



WA and energy in the 21st century

Australian Institute of Energy
Perth, 1 April 2015



esaa energy reform scorecard





Electricity Market Review - TOR

- Reduce costs of production and supply
- Private sector take over new investment from Government
- Encourage blue chip companies to WA market



3 problems identified

- Government business crowding out private sector
- Little competition in generation or retail
- Capacity market design inefficient and expensive



Steering Committee recommendations

Synergy split, then sold	Rejected
Full retail contestability	Accepted
Concessions paid through Synergy made available to all	Unclear
Tariff Adjustment Payment phased out	Unclear
Tariff Equalisation Contribution paid as a CSO	Unclear
Move to NEM	Rejected
AER to regulate networks	Accepted
Remove regulatory barriers to Western Power using stand-alone electricity systems in regional areas	Accepted
Roll out smart meters	Partially accepted
ERA set retail tariffs, then deregulate	Unclear

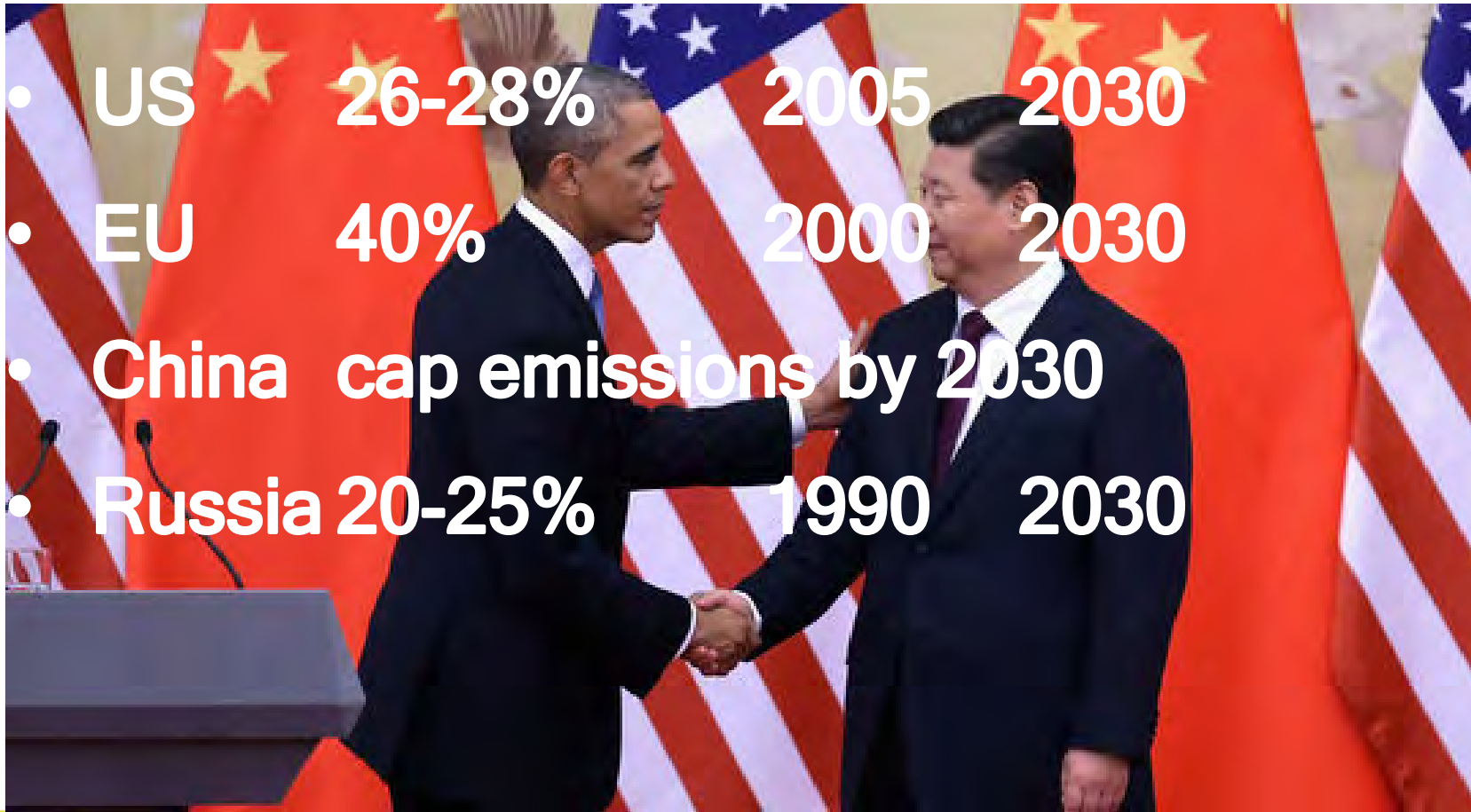


Here be dragons

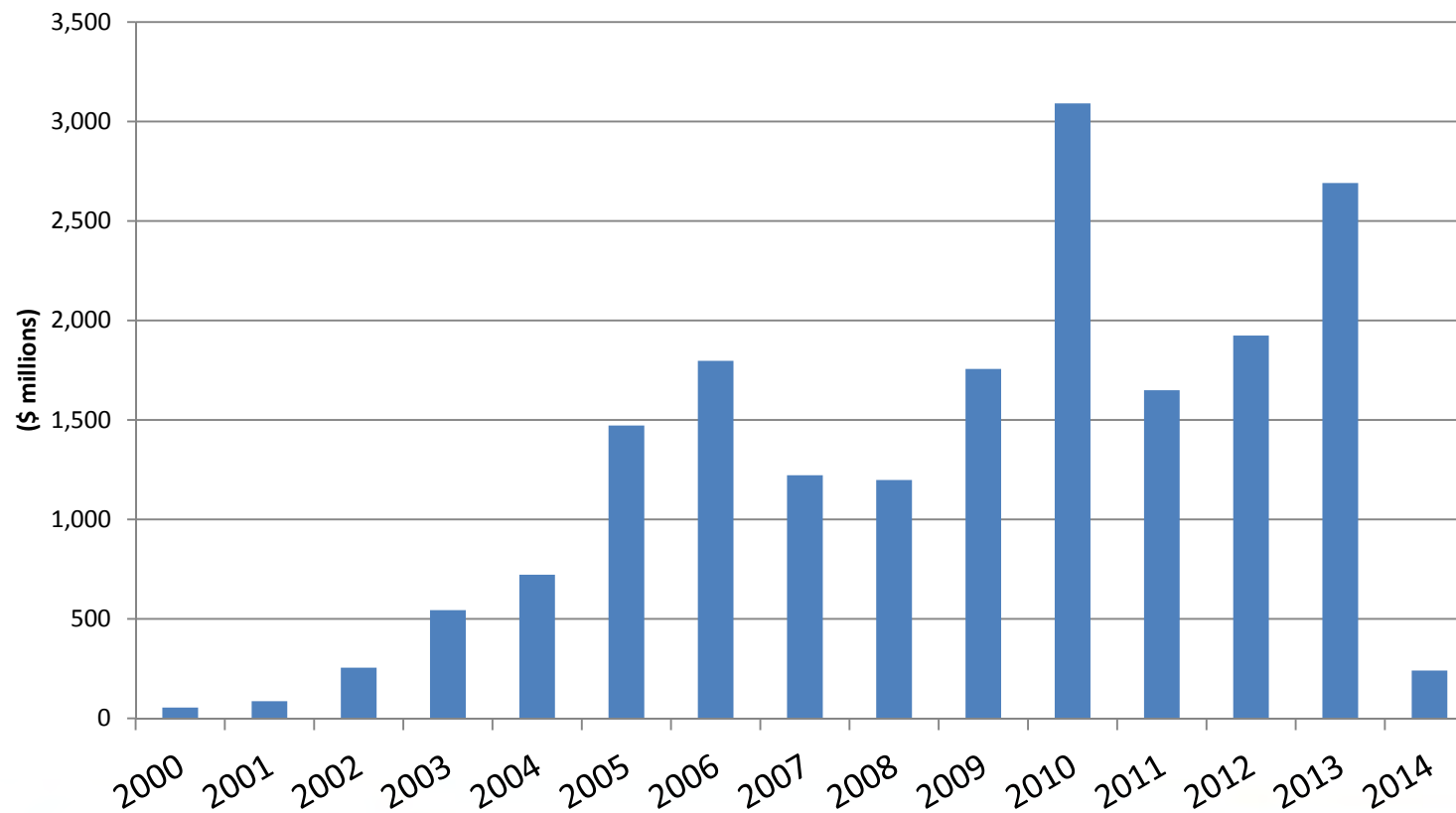
- Climate policy risk
- Political risk
- Market risk (from utility to consumer good)
- Technology risk

Climate negotiations will continue until further notice

- US 26-28% 2005 2030
- EU 40% 2000 2030
- China cap emissions by 2030
- Russia 20-25% 1990 2030

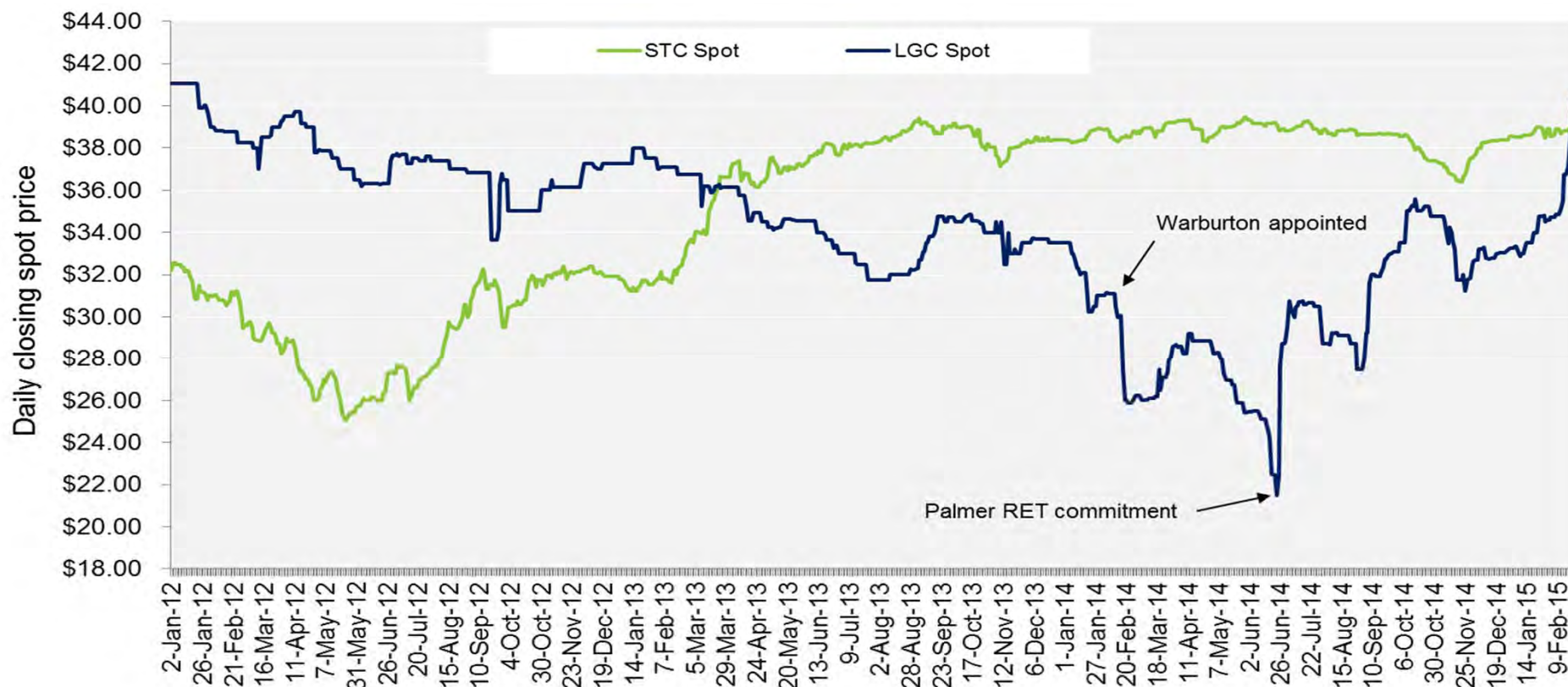


Annual investment in large-scale renewable energy in Australia





Market thinks a deal on RET is imminent



Source: greenmarkets.com.au



Electricity privatisation election scorecard

- Tasmania, 1998 **DEFEATED**
- Victoria, 1999 **DEFEATED**
- South Australia, 2001 **DEFEATED**
- Queensland, 2015 **DEFEATED**
- New South Wales, 2015 **WON**



I  GRIDLOCK

Authorised by Brendan Lyon,
ASA Limited, 8/8-10 Loftus St, Sydney.

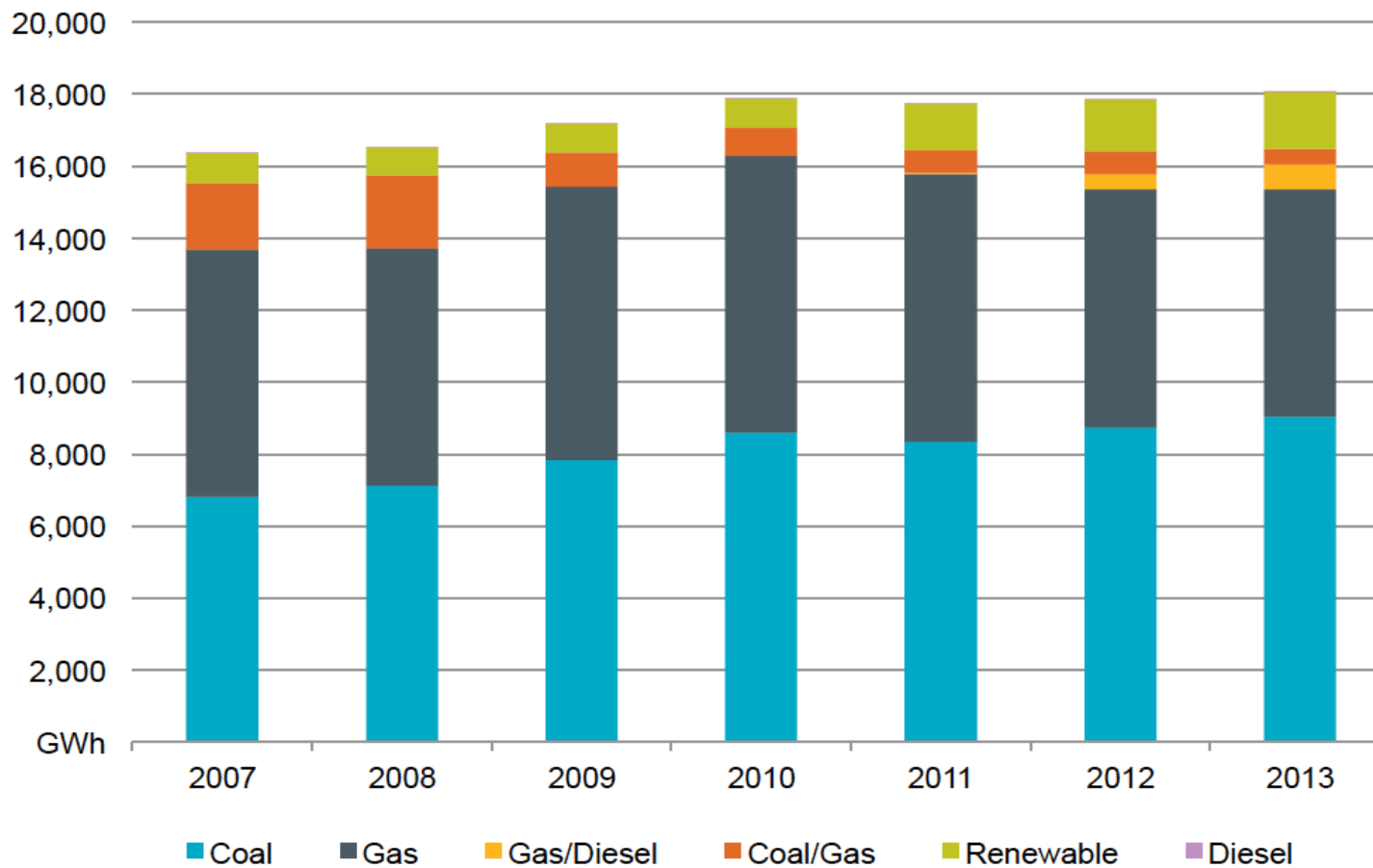
Get the **facts** about how leasing the electricity grid
will deliver **\$20 billion** in **new infrastructure**



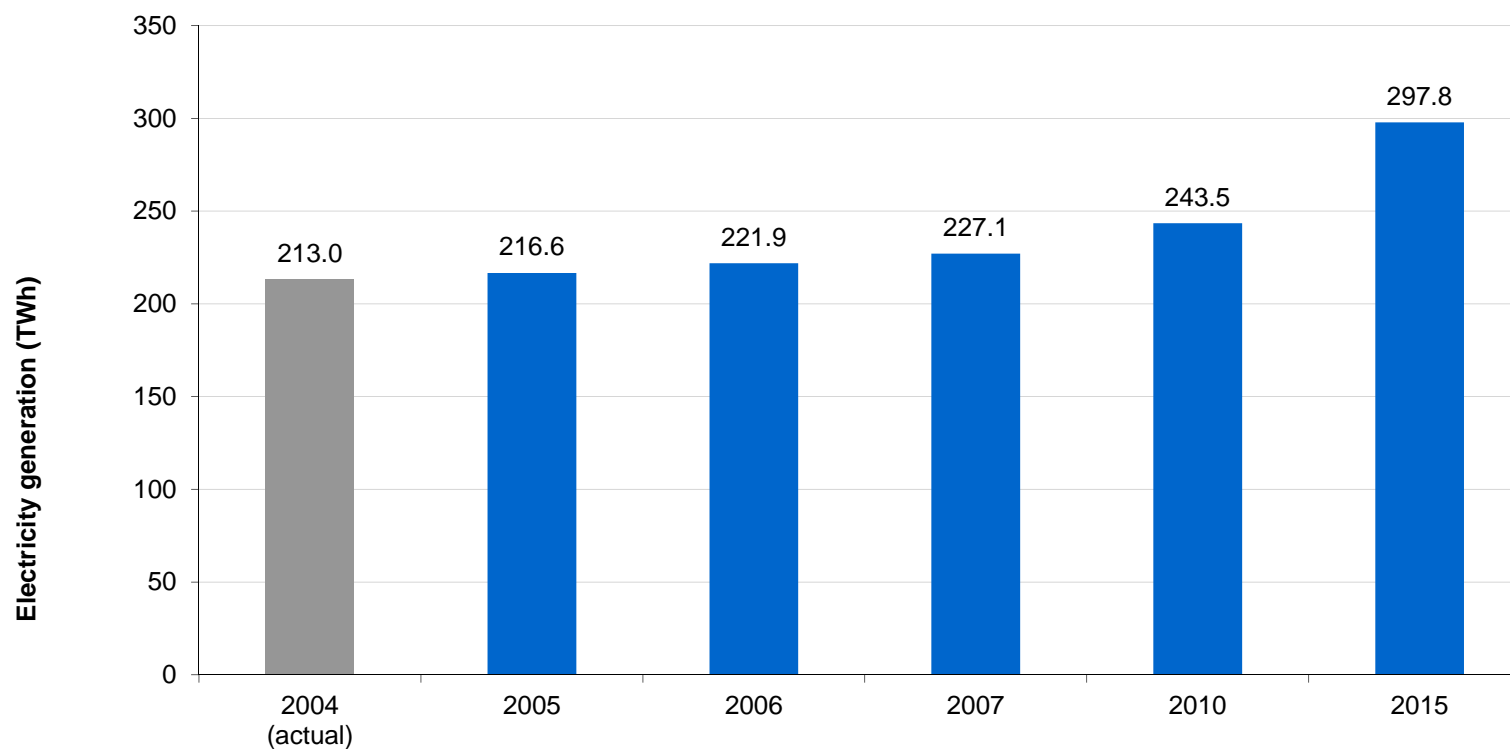
**REPOWERING
NSW**



WA generation 2007-13



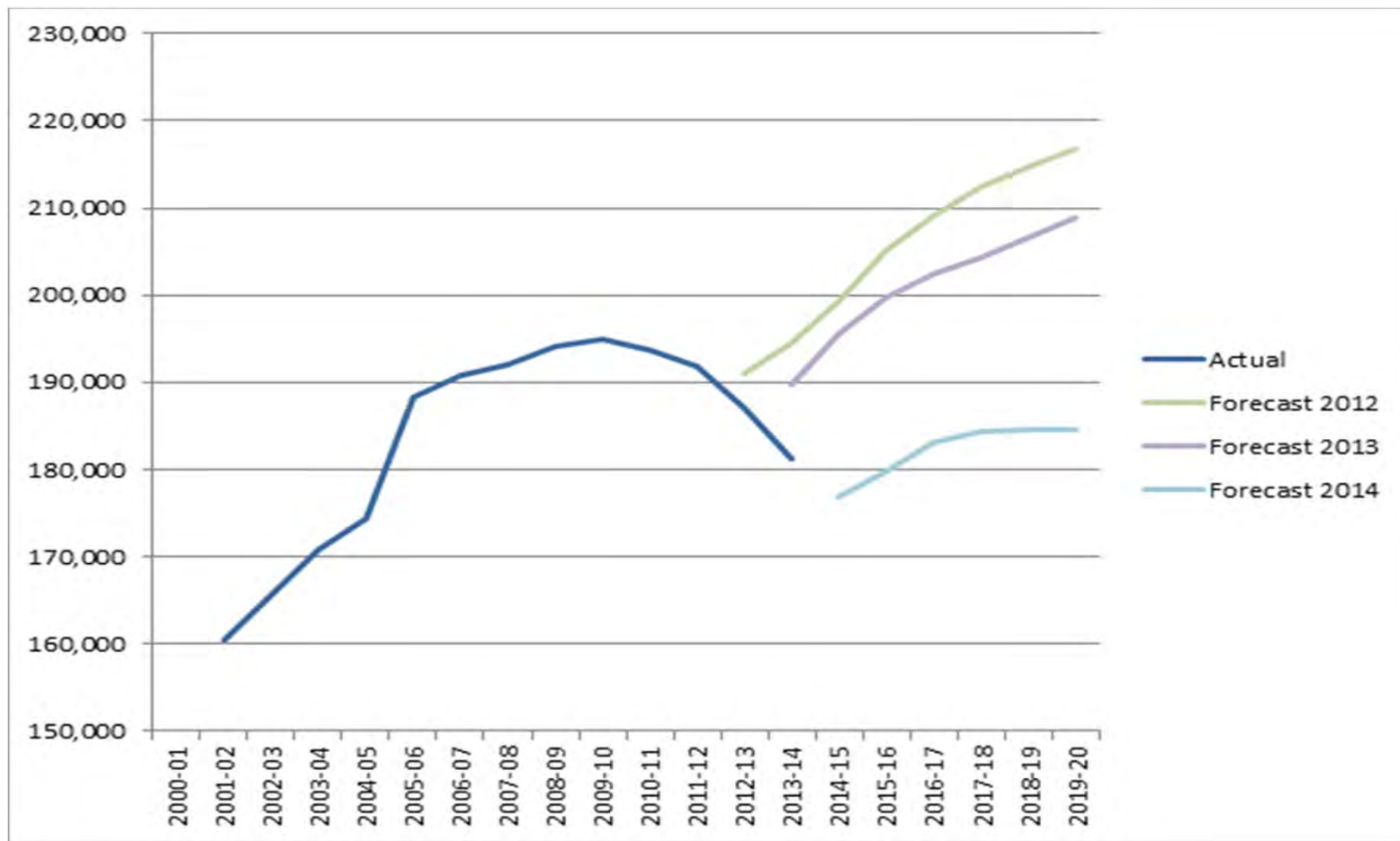
NEM Forecast demand, ESOO 2005



Note: 1. Forecast generation is based on generation terminal data, which includes generator own-use.

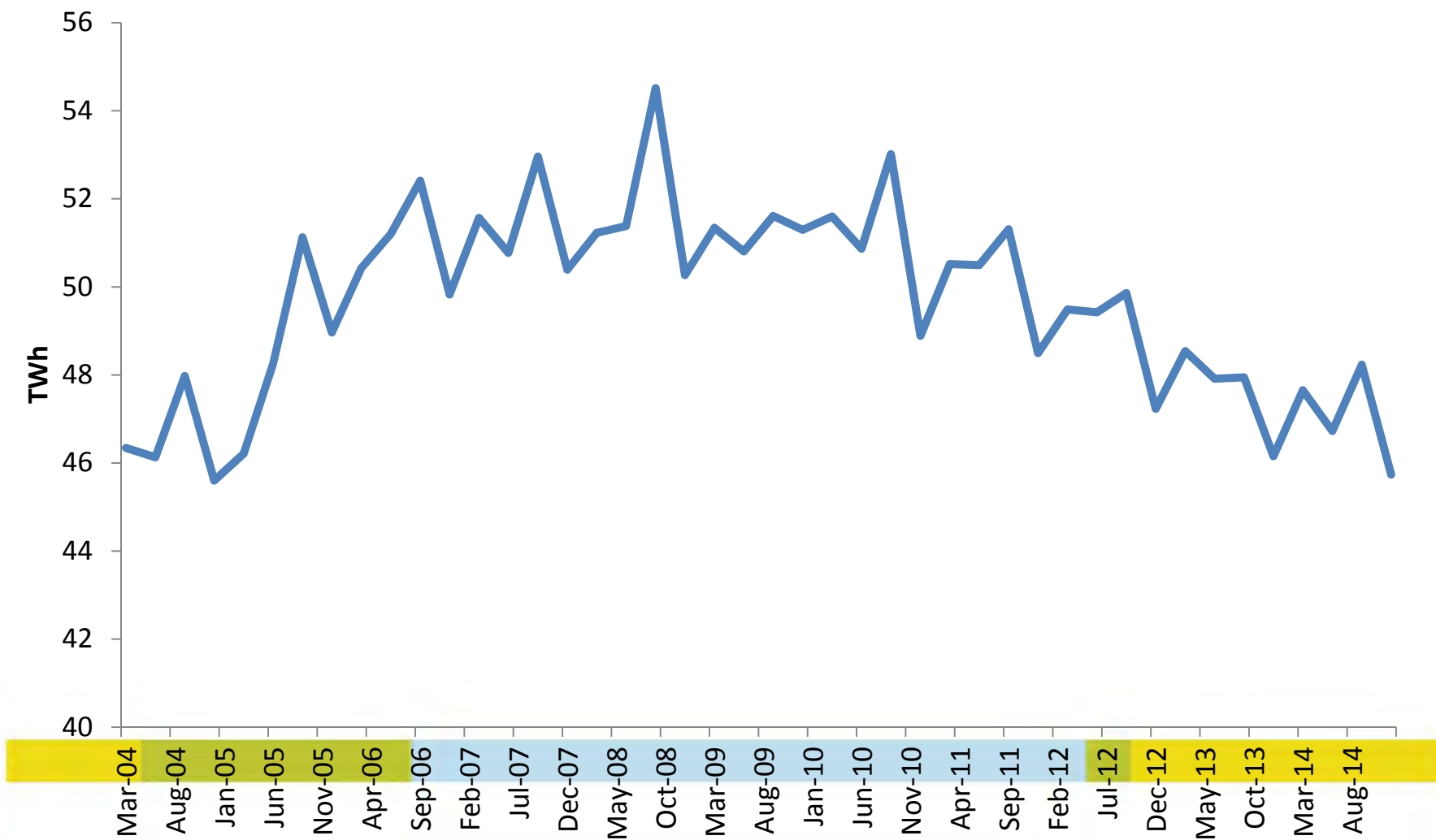
Source: esaa, NEMMCO, ABARE

NEMMCO/AEMO NEM forecast demand 2012-14



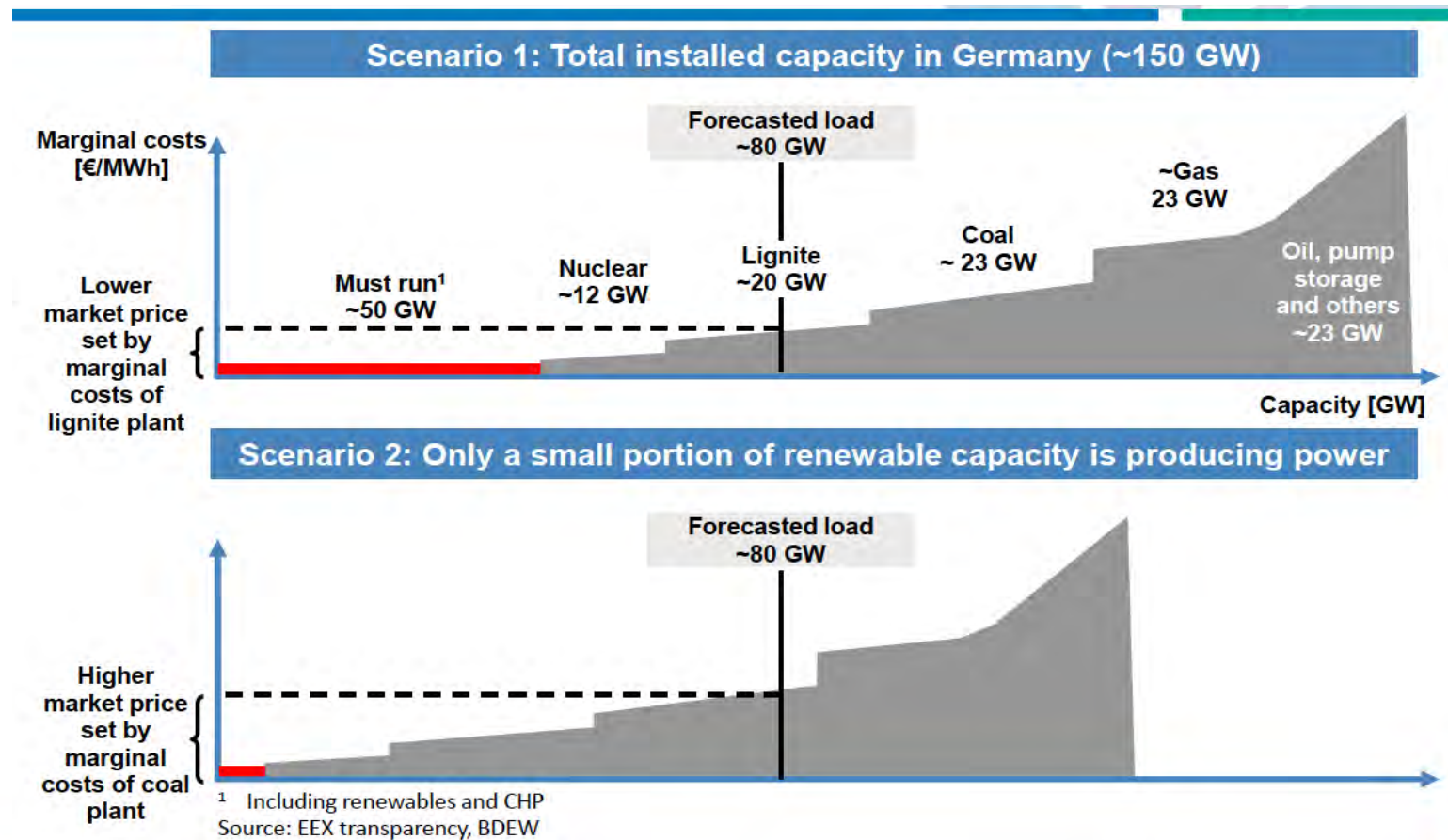


NEM Quarterly Demand 2004-14





Judisch: Germany: weak carbon price, high renewables penetration, high gas price



E.ON reports record group losses as prepares to hive off fossil fuel business

German power blames plunging wholesale electricity and oil prices for €3.2bn loss, and uses annual results to give details of plans to split business into two



Last updated: March 10, 2015 5:00 pm

RWE warns core earnings will fall amid energy market shake-up

Jeevan Vasagar in Berlin



RWE has sold its North Sea oil and gas production and exploration arm

[RWE](#) on Tuesday warned of a “crisis” in fossil fuel power generation as Germany’s second-largest utility by market value predicted a sharp fall in underlying earnings this year and unveiled new cost-cutting plans.

RWE grabs Conergy stake

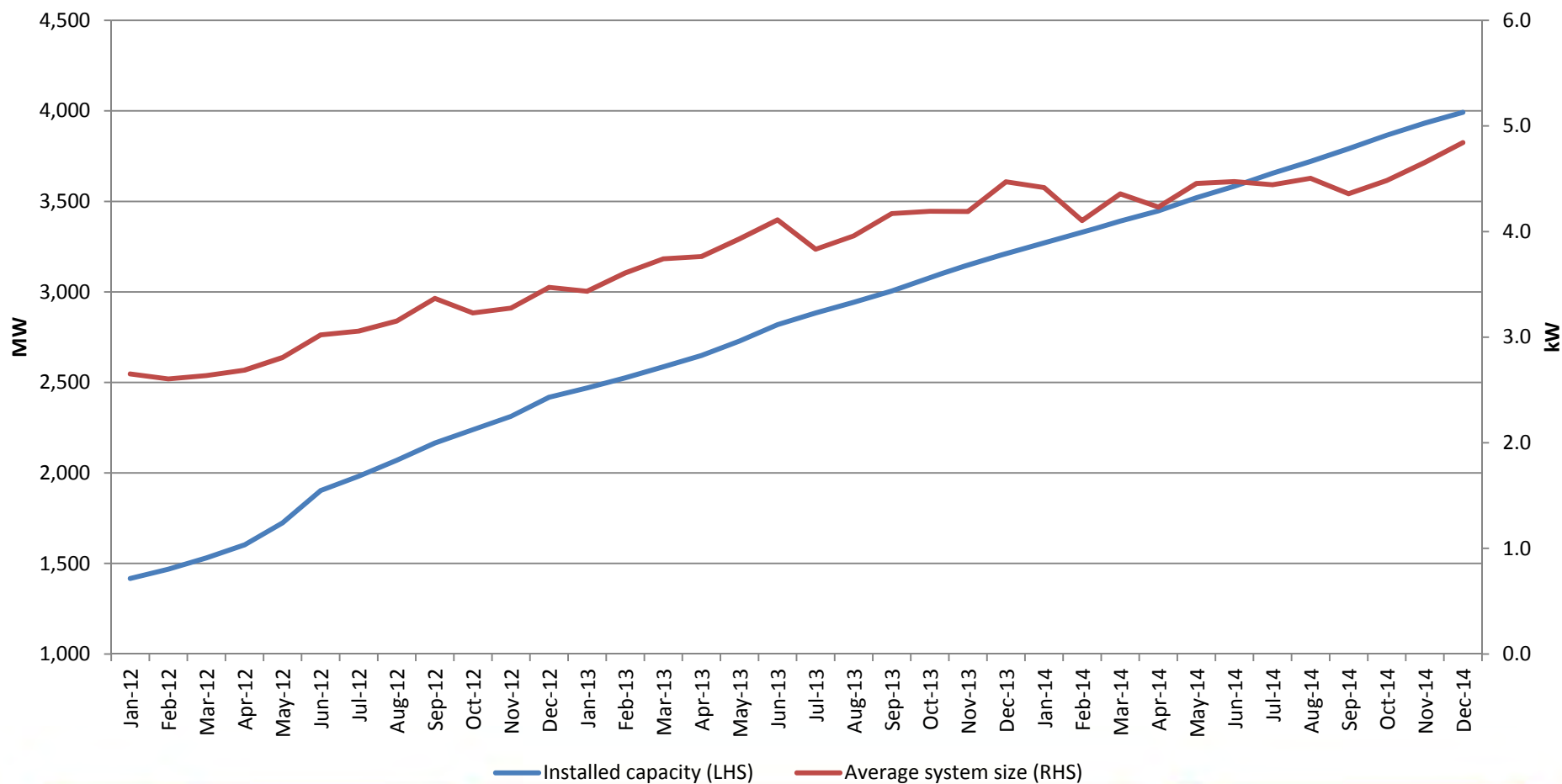


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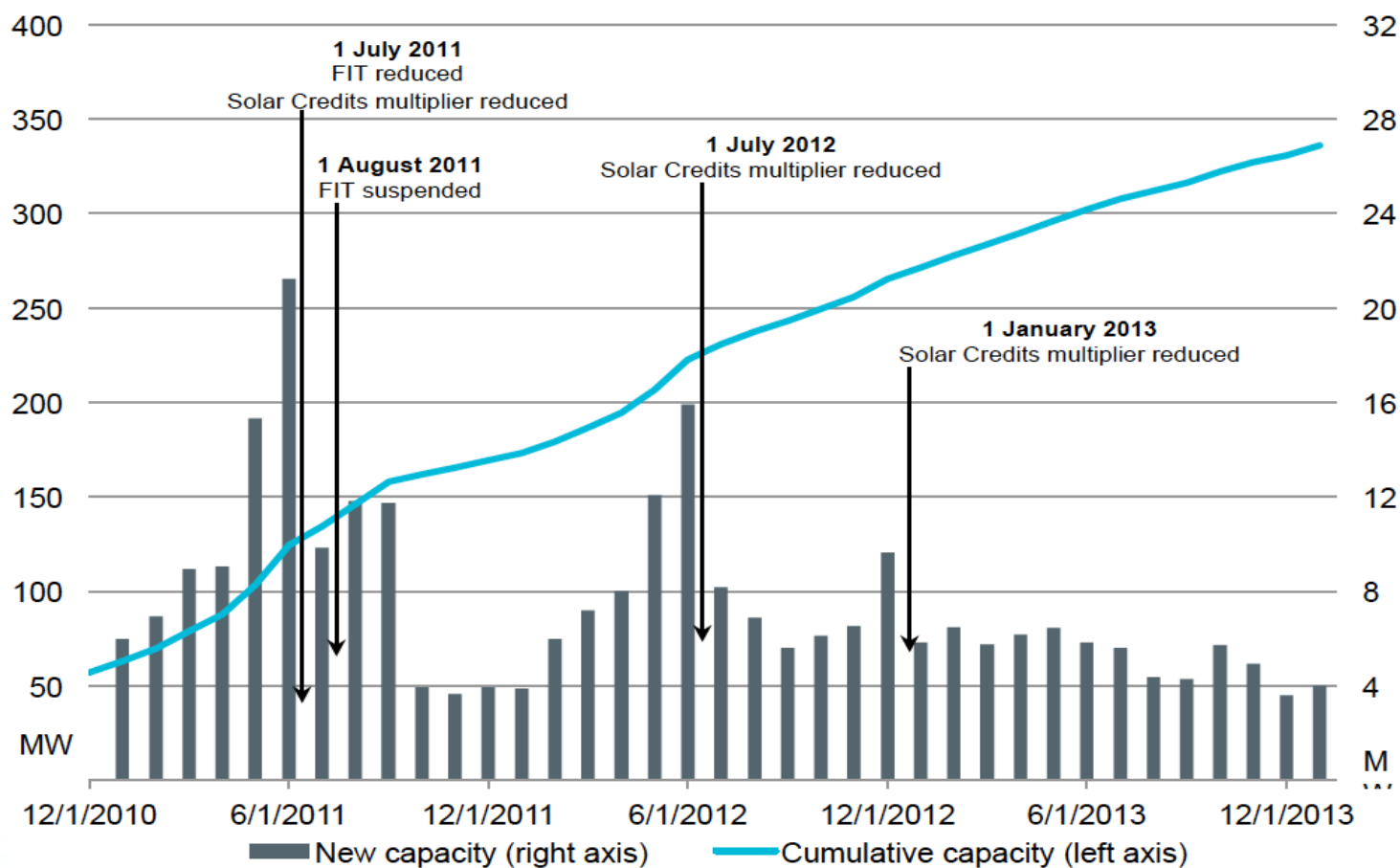
German utility RWE has taken an equity stake in compatriot solar player Conergy under a funding round by owner Kawa Capital Management.



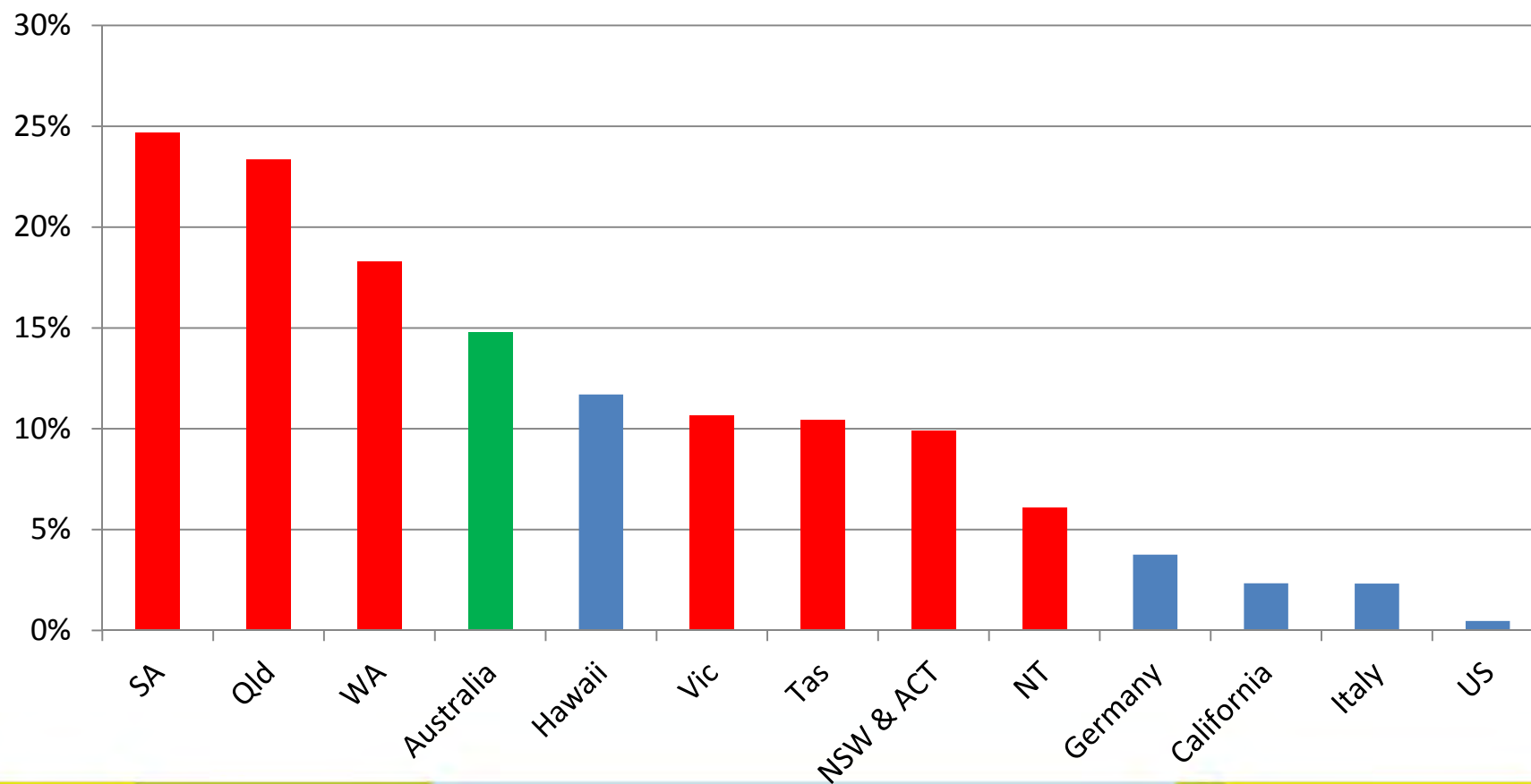
Solar PV capacity in Australia



Solar PV capacity in WA

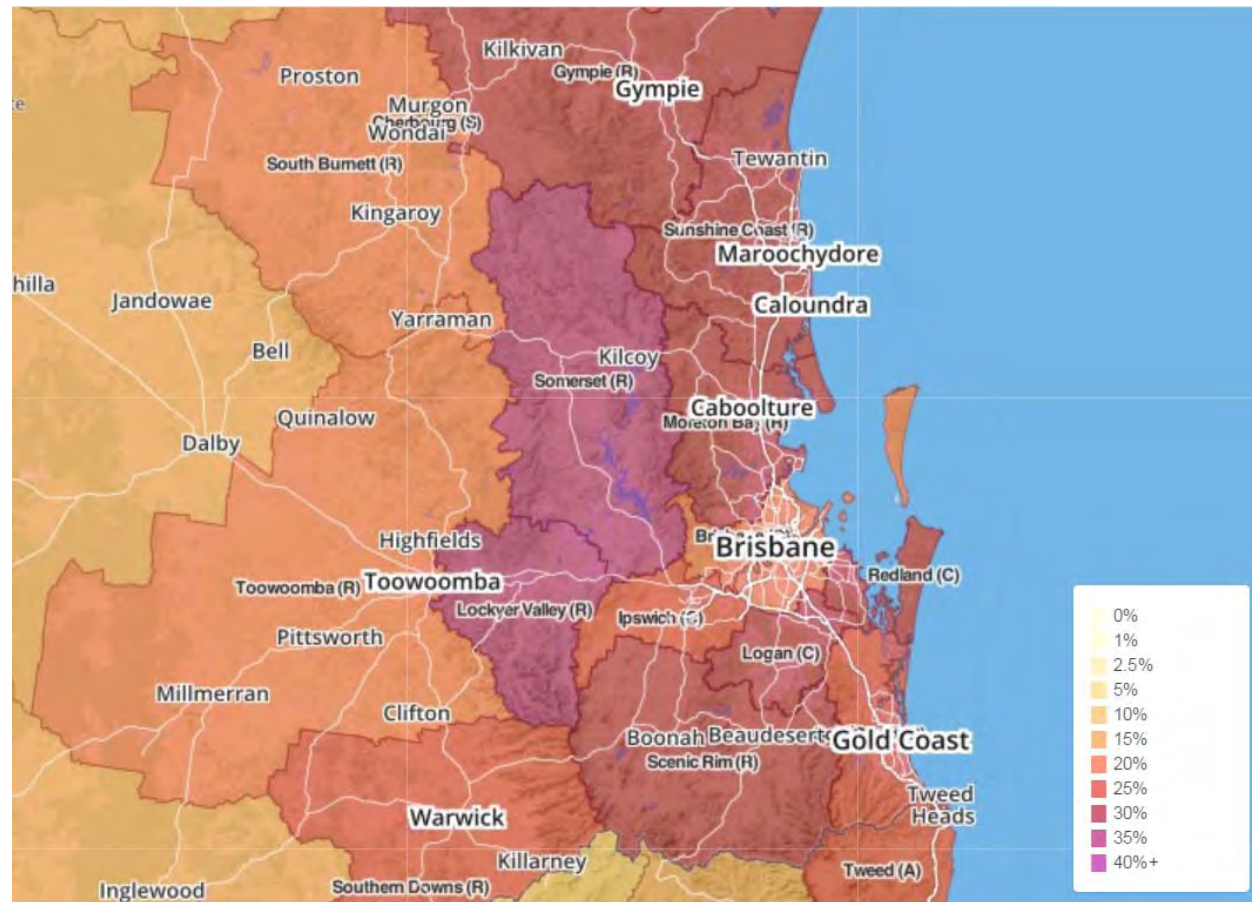


Solar PV residential penetration rate – international comparison



Brisbane solar penetration rate

Source: Australian PV Institute (APVI) Solar Map





Perth solar penetration rate

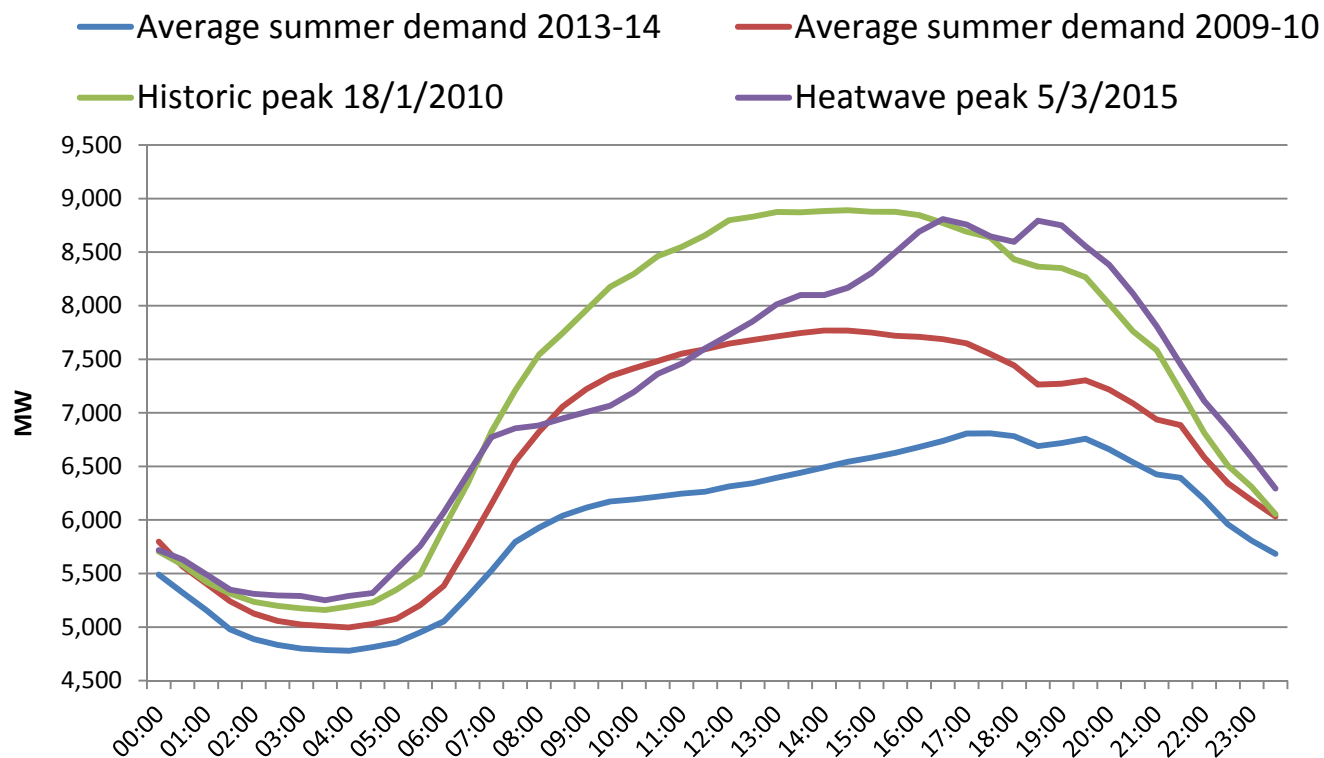
Source: Australian PV Institute (APVI) Solar Map



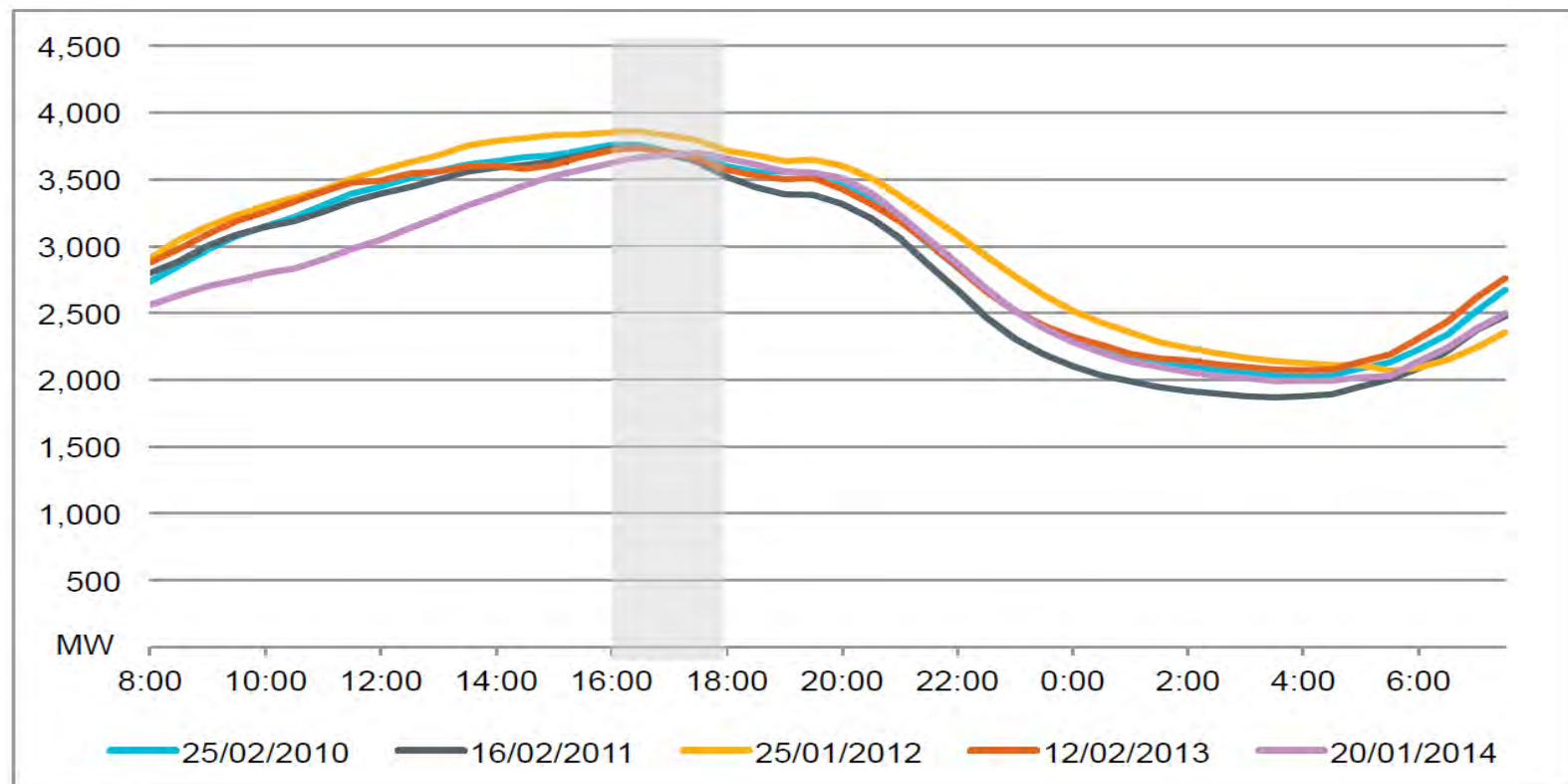


Queensland's shifting demand Source

NEM Review, Target Generation data

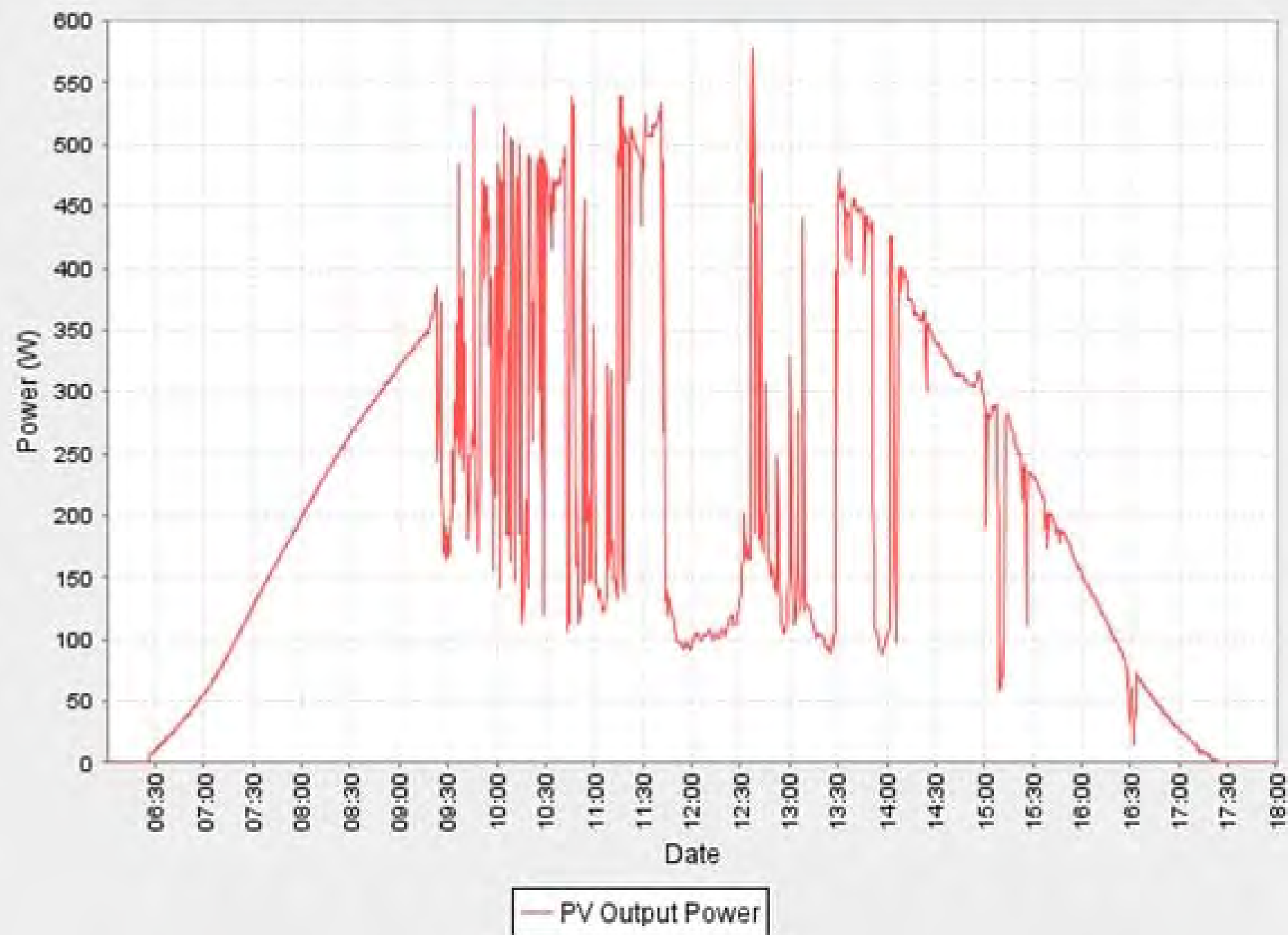


WEM daily load profiles for peak days, 2009-10 to 2013-14

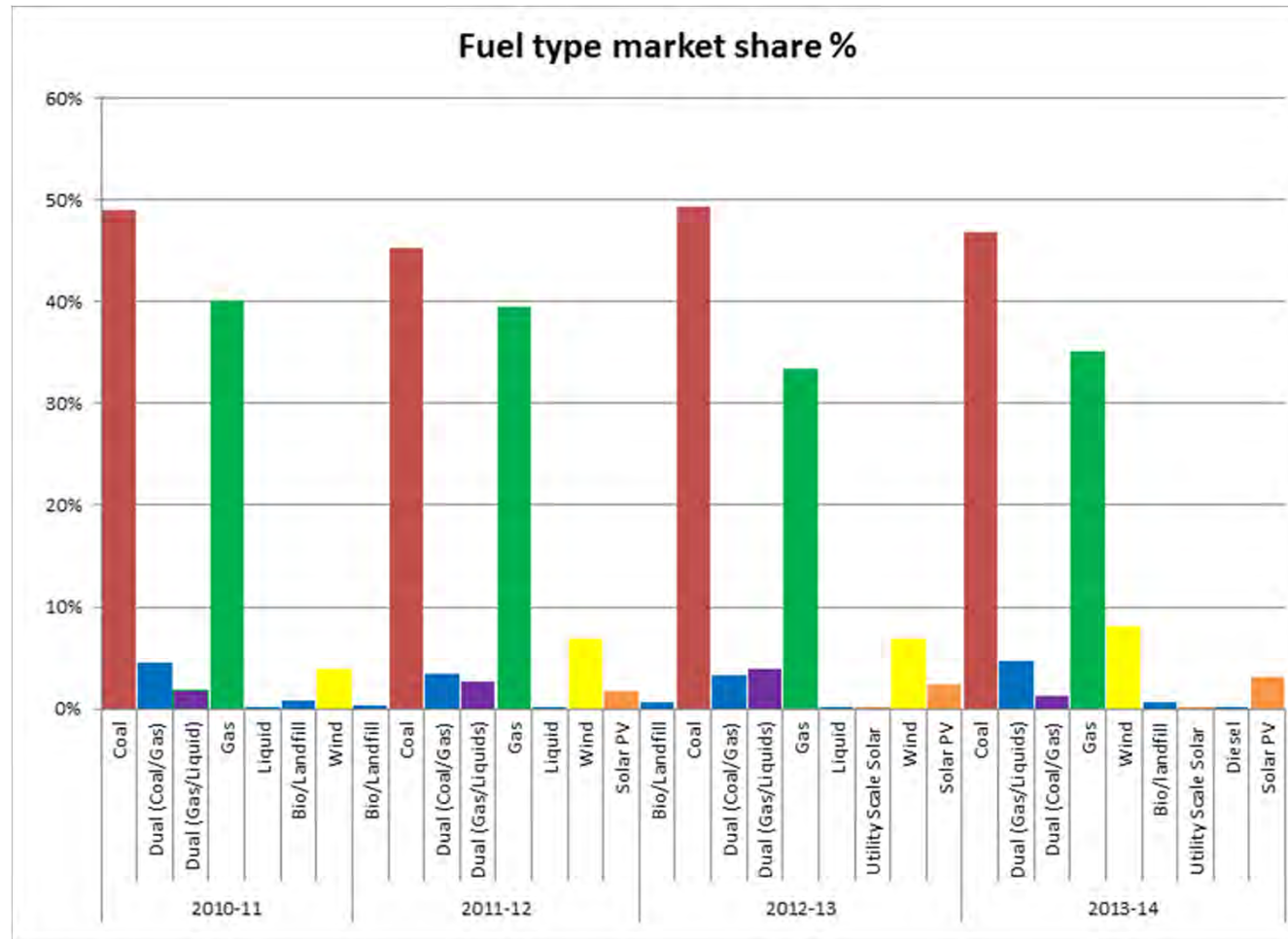


Source: IMO

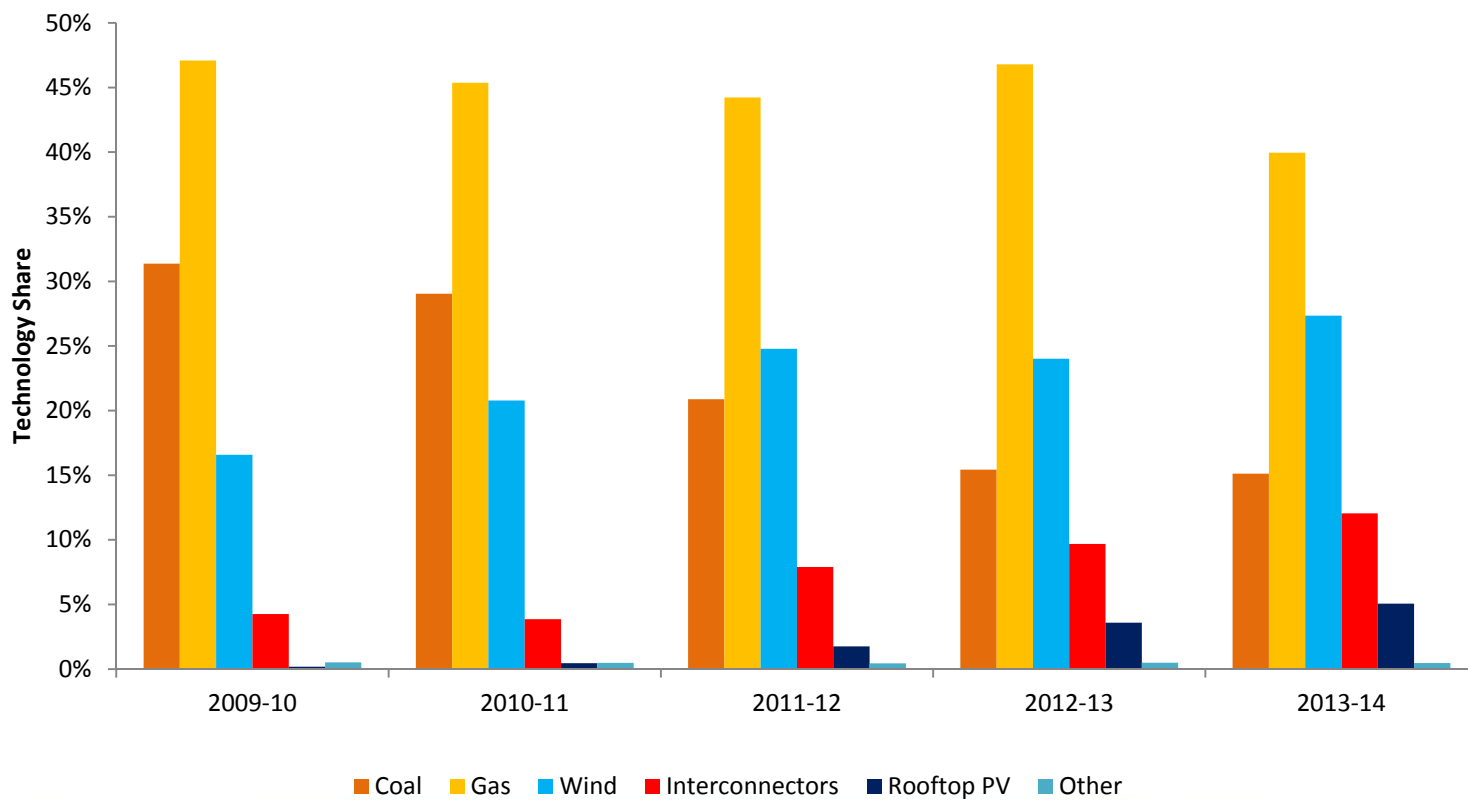




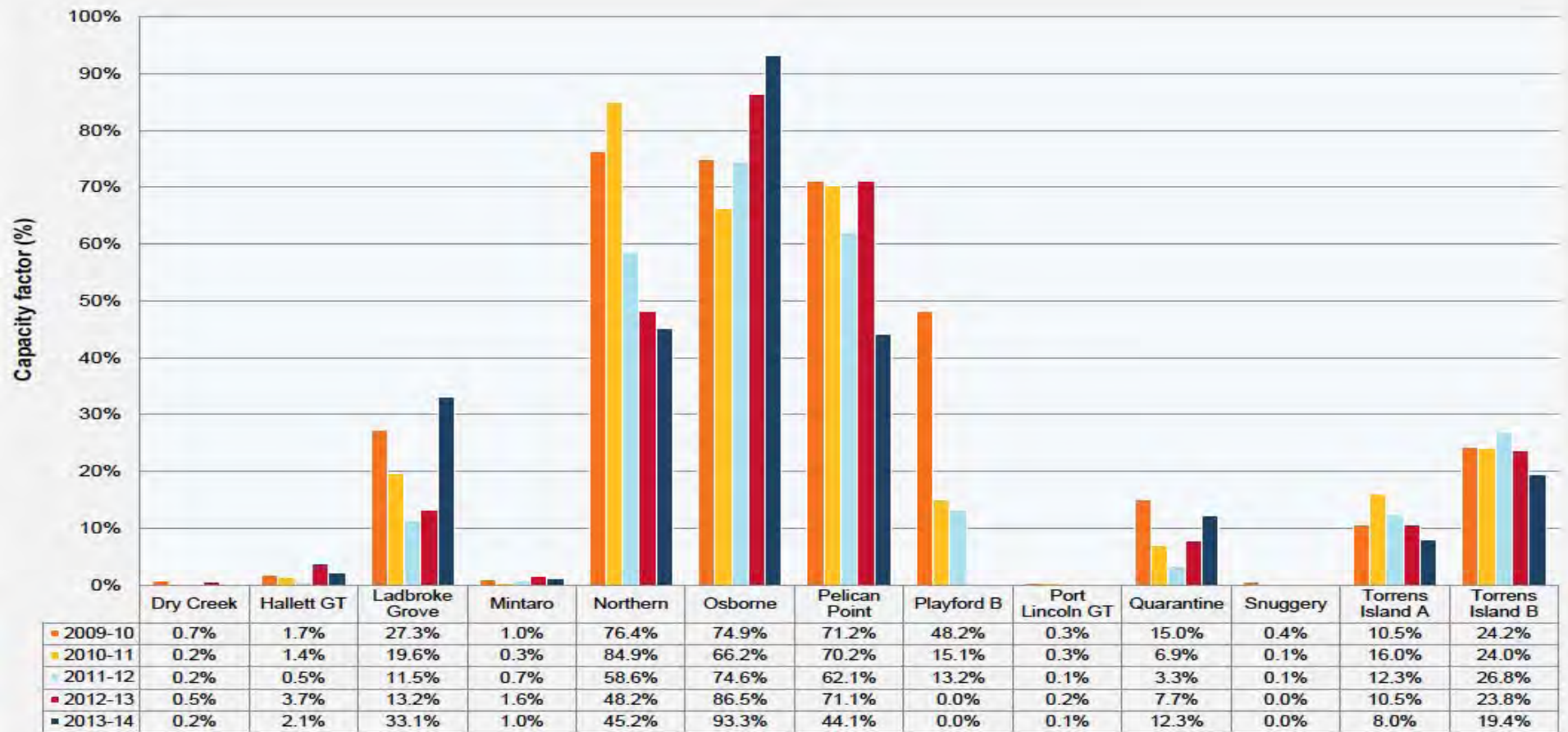
SWIS changing fuel mix



SA changing fuel mix



South Australia capacity factors thermal generation





electricity ↔ economics



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March 31, 2015, 9:33 A.M. ET

Tesla Motors: Personal Storage Battery a 'Long Shot at Best'



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By Ben Levisohn

Yesterday, **Elon Musk** tweeted that **Tesla Motors** ([TSLA](#)) would have make a big announcement next month—one that wasn't about a car. It's now widely assumed that he will be debuting Tesla's "stationary storage application." **BofA Merrill Lynch's John Lovallo II** and **John Murphy** call it "a long-shot at best." They explain why:

In our view, the "new" product offering referenced in today's tweet is almost certainly Tesla's stationary storage application, the unveiling of which Musk had already teased during the 4Q conference call. Therefore, we view the markets positive reaction as rather surprising and overdone. As we have written



of Australia's
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of clean energy
energy integration

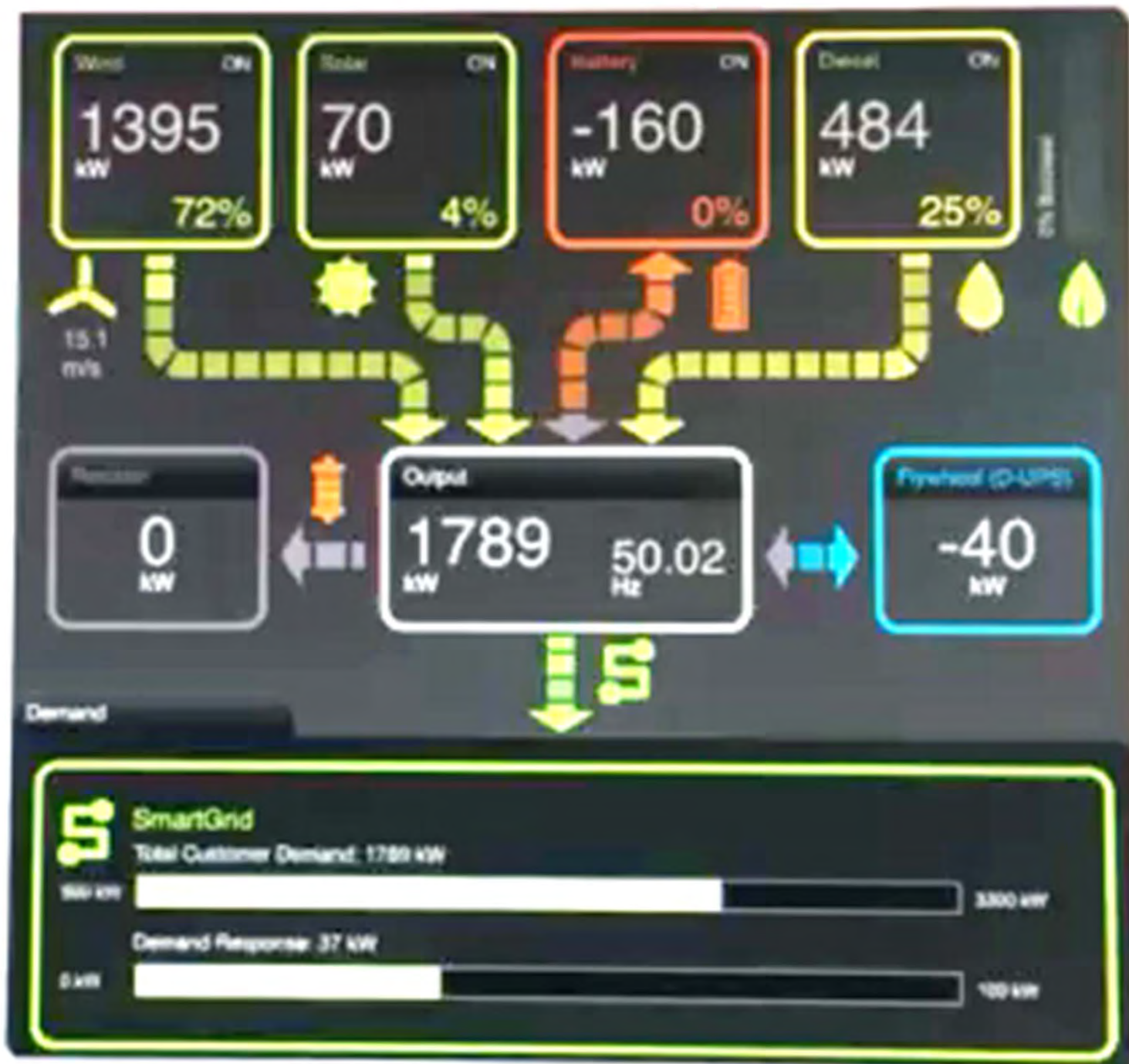
[journey here >>](#)

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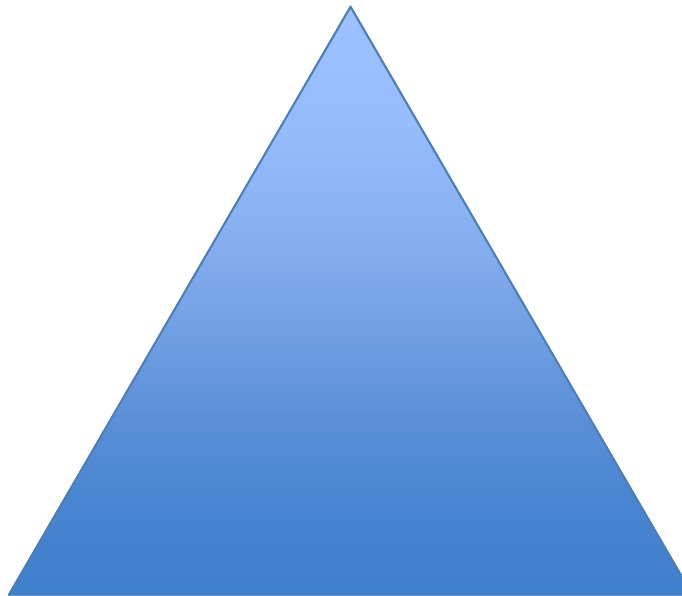
Live data - King Island Advanced Hybrid Power Station





The energy triangle of pain

Sustainability



Reliability

Affordability

