

COVID-19

Shifting demand a temporary blip or an enduring trend?

The impact of COVID-19 on electricity demand – 85 days in

April 2020

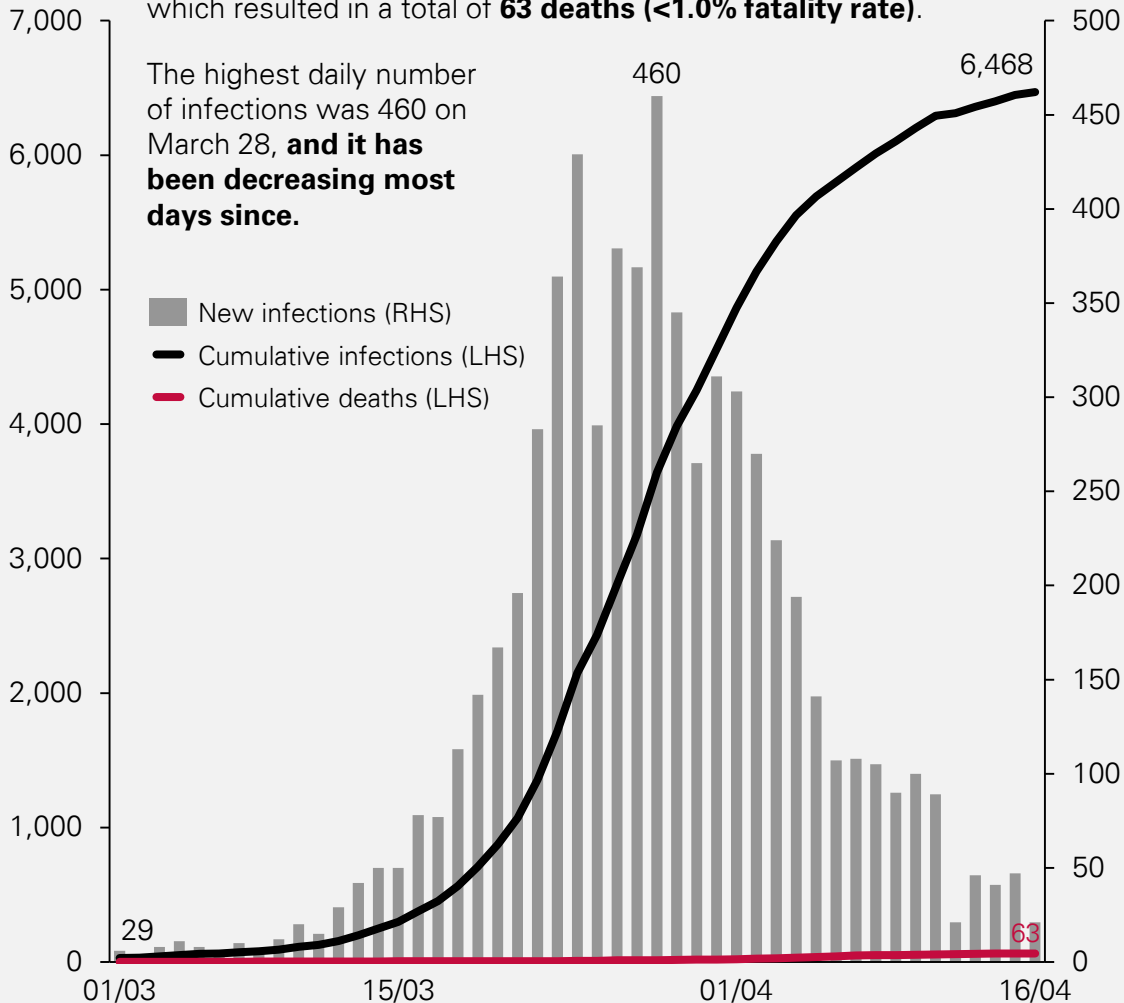


Confirmed COVID-19¹ infections in Australia

Number
01 Mar to 16 Apr 2020

As at 16 April 2020, **6,468 infections were confirmed** in Australia, almost **85 days since the 1st case** dated 25 January, which resulted in a total of **63 deaths (<1.0% fatality rate)**.

The highest daily number of infections was 460 on March 28, and it has **been decreasing most days since**.



Notes: (1) Also referred to, or known as coronavirus.

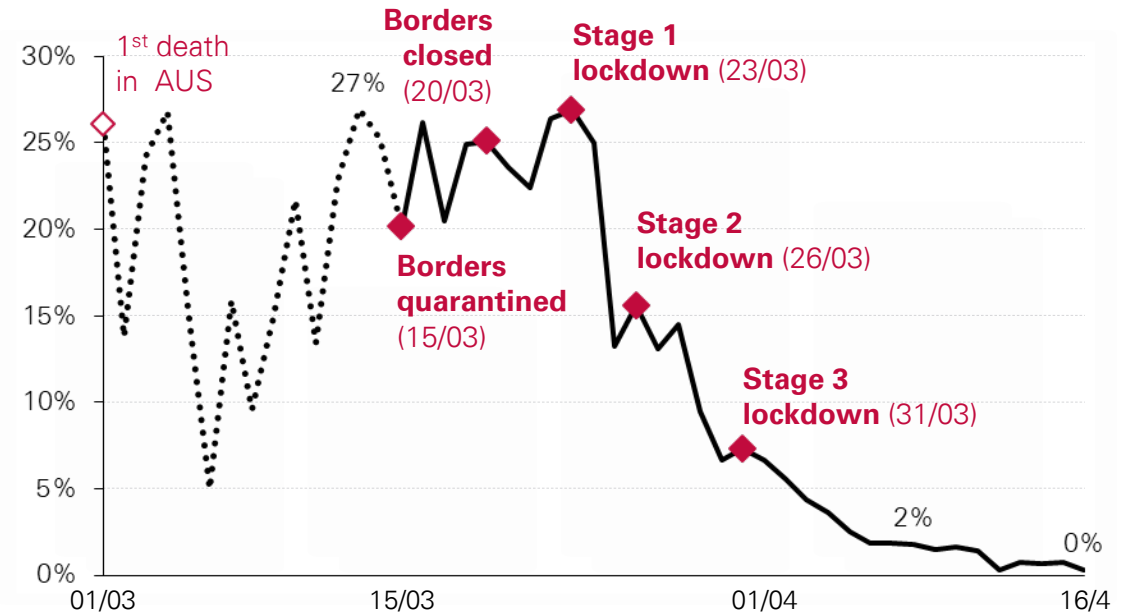
Sources: Media releases by various Health Departments (e.g. NSW Health, Department of Health and Human Services Victoria) across Australia (2020)

Australia is flattening the infection curve as a result of key and timely preventative measures

Daily infection rate in Australia

Per cent
01 Mar to 16 Apr 2020

••• Pre preventative measures
— Post preventative measures



Since mid-march, **the National Cabinet deployed a set of key preventative measures** such as quarantining and subsequently closing its borders, closing non-essential services and allowing only four reasonable reasons to be outside.

These **timely measures** appear to **effectively and directly influence the daily infection rate**, which peaked at 27% in early March, before **steadily decreasing to below 5%** at the start of April, and **now sitting at a record low of less than 1%**.

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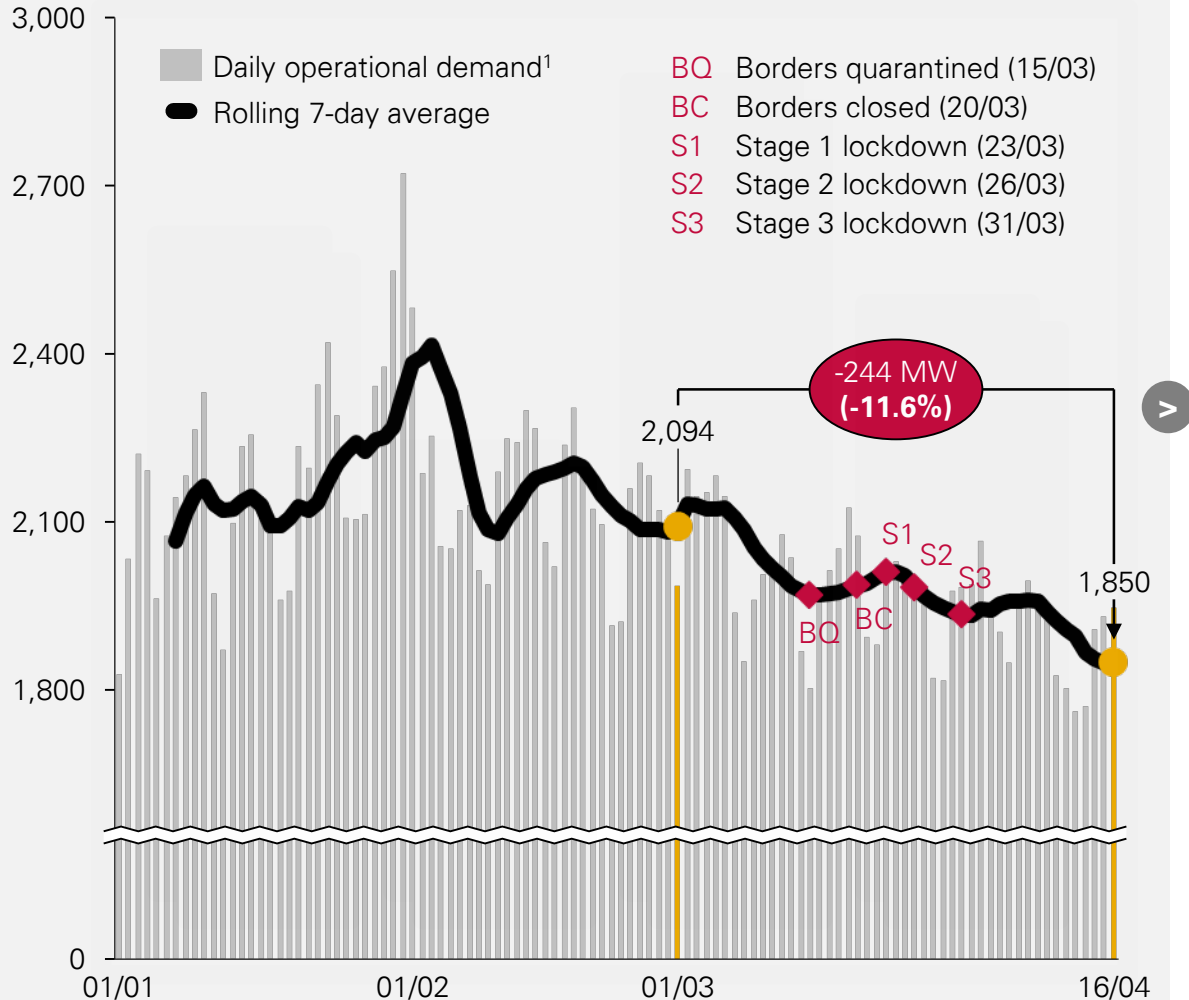


Daily operational demand¹ across the NEM²

MW

01 Mar to 16 Apr 2020

Since 01 Mar 2020, **operational demand has decreased by 244 MW (or 11.6%)** using a rolling 7-day average metric



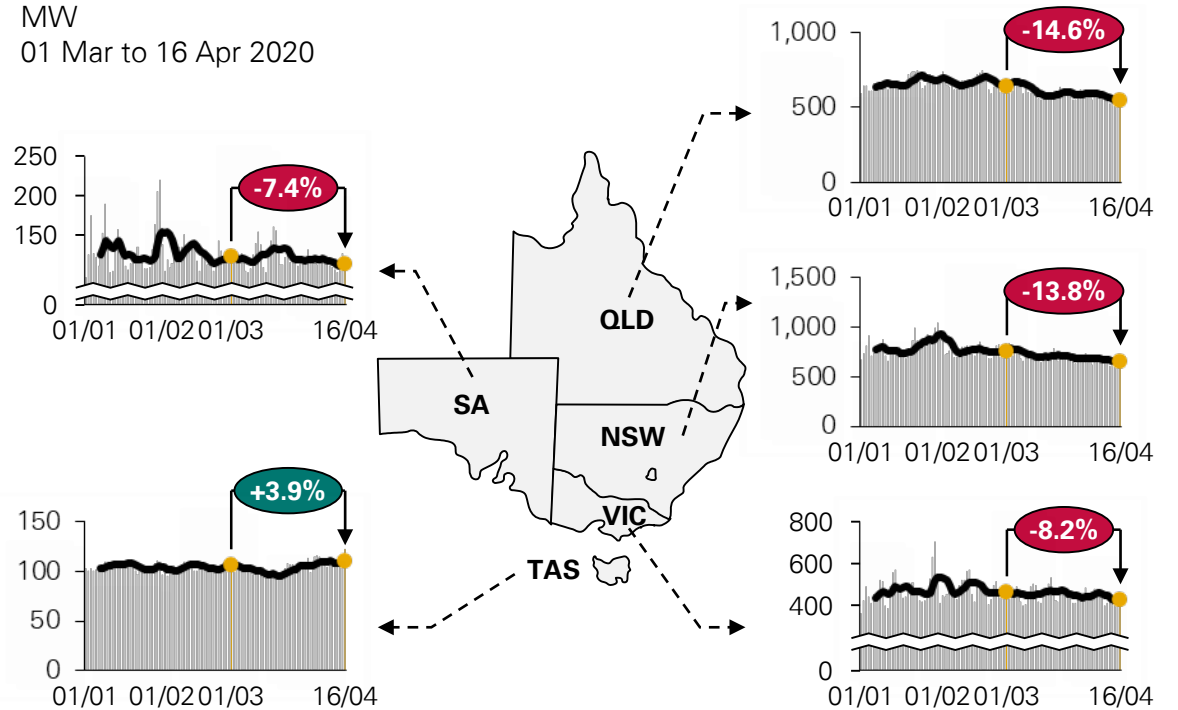
Notes: (1) Measured on the transmission network and adjusted for rooftop solar production; (2) National Electricity Demand, which covers the NSW (including ACT), VIC, QLD, SA and TAS states.
Sources: NEOpint – AEMO database (accessed Apr 2020); KPMG analysis

Meanwhile, electricity demand¹ has declined by c. 7-15% across the NEM except Tasmania

Daily operational demand by NEM¹ state

MW

01 Mar to 16 Apr 2020



Since 01 March, **with the exception of Tasmania, all NEM states experienced a downward trend in electricity demand**, but faced different trend curves:

- QLD and NSW's down by 14-15%, a sustained reduction over time
- VIC and SA's down by 7-8%, with an initial partial recovery over the balance of March, followed by a reversing trend over April
- TAS up by 4%, a result of a sharp decline first in March, then a strong recovery in April

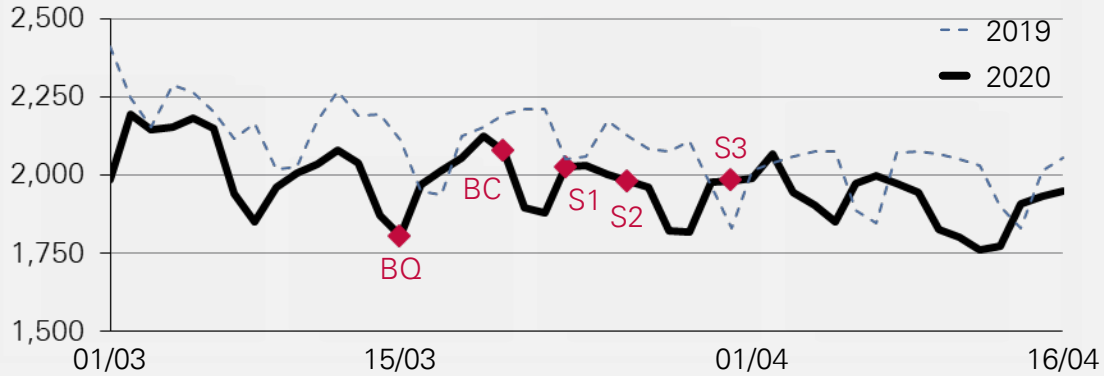
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Daily operational demand across the NEM

MW
2019 and 2020 (from 01 Mar to 16 Apr)

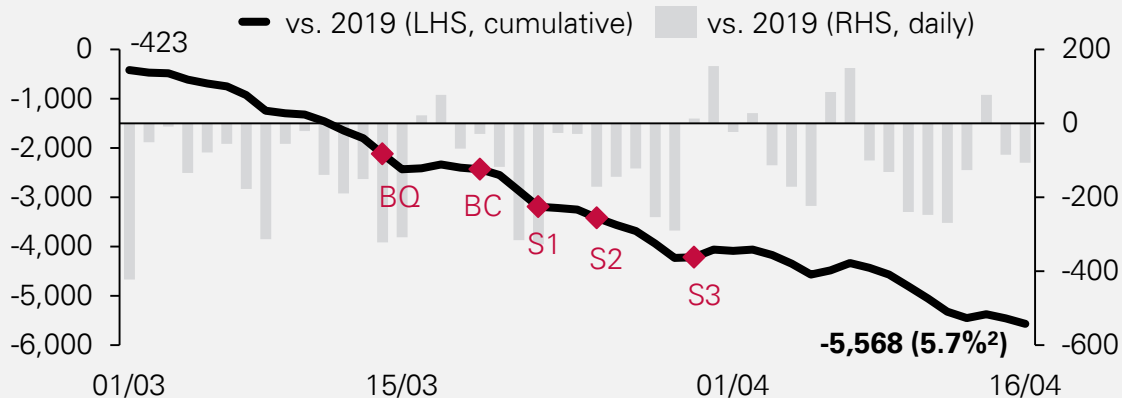
For the vast majority of the period covering 01 Mar to 16 Apr, **daily operational demand for 2020 was below 2019 levels...**



Difference between 2020 operational demand and 2019 levels

MW (cumulative¹), Per cent (change from previous period)
01 Mar to 16 Apr

...reaching up to **5.6 GW (or 5.7%) on a cumulative basis**

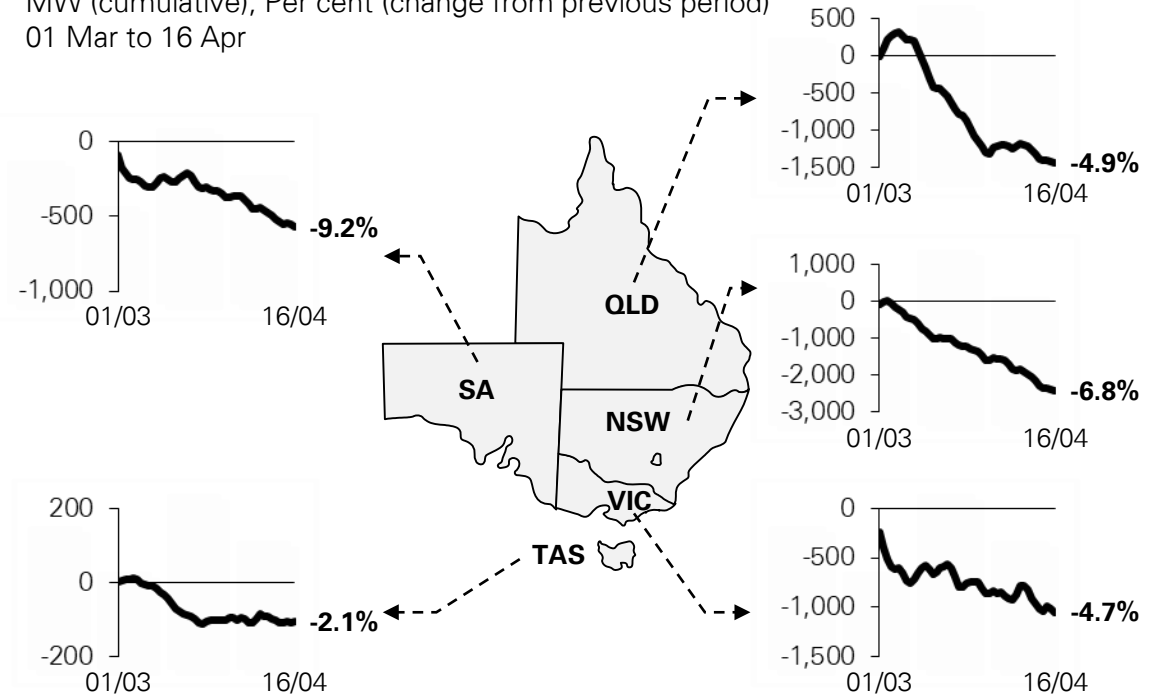


Notes: (1) Calculated by adding daily differences in operational demand over the period; (2) Calculated as cumulative difference (2,727 MWh), divided by 2019 demand over nominated period (46,130 MWh).
Sources: NEOpoint – AEMO database (accessed Apr 2020); KPMG analysis

...and this is approximately 2-9% lower when compared to 2019 levels

2020 daily operational demand vs. 2019 by state

MW (cumulative), Per cent (change from previous period)
01 Mar to 16 Apr



Over the period 01 March to 13 April, **when compared to 2019 levels, all NEM states experienced cumulative reductions in electricity demand, where:**

- SA faced the deepest reduction, with 9.2% (or 572 MW) lower demand
- NSW follows closely with a 6.8% (or 2,409 MW) reduction
- QLD and VIC experienced c. 5% reduction with 1,432 / 1,050 MW respectively
- TAS experienced the least reduction (at 2.1% or 106 MW), flattening over April

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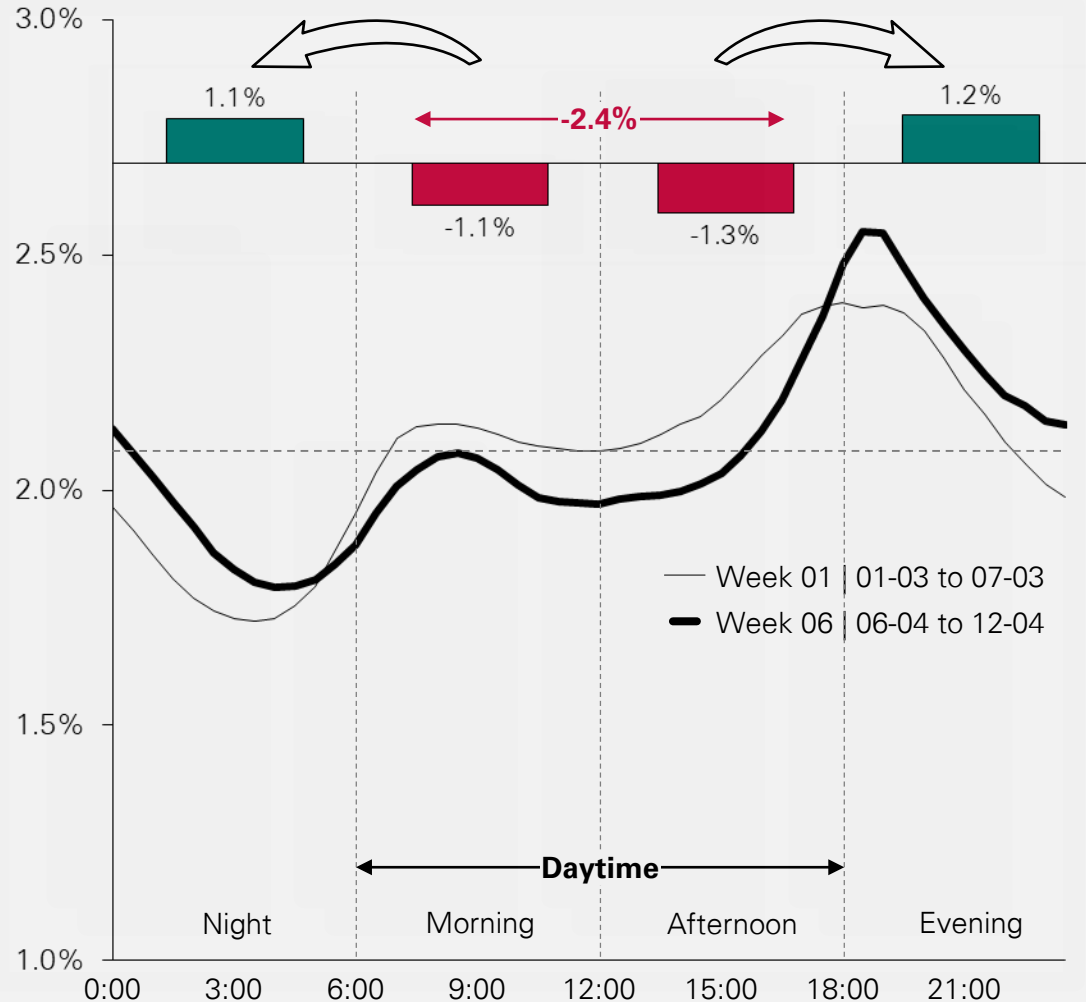


Operational demand curve¹ daily profile within the NEM

Per cent (based on 30min block interval)

Week 1 (01 to 07 Mar) and week 6 (06 Apr to 12 Apr)

In the most recent week, **2.4% (or c. 35 mins)** of demand has shifted away from **daytime** (06:00 to 18:00) to evening / night, when compared to 1st week of March



Notes: (1) Measured based on demand patterns over 30min block intervals for particular weeks, e.g. Block 00:00 to 00:30 % is calculated as weekly demand over the 30min, divided by total weekly demand.
Sources: NEOpnt – AEMO database (accessed Apr 2020); KPMG analysis

The demand curve is not only trending down, but daily profiles are shifting away from daytime

Operational demand curve daily profile by state

Per cent (based on 30min block interval)

Week 1 (01 to 07 Mar) and week 6 (06 Apr to 12 Apr)



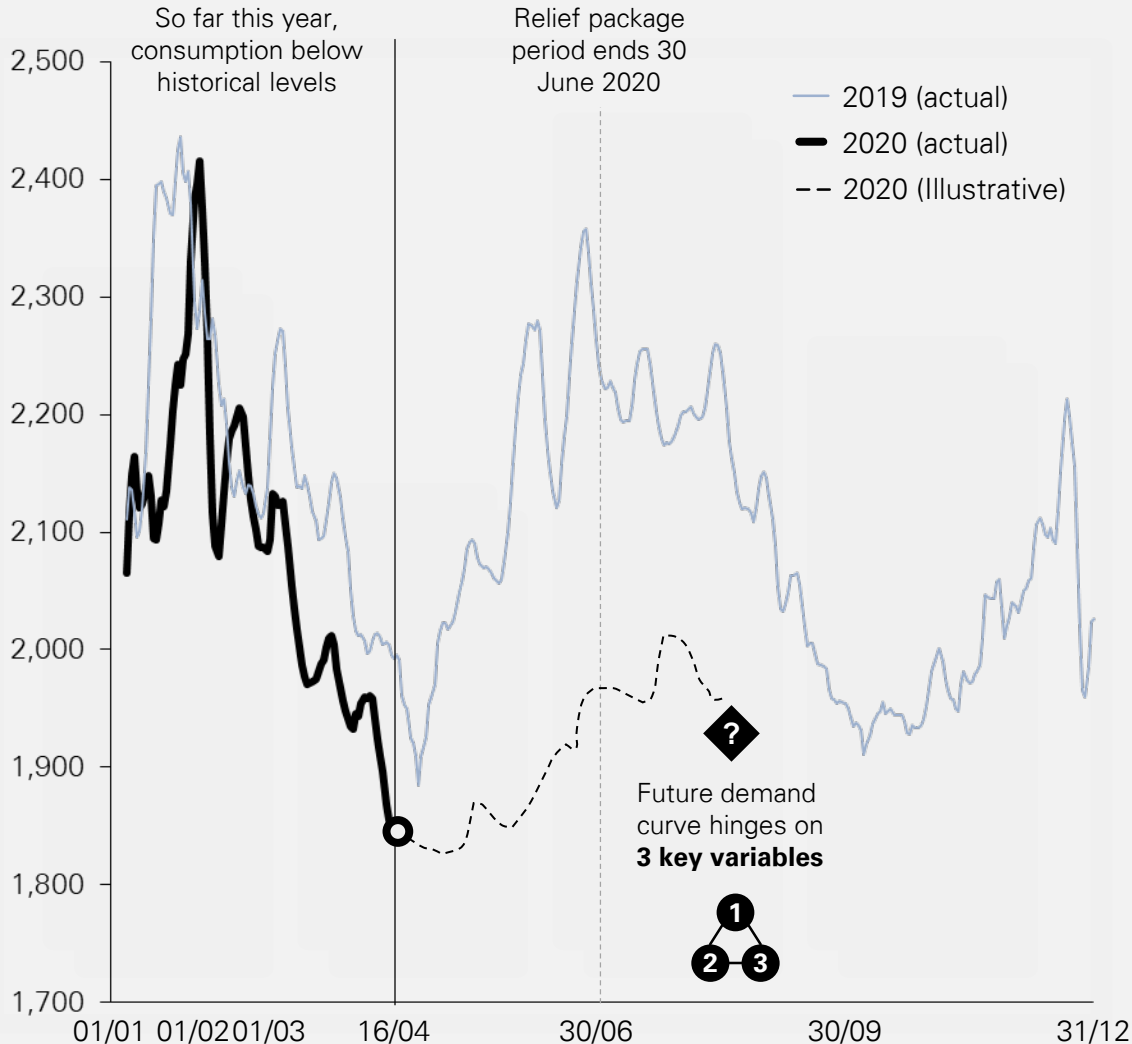
Comparing the first week of March (1st to 7th) to the most recent week (6-12 Apr), **all NEM states experienced shifts in their daily demand curve profiles, where:**

- In NSW, c.45mins (or 3.2%) is shifted equally to evening or night time
- In VIC (c.25mins) and SA (c.40mins), demand largely shifted to the evening
- In QLD, the shift in demand (2.1%, c. 30mins) is predominantly to the night time
- In TAS, demand now staggered to evening (+0.7%), and to some extent morning

Daily operational demand across the NEM

MW (rolling 7-day average)

2019 (Jan to Dec), 2020 (01 Jan to 16 Apr)



Notes: (1) Measured on the transmission network and adjusted it for rooftop solar production; (2) National Electricity Demand, which covers the NSW (including ACT), VIC, QLD, SA and TAS states.

Sources: NEOpint – AEMO database (accessed Apr 2020); KPMG analysis

A new demand curve as the economy navigates through, recovers and transitions from COVID-19?

What goes down must go up, but...

The operational electricity **demand curve typically depicts a “see saw” shape**, in that it peaks in summer, softens over the start of autumn before rising again during the winter months, then ultimately declines across spring.

So far this year, whilst the curve has followed its “typical” downward trajectory, the **observed reduction has been deeper than 2019 levels** (estimated at 5.7% cumulatively over the period 1 Mar to 16 Apr 2020).

But as **lock down measures are foreseen to extend, these could (most likely further) widen the gap** and lead to an enduring shift in Australia’s electricity demand profile.

Three key questions arise regarding the short to mid-term electricity market (e.g. to the end of 2020):

- 1 How much deeper will the demand reduction go?
- 2 How long before demand tracks back up?
- 3 When demand does rise again, how close will the demand curve be against its normal glide path (same, lower, higher)?

...will the ‘new normal’ be the same?

With the **whole Australian economy transitioning to a new normal**, so are its businesses, population, employees and government bodies, that will see **alternative business and operating models, ways of working, consumer behaviours, and political or regulatory agendas** emerge. This could in turn lead to a structural and (unknown) sustained shift to the electricity demand curve and with it, a fundamental change to Australia’s electricity market and participants.



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