

# Energy Efficiency for the Modern Utility

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**Hawaiian Electric  
Maui Electric  
Hawai'i Electric Light**

# Think About Household Energy Budget

2016's Most & Least Energy-Expensive States, WalletHub, July 13, 2016

Overall Rank ↕	State ↕	Total Energy Cost ↕	Monthly Electricity Cost (Rank) ↕	Monthly Natural-Gas Cost (Rank) ↕	Monthly Motor-Fuel Cost (Rank) ↕	Monthly Home Heating-Oil Cost (Rank) ↕
1	Connecticut	\$404	\$155 (7)	\$44 (20)	\$100 (38)	\$104 (1)
2	Massachusetts	\$346	\$115 (34)	\$60 (6)	\$92 (44)	\$78 (6)
3	Rhode Island	\$338	\$107 (39)	\$61 (5)	\$79 (50)	\$91 (4)
4	Vermont	\$332	\$120 (30)	\$18 (48)	\$100 (37)	\$93 (3)
5	Georgia	\$328	\$157 (6)	\$46 (19)	\$126 (10)	\$0 (42)
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31	Wisconsin	\$285	\$109 (37)	\$57 (9)	\$114 (23)	\$5 (17)
32	Virginia	\$284	\$141 (14)	\$31 (32)	\$102 (35)	\$10 (13)
33	Hawaii	\$283	\$177 (2)	\$5 (50)	\$101 (36)	\$0 (51)



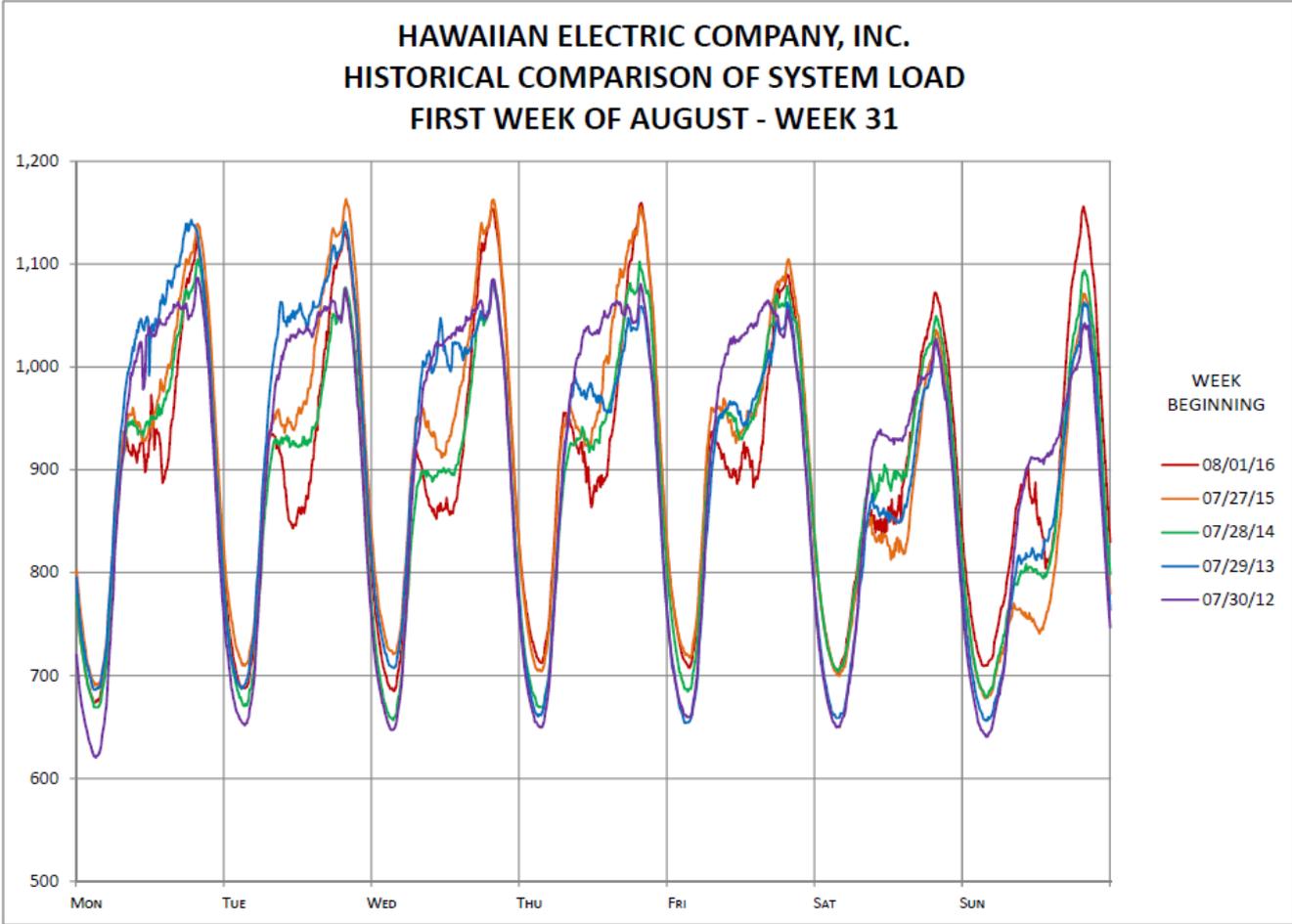
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# EE on the Grid Examples

- ◆ Generating heat rates and ramping (Schofield)
- ◆ T&D testing to reduce secondary voltages
  - Installing more monitoring
  - Gridco IPS
  - Varentec ENGO's
  - Advanced Inverters



# Daily Variation



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# Portfolio and Partnership Approach



- Energy Efficiency
- Supply
- Demand
- Pricing
- Programs

Must work together to solve problems for customers, the neighborhoods and the whole community... a systems approach for decarbonization – everything is interrelated



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# Long Term View

- ◆ Example from Maui Energy Conference – “The 8 – 80 city: Creating Vibrant, Healthy, and Resilient Communities for All.” Gil Penalosa
- ◆ Use all resources efficiently to optimize outcomes for the community
- ◆ Build stronger local economies

