Sharing the load

Cost-reflective network tariffs and fair consumer outcomes

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The big questions

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What are the objectives of tariff reform, and what then are the implications for the approach?

WHO?

Who are network tariffs for?

- Energy retailers?
- Energy consumers?

WHAT?

What costs are we trying to reflect?

- Regular ongoing costs?
- Future augmentation costs?

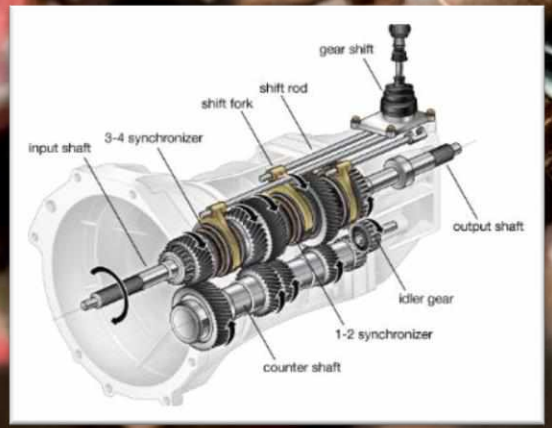
WHY?

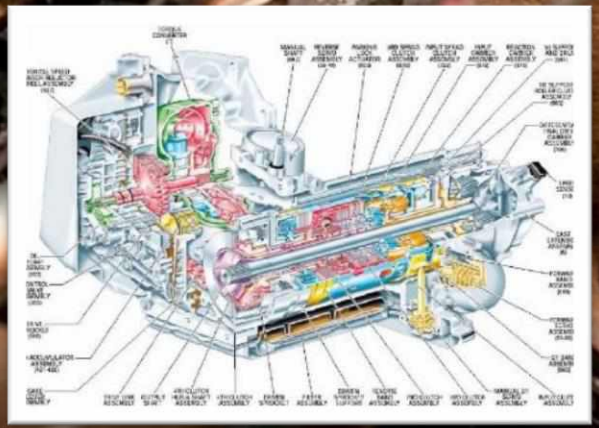
What inequity are we trying to address?

- Before the reform?
- After the reform?

Complexity

Complexity matters at the interface with the user. Complexity in the back end doesn't necessarily mean complexity at the front end.





Cost drivers

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Behaviour-change signals in constrained areas need a different approach than allocating ongoing costs fairly across the whole network

Constrained areas

Time- and location-based signals such as critical peak rebates or prices, or demand response signals behavior change or investment.

Non-constrained areas

Gentle demand or time-of-use based pricing allocates ongoing costs in proportion to usage during peak periods

Cost drivers

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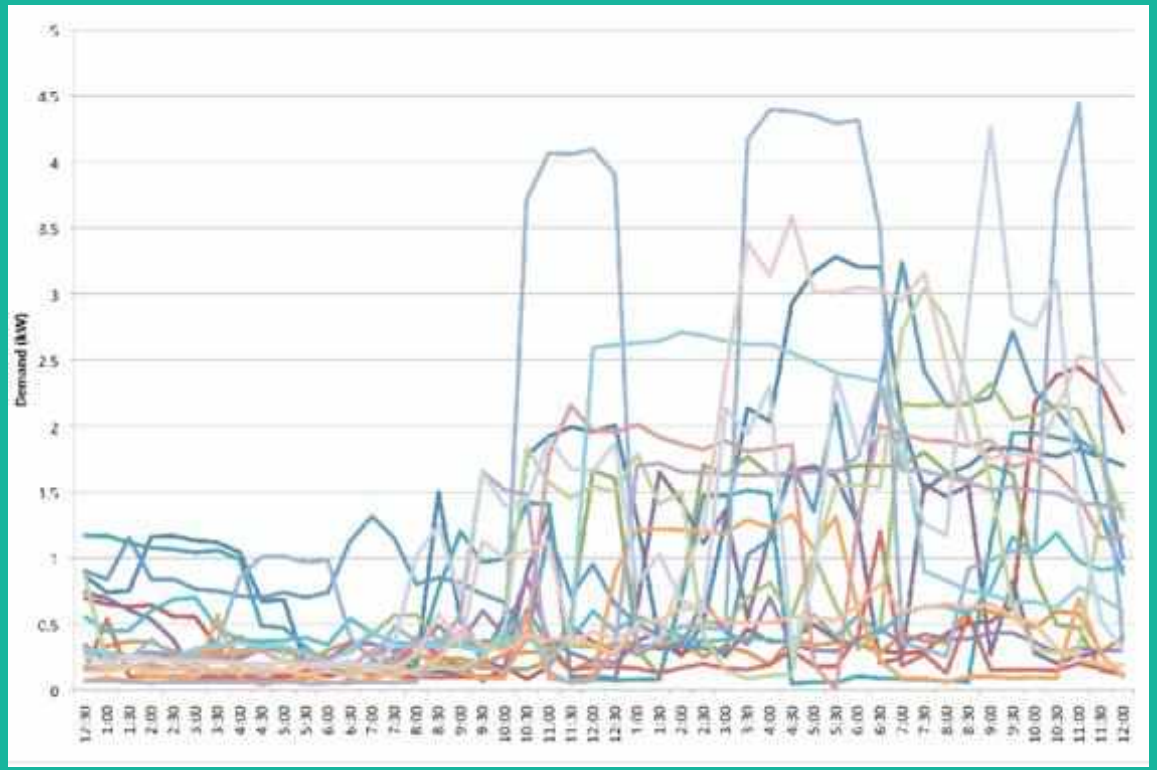
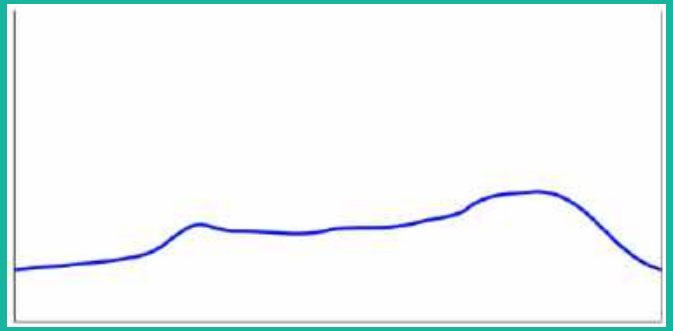
Load is a group activity. Network deals with aggregate load, not individual loads.



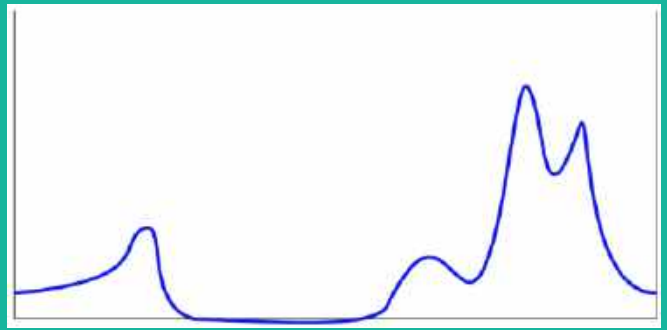
Winners & losers: now

A tale of three households...



Dean: high standby, not much peak

Simon: low standby, high peaks



Gavin: solar gives very low usage, high peaks

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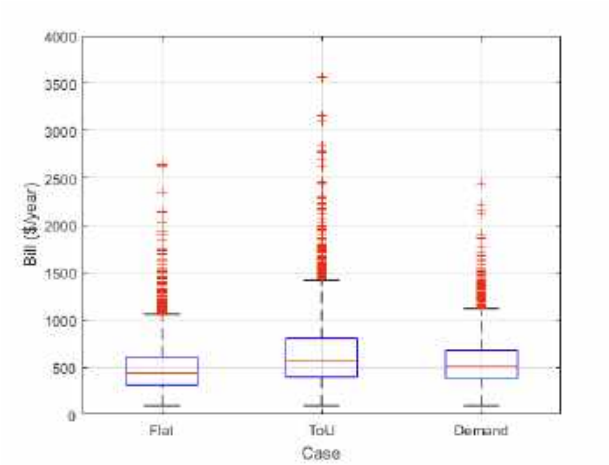
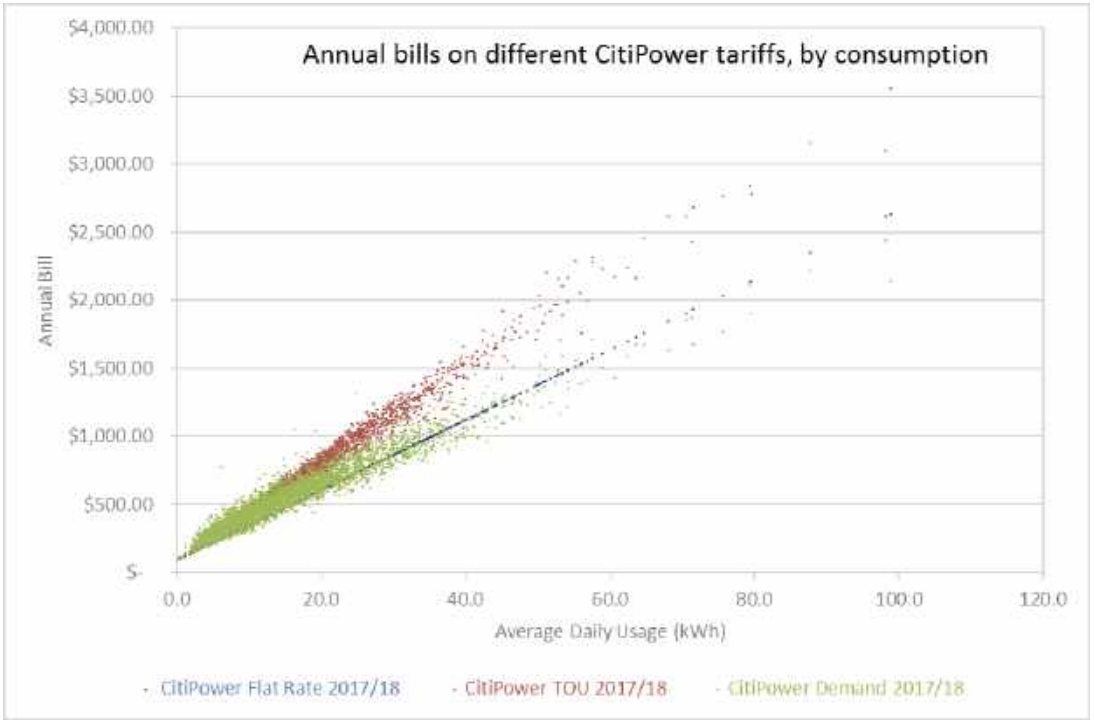
Winners & losers under cost-reflective tariffs





ToU vs demand? It depends

Winners & losers under cost-reflective tariffs

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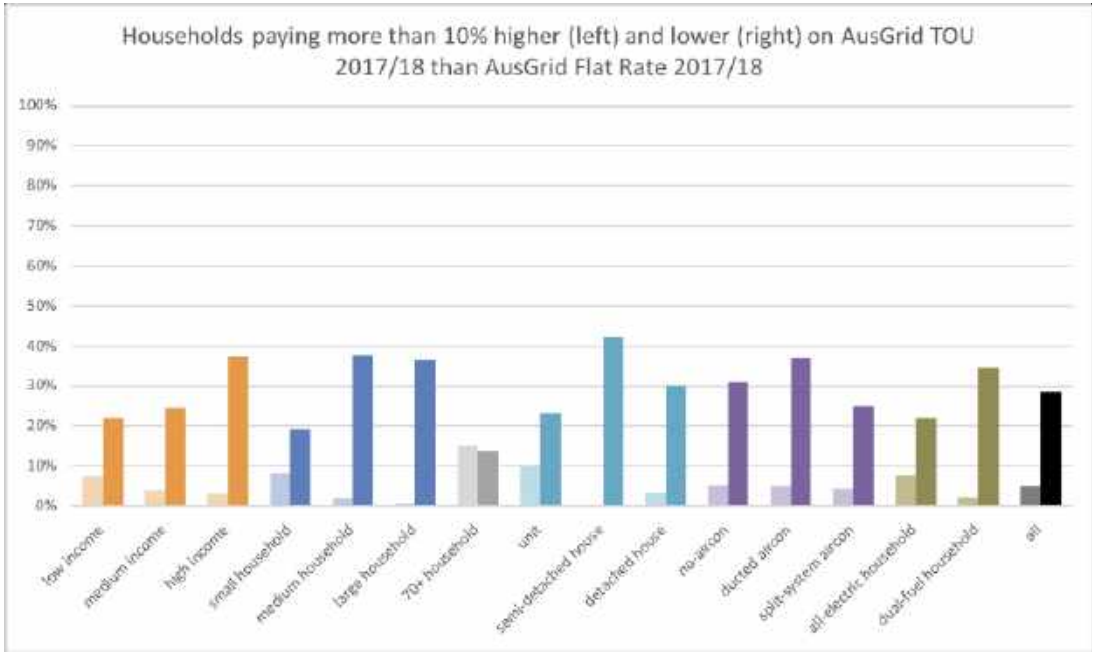

Low vs high income? It varies, but there's a pattern

Social equity

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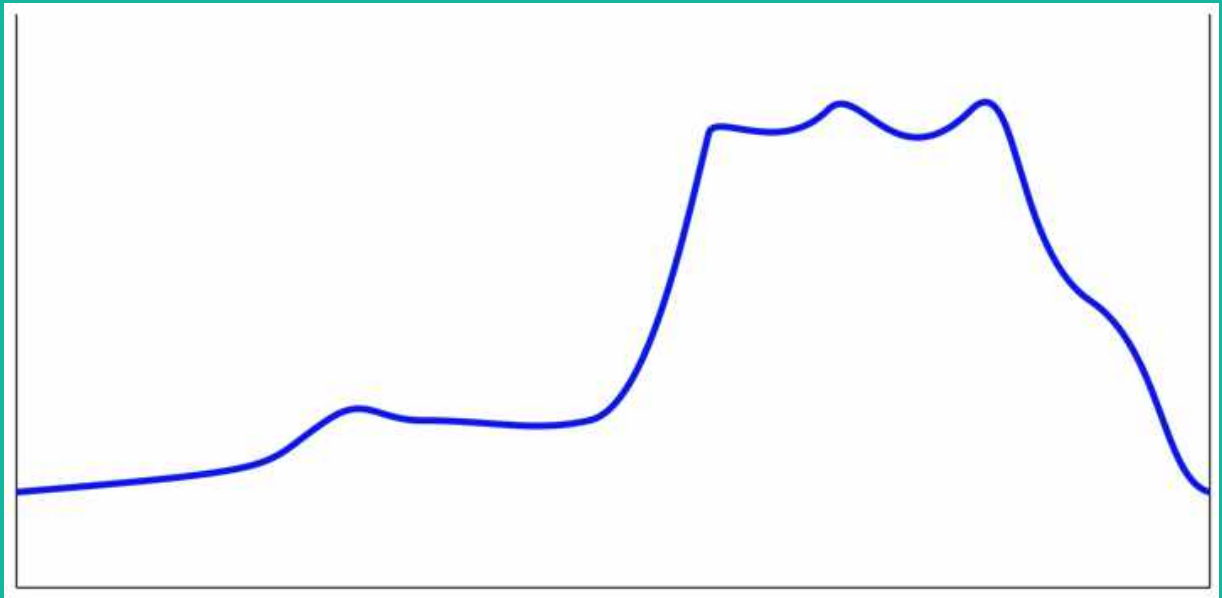
‘Fair’ allocation of costs is one thing… households stuck in high demand situations is another.

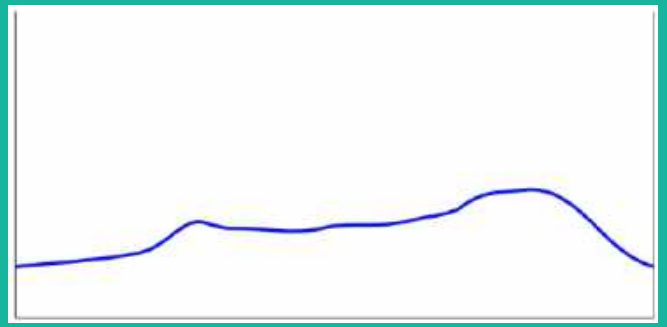


This household *already* pays a lot.
They still will under demand pricing – unless they don’t maintain an appropriate temperature.

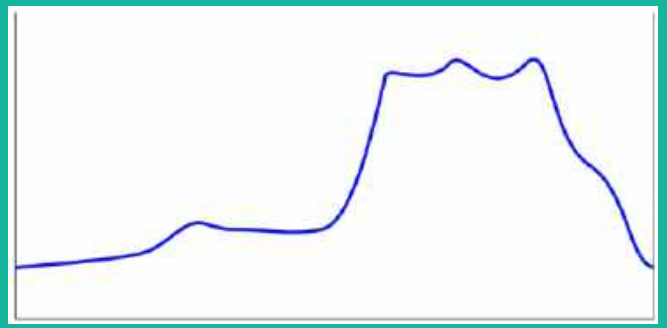
Social equity

Tariffs cannot deliver social equity. The best they can do is deliver predictable and rational baseline pricing

More uncomfortable



More expensive



These two households fare vastly differently under any type of pricing.

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Reality

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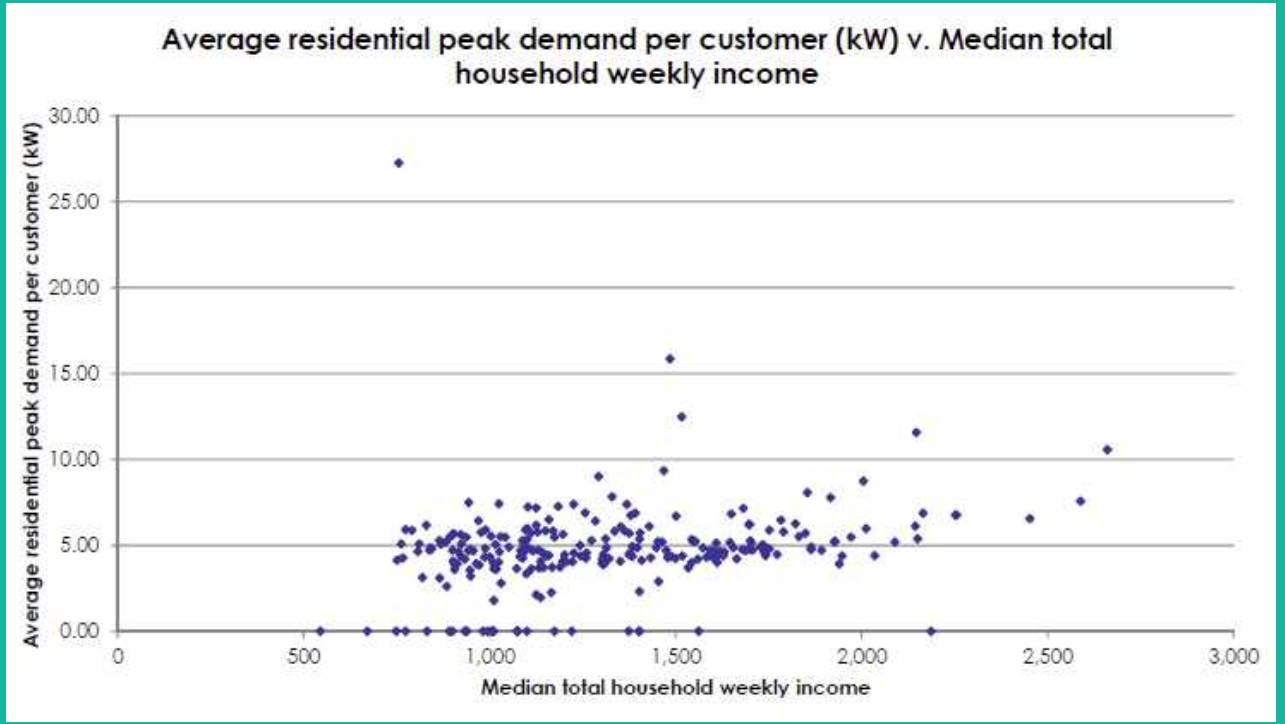
Source: AusNet Services presentation to VicUtilities, 22 March 2018



Tariffs cannot deliver social equity. The best they can do is deliver predictable and rational baseline pricing

Demand and income are not really correlated

Reality

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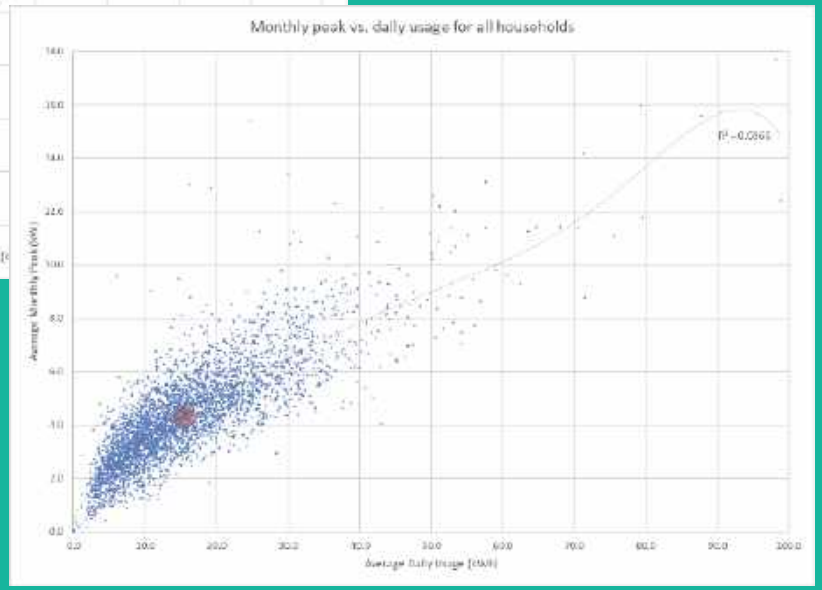
Tariffs cannot deliver social equity. The best they can do is deliver predictable and rational baseline pricing



Low income households tend to use less and have lower peak demand than others, but not by much (and there's a lot of variation).

Reality

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Table 1: Average consumption, demand, and utilisation of different household types (Ausgrid)

	Average Annual Usage (kWh)	Average Annual Peak (kW)	Average Monthly Peak (kW)	Average Daily Usage (kWh)	Average Daily Peak (kW)	Average Utilisation (%)
INCOME						
low income	4633	5.4	3.8	12.7	2.0	26%
medium income	5252	5.8	4.1	14.4	2.2	27%
high income	6844	6.8	4.8	18.8	2.7	28%
HOUSEHOLD SIZE						
small household (1–2 ppl.)	4091	5.2	3.7	11.2	1.9	25%
medium household (3–4 ppl.)	6620	6.5	4.7	18.1	2.7	29%
large household (5+ ppl.)	8417	7.4	5.4	23.1	3.1	31%
AGE						
70+ y.o. household	4180	5.1	3.5	11.5	1.8	26%
DWELLING TYPE						
unit	3453	4.8	3.4	9.5	1.9	23%
semi-detached house	5350	5.8	4.1	14.7	2.3	27%
detached house	6323	6.4	4.6	17.3	2.5	29%
AIRCON TYPE						
no aircon	4608	5.1	3.6	12.6	2.0	26%
ducted aircon	8244	8.4	6.1	22.6	3.2	28%
split-system aircon	5700	6.0	4.3	15.6	2.3	28%
ALL HOUSEHOLDS	**5665**	**6.0**	**4.3**	**15.5**	**2.3**	**27%**

Note: Green values are lower, and red values higher, than the average for all households

Tariffs cannot deliver social equity. The best they can do is deliver predictable and rational baseline pricing

The answer?

The best tariff for fairly allocating network usage, minimizing inequitable cross-subsidies, and managing impacts on vulnerable consumers

Tariff design

- Based on network utilisation (demand or ToU?)
- Smoothed price signals
- Work closely with retailers
- Complementary programs
- Target constrained areas specifically

Implementation

- Introduce on new connections
- Gradual transition for existing
- Targeted opt-out (work with retailers) where required
- SHOW HOW IT WORKS (please)
- (EVs: controlled load falling back to ToU)

Thanks

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