

# Brown Bag Lunch

## BEIS 22 March 2018

# Smart Lessons from States of USA and Australia

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New Thinking For Energy



# Overview

- Australia is an example of where the ‘future’ energy system is already happening
  - Came from one big mistake of traditional regulatory mechanism combined with technology cost reductions; Government / Regulator not waking up to situation / taking action fast enough; plus governance which is difficult to change
- NYS was given mandate by people of NYS after Hurricane Sandy and has proactively torn up rule book to put in place fit-for-purpose governance for sustainable technologies and new ways of system operation / customer wishes / BMs

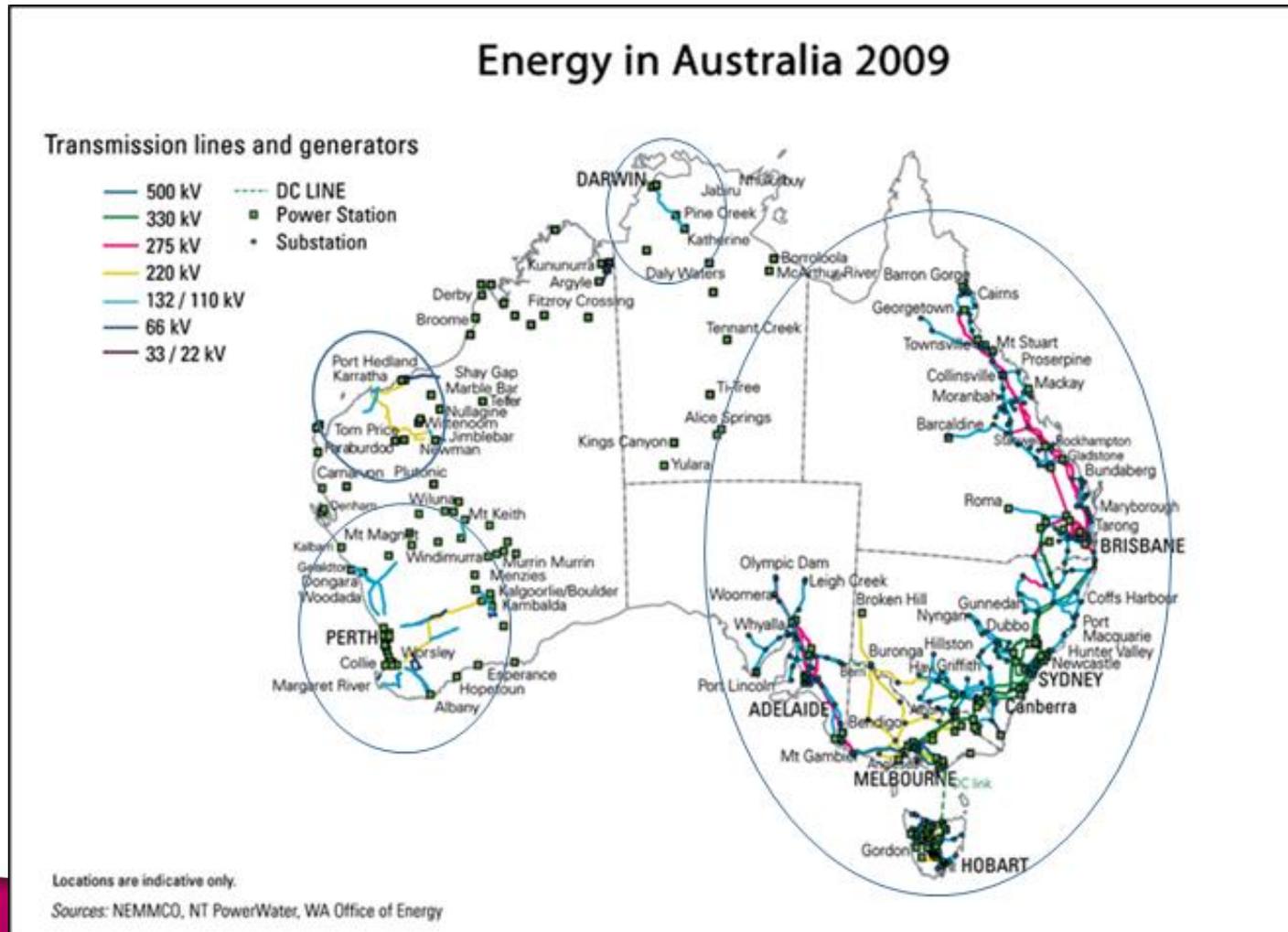
# Australia's 4 electricity markets – these slides focus on the National Energy Market – the eastern States.

## Very complicated governance

(source: forthcoming H. Poulter Australia chapter in

Burger, Froggatt, Mitchell and Weinmann DG book) + H. Poulter Postcards from Australia series with Blog 1:

<http://projects.exeter.ac.uk/igov/postcard-from-australia-sydney/>



# Australia's situation:

- Poor projections for increased electricity demand (they actually fell), led to regulator allowing higher than necessary revenues for T and D for network upgrades – so % of retail price between 42-54%, doubling over 15 year period, and still continuing <http://reneweconomy.com.au/consumers-got-burned-electricity-prices-started-networks-48000/> and <https://energyconsumersaustralia.worldsecuresystems.com/grants/807/AP807-accelerated-depreciation-paper-april2017.pdf>
- Generous early subsidies for PV (ended 2012) + falling pv prices led to murmuration of PV – PV now cheaper than retail price (when calculated on 10 year basis)
- Highest % domestic PV installation in world
- Regulation has not kept up with situation
- Utilities now trying to keep customers but customers essentially now in control because of pv economics

# Australia has States with highest proportion of homes with PV

source: forthcoming H. Poulter Australia chapter in DG book + Postcards from Australia series with Blog 1:  
<http://projects.exeter.ac.uk/igov/postcard-from-australia-sydney/>

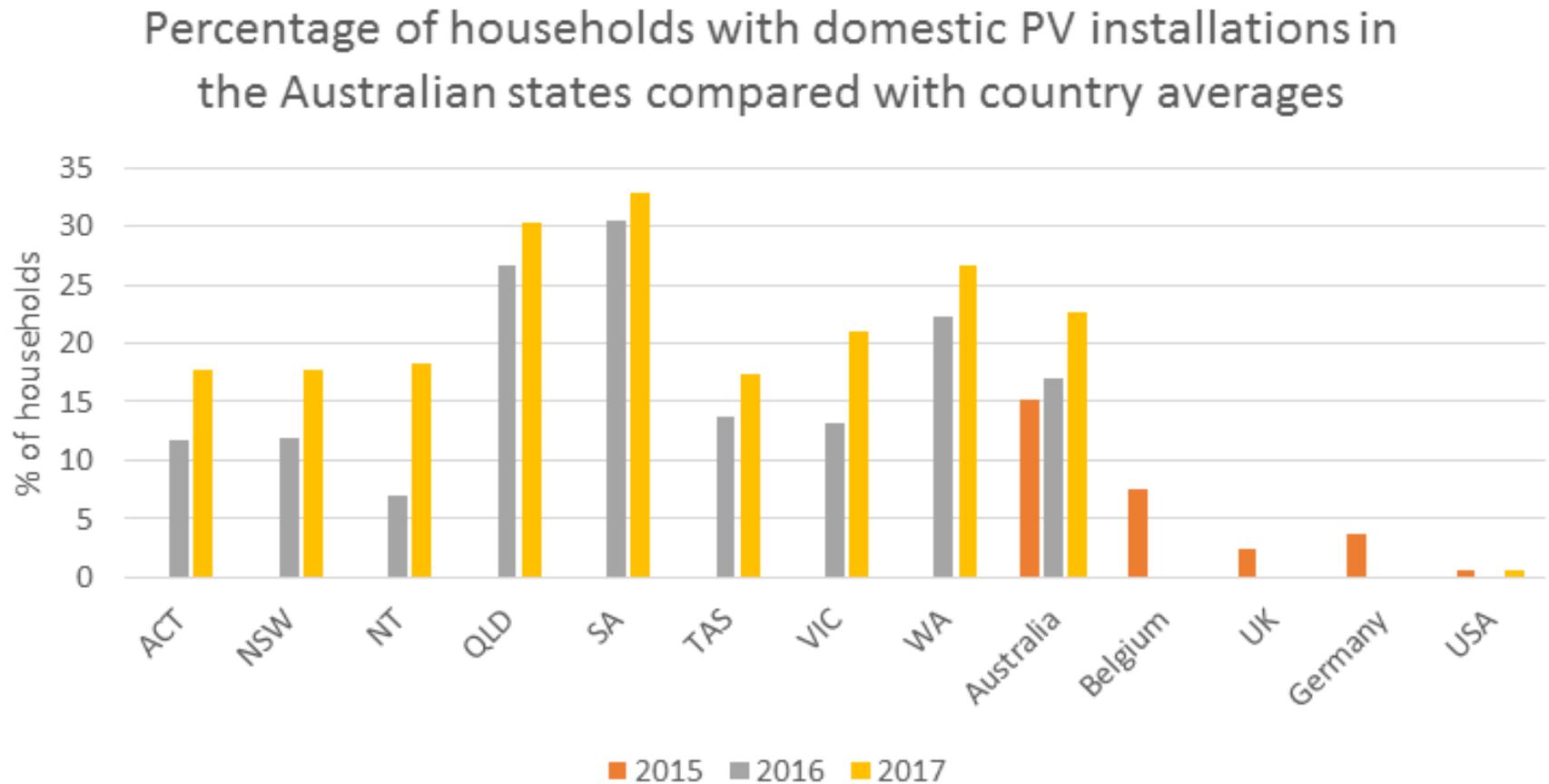
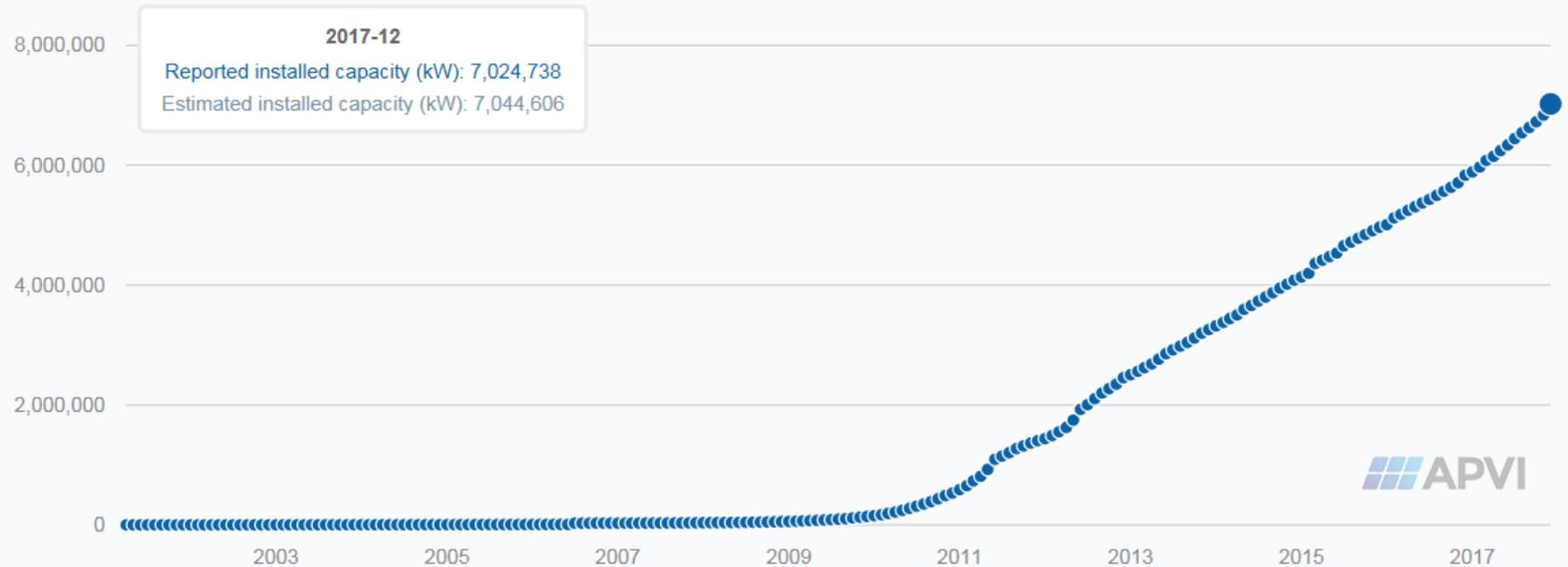


Figure 10 Comparison of state/territories of Australia at year end 2016 (Clean Energy Regulator 2016), end of May 2017 (Roy Morgan Research 2017) and world averages in 2015 (AEC 2016)

# <http://pv-map.apvi.org.au/analyses> increase of PV – it happened quickly

Australian PV installations since April 2001: total capacity (kW)

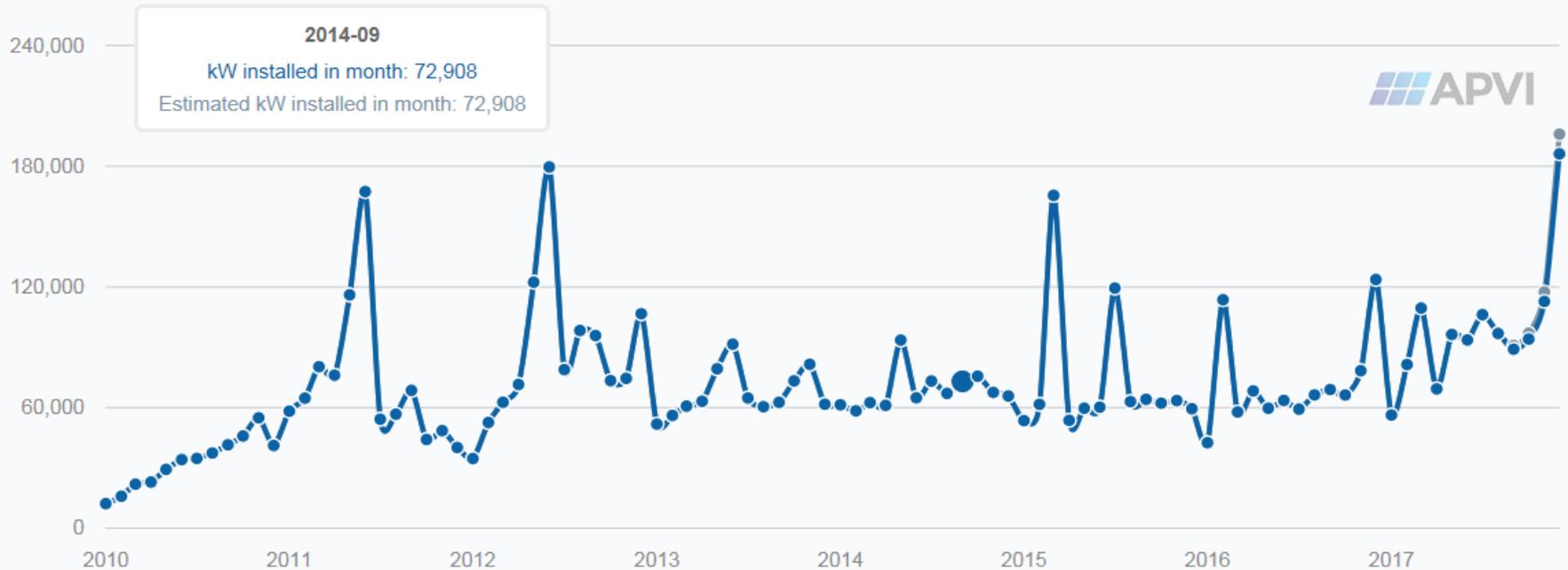


<http://pv-map.apvi.org.au/analyses>

# Early peaks reflect generous subsidies until 2012

Australian PV installations since January 2010: kW installed per calendar month

[Download data](#)

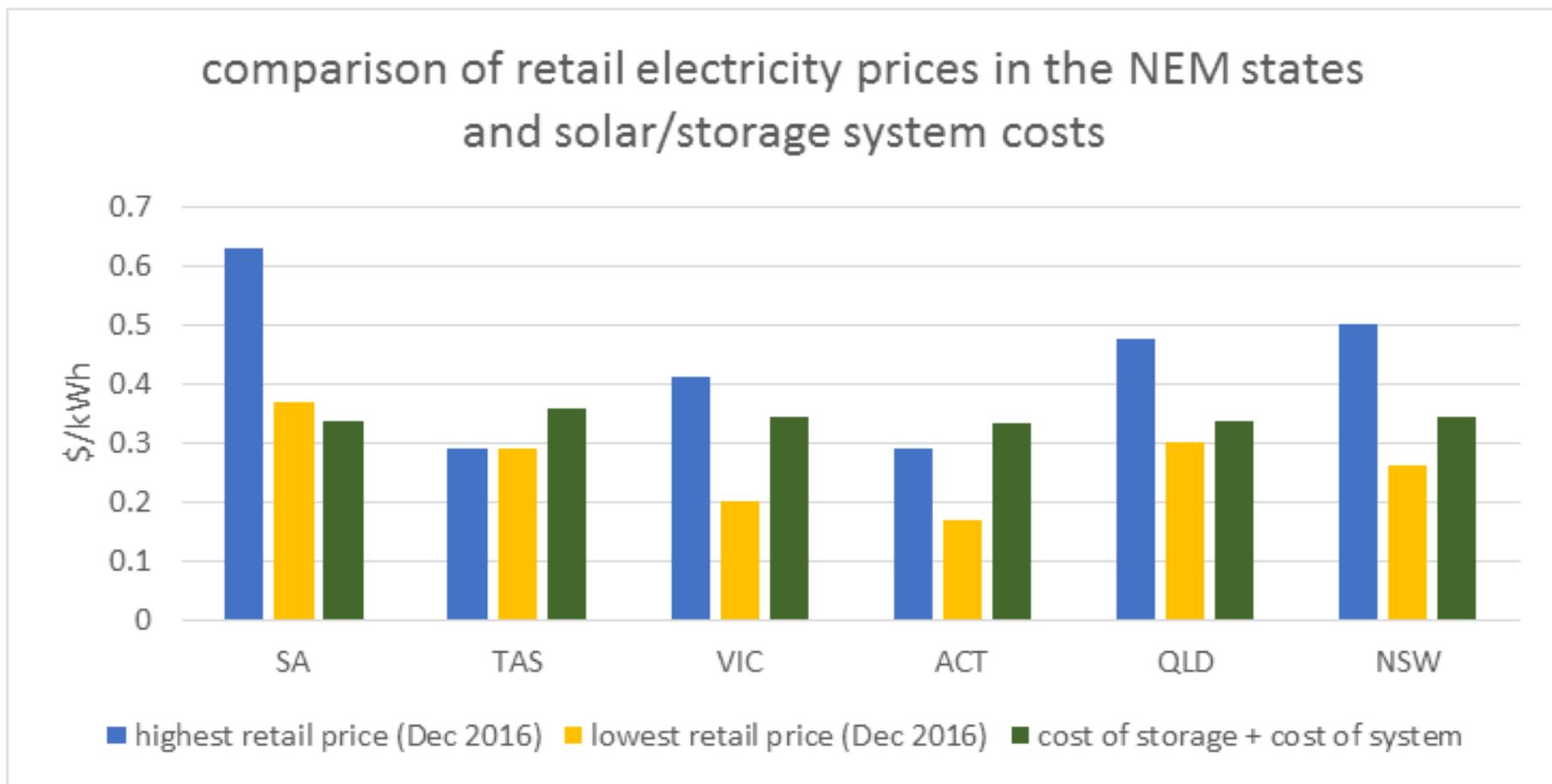


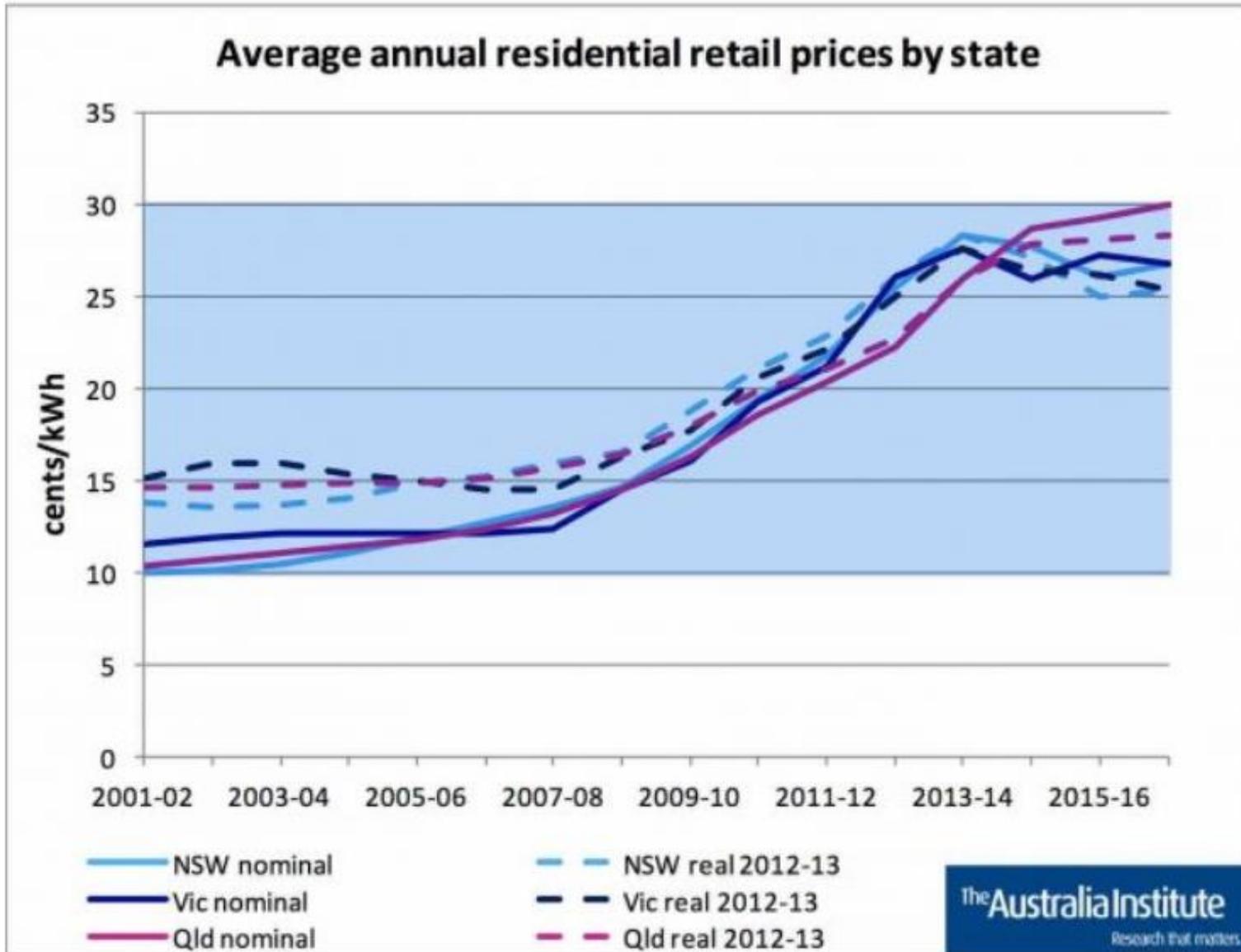
# 2017 PV Payments – more used by utilities to capture / retain customers

– source: forthcoming H. Poulter Australia chapter in Burger, Froggatt, Mitchell and Weinmann DG book

STATE	Scheme	Rate c/kWh	Max size
Queensland	South-eastern QLD: no minimum	Based on retailer competition	5kW
	Rural QLD: mandatory minimum	6-8	
New South Wales	Recommended benchmark range for retailers	11.6-14.6	Depends on retailer
Australian Capital Territory	No minimum	Depends on retailer: currently 6-8	n/a
Victoria	Mandatory minimum	11.3	<100kW
South Australia	No minimum	Depends on retailer: currently 6-12	First 45kWh per day
Tasmania	Set rate	7	10kW single phase 30kW three phase

Source: Author's own, forthcoming H. Poulter Australia chapter in DG book and Postcards from Australia Blog series with Blog 1: <http://projects.exeter.ac.uk/igov/postcard-from-australia-sydney/>



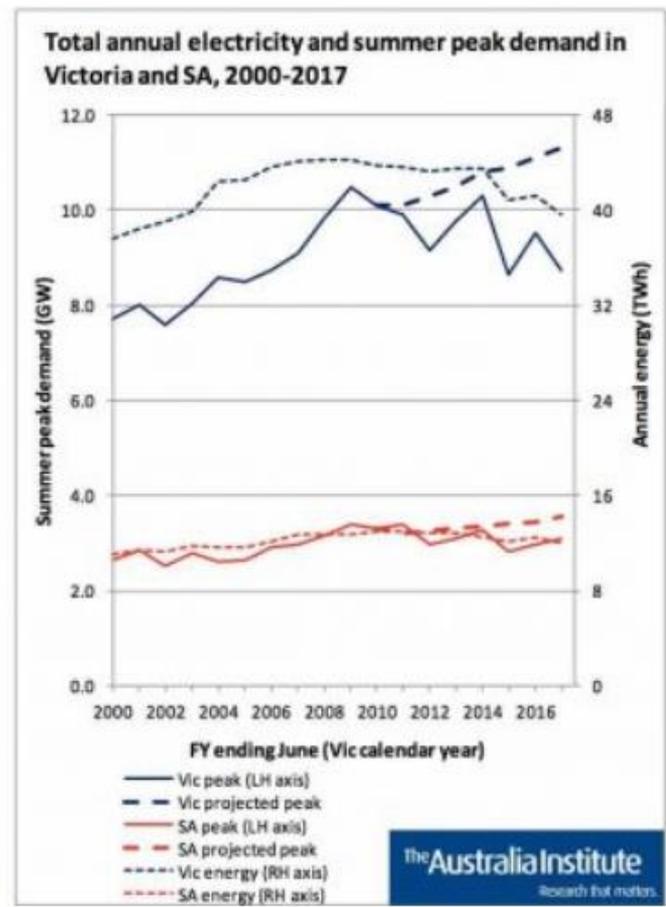
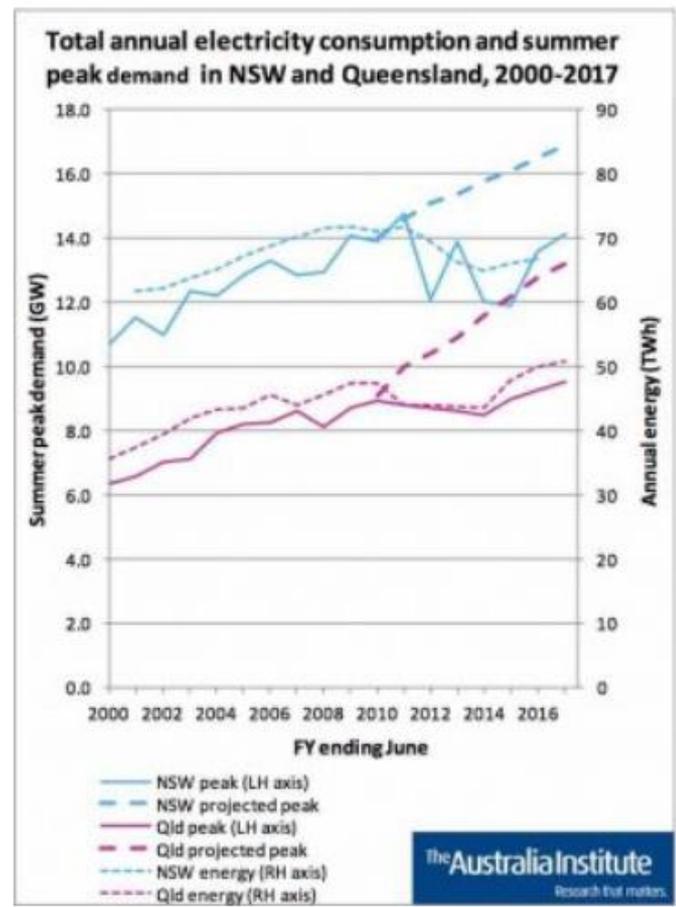


Sources: Calculated from Consumer Price Index data and AEMC 2013 Residential Electricity Price Trends Report

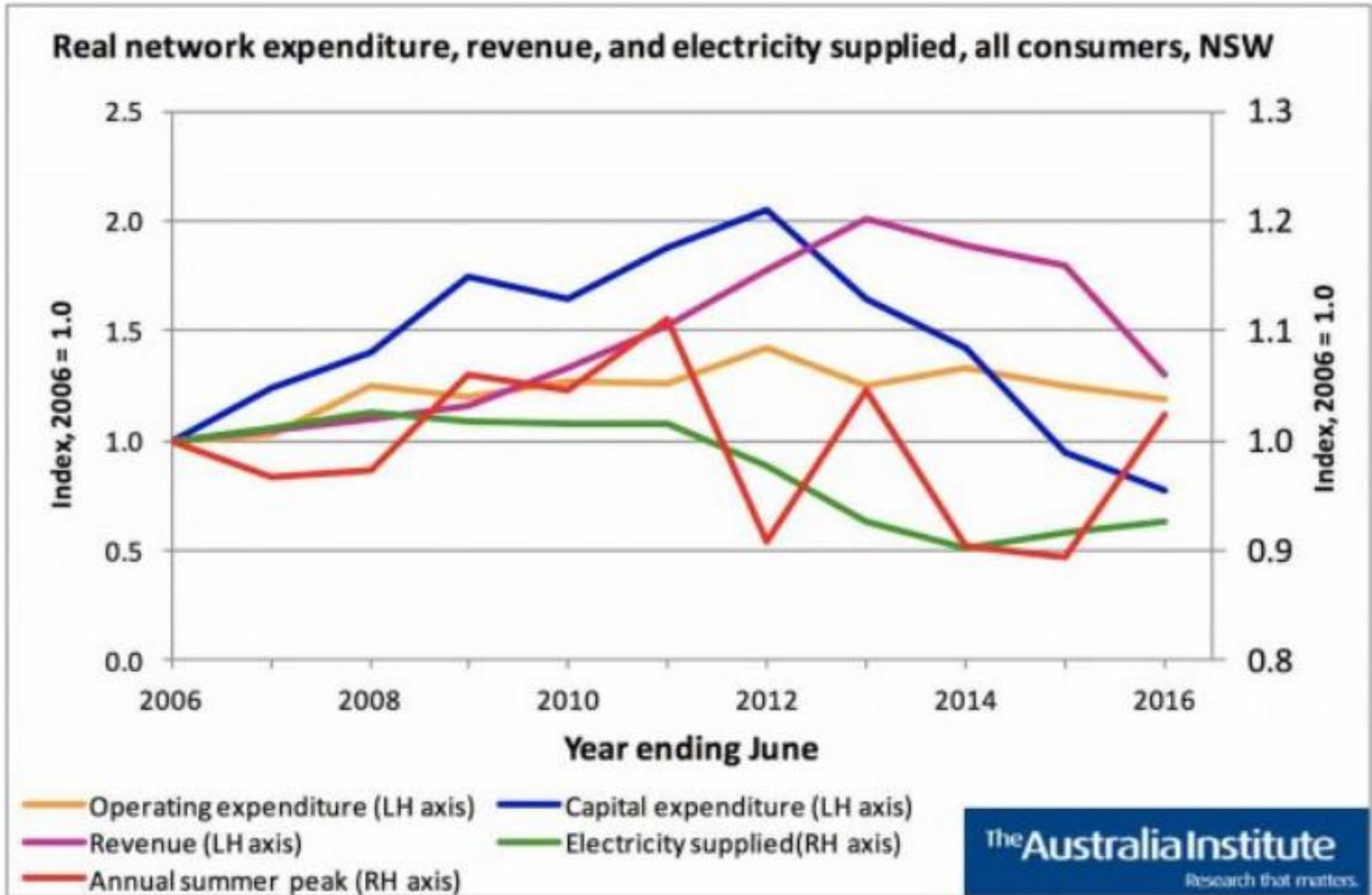
**Expectation of customer demand over optimistic, and now network companies tied into repayments for T and D on falling electricity supplied**

South east Queensland	11.95 c/kWh	45%
NSW	10.90 c/kWh	45%
ACT	8.06 c/kWh	42%
Victoria	12.36 c/kWh	45%
SA	13.52 c/kWh	42%
Tasmania	12.03 c/kWh	54%

<http://reneweconomy.com.au/consumers-got-burned-electricity-prices-started-networks-48000/>



Source: Data extracted from EnergyGas Australia (Australian Energy Council), various past issues



Source: Calculated from data contained in distribution business Regulatory Information Notice (RIN) reports to the AER

# New business models

- Efforts underway to get local platforms
  - <https://dex.energy/>
- Federal and State level governance still slow to change
- Questions that they are grappling with similar to GB but in a very different situation

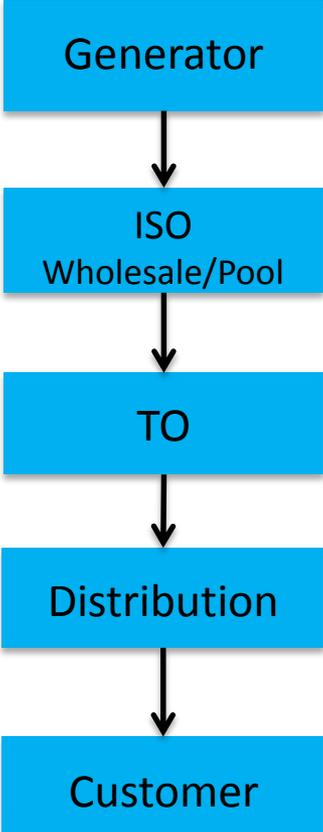
# Lessons to be learnt from Australia

- Original and continuing major problem was fall-out from poor demand and technology take-up projections
  - Similarity to GB solar predictions
- Change can happen very quickly
  - In general, solar installation is a very efficient industry now – ready for storage
  - Were / are ‘cowboy’ cases – important role for Regulator as customer protector
- Once momentum got going, attempts to dampen down by States did not work – only made customers less trusting of energy companies and network operators
  - This means that ‘rational’ decisions by energy companies and networks based on assumptions of customer behaviour and acceptance of data transfer etc is not necessarily going to work
- State governance complex and difficult to change

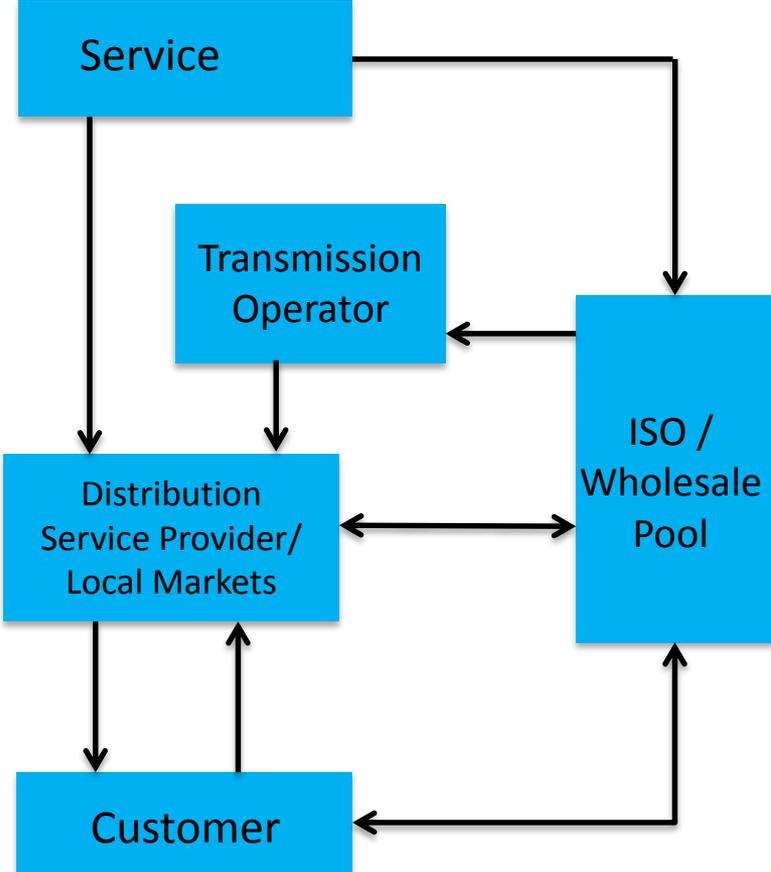
# Lessons from NY

**Upfront argument (Vision) that conventional wisdoms were no longer suitable for changing energy world. Distribution was becoming the centre of an energy system with new roles for all stakeholders, and new BM reflecting new energy economics. Vision wanted new balance between regulation and market for innovation** eg <http://projects.exeter.ac.uk/igov/us-regulatory-reform-ny-utility-transformation/>

### Traditional

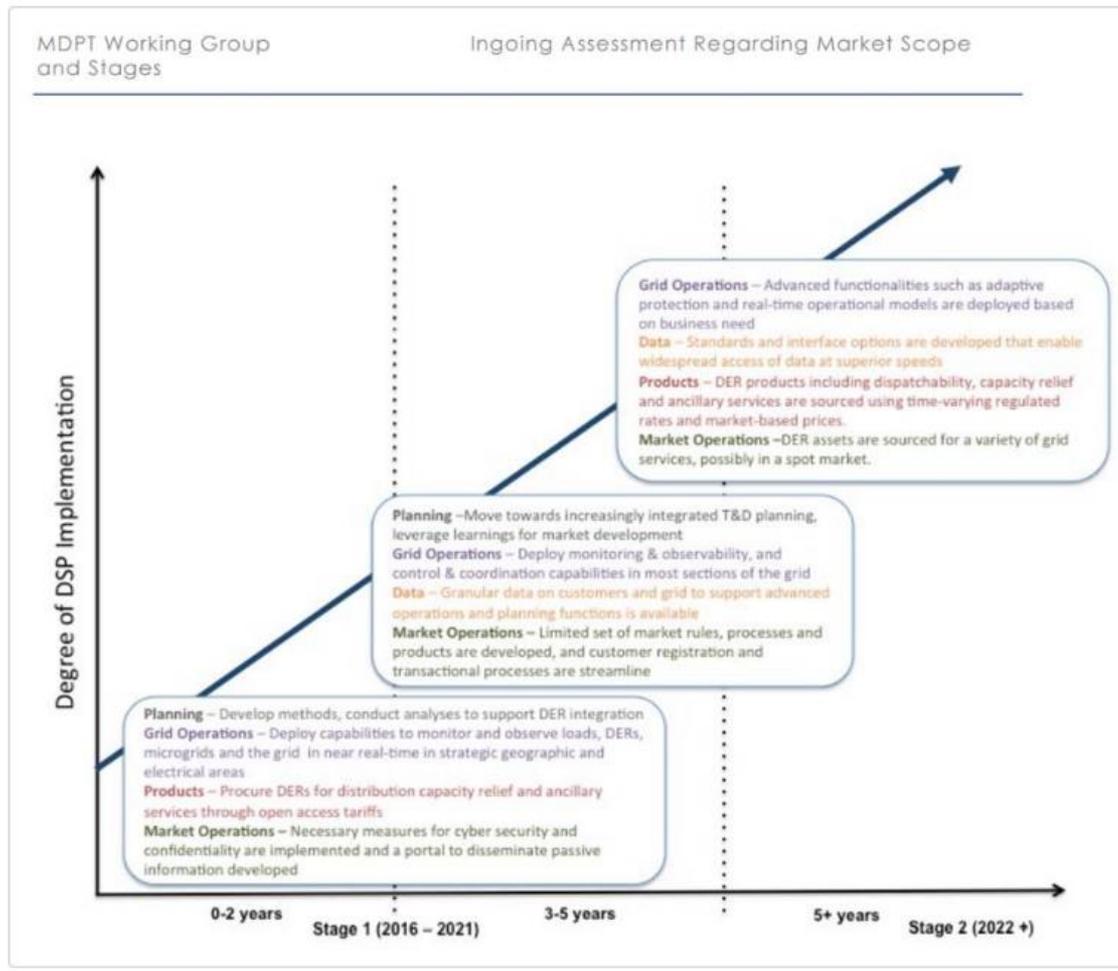


### Smart and Flexible



**NY had a Vision and set out timelines to get there, and inclusive working processes – but not how. The idea is to set up regulatory process which could be open to change. Slow start but speeding up now.**

[https://www.energymarketers.com/Documents/MDPT\\_Report\\_150817\\_Final.pdf](https://www.energymarketers.com/Documents/MDPT_Report_150817_Final.pdf)

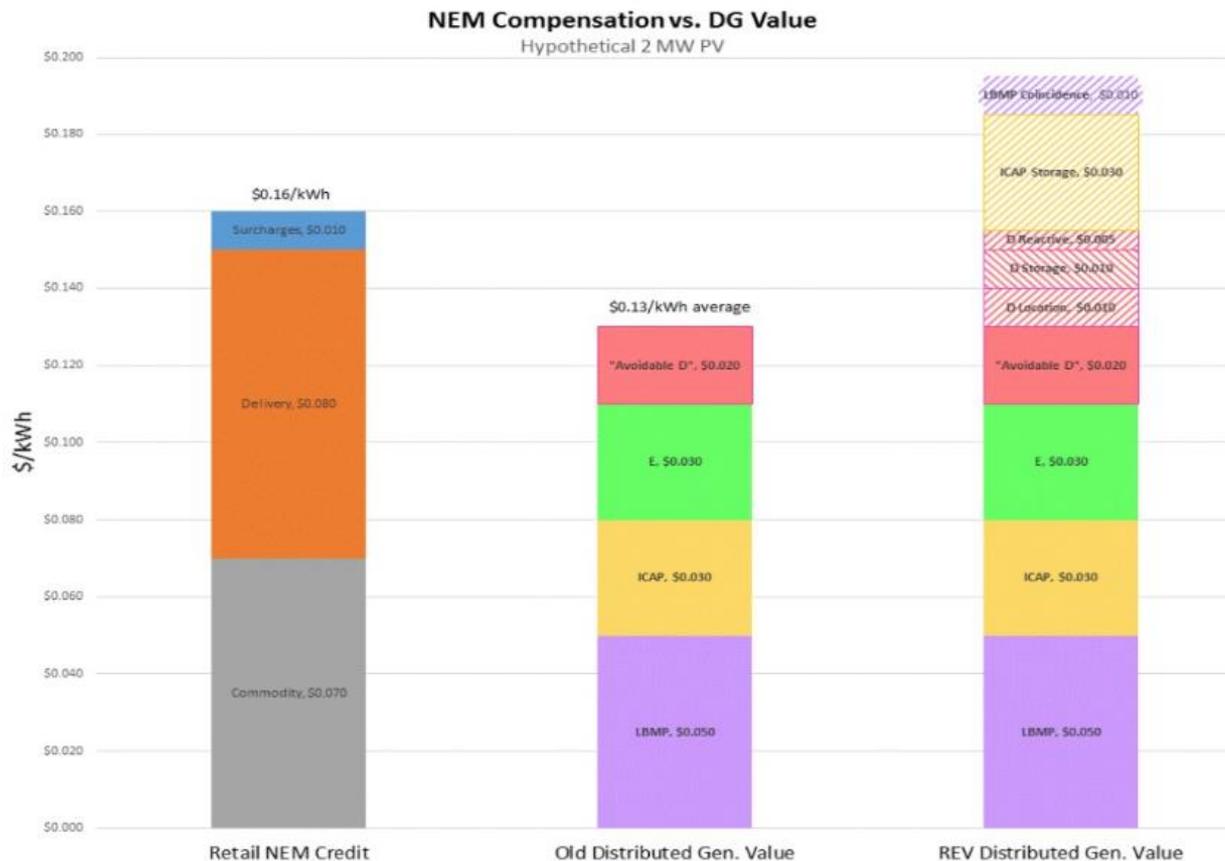


**It was agreed that a new energy system costing methodology was necessary plus knowledge of value of DER – so put in place distributed energy resource assessments, and a methodology to find that information – should be 1<sup>st</sup> step for GB**

- <http://projects.exeter.ac.uk/igov/new-thinking-reset-the-reset-1-we-need-institutional-governance-reform-and-we-need-it-now/>
- <http://projects.exeter.ac.uk/igov/new-thinking-reset-the-reset-3-der-walking-the-walk/>

# 1<sup>st</sup> attempt a working out DER value

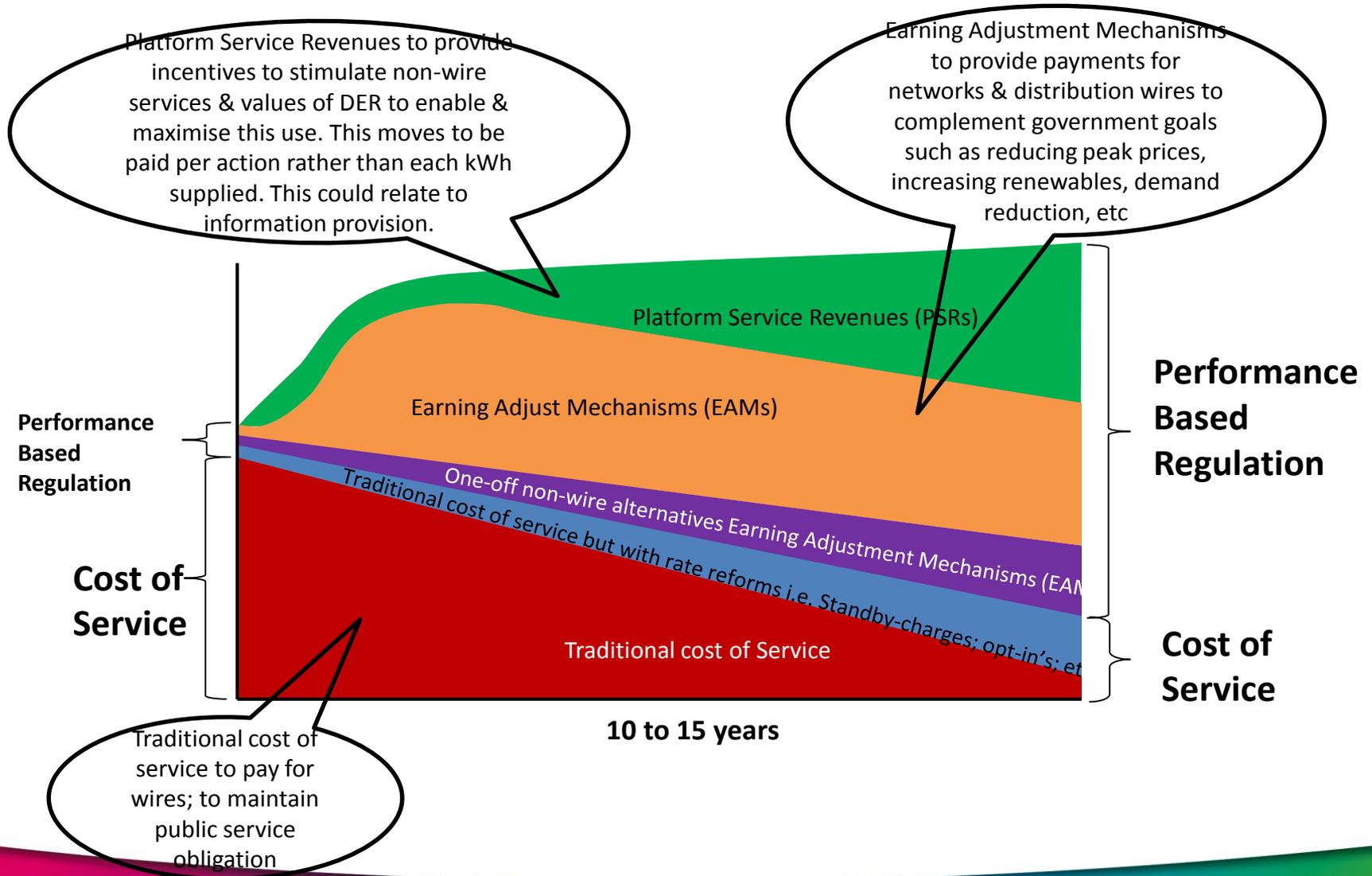
Source: Staff Report and Recommendations in the Value of Distributed Energy Resources Proceeding 15-E-0751, 27 October 2016 (p12) [https://s3.amazonaws.com/dive\\_static/editorial/Staff+Report+and+Recommendations+10-27+\(1\).pdf](https://s3.amazonaws.com/dive_static/editorial/Staff+Report+and+Recommendations+10-27+(1).pdf)



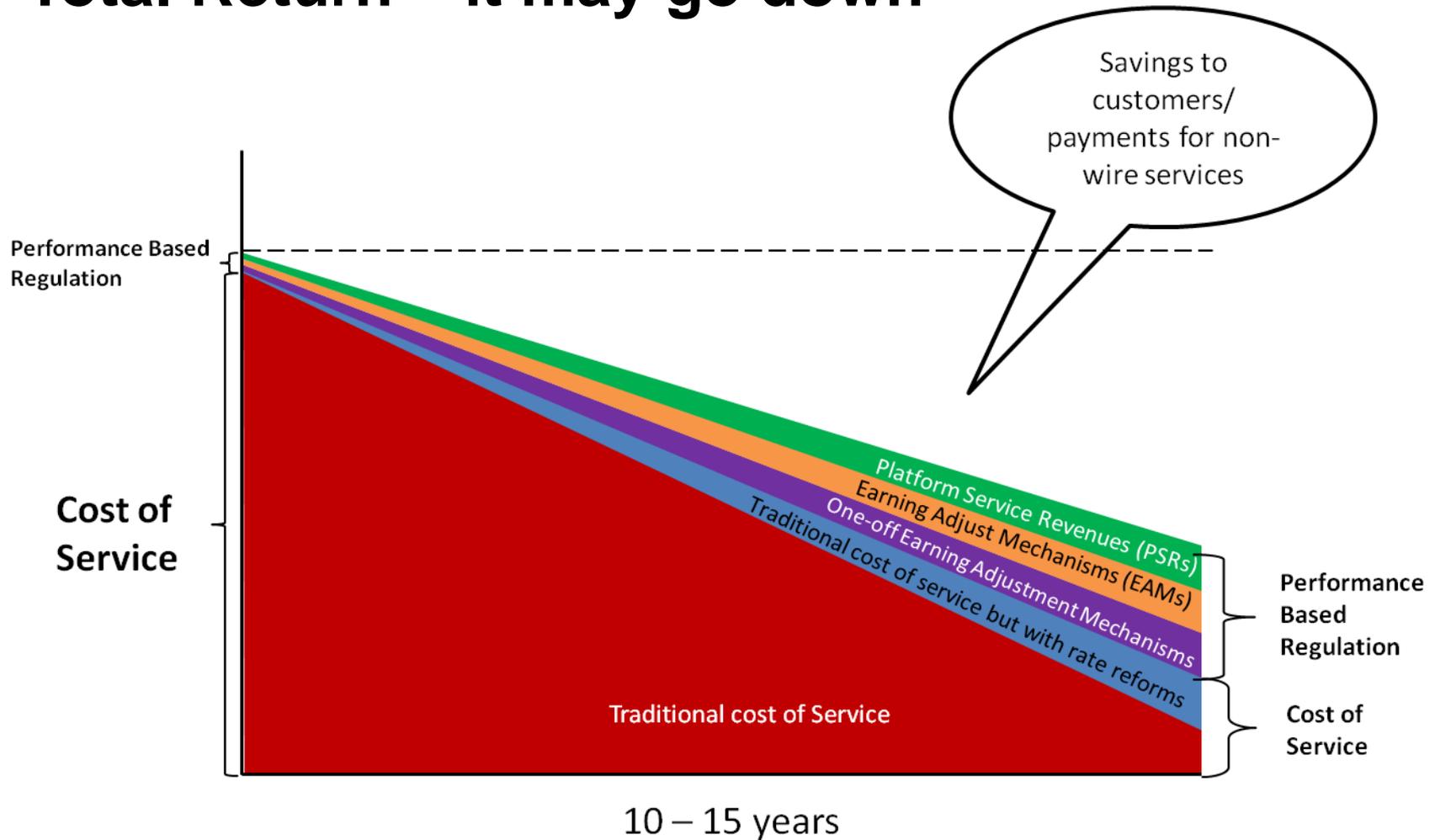
**Notes:**

1. The "retail NEM Credit" column represents compensation NEM provides per kWh.
2. The "Old Distributed Gen. Value" column represents the potential value that may be provided under NEM price signals, when the kWh and kW benefits are calculated and then expressed on a per kWh basis.
3. The "REV Distributed Gen. Value" represents the potential locational kWh and kWh value that could be created if NEM price signals are replaced with more efficient price signals.

# Changed basis of regulatory mechanism to PBR



# An obvious problem for conventional utility: Total Return – it may go down



# Lessons to be learned

- NY has torn up the rule book
  - Looked at the challenges and came to the conclusion that in-situ governance was not fit for purpose
  - Developed Vision for what was wanted, and a flexible, transparent, inclusive process to get there
  - Developing a new costing methodology suited to smart and flexible energy system, including understanding value of DER
- Decided that regulated institutions should be paid to do what society wants them to do
  - Created new regulated payment system intended to stimulate innovation, and link to public policy goals
    - Utilities may make higher RORE but what they do has to change
- Public interest remains at heart of mandate

# Overall

- Fundamental change can happen quickly and society requires that change to lead to desired outcomes
- Government / Regulator has to be ready and put in place fit-for-purpose governance

# Thankyou

For more information, please go  
to the IGov website

<http://projects.exeter.ac.uk/igov/>