



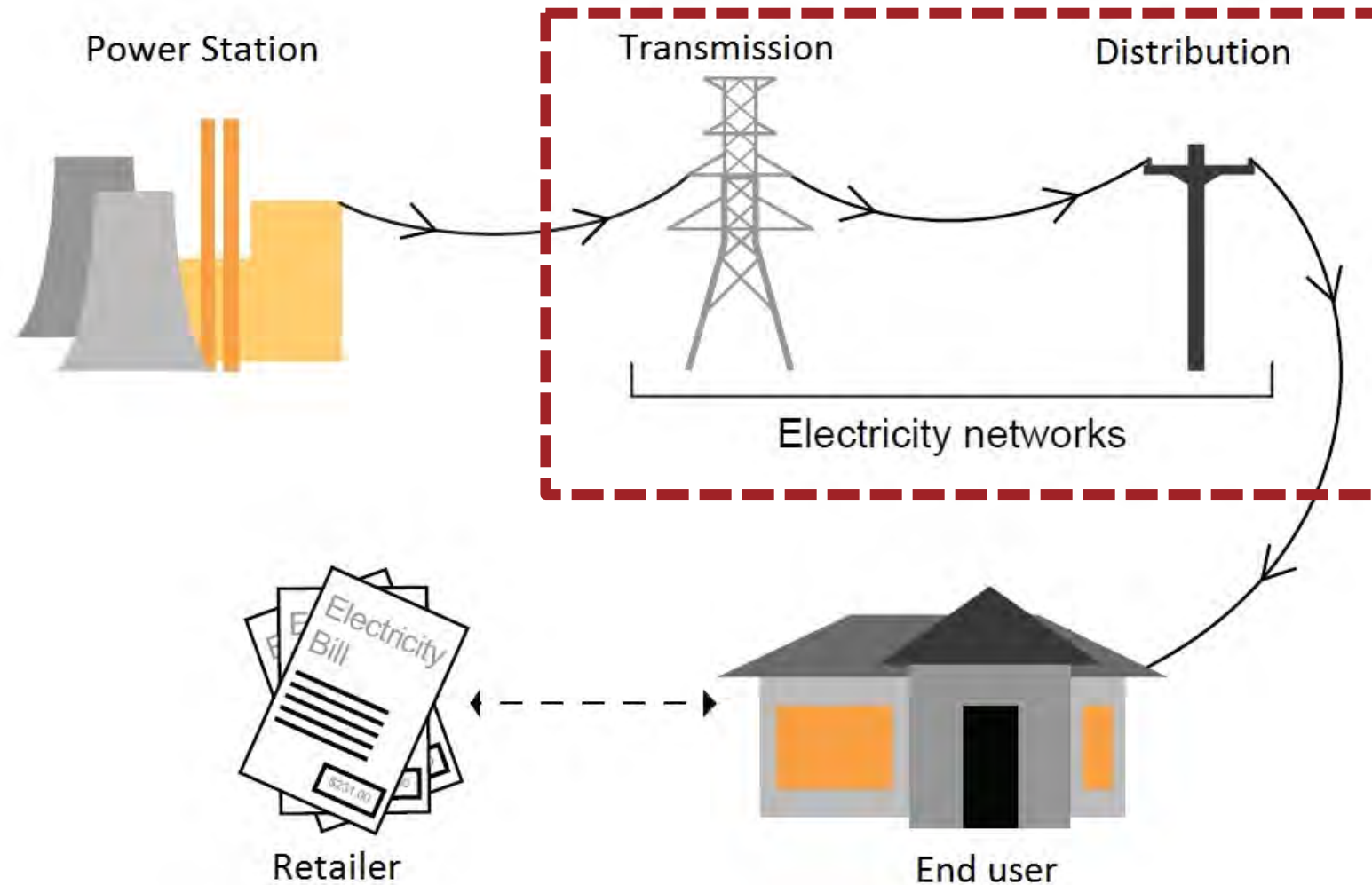
Fairer pricing for power

Lucy Carter

25 June 2014

The power system

Components of the energy delivery system

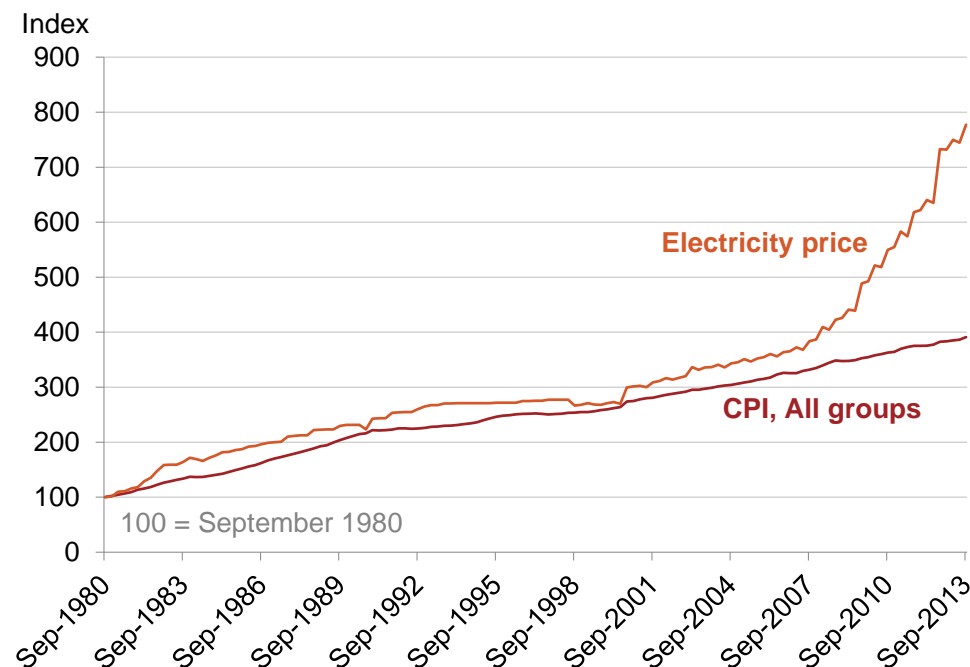
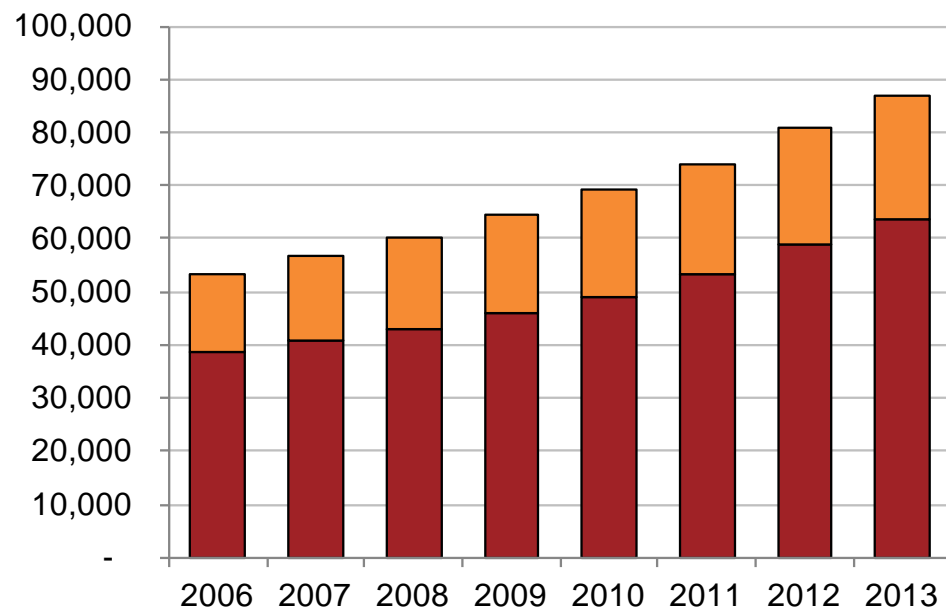


Network spending and rising power prices

Rapid increases in network spending have been driving retail power prices

Network costs grew by 64% between 2006 and 2013...

\$ million (real \$2012-13)



...and electricity prices grew by 75%.

'Shock to the system' recommendations

Strategies to reduce network costs



Fix network tariffs

Reduce unnecessary expenditure

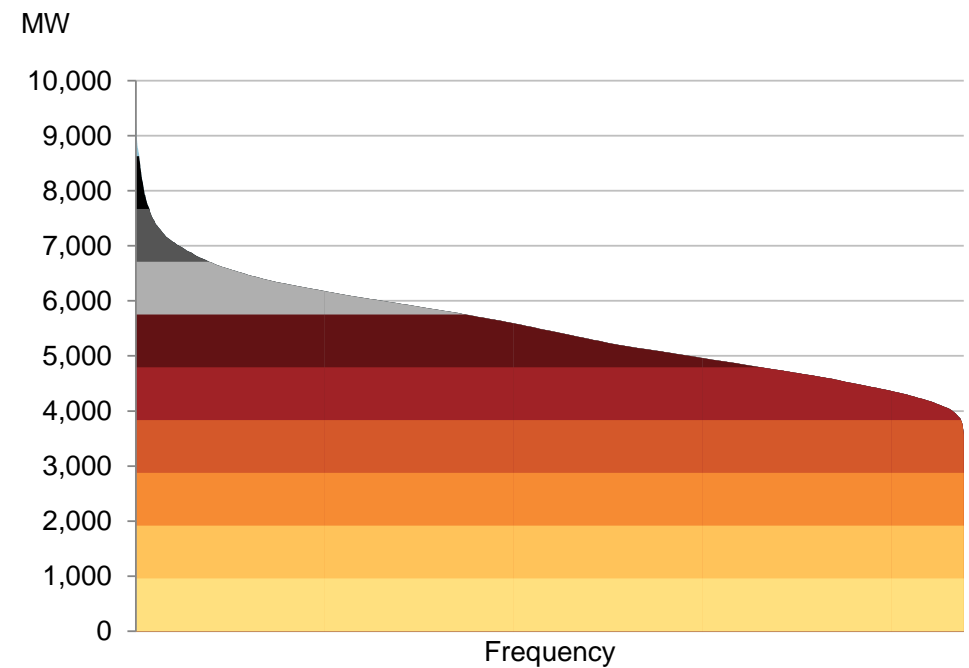
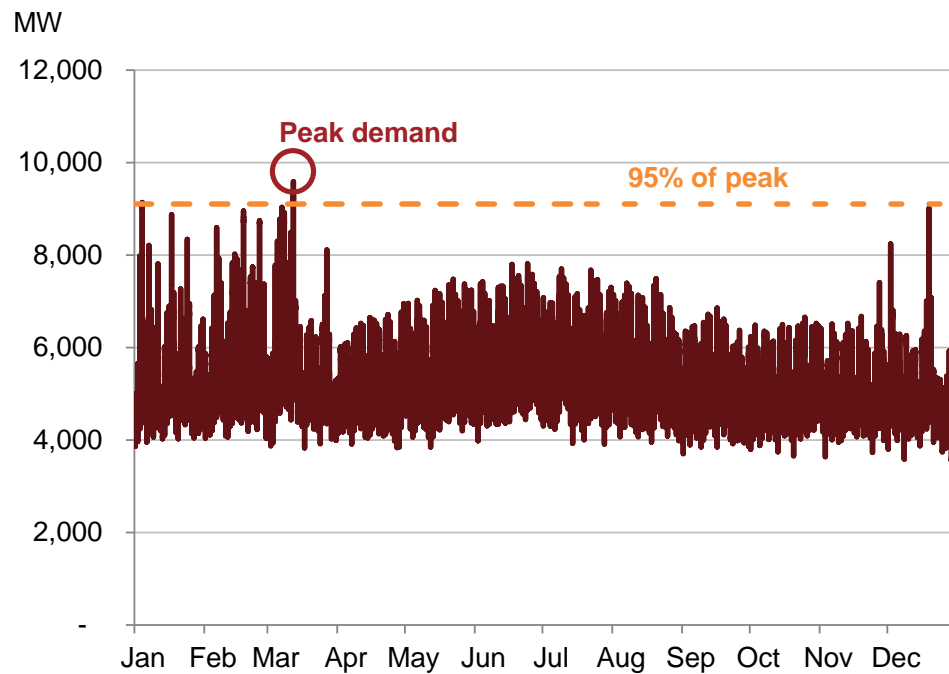
- rates of return
- ownership
- reliability standards
- capital spending

Cut network asset values

- regulatory risk
- who pays?
customers, taxpayers or investors

Electricity demand rarely approaches the peak

In 2013, demand came within 5 per cent of the peak for only 6 hours



The problem with networks

For the AFL grand final, MCG ticket prices are higher and sales are limited

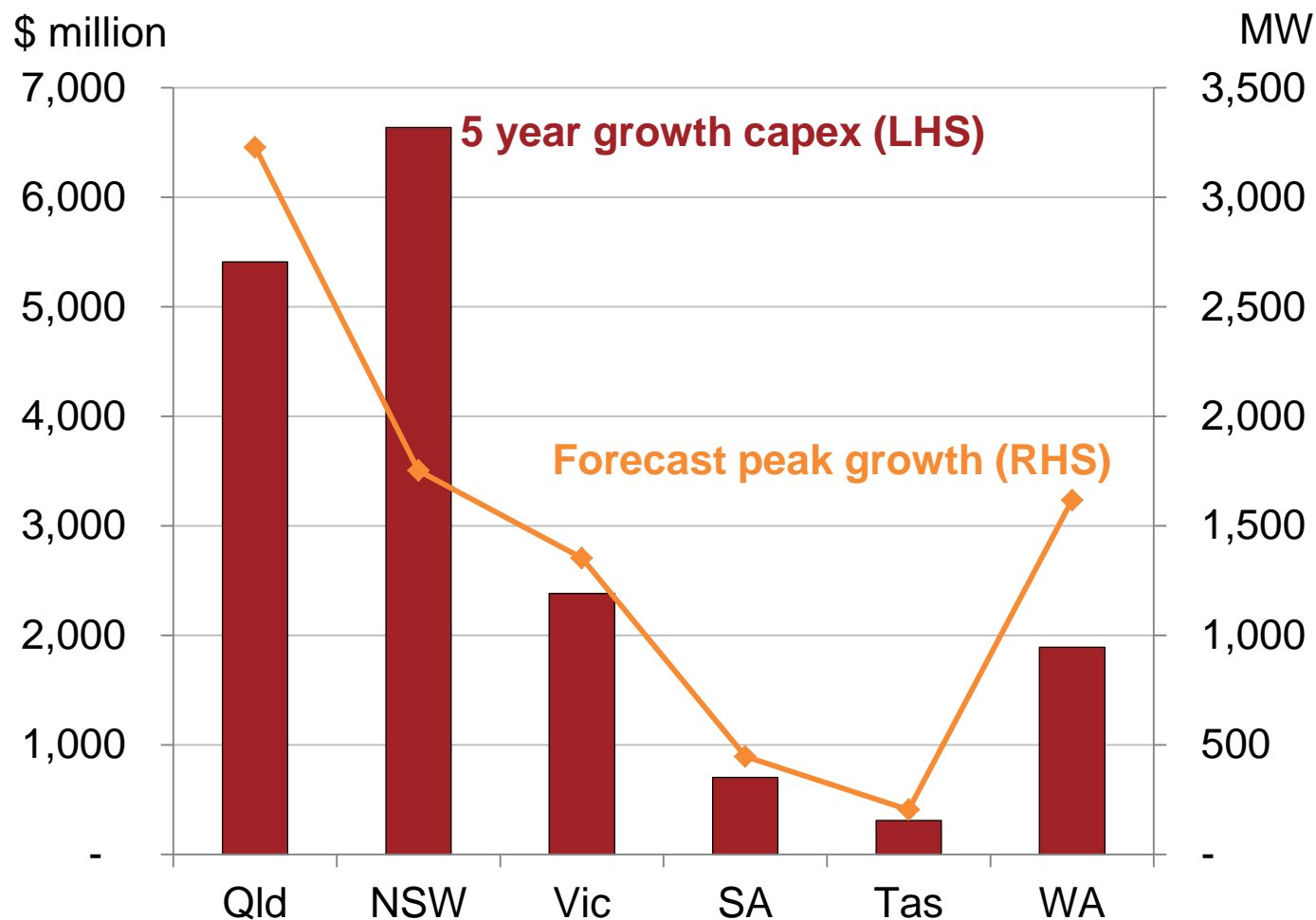


Source: Sheko, Alexander (2010), 'The Melbourne Cricket Ground during the 2010 AFL Grand Final'

Under the regulated model, more infrastructure drives higher prices

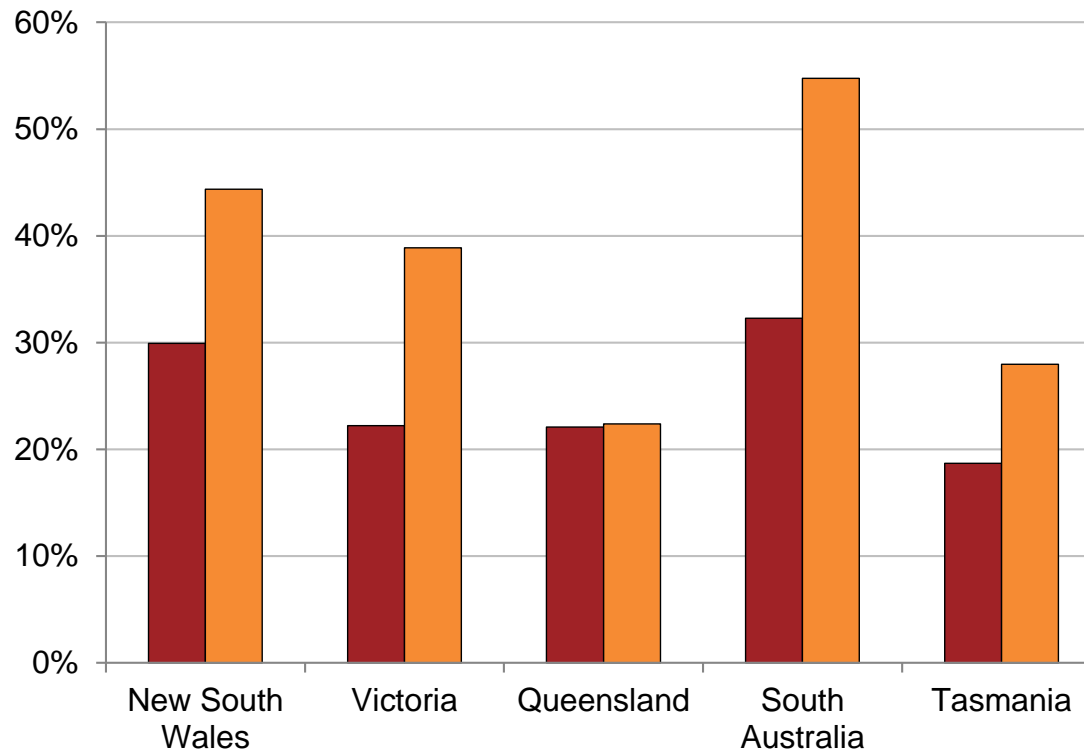
Peak demand expectations drive growth

Actual growth capex vs forecast peak demand: 2009 to 2013



Why look at households?

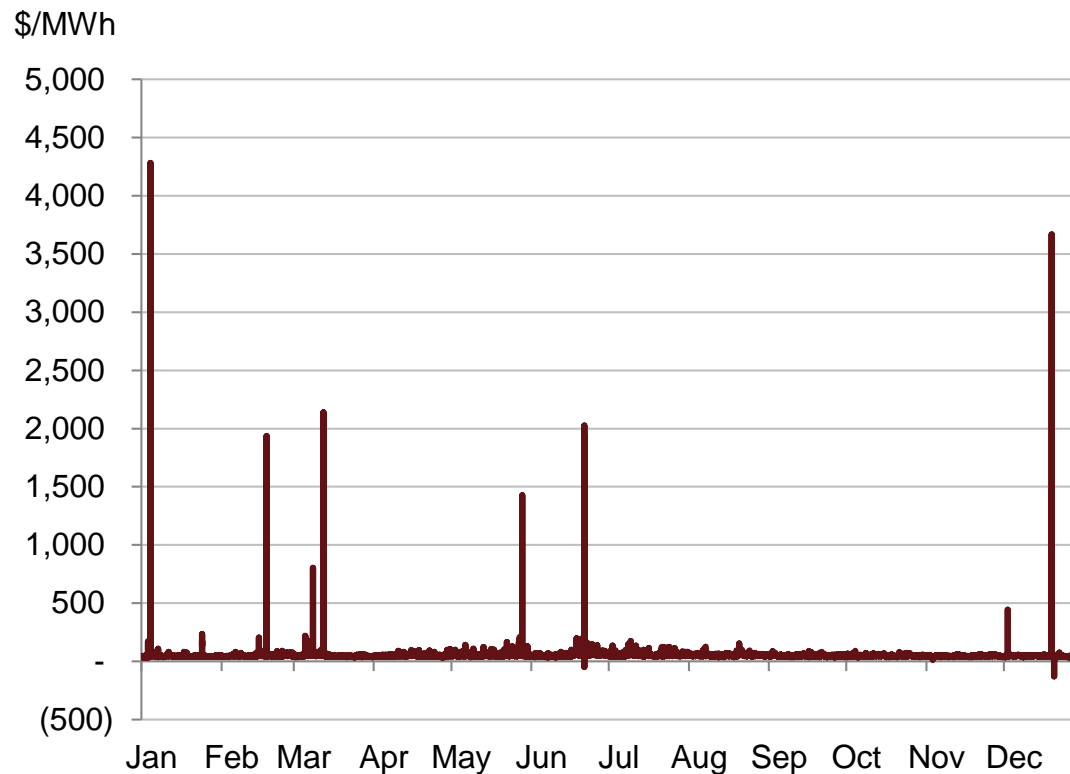
Households are large contributors to peak demand...



...and many large businesses already have more efficient traiffs.

The solution: charge more at peak times

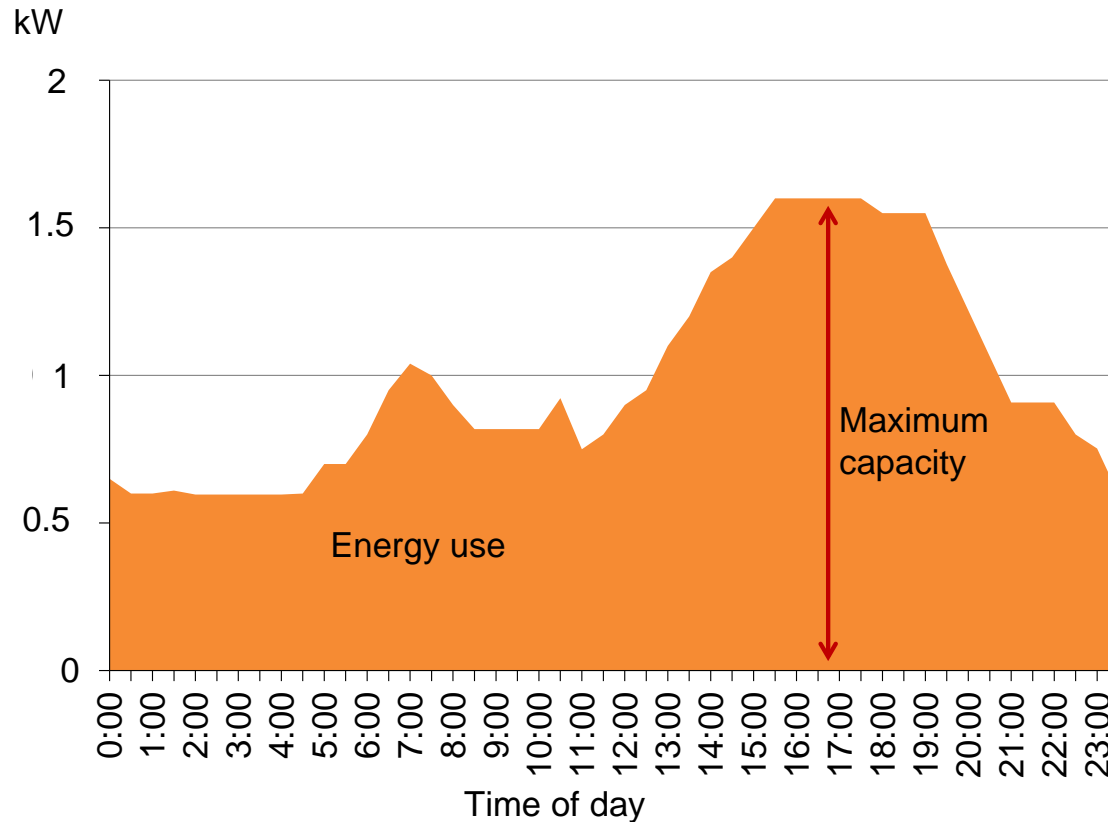
Wholesale electricity is sold into a pool market....



... prices rise dramatically at constrained times.

Charge for capacity, rather than energy

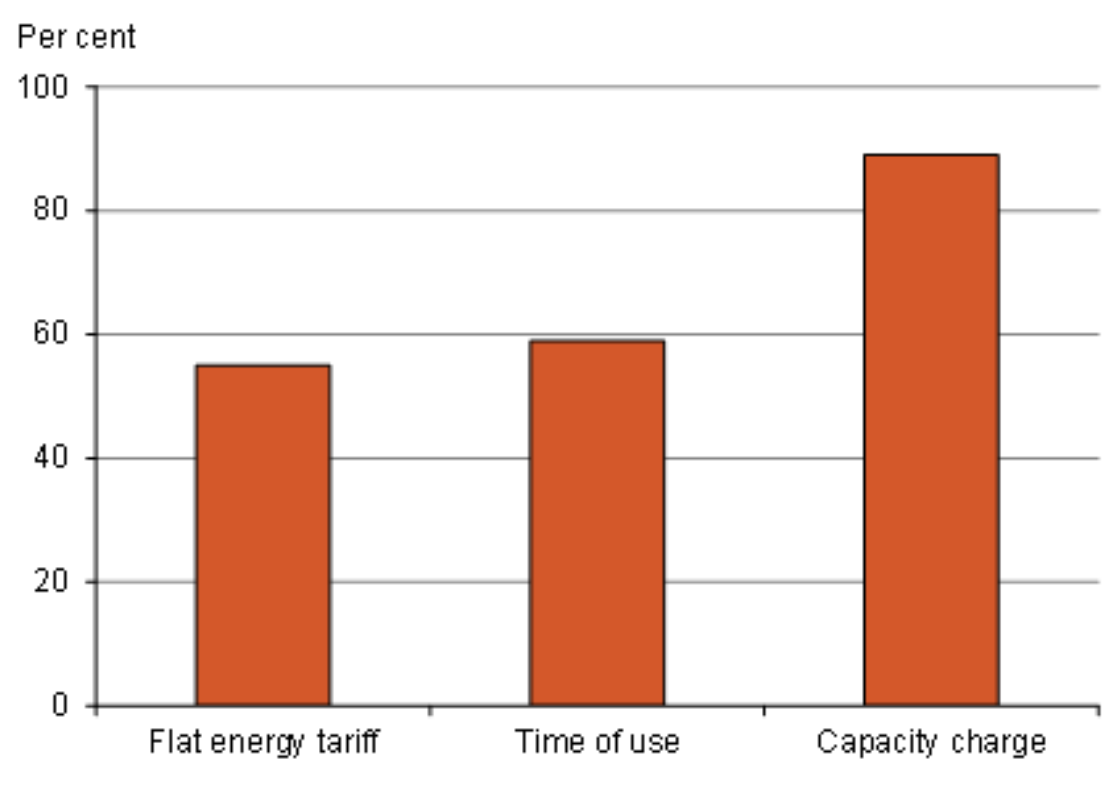
Customers would be charged based on their maximum annual use



- Encourages customers to become aware of their maximum use.
- No change in the total amount paid by customers under a revenue cap.

Capacity charges better reflect peaks

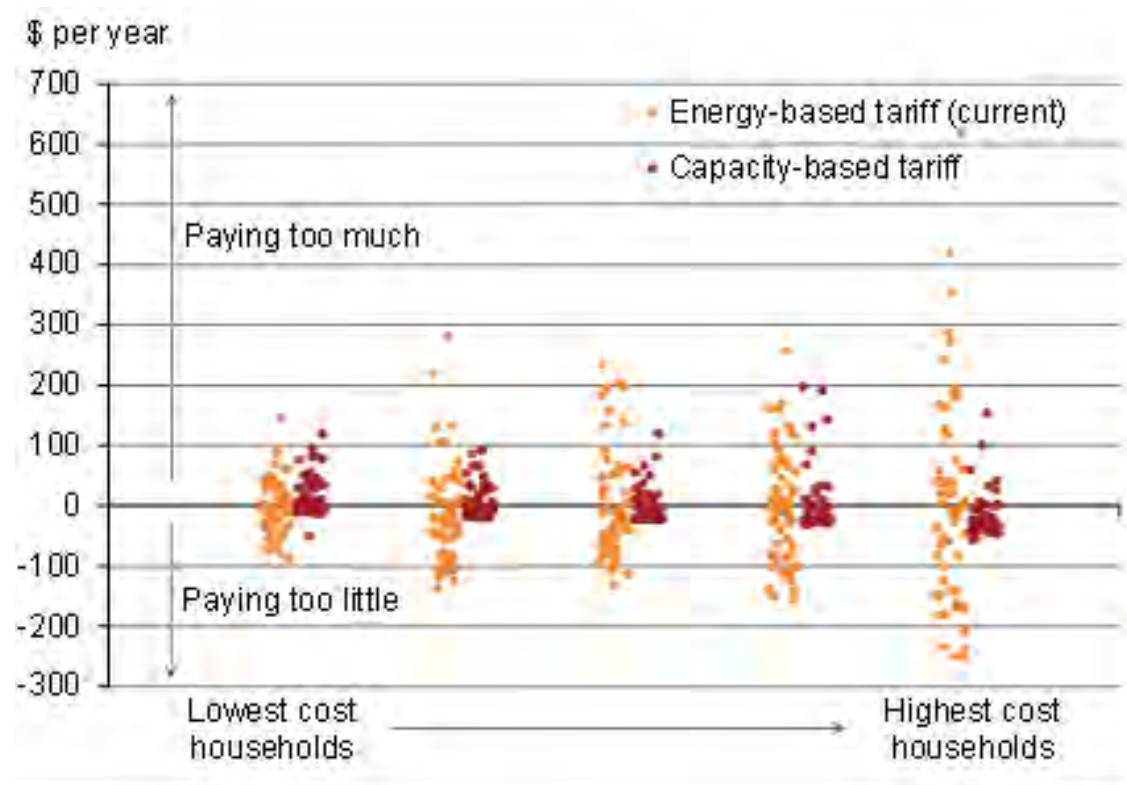
Capacity has a stronger correlation with peak demand than energy use



- Capacity charge from 6am to 11pm on weekdays
- Results modelled using the top half hour of household use per year.

Capacity charges make power prices fairer

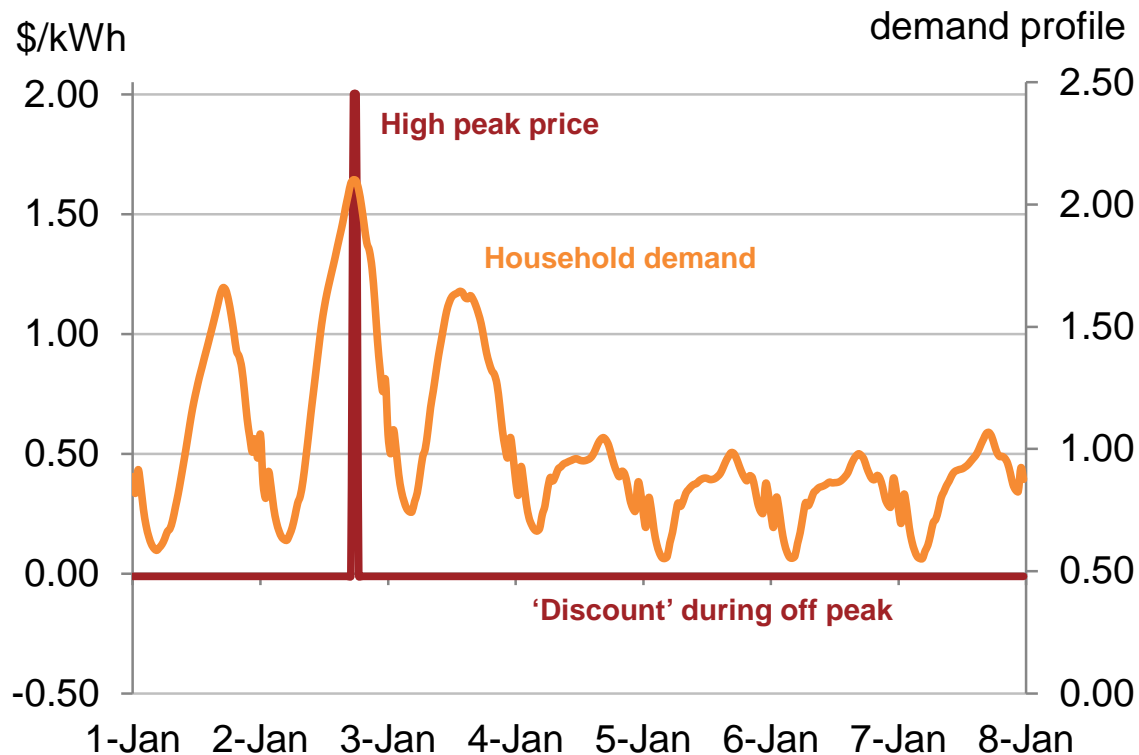
Energy charges mean some households pay too much, others pay too little



- **Now in Victoria, efficient users of the network subsidise others by an average of \$150 a year.**

Critical peak pricing to be used in some locations

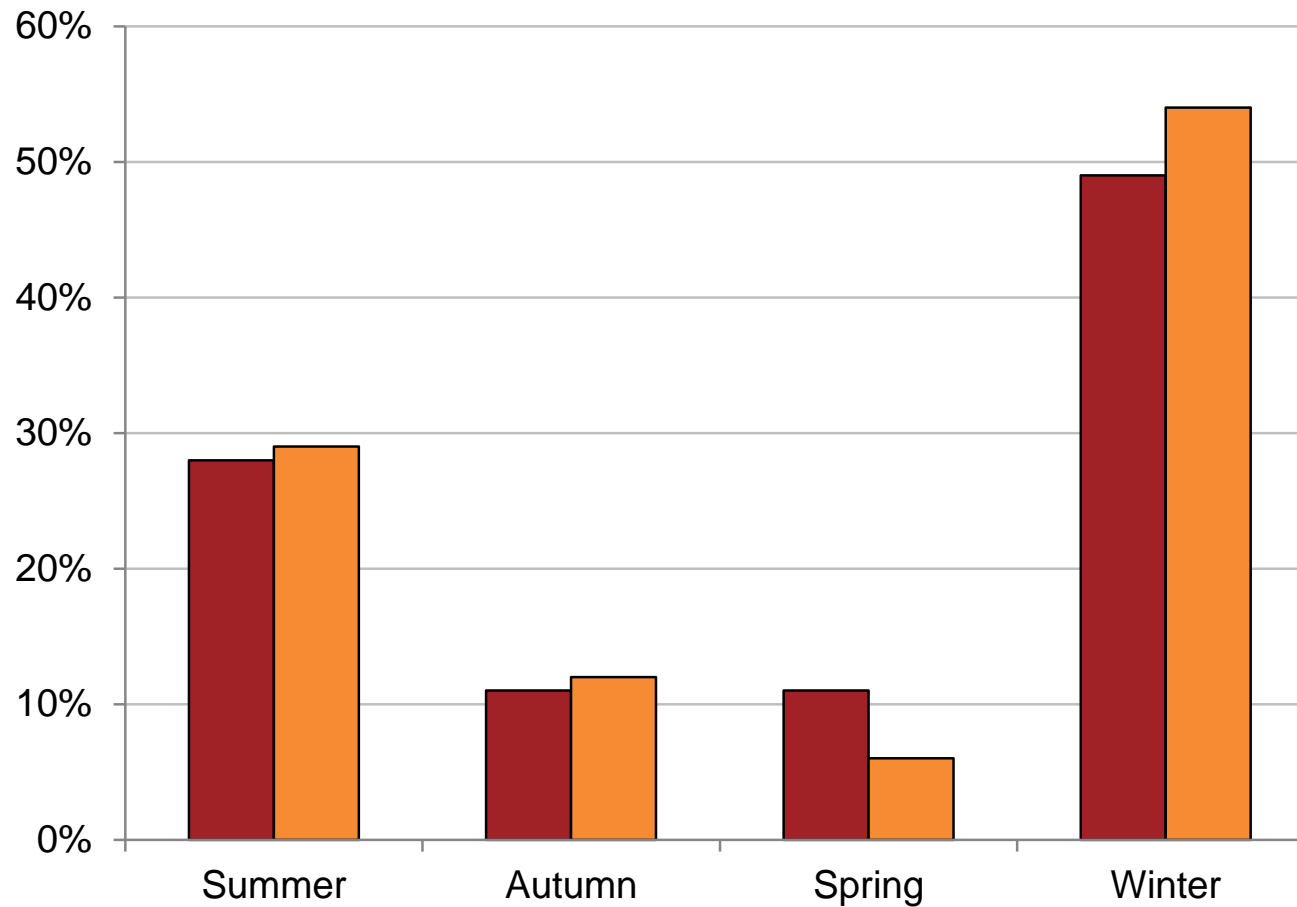
Alongside capacity charges, CPP can be designed to be revenue neutral



- **CPP operates as a 'non-network' solution to a capacity constraint.**
- **Only applies in constrained areas**
- **Cost-benefit test to justify metering investment**

Household maximum vs system peaks

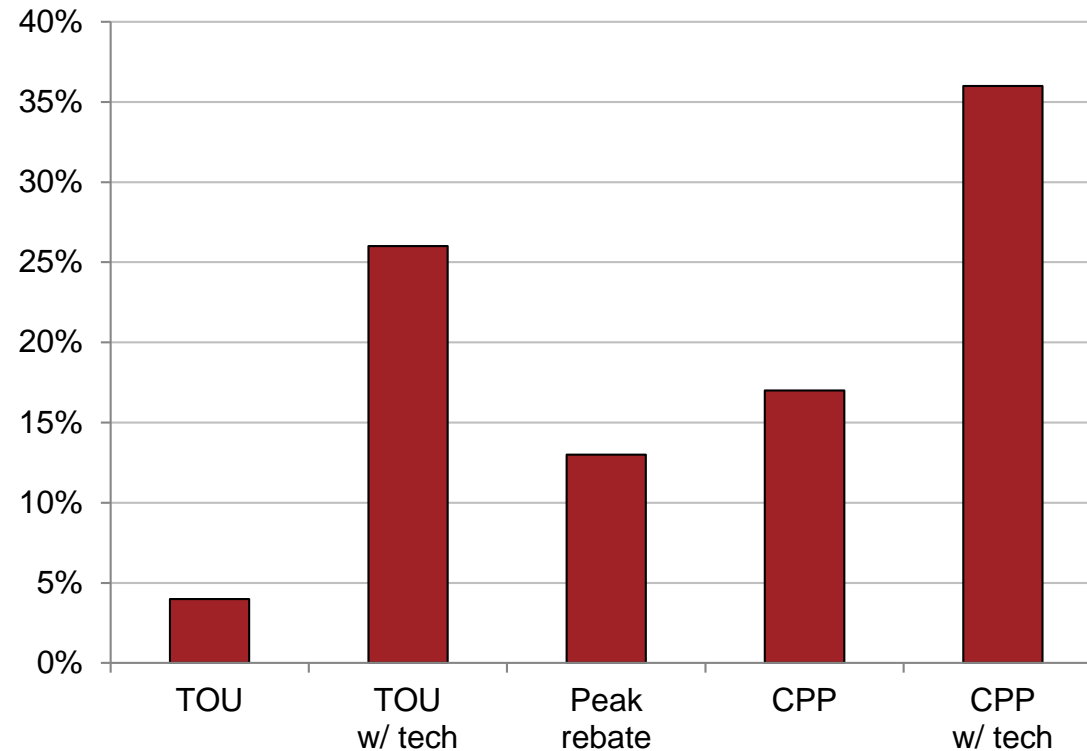
Two data sets show maximum demand is unlikely to coincide with peak demand



Source: Passey, R., Noone, B and Watt, M, (2014)

CPP has proven effective in reducing peak demand

Where a network is under strain, a sharper price signal is warranted



Source: Faruqui, A., and Sergici, S. (2010)

- **CPP results in a 17% decline in peak demand, or 36% with technology.**
- **Results may be lower without voluntary participation.**

Key advantages of the proposed solution

More cost reflective

The price each customer pays reflects pressure they put on the system.

Customers can respond

Customers that reduce their maximum consumption pay less (unlike, say, with fixed charges).

Networks recover regulated revenue

Recovers the cost of building the network, even with falling energy demand.

Resilient to future technologies

A design that is not technology specific allows for future changes (eg, more electric vehicles).

Considers metering availability

Capacity can be billed on estimates where interval meters are not available. Pricing design would support a staged metering rollout.

Barriers to implementation

Retail price regulation

Network solutions will work best where retailers have flexibility to help manage the transition.

Smarter metering

Smart meters are available in Victoria, but not in other states.

Regulatory process

The regulated model means changes occur slowly and may need to fall within 5 year regulatory periods.

Consumer backlash

Customers may find change difficult.

A fairer system will mean some customers pay more.

Transitional arrangements and engagement are critical.

Victorian 'moratorium' on time of use pricing shows the potential for a backlash.