



Coming opportunities for DR in the NEM

A2SE Summer Study, Sydney — 27 February 2013

Overview

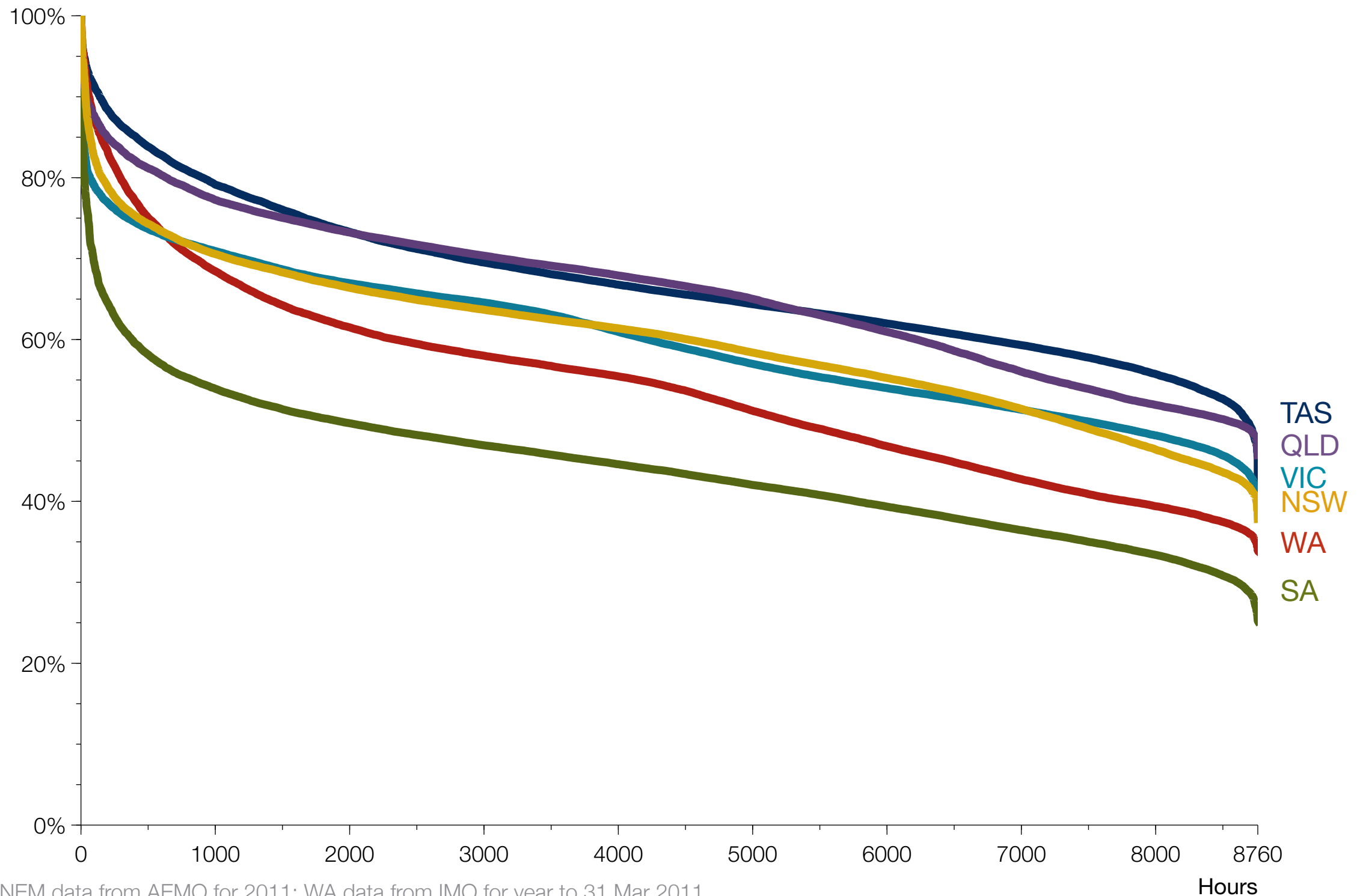
- What can DR do?
- What can DR do in the NEM now?
- What's changing?
- What will DR be able to do in the NEM?



■ What can DR do?

Capacity in the wholesale market

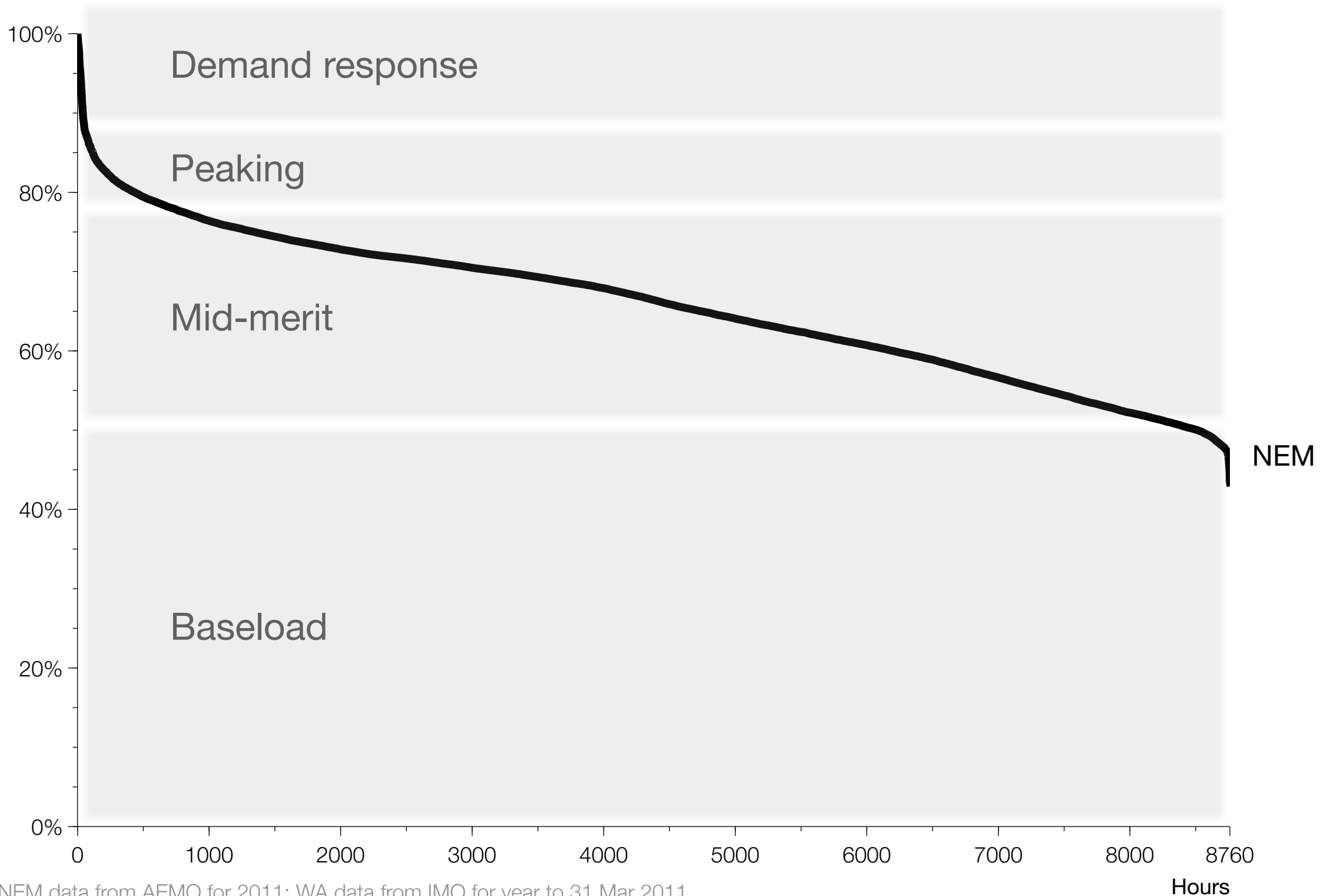
It's wasteful to build generators to service extreme peaks in demand



NEM data from AEMO for 2011; WA data from IMO for year to 31 Mar 2011.

Capacity in the wholesale market

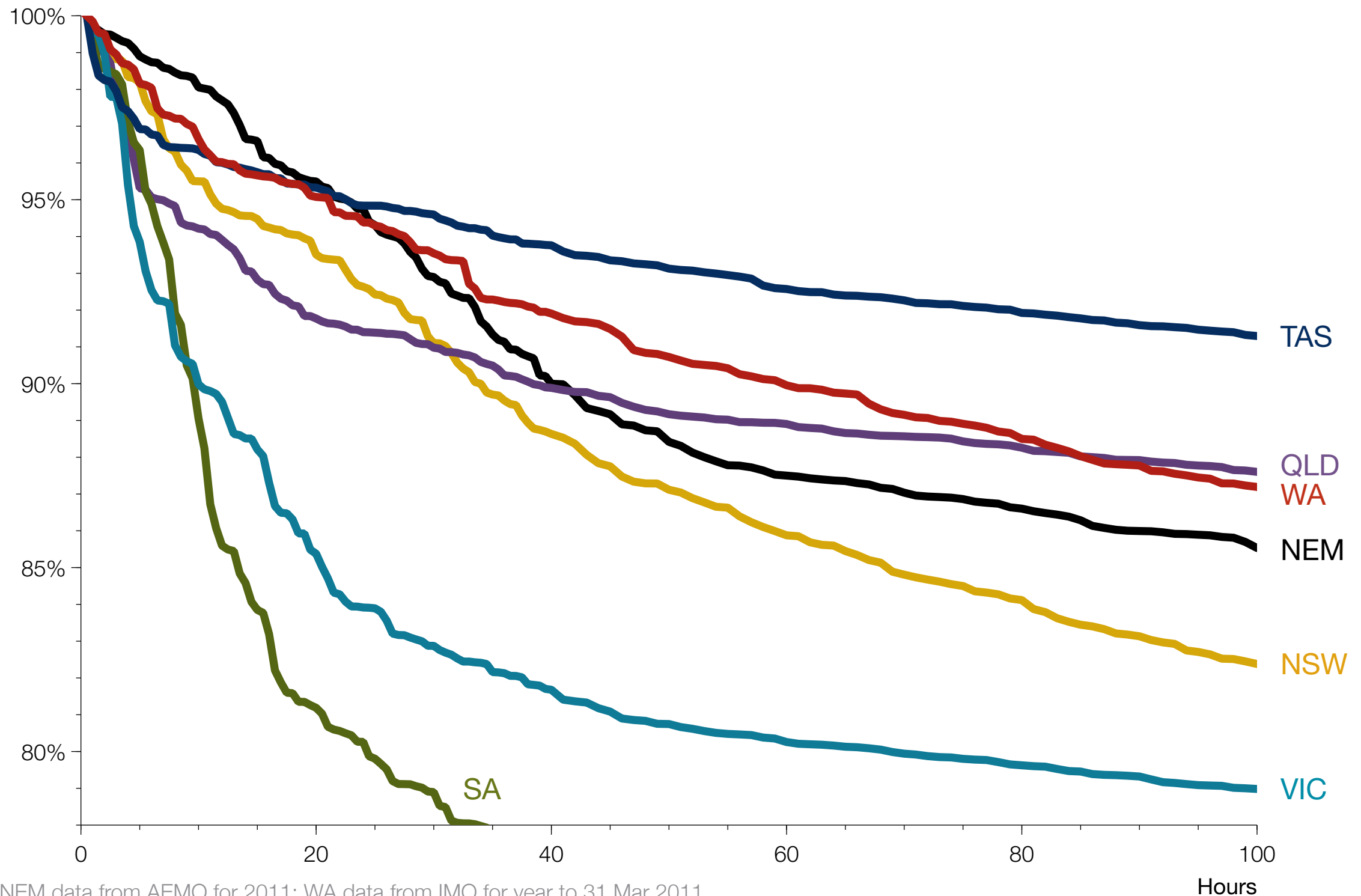
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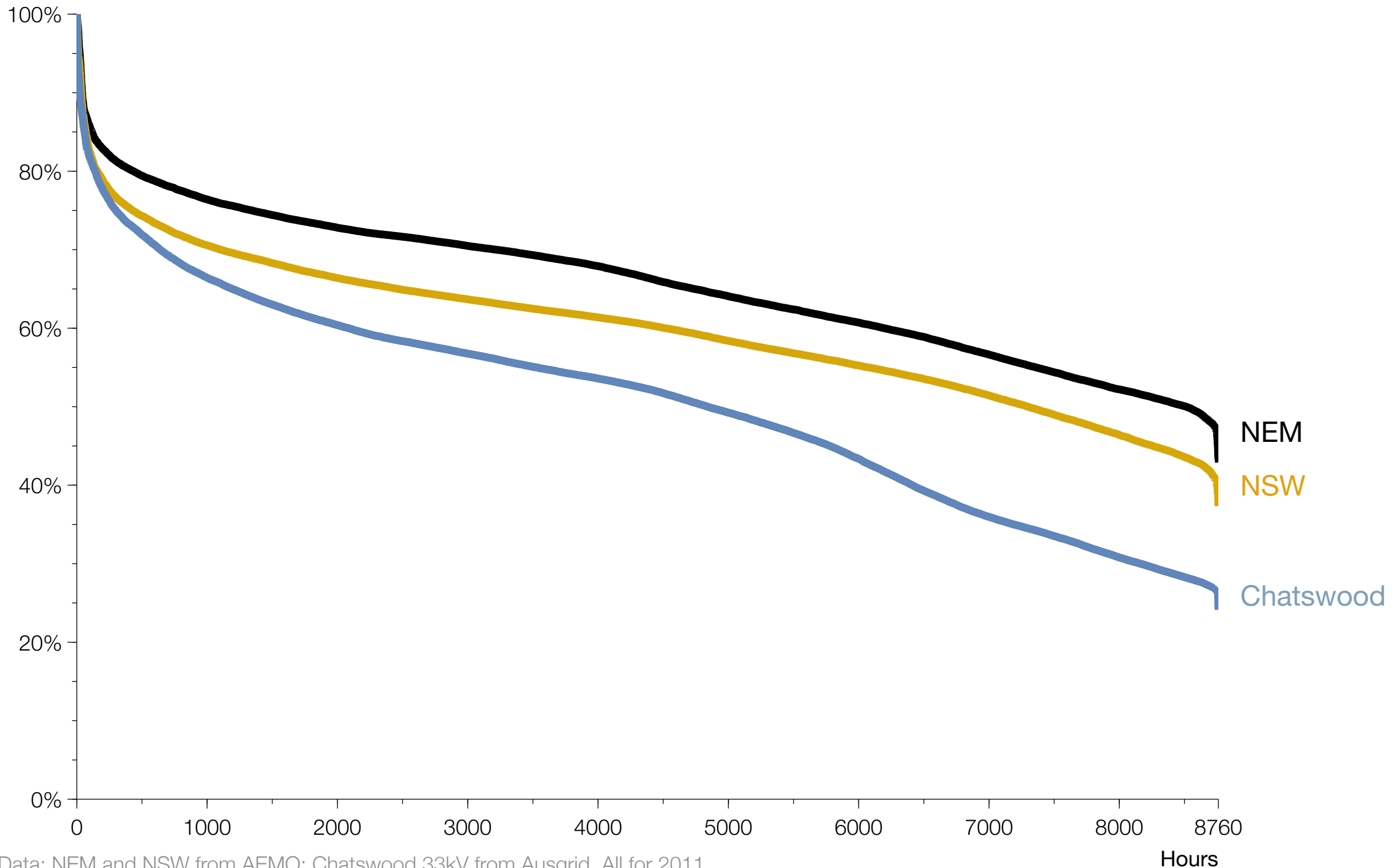
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NEM data from AEMO for 2011; WA data from IMO for year to 31 Mar 2011.

Network capacity

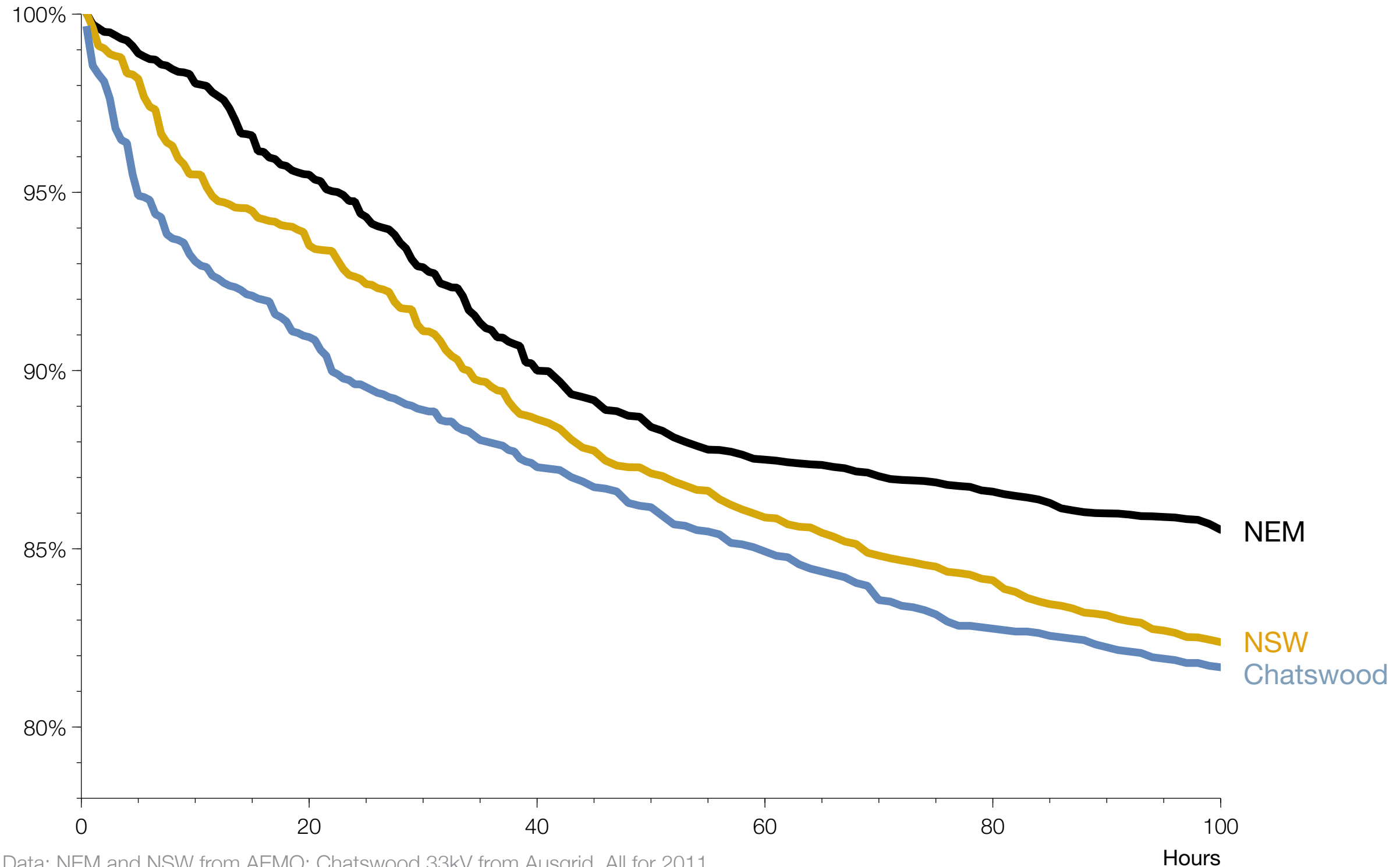
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Data: NEM and NSW from AEMO; Chatswood 33kV from Ausgrid. All for 2011.

Network capacity

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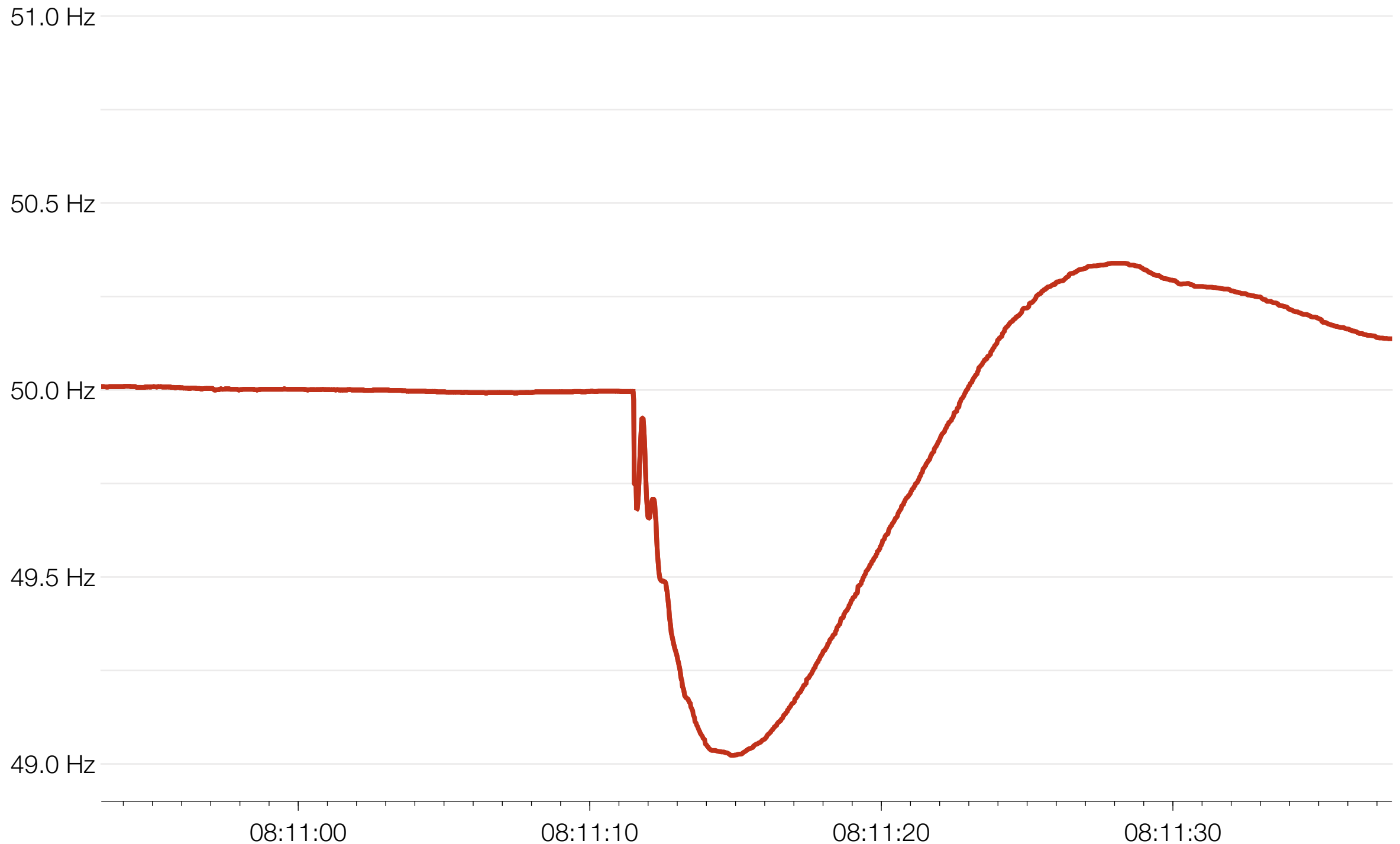


■ Other uses of DR

Contingency ancillary services

Load can be shed extremely quickly during an underfrequency event.

Unlike with generation, there's no efficiency penalty for keeping this capacity armed.

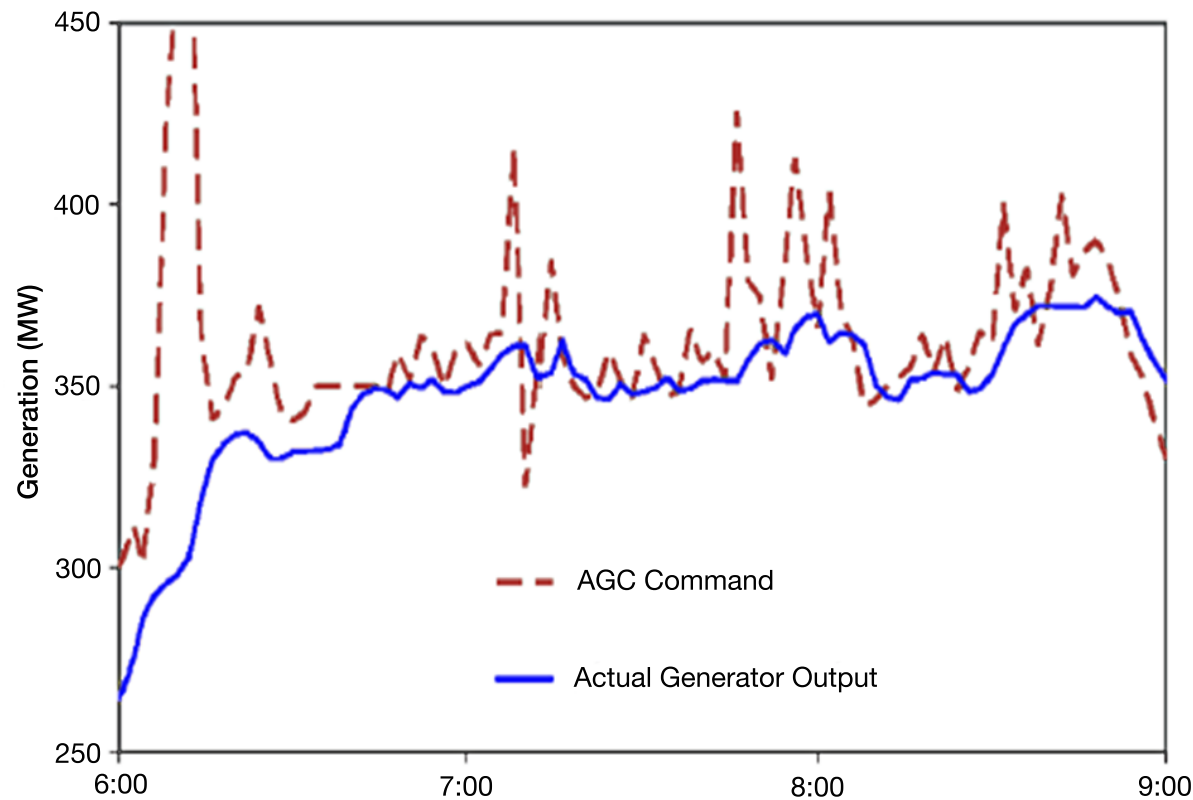


Data: 20 millisecond frequency samples recorded in Wellington during North Island UFE on 9 Dec 2011.

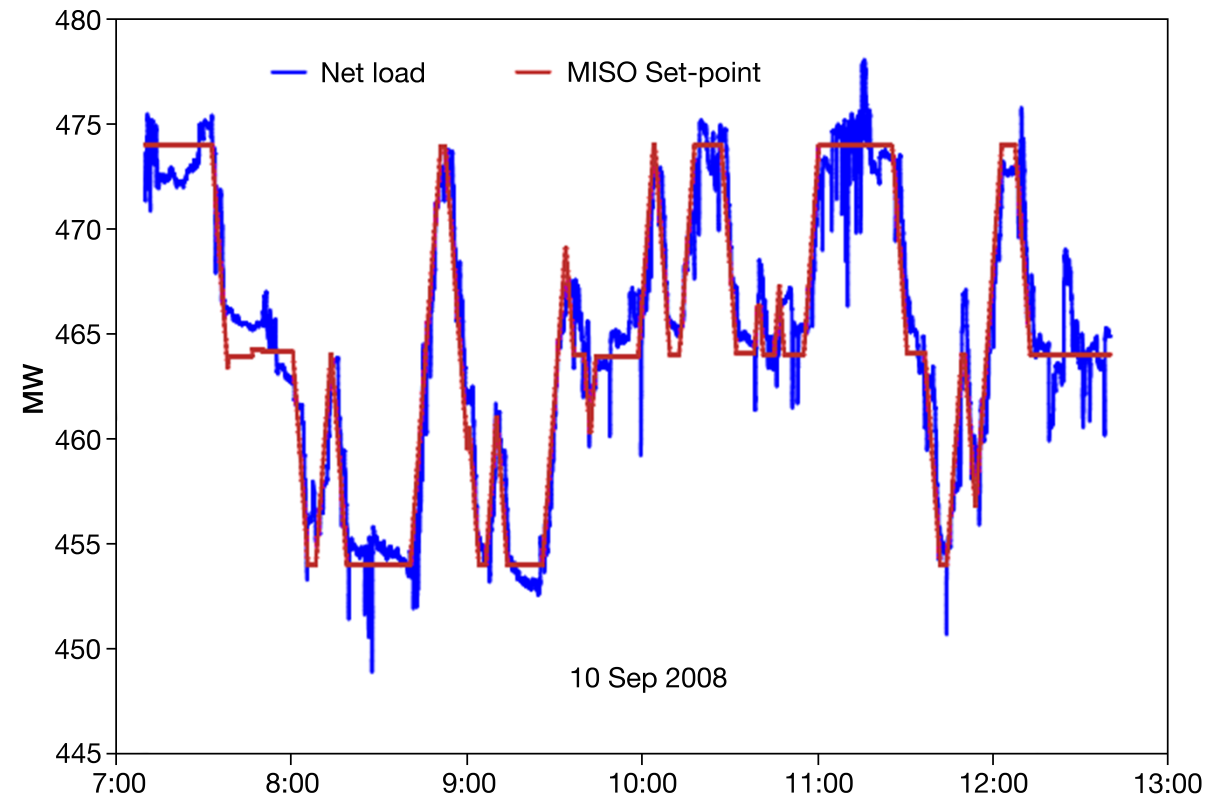
Frequency regulation

Load resources can respond more quickly and accurately than typical generators.

Regulation by generator



Regulation by demand response





■ What can DR do in the NEM now?

What can DR do in the NEM now?

	Advantage	Happening?	Problems
Wholesale	Lower cost	A small amount	Retailers and the brave only
Network	Lower cost	A tiny amount	Conflicting incentives
Contingency ancillary services	Better Lower cost	No	Retailers only No aggregation
Frequency regulation	Better	No	Retailers only No aggregation



■ What's changing?

Australian

FINAL

Power
options

30 November

Austra

RULE

National
Regulation
2012

National
Regulation

Rule Proponent
Australian Energy
Energy Users Rule
Westfarmers, West

29 November 2012

For and on behalf of the Australian

Reference:
Final Report



Mr Matt Zema
Chief Executive Officer
Australian Energy Market Operator
GPO Box 2008
Melbourne VIC 3001

Dear Mr Zema *Matt*

RE: Demand response mechanism and new category of market participant

Thank you for your letter of 19 December 2012 regarding implementation of these measures. As you noted in your letter, both work streams are outcomes of the Australian Energy Market Commission's (AEMC) Power of Choice review of demand side participation in the National Electricity Market.

I am writing to formally request the Australian Energy Market Operator (AEMO) to take leadership on the implementation of these two related work streams endorsed by the Standing Council on Energy and Resources (SCER) at its meeting on 14 December 2012:

1. a new option for demand side resources to participate in the wholesale market; and
2. a new category of market participant that will allow for the unbundling of non-energy services from the sale and supply of electricity.

In the package of energy market reforms that the Council of Australian Governments (COAG) endorsed at its meeting on 7 December 2012, SCER recommended development of a demand side wholesale market mechanism based on the recommendations of the AEMC's Power of Choice review.

In the Power of Choice review, the AEMC also recommended that work on unbundling ancillary service provision from the sale and supply of electricity be conducted alongside development of the demand side wholesale market option, to allow consideration of the links between the two.

On 14 December 2012, SCER agreed that officials should develop the terms of reference for AEMO to establish an advisory stakeholder working group to assist in developing a potential rule change proposal for a new wholesale market demand side participation option, and a new category of market participant, for the AEMC's consideration and final decision.

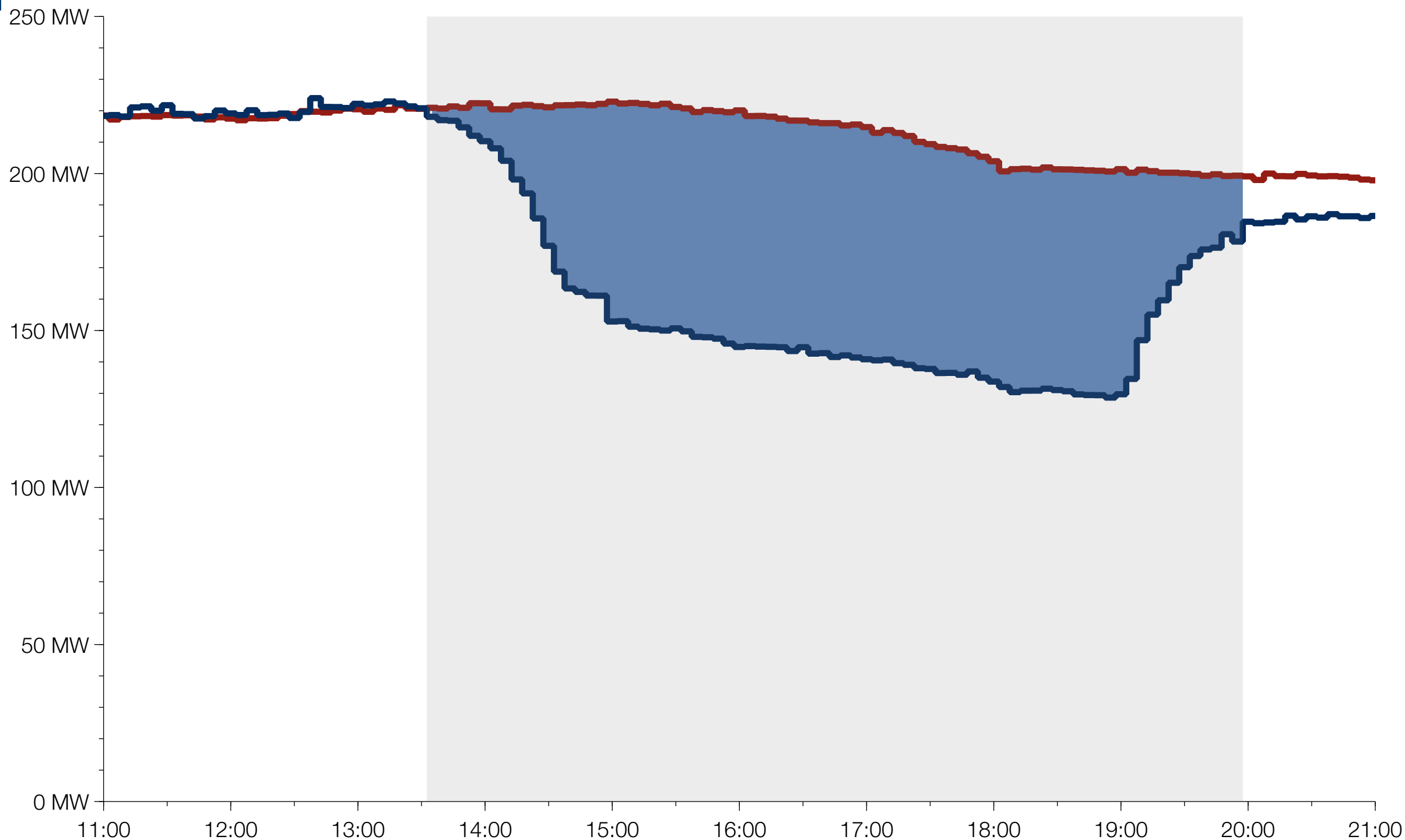
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■ What will DR be able to do in the NEM?

Demand response mechanism

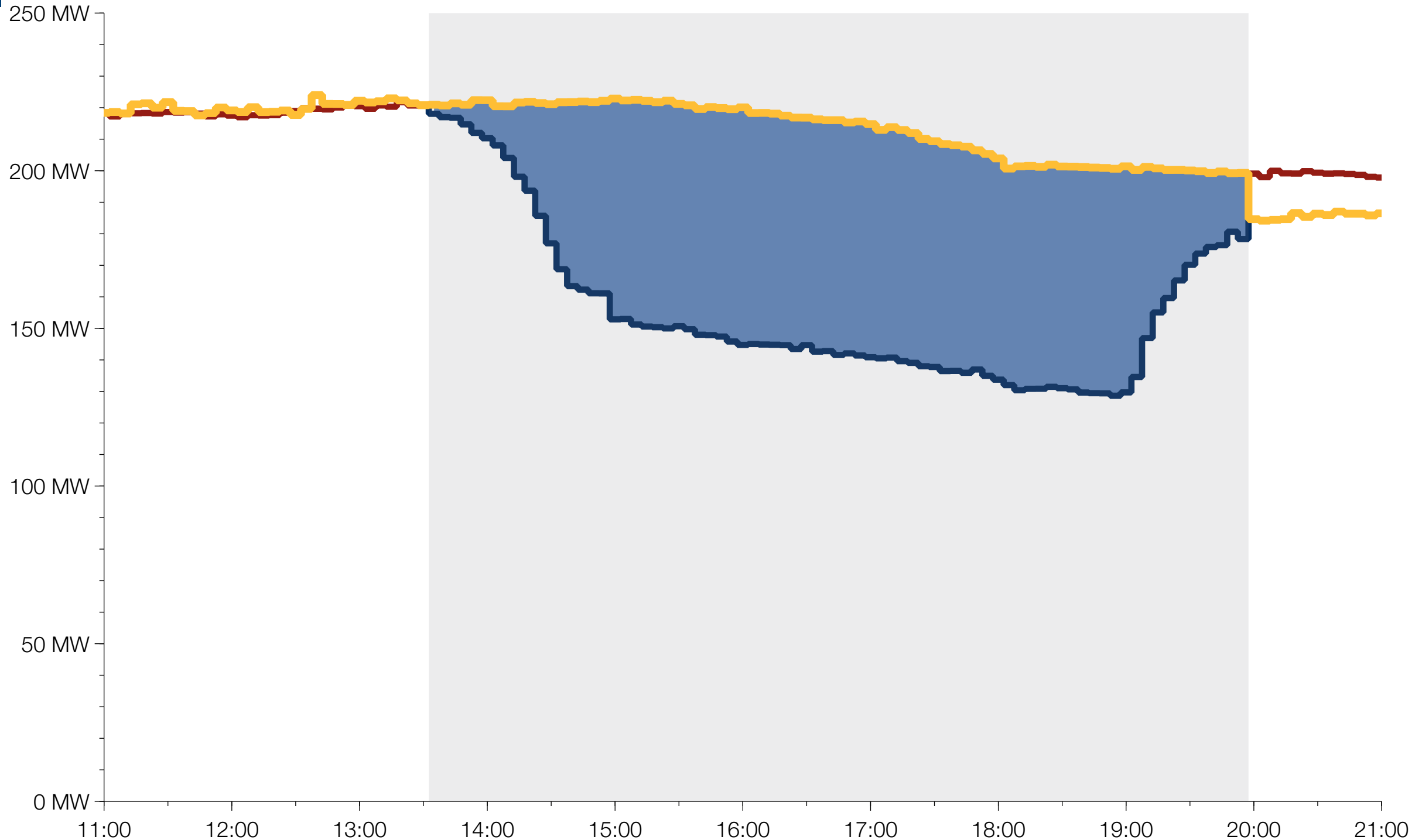
- Baseline
- Consumption
- DR



Data: EnerNOC portfolio during PG&E dispatch on 9 Aug 2012, with uncapped baseline adjustment.

Demand response mechanism

- Baseline
- Consumption
- DR
- Retail energy



Data: EnerNOC portfolio during PG&E dispatch on 9 Aug 2012, with uncapped baseline adjustment.

Demand response mechanism

What it should achieve

- DR providers treated like generators
 - Scheduled or unscheduled
 - Sell energy on the spot market
 - Could also sell hedges
- DR becomes a separately contestable service
 - Participate through retailer, or third party, or directly

What it seems unlikely to achieve

- Sensible treatment of long-lead-time resources
 - Price uncertainty is a fundamental problem with “real-time-only” energy-only market design
 - Can be solved through day-ahead or hour-ahead markets or commitment mechanisms

Why it may achieve much less

- Incumbent generators and retailers will continue to oppose it strenuously

Use of DR in networks

Initiatives underway both to prescribe what networks should do, and, more importantly, align their financial incentives with customers' interests.

Network planning and expansion framework

- RIT-D
- Information and engagement obligations

Economic regulation of NSPs

- More robust setting of rates of return
- Capital expenditure efficiency incentive schemes

Power of choice

- Genuine incentive scheme for demand management

What will DR be able to do in the NEM?

	Change	Timeline
Wholesale	Power of Choice demand response mechanism	Early 2015
Network	AER Better Regulation reforms	Regulatory resets from 2014/15
Contingency ancillary services	Non-energy services market participant	Unclear
Frequency regulation	Non-energy services market participant	Unclear



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