Power of choice review

Public Forum – Draft report

3 October 2012
Melbourne

AUSTRALIAN ENERGY MARKET COMMISSION

Welcome and purpose of today

- Provide overview of draft report, including key areas
- Engage and obtain stakeholder views on draft recommendations
- Encourage stakeholder engagement and consultation
- Submissions to draft report close on 11 October 2012

Overview – draft report

The review

- AEMC was asked to investigate and identify the market and regulatory arrangements needed across the electricity supply chain to facilitate the efficient investment in, operation and use of demand side participation (DSP) in the NEM.
- The review has a broad focus.
- Its aim – to ensure that the community's demand for energy services is met by the lowest cost combination of demand and supply side options.
- Important to recognise the Power of choice review is a combined state, territory and federal government initiative under the auspices of the Standing Council on Energy and Resources (SCER).

The Review – key reform areas

Facilitating consumer engagement and participation

- Information
- Enabling technology (metering)
- Third party participation
- Role of parties

Improving efficient and flexible price signals

- Potential for time varying price signals
- Protections for vulnerable consumers
- Retail price regulation

Efficient DSP

Improving supply chain interactions

- Coordination and alignment of incentives across parties
- Energy Efficiency measures and policies

Improving distribution network incentives

- Profit incentives
- Valuing DSP impacts and DSP uncertainty
- Facilitating distributed generation

Draft report

- Recommends a package of reforms - for longer term outcomes.
- Focus on enabling consumers to make informed choices about the way they use electricity and decide what action is best for them.
- Makes recommendations across all parts of the electricity supply chain designed to:
  - Provide consumers with the information, education, incentives and technology they need to efficiently manage their electricity use.
  - Provide network operators, retailers and other parts of the electricity supply chain with incentives to better support consumer choice and use flexible demand to reduce overall industry capital and operating costs.

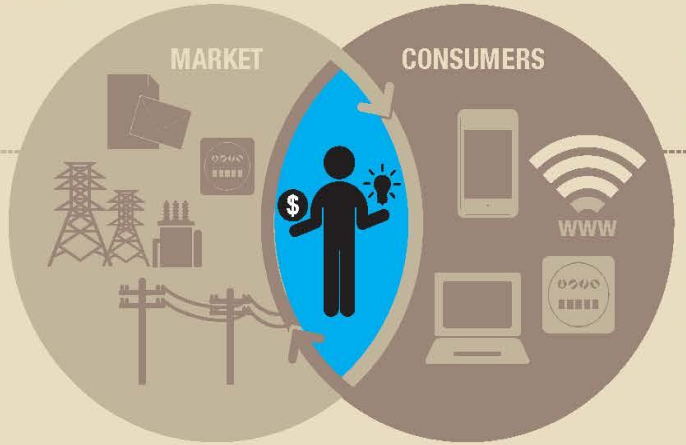
DRAFT RECOMMENDATIONS

AUSTRALIAN ENERGY MARKET COMMISSION **POWER OF CHOICE REVIEW**

BENEFITS OF CHANGES

ENABLES ENERGY BUSINESSES TO SUPPORT CONSUMERS BY:

- Providing better incentives to capture the value of DSP
- Supporting coordination across the supply chain
- Improving competition in the provision of DSP options
- Giving different parties clearer roles and responsibilities
- Making investment decisions in DSP technology



ENABLES CONSUMERS TO MANAGE ENERGY BILLS BY:

- Improving information and education
- Rewarding changes in consumption behaviour
- Enhancing consumer choice
- Maximising the value of technology available
- Providing more flexibility about how they contract for energy services

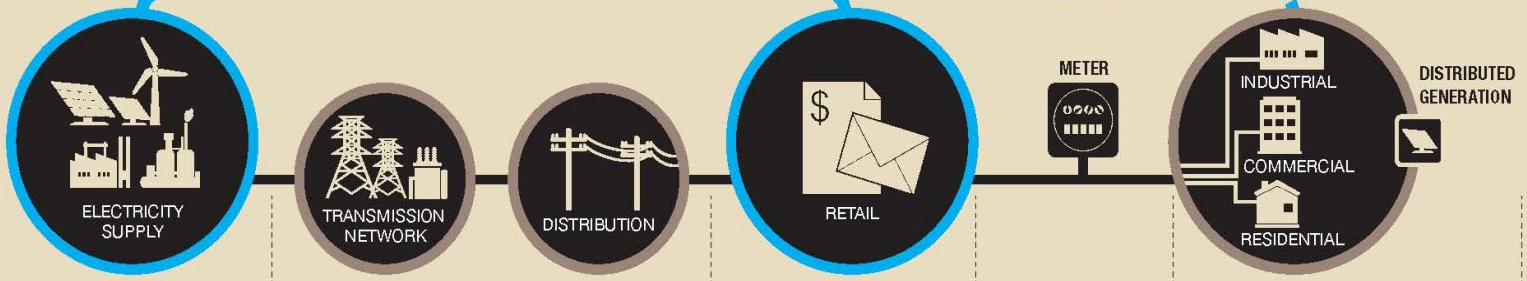
WHY DEMAND SIDE PARTICIPATION?

- Gives consumers options to manage and control electricity consumption and bills
- Allows electricity services to be delivered at lowest cost combination
- Enables informed consumer choices to support efficient investment and use of network and generation infrastructure

ELECTRICITY SUPPLY CHAIN

WHOLESALE MARKET
(Generators sell their power to retailers)

CONSUMERS



- Rewarding DSP in the wholesale market
- Allowing consumers to sell DSP actions to parties other than their local retail electricity supplier
- Improving AEMO's ability to forecast demand in the short and long term

- Reforming distribution network businesses' pricing principles and structures
- Improving distribution network incentives to utilise the value of DSP
- Providing appropriate arrangements for network businesses to recover the costs of DSP

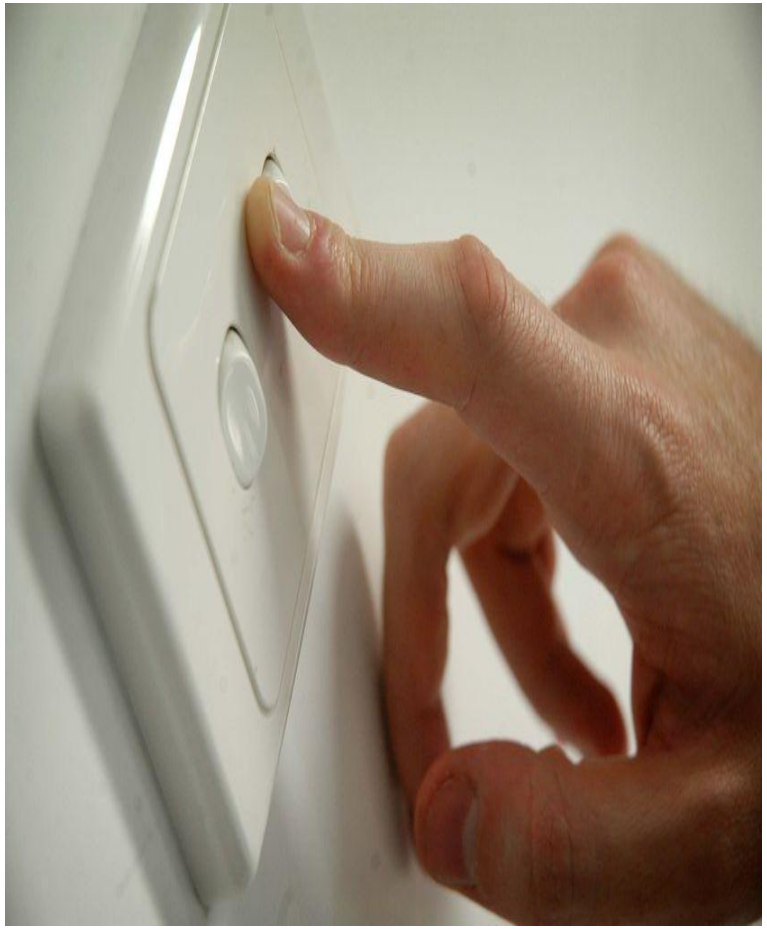
- Improving price signals to residential and small business consumers
- Providing appropriate options for vulnerable consumers
- Supporting consumers to understand time varying tariffs
- Facilitating the participation of third party service providers

- Enabling consumers to separate their consumption for different uses
- Providing better arrangements to support private sector investment in metering
- Providing flexible metering arrangements to improve the range of ways consumers use electricity – see *AEMC Electric Vehicles Review* for more information

- Providing safeguards for vulnerable consumers who may have limited opportunities to change their consumption patterns
- Providing a greater range of pricing options to enable better rewards for managing use
- Enabling better access to consumption data
- Providing robust arrangements for how market participants directly engage with consumers to offer DSP products and services
- Enabling consumers with distributed generation to sell their power to a range of parties
- Enabling better integration of energy efficiency government policies and DSP

Final phase – next steps

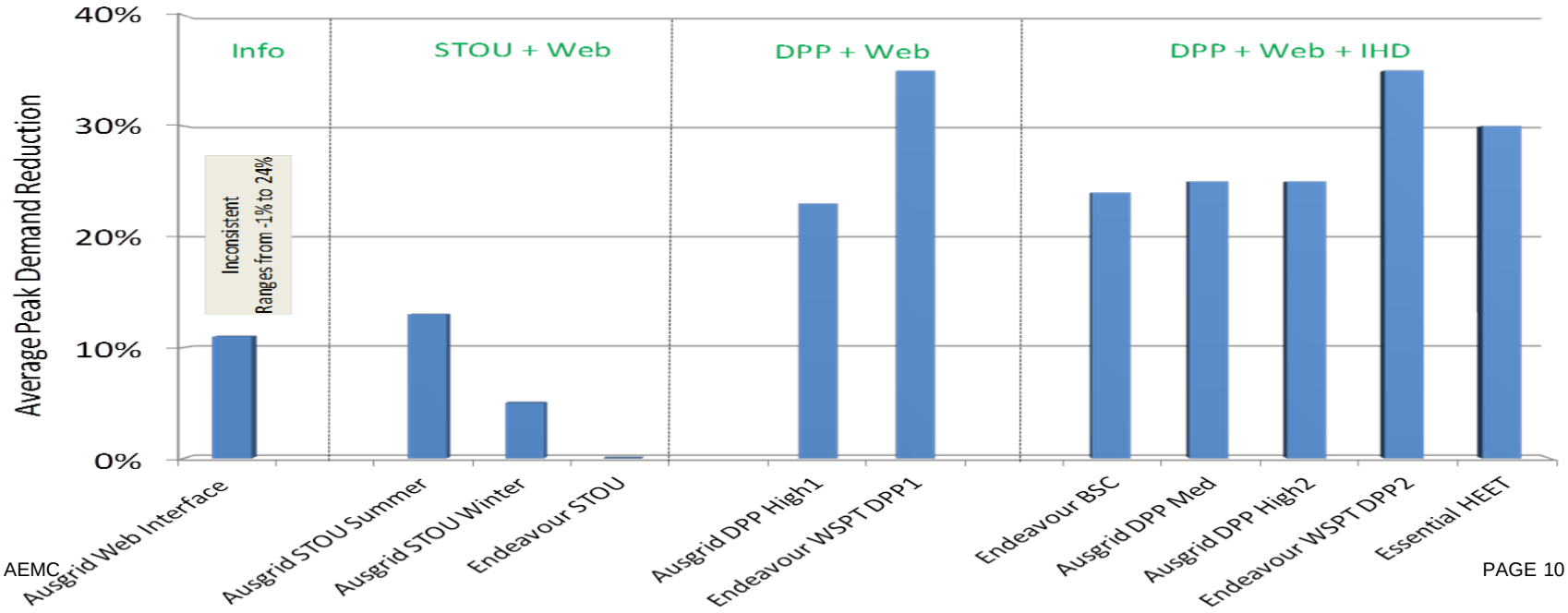
- Stakeholder submissions due 11 October 12
- Consideration of stakeholder views/submissions to draft report
- Finalise final report and recommendations
- Final report and implementation plan to SCER – 16 November 2012



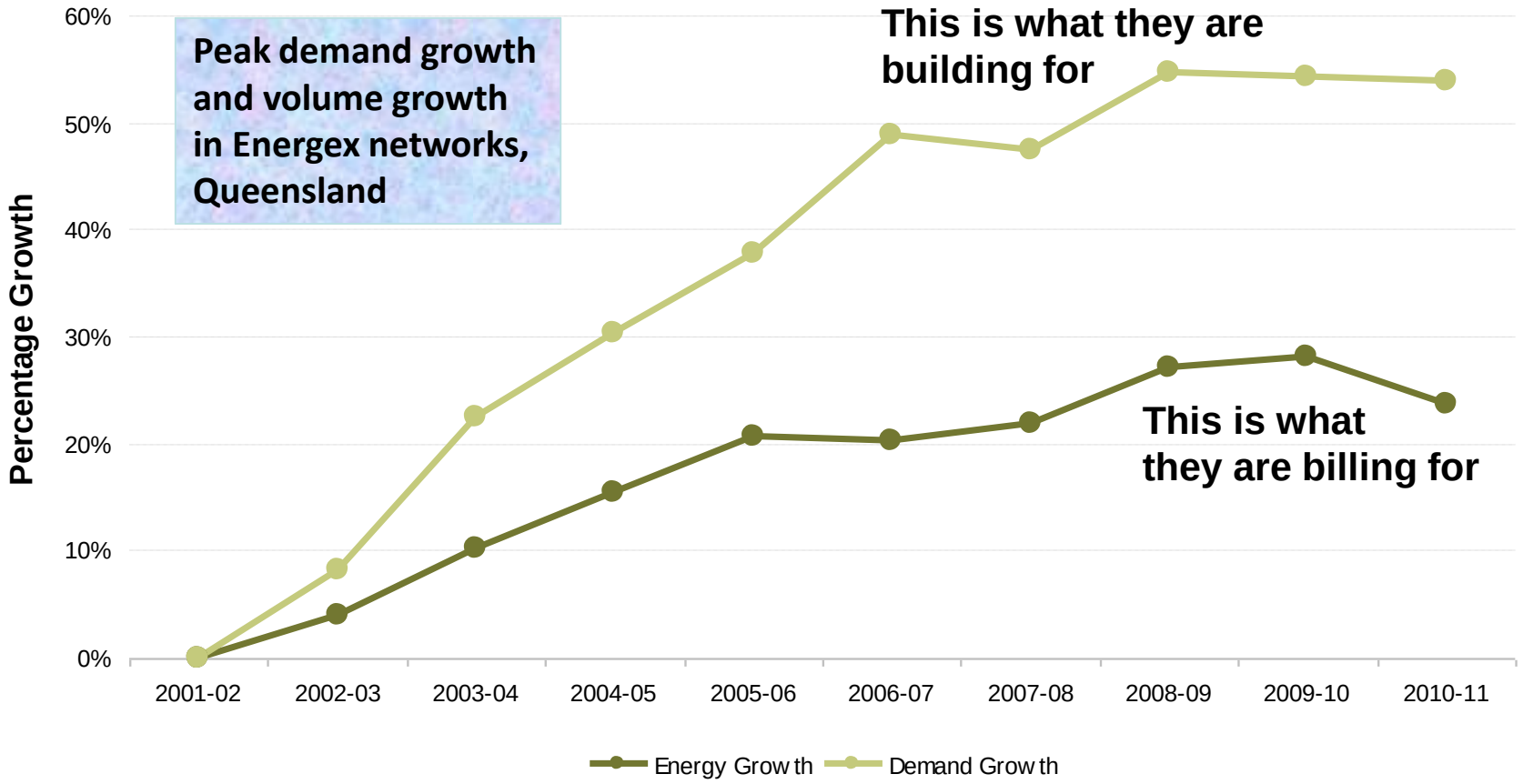
Session 1: Proposed transition to flexible pricing

Benefits of flexible pricing

- **Rewards consumers for changing consumption patterns and opportunity to reduce bills**
- **Potentially avoids need for network and generation investment**
- **Flexible prices are not new to consumers (i.e., airlines) and Australian trials of flexible pricing have been encouraging**

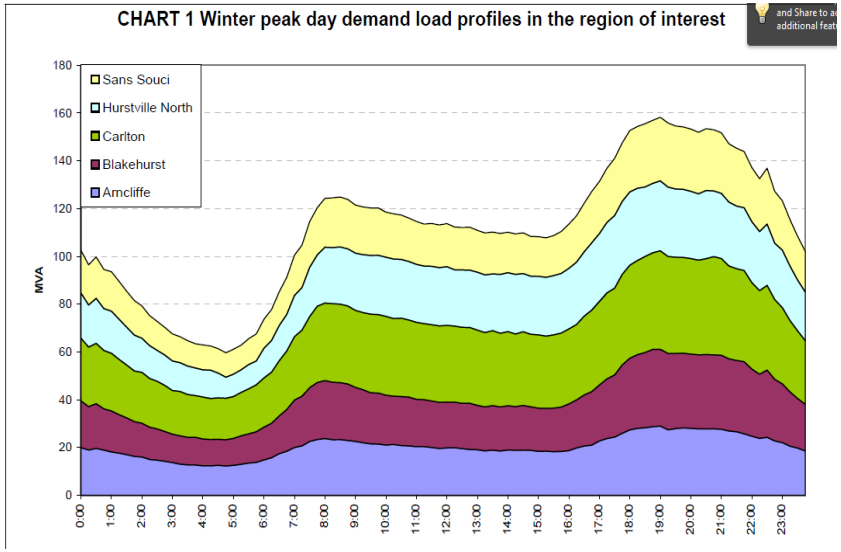


The link between investment costs and the tariff design is diminishing for networks



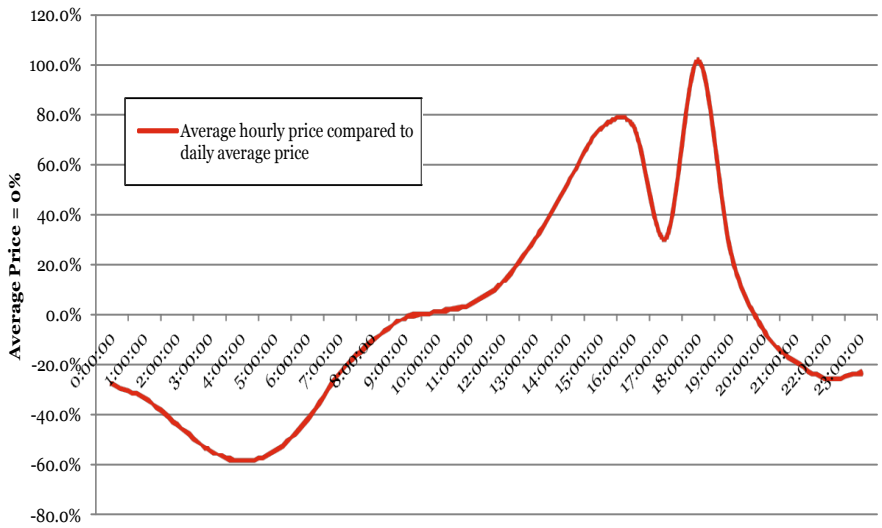
Designing efficient and flexible prices: Networks costs plus energy costs

Substation daily demand profile[1]

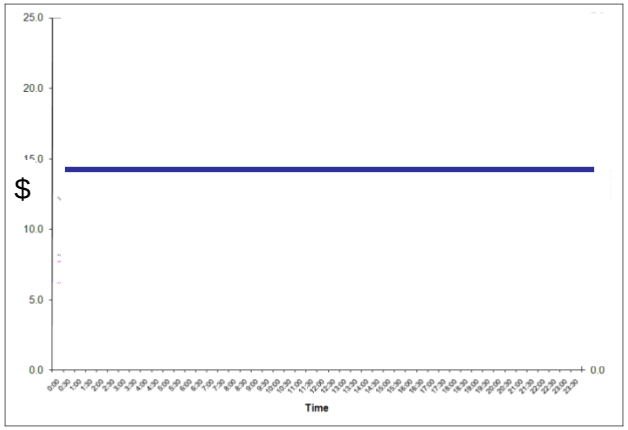


Eastern St George Area, Sydney (AusGrid network)

Relative hourly prices in the NEM



Typical retail tariff



Reasons for the limited uptake of flexibility pricing

- **Customer understanding of interval metering and time-varying tariffs**
- **Identifying who benefits -** Very hard to identify which consumers will want to move to a time varying tariff without timely consumption profiling data (this creates a chicken and egg problem)
- **Lack of metering technology**
- **Concerns about impacts on vulnerable consumers**

Reasons for the limited uptake of flexibility pricing

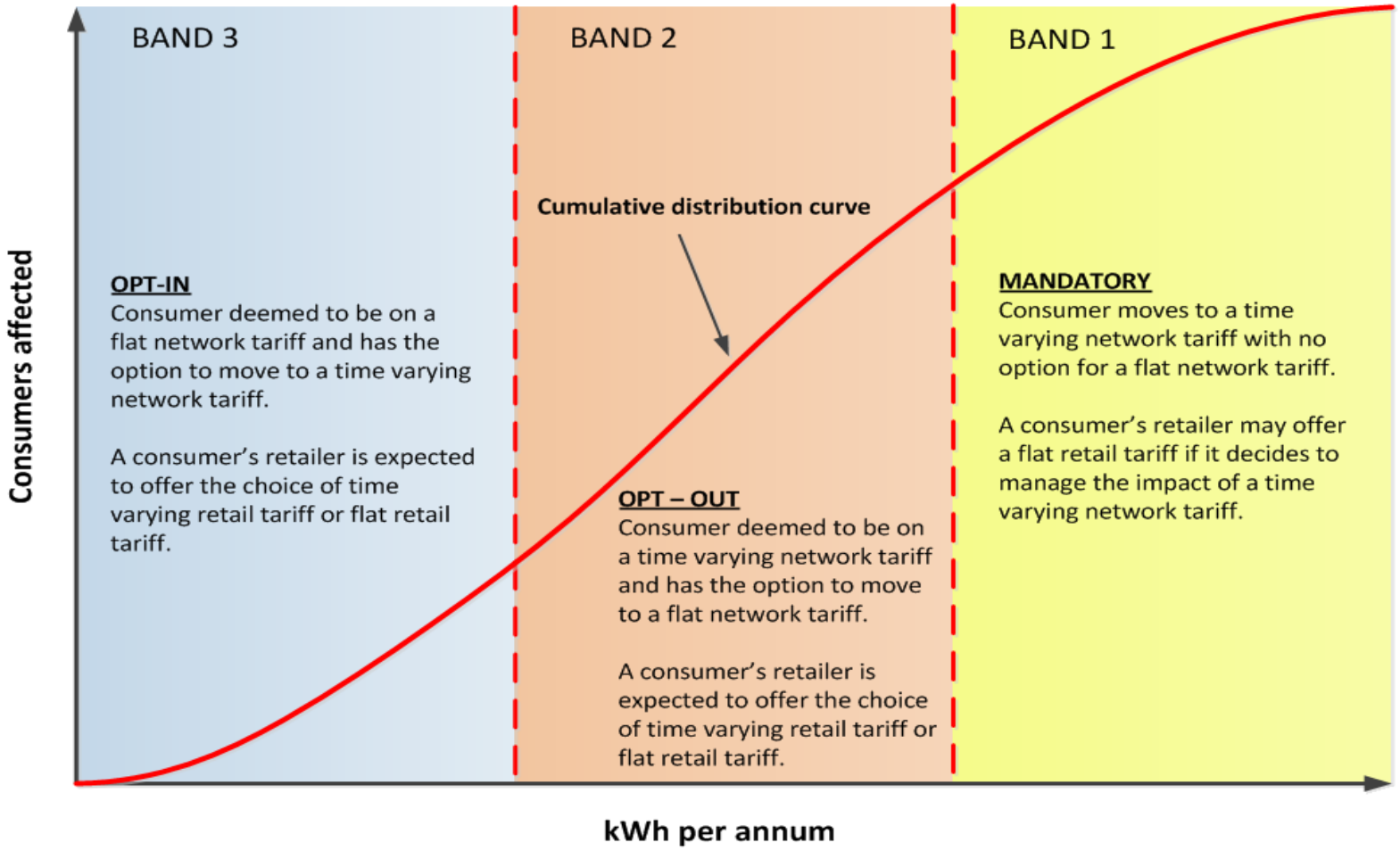
- **Networks profits linked to consumption?** Yes, possibly for certain types of business. Hence recommendation to look at the rules governing distribution pricing
- **Extra risks for retailers?** No, interval metering and time of use prices should improve risk management. But may increase data system costs
- **Retail price regulation?** Problem does not seem to be the requirement for retailers to offer standard/regulated anytime tariffs. However, the availability of anytime tariffs could make it harder to encourage customers to voluntarily adopt time-sensitive tariffs.

Proposed reforms in the draft report

- Increasing flexible pricing will impact on all consumer bills
- Not all customers will be able to respond to a changes in prices and may therefore face increase in financial stress
- Need to transition to flexible pricing in a gradual (phased) approach focusing on large load consumers first **and:**

1. Appropriate safeguards for vulnerable consumers, including
   - Option to remain on flat tariff
   - Government programs with targeted advice and assistance
   - Review of energy concession schemes
2. Information to help consumers understand and respond to the new tariffs

Proposed reforms in the draft report



Questions for consultation

We are keen to get stakeholder feedback on our proposed reforms including:

1. **Do you agree with our approach for phasing in the introduction of flexible retail prices via the network tariffs? How should the consumption thresholds be determined?**

2. **Are further measures required to manage the impacts of flexible pricing on consumers, including vulnerable consumers?**

3. **What information should be provided to consumers and by whom?**

4. **What should be the appropriate pricing principles for distribution businesses and the process for stakeholder consultation on distribution network pricing proposals?**

Perspectives on time varying electricity prices for residential and small business consumers

Dr Ahmad Faruqui, The Brattle Group

Session 2: Proposed reforms to metering arrangements

Benefits of better metering technology

Moving away from accumulation meters to meters that permit interval data measurement and remote communications will deliver opportunities for market development and efficiencies:

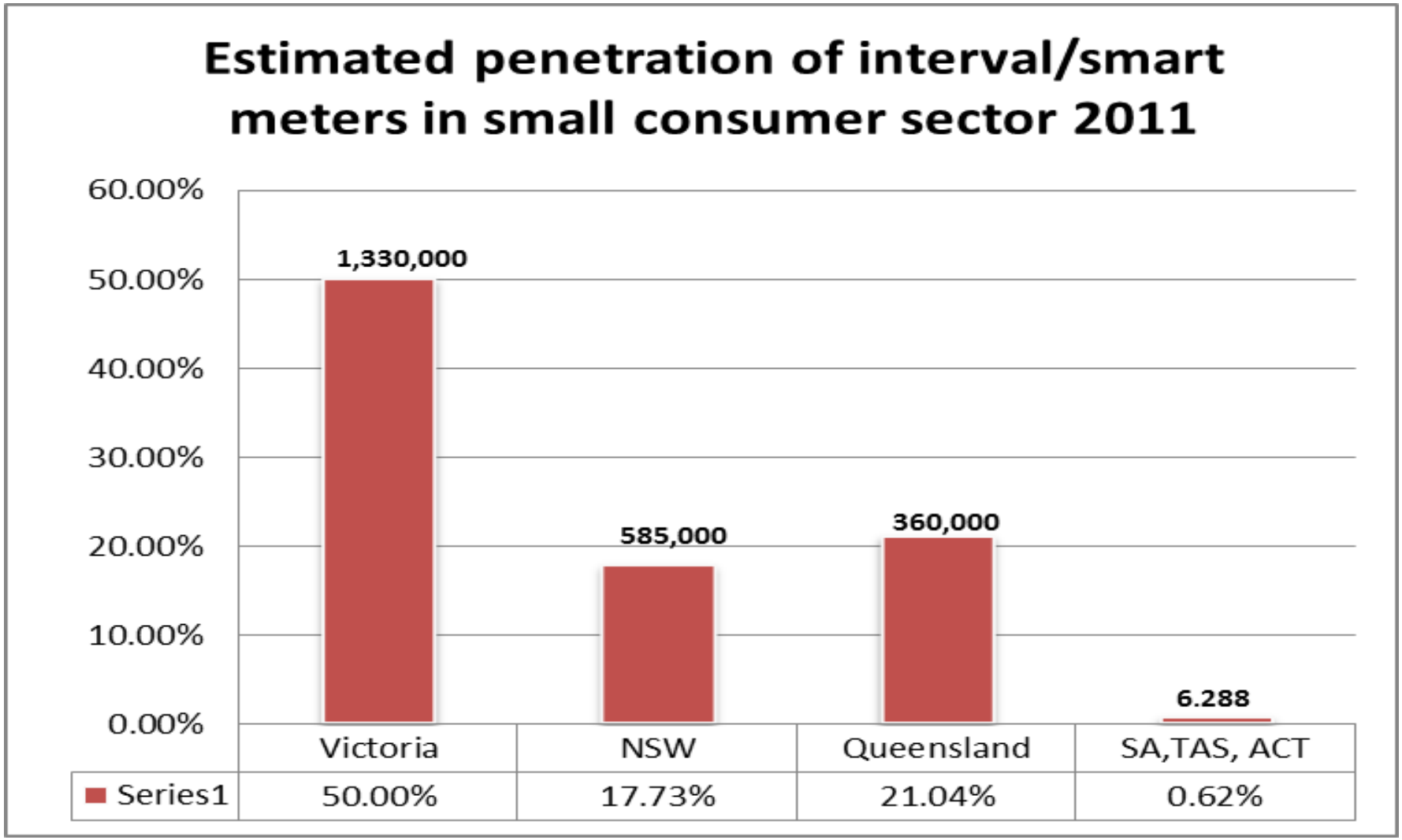
- **Time varying tariffs:** retailers could develop innovative tariffs that reward consumers for consuming at off peak rather than peak times
- **Demand side participation:** new products that reward changes to consumption patterns and help reduce system costs
- **Energy management services:** new services could develop around the consumption data provided by these meters
- **Payments methods:** greater choice plus facilitating a move to monthly billing cycles

Benefits of better metering technology

Moving away from accumulation meters to meters that permit interval data measurement and remote communications will deliver opportunities for market development and efficiencies:

- **Improve the accuracy of settlement arrangements:** through accurate meter reads and replacing the deemed net system profile
- **Change of retailer process:** improve the speed of consumer switching
- **Businesses operational efficiencies:** network operational savings and retailer processes savings

Where is the market today?



Why? – findings in the draft report

- Multiple issues with current arrangements inhibiting consumers and market participants from investing in better meter technology in the residential and small business sectors.
- Three key themes:
  - **Split responsibility between retailers and network businesses**
  - **Uncertainty in relation to regulation and government policy**
  - **Difference between who pays for the meter and who benefits from the meter**

Proposed reforms in the draft report

- Remove the distinction between the provision of metering services between retailers and networks based upon the type of meter
- Introduce contestable provision for metering services
- Enabling consumers with the option to contract with any accredited provider of metering services
- Allow networks to fund new meters to address network constraints
- Requirement for minimum functional meters to be installed in certain situations
  - New connections, replacement of old meters
  - Consumers above a defined consumption threshold.

Proposed reforms in the draft report

Contestable approach to be supported by:

- Unbundling metering costs from the distribution use of system charges
- Clearly defined exit fees when consumer upgrades from an accumulation meter
- Services arising from smart meters should be open to competition (energy management services)
- Clearer rules about consumer's ability to access and share their consumption data
- Disaggregation of a consumer's load between multiple retailers

Questions for consultation

We are keen to get stakeholder feedback on our proposed reforms including:

1. **Will a contestable approach to metering services result in the most efficient provision of services?**
2. **Should a more advanced meter be installed without the consumer's consent?**
3. **What should be the minimum functionality for meters?**
4. **Is the current ability for state governments to mandated a roll-out in their jurisdictions a barrier to commercial investment? If so, should it be removed?**

New Zealand metering arrangements and lessons for Australia

Mr Robert Reilly, Strata Energy Consulting

Session 3: Stakeholder presentations

Session 4: Benefits of proposed recommendations

Range of DSP actions & responses

DEMAND SIDE PARTICIPATION OPTIONS AND OPPORTUNITIES

DSP options refer to the actions that are available to consumers to reduce or manage their electricity use. There are many different DSP options, including projects that shift load away from peak periods or result in a more general reduction in consumption.

Energy efficiency involves using less energy to produce the same level of output, or using the same amount of energy to deliver a higher level of output. Energy efficiency actions by consumers can include installing more efficient appliances and equipment or engaging a third party to provide energy audits/assessments of household or business operations to consider potential improvements that could be made.

Below is an outline of the range of potential DSP options that are either currently available, or may be available in the future. Further information regarding the range of DSP options and associated benefits can be found in Chapter 3 of the *Power of Choice Directions Paper*.

PEAK LOAD MANAGEMENT

WHAT: **Price based approaches**
Use of different tariff arrangements

BENEFITS: Clearer signals for consumers, reductions in network costs. Retailers provide new product and service options.

EXAMPLE: SP Ausnet Critical Peak Demand Multirate Tariff, launched in summer 2010. Approx 88 MW of peak load reduction achieved.

WHAT: **Power factor correction**
Installation of technology to reduce losses

BENEFITS: Cost savings for consumers, reductions in peak demand and network costs.

EXAMPLE: ETSA Utilities implemented PFC at 139 sites between 2007 and 2009. Approx total peak demand reduction of 33MVA.

WHAT: **Interruptible supply contracts**
Payments to consumers to change consumption to non peak periods

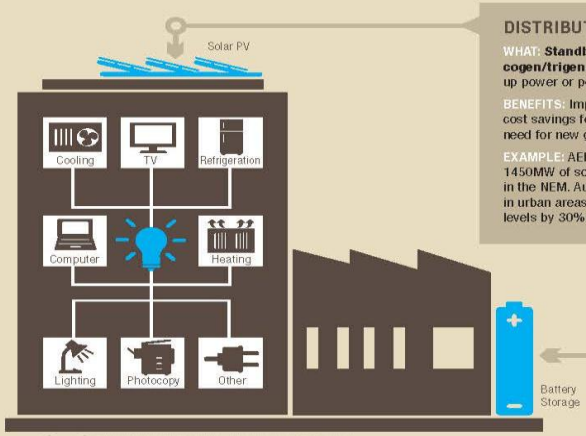
BENEFITS: Cost savings for consumers, more options for retailers to manage price risk. Reductions in network costs.

EXAMPLE: AEMO has identified around 263MW of curtailable load in the NEM.

WHAT: **Thermal storage**
Use of electricity in off peak periods to store energy for use in peak periods

BENEFITS: Cost savings to consumers and reductions in network costs

EXAMPLE: Ergon Energy and James Cook University thermal energy storage program has resulted in around 5MVA energy reductions and electricity cost savings of $3million a year.



DISTRIBUTED GENERATION

WHAT: **Standby generators, solar PV, cogen/trigen.** Used to provide back up power or power storage.

BENEFITS: Improved reliability and cost savings for consumers. May reduce need for new generation and network.

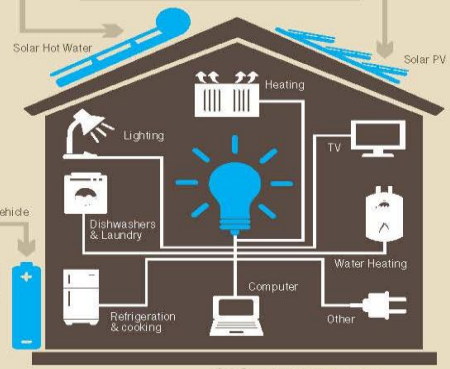
EXAMPLE: AEMO estimates around 1450MW of solar PV capacity installed in the NEM. Ausgrid reports that solar PV in urban areas can reduce peak demand levels by 30% to 43%

FUEL SUBSTITUTION

WHAT: Use of equipment to place electricity as end use energy source

BENEFITS: Consumer cost savings through improved efficiency of energy use. Reductions in network costs.

EXAMPLE: Commonwealth Government has commenced mandatory phaseout of electric hot water systems.



PEAK LOAD MANAGEMENT

WHAT: **Direct load control technology**
Enables shut down or cycling of equipment

BENEFITS: Cost savings to consumers, reductions in network costs.

EXAMPLE: ETSA Utilities 2006 air-conditioner DLC trial. Resulted in average 19% reduction in peak demand.

Energex Tariff 33 provides lower rates in return for direct control of pool pumps during peak. Has resulted in approx. 75MW of load shifted away from the peak.

WHAT: **Price based rebate approaches**

BENEFITS: Clearer signals for consumers, reductions in network costs.

EXAMPLE: Endeavour Energy Peak Time Rebate trial pays customers a peak time rebate reward for energy saved below a baseline. Average peak period reductions compared to baseline ranged from 29% to 51% of household load.

DISTRIBUTED STORAGE

WHAT: **Battery storage, electric vehicle battery storage.**

BENEFITS: Improved reliability and cost savings for consumers. May help reduce peak demand and network costs.

EXAMPLE: Potentially examples include storage in electric vehicle batteries and installation of residential or commercial/industrial large battery storage units.

ENERGY EFFICIENCY

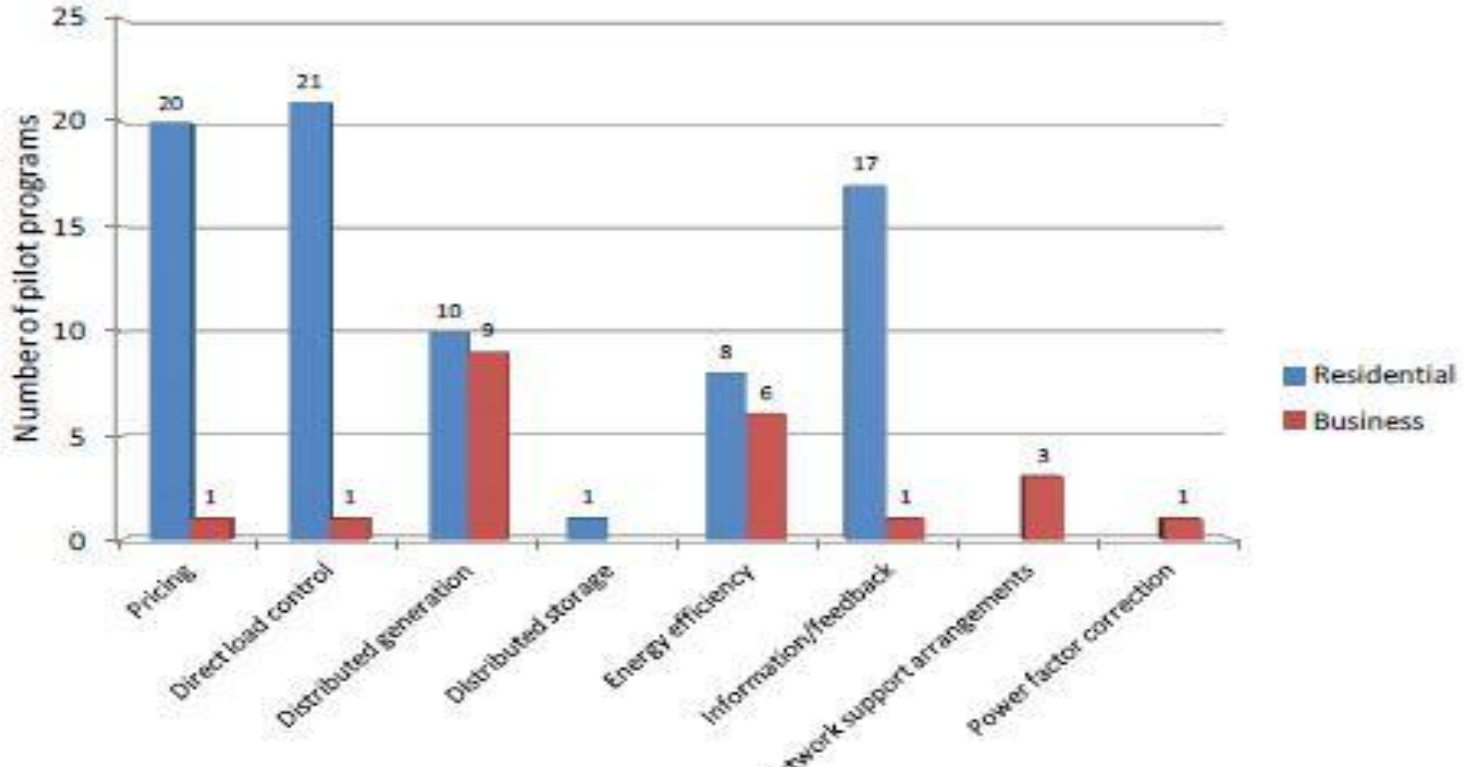
WHAT: Installation of more efficient appliances, lighting, water heating, industrial equipment.

BENEFITS: Consumer cost savings through more efficient consumption. Reductions in overall demand for electricity.

EXAMPLE: State based energy efficiency schemes in NSW, Victoria and South Australia have resulted in around 5000GWh of electricity savings.

DSP options: potential benefits to consumers

Number of pilots and trials and programs completed or underway testing DSP options and understand consumer responses.



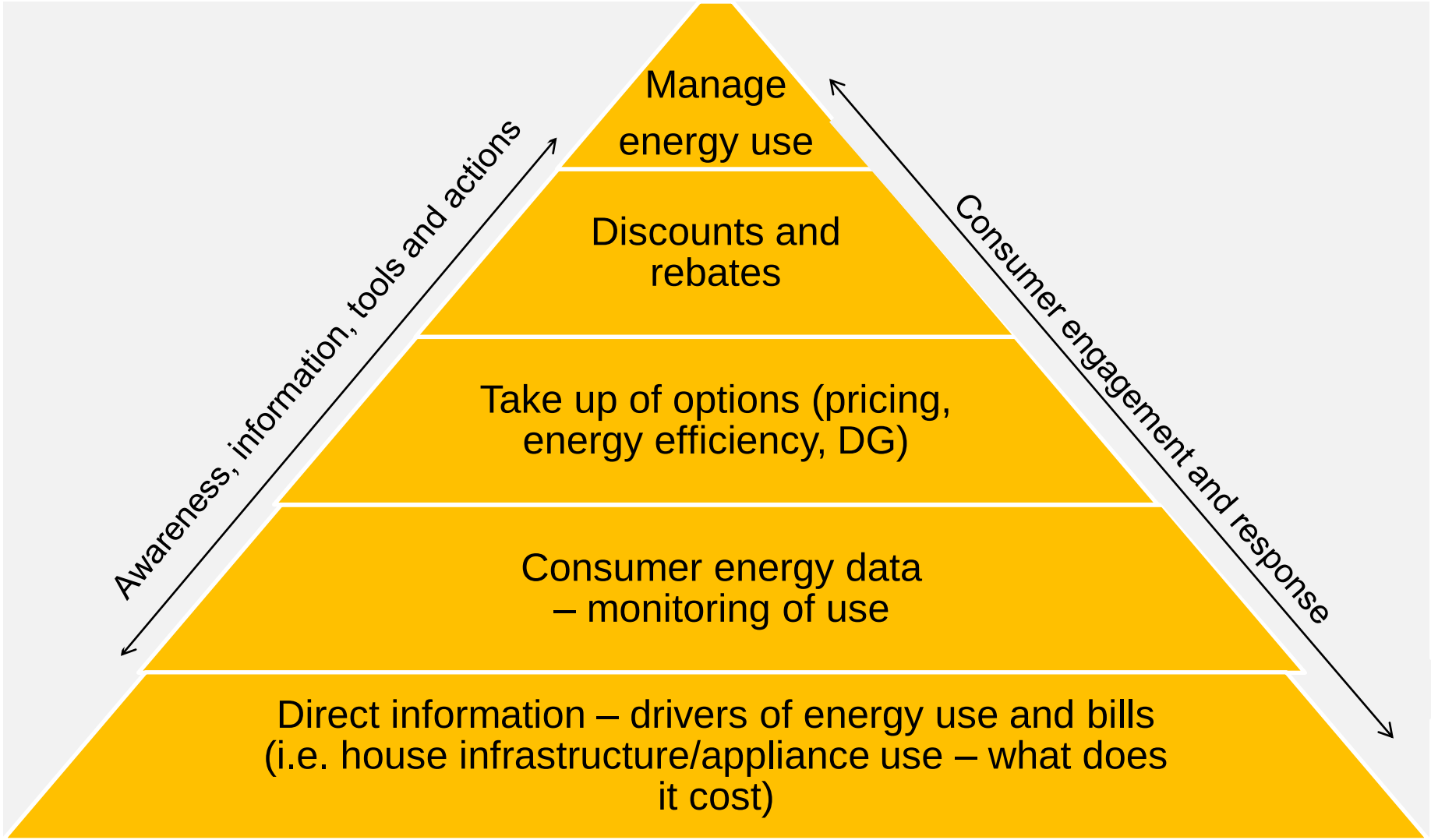
Source: Futura Consulting, *Investigation of existing and plausible future demand side participation in the electricity market - Report for the AEMC*, 8 December 2011.

Draft recommendations: potential benefits to consumers

- What are some of the individual actions consumers take in response to more information/pricing and other DSP options?
- What are some of the consumer responses/changes in consumption to DSP opportunities experienced in pilots and trials?

Ultimately, consumers, given the right information and tools, will be in the best position to decide what course of action is appropriate for them to manage their use and bills.

Informed consumer choices – managing energy use



Examples of consumer actions- residential and small business sector

Information/energy efficiency measures

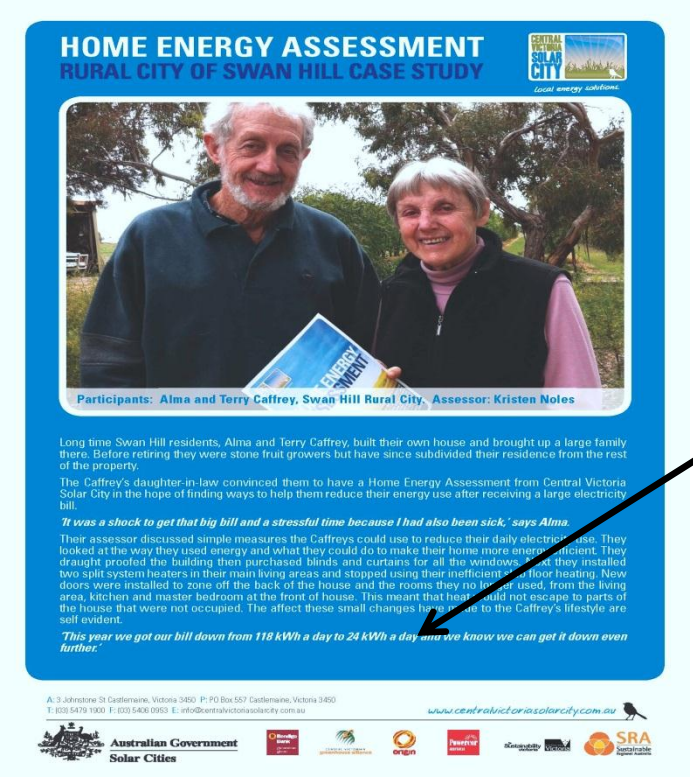
• Seal gaps to prevent draughts of house	• Covers for exhaust fans
• Purchase blinds/curtains	• Underfloor or roof installation
• Turn off appliances at the wall	• Turning off extra fridges/freezers
• Better use of appliances (i.e. kettle)	• Change slab floor heating to split system

Examples of consumer actions – residential and small business sector

Switching to different retail tariffs – time of use/critical peak rebates/incentives

• Purchasing timers and setting them to appliances	• Go for a walk
• Switching dishwasher and washing machine time of use	• Take kids to the pool
• Charging laptops, phones etc overnight	• Go to shopping centre or movies
• Use bbq rather than stove	• Turn down air conditioner a few degrees
• Change pool filtering time or install energy efficient pool pumps with variable speed drives	• Installation of PV/Solar hot water • Hang clothes on line rather than use dryer

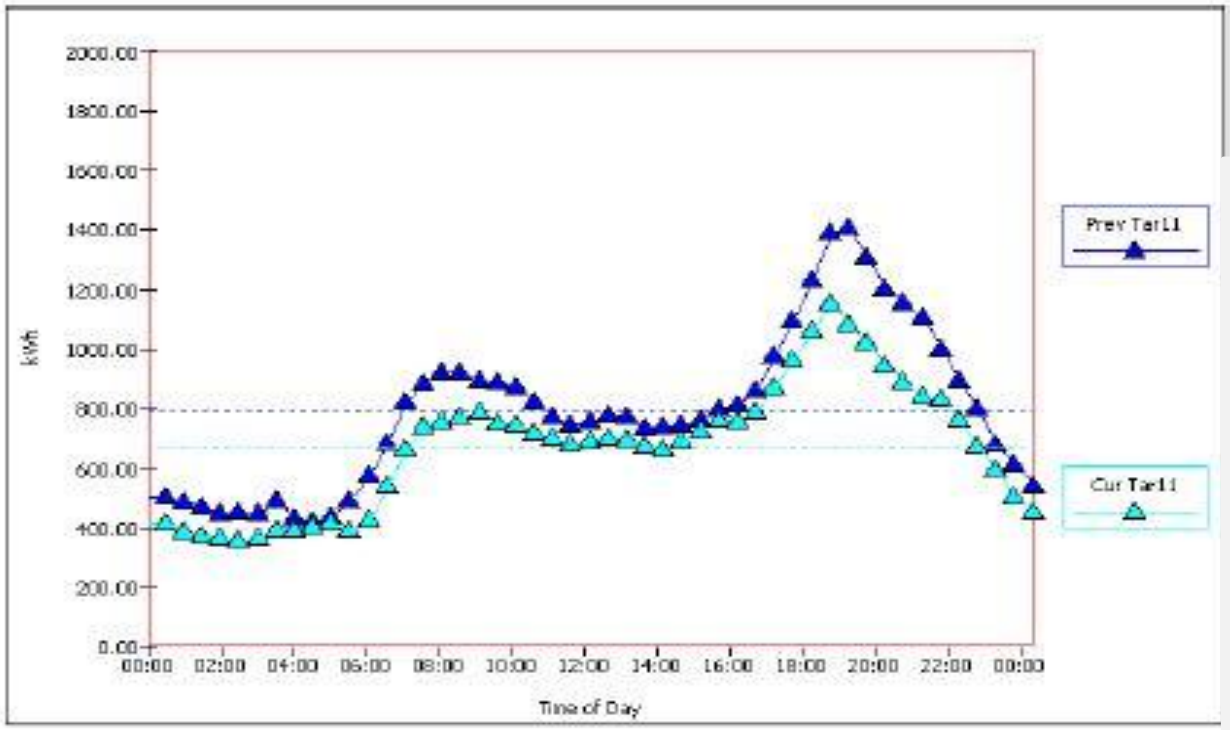
Consumers can benefit – case studies



Energy reduction DSP options reduced bill from 118kWh to 24 kWh a day

Taking up EE options and changing retail tariff to ToU – saved $300 off last quarterly bill.

Consumer responses – what is possible?



Source: Ergon Energy. *Peak Demand Reduction Trial June 20, 2011 Monthly Report – Solar Cities Ta Trial 1.* 2011.

Ergon Energy solar cities project – Magnetic Island peak demand reduction tariff rebate trial (2010/11)

- Rebates offered

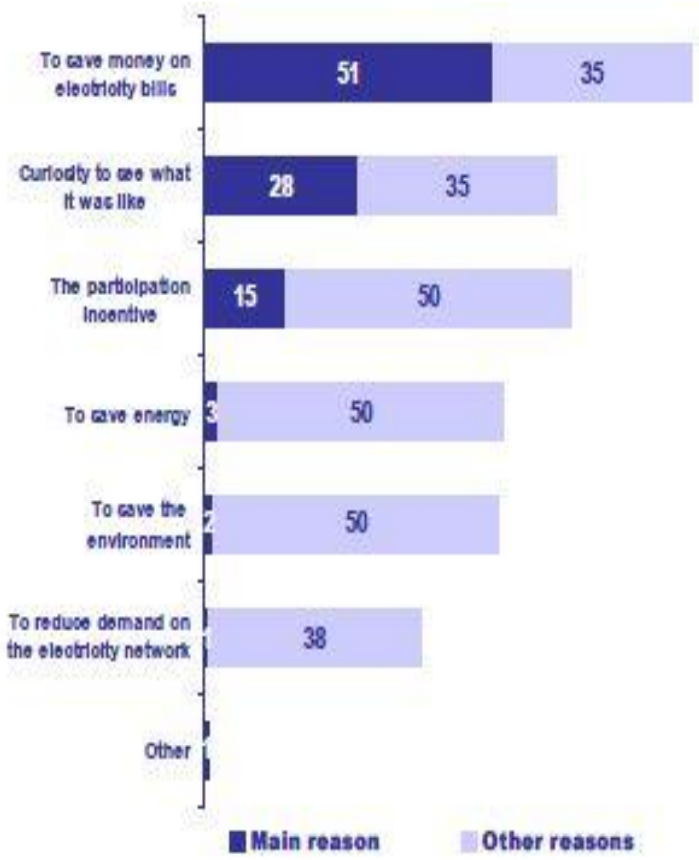
- 23% peak period (6-9pm) reduction demand (or 1,649kWh)

- 16% (or 5,951 kWh) reduction in total consumption by the group of 84 participants.

Consumer responses – what is possible?

Endeavour energy *PeakSaver* PTR program – summer 2010/11

- Voluntary opt-in
- Received PTR reward
- Early stages demonstrated 29 - 51% reductions in peak demand on notification days.
- kVA demand reduction per participant (1.7 kVA as compared to 1.0 kVA).



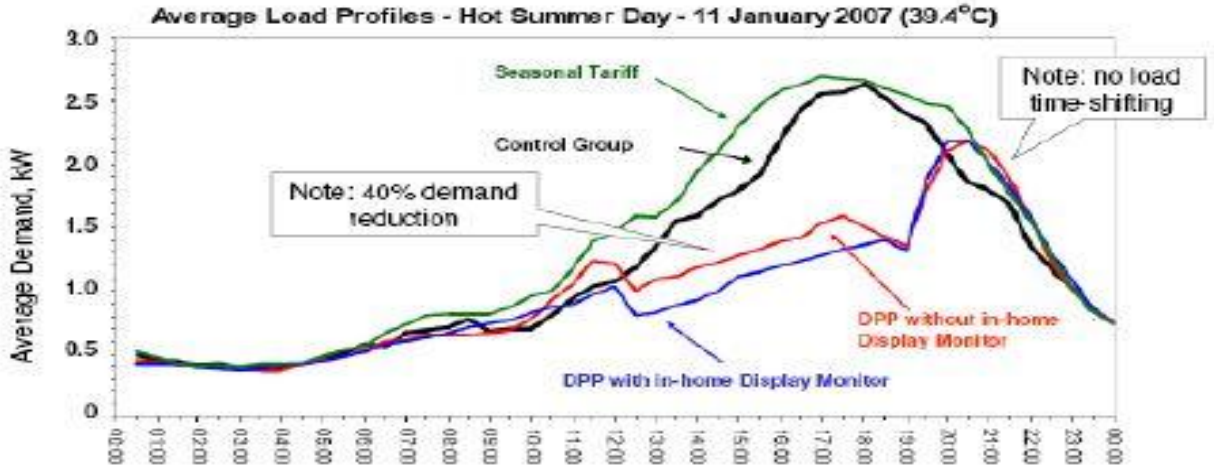
Source: Endeavour Energy. *PeakSaver & CoolSaver RESIDENTIAL DEMAND MANAGEMENT PROGRAMS Year 1 Evaluation Report.* (Cut-down Version). 2011.

Consumer responses – what is possible?

Endeavour Energy – Western Sydney dynamic peak pricing trial (2006/08)

- Paid incentive to participate ($100)

- Participating residential consumers reduced peak demand by around 30% to 40%.



Consumer actions – commercial/industrial sector

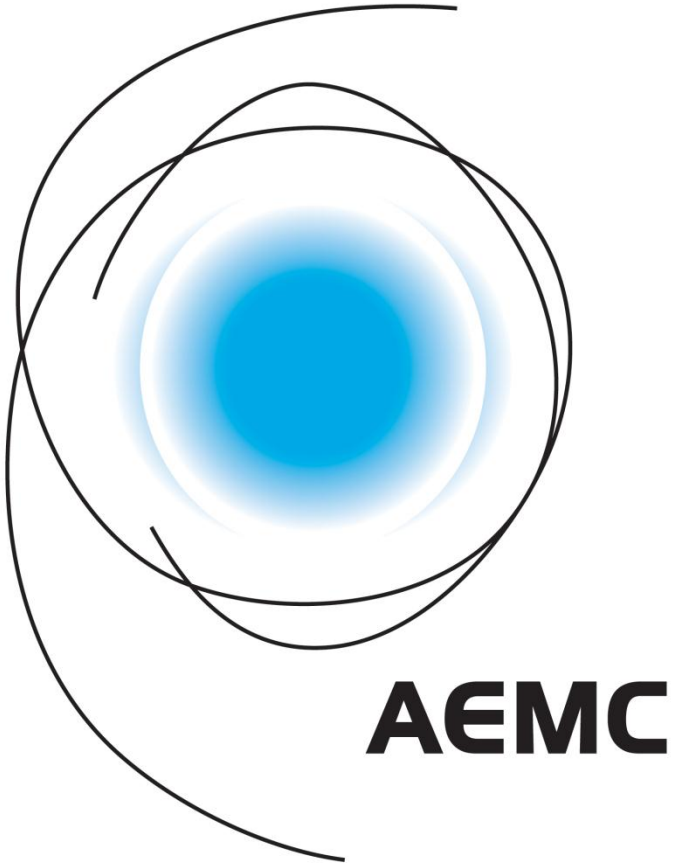
- We have proposed a demand response mechanism
  - Allows consumers to be rewarded for changes in demand via the wholesale market.
  - Resources treated similarly to generation, and paid the wholesale electricity spot price for reducing demand at peak times.
- Large industrial and commercial users are likely to take up such an option in short – medium term.
- Over time as knowledge and confidence builds - likely to see a greater range of participants.

Consumer actions – commercial/industrial sector

- Actions by C&I could include:
  - Advanced metering systems to shut down or lower store loads
  - Automatic energy management system responses to a pre-programmed demand response strategy
  - Shutting down the blast furnace, or using a behind the meter generation
  - Building automation systems randomly turn off fans in many buildings causing chillers to back off and pumps to ramp down
  - Using HVAC and lighting systems as a demand response (commercial).
  - Installation of solar PV (schools, factories)
  - Energy efficiency measures

Findings of modelling – benefits of draft recommendations

Mr James Allen, Frontier Economics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