Rate Design

Do we have a problem?

If so, how big of a problem is it?

What are good responses?

Do we have a problem?

YES: Current rates do not reflect underlying costs.

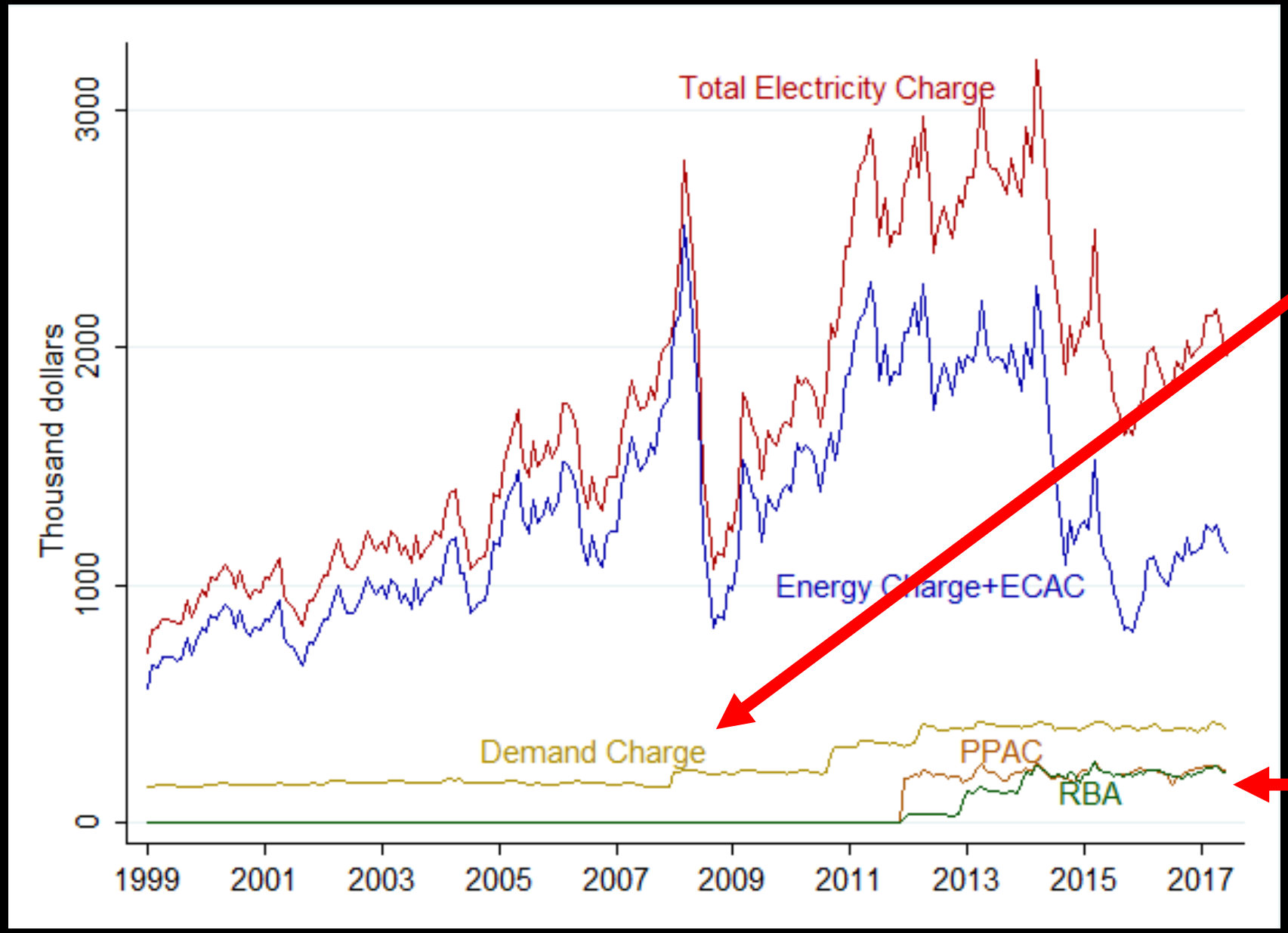
- Current per-kWh rates are not efficient: Prices >> MC

  IMPLICATION: The economic "pie" could be larger
  Everyone could have a bigger slice.

- Demand charges do not reflect capacity costs.

How big is the problem?

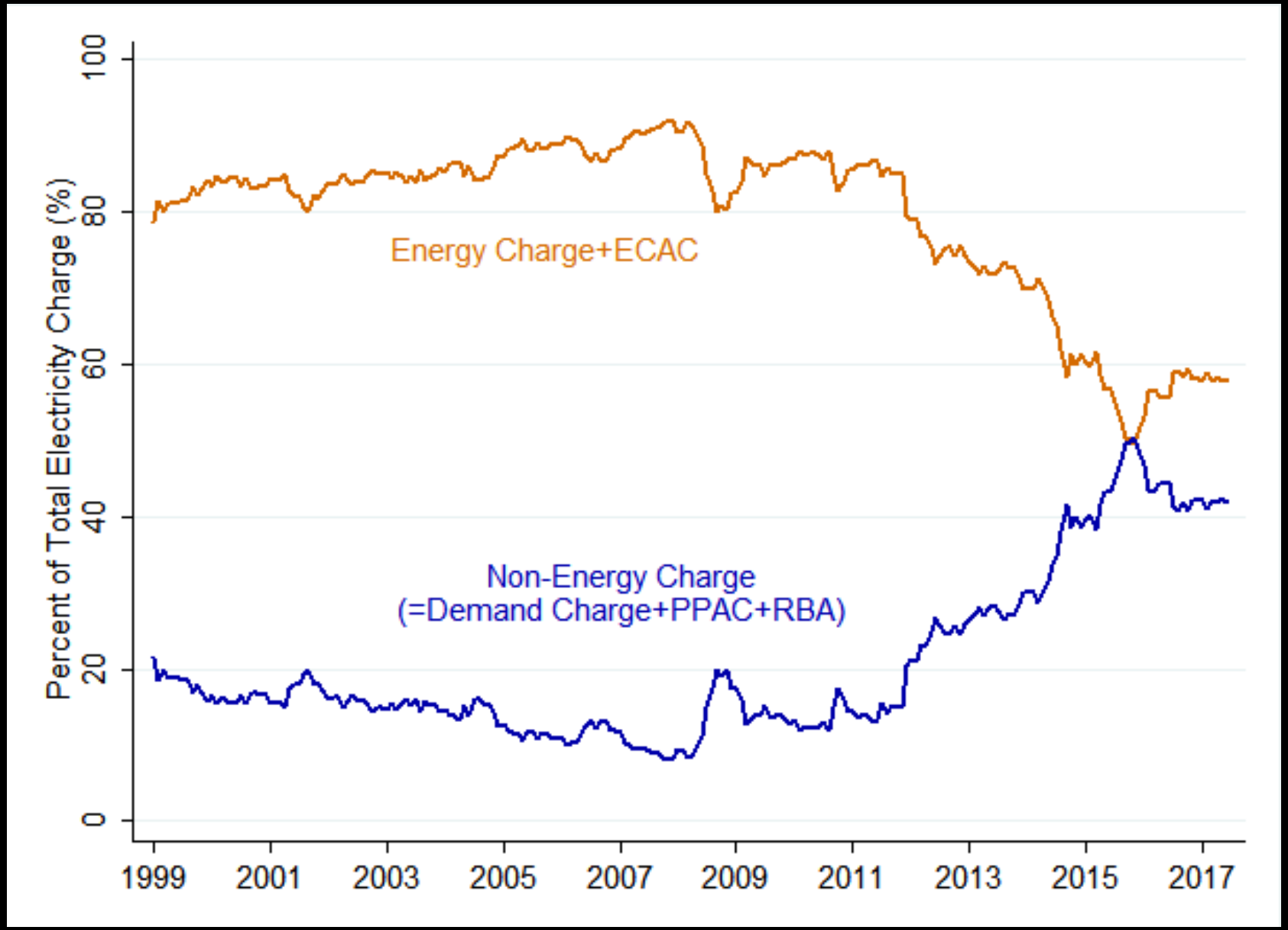
Example: UH Mānoa Energy & Non-Energy Charges



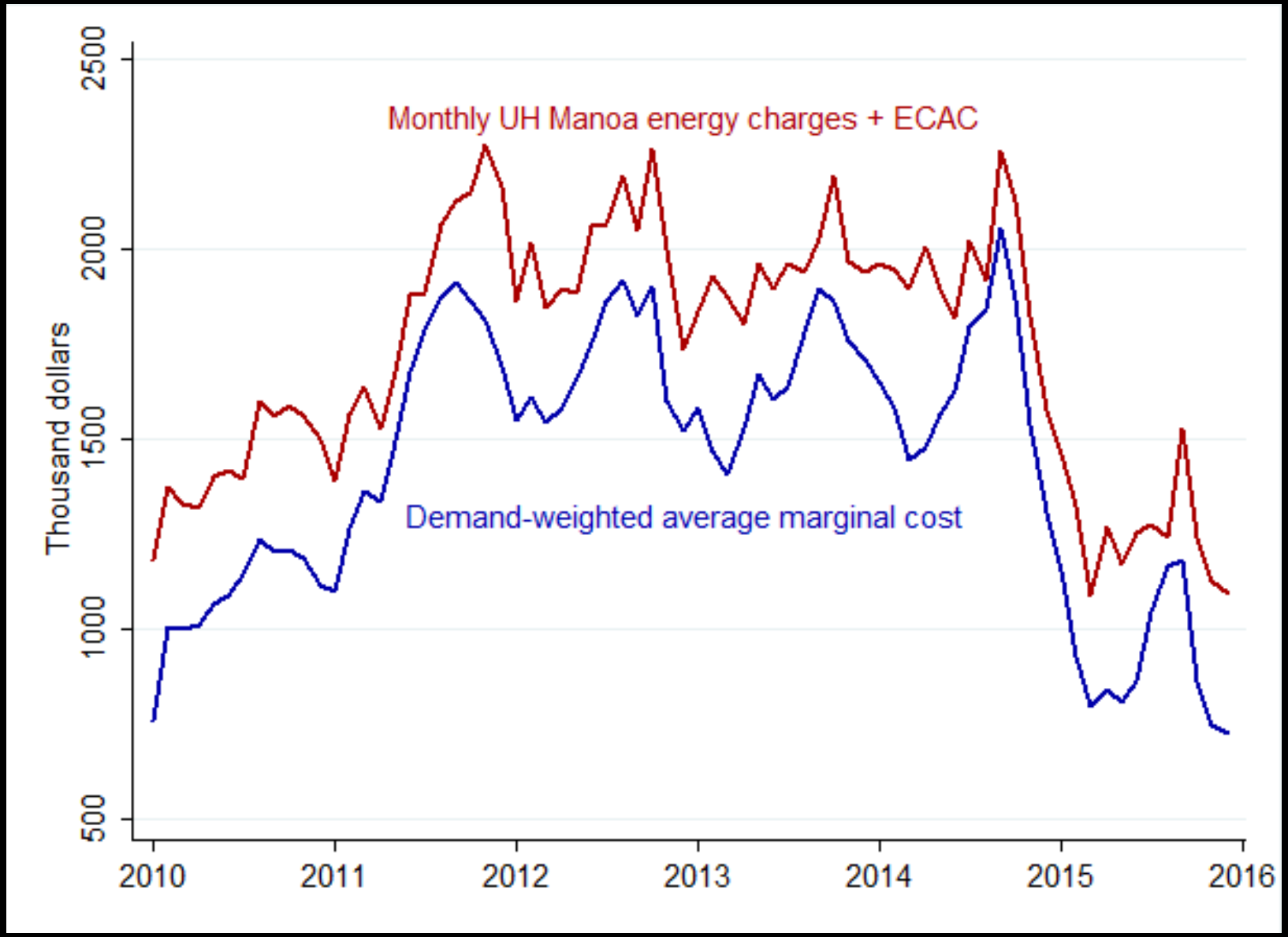
Per kW of non-coincident peak load

Adders to per-kWh rate

Example: UH Mānoa Energy & Non-Energy Charges



It gets worse: Energy charges already > MC

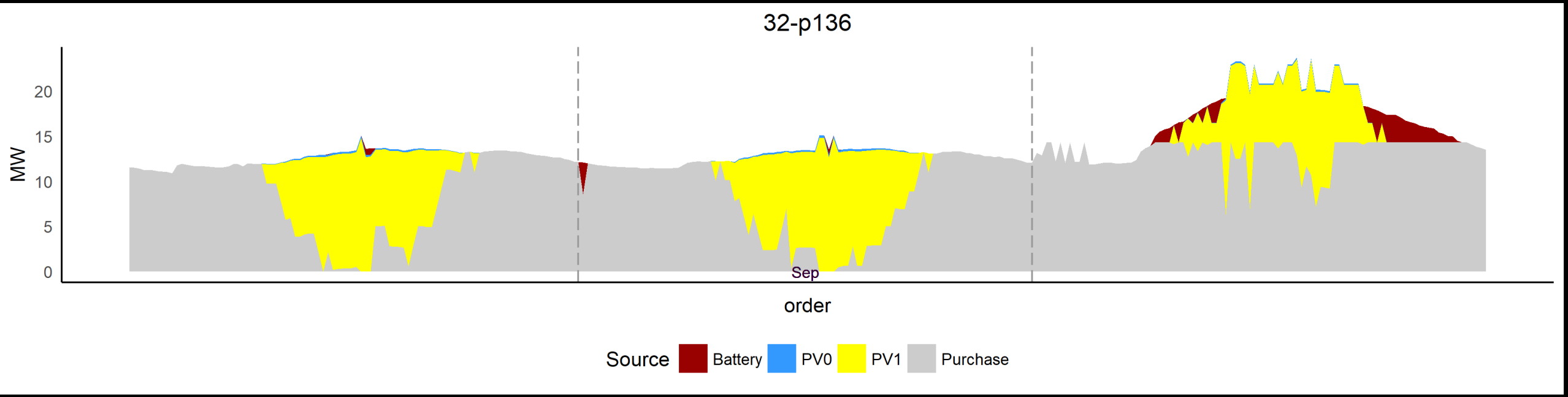


And considerably worse for other customer classes…

Inefficient rate design invites poor, socially wasteful investments, rent seeking and generally kludgy responses.

Basic fairness is at stake, not just efficiency.

Example: UH Mānoa load profile and optimized solar plus battery investments.



The solution -- Part 1

Give customers options, all based on MC:

1. Flat prices
2. Time-of-use prices
3. Real time prices

The solution -- Part 2
Like water for power. (And vice versa)

PAYMENTS/ADJUSTMENTS/CHARGES	AMOUNT	BALANCE
Previous Balance		-4.86
Balance Before Current Charges		-4.86
Single Family Water Charges 12/22/2016 to 01/21/2017		
Tier 1 = 4 Kgal @ $4.42	17.68	
Water Billing Charge	9.26	
Total Water Charges		26.94
Meter No. 01304198 Curr Rdg: 180.000 Prev Rdg: 176.000 Cons: 4.000 thousand gals		
Single Family Sewer Charges 12/22/2016 to 01/21/2017		
Water Irrigation Factor - 1 Kgal @ $0	0.00	
Sewer Volume Charge - 3 Kgal @ $4.63	13.89	
Sewer Base Charge for 1 Units	77.55	
Total Sewer Charges		91.44
TOTAL AMOUNT DUE		$113.52
PAYMENT MUST REACH US BY 02/13/2017		

Fixed charges >70% of bill

The solution -- Part 2

Find fair, not-too-distortionary way to collect any remaining revenue.

- Higher fixed charges
  Tie to: property tax, building size, customer value, ??
- Exit fees?
- Tax financing?