



# Stirring the pot

*Getting some answers on tariff reform*

*Dean Lombard  
Alternative Technology Association  
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# Why reflect network costs?

In an energy market framework that seeks equitable cost and service outcomes for consumers ***and embodies the principle that no consumer should forego supply due to inability to pay***, distribution of costs proportionate to how they are incurred promotes equity

- Acute and chronic affordability problems can be addressed in a systematic and targeted way as a shared responsibility of market participants backed up by strong government social policy.

# What should users pay for?



- A fair share of ongoing costs (sunk costs, operation, maintenance)
- A fair share of future augmentation

What does Long Run Marginal Cost include?

- Could be anything – augex, repex, opex – for which changes in a customer's usage change the timing or cost of the expenditure

# What drives network costs?



- CitiPower: annual peak demand – largely by commercial and industrial loads
- Paul Simshauser: *air-conditioner accounts for 17% of household load but 64% of peak demand on 'critical event' summer days*
- Network price determinations:
  - Capex is 50-70% of Capex + Opex
  - Augex is 10-20% of Capex (30% for NSW regional)
  - Repex is 25-55% of Capex

# Who's cross-subsidising who?



- High consumption cross-subsidises low consumption (sunk cost)
- Flat consumption cross-subsidises peaky consumption (augmentation cost)
- Undercharges:
  - high demand appliances used at network peak (aircon)
  - consumption reduction appliances that don't affect peak (PV)
- Discourages investment in stuff that:
  - reduces demand during peak (insulation, aircon cycling)
  - shifts demand from peak (battery + PV)

# How should networks charge?



Ahmad Faruqui: *For distribution-only utilities ... a two-part rate:*

- **Service charge** (fixed)
  - *Billing, metering and customer care*
- **Demand charge**
  - *A reservation charge for transmission and distribution capacity*
  - *A reservation charge for generation capacity*
  - *A demand charge for actual utilization of capacity*

Paul Simshauser: *A Three-Part Demand Tariff. The **fixed charge** is designed to cover fixed operating costs, a **time-of-use variable rate** to cover nominal variable costs, and a **Demand Charge** covering sunk costs based on coincident maximum demand.*

Hendrik S. Houthakker: *A **two-period TOU rate** is better than a maximum demand tariff because the latter ignores the demand that is coincident with system peak.*

# How should a customer's demand be calculated?



- Coincident peak? (i.e. peak that coincides with highest annual network peaks) – biggest driver of augex
- Monthly/quarterly/seasonal peak? – customer's outlier demand
- Average peak? – customer's typical demand (in aggregate, indicates minimum network capacity)

Ergon: demand charge should probably be based on average demand, but that's complicated and hard for customers to understand

# Tariff design principles



James Bonbright:

1. *Simplicity of tariff design*
2. *Freedom from controversy as to proper interpretation*
3. *Effectiveness in meeting total revenues*
4. *Revenue stability*
5. *Tariff stability*
6. *Fairness in the apportionment of sunk costs*
7. *Avoidance of undue discrimination*
8. *Static efficiency of rates (i.e. encourage optimum use and minimise waste)*
9. *Reflection of all externalities*
10. *Dynamic efficiency of products in response to technological innovation and changing demand-supply conditions*



# The customer impact principle



- Consult with customers first
- Do a customer impact assessment
- Introduce progressively to smooth cost change

# The customer impact principle



1. Consult with customers first
2. Do a customer impact assessment
- 3. Assess for equity, fairness, sense; adjust, repeat... (*trade off cost reflectivity for fair customer outcomes*)**
4. Introduce progressively to smooth cost change

# Initial impact analysis



Looking at impact of proposed cost-reflective tariffs on household loads typical of different types of households

*For most users, annual peak demand was between 2.5 and 7 times average daily peak demand; monthly or seasonal peak demand was still 2–4 times average. **Under most of the networks' demand tariffs, households are being charged according to their outlier peaks on a handful of days per year, instead of their typical peaks.***



# What we need to see

- Clarification of the purpose of cost-reflective tariffs
  - Behaviour change?
  - Cost-distribution?
- Clear info showing the relative contribution to network costs of annual and daily peak demand
- Tariffs that reflect those costs
  - This could totally be average demand-based tariffs with critical peaks price/rebate aspect
- Granular analysis of customer impacts including identification of systemic impacts and strategies for dealing with issues

# Thanks



Dean Lombard  
Alternative Technology Association  
dean@ata.org.au

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