

Market-led Solutions and Innovations

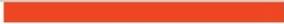
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PRESENTED BY

Neil Lessem, Ph.D.

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Smart technologies can help customers reduce their energy consumption

Smart thermostats

- Nest claims to reduce heating load by 10 to 12 percent and cooling load by 15 percent
- No customer intervention needed

Home Energy Controllers (HEC)

- Dutch retailer Eneco has leased the Toon HEC to over 350,000 customers
- Eneco claims Toon users consume 10% less energy

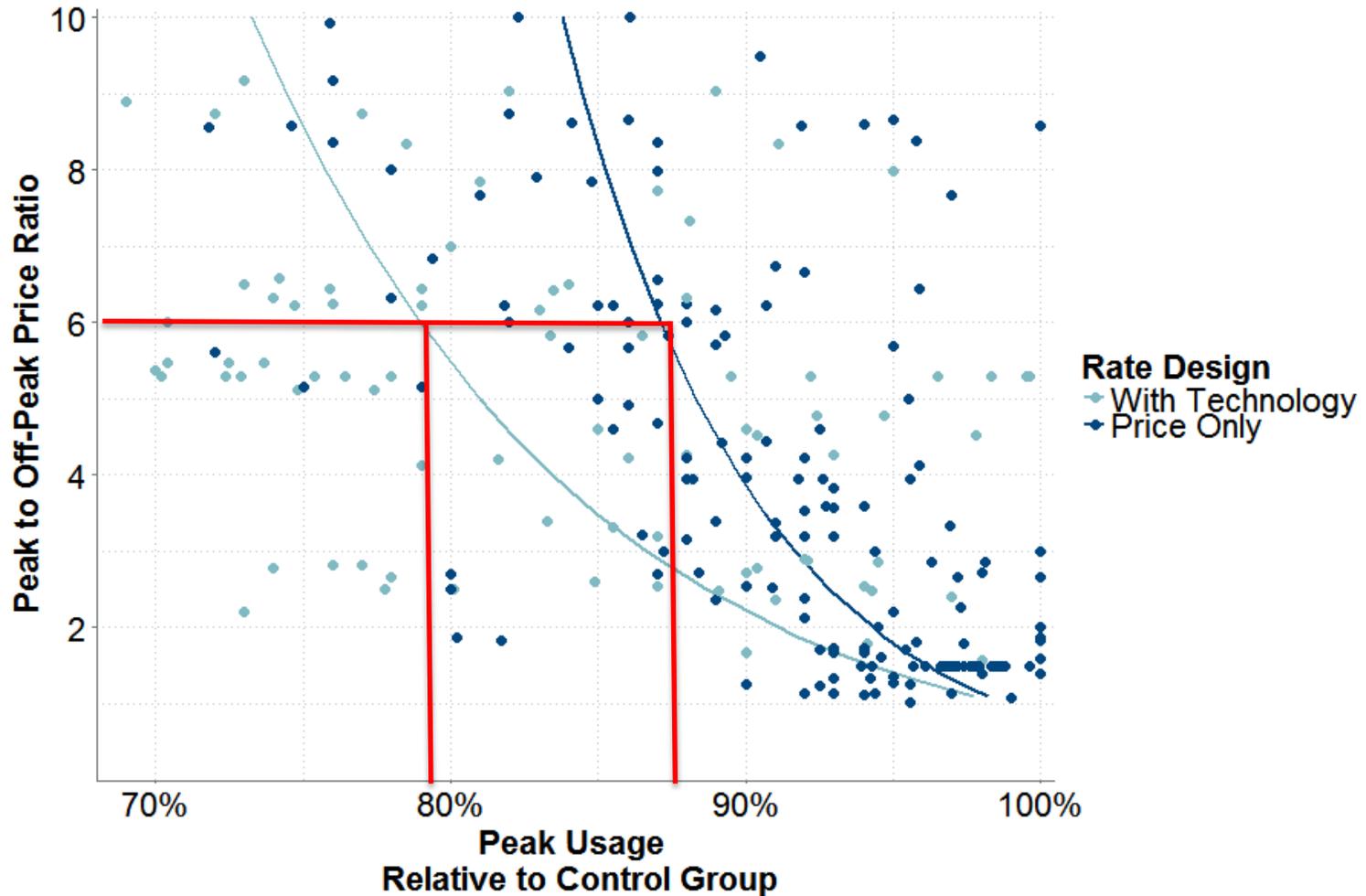
Smart meter-enabled prepayment

- Smart meters can facilitate digital prepayment through smart phones
- Conservation savings from studies across the UK and North America range from 5 to 15 percent

Conservation Voltage Reduction(CVR)

- Smart meters can be used to dynamically control voltage
- No loss of comfort to customers
- In Maryland CVR reduced usage by 1.4%

Smart prices can help customers reduce their peak load (especially when coupled with smart technologies)



Source: Ahmad Faruqui and Cody Warner, "Arcturus 2.0: International Evidence on Dynamic Pricing," 2017).

But how much does it cost to get smart?

You can get a lot for free these days...

Free conservation

- **Free smart thermostats**
 - First Utility (UK); EDF Energy (UK); Green Mountain Energy (Texas); Reliant Energy (Texas)
- **Smart meter enabled prepayment**
 - First Choice Power (Texas); Champion Energy (Texas); OVO Energy (UK)

Free peak load management

- **Free weekends**
 - British Gas (UK); Direct Energy (Texas); First Choice Power (Texas); Reliant Energy (Texas); Champion Energy (Texas)
- **Free nights**
 - TXU Energy (Texas); Champion Energy (Texas)
- **Free demand response**
 - Reliant Energy has the Reliant Degrees of Difference with Nest program for a \$5 monthly credit in summer. Customers can override the temperature at any time.

Retail competition has the potential to bring innovative services to market

Any policies that intensify “good” competition will be beneficial to customers

- Promote conservation and load management

But in deregulated markets some “free” programs like CVR may fall through the cracks

- Distribution networks have no conservation motive
- Real-time metering data may be costly to obtain for distribution networks
- Retailers don't get any competitive advantage from CVR

Innovative policies are needed alongside competition to ensure customer value is maximized

Presenter Information



NEIL LESSEM, PH.D.

Senior Associate | Sydney

Neil.Lessem@brattle.com

Neil Lessem is an expert on consumer behavior and energy markets. He has assisted clients around the world on issues such as wholesale market design, regulated tariffs and cost allocation, innovative customer and pricing programs, and policy impact measurement.

He has worked with more than 50 clients across North America, Asia-Pacific and the Middle-East. His clients include regulators, policy makers, utilities, system operators, consumer representatives, tech startups and infrastructure owners. He has published in peer-reviewed journals such as the *Journal of Economics and Environmental Management*, and *Business and Society*; and trade journals such as *The Electricity Journal* and the *Public Utilities Fortnightly*. He has presented on pressing energy topics to audiences in Australia, Brazil, Canada, Hong Kong, Malaysia, the Netherlands, New Zealand, Thailand, and the United States. In his graduate studies, he conducted extensive research examining consumer adoption of environmentally-friendly products and conservation behaviors, utilizing both field experiments and utility data.

He holds a Ph.D. and M.A. in Economics from the University of California, Los Angeles and an honours degree in Business, Economics and History from the University of Cape Town.

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