

Rate Rate Don't Tell Me: How Rate Design Impacts Energy



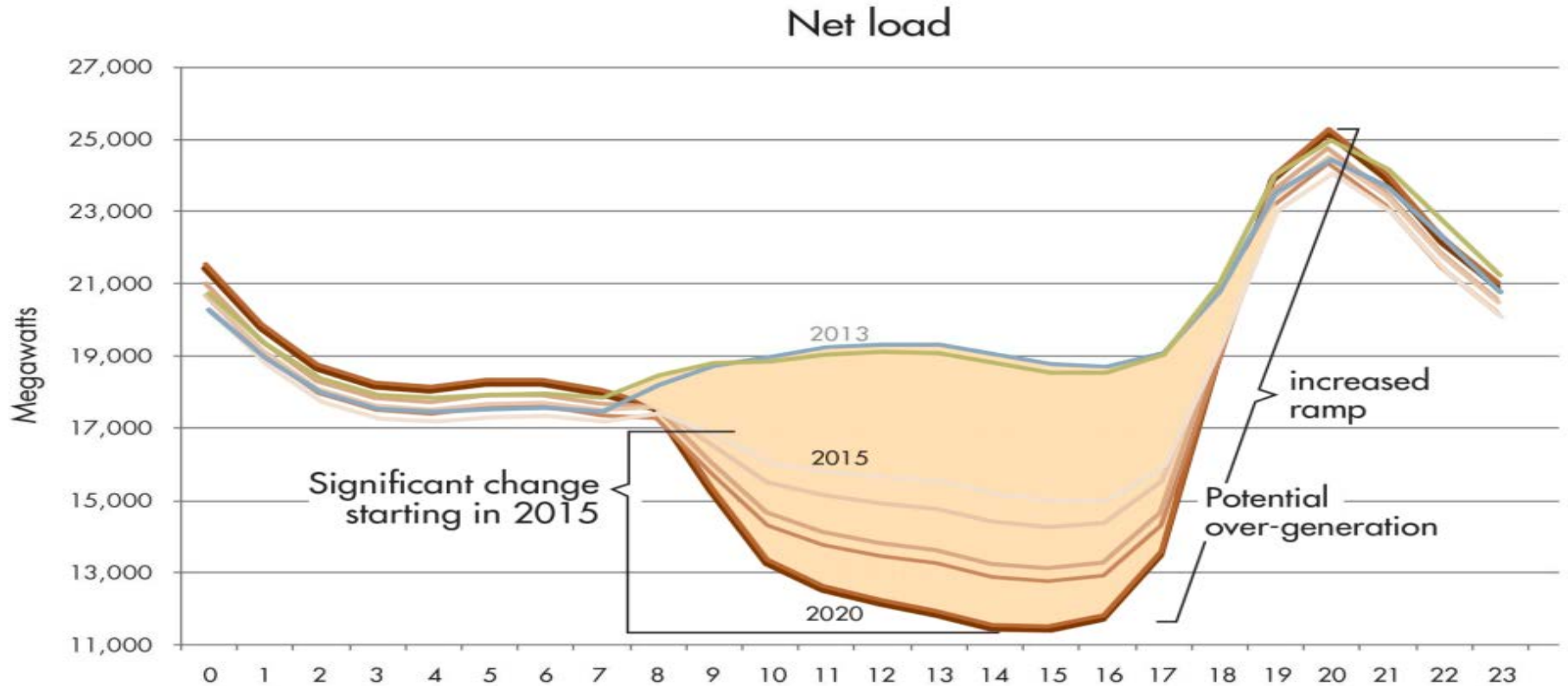
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Terminology

- * Fixed charges
- * Energy charges
- * Distribution charges
- * Demand charges / Capacity charges
- * Time-based rates, time-of-use, peak, non-peak, critical peak, real-time pricing

April Energy Bill		Invoice: 5555555555
Account Summary		
Last Month's Account Balance		\$124.84
Payment on March 09, 20XX		<u>\$124.84-</u>
Balance Forward		\$0.00
<small>Payments applied after March 31, 20XX, are not included.</small>		
Natural Gas Charges		
Gas Distribution	11.0 Mcf @ 2.702100	\$29.72
Energy Efficiency	11.0 Mcf @ 0.210800	\$2.32
Gas Cost Recovery	11.0 Mcf @ 3.466100	\$38.13
Customer Charge		\$11.50
Total Natural Gas		<u>\$81.67</u>
Tax and Other Charges		
State Sales Tax		<u>\$3.26</u>
Total Energy Charges		\$84.93

Challenge faced by utilities



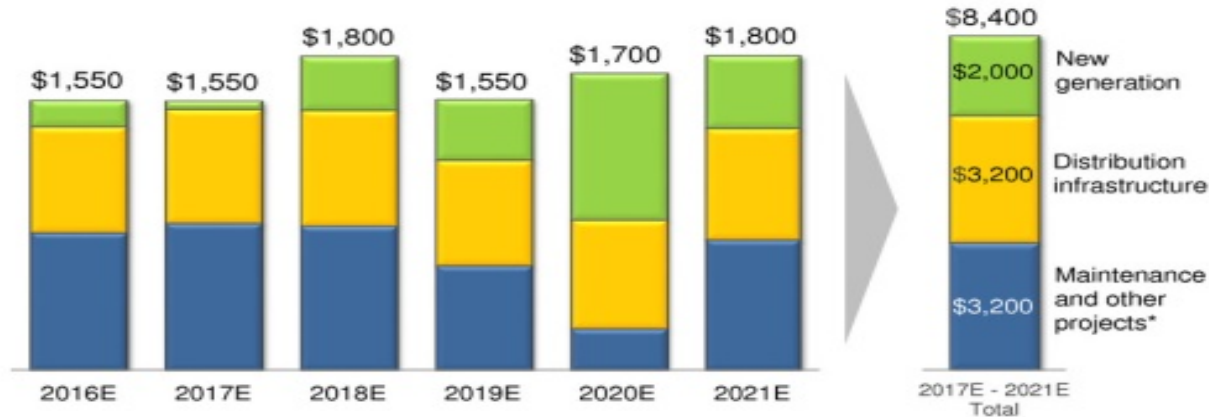
Major new investments needed

DTE Electric plans \$8.4 billion of investments over the next 5 years with a focus on increasing customer reliability



(millions)

Targeting 6% - 7% growth



Depreciation ~\$714M → ~\$923M
 YE Rate Base** ~\$15.6B → ~\$20.9B

* Includes power reliability, existing generation maintenance, AMI, Ludington expansion and other investments

** Includes working capital and rate base associated with surcharges

Challenges for ratepayers

- * Understanding more complex rate design
- * What rates designs are trying to achieve – how will behavior change will be rewarded?



Basic Rate Setting

Revenue
Requirement

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graph LR; A[Revenue Requirement] --> B[Cost of Service]; B --> C[Rate Design]
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Cost of
Service

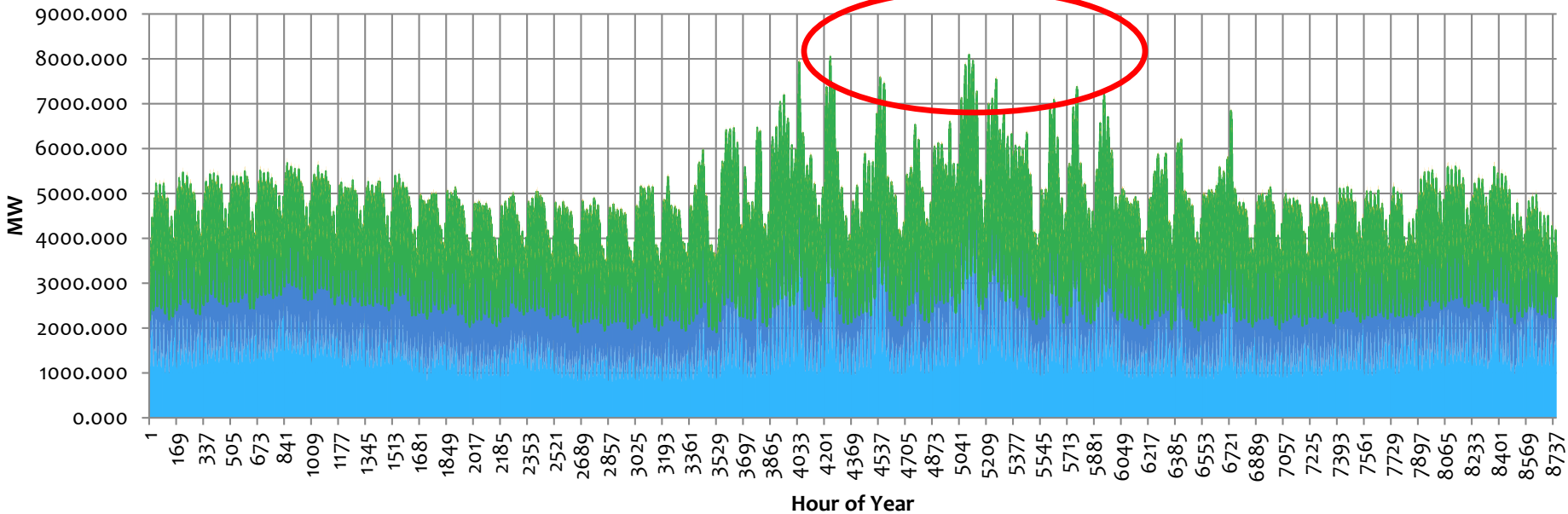
Rate
Design

Cost of service

- * Allocation among classes – cost of service – 75-0-25
 - * Contribution to demand
 - * On-peak energy use
 - * Total energy use

Electricity Load by Class

Residential Commercial Industrial Streetlighting Wholesale



Impact on energy efficiency

- * Ratepayers:
 - * In rate design, simplicity is your friend
 - * Greater the reliance on volumetric charges (\$/kWh or \$/therms) – greater the potential for shorter paybacks on energy efficiency investments
- * Utilities
 - * Need to meet revenue requirements
 - * How are utility incentives designed?

Michigan Experience

- * Have rate design reflect cost of service
- * Make sure customers understands and can modify behavior based on rate design
- * Provide maximum incentive for positive behavior (both individually and collectively)



Contact Info



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