

Rooftop Solar Market update

Ric Brazzale, May 2023

Smart Energy Council - Sydney

Rewarding sustainable choices



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1. New installations to slow as we achieve increasing saturation levels – but don't think we have passed “peak rooftop PV” yet
2. Solar to face some headwinds with value of exported electricity to resume downward trajectory which will undermine attractiveness of PV

Who we are?



- Drive change to decarbonise Australia's energy sector through
 - support our clients successfully roll out clean energy solutions (solar, wind, energy saving upgrades, batteries etc ...)
 - support policy and regulatory changes to drive market transformation
- Active across Renewable Energy Certificates, Energy Efficiency Certificates and Peak Energy Reduction, ACCUs and other offsets
- In business since 2007 - Offices in Sydney & Melb



www.greenenergytrading.com.au
www.nationalcarbonbank.com.au
www.greenmarkets.com.au
www.gecm.com.au
www.co2ex.com.au



Data from following sources



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Small-Scale STC Creation Report

For the Clean Energy Regulator

November 2022

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Mthly Solar Snapshot (print ready)

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— The data, analysis and assessments included in this report are based on the best information available at the time of writing. Green Energy Markets does not in any way warrant the accuracy of any information or data contained in this report and accepts no responsibility for any loss, injury or damage sustained by any users of this report or in relation to information or data contained in this report.

Tips for using the Solar data workbook

Latest month 31-Jul-22

each worksheet contains slicers to filter the data

To make a selection, mouse click on button or hold mouse down to select multiple

to remove all filters click on the funnel/cross image

For most charts and tables, the data can be viewed on annual, quarterly or monthly basis. Click the +/- to

Selected states will be noted on charts (where applicable). Where there is no state denoted, the chart includes data for all states. Multiple states can be selected by holding cursor or holding down the CTRL key. To remove filters (select all), click on the funnel icon

6.1 PV SGU systems by capacity band

ACT, NSW

Fig 6.3 PV SGU systems by capacity band as % total systems

ACT, NSW

Selected states will be noted on charts (where applicable). Where there is no state denoted, the chart includes data for all states. Multiple states can be selected by holding cursor or holding down the CTRL key. To remove filters (select all), click on the funnel icon

STATE

| | | |
|-----|-----|-----|
| ACT | NSW | NT |
| QLD | SA | TAS |
| VIC | WA | |

CAPACITY BAND

| | | |
|---------|---------|---------|
| <5kW | 5-10kW | 10-15kW |
| 15-30kW | 30-50kW | 50-95kW |

GEM – Mthly Solar Snapshot

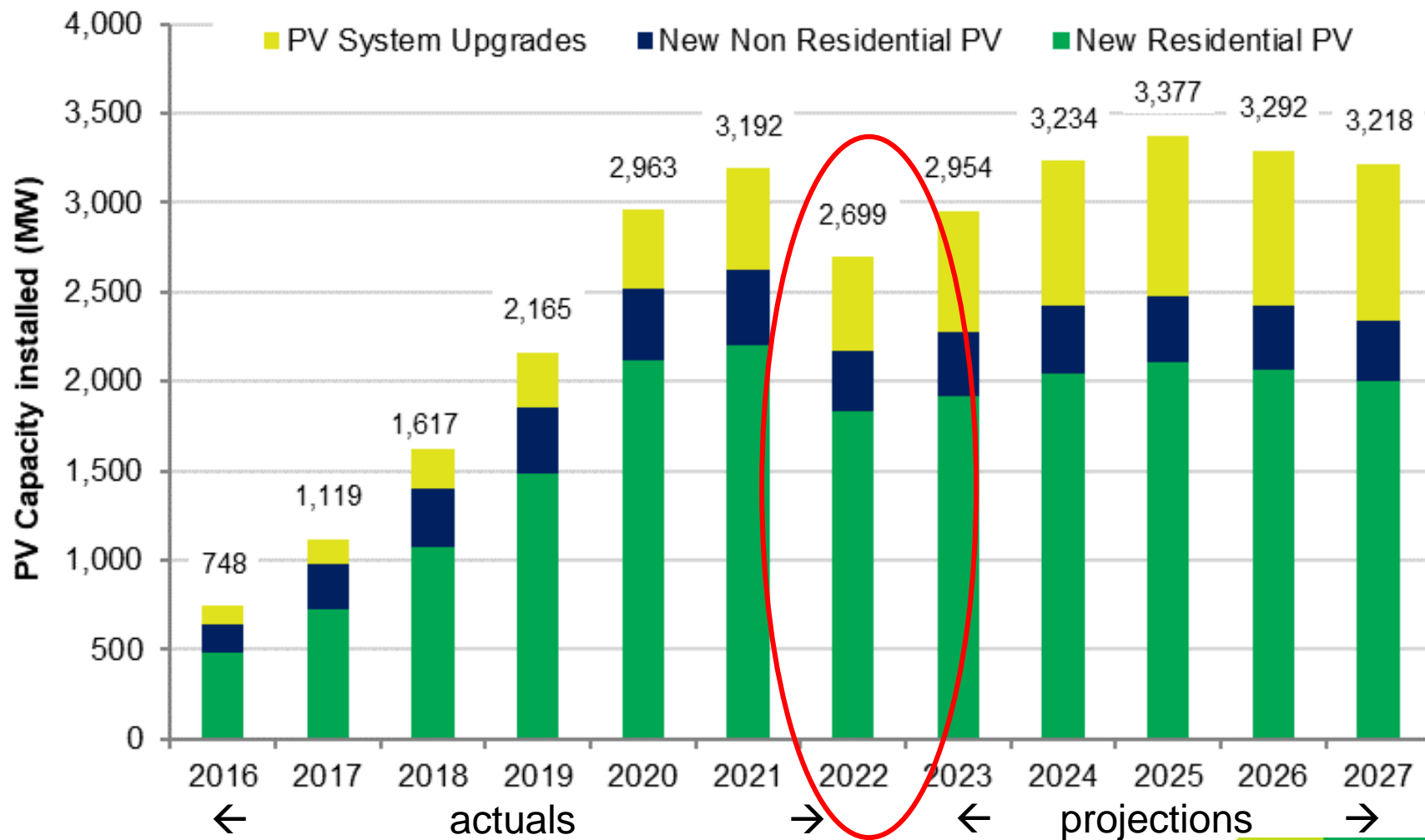
2022 was first time since 2015 that roof-top MW installed declined



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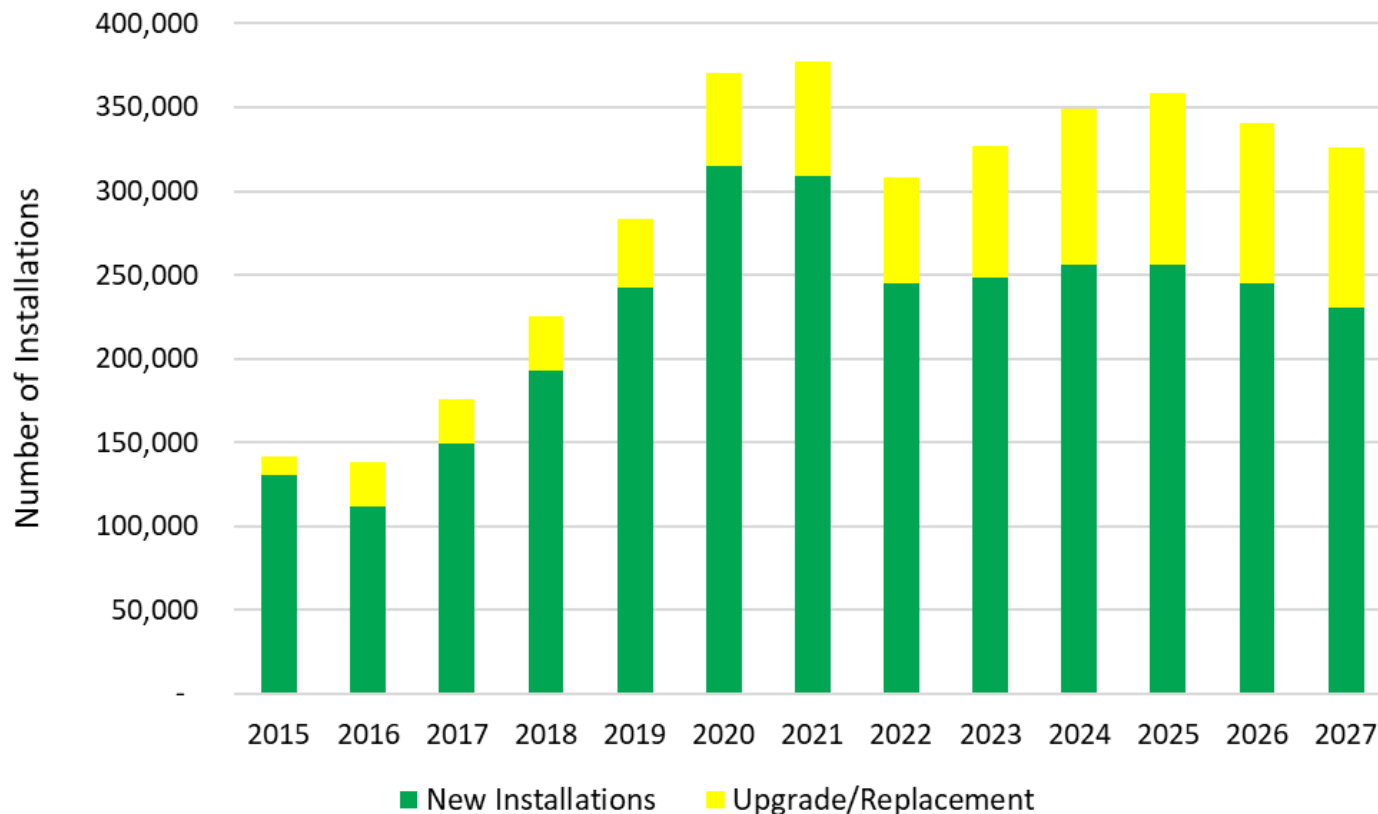
Replacement market to increase (number of installations)



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Note: level of new home construction to exceed 100,000 pa

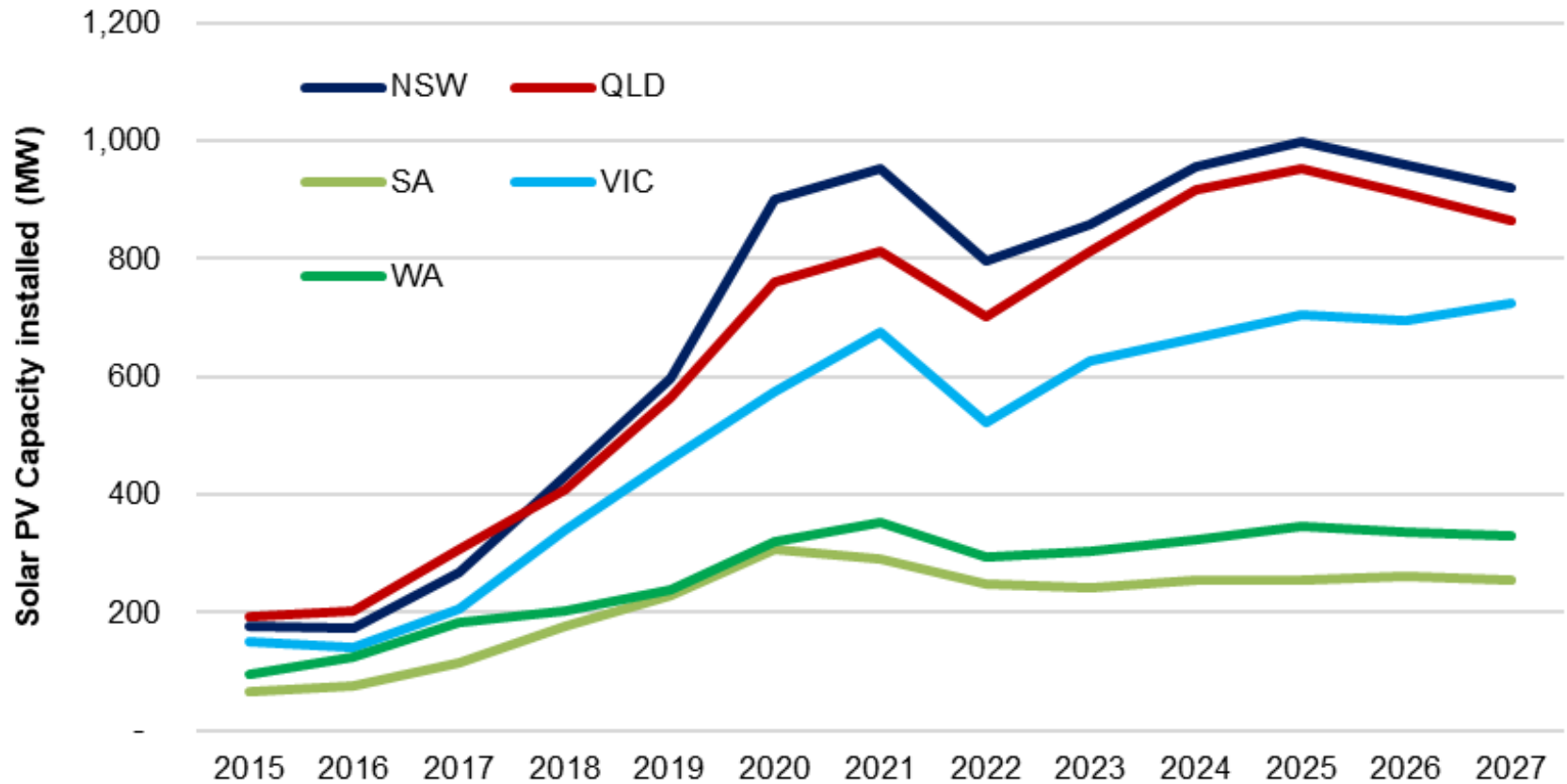
Capacity installed by state



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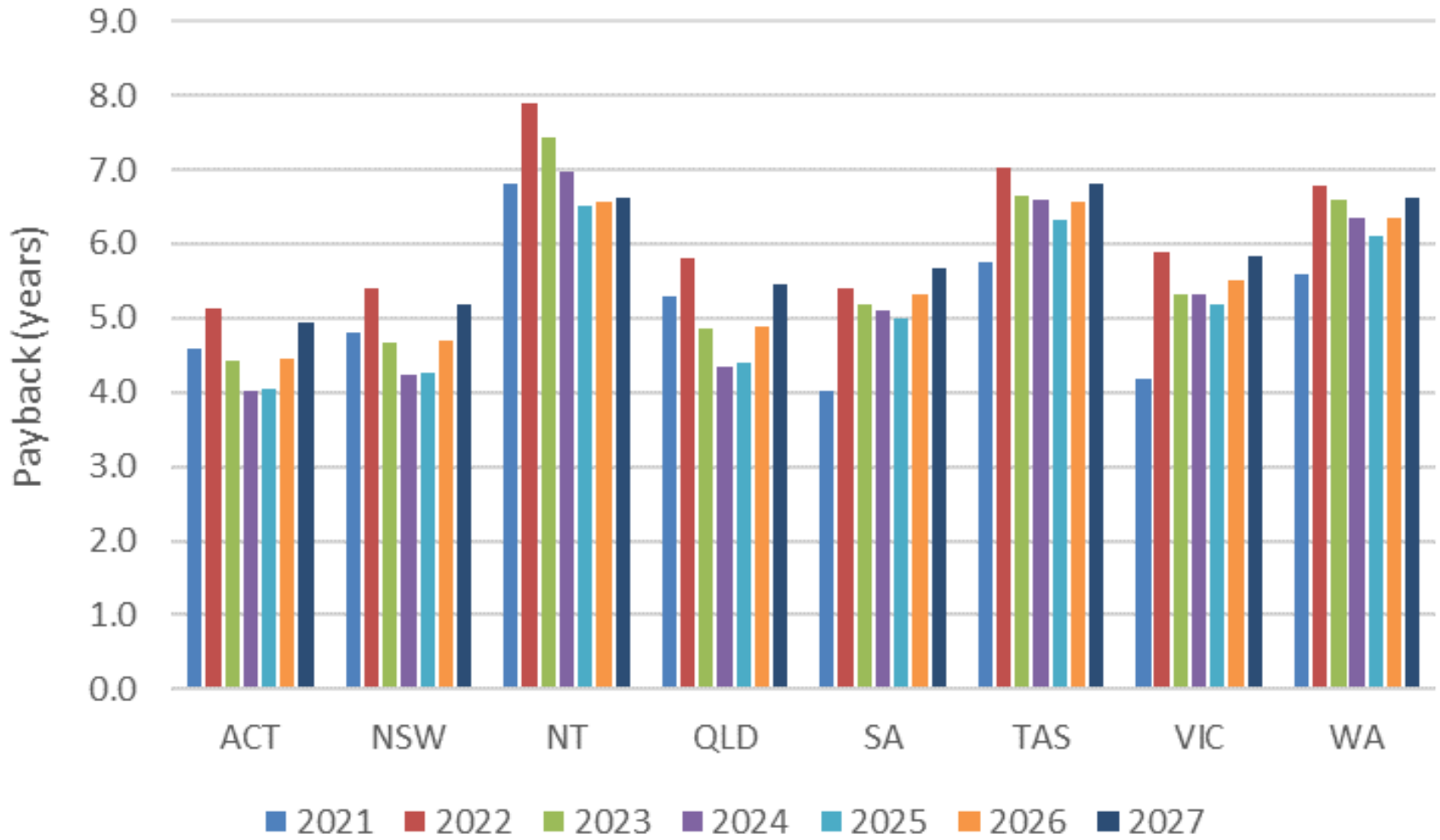
Higher power prices supporting better paybacks - though unlikely to last



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Residential PV saturation

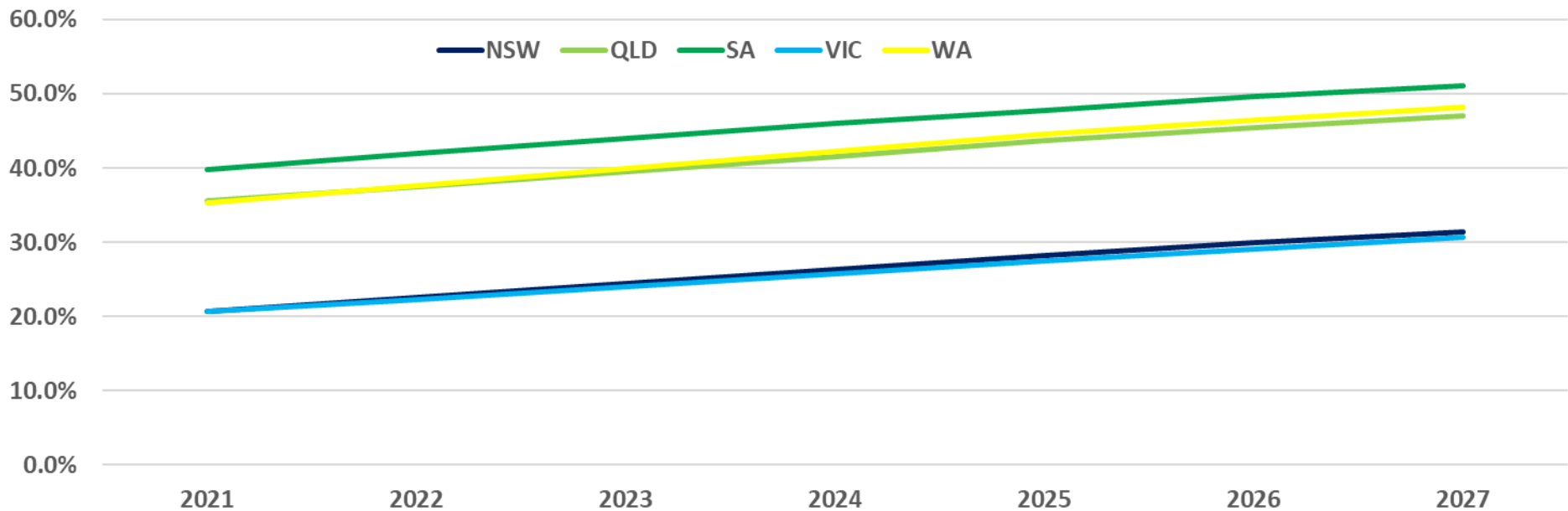


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Residential installations as proportion of detached and semi-detached homes (including rentals)





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How are we going so far this year?



Monthly installs stabilising?

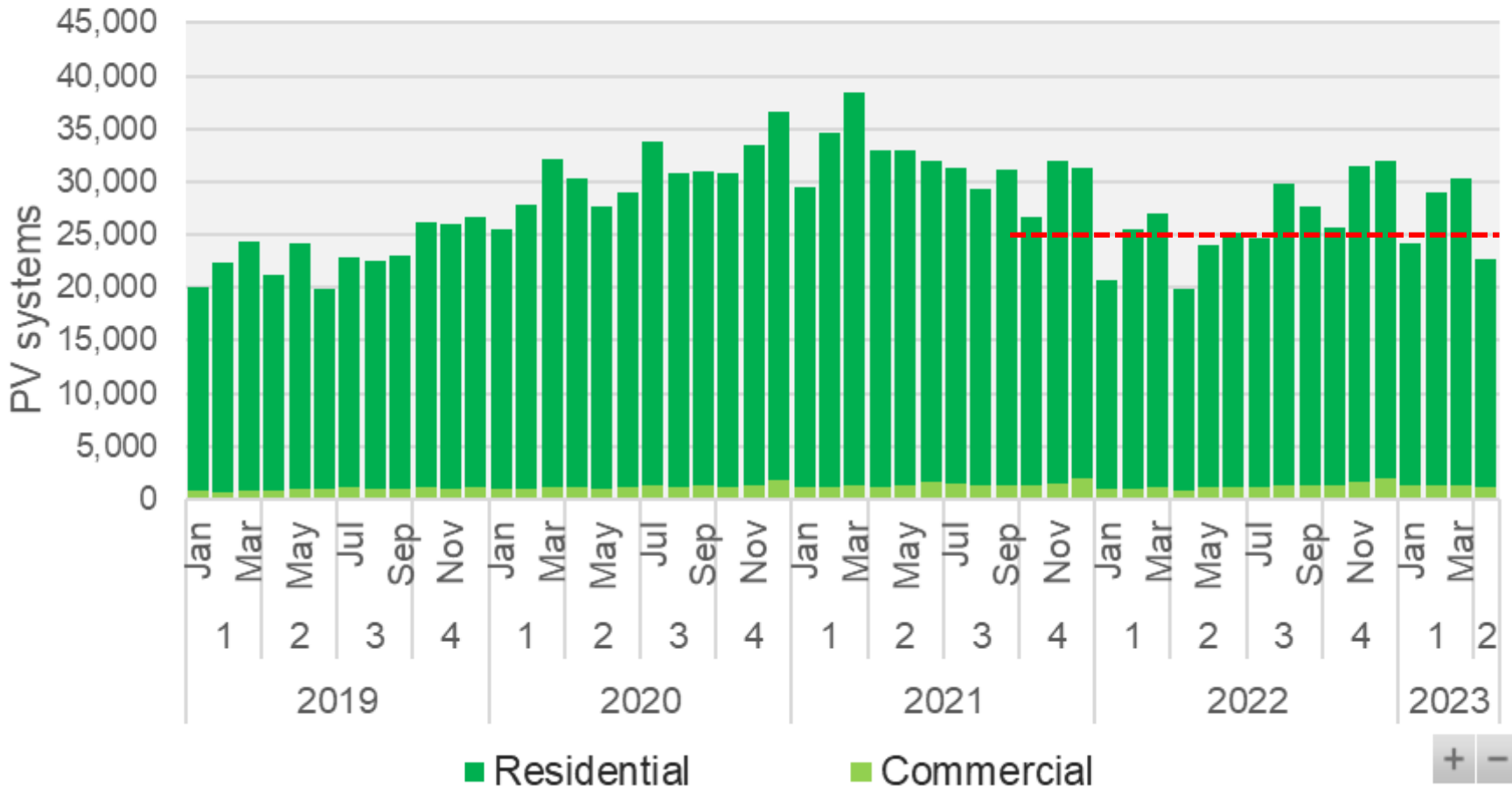


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Fig 5.3 PV SGU systems by sector



Tracking to 2020 levels – what happened in April ??

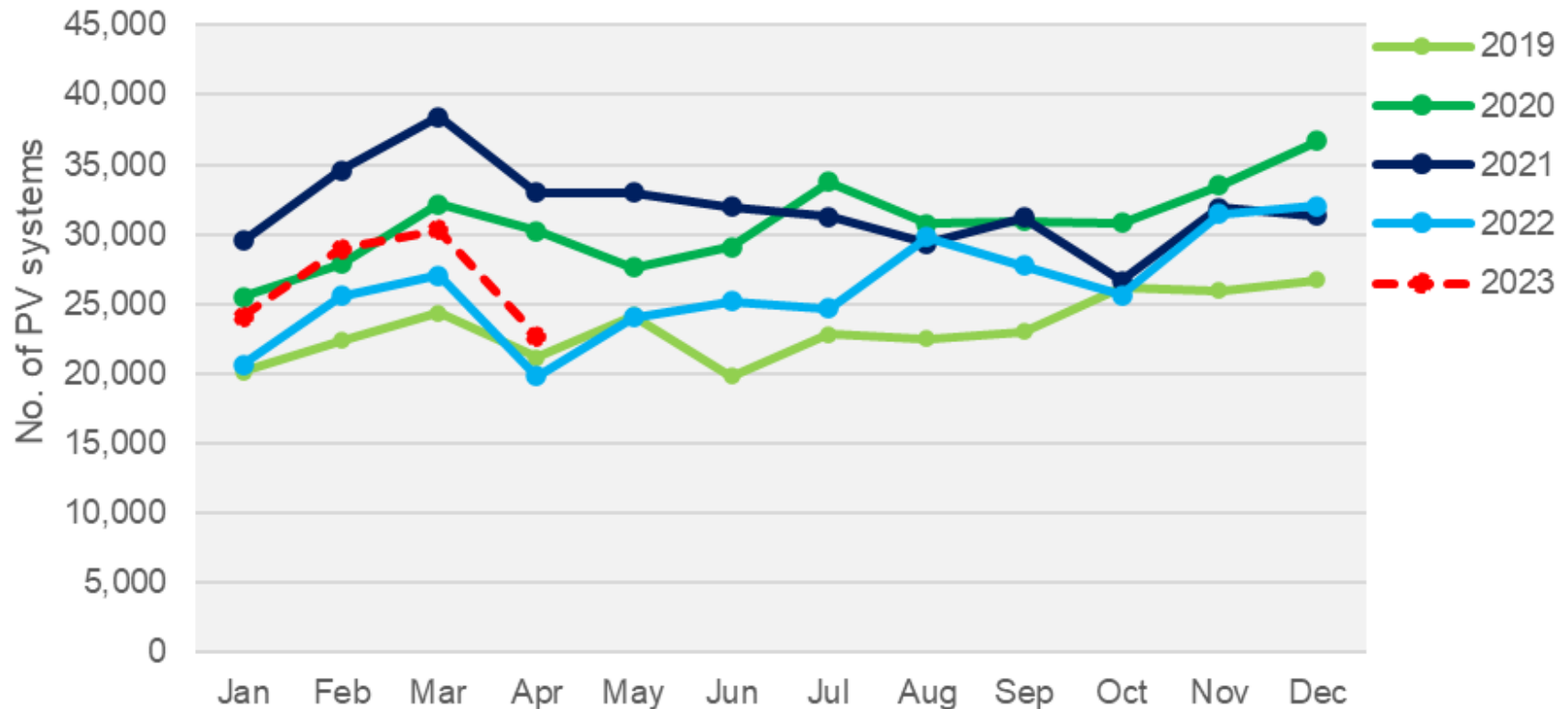


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Fig 5.9 PV SGU systems annual profile



NSW market stabilising at 6000 to 7000 installs per month



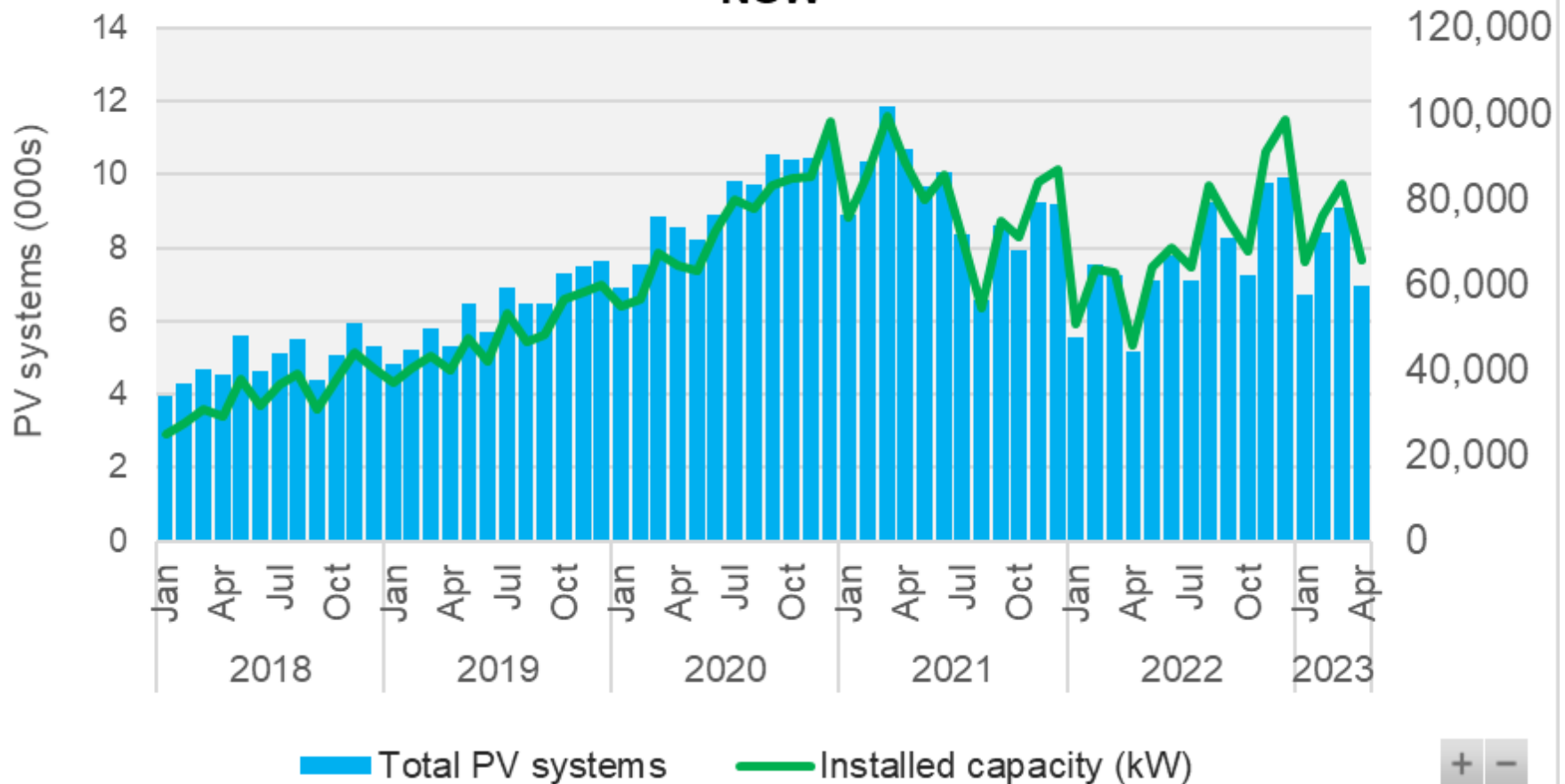
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Fig 5.7 PV SGU systems and installed capacity

NSW



Managing coming headwinds



Solar causing demand to fall across all states

Figure 7 Lowest Q1 NEM minimum demand since Tasmania joined NEM in May 2005

NEM Q1 minimum operational demand

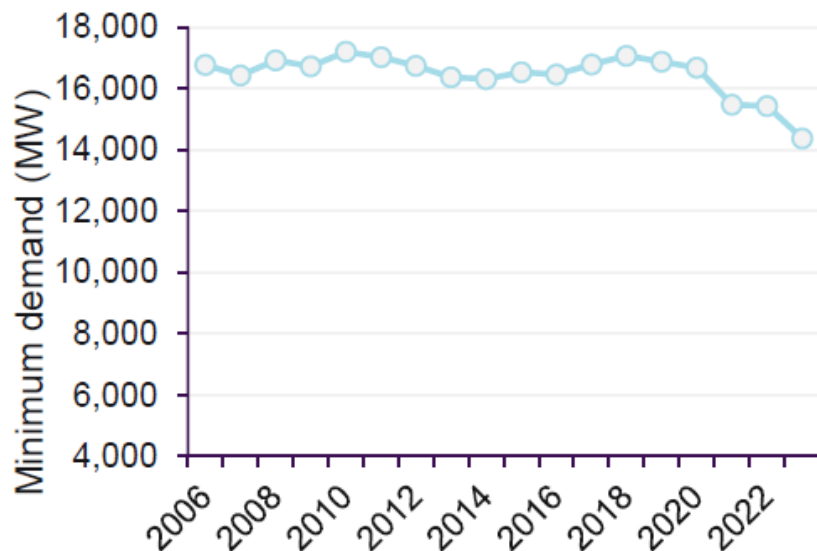
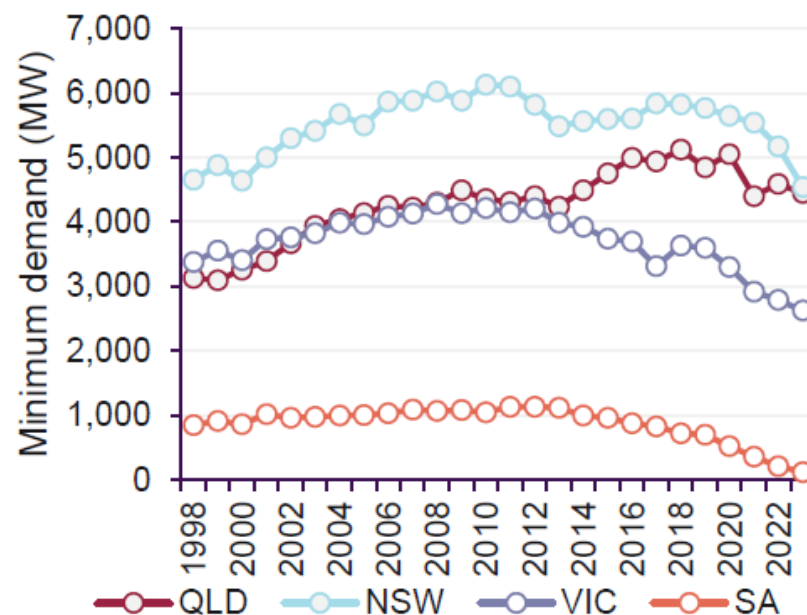


Figure 8 Record Q1 minimum demand in New South Wales, Victoria and South Australia

Q1 minimum operational demands for mainland regions



Source: AEMO Quarterly Energy Dynamics Q1 2023

Lower daytime prices



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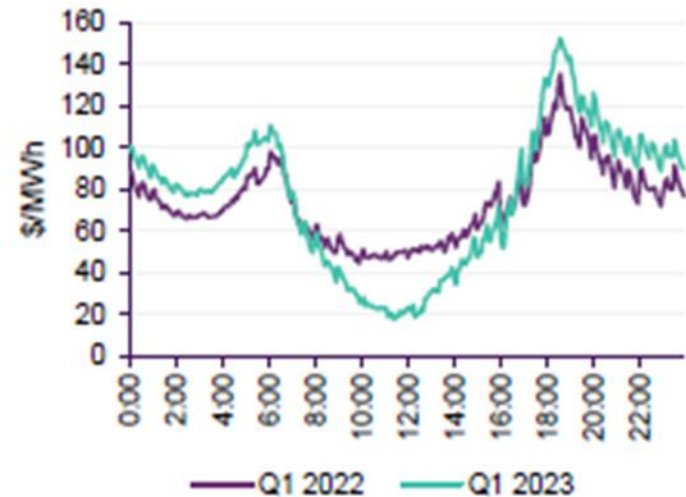
How much is my solar energy worth?

In 2023-24, IPART forecasts that the value of solar exports will be 7.7 to 9.4 c/kWh. This guide could help you work out whether your retailer is offering a reasonable feed-in tariff for your solar exports. You can compare rates on the Commonwealth Government [Energy Made Easy](#) website.

| Time period | 2022-23 (c/kWh) | 2023-24 | % of solar exports |
|--------------|-----------------|--------------|--------------------|
| 6 am to 3 pm | 5.6 to 9.7 | 7.2 to 8.7 | 91.0 |
| 3 to 4 pm | 7.7 to 14.3 | 9.9 to 11.7 | 6.15 |
| 4 to 5 pm | 12.3 to 24.8 | 12.2 to 14.9 | 2.22 |
| 5 to 6 pm | 11.1 to 20.0 | 12.1 to 15.3 | 0.41 |
| 6 to 7 pm | 16.3 to 27.4 | 23.2 to 27.3 | 0.04 |
| 7 to 8 pm | 9.9 to 16.5 | 14.9 to 17.5 | 0.01 |
| 8 pm to 6 am | 6.3 to 10.5 | 11.2 to 13.2 | 0.15 |

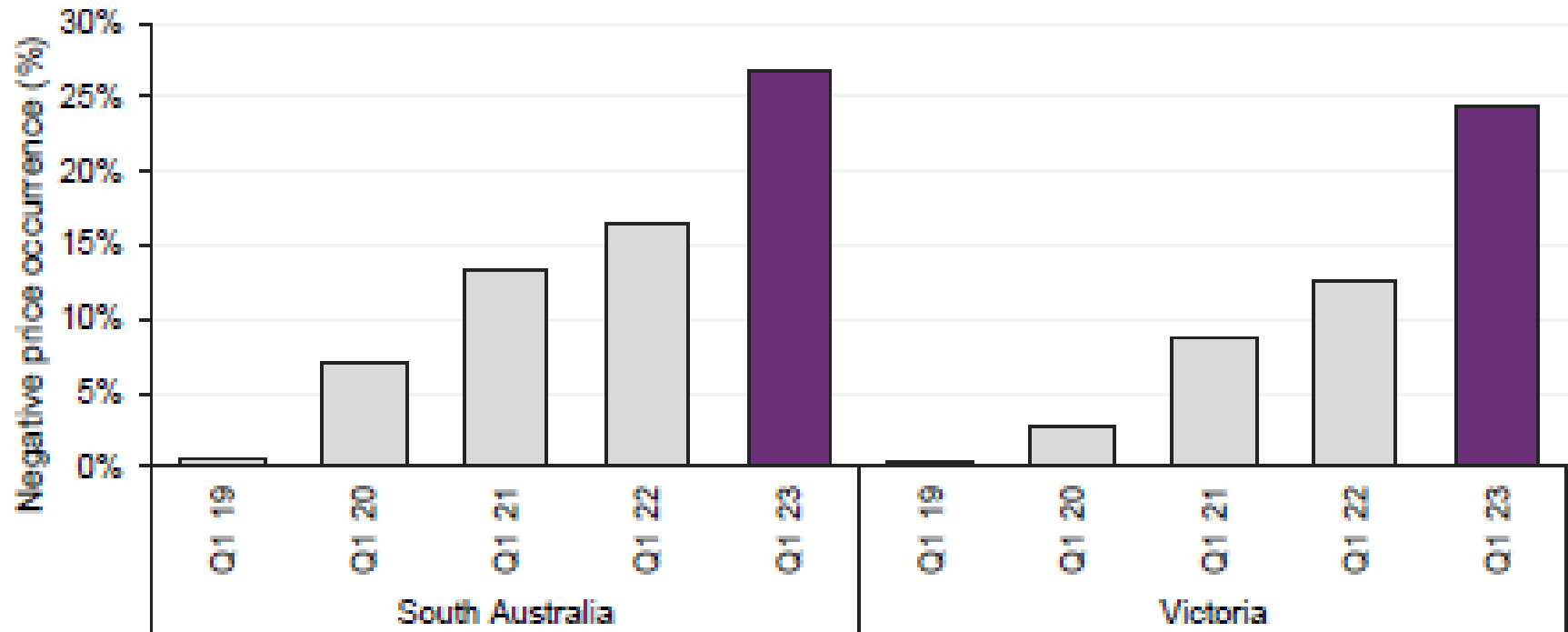
Figure 12 Lower daytime prices

Average NEM energy prices by time of day – Q1 2023 vs Q1 2022



More negative prices

Figure 16 Negative price occurrence in South Australia and Victoria increases
South Australia and Victorian negative price occurrence – Q1's



Export charges coming



Here comes the sun tax: The export tariffs proposed for households with rooftop PV

Mark Byrne 14 December 2022 43



Export tariffs

| | Tariff name and type | Basic export level (BEL) | Export pricing parameters | Tariff (for exports above BEL) | Transition strategy |
|-------------------------|---|--------------------------|--|--|--|
| Ausgrid | <i>Export tariff</i> Time of use energy (kWh) | 3 kW* | Charge: 10 am-3 pm Rebate: 4 pm-9 pm | Charge: 1.18 c/kWh Rebate: 2.19 c/kWh | Existing customers and new and upgraded connections: From July 2024: opt in From July 2025: default or opt out |
| Essential Energy | <i>Sun Soaker two-way</i> Time of use energy (kWh) | 1.5 kW | Charge: 10 am-3 pm 2 bands: <3kW, >3 kW Rebate: 5-8 pm | Charge: 61 c/kWh/month for 1.5-3 kW 70 c/kWh/month for >3 kW/month Rebate: 13.6 c/kWh | Existing customers: By July 2028: opt out New and upgraded connections: From July 2024: opt in From July 2025: opt out |
| Endeavour Energy | <i>Prosumer</i> Seasonal time of use energy (kWh) OR Seasonal time of use demand (kW) | 2 kW | Charge: 10 am-2 pm Rebate: 4-8 pm | Charge based on export LRMC.** Rebate based on import LRMC.** | Existing customers: From July 2024: opt in. New and upgraded connections: From July 2024: opt in From July 2025: opt out |

All export tariffs assume smart meters; pass-through by retailers unknown.

* While Ausgrid's BEL is claimed to be equivalent to 3kW, it's billed as a kWh block structure. So it's applied in retailer billing as 6.85 kWh per the number of days in the billing period.

** LRMC = long run marginal cost

Batteries to become more important



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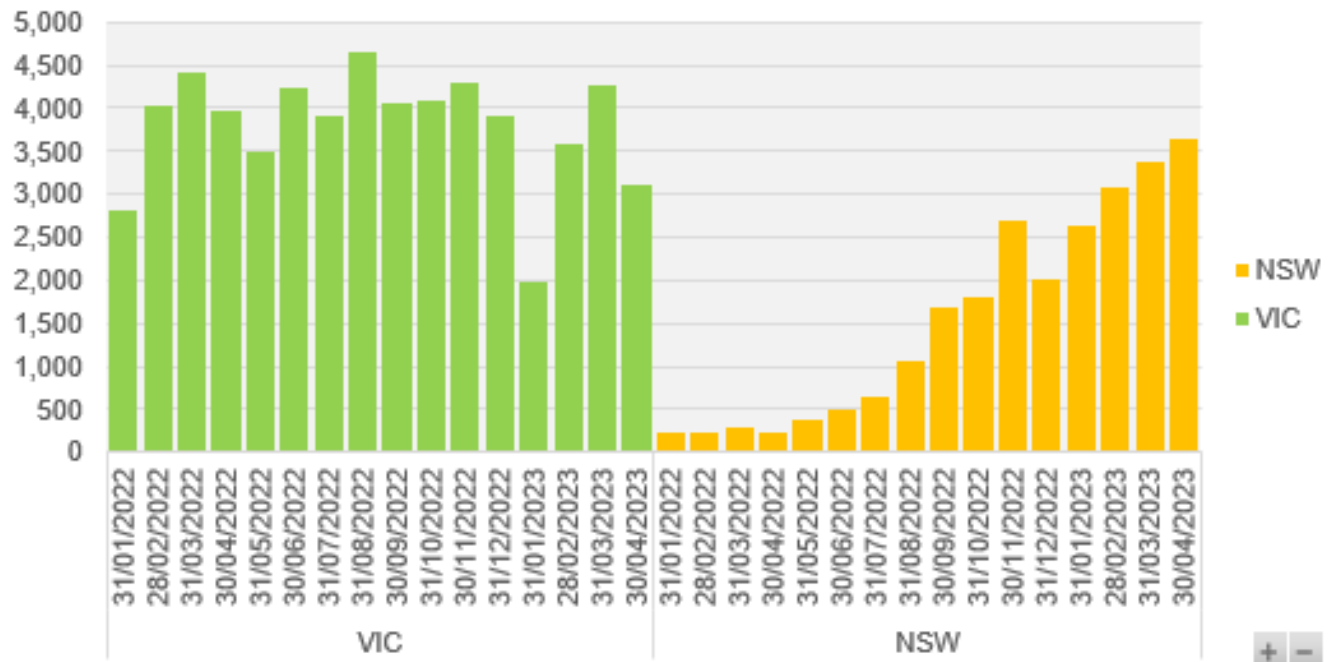


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- Expect that PV will be more attractive with batteries in the not too distant future
- Expect that benefits of storage to be progressively recognised
- NSW - support through Peak Demand Reduction Scheme means this could be by end of this year

Heat Pump Water Heaters

HPWH systems creating STCs per month



- 3648 HPWH systems created STCs in April 2023 in NSW
- Most of these will have replaced an electric WH and would be eligible to create ESCs and if commercial will also be eligible to create PRCs

Thank you

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