Demand Side Participation Forecast - Draft

June 2020

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DSP Forecasts - context

Timeline

Date	ESOO related discussion	Presenter
March	• DSP methodology 1st stage consultation	AEMO
Apr FRG	• DSP methodology overview and recap of consultation	AEMO
June	• DSP 2nd stage consultation and draft determination	AEMO
Today	• **Draft DSP results**	**AEMO**
July	• DSP final determination	AEMO

Today

Purpose:

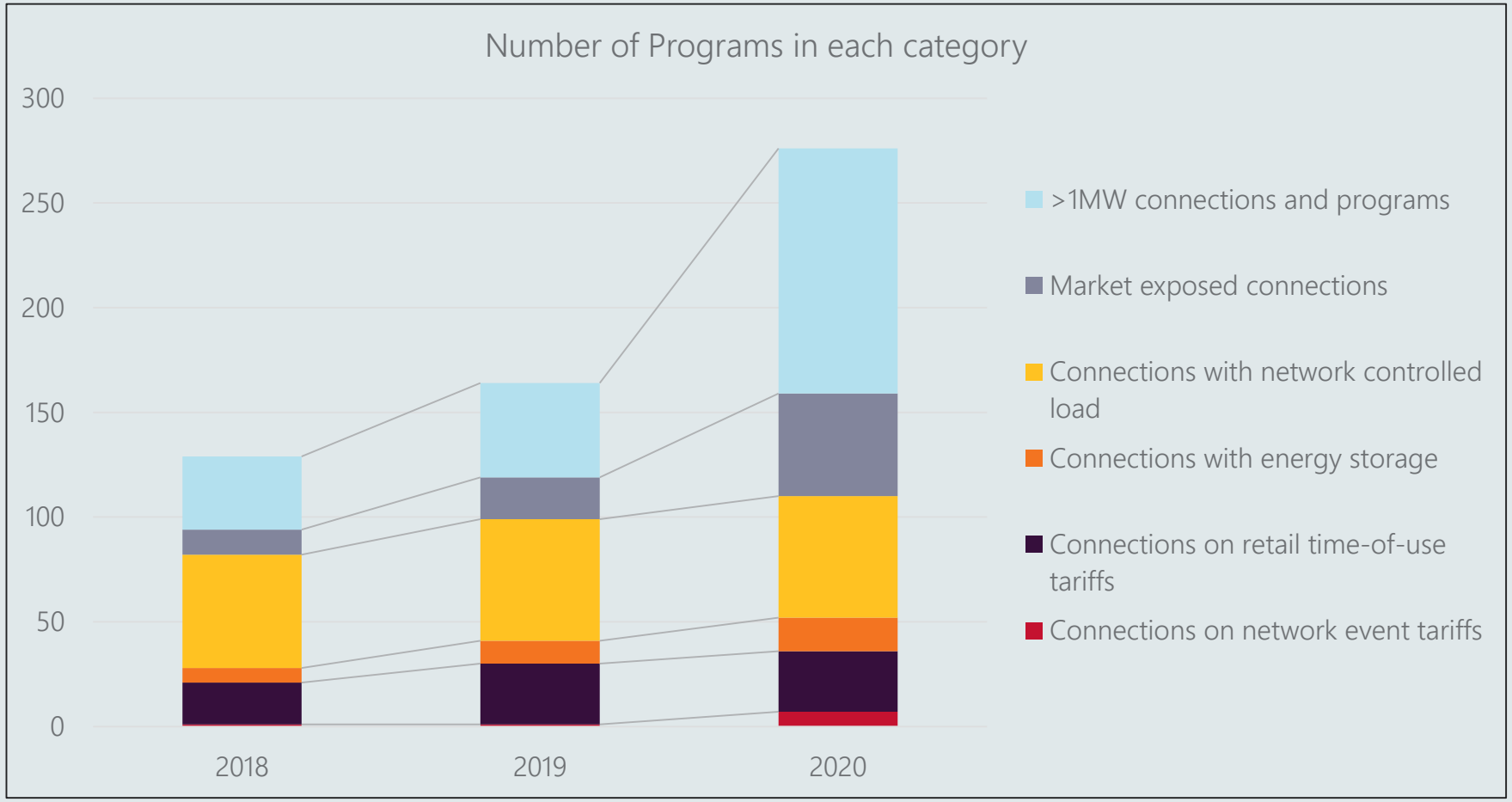
- Provide overview of Demand Side Participation Information (DSPI) portal information received
- Discuss draft DSP forecast results.

Agenda:

- Results from DSPI Portal
- Modelling Results
- Comparison with 2019
- Discussion

	Agenda
1	DSPI
2	Results
3	Meaning
4	Discussion

DSPI: Growth in DSP programs



Program numbers increasing year-on year, in particular Market exposed, Storage, and >1MW categories.

For forecasting, AEMO needs to use a specific definition of DSP to avoid double counting with demand, generation and storage.

But DSP definitions are critical to the numbers!

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2019

1a. A NMI is excluded from DSP if it meets one or more of the following:
- In the RERT program (panel or contract)
- Has peaking/non-peaking ONSG
- Has energy storage

Otherwise…

1b. The NMI is included if it has one or more of:
- Curtailable load (major industrial)
- Network tariff is short-term and/or has events

For clarity, the following factors do not impact a NMI's inclusion or exclusion from DSP as they are accounted for in either supply or demand forecasts:
- Retail TOU tariff
- Has daily/regular network controlled load

2020

2a. A NMI is excluded from DSP if it is in the RERT program (panel or contract)

Otherwise…

2b. The NMI is included if it has one or more of:
- Curtailable load (major industrial)
- Network tariff is short-term and/or has events
- *ONSG peaking generation*

For clarity, the following factors do not impact a NMI's inclusion or exclusion from DSP as they are accounted for in either supply or demand forecasts:
- Energy storage
- Non-peaking ONSG
- Retail TOU tariff
- Has daily/regular network controlled load

❶ Some proposed changes in DSP definition, but in any case…

❷ The bulk of NMI's that might broadly be considered DSP are already included in either demand generation or storage, so are excluded from AEMO's DSP count

Number of NMIs in each category	2020 DSPI	AEMO Included
Connections on network event tariffs	3,913	3,913
Connections on retail time-of-use tariffs	979,917	-
Connections with energy storage	15,430	-
Connections with network controlled load	2,190,708	87
Market exposed connections	5,832	5,832
>1MW connections and programs	327,065	2,215

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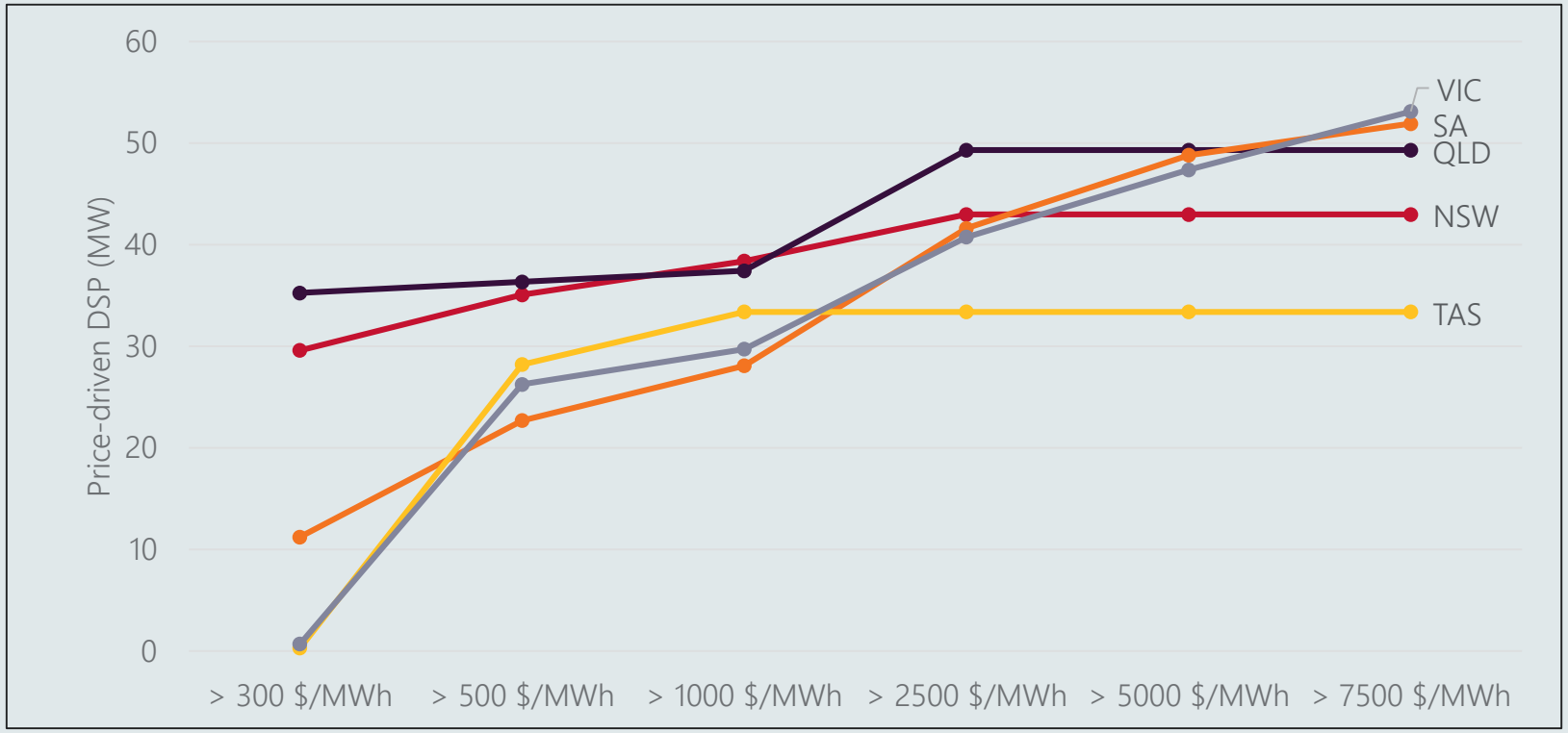
Regional DSP differences tell a story…

- Queensland magnitude attributed to greater proportion of industrial load and large OSNG peakers.
- Queensland and New South Wales all have significant responses from relatively low prices, expectedly from being contracted to support $300 cap contracts.
- South Australia has significant generator peaking capacity (non-ONSG) and less industrial load explaining the range in forecast. DSP.
- Tasmania's response is predominately from larger industries reducing load on the rare high price events.



Trigger	NSW	QLD	SA	TAS	VIC
Reliability response (MW)	285	101	52	33	200

DSP increases expected to support improved reliability outcomes

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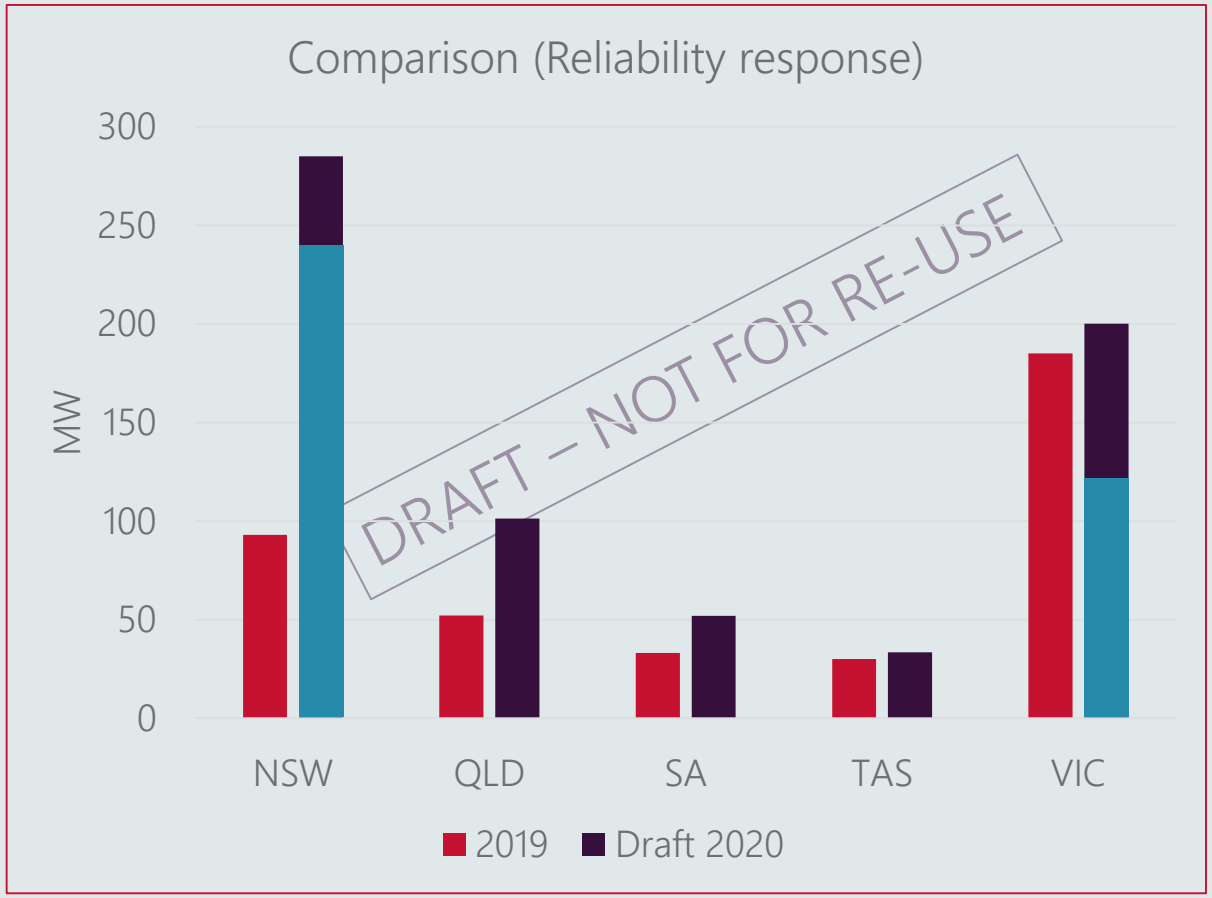

Modelled programs:

- Queensland and South Australia are higher due to included ONSG peakers and additional observed DSP response.
- New South Wales, Victoria higher due to reliability response adjustments:
  - 242 MW in New South Wales and 122 MW in Victoria added to account for contribution of sites that are only partly on RERT. These estimates are subject to further review.
  - It has been assumed these responses are not firm for durations longer than 3 hours.
- DSP forecasts for Tasmania basically unchanged.

DSP increases expected to support improved reliability outcomes

Comparing the 2019 and draft 2020 DSP forecasts (in MW)

	NSW	QLD	SA	TAS	VIC
2019 DSP forecast	93	52	33	30	185
Draft 2020 forecast	285	102	52	33	200
Increase in DSP	192	50	19	3	15
Added to demand	2	18	4	0	-61
Increase in supply (DSP) relative to demand	190	32	15	3	76

This supply increase will (everything else equal) improve reliability.

Discussion

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- Does your expectation of DSP levels for the coming summer differ from the forecast?
- What changes can be expected beyond summer 2020-21?

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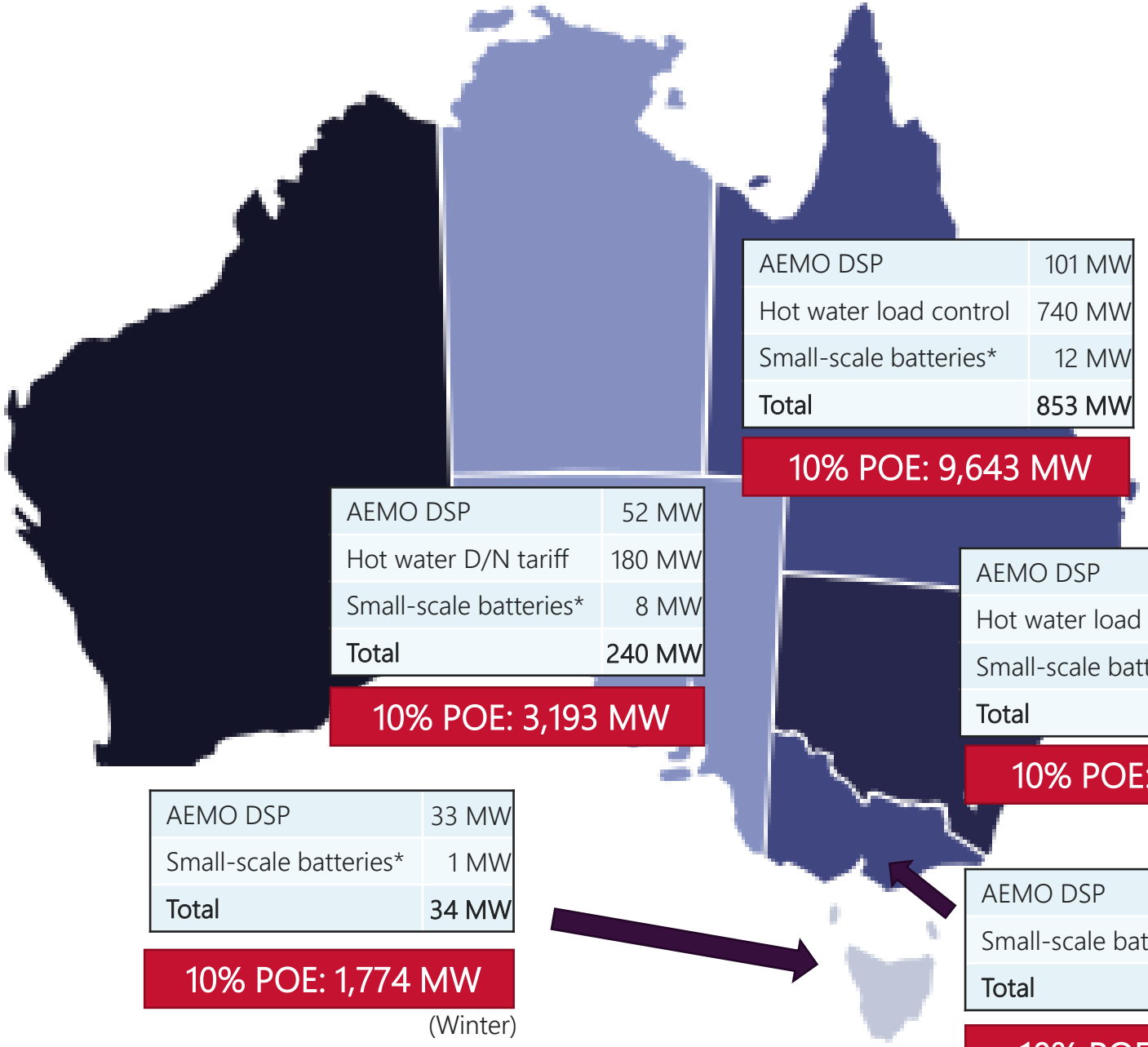
Significant demand flexibility in the NEM beyond DSP

The tables illustrate the total level of demand flexibility estimated for 2020 against the 10% POE forecast for this year (2019 ESOO forecast).



AEMO DSP	101 MW
Hot water load control	740 MW
Small-scale batteries*	12 MW
Total	**853 MW**

10% POE: 9,643 MW

AEMO DSP	52 MW
Hot water D/N tariff	180 MW
Small-scale batteries*	8 MW
Total	**240 MW**

10% POE: 3,193 MW

AEMO DSP	285 MW
Hot water load control	1240 MW
Small-scale batteries*	25 MW
Total	**1550 MW**

10% POE: 14,293 MW

AEMO DSP	33 MW
Small-scale batteries*	1 MW
Total	**34 MW**

10% POE: 1,774 MW

(Winter)

AEMO DSP	200 MW
Small-scale batteries*	11 MW
Total	**211 MW**

10% POE: 9,967 MW

* Batteries: Estimated contribution to peak excluding VPP

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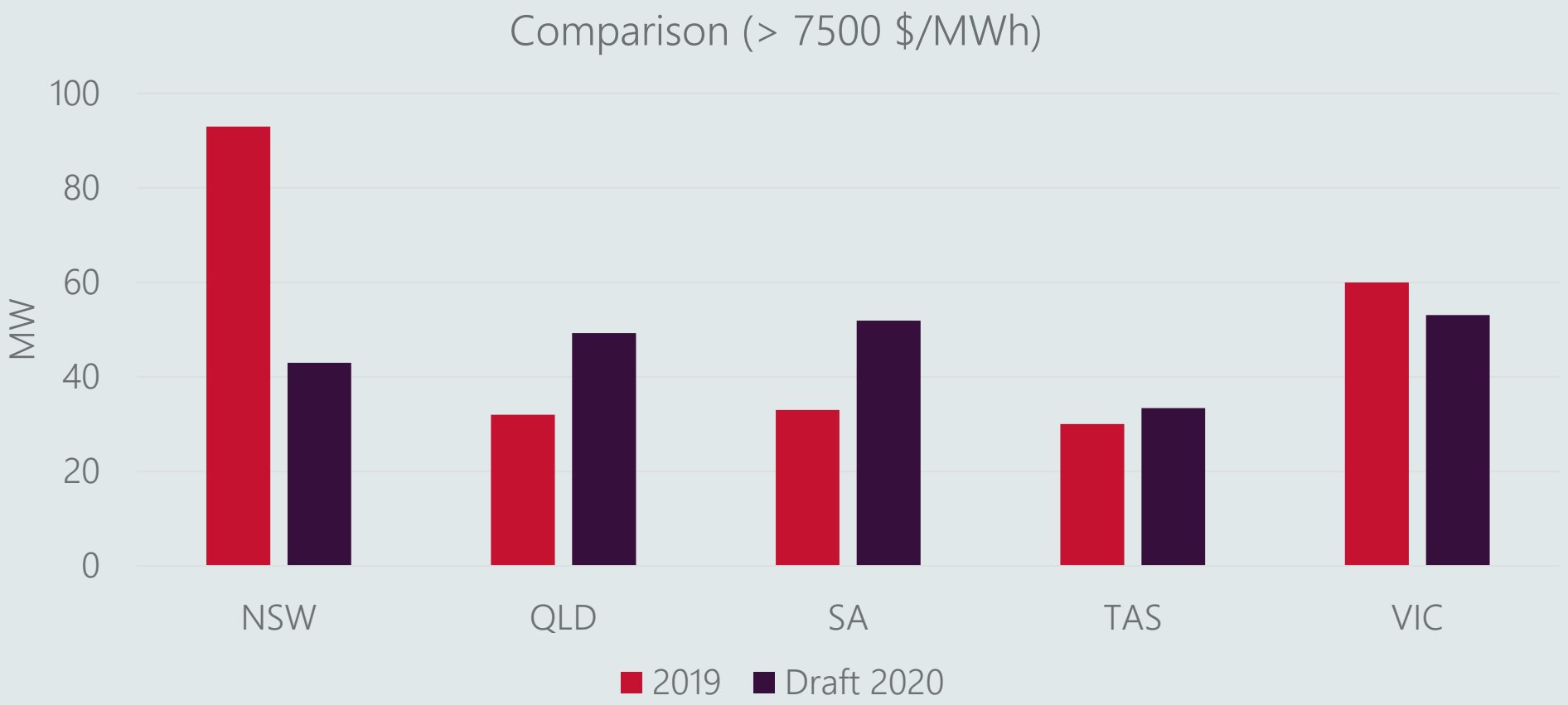
Results (modelled programs and reliability response)

Price	NSW	QLD	SA	TAS	VIC
> 300 $/MWh	30	35	11	0	1
> 500 $/MWh	35	36	23	28	26
> 1000 $/MWh	38	37	28	33	30
> 2500 $/MWh	43	49	42	33	41
> 5000 $/MWh	43	49	49	33	47
> 7500 $/MWh	43	49	52	33	53
Reliability response	285	101	52	33	200

Comparison (price response)