enrolled in the rate, and the jurisdiction also includes a small amount of small commercial accounts. Staff asked whether customers in Maryland are automatically

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- registered for the critical peak rebate program by default unless they opt out? Pepco noted that this is correct, and if the customer were to go to a third party that had price responsive demand rates, they would exclude those accounts to avoid double counting. OPC asked Pepco whether dynamic pricing will benefit customers through both energy and capacity. Pepco noted that by 2021, it will only be in the capacity side. DC SUN asked Pepco whether net energy metering (“NEM”) customers automatically get placed in the dynamic pricing rate? Pepco said yes. DC SUN also asked, what is the comparison between cost savings with net energy and behind the meter dynamic pricing? Pepco noted that with NEM customers there is a higher price during the event/hours, but generally it is a rebate that the customer will receive. Staff asked, with regards to credits, are there factors of reduction in distribution capacity or generation capacity? Pepco indicates it could be generation, transmission and distribution in terms of benefit. Staff asked, is there a distribution capacity multiplier? Pepco noted that there is not one. Staff clarified that a kWh not consumed is a kwh saved so the value includes generation, transmission and distribution and Pepco agreed. Staff asked whether there is a scale-up for locational value of distribution capacity value? Pepco noted that there is not, but it is an interesting question.
- OPC asked why is it necessary to keep the peak rebate at 1.25 /kwh? Pepco noted that they can always adjust the rate credit, but to do so would require doing it for all customers, so they have to be careful because they have to think about the messaging problem. OPC asked Pepco to further explain the cost for educating customers of this program. Pepco noted that the cost for the first year will be higher, therefore, after the annual education cost, there will be lower cost because of experience with the rate. OPC asked, is the energy wise program (“EWR”) going away? Pepco noted that EWR and Dynamic Pricing will be linked together to operate concurrently with one another. DOEE noted that with the cost of \$1.25 kW/h price of capacity in PJM, moving to a price responsive, wouldn’t it require the price to be a little higher? Pepco noted that the bases for the 1.25 kwh is used in MD programs. Pepco further noted that the idea is for all PJM credits that get to us, gets credited back to the consumer, plus or minus. Staff asked, on the implementation side, if we have PRD and DR, will PRD be given to the everybody, and Direct Load Control (“DLC”) will be Opt-in. Pepco confirmed that. Staff asked whether Pepco has some kind of benefit cost analysis for the dynamic pricing program where the benefit includes the distribution side of the savings. Pepco noted that they have it in MD.
 - Grid2.0 asked whether there are any constraints that would prevent Pepco from linking into a smart thermostat to reach customers and notify them of an event in order to participate in the program? Pepco noted that this is possible, but if the thermostat is from a third party, some other things will come into play. OPC asked, what mechanics for delivery does Pepco have in place in PJM to avoid penalties? Pepco noted that they

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- know exactly what the performance is, what the PLC data is, and they look at A number of ways to measure that performance. Pepco also noted that they use energy regression modeling. PJM noted that based on the FERC MOPR issue, the BRA will be held 6 months after receipt of a FERC order, likely no earlier than January 2021, but the date is uncertain. Staff, referencing slide 10, second bullet, asked whether both will receive their respective benefits? Pepco noted that, if DLC has greater performance than PRD, they will derive the revenues from both programs, and any excess will be a summer resource for a revenue source. Staff asked, in MD, what is the MW for DLC and for PRD? Pepco noted that it is approximately 220MW collectively (MD and DE). Pepco noted that it would look into the split and provide further information to Staff.
- DC Climate Action asked Pepco to further explain the peak energy, peak reduction of 126MW. Pepco noted that that measurement is out of the panel regression modeling, which indicates what customers are actually doing to reduce load, depending on what measurement is looked at. DC Climate Action also asked how big it is, to the average peak demands, since MD's was 3400MW. Pepco noted that stakeholders should look at what is happening with the residential customers. OPC asked about bill protection and or penalty. Pepco noted that the idea is that a customer will never face a higher bill if they do not respond to an event, and there is no penalty. DOEE asked about the communication schedules and post event communications, and for Pepco to discuss why in the strawman proposal, Pepco did not propose post communications? Pepco noted that right now in MD, they have a report that gives a post event. DOEE noted that it would be curious if there is improved customer recall, options after an event. Pepco noted that it would have to check how quickly it is posted after an event. DOEE asked whether Pepco's proposal includes an earnings mechanism, recovery on the program cost? Pepco noted that right now, it does not. Pepco stated that they have not had that conversation but that can be decided on later if the program gets approved. DC Climate Action asked Pepco, while the small businesses inclusion in MD's program appears to be problematic, whether Pepco considers the same for DC? Pepco noted that MD does include small business, but it is important to note that business operations during weekdays are hard to understand, therefore given that commercial groups behavior are very individualistic, running a DR program with small commercial businesses becomes very challenging. OPC asked whether predictability of the load is the reason why there is a preference for residential over commercial? Pepco noted that its more than predictability of the load, because with residential it is easier to aggregate customer loads. OPC asked whether the PJM market credits are enough to cover the costs of the program? Pepco noted that it will review this based on Maryland and other jurisdiction and provide to group.

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● **Meeting Action Items**

- PJM to report on how many pnodes are in the District.
 - PJM's Response: There are 48 load pnodes in DC.
- PJM to send link of PRD zones to RDWG.
 - PJM's Response:
 - Summary of DR & PRD volume by DY can be found at <https://www.pjm.com/-/media/markets-ops/dsr/2020-demand-response-activity-report.ashx?la=en>
 - PRD amount committed to DY by zone can be found with information posted for each BRA. Please see Load Pricing Results tab for worksheet at the following link: <https://www.pjm.com/-/media/markets-ops/rpm/rpm-auction-info/2020-2021-base-residual-auction-results.ashx?la=en>.
 - You can find a write up summary of the auction results and PRD on page 13 of the following link <https://www.pjm.com/-/media/markets-ops/rpm/rpm-auction-info/2020-2021-base-residual-auction-report.ashx?la=en>
- Pepco to provide MW split for DLC and PRD for MD and DE.
- Pepco to report on how quickly its options to participate in an event is posted after an event.
- Pepco to review cost for dynamic pricing program in other jurisdictions and compare the PRD program costs with PJM bill credits?

Next Steps (Revised)

- | | |
|---|------------------------|
| ● Draft Minutes Circulated to Participants: | Friday, May 15, 2020 |
| ● Comments from Participants to PSC Staff: | Tuesday, May 19, 2020 |
| ● Report Filed with Commission: | Thursday, May 21, 2020 |

Rate Design Working Group (RDWG)

MEMBERS

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Power Path DC – Rate Design Working Group

**1325 G Street, N.W., 8th Floor
Washington, D.C. 20005**

May 12, 2020

10am – 12pm

**Dial-in Number: 1 202-594-9550
Meeting ID: 875 410 279#**

REVISED AGENDA

I. WG Members - Identification

II. Introduction

- **Housekeeping Rules**
- **Scope of RDWG**

III. Presentation (Q&A follows each presentation)

- **PJM – Price Responsive Demand**
- **Pepco – Dynamic Pricing Strawman Proposal**

IV. Miscellaneous Discussion

- **Meetings**
- **Timelines**

V. Next Steps

A. Working Group Minutes

Draft Circulated to Participants:

Thursday, May 14, 2020

Comments from Participants to PSC Staff:

Monday, May 18, 2020

Minutes filed with Commission:

Wednesday, May 20, 2020

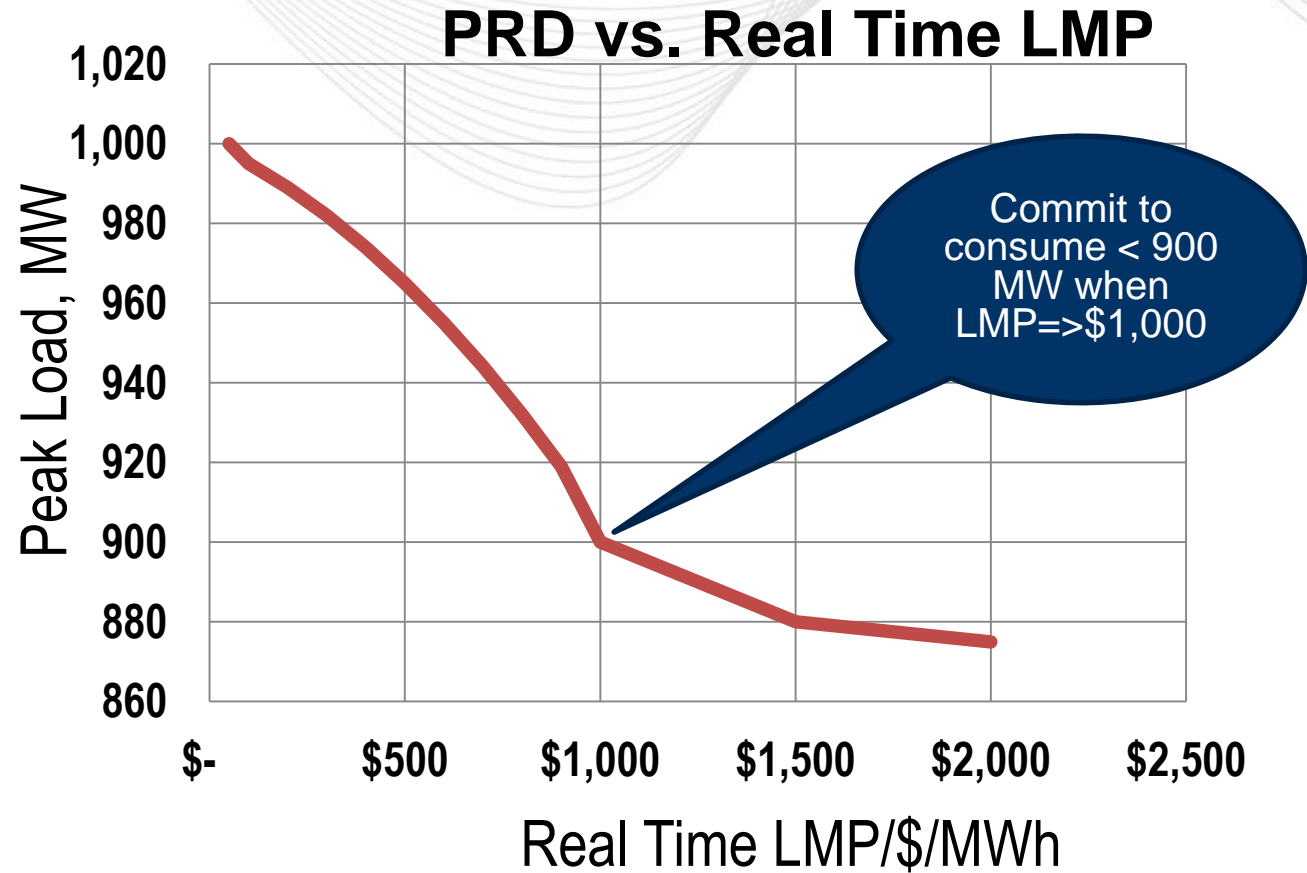
B. Next Meeting

(TBD)

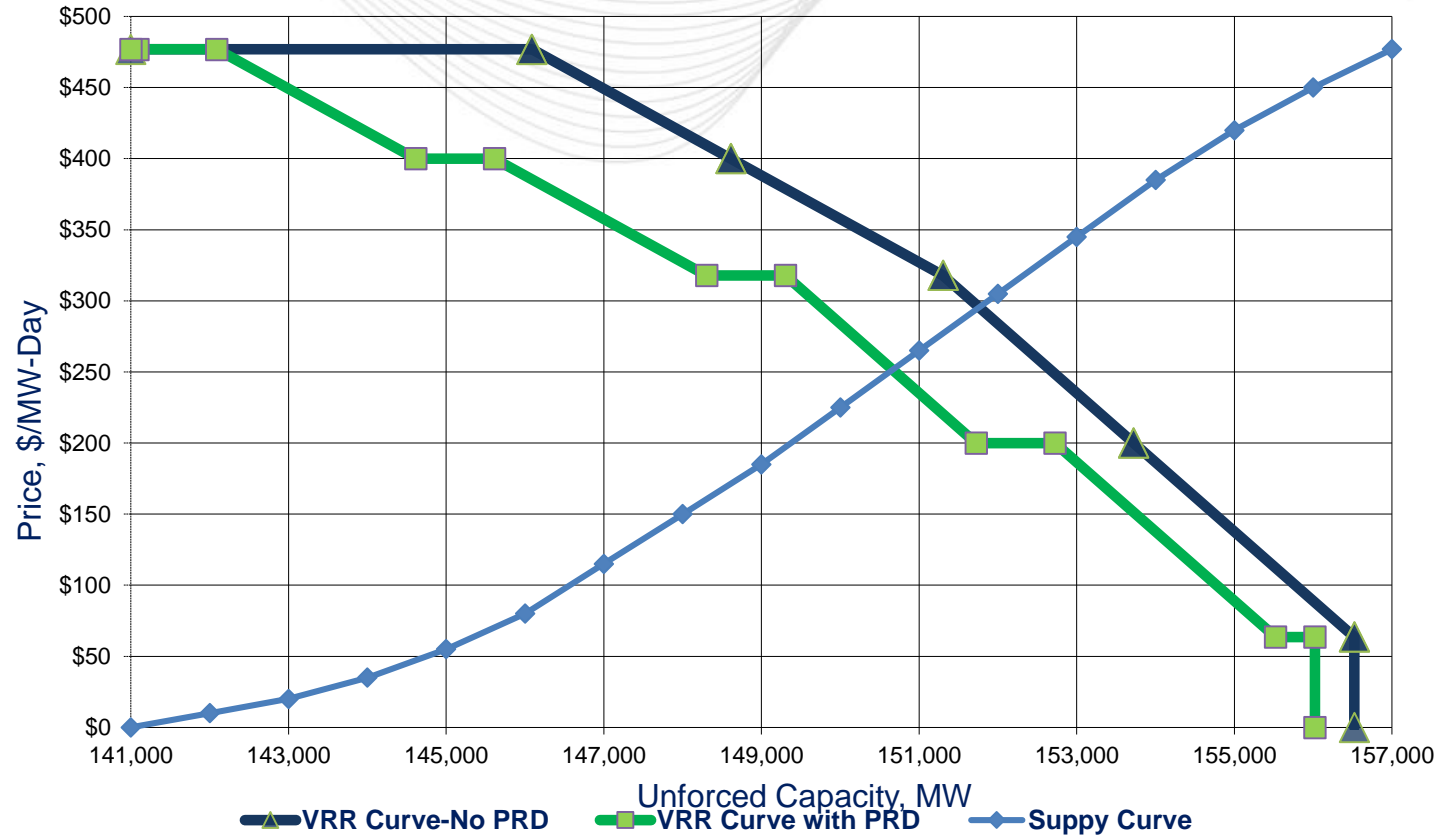
ADJOURNMENT

Price Responsive Demand

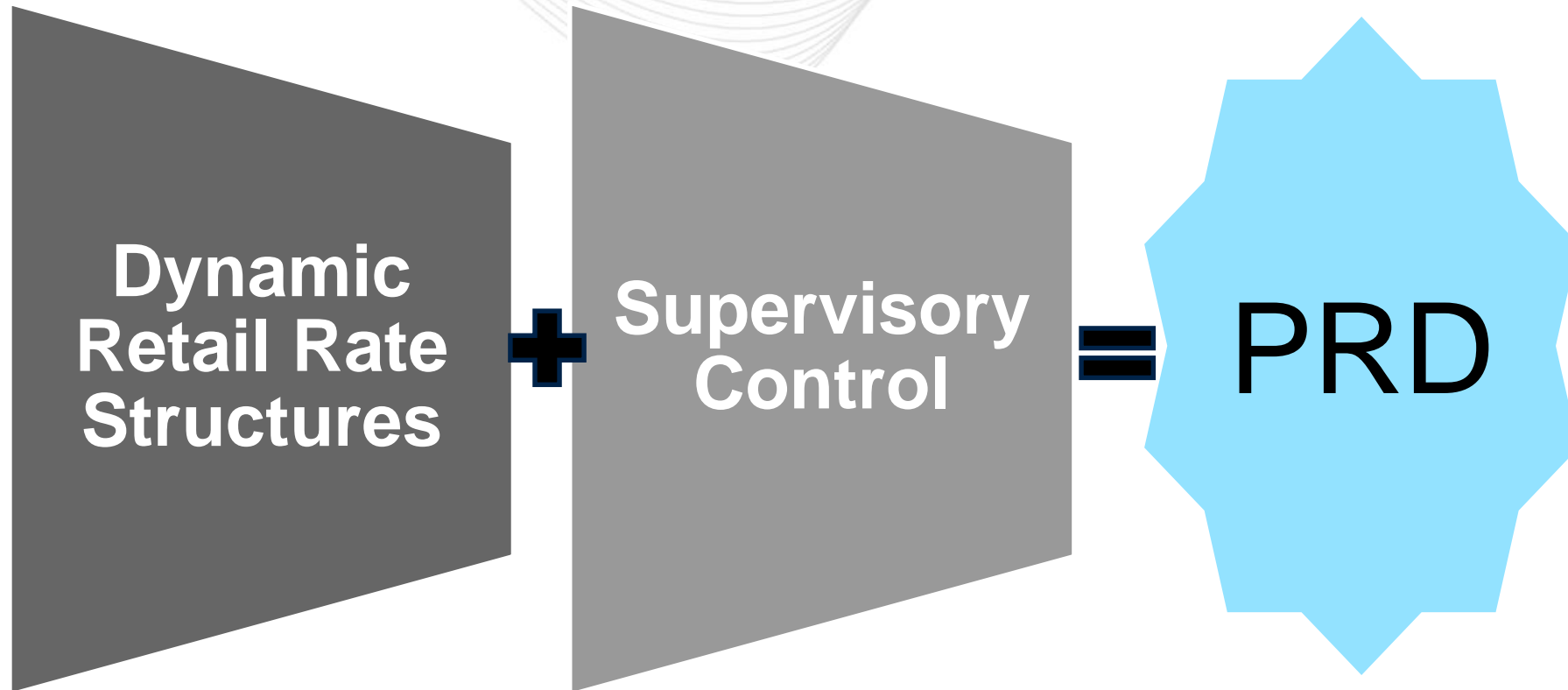
Power Path DC
Rate Design Working Group
May 12, 2020



Load that will automatically respond to energy prices and be off the grid during a PJM emergency will receive a lower capacity requirement.



PRD will shift the demand curve to the left which will reduce the overall capacity requirement



PRD must be managed by pricing point/substation (“pnode”)



PRD changes filed at FERC (22/23 DY)

| Design Components | Status Quo | Original Filing (FERC rejected) | New Filing |
|---|--|---|---|
| Auction/FRR Plan credit requirement | Credit based on Base Capacity Rate | Credit based on new CP rates (which are higher than base rates) | same |
| Auction/FRR Plan Nominated capacity amount (PRD plan) | Existing based on prior registered capacity nomination, Planned based on estimated nominated capacity amount | Existing based on prior registered capacity nomination, Planned based on estimated nominated capacity amount | same |
| Nominated capacity amount (PRD registration) | Expected Peak Load (PLC times Zonal Forecast Peak / Zonal W/N Peak) minus MESL | Lesser of: PLC - Summer FSL (adjusted for losses), WPL - Winter FSL (adjusted for WWAF and losses) | PLC - FSL (adjusted for losses) |
| Event Compliance Penalty Rate | Provider's Weighted Final Zonal Capacity Price + Higher of [0.2 Provider's Weighted Final Zonal Capacity Price, \$20/MW-day]*number of days in DY. The penalty is applied on event basis | Subject to CP non-performance assessment. Higher of (Net Cone * 365/30 and Daily Commitment Penalty), up to the stop loss provision. Penalty applied on hourly basis | same |
| load reduction measurement add back (PJM unrestricted load for forecast and customer PLC input) | Expected Peak Load minus load plus MESL adjustment amount | Summer = PLC minus Summer load, Winter = adjusted WPL minus Winter load. Performance measured for each hour | PLC - load. Performance measured for each hour. |
| Trigger to assess CP Penalty | LMP at or above PRD curve and max emergency generation action | Based on when PRD required to reduce load from PRD energy curve (add back amount based on capacity compliance amount) | same |
| Overperformance/bonus payments | not applicable | PAH and LMP greater than PRD curve triggers penalty overperformance will be eligible for bonus payment (similar to Load Management event), update balancing ratio calculation to include PRD bonus performance (similar to DR bonus performance). | same |

Slides are based on the PRD changes which will become effective for X if approved by FERC

- PRD provider
 - PJM member
 - Typically the Load Serving Entity (LSE) for the retail customer
 - Responsible for all PRD obligations and associated penalties
- LSE
 - receives reduced capacity charges (PJM bill credit)
 - Registration review – ensure it is there customer if they are not the PRD Provider
- EDC
 - Registration review - data validation for account number, PLC, line losses, etc.

PRD customer may not participate as Economic or Emergency (Load Management) DR

Submit PRD plan
~3.5 years in
advance (Jan 15
prior to BRA)

PRD may participate
in 3rd IA if Load
Forecast goes up

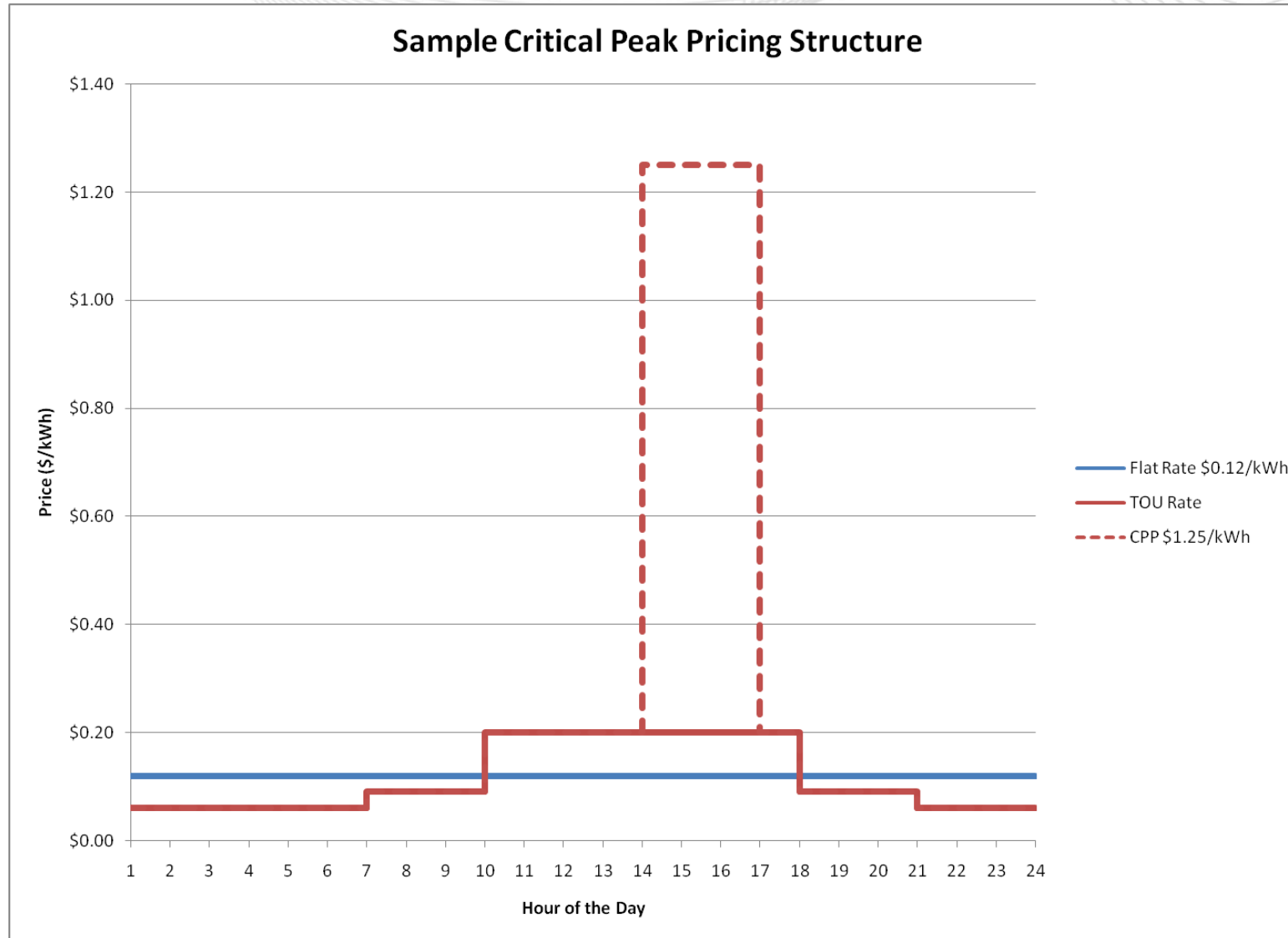
DY
Submit PRD
curves by pnode

Register locations
by pnode
Jan – May prior to
DY

Update
Registrations,
Performance
compliance

- Customer response if based on a dynamic retail rate.
 - “..... and a retail rate structure, or equivalent contractual arrangement, capable of changing retail rates as frequently as an hourly basis, that is linked to or based upon changes in real-time Locational Marginal Prices at a PRD Substation level and that results in a predictable automated response to varying wholesale electricity prices”.
- Examples:
 - **Critical Peak** that allows retail rates to rise when the wholesale market price exceeds a threshold level;
 - **Critical Peak Rebate** which provides bill credits to consumers who reduce their usage below a baseline quantity during periods when the wholesale market price exceeds a threshold level; or
 - **Index based on Real-Time LMP.**

Examples of Critical Peak Pricing Retail Rates



Eligibility Requirement - Supervisory Control (automated load reduction)

- Customer load at each substation automatically reduced based on PRD price curve and PJM Maximum Emergency Generation condition
 - “load shall be reduced automatically in response to control signals sent by the PRD Provider directly to the control equipment where the load is located without the requirement for any action by the end-use customer.”
 - Exception: individual site with supervisory control
- PRD provider can reduce customer’s load remotely
 - In case load did not respond to price



Load must be reduced – capacity was not procured for the customer

Key PRD processes when there is a PRD commitment



- Identify each customer location (EDC account #) by Transmission Zone, EDC, Pnode, and LSE
- Determine the nominated capacity based on the EDC determined peak load contribution (PLC)
 - Nominated Capacity = PLC – (Firm Service Level* Line Losses)
- Manage the registration for any changes (LSE, service disconnect, etc.)
- Ensure hourly metering is +/- 2 percent accuracy

- PRD provider will manage PRD curves & reduce load based on such curve
 - Load MW by Price by hour by pnode
 - PJM will measure compliance and assess penalties when $LMP \Rightarrow PRD$ price and there is a Maximum Emergency Generation action
- PJM will use PRD curve in overall dispatch to maintain power balance
 - When PRD is expected to reduce load PJM will commit other resources based on a lower load forecast

- **LSE PRD Credit = [PRD Icap commitment * Final Zonal RPM Scaling Factor * FPR * Final Zonal Capacity Price]**
 - Very similar to DR BRA credit.

| Zone | Nominated PRD Value [MW] | PRD Credit [\$/day] | PRD credit effective price | BRA prices |
|-------|--------------------------|---------------------|----------------------------|------------|
| BGE | 330.0 | \$34,223.35 | \$103.71 | \$86.04 |
| PEPCO | 170.0 | \$17,630.21 | \$103.71 | \$86.04 |

- PRD that is not required to reduce load for compliance is required to perform a test
- Changes to DR/PRD test requirements were filed at FERC and if approved will be effective 23/24. New test requirements:
 - PJM initiated 2 hour test per year
 - Test may occur throughout the year
 - Ability for retest

**Commitment
Penalty (do not have
enough customers to cover
commitment)**

**Max Emergency Event
Penalty (don't reduce
enough load when
required)**

**Test
Penalty (don't reduce
enough load when
required)**

(1) Daily Unforced Capacity Obligation shortfall (MW)

Shortfall (MW) * Forecast Pool Requirement

(2) RPM PRD Commitment Compliance Penalty rate (\$/MW-Year)

[Weighted Final Zonal Capacity Price in \$/MW-Day + Higher of 0.2 * Weighted Final Zonal Capacity Price or \$20/MW-day].

- LSE's Weighted Final Zonal Capacity Price is the average of the Final Zonal Capacity Price and the price component of the Final Zonal Capacity Price due to the Third Incremental Auction, weighted by the Nominal PRD Values committed in BRA and Third IA.

PRD Compliance Penalty for RPM LSE (\$/Year) = (1) * (2)

MW shortfall

*

[Forecast Pool Requirement]

*

[Weighted Final Zonal Capacity Price in \$/MW-Day + Higher of
0.2 * Final Zonal Capacity Price or \$20/MW-day] * 365 days.

MW shortfall

*

[Weighted Final Zonal Capacity Price in \$/MW-Day + Higher of
0.2 * Final Zonal Capacity Price or \$20/MW-day] * 365 days.



PRD vs DR/CP comparison in capacity market

| Process | PRD | DR/CP |
|-------------------------|---|---|
| RPM | BRA or 3 rd IA if forecast goes increases, No replacement, Submit PRD plan, PRD provider only. Credit based on the CP rates | BRA and IAs, replacement allowed, Submit DR plan, CSPs provide. Credit based on new CP rates |
| Revenue | No revenue – bill credit to LSE based on FZCP if cleared in BRA. No energy market revenue. If PRD provider different from LSE then they must work out arrangements for any transfer for money | Revenue to CSP based on auction clearing price. Energy market revenue based on full LMP |
| Registration | LSE required and nnode required (and limits aggregation), Dynamic retail rates (linked to nodal LMP). Not allowed to participate as economic DR | No LSE required. Registration not permitted after start of DYs. |
| Reporting | PRD hourly curve (load and LMP) by nnode | Expected reductions by dispatch group |
| Dispatch & Notification | PRD provider dispatches from price curve and supervisory control during Max Emergency. Eligible to set LMP. May have price curve of 1 point at energy offer cap | PJM dispatch/release by zone/subzone by type by lead time. Eligible to set LMP. PJM dispatches based on system needs when short on reserves |
| Verification | FSL (compared to PLC, hourly basis | Summer FSL (compared to PLC) and Winter FSL (compared to WPL). Hourly basis |
| Penalty | Daily deficiency charge (FZCP * > of 1.2 or \$20/mwday Event – same as DR | Daily deficiency charge (RPM price * > of 1.2 or \$20/mwday Event – Net Cone * 365/30 |
| Testing | Same | same |
| Add Back | Based on emergency event and 5 CPs | Based on emergency and economic events |

Pepco Recommendation to Rate Design Working Group Residential Dynamic Pricing

District of Columbia
Rate Design Working Group

May 12, 2020

Steve Sunderhauf
PHI Utility of the Future Group

Overview

- Pepco Residential Dynamic Pricing Straw Proposal filed on April 23, 2020, pursuant to Order No. 20286
 - Modeled based on:
 - The District’s Residential Dynamic Pricing Pilot Program – PowerCentsDC
 - Pepco’s Maryland Peak Energy Savings Credit Program
 - Delmarva Power’s Maryland and Delaware Peak Energy Savings Credit Program
 - Baltimore Gas & Electric Maryland dynamic pricing program
 - Dynamic pricing program proposed to begin during June of 2021, if Commission approval is received by year-end 2020
- Purpose of today’s discussion – obtain feedback from Working Group participants

Pepco DC Recommended Dynamic Pricing Rate

The Critical Peak Rebate (CPR) rate is initially recommended for District residential customers for the following reasons:

1. Most preferred rate by PowerCentsDC participants (Pilot)
2. No financial risk for non-participants
3. Can be offered on a default basis, insuring rapid rate penetration
4. Simple to understand
5. Supports participation in PJM capacity and energy markets
6. Significant experience with the CPR rate in Maryland and Delaware
7. Relies on existing utility AMI metering and billing capabilities
8. More complex rates can be introduced over time

Dynamic Pricing is Advantageous to Consumers

If approved, a dynamic pricing rate would offer the following benefits:

- Electricity bill savings
- Reduce peak electricity load
- Possible deferral or the need to build additional distribution, transmission, and power plants
- Reduce power plant air emissions
- Help grid operators to reliably supply electricity
- Place downward pressure on wholesale market energy prices
- Provide PJM wholesale market opportunities for capacity and energy

Pepco's Overall Perspective on Dynamic Pricing

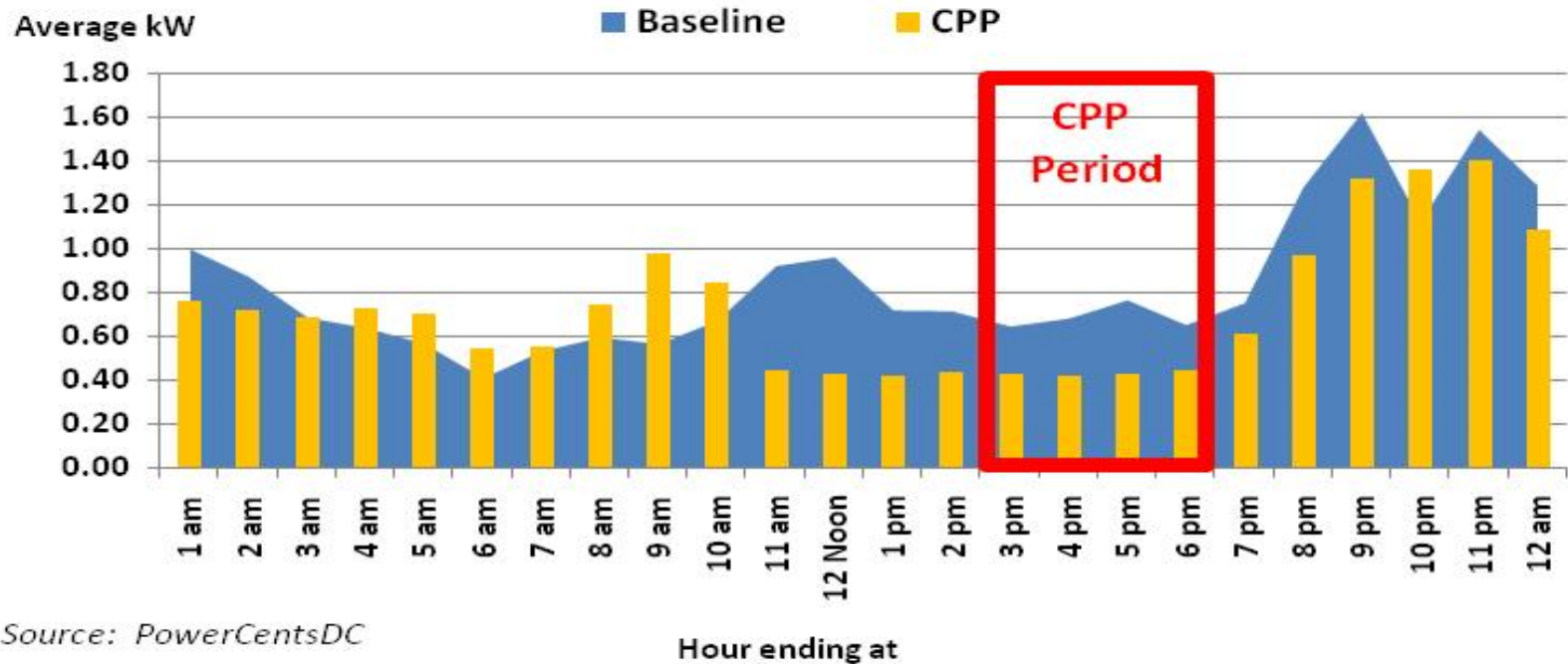
- Benefit of residential dynamic pricing has been demonstrated by:
 - The Smart Meter Pilot Program, Inc. (SMPPI) PowerCentsDC Program in the District.
- PHI has established large-scale residential dynamic pricing programs for Pepco Maryland and Delmarva Power Maryland and Delaware.
 - Program phase-in began in 2012.
 - Over \$38 million in Pepco bill credits provided to residential customers.
 - Over \$9 million in Delmarva Power Maryland bill credits.
 - Over 200 MW in peak reductions available for Pepco and Delmarva Power.
 - Over 70% event participation rate.
- BGE has established a similar residential dynamic pricing program in Maryland.
- Approximately 2 million residential customers in the Mid-Atlantic currently have utility-provided dynamic pricing in the form of a Critical Peak Rebate rate.
 - Default applicability for all MD Residential Distribution Customers
 - Default applicability for DE SOS Residential and SOS Small Non-Residential Customers.

Pepco's Dynamic Pricing Straw Proposal

- Dynamic Pricing Start Date: June 1, 2021, (subject to Commission approval by December 31, 2020)
- Rate Applicability: All residential Pepco distribution customers
- Education Campaign: Begins Q2 2021
- Rate Form: Critical Peak Rebate
- Rebate Amount: \$1.25 per kWh Reduced -- set equal to dynamic pricing rebate level in Pepco Maryland
 - Based on comparison of energy use during dynamic pricing event window with a Customer Baseline Loadshape (CBL).
 - Example Calculation: A customer who reduces energy use by 5 kWh during a dynamic pricing event would receive a bill credit of $\$1.25 * 5 \text{ kWh} = \6.25
 - No penalty if energy use is equal to or higher during event

CPR Illustrative Baseline Calculation

CPR-R Customer on PowerCentsDC August 6 to September 4, 2008



Source: PowerCentsDC

Pepco's Dynamic Pricing Straw Proposal (continued)

- CBL Calculation: Average energy use during same time period for each customer during 3 weekdays over prior 30 day period (day prior to event is skipped)
- CBL Availability: Available to customers on the morning of an event through the Pepco My Account website
- Event Occurrence: Can take place anytime during the year to comply with PJM requirements
 - Typically take place during high summer weekday load periods
- Event Selection: Determined by: 1) PJM emergency conditions, 2) high PJM wholesale market energy prices, 3) local Pepco distribution system constraints, and 4) testing
- Event Frequency: Expected to be between 2 to 10 events annually. Preference for a minimum of 4 events to ensure customer engagement
- Event Duration: Up to 10 hours maximum, but typically 4 hours in length. Most events occur between 2 pm and 6 pm on summer weekdays

Pepco's Dynamic Pricing Straw Proposal (continued)

- Event Notification: Pepco will typically notify customers of an anticipated Dynamic Pricing (or Savings) Event by 9 pm on the day prior to the event
- Notification Method: Customers have the choice of two of the following notification modes: 1) phone call, 2) email, and/or 3) text message
 - Customers who do not make a selection will receive a phone call
 - Customers may state their notification preference through “My Account”
- Direct Load Control (DLC) Program: Customers have the ability to participate in both the Dynamic Pricing Program and the DLC Program – providing the opportunity to earn bill credits that exceed the monthly summer bill DLC bill credits
 - DLC events will typically take place at the same time as DP events
- Bill Credits: Separately shown on Pepco distribution bills

Pepco's Dynamic Pricing Straw Proposal (continued)

- PJM wholesale market interface – At this time, the dynamic pricing program will be placed into the PJM capacity market as Price Responsive Demand (PRD)
- PJM requires that PRD resources be matched with “supervisory control” - the existing DLC Program in the District of Columbia
- Energy market earnings are available during event windows
 - Revenue is based on regression modeling, actual energy market Locational Marginal Prices (LMP), or PJM market energy shortage prices
- All resulting PJM revenue will be credited back to Pepco distribution customers
- The PJM market continues to evolve and available PJM future revenue will vary annually

Dynamic Pricing Program Costs and Proposed Recovery Method

- Education Campaign
 - Initial Campaign – \$500 thousand to \$1.5 million
 - Annual Campaigns thereafter – approximately \$250 thousand
- Billing System Adjustments: Expected to be minor unless form of dynamic pricing is changed
- Event Notification Expense: Primarily cost of phone notification
- Dynamic Pricing Bill Credits: Will vary annually based on customer response and number and duration of events
- Proposed Recovery Method: Bill rider or surcharge that is adjusted annually to recover program costs
 - PJM revenues credited to the bill rider/surcharge
 - Bill rider/surcharge could be positive or negative depending upon costs and PJM market earnings

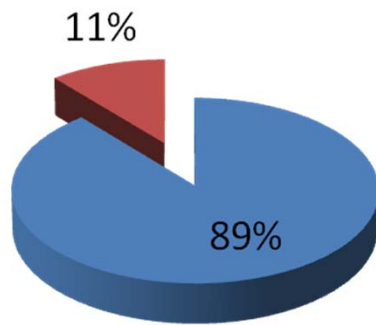
Pepco and Delmarva Power Customer Feedback on Dynamic Pricing

Through focus groups and customer surveys, customers have indicated the following about Pepco and Delmarva's dynamic pricing programs:

- Saving money is the primary motivation for conserving energy and participating in the Dynamic Pricing program, although some customers like the fact that they may also be helping the environment
- The Critical Peak Rebate design of Dynamic Pricing is considered easy to understand
- Customers like the fact that they are not penalized if they are unable to participate on a particular day
- Customers find it convenient that they do not need to sign up for the Dynamic Pricing program
- Most prefer a phone call notifying them of the Event
- Customers like that they can choose how to save energy – whether they reduce their air conditioning use or stop using certain appliances
- The flexibility of the DP program is considered a key benefit

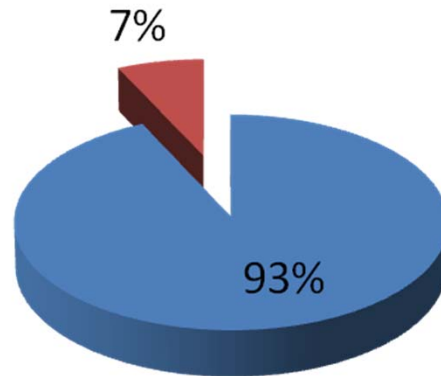
District Pilot Participants Liked the Program

Would you recommend PowerCentsDC electricity pricing to your friends and family?



■ Yes ■ No

Which price plan did you prefer?



■ PowerCentsDC Plan
■ Former Pricing Plan

Overall, were you satisfied, neutral, or dissatisfied with the PowerCentsDC program?

