
A-HELP/Demand Response – where are we up to?

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What I will cover

- A-HELP and Demand Response
- The need for a Demand Response strategy
- Progress with Demand Response Standards
- What the electricity utilities are doing
- International developments
- Some conclusions
- What happens next

A-HELP and Demand Response

- AGO/E3 interested in AC peak load since Oct 2004 (GWA paper)
- Started to identify/engage stakeholders in Feb 2005
- Useful 'branding' to call project 'A-HELP'
 - » Australian Household Electricity Load-management Platform
- Activity is now mainstream – accepted term is Demand Response

What is Demand Response?

The automated alteration of an electrical product's normal mode of operation in response to an initiating signal originating from or defined by a remote agent, usually with the objective of reducing the product's power demand.

NOTE: Demand response does not require action by the user, although the user may participate in activating, configuring or deactivating demand response capability. Action by the user to alter the operation of an electrical product on request or as a consequence of electricity price information or other information is not demand response within the meaning of this Standard.

Why do we need DR?

- AC-induced peaks rising faster than energy
- Energy efficiency measures have only limited effect on peak load, especially residential
 - » Building thermal performance standards too slow
 - » AC efficiency standards faster, but still not enough
- Demand response easier to implement with larger industrial & commercial users
 - » Is happening, buys time, but does not address cause
- No choice but to develop residential sector DR
 - » Already beginning to happen

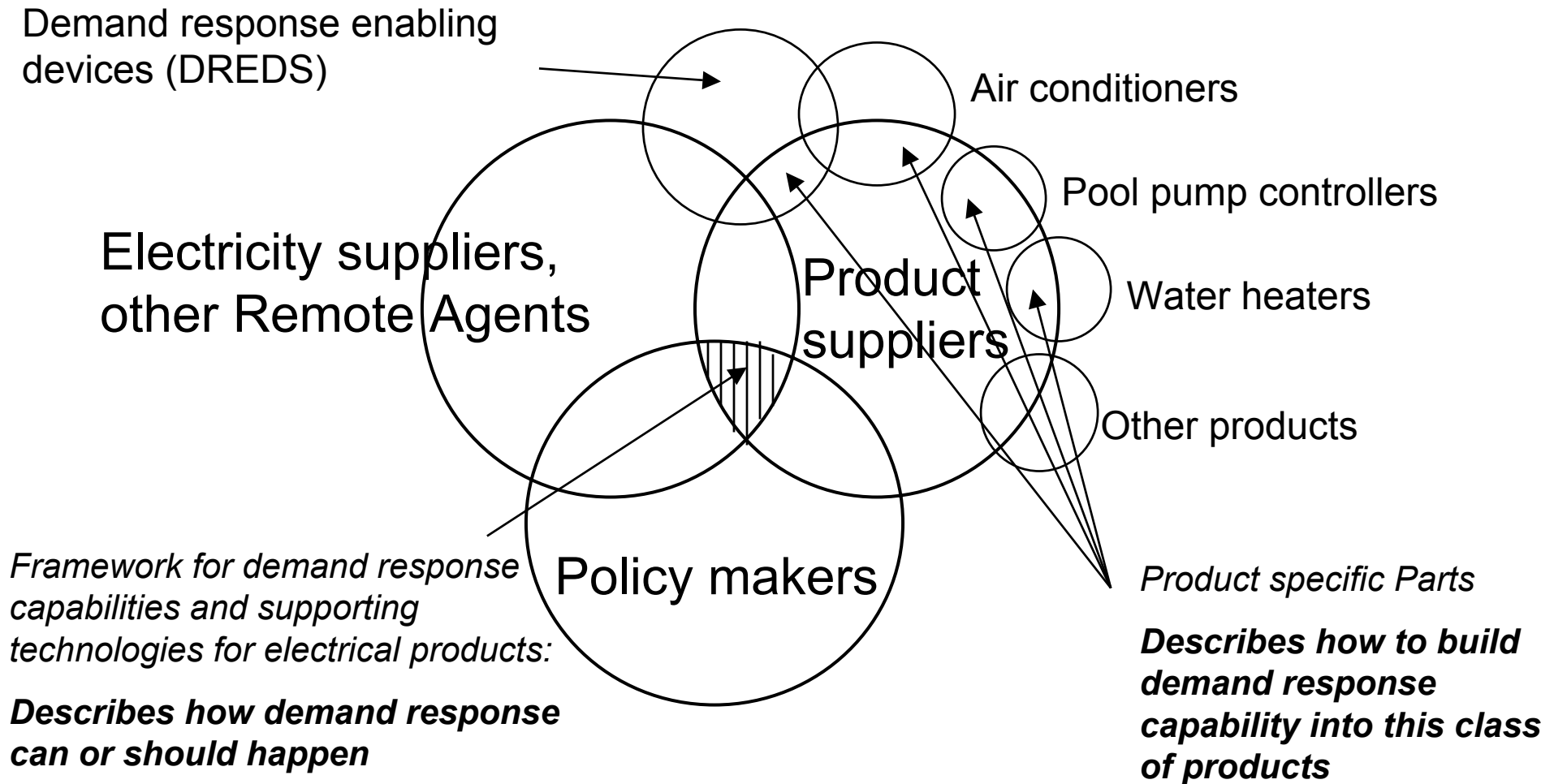
Need for appliance DR Strategy

- Many approaches - all converge on appliance
- Historic opportunity
 - » Issues have attention of COAG & MCE
 - » Costs can be lowered through co-ordination
- Lots of activity that people confuse with DR
 - » eg 'advanced metering', TOU tariffs, displays
- There is a role for the energy labelling regime
 - » Indicating DR capability at point of sale can be critical for utilities, product buyers and suppliers
- First draft of a Strategy has been prepared

Role of Standard

- Informal discussions go only so far
- Need some formalisation of concepts, rules
- AGO approached SA; EL-54 set up early 2006
 - » ENA, AC industry, AGO & others
- EL 54 has met 3 times (27 Nov latest)
- Agreed on multi-part structure for standard
- Working Group set up to draft first part
 - » Draft debated, re-titled from 'code; to 'framework'
 - » To be released for comment by end 2006

Standard: Relationship of parts



How Standard could help DR

- Electricity suppliers will drive DR programs
 - » Need products compatible with their systems and technical/economic objectives
 - » Need products that can be marketed to customers
- Use Standard as starting point in negotiation with product & DRED suppliers
 - » Requirements could be expressed as a 'Profile'
- Products meeting profile need to be identified
 - » By utility (who may offer \$\$ incentives)
 - » By customers (who want to participate in program)

Scenario (cont)

- Products which meet DR profile/s can be listed on websites, labels
 - » Eg 'DR-ready type 1', 'DR-ready type 2' etc
- Market will determine 'special profiles'
 - » Number likely to be low - first mover advantages
 - » Will refer to (or be called up in) the DR Standard
- Case for a few basic 'general' profiles
 - » Basic: eg will accept signals via a number of channels, will turn off/on, with randomisation etc
 - » More advanced: eg can be remotely configured to cycle

What utilities are doing

- Experimenting with pricing, information
 - » Constant readouts, advance notice of CPP etc,
 - » Country Energy, EnergyAustralia
 - » These are NOT demand response – not automated
 - Strategy may be to recover TOU costs, not limit them
- Actual DR trials
 - » Energex: plug-in ripple controls (in abeyance)
 - » Integral: fixed ripple (small scale)
 - » ETSA: trailing 2,000 retrofit DREDS, cycling via FM, no TOU metering: most likely to be rolled out
 - Probable first driver for building DR into new ACs

International trends

- USA
 - » Many long-standing DR programs targeting ACS
 - Vast range of approaches, not all successful
 - Special local conditions mean even successful examples do not travel well, are hard to replicate
 - » EPC Act 2005 requires annual FERC reports on DR
- UK Climate Change & Sustainable Energy Act 2006
 - » requires study of ‘dynamic demand response’
 - » Aim is demand management for reliability, not peak
 - » starting with refrigerators: no AC problem (yet!)

International

- California
 - » Planning to mandate ('Title 24') Programmable Communicating Thermostats for all new ACS
 - Utility can change setting remotely
 - User can over-ride 'price' event, not 'emergency'
 - » PCT option does not fit as well with Aust market
- IEA DSM program
 - » Aust participating
 - » Information exchange, but not likely to drive issue

Some conclusions

- DR seen as subset of metering/pricing
 - » Needs to emerge as related but separate
- Drivers will be local, not international
- DR for 'legacy' ACs will drive development
 - » But utilities will need ACs with the right 'profiles' to maintain their DR programs, and lower the costs
- Energy labelling support could speed this up
- International coordination effort still valuable
 - » Aim for low-level 'general' DR capability standard

What happens next

- Technical part of Standards by end 2007 (?)
 - » DRED and AC parts equal top priority
 - » Swimming pool pump controllers next
 - But new SA committee should focus on energy efficiency testing and labelling first
 - » Water heaters using electricity next
 - In longer term, DR will replace
- Utility trials over next 2 summers (06/7, 07/8)
- For ACs, first opportunity to indicate DR on label may come with post-2008 rescaling