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# *The Brattle Group*

## BRINGING DYNAMIC PRICING TO THE MASS MARKET

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# The demand response imperative

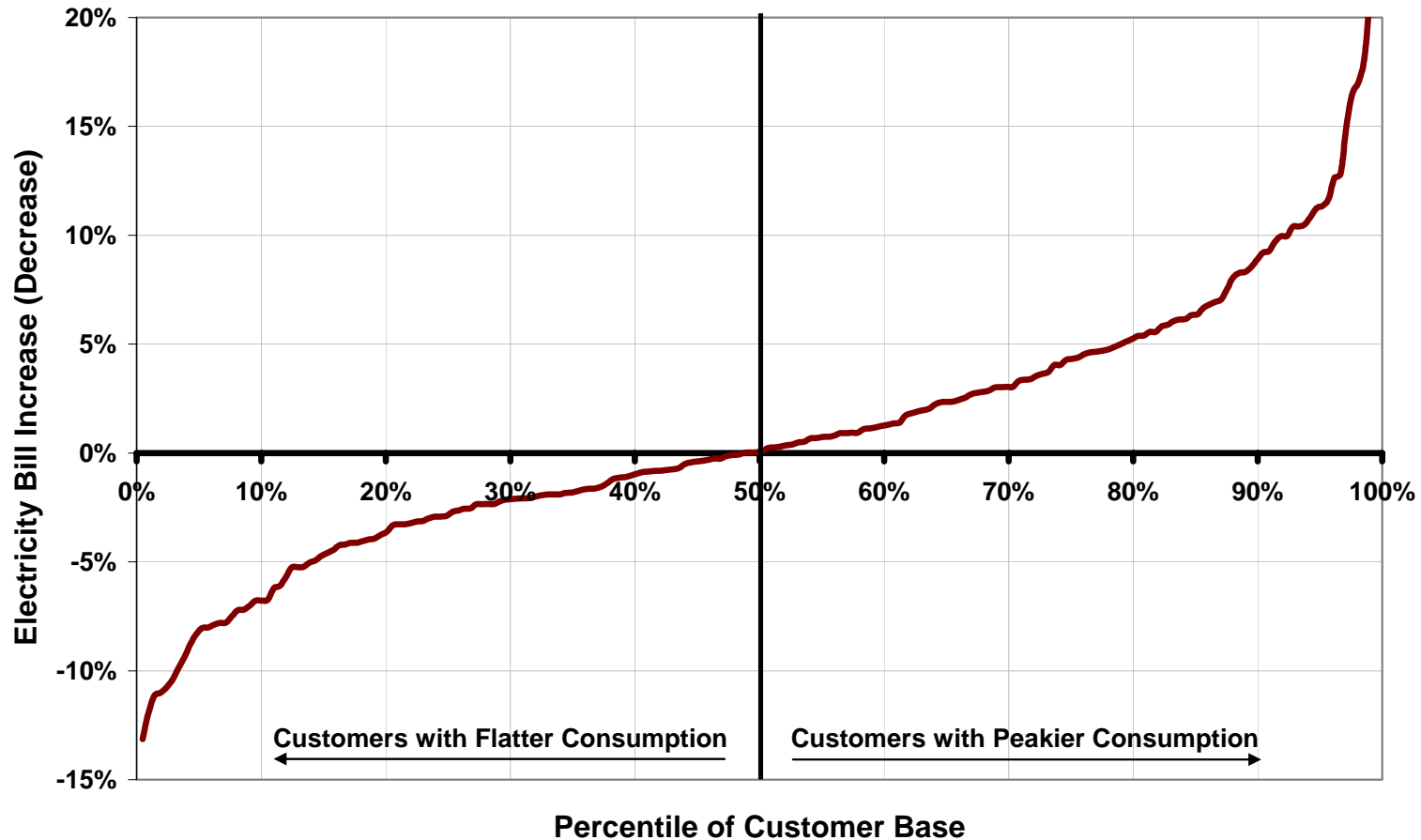
- Electricity capacity margins are projected to fall below minimum levels in several areas in the next 2-3 years
- Electricity rates are likely to go up
  - Rising capacity costs
  - Rising fossil fuel prices
  - Climate Change
- We don't have time to build our way out of this problem
- Customers should be given the ability to control their usage, ensuring that the lights stay on and their bills come down
- AMI and dynamic pricing can help

# However, not every customer is on AMI, nor is every AMI customer on dynamic pricing

- Regulators and utilities are concerned about AMI costs, the perceived “rate volatility” associated with dynamic pricing, and the related potential for customer and political backlash
- In attempts to ensure rate stability, regulators and utilities forgo the benefits that dynamic pricing can bring in the form of reducing customers’ energy bills
- In the eastern PJM region, a load drop of 3% in the top 100 hours of only 5 utilities would yield customer benefits of \$275 million per year

# Under traditional ratemaking, bills will rise for 50% of the customers who choose dynamic pricing

Distribution of Bill Impacts

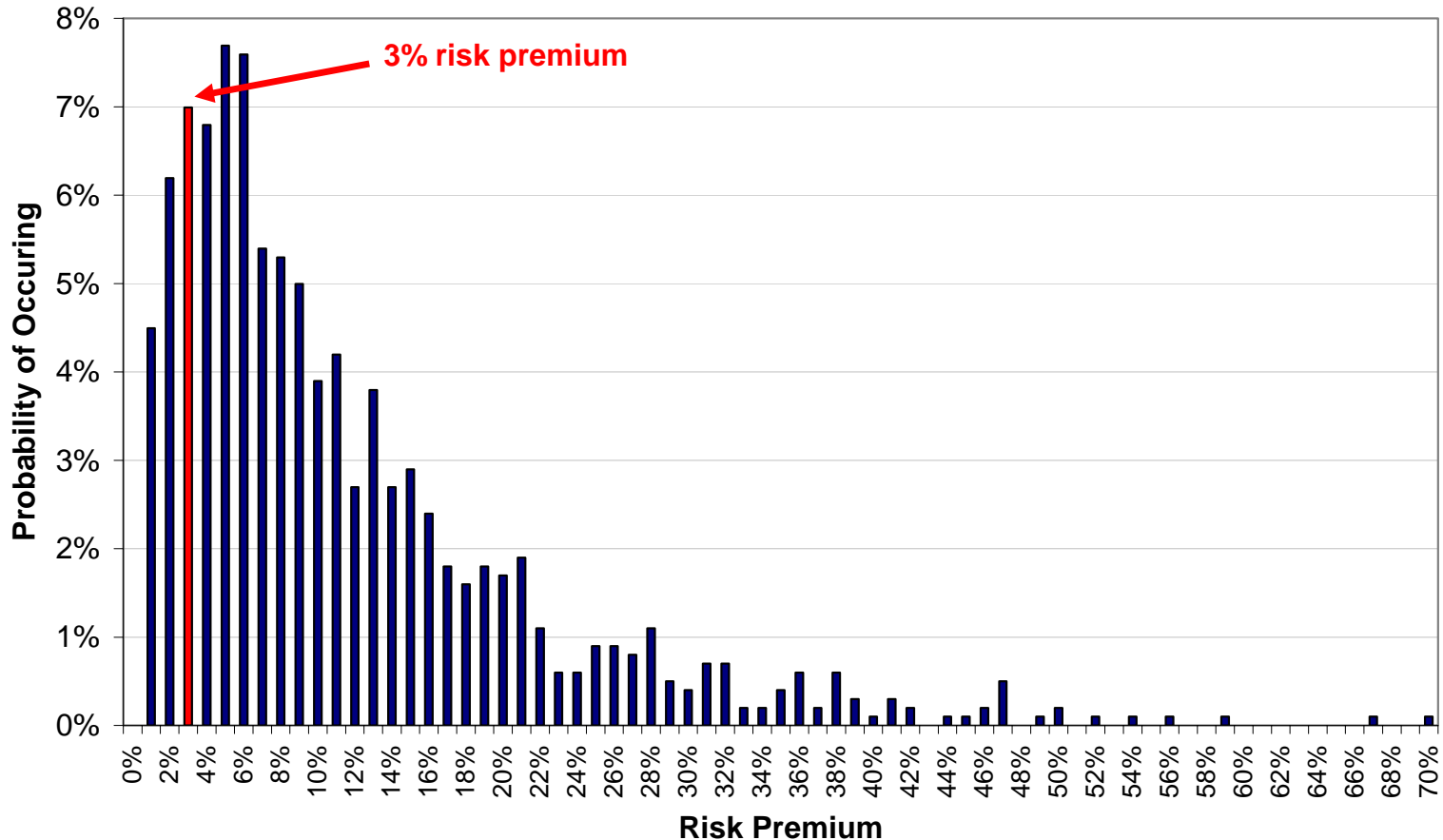


# That fear may keep customers from even trying out the new rates

- And *fear of that fear* may keep us from even offering dynamic pricing to customers, since we are anxious to “protect the customers from themselves”
- How do we break out of this bubble?

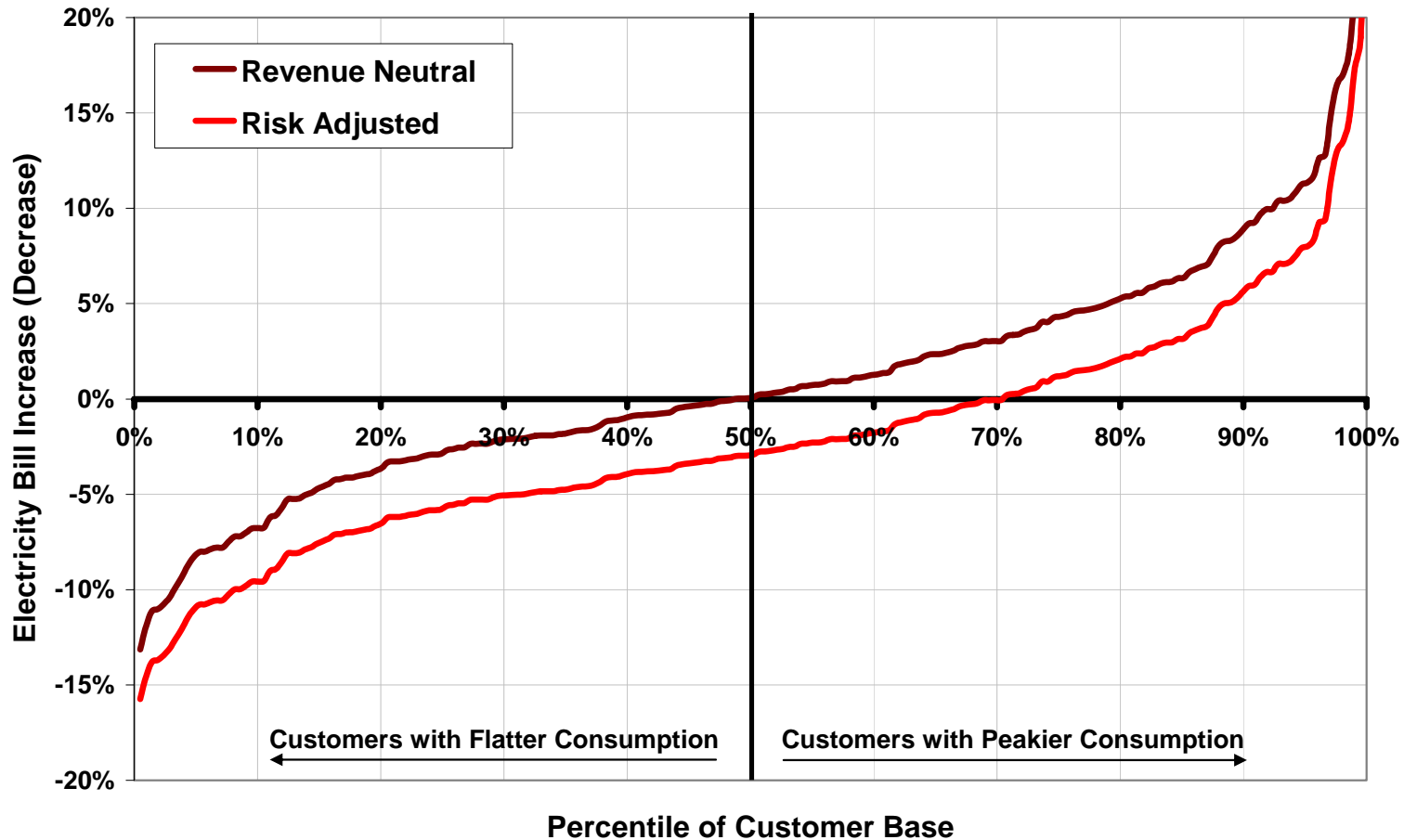
# Flat rates embody an *implicit* but very real risk premium that insures customers against price volatility

## Probability Distribution of Risk Premium



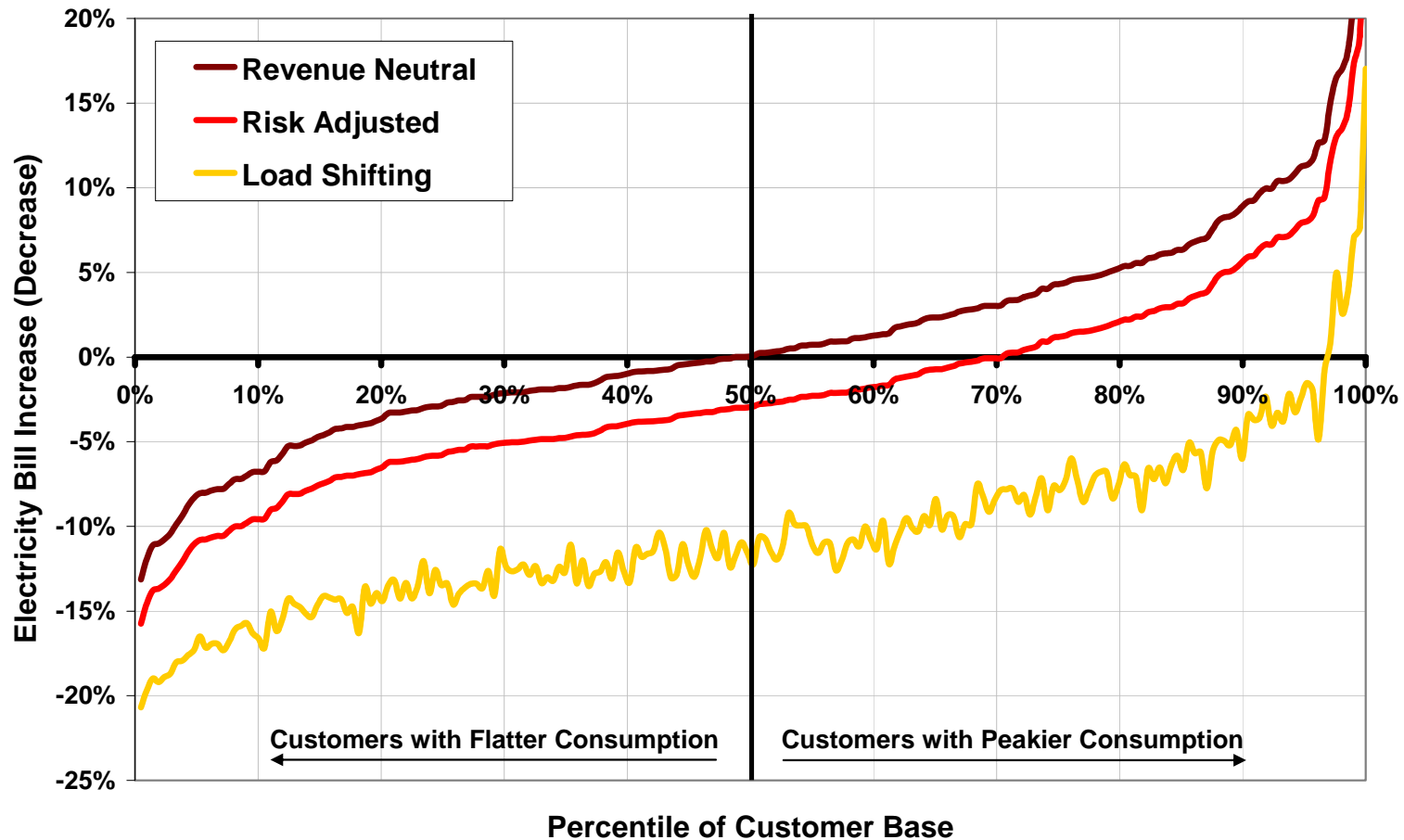
# By crediting customers for the risk premium, dynamic pricing rates become attractive for 70% of customers

## Distribution of Bill Impacts



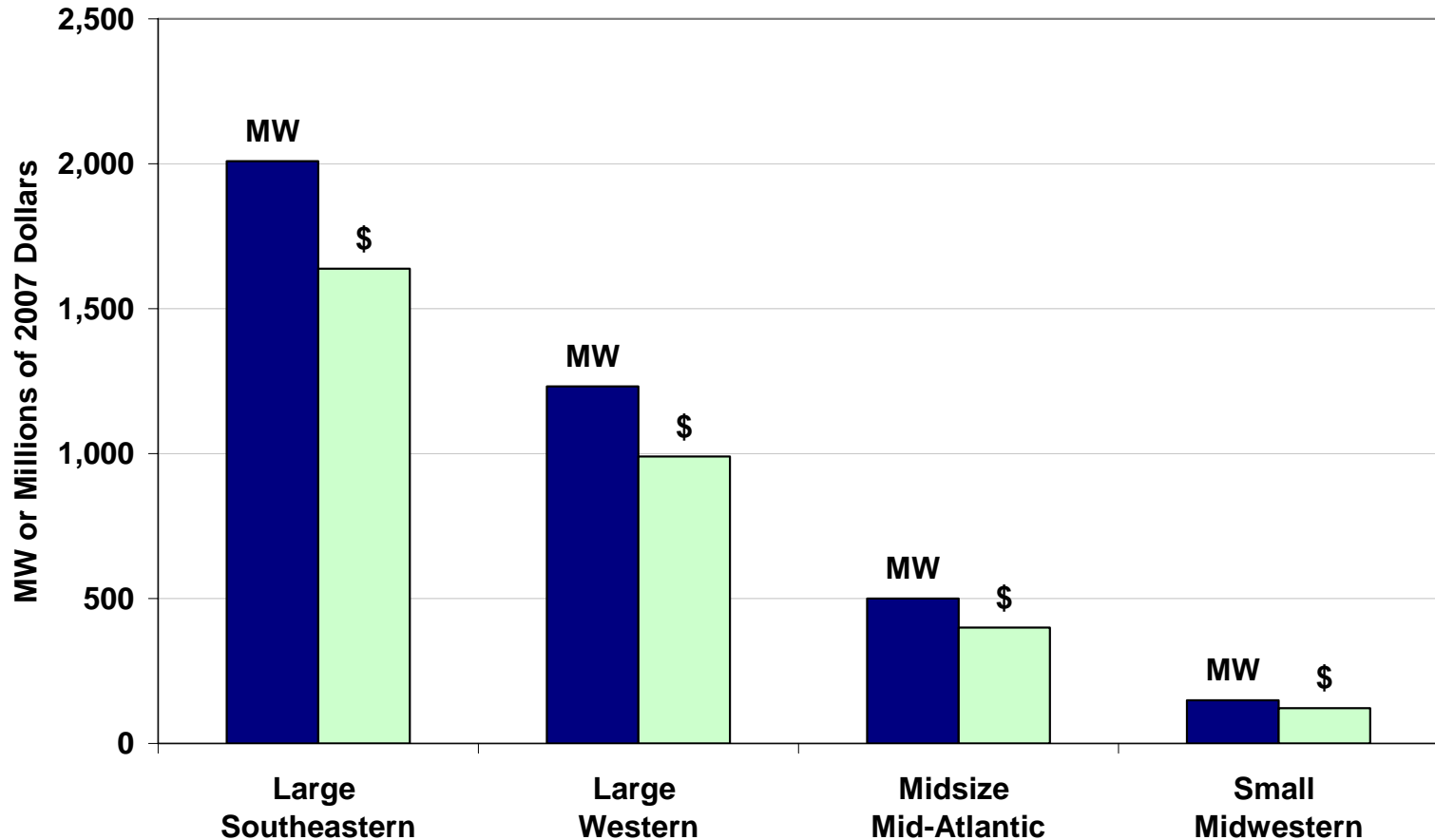
# With demand response, dynamic pricing becomes attractive to over 95% of customers

## Distribution of Bill Impacts



# With creative ratemaking, we can bring the benefits of DR to millions of customers

## Impact on Four Representative U.S. Utilities



# Additional reading

- Brattle Group, The. "Quantifying the benefit of demand response for PJM," prepared for PJM Interconnection LLC. and MADRI, January 2007
- Faruqui, Ahmad. "Breaking out of the bubble: how dynamic pricing can mitigate rate shock," *Public Utilities Fortnightly*, March 2007, forthcoming
- Federal Energy Regulatory Commission (FERC), The US. Demand Response and Advanced Metering, Staff Report, August 2006
- North American Electric Reliability Corporation (NERC). "2006 Long-Term Reliability Assessment," October 16, 2006.
- Plexus Research, Inc., Deciding on Smart Meters, Edison Electric Institute, September 2006.

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