Cost-Reflective Pricing and its Impact on Storage

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CRP is very complicated

- Tariffs divided into: transmission, distribution, retail/wholesale
- Distribution:
  1. Sunk/residual costs – fixed charge? historical responsibility?
  2. Augmentation costs – SRMC and LRMC? decreasing demand peak?
  3. O&M costs – just a per kWh charge?
- How to:
  1. Calculate each of these
  2. Allocate proportion of costs between them
- Here focus on
  - Assessing how well proposed CRTs result in a household’s bill correlating with their contribution to the demand peak and augmentation costs – most relevant for storage
What is Network Cost-Reflective Pricing?

- AEMC “Network prices to reflect the efficient cost of providing network services to individual consumers so that they can make more informed decisions about their electricity use”

- End-users pay the full costs of their use of the network
  - Corollary is ….

- DG and EE are rewarded to the extent that they provide network support

Annual Peak – weekend (Dataset A)
Annual Peak – weekday (Dataset B)

Time of Day

Demand & PV Output (KW)

- Peak demand day
- PV output
- Summer average

Annual Peak – weekend (Dataset A)

Time of Day

Demand & PV Output (KW)

- Peak demand day
- PV output
- Summer average
Summer peak?

- Aggregated (network) peak is in summer, but ....

Blacktown, season of household peak load

Ausgrid 300, season of household peak load

Summer peaks are more aggregated

Both same time and same day
When to Apply Demand Charge?

- Network Determinations: Networks are sized to be able to meet the projected annual demand peak.

- Cost-reflective charges should be applied to customers based on their demand at the time of the annual network peak (Ergon, 2015).

- Instead, current CRTs base it on the customer’s demand peak over a broad period each day and over the full year.


Proposed cost-reflective tariffs

- Looked at 9 DNSPs => 6 TOU, 3 with demand charges.

- SA Power Network’s Residential Actual Demand Tariff – DUOS only (incl. GST)

<table>
<thead>
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<th>Residential Single Rate Tariff</th>
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<td>Capacity - peak</td>
<td>4 – 9pm (Nov – March) Rate: $9.966/kW/month</td>
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<td>Capacity – off peak</td>
<td>4 – 9pm (April – Oct) Rate: $4.983/kW/month</td>
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<td>Energy</td>
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### SAPN’s cost-reflective and flat tariffs

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### What Does All This Mean For Storage???
Non-CRP Drives Storage Uptake

Tariff peak → Demand peak

If You Want to Drive Uptake of Storage...
If You Want to Drive Uptake of Storage …

Use cost-reflective tariffs that aren’t

Thank you

Questions?
Proposed demand charge tariff

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<th>Proposed</th>
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<td>Charged on peak demand</td>
<td>Charged on demand during network peak</td>
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<td>Every month of year</td>
<td>Selected months (eg. summer)</td>
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<tr>
<td>3-9pm, 6 hr period</td>
<td>4.30-7.30pm, 3 hr period</td>
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<tr>
<td>$/kW charge lower</td>
<td>$/kW charge higher</td>
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<td>Billed each quarter based on 3 monthly demand peaks in that quarter</td>
<td>Billed each quarter based on default demand charge</td>
</tr>
<tr>
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<td>True-up period after eg. summer</td>
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<td>Use actual demand for new default demand charge</td>
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Household peak vs network peak

![Comparison of household peak to network peak](image_url)