Encouraging Controllability of Residential HVAC

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Smart Appliance Standards

- Summer and winter peaks responsible for significant increase in energy infrastructure in Australia and increases in energy prices for consumers

- The Australian Equipment Energy Efficiency (E3) Committee supported the development of smart appliance Standards:

  AS/NZS 4755.3

  Part 1 – Air conditioners (published)

  Part 2 – Swimming pool pumps (published)

  Part 3 – Electric water heaters (published)

  Part 4 – Electric vehicles (draft)

  Part 5 – Grid connected electrical energy storage systems (published)
DR for Air Conditioners

- Not mandatory to have DR capability
- But if its present must indicate it’s presence when completing registration application
- Currently must indicate the DR mode on the energy rating label
Air Conditioner – DR Modes

- Mode 1 is compressor off (no cooling)
- Mode 2 is power down to 50%
- Mode 3 is power down to 75%
DR Incentive Programs

- AS/NZS 4755 standard for air conditioners put to use on a voluntary basis
- Energex “Peak Smart” program
- Provides incentives for customers who participate
- To help manage peak demands on the network
- Driven significant uptake in DR enabled air conditioners

<table>
<thead>
<tr>
<th>Reward</th>
<th>$100</th>
<th>$200</th>
<th>$400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling Capacity</td>
<td>Less than 4kW</td>
<td>4kW or less than 10kW</td>
<td>10kW or more</td>
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Trial of cloud interfaced air conditioners

- AGL Energy with United Energy trial of control of cloud interfaced air conditioners
- Air conditioners send commands to slightly increase the set point temperature
- To demonstrate alternative ways to balance peaks in energy demand and reduce or delay investment in infrastructure
- Cloud interfaced air conditioners connected to virtual power plant software
New Rules for a DR Incentive Scheme

- Australian Energy Market Commission
- New rule to be developed and published from 1 December 2016
- To create a demand management incentive scheme and demand management innovation allowance
Summary

• Summer and winter peaks responsible for significant increase in energy infrastructure in Australia and increases in energy prices for consumers

• Demand response standards developed to provide a framework to allow electrical products and communications technologies to be integrated

• Programs and trials already underway are driving increasing uptake of controllable appliances

• New Australian energy market rules from late 2016 are expected to drive further investment in and take up of load control programs