

Illinois Solar Energy Association



Residential Rate Design Webinar

August 25, 2016

Illinois Policy Update

- SB 1585: Exelon/ComEd Bill
- ISEA working w/ Clean Jobs Coalition to fix of Renewable Portfolio Standard in SB 1585
 - Adjustable incentive for distributed generation
 - Community solar incentives
 - Utility scale solar and wind procurements
 - Low-income solar program and job training program
- Additional issues in bill
 - Mandatory demand charges on all residential customers
 - Elimination of retail net metering at 2020, instead of 5% cap (already exists)

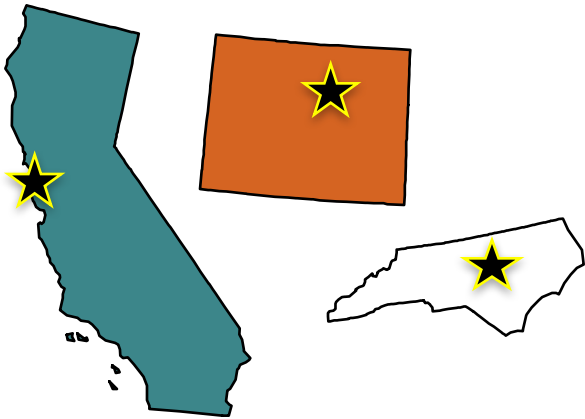


Rate Design Trends: Residential Demand Charges

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ISEA | August 25, 2016

About EQ Research, LLC

OFFICES



EXPERTISE

- Distributed Energy Resources: Interconnection, Net Metering, Third-Party Ownership
- Regulatory Policy: Rate Design, Cost of Service, RPSs, Grid Modernization

SERVICES



POLICY
VISTA



CUSTOM
RESEARCH



INCENTIVE
SPECTRUM



Order of Operations

1. Rate Design in General
2. Basics of Demand Charges
3. How They Impact Customers
4. National Trends
5. Alternative Approaches



About Rate Design

- Public utility commissions approve “revenue requirements” for utilities to cover their costs
- The overall costs are broken down into amounts that must be recovered from different types of customers
- Individual rates are set at levels to recover that revenue
- For residential customers, rates are typically:
 - Monthly customer charge (~\$10/month)
 - Electricity charge for kWh consumed
 - Now – demand charges per kW?



Household Appliances Have Demand Profiles

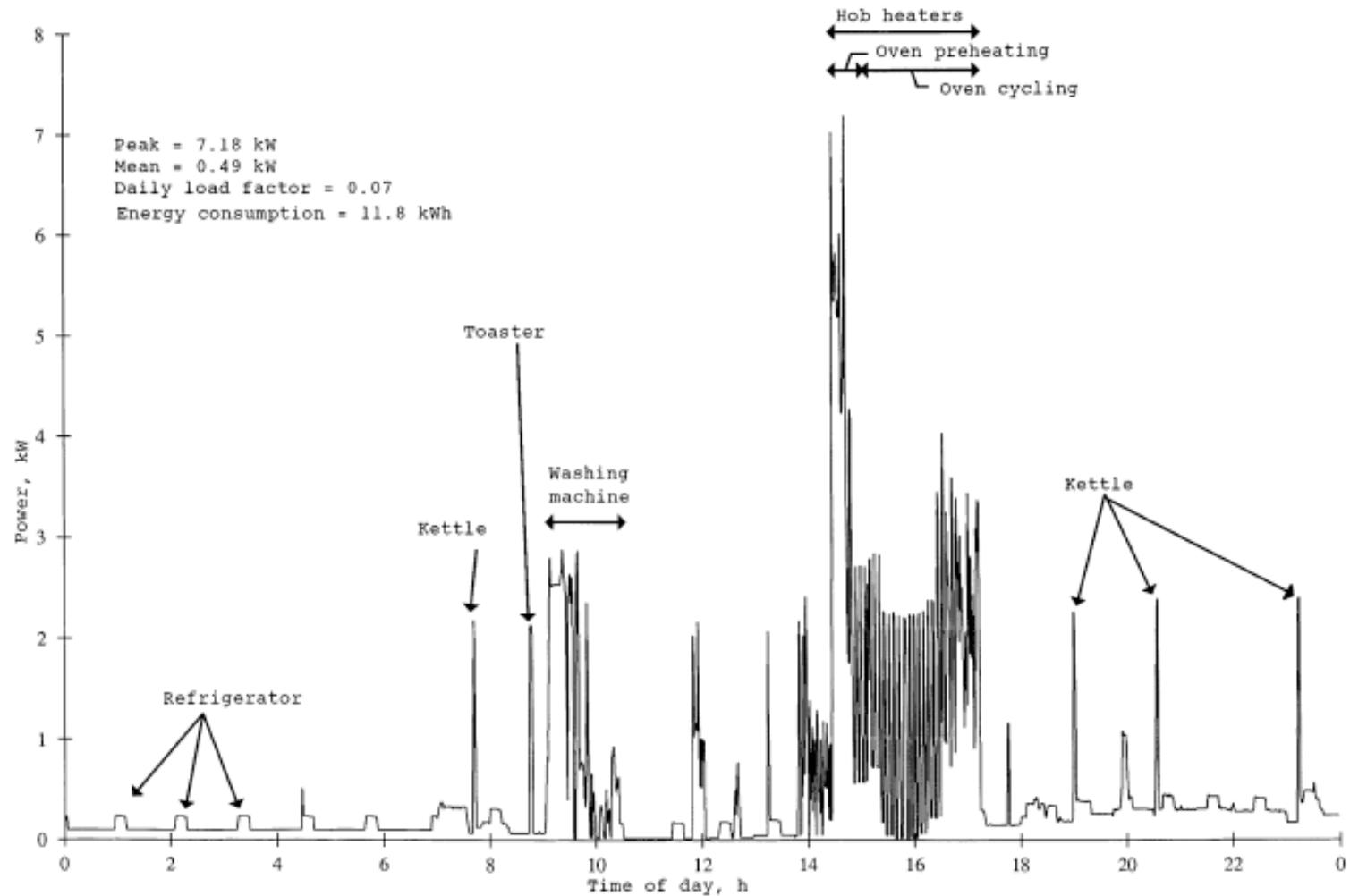
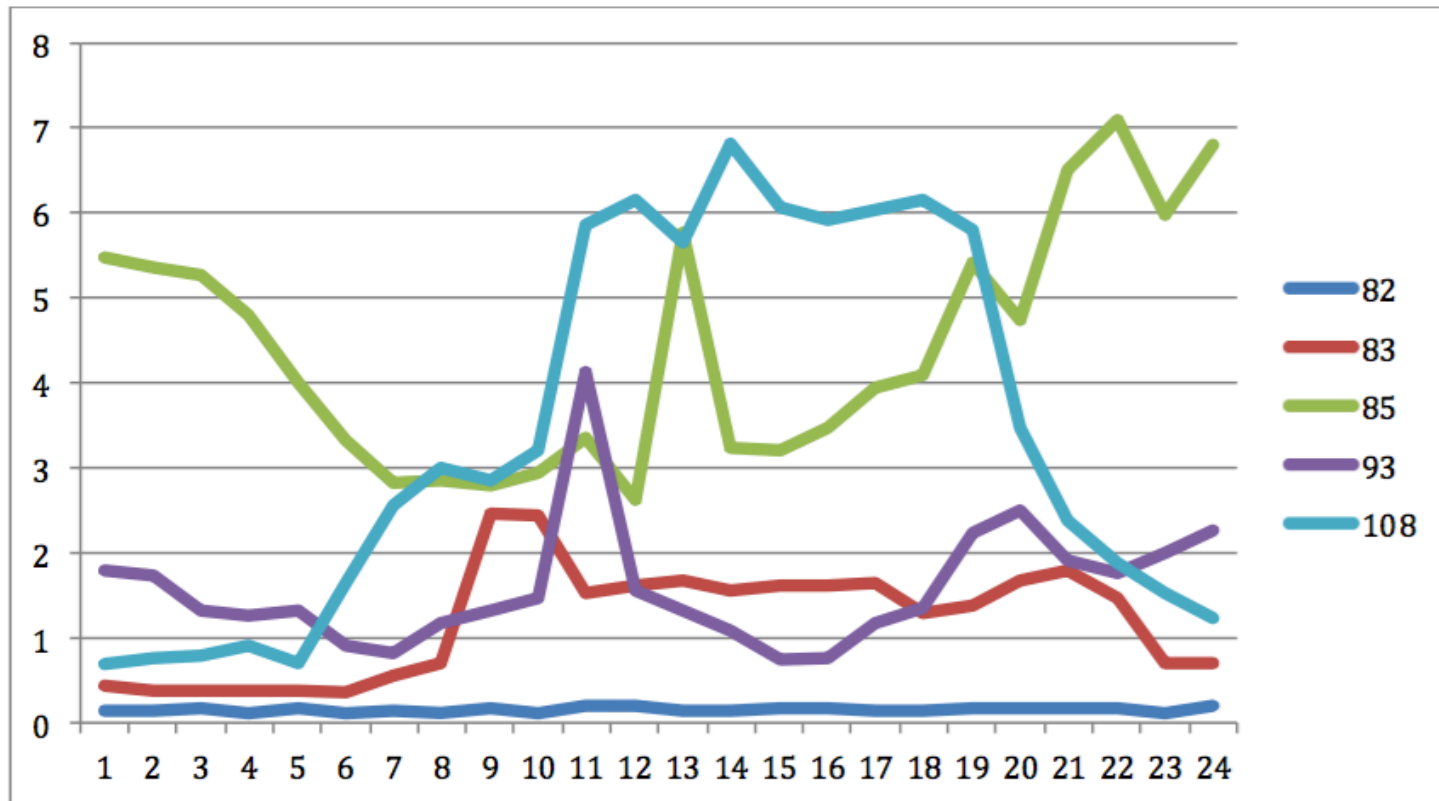


Fig. 1. Example of an electricity demand profile from an individual household recorded on a 1-min time base [7].

Many Households Have Many Demand Profiles

5 Residential Customers in Colorado

July 11, 2013



Source: Charge Without a Cause (2016, <http://acadiacenter.org/document/charge-without-a-cause/>) (Appendix B, p. 19)



What Are Demand Charges?

If the kWh charge is like the water flowing through the pipe, the kW charge is like the size of the pipe needed to get that flow of water in a particular time.

Utilities propose them to recover “fixed costs” they say they are losing due to energy efficiency and net metering.

Utilities charge for demand in different ways:

- Coincident or non-coincident peak
- Measured hourly or 15-minute (generally requires advanced metering)
- Demand “ratchets”

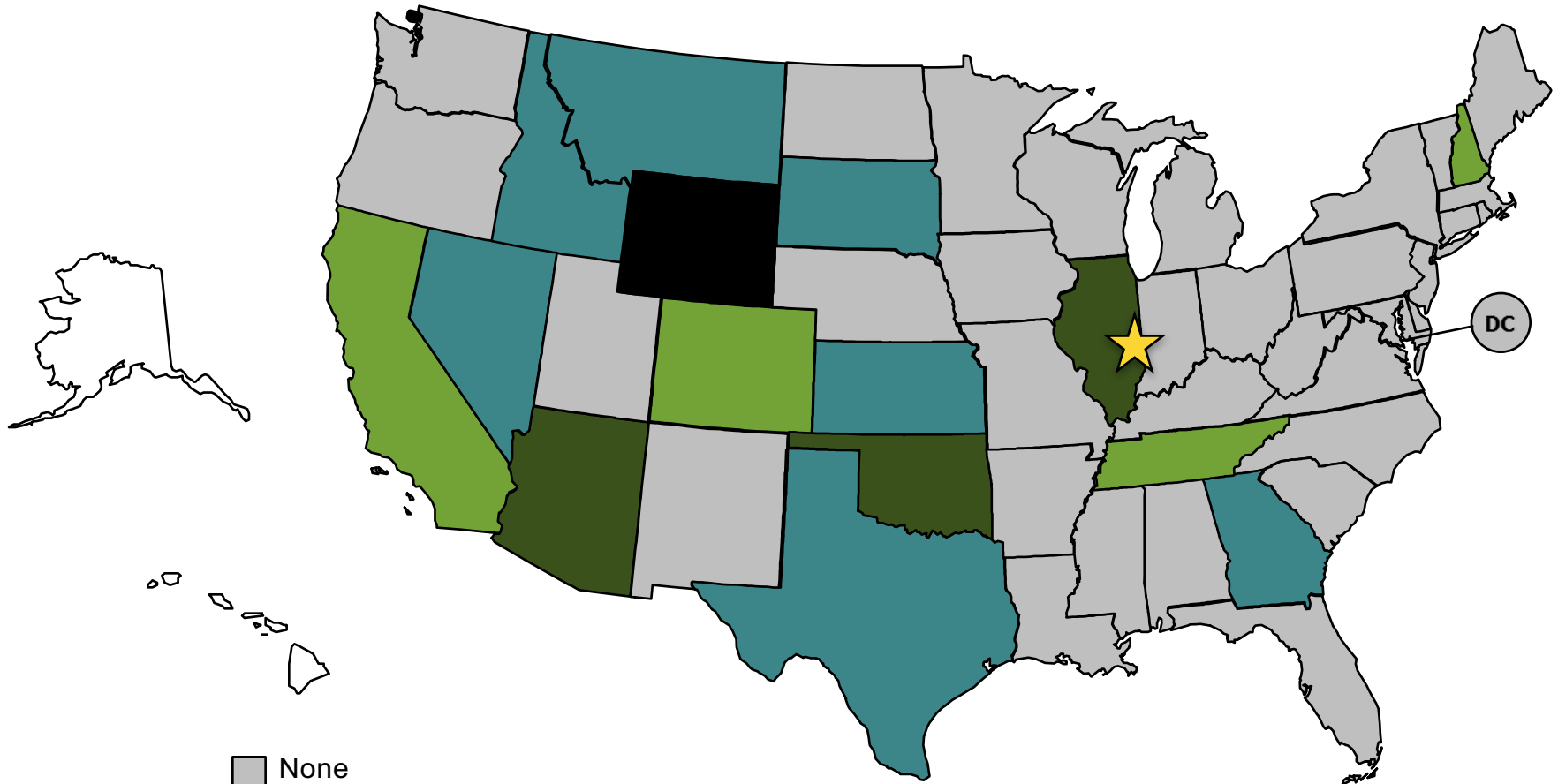


How Demand Charges Impact Customers

- Demand charges negatively impact solar and efficiency.
 - They reduce the long-term value of net metering – like a fixed charge
 - They make bill savings smaller and less predictable
 - Solar may not offset them if they are “non-coincident”
- Residential customers do not have good tools to manage demand charges.
 - They do not understand energy vs. demand
 - They do not have access to data about how they are using energy, so do not know what behaviors trigger charges
 - Battery storage can help, but is not yet commonplace



Status of Residential Demand Charges in PUC Proceedings



- None
- 1 IOU tariff with residential demand charge proposed; case pending
- >1 IOU tariff with residential demand charge proposed; cases pending
- IOU tariff(s) with residential demand charge proposed; case(s) withdrawn or rejected
- IOU tariff with residential demand charge adopted
- ★ Legislatively proposed

Source: EQ Research, June 29, 2016, for GTM Squared (2013-2016 data)



Alternative Approaches

How do you set rates that help utilities recover costs, *without* preventing customers from adding solar or being efficient?



Colorado

Time of Use Rates



California

Minimum Bills



Massachusetts

Decoupling



Thank you!

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Opinions expressed here are my own and do not reflect the firm's or our clients.



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Questions?

