



An Exelon Company

Rate Design with DER in Mind

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The views expressed in this document are the presenters

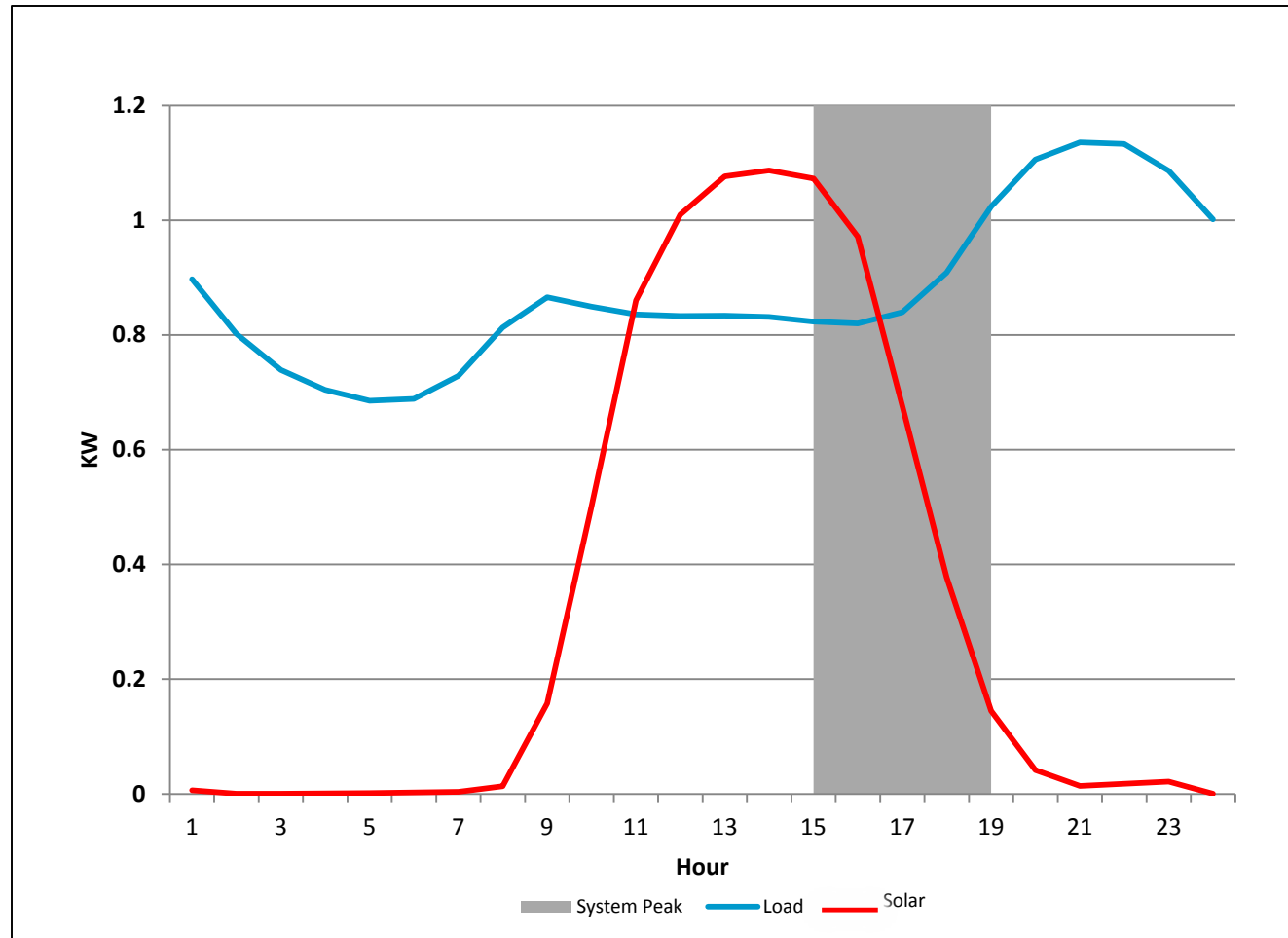
What is DER?

- ✓ Distributed Energy Resource
- ✓ Customer or third-party-owned generation on the distribution system
- ✓ Focus will be on customer-owned generation and its impact on rate design

Why is there an impact on Rate Design?

- ✓ DER reduces customer load thereby affecting cost
 - Reduces energy cost when operating
 - May reduce capacity cost
 - May provide a line loss benefit
 - Reduces revenue more than it reduces cost (Many costs are fixed)
 - In some cases it might cause an increase in distribution system costs

Hypothetical Daily Load Shape for Residential



The Issue

- ✓ Compensating customers with DER while also assuring that they pay their fair share for the value and cost of the grid

Key Rate Design Fundamentals

- ✓ Rates should be designed to recover cost
- ✓ Rates should be linked to cost causation to send the appropriate price signals

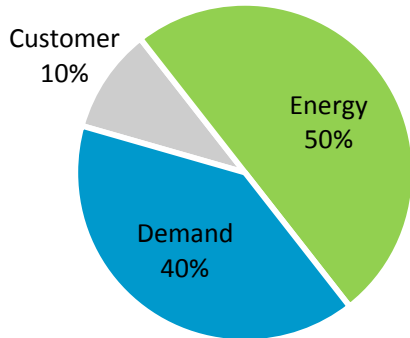
Why is current rate design an issue?

- ✓ For C&I customers, it is not as big an issue because rates are designed based on cost as shown in the prior slide
- ✓ For residential customers, the issue is that cost recovery is primarily on a kWh basis, whereas costs other than energy are not based on kWh, but rather on customers or demand

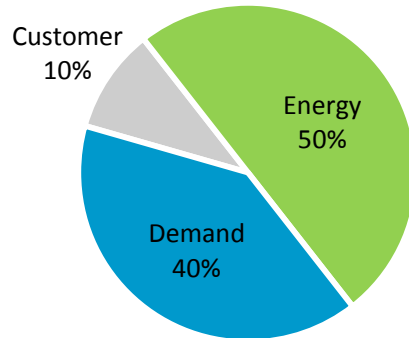
Current State of Rate Design

Commercial & Industrial

Cost

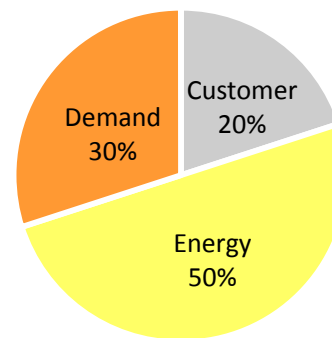


Revenue

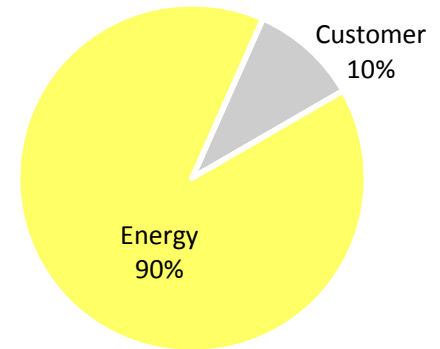


Residential

Cost



Revenue



Current Compensation & Rate Design for DER

- ✓ Net Energy Metering- compensates customer at the full retail value for all kWh produced – kWh produced are netted against kWh used over a period of time, typically a month or a year – kWh produced in one month can offset those used in another
- ✓ For rates that are primarily kWh, such as residential, the netting offsets distribution revenue also even though the customer is still using the system
- ✓ Nationally, this has been recognized as an issue since customers, where rates are kWh-based, can offset large portions of their bills even though they use the grid, resulting in subsidization
- ✓ In fact, NARUC is drafting a new rate design manual that recognizes this fact

How does rate design have to change?

- ✓ Be more reflective of cost causation to have all customers pay their shares of grid cost
- ✓ Residential rates could be more like C&I rates and have a demand charge component
- ✓ Back up or capacity reservation rates may be necessary as DER grows

Effective Rate Design

✓ Demand-Based Rates

- Tracks cost causation for customers
- Avoided energy and line losses are compensated for through avoided price-to-compare charges (the PTC included line losses)
- Demand charges will provide compensation for the grid
- May be some compensation for avoided demand depending on the DER
- Design would encourage demand response

Does this issue solve all issues?

- ✓ NO
- ✓ DER makes things a bit more complicated
- ✓ If a customer is connected to the grid, the Company has to stand ready to serve their load and basically cannot sell that capacity to another customer
- ✓ IF the customer's DER ran the whole year, they would pay only a customer charge and possibly a minimum demand charge
 - The Company, however, must have distribution facilities ready to serve the capacity being provided by the generator because if it shuts down, the load automatically switches to the grid
- ✓ A back-up charge or capacity reservation charge would be necessary for customers with DER

Will new rate design solve the issues?

- ✓ Time will tell
- ✓ Requires customer education on the residential side regarding demand charges
- ✓ Reserving capacity might be a new issue for C&I customers
- ✓ Phasing in any change for residential customers could smooth the transition
 - Implementing for NEM customers first is an option but would require legislative change in PA