

2014 Polar Vortex Impacts on Residential Dynamic Electricity Pricing Programs

National Summit on Smart Grid
and Climate Change



ELEVATE ENERGY
Smarter energy use for all



Our Mission

We promote smart energy use for all.



We give people the resources they need to make informed energy choices.



We design and implement efficiency programs that lower costs, and protect the environment.



We ensure the benefits of energy efficiency reach those who need them most.



Dynamic Pricing in Illinois

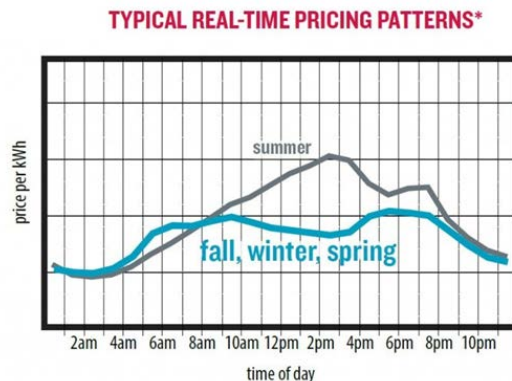
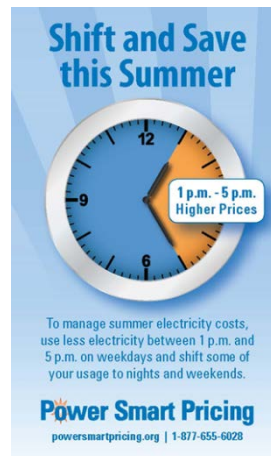
Energy Smart Pricing Plan (2003 – 2006)

Ameren Illinois Power Smart Pricing (2007 – present)

- 10,500 households
- PTD: \$8 million saved (17 percent)
- Day-ahead hourly pricing

ComEd Hourly Pricing (2007 – present)

- 10,000 households
- PTD: \$14 million saved (21 percent)
- Real-time hourly pricing





2014 Polar Vortex: Weather Impacts

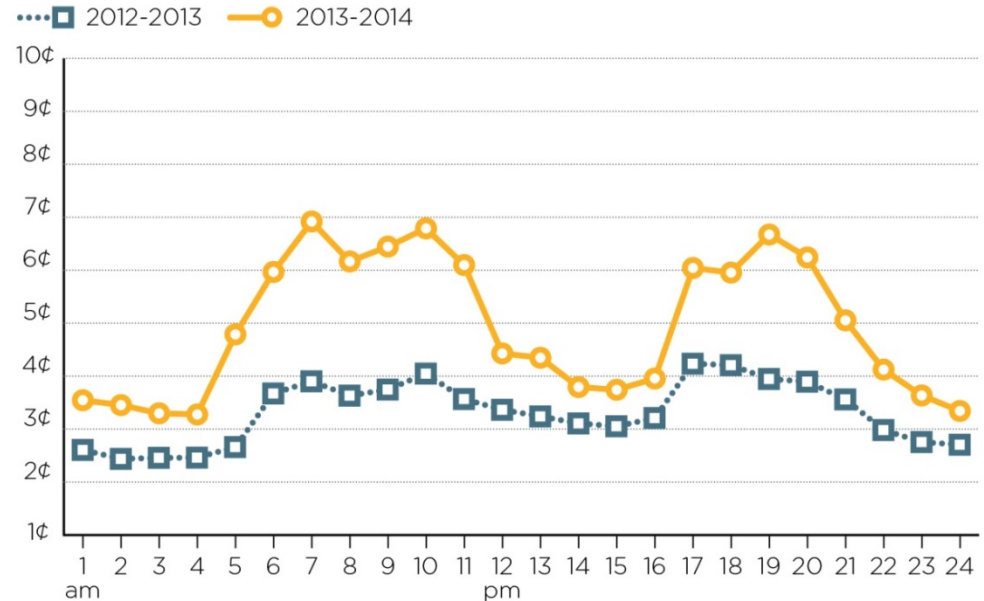




2014 Polar Vortex: PJM System & Price Impacts

- 8 of the 10 highest winter demands for electricity on the PJM system occurred in January 2014
- Jan 7: Highest ever winter peak demand of 141,846 MW
- Jan 7: \$1.81 per kWh

Winter Average Daily Price Curve In Average Cents Per kWh

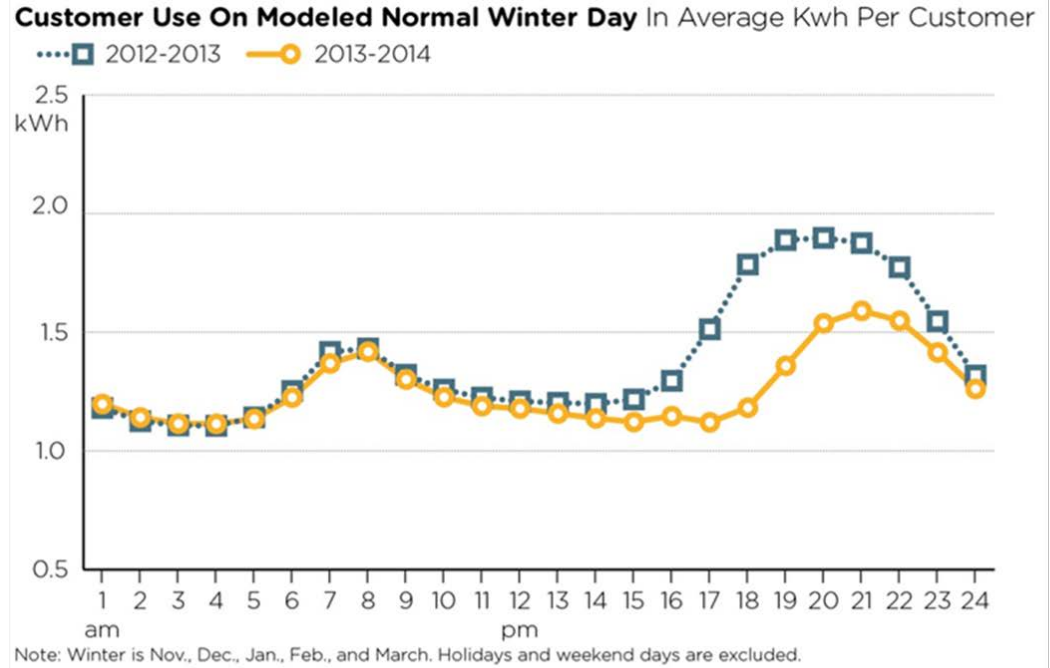


Note: Winter is Nov., Dec., Jan., Feb., and March. Holidays and weekend days are excluded.



After January 7: Take Cover

- No price elasticity, but large **and** sustained conservation effect
 - 75% shifted appliance use
 - 64% changed thermostat settings
 - 59% turned off lights
 - 17% invested in energy efficiency



*Data analysis courtesy of Klos Energy Consulting – www.KlosEnergy.com



Double-Digit Conservation Effect

- For homes without space heating, the overall conservation effect following January 7, increased *roughly* three-fold

	Percent change in Energy Usage After Joining RRTP	Additional Percent Change in Usage After January 7th.	Net Change in Usage after January 7th.
Single Family	-5%	-9%	-14%
Multi-Family	-4%	-7%	-11%
SF with Electric Spaceheat	-7%	Not Statistically Significant	-7%
MF with Electric Spaceheat	-4%	Not Statistically Significant	-4%



Potential Impact on PJM Grid

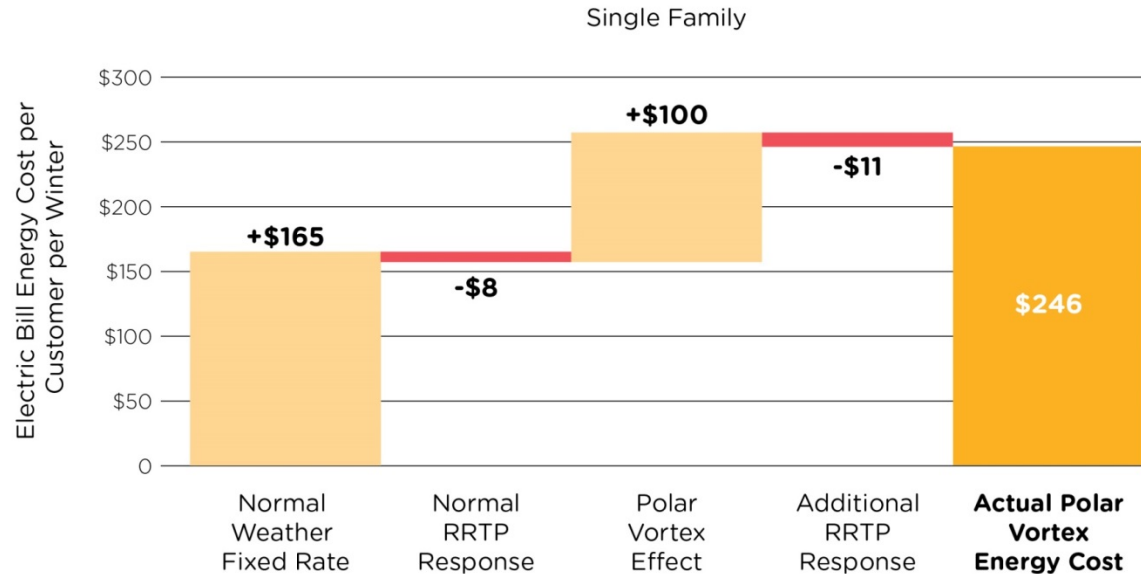
- Winter electricity reduction was comparable to typical reductions during summer peak hours

	Impact per Customer	Actual Impact on Alert Days After Jan. 7, 2014 (9,961 Participants)	Potential MW Impact @50,000 Participants
Winter Hour Ending 16	-0.30 KW	-3 MW	-15 MW
Winter Hour Ending 17	-0.47 KW	-5 MW	-24 MW
Winter Hour Ending 18	-0.74 KW	-7 MW	-37 MW
Winter Hour Ending 19	-0.55 KW	-5 MW	-28 MW
Winter Hour Ending 20	-0.46 KW	-5 MW	-23 MW
Winter Hour Ending 21	-0.29 KW	-3 MW	-15 MW
Summer Peak Hour	-0.48 KW	-5 MW	-25 MW



Hourly Pricing Bill Impacts

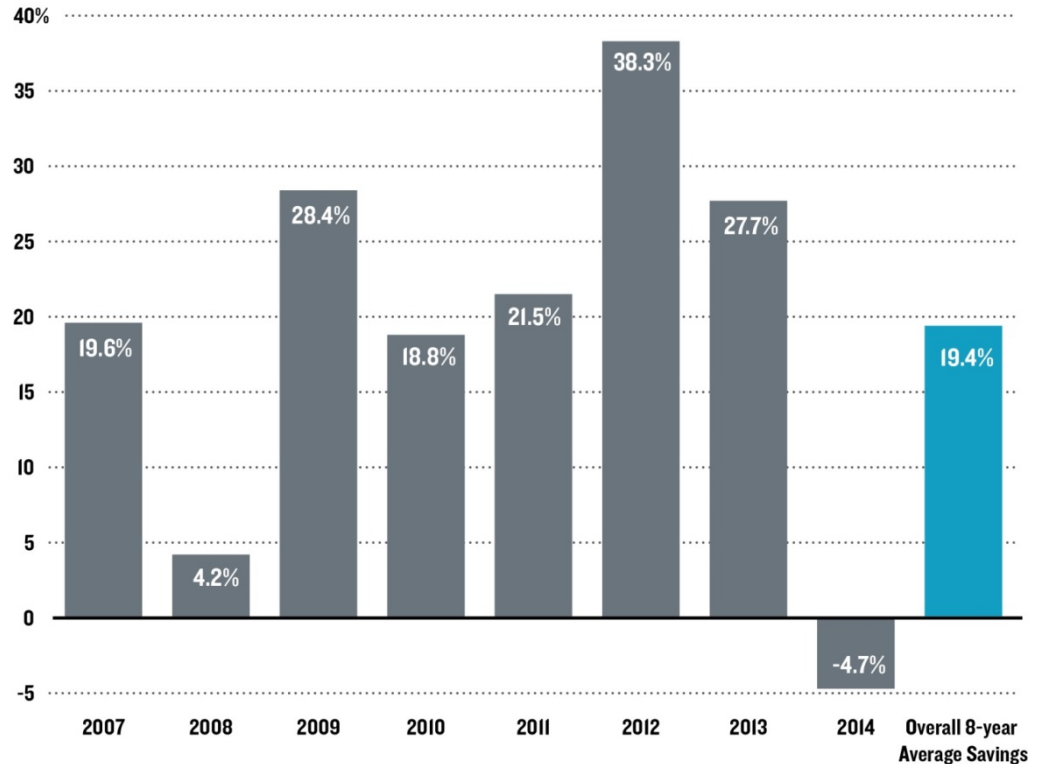
- Although participants reduced usage, the impact of the Polar Vortex increased total bills by an average of \$81 during winter
- 2014 year: 62 percent paid more on Hourly Pricing than the standard, fixed rate





Hourly Pricing Program to Date Savings

- Despite 2014 Polar Vortex, strong PTD Savings since 2007
- There was also no discernable difference in customers leaving the hourly pricing program





Program Improvements

- **Immediate questions answered:** Live Chat was extremely helpful during Polar Vortex
- **Quick access to pricing information:** Smart Phone App – pricing and savings info
- **Education on winter prices:** Email series to promote smart phone app, budget billing, energy tips, and pricing info
- **Pricing specifics in high price alerts:** Modified to include “30-minute average” price details
- **Greater access to real-time costs:** My Hourly Pricing Account update to include real-time usage and cost info





Questions – Stay in Touch

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