AEMC

Access and Communication Standards Review

Consumer perspective on smart meters

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February 27th 2014

Consumer and smart meters

- what smart meters mean to consumers
- what services consumers expect
- what are key concerns or key risks facing consumers
- if there were little or no regulation of access arrangements, what are the risks to efficient outcomes for consumers.

What is a smart meter?

As smart meter is a

- remotely read (two way communication with energy business/es)
- interval meter (measures and records energy at the time it is used)
- with a suite of enhanced functions (intended to deliver benefits for consumers and energy businesses)


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50
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What do smart meters mean to consumers today?

Portion of consumers	Meaning of smart meters
14%	A thing they had to buy so to install a solar system
5%	Aware of smart meters, but no strong views and have more pressing things to think about right now
30%	%$#*$&@ SMART METERS!! (possible Vic. bias)
50%	Huh?
1%	Cool! Here is a tool with which I can sustainably manage my energy use and improve the electrical system, potentially saving us all money in the process. Where do I sign?

**Please note the above data is not evidence-based and is for illustrative purposes only.*

Most consumers will initially acquire a smart meter solely for energy billing...

Time of Use (ToU) pricing (aka flexible pricing, time-variant pricing, time-of-day pricing)

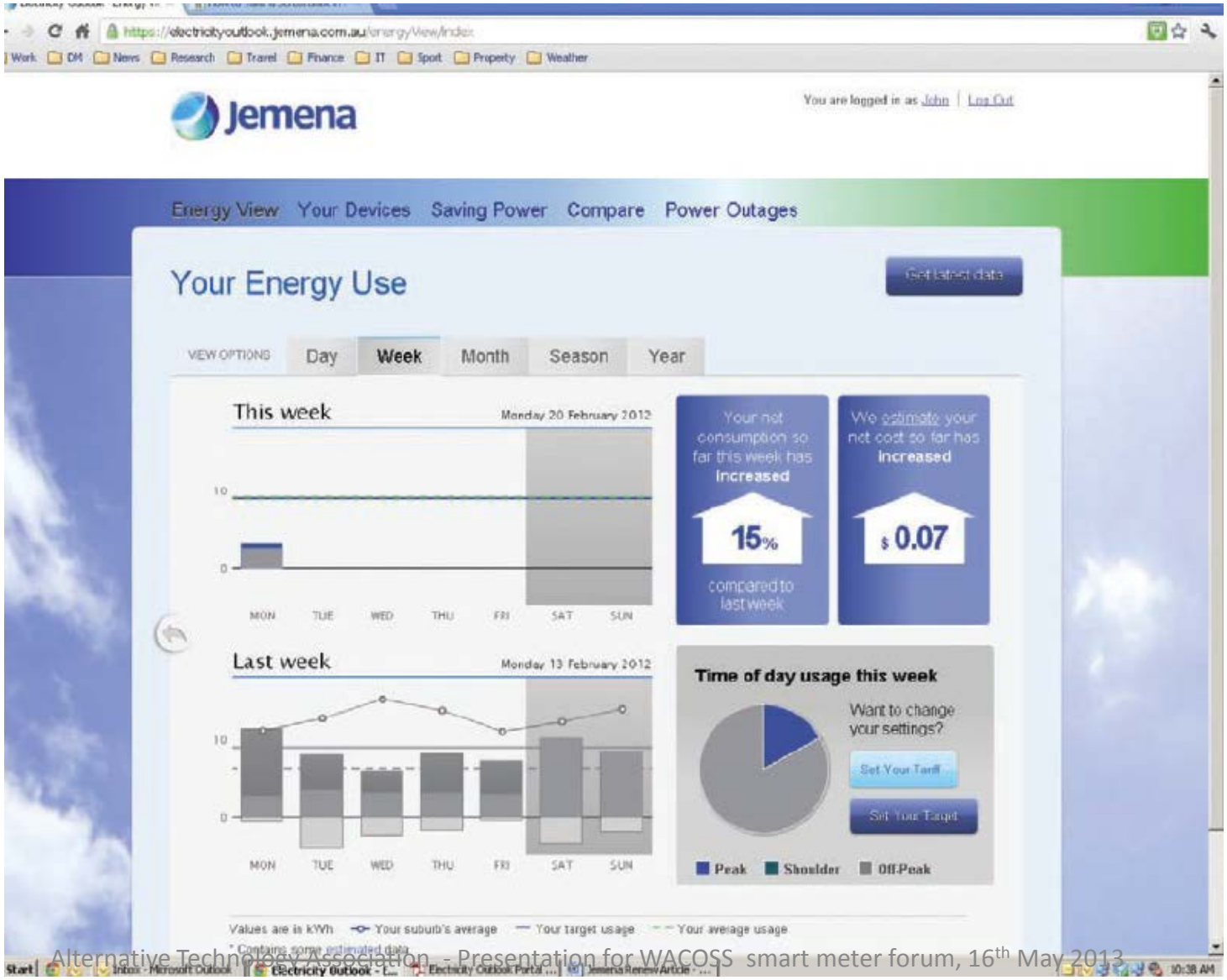
- Different prices for energy used at different times of day, week and possibly year
- More reflective of costs to build networks and operate generators to meet demand
- Typically ‘three part’: Peak, shoulder, offpeak
- May include ‘Critical Peak’ or ‘Capacity’ price

... oblivious to advanced functions

- Information and feedback for consumers
- More effective demand side participation (improved cost and sustainability)
- More efficient supply side expenditure
- More reliable supply, improved power quality
- Improved fault finding, faster restoration
- Improved safety

In Home Displays

Online Energy Portals



Smart meter functions and services

Online energy portals (aka web portals)

- In some ways similar to IHDs
- Give access to historical data
- Can help reduce wasted energy
- Can display messages, notifications
- Detailed, interactive analysis of long term consumption, and costs

Smart meter functions and services

Online energy portals (cont.)

- Help consumers choose between flat and ToU
- Help ToU consumers benefit from load shifting
- Help consumers compare retailers
  - where competitive retail exists, and
  - when portal not provided by a retailer
- Includes targets, benchmarking and advice
- May aid financial counsellors, energy auditors

Smart meter functions and services

Direct Load Control (DLC, aka load control) is the

- Management of certain consumer loads
- by the utility, retailer or other third party
- to alter demand on network or system
- in return for financial incentive for consumer.
- DLC can be direct switching of appliance, or
- telling appliance to manage its consumption

Smart meter functions and services

Loads controlled by Direct Load Control include

- Pool pumps
- Electric hot water
- Air conditioners (smart thermostat or AS4755)
- Bore pumps
- Smart washing machines, driers, dishwashers
- Electric vehicles

Smart meter functions and services

Direct Load Control (cont)

- Direct financial benefit to participating homes
- Can lower network and energy market costs
- therefore benefiting all users through lower bills (assuming the incentives are balanced)
- Can reduce impact/frequency of blackouts

Smart meter functions and services

Direct Load Control (cont)

- Can often be done without impact on the consumer, even without consumer noticing
- Not suitable for all consumers though
  - eg DLC of airconditioners could be
  - fine for healthy consumers in efficient homes
  - disastrous for consumers with certain medical conditions, or in poor quality housing stock

Smart meter functions and services

Smart appliances

- Appliances that manage their own energy use
- Use less during peak times, shift to offpeak
- Can be manually overridden
- Some can receive signals for DLC
- Will suit be good for consumers on ToU tariffs
- AS4755 on the way, but not a lot available yet

Smart meter functions and services

Supply Capacity Limiting (SCL, aka supply capacity control) is used to limit the energy consumption for a household

- Can be set at a predetermined level, like a sophisticated rubbery circuit breaker
- Can be adjusted for different times of day
- Can be changed remotely, quickly if needed
- Can avoid blackouts and speed up restoration

Most advanced services are not available today to consumers

- Metering is still pretty dumb…
- … even in Victoria (networks are putting some network services to good use, but…
- DLC, SCC etc are yet to be introduced)
- Today's immediate consumer drivers for installing smart meters (outside of Vic) are rooftop solar and flexible pricing

What if access arrangements aren't regulated?

- Consumers are interested in the services that meters enable, not meter functionality
- Consumers do not understand the implications of choices of metering and future communications capabilities
- Ensuring that consumers can access advanced services in the future is key to effective future DSP

What if access arrangements aren't regulated?

- Lack of access for some consumers to some services. This presents equity issues, confusion and risk for consumers
- Inefficiency (meter churn, asset stranding)
- Lack of innovation, with potential barriers to new entrants and services
- Lost opportunities to improve the performance and efficiency of energy networks (outside of Vic)