

PV & Battery Market Update

The Solar Victoria Team

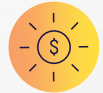


solar.vic.gov.au



Introductions and overview

Empowering Industry and providing Victorians to access clean and affordable energy



Session overview



Market update – Insights & *'Putting the sun to work'*



Audit and compliance update – Non-compliance priorities



Regulator Coordination & Guidance available



Industry training, technical mentoring & Notice to Market



Q&A



Solar Victoria – Current offers



Visit
solar.vic.gov.au

Solar Victoria's \$1.3 billion Solar Homes Program is supporting Victorians to access affordable, clean and reliable energy.



Solar panel rebates

\$1,400 to install solar PV for eligible homeowners, including rental providers and those building homes.

Interest-free loans are also available.



Hot water rebate

\$1,000 rebate to install solar hot water or an energy-efficient heat pump hot water system.



Solar battery loan

Interest-free loan of up to \$8,800, repayable over four years, to install a solar battery.



Solar for apartments

\$2,800 per apartment to install solar PV, up to \$140,000 for buildings of up to 50 apartments.



Solar for community housing

Solar panel rebates of up to \$1,400 are available for community housing organisations.



Victorian Energy Upgrades

Helping Victorians reduce their energy bills and greenhouse gas emissions by providing access to discounted energy efficient product and services.

Emergency Backstop Implementation Update

- Emergency Backstop - Implemented for all solar systems in Victoria on 1 October
- SV hosted DEECA & Industry roundtable 25 October
- Government working closely with DNSPs and Retailers/Installers to manage implementation challenges
- Monitor the Solar Victoria website for support and updates



Training and guidance

Helping the solar industry understand and meet the requirements of the new emergency backstop.

solar.vic.gov.au/emergency-backstop-training



Energy,
Environment
and Climate Action

Tim Renowden

Manager

Enterprise Insights, Data and Reporting

Market update – Insights &
'Putting the sun to work'



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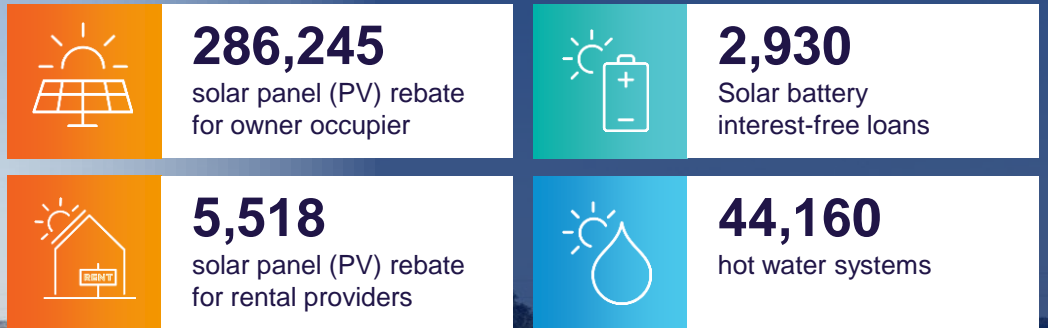
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Victoria



What we've achieved together

Over 387,000 systems installed across all Solar Victoria programs

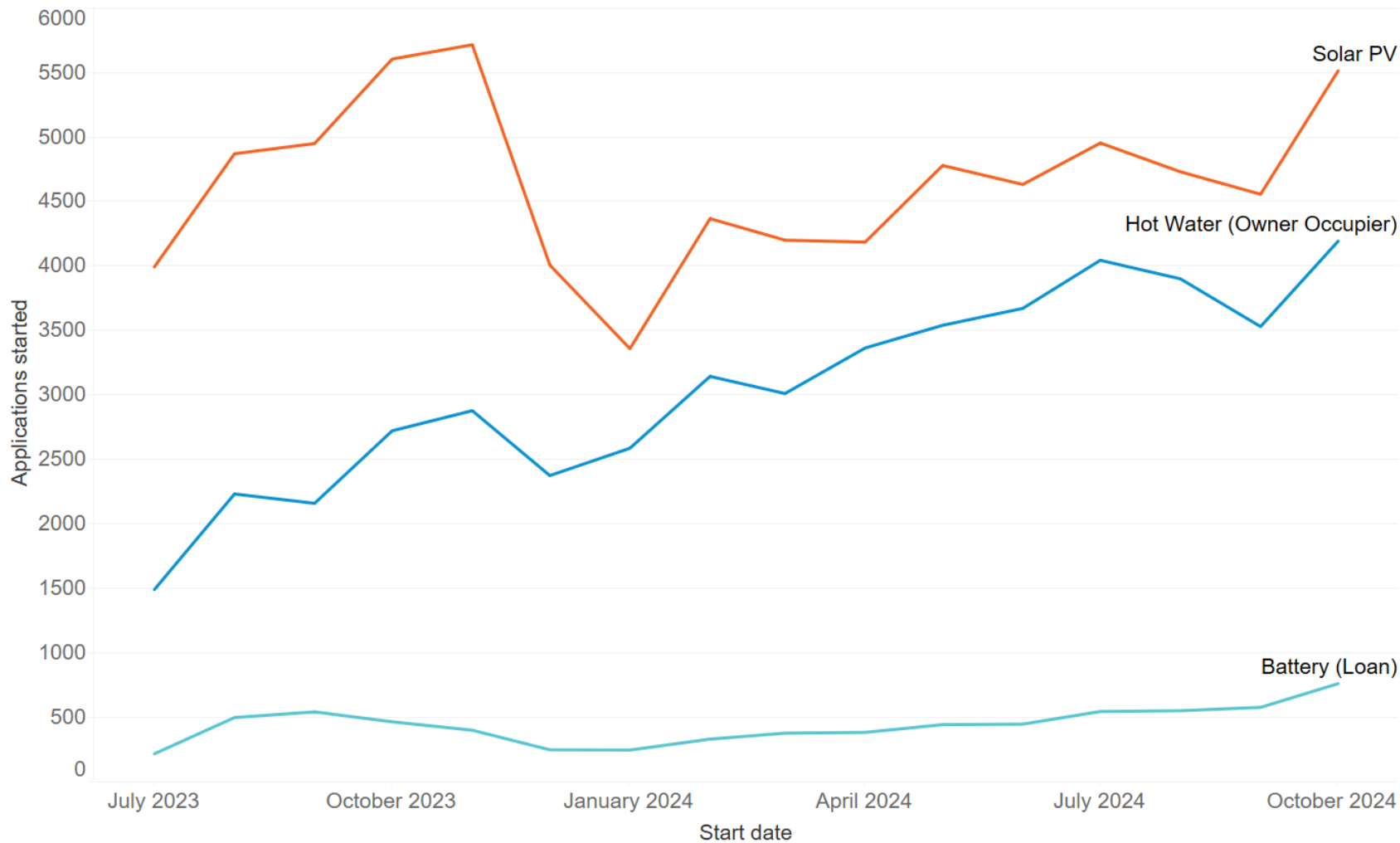
Completed installations (current programs):



Total capacity (all programs):



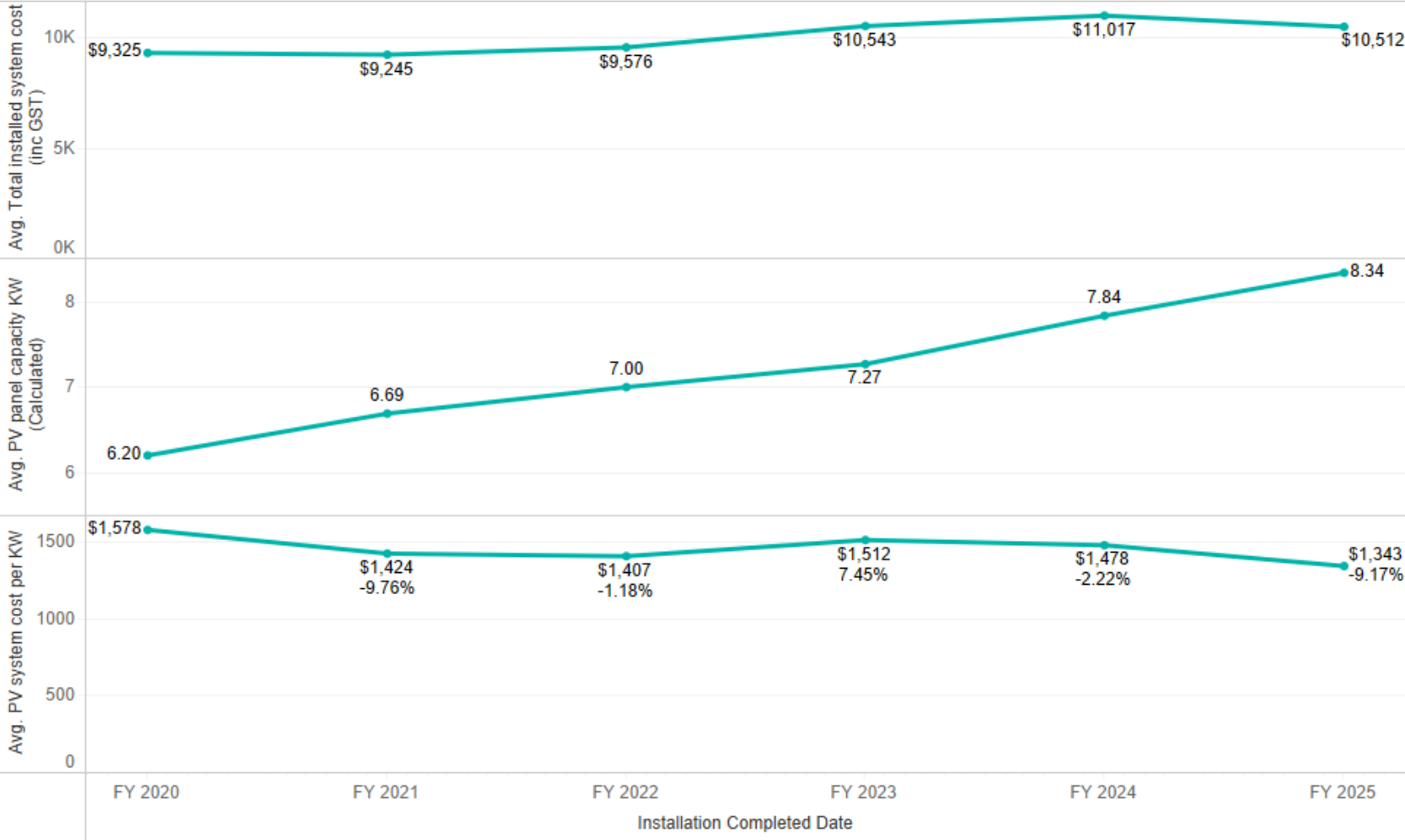
Demand is healthy across all current programs



- October was the **best month ever** for applications started in the Solar Homes program.
- This is driven by growing interest in heat pumps. With more than 40% of Hot Water customers also having a Solar PV rebate, customers are maximising their investment in PV.
- PV demand in 2024 is good, but well below the 2021 peak.

PV is now cheaper per KW than we've seen in the Solar Homes program

PV system size is rising as costs are falling



- Average customer upfront cost in FY25 to date is **\$5,077**, with a lower median of **\$3,980**.
- FY 2024 the average customer paid **\$5,577** upfront, with median of **\$4,680**.
- This is driven by:
 - a shift to lower-cost brands (Jinko, Goodwe, Sungrow)
 - discounting on like-for-like systems.

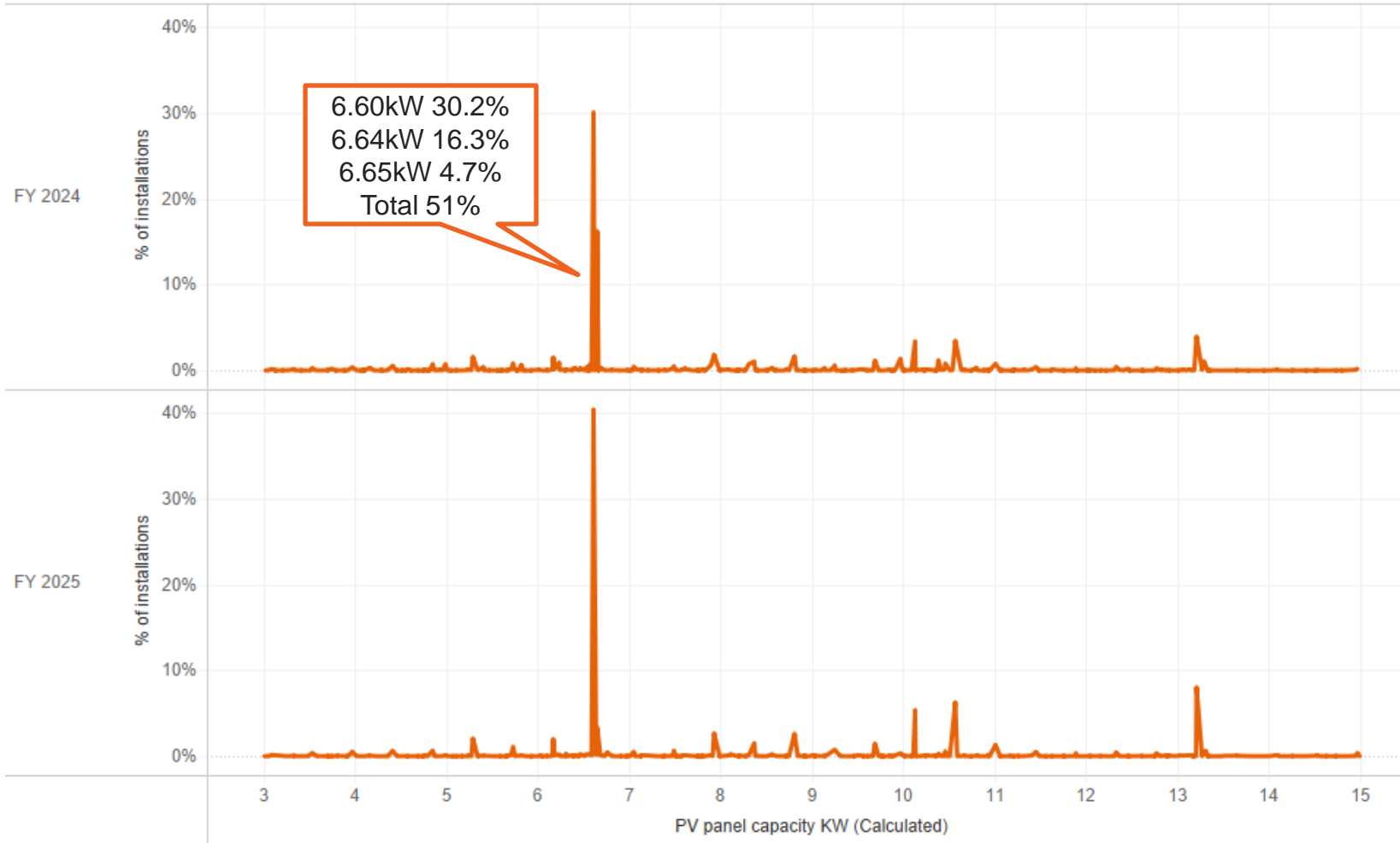
Total installed system costs include installation costs and GST, before rebates, loans and STCs.

PV panel capacity is calculated from # of panels and panel model capacity.

Average PV system cost per KW is [Total Installed System Cost]/[PV Panel Capacity]

PV system size is changing as more customers install larger systems

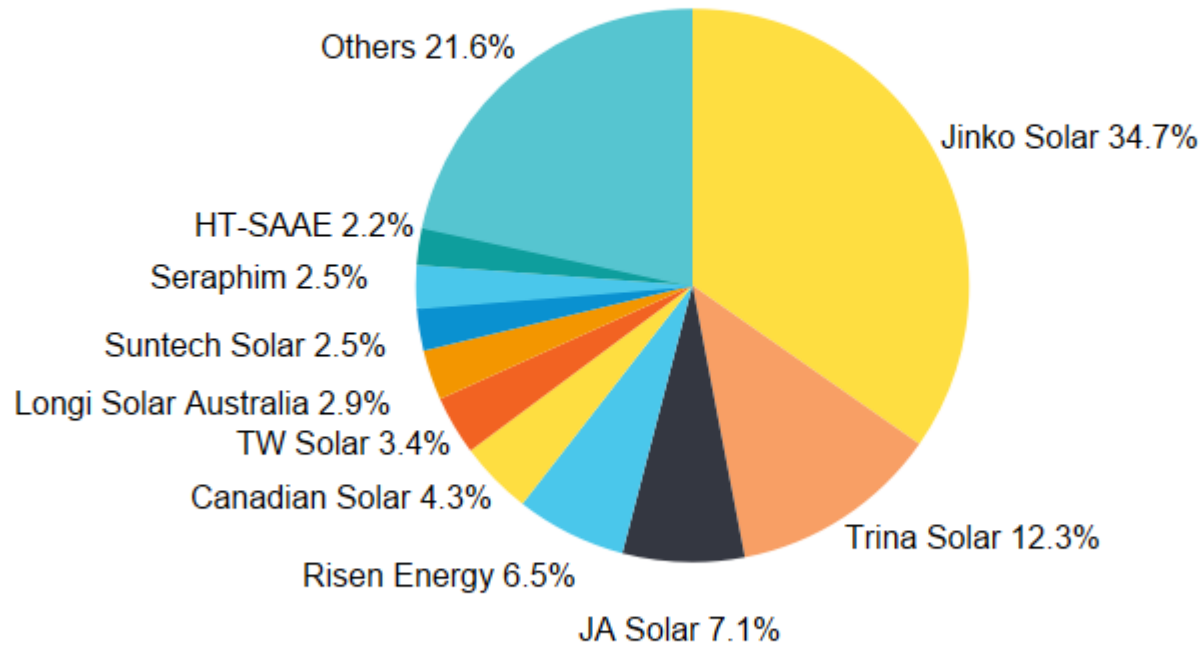
Residential PV system sizes (installed in FY 2024 & FY 2025)



- 6.6kW is still the most popular system size, with **40%** of systems installed in FY25 to date being 6.6-6.7kW
- In FY24 6.6-6.7kW systems were **51%** of installed systems.
- We are seeing a shift to higher-capacity 10-11kW, and 13.2kW systems, which is increasing the average system size.

PV panel manufacturers

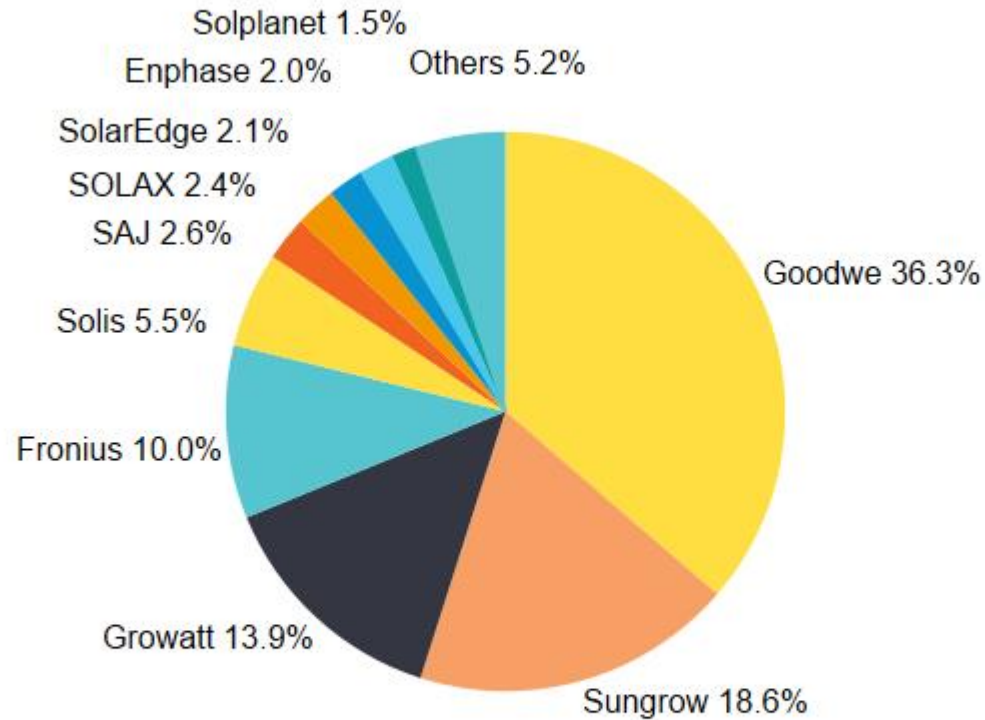
Share of Solar Homes installations in 2024



- 78% of installed panels in 2024 to date are from top 10 manufacturers.
- Jinko Solar has increased its program share from 18% in FY20 to 35.8% in FY25 to date.

Inverter manufacturers

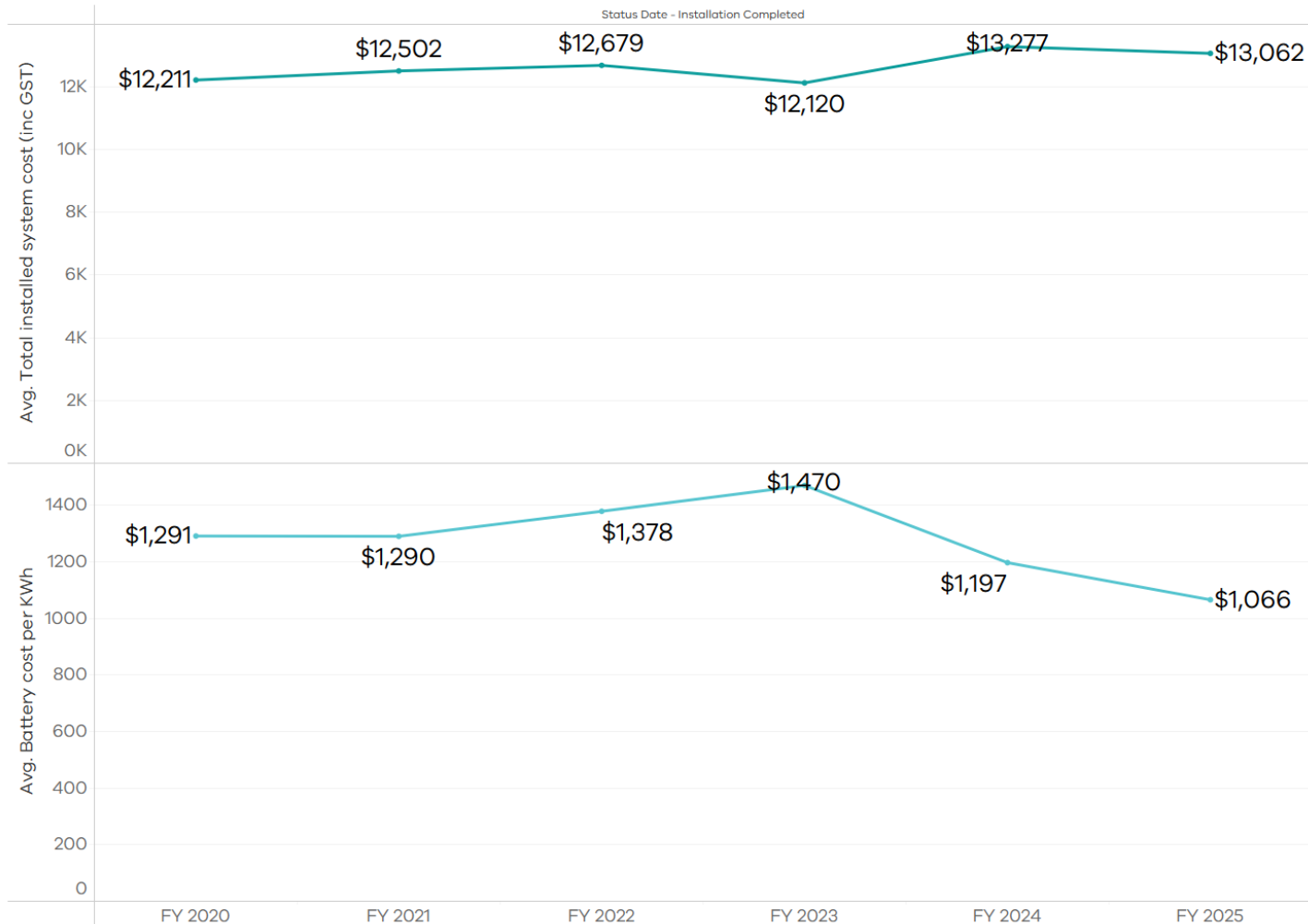
Share of Solar Homes installations in 2024



- 95% of installed inverters in 2024 were from top 10 inverter brands.
- Goodwe has increased its program share from 16% in FY20 to 38% in FY25 to date.
- Sungrow increased from 9% in FY20 to 18% in FY25.
- Fronius has declined from 21% in FY20 to 9.4% in FY25.

Battery prices have fallen slightly, with customers getting more for their money

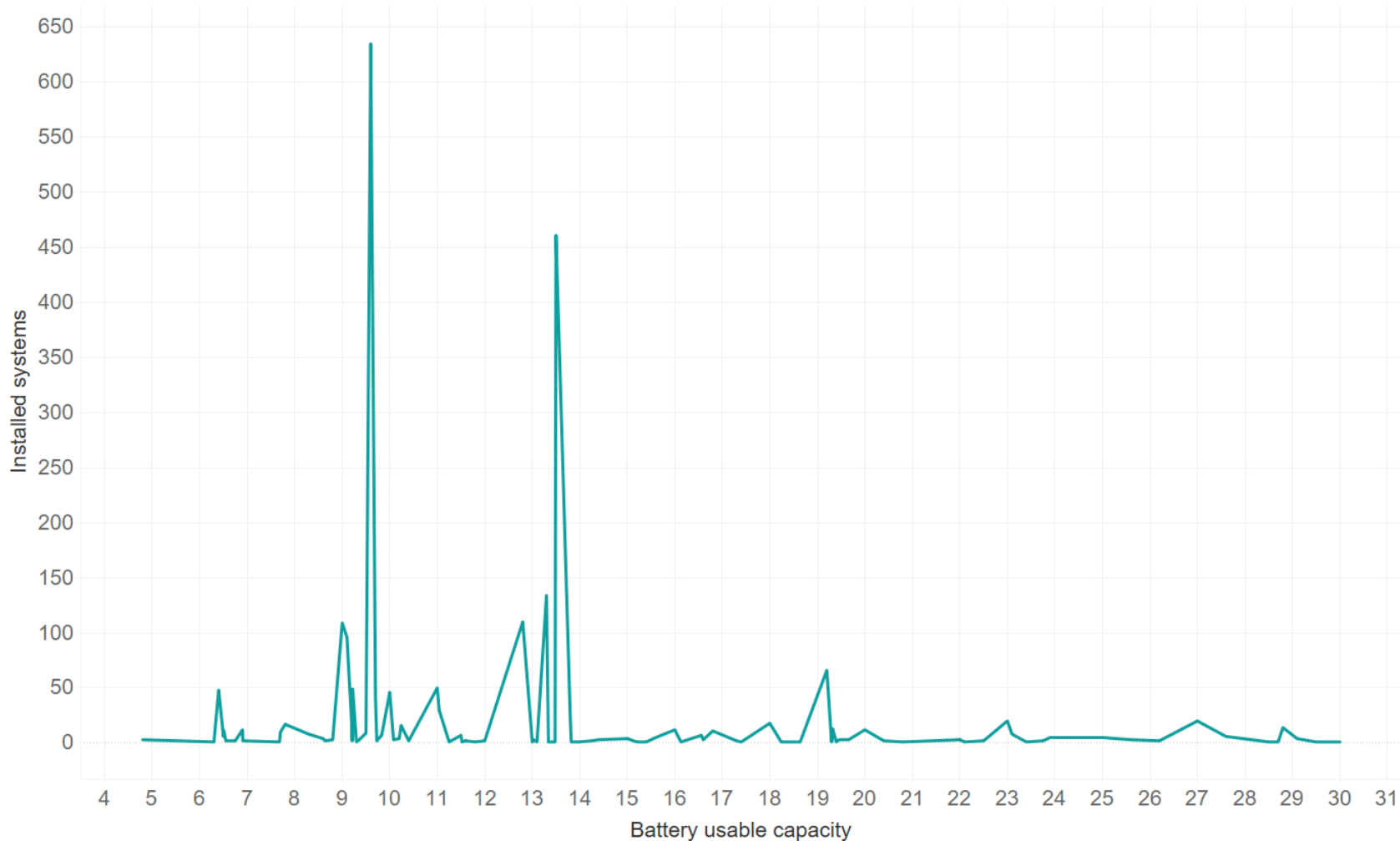
Battery-only installations in the Solar Homes rebate and loan programs



- Average total installed system cost in FY25 to date is **\$13,062**, with a lower median of **\$11,569**.
- FY 2024 the average customer paid a total installed system cost of **\$13,277**, with median of **\$12,305**.
- In FY25 battery loan customers are paying an average of **\$4,322** upfront, or median of **\$2,800**.

Total installed system costs include installation costs and GST, before loans. Battery loans are available for standalone batteries only, which do not attract STCs.

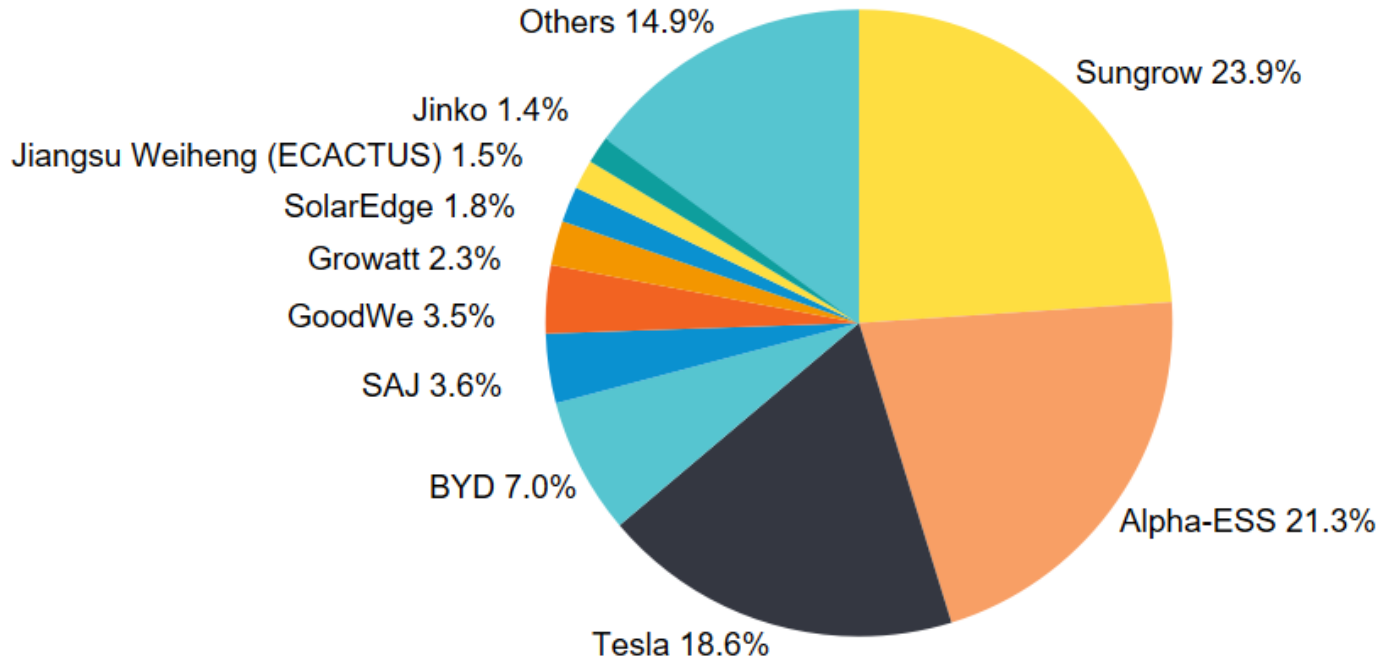
Most common battery systems are 9.6kWh and 13.5kWh



- Spikes in system capacities are related to model ranges of the top brands.
- Top two brands in calendar 2024 (Sungrow, AlphaESS) focus on 9.6kWh.
- Tesla (rank #3) focuses on 13.5kWh batteries.

Battery manufacturers

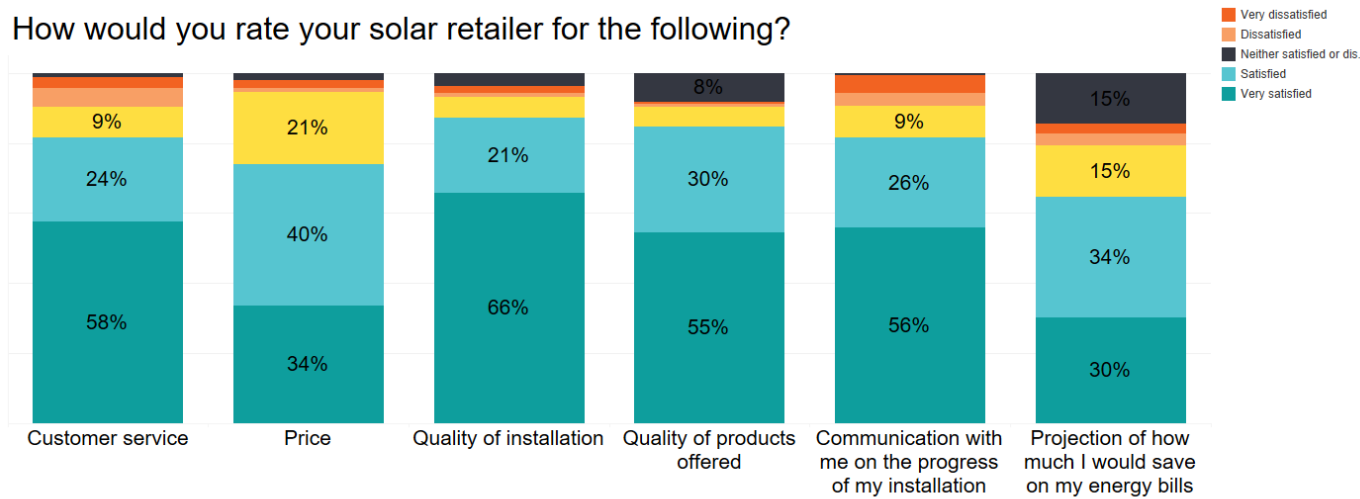
Share of Solar Homes installations in 2024



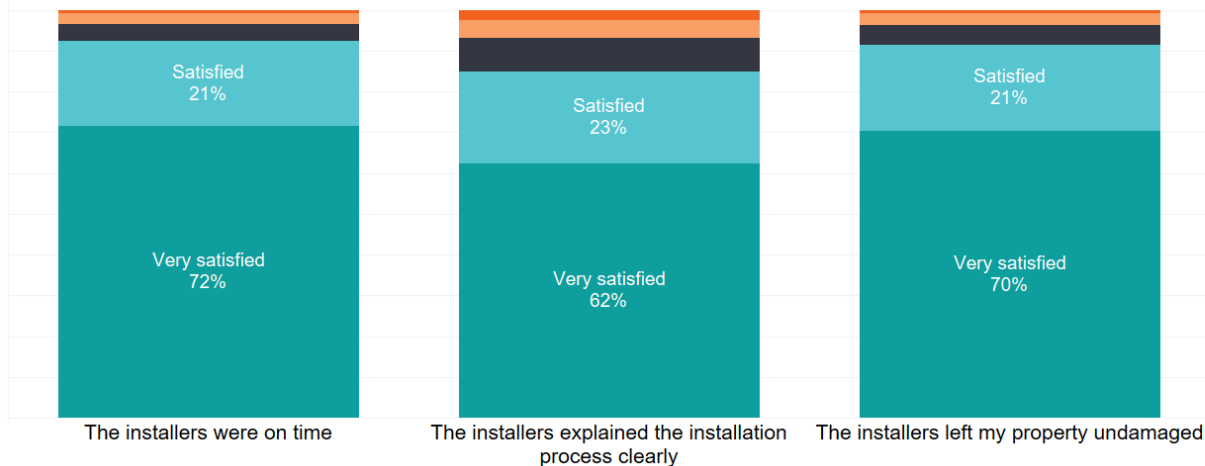
- 85% of installations in 2024 are from top 10 manufacturers.
- AlphaESS has increased its share from 14% in FY20 to 22% in FY25 to date.
- Sungrow has increased from 4% in FY20 to 20% in FY25 to date.
- Tesla has declined from its peak of 30% in FY21 to 17% in FY25 to date.

Voice of Customer surveys show high levels of customer satisfaction with retailers

How would you rate your solar retailer for the following?



How satisfied were you with the following aspects of the installation process?



- Customers are surveyed one month post-installation.
- **75% of customers are satisfied or very satisfied with their retailer**, and only 8% are dissatisfied or very dissatisfied.
- Retailers score high on **customer service**, **quality of installation** and **quality of products** offered.
- Installers score high for **punctuality** and leaving the **property in good condition**.
- Energy bill savings are the most important driver of customer uptake – projected bill savings are one area for improvement, as overly optimistic estimates can set customers up for disappointment.
- Improved relationships & expanding electrification offerings.

Source: Solar Victoria VOC surveys completed 2024, n = 550.

Solar Victoria customer survey on home electrification:
15,248 completed responses from Solar Homes program customers
Conducted September-October 2024 by Solar Victoria
Largest survey on Victorian consumers' attitudes to home electrification

20% of respondents are all-electric

Of those who are not:

36% are likely to go all-electric in the next five years

22% are undecided

44% are likely to switch at least one gas appliance in the next five years



Solar Victoria

Put the sun to work



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Advertising campaign – Put the Sun to Work

In-market: 1 September 2024 – 30 June 2025

Objectives: This campaign promotes the availability of rebates and interest-free loans for installing solar panels, batteries and hot water systems to help more Victorians make the switch to solar.

Call to action: Put the sun to work with rebates and assistance from Solar Victoria.

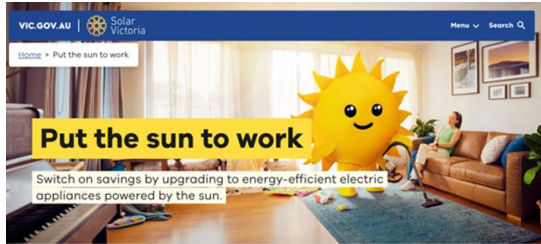
Target audience: aligns with program eligibility requirements, based on the following criteria:

- Metro Vic (70%) / Regional Vic (30%), aged 25+
- Homeowners (or own an investment rental property)
- Household income of under \$210,000 per year

Channels: Broadcast video-on-demand (9Now, Foxtel, Binge), YouTube, Facebook & Instagram, SEM (Search Engine Marketing), Spotify and Radio.



Creative examples



Join more than 700,000 Victorian homes with solar.



Solar panels

Save with the sun by installing solar panels to power electric appliances in your home. Our customers report average bill savings of \$750 per year with solar panels.

Solar batteries

Add a battery to store power from your solar panels, so you can use the sun's energy when you need it. This could help you save another \$650 per year.

Hot water systems

Tap into savings by upgrading to an energy-efficient hot water system. You could save around \$250 per year by replacing a gas hot water system with a quality heat pump.



Campaign Stakeholder Pack



September 2024

Solar Victoria Campaign Stakeholder Pack

Social assets

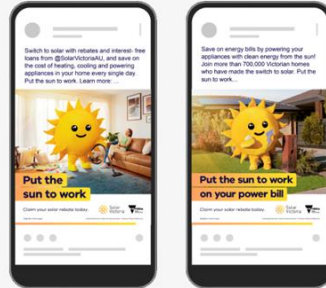
Post copy #1:

Switch to solar with rebates and interest-free loans from @SolarVictoriaAU and save on the cost of heating, cooling and powering appliances in your home every single day. Put the sun to work. Learn more: www.solar.vic.gov.au/apply

Post copy #2:

Save on energy bills by powering your appliances with clean energy from the sun! Join more than 700,000 Victorian homes who have made the switch to solar. Put the sun to work with rebates and assistance from @SolarVictoriaAU. www.solar.vic.gov.au/apply

Download social tiles



Save up to **\$1,000** when installing an energy-efficient hot water system with **rebates** from Solar Victoria.

Apply today solar.vic.gov.au



Eligibility criteria apply

Authorised by the Victorian Government, 1 Treasury Place, Melbourne



Switch to solar with **rebates** and **interest-free loans** from Solar Victoria. Apply today: solar.vic.gov.au

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Eligibility criteria apply



Authorised by the Victorian Government, 1 Treasury Place, Melbourne



Put the sun to work on your power bill

Claim your solar rebate solar.vic.gov.au

Eligibility criteria apply



Authorised by the Victorian Government, 1 Treasury Place, Melbourne

solar.vic.gov.au/apply

Home electrification guide for customers

1 in 3 Victorians who downloaded the guide applied for more than one rebate, to maximise their solar consumption

Our new electrification e-book is now available for download.

Results from our previous 'Solar made simple' guide:

- **50%** applied for a solar rebate within 3 months of downloading the guide
- **27%** started two applications, for multiple products



The guide includes:

- What is an all-electric home?
- Guidance for installing solar
- Switching your appliances (hot water, heating and cooling, cooking, vehicles)
- Leaving the gas grid
- Action Plan
- Glossary



New Website Feature - Find an authorised retailer

The new retailer table was launched in mid-October on the Solar Victoria website.

solar.vic.gov.au/retailers

Customers can now search retailers by name, assigned postcodes, suburbs and local government areas.

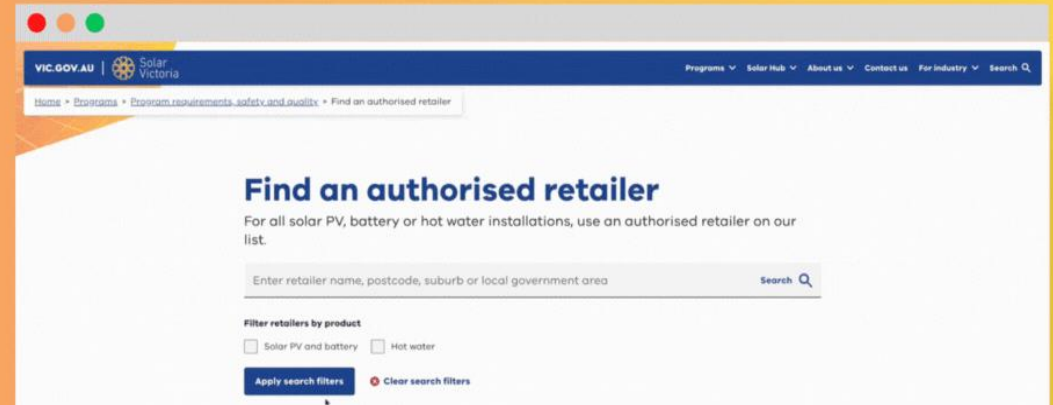
The table also provides to customers your sales phones numbers and websites contact channels to located retailers.

Your input

Retailers should assign or update postcodes that they service via the retailer portal (find the **Retailer Service Areas** box on right-side of the **My Account** page). Start with your most serviced postcodes.

Retailers can also update their sales phone number and website via the portal.

Be specific for best results. Details are updated weekly into the table.



1367

Authorised retailers available to search online

As of 22 November



311

Retailers that have submitted location data (postcodes)



+11.7%

Increase in page views of the new retailer table



+1.2%

Increase in engagement across the new retailer page

(Time on page, clicks)

Ben Wright

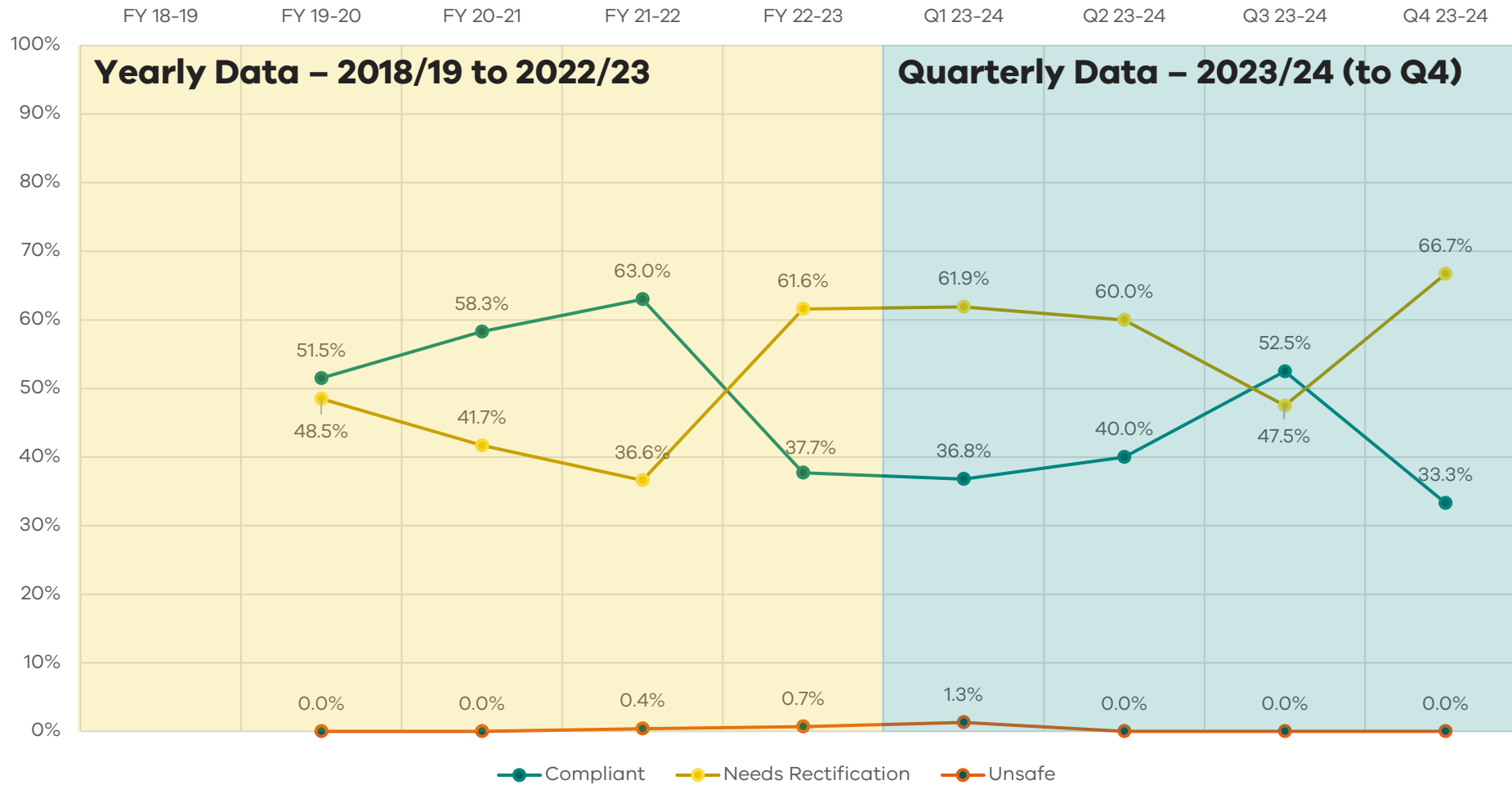
Director

Risk, Assurance & Standards

Audit and compliance update
Non-compliance priorities



Battery Compliance | October 2024

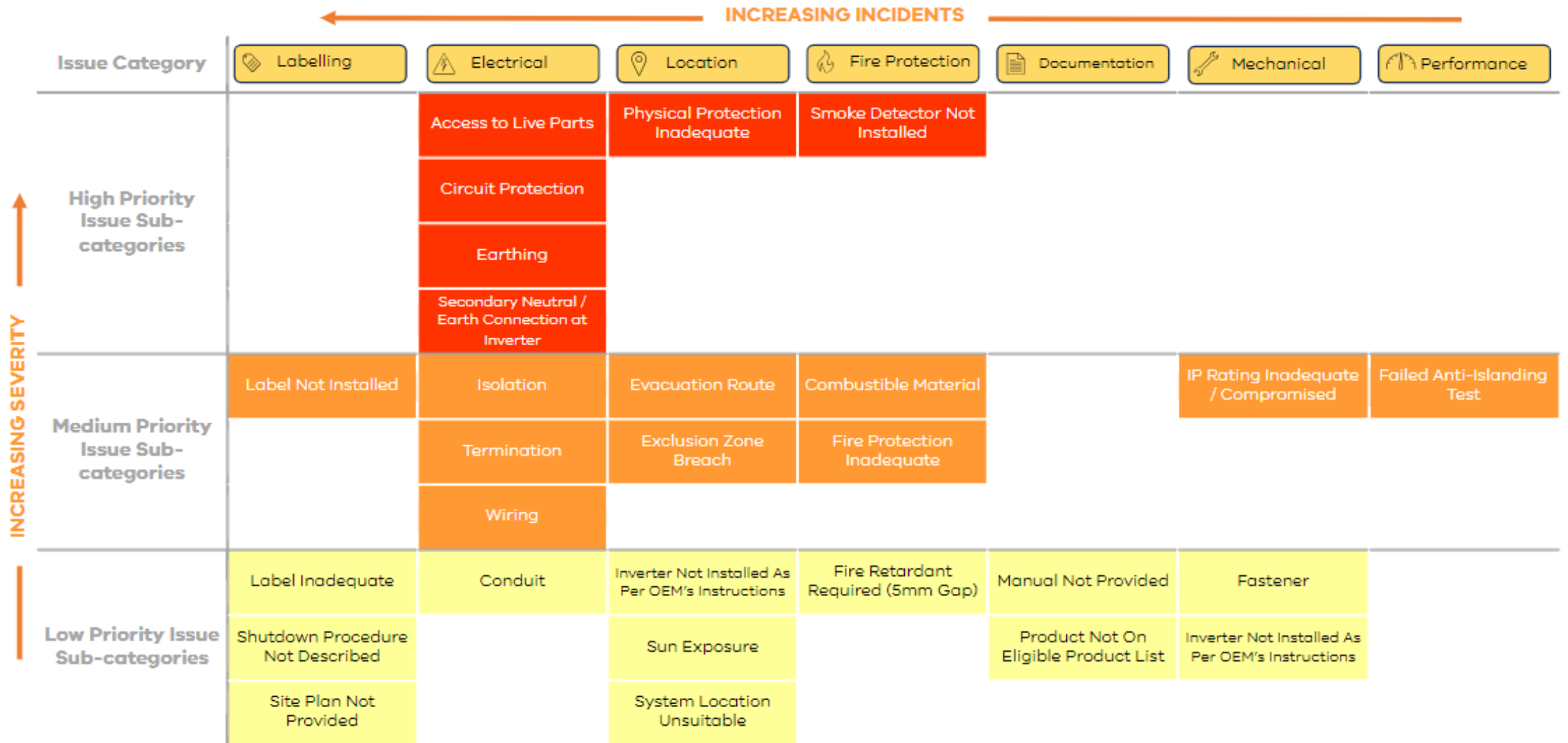


33.3%

Battery Compliance in Q4, 2023-24 (most recent data point)

Currently 2024 compliance rate ~44.6%

Battery Safety Analysis | Heatmap

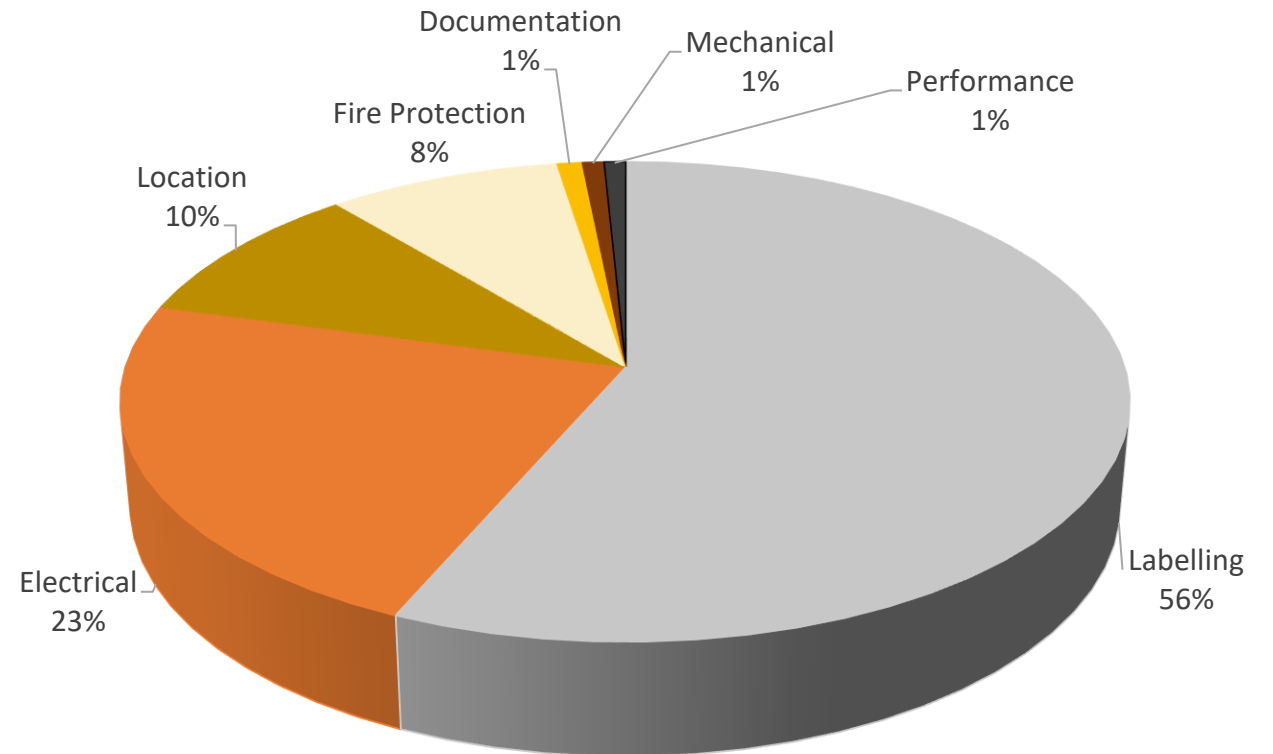


Battery Safety Analysis | Breakdown by Issue

Total installations carried out in CY2023*	4,648
Total audits analysed	348
Total NEEDS RECTIFICATION audit ratings	341
Total UNSAFE audit ratings	7
Total issues logged	757
Total LABELLING issues	428 (56%)
Total ELECTRICAL issues	172 (22%)
Total LOCATION issues	73 (9%)
Total FIRE PROTECTION issues	65 (8%)
Total DOCUMENTATION issues	7 (0.9%)
Total MECHANICAL issues	6 (0.8%)
Total PERFORMANCE issues	6 (0.8%)

* Total batteries across rebate and loan streams

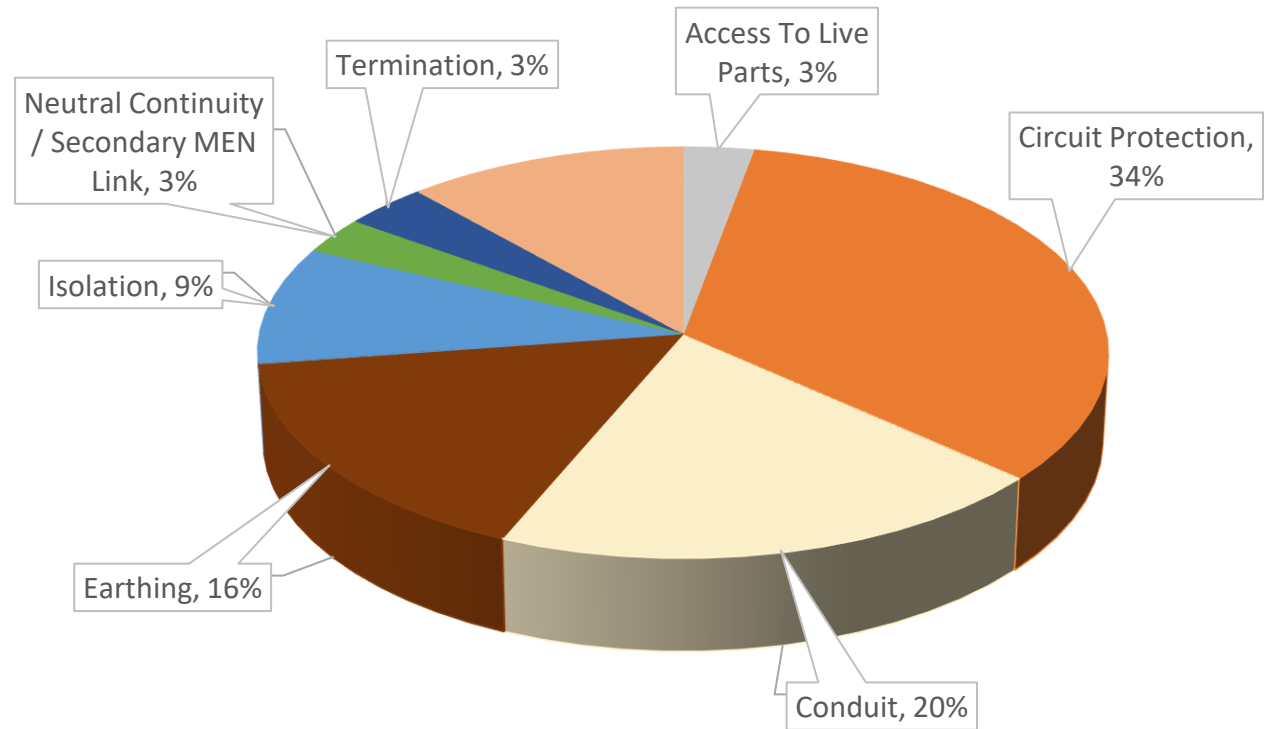
Instances of Issues by Category



Electrical Overview

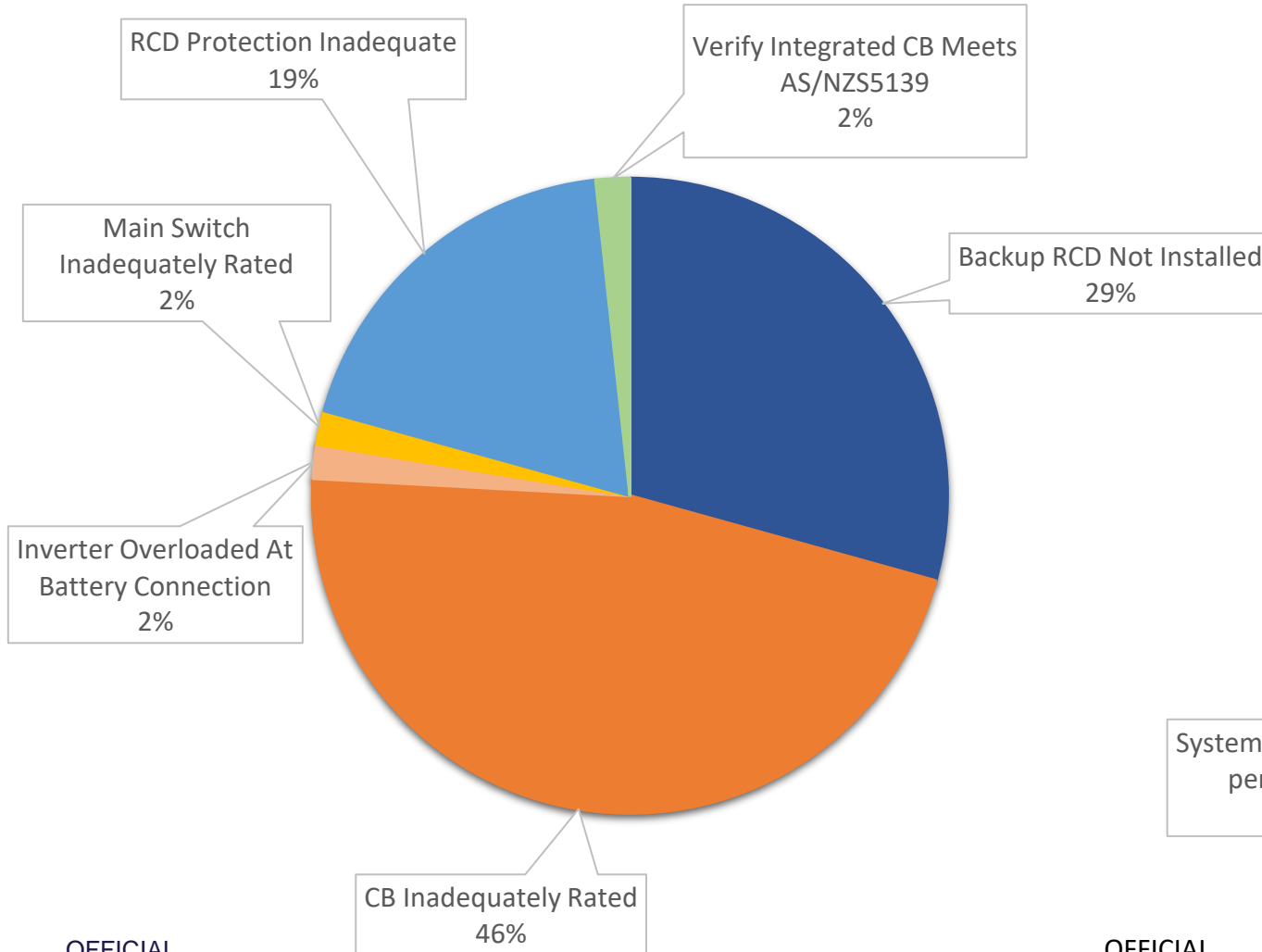
Electrical Sub-Category Breakdown

Total Electrical Issues	172	
Access To Live Parts	5 (3%)	HIGH
Circuit Protection	58 (34%)	HIGH
Conduit	34 (20%)	LOW
Earthing	28 (16%)	HIGH
Isolation	16 (9%)	MED
Neutral Continuity / Secondary MEN Link	5 (3%)	HIGH
Termination	6 (3%)	MED
Wiring	20 (11%)	MED



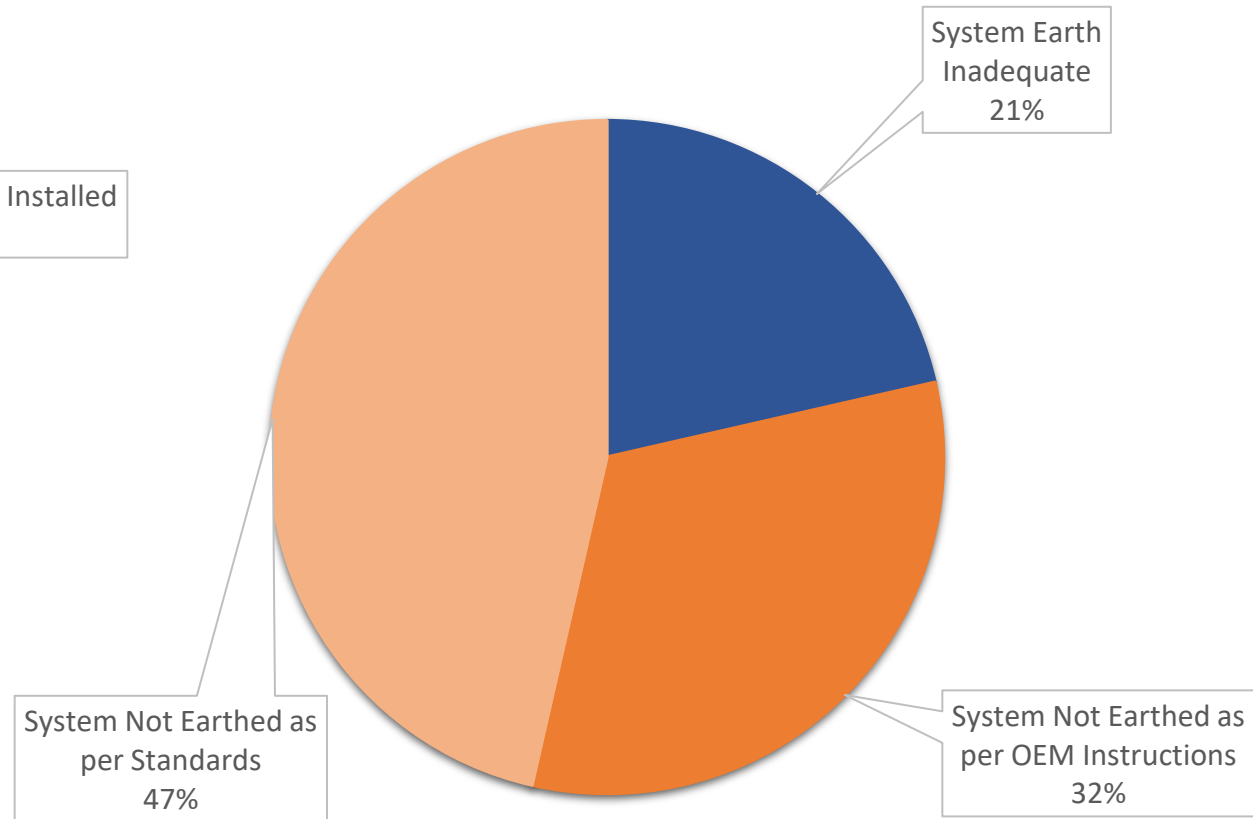
Electrical | Circuit Protection and Earthing Insights

Circuit Protection



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Earthing issues

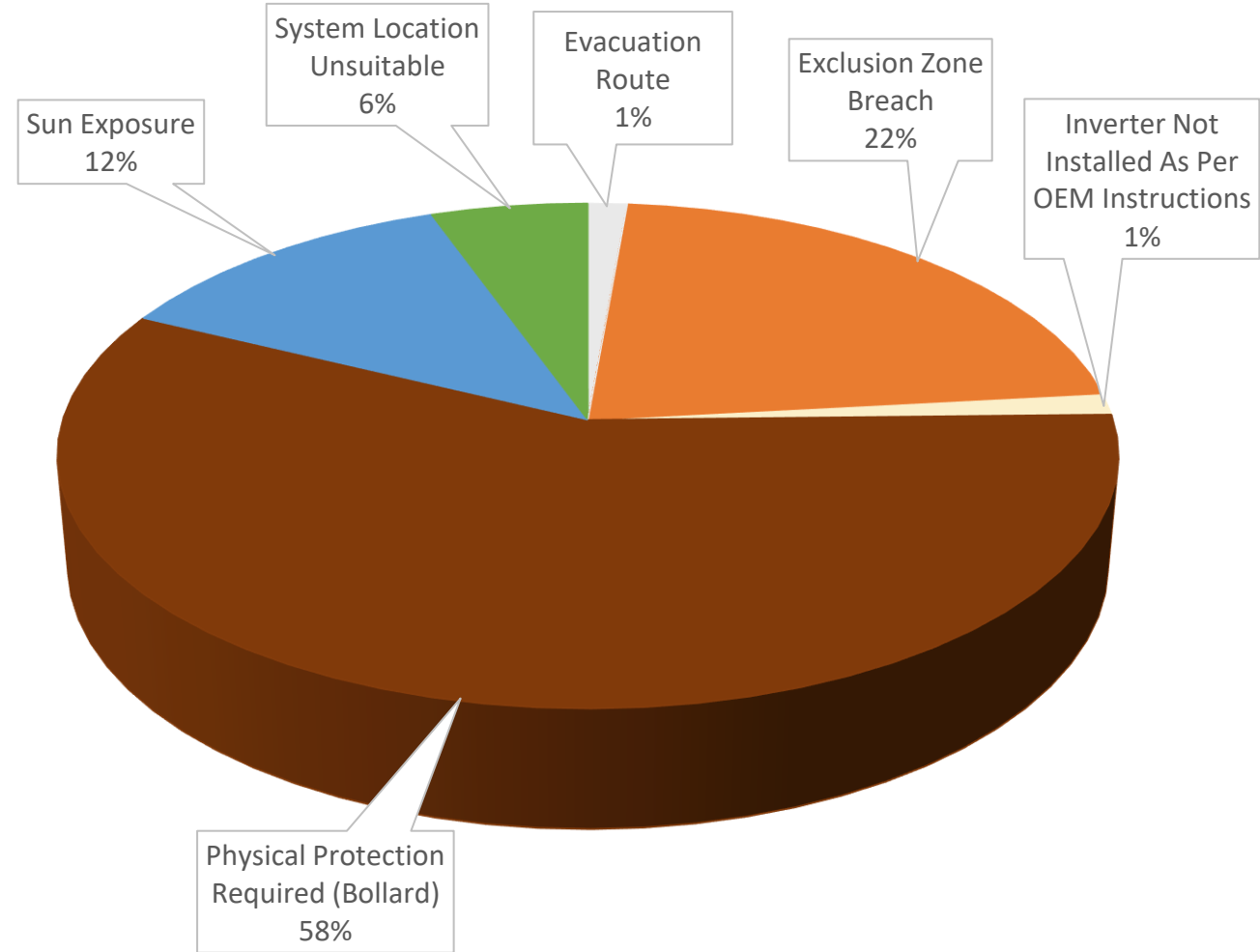


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Location | Overview

Location Sub-Category Breakdown

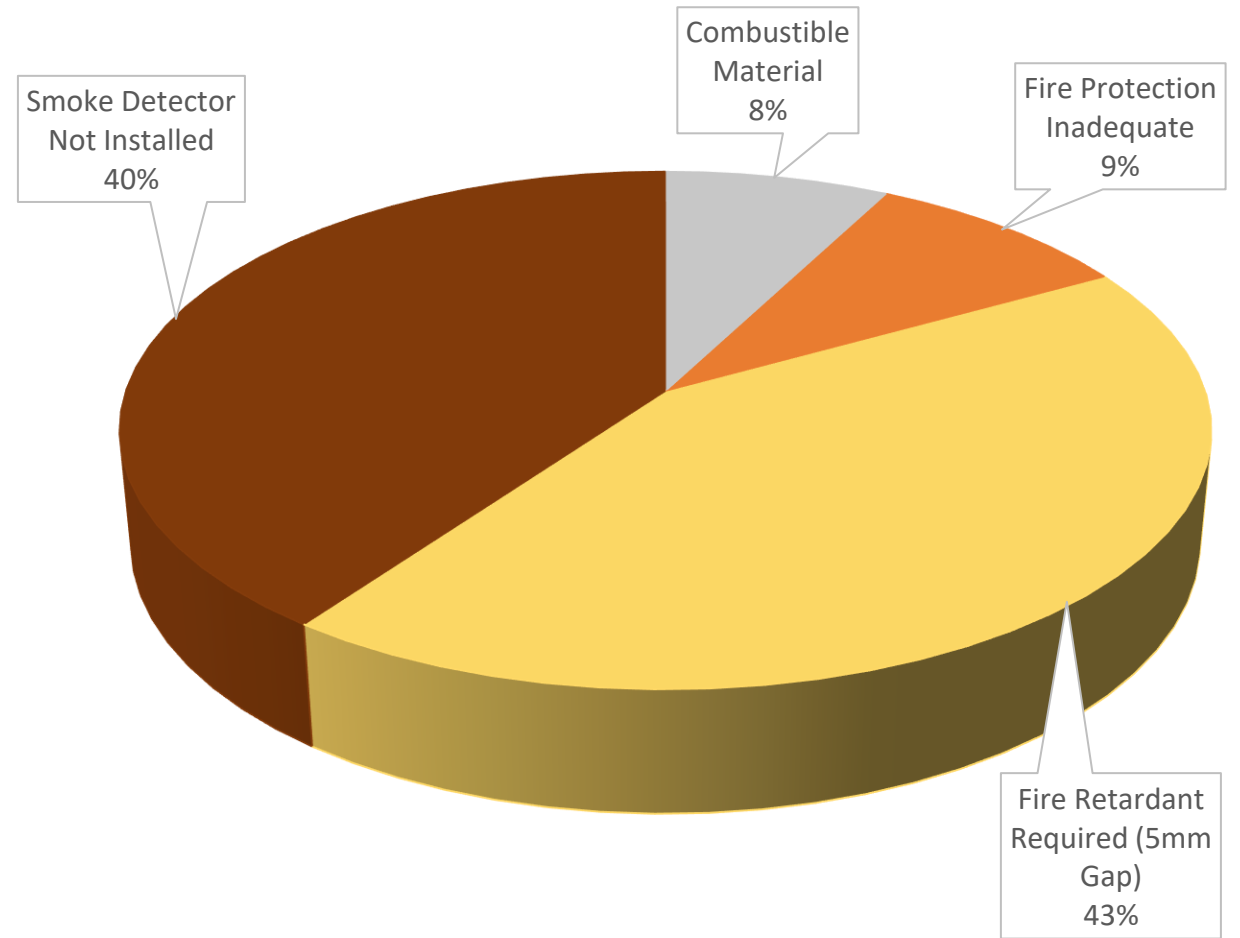
Total Location Issues	73	
Evacuation Route	1 (1%)	MED
Exclusion Zone Breach	16 (22%)	MED
Inverter Not Installed As Per OEM Instructions	1 (1%)	LOW
Physical Protection Required (Bollard)	42 (57%)	HIGH
Sun Exposure	9 (12%)	LOW
System Location Unsuitable	4 (5%)	LOW



Fire Protection | Overview

Fire Protection Sub-Category Breakdown

Total Fire Protection Issues	65	
Combustible Material	5 (7%)	MED
Fire Protection Inadequate	6 (9%)	MED
Fire Retardant Required (5mm Gap)	28 (43%)	LOW
Smoke Detector Not Installed	26 (40%)	HIGH



Upcoming safety and quality education

Industry Webinar Tuesday 3 December:

- Battery Installations – Common Defects
4pm – 5pm

Industry Webinar TBC January/February 2025

- PV Installations – Common Defects



Anita Holt

**Director
Industry Development and Technology**

Industry training and mentoring, recommendations and requirements via Notice to Market



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Solar Victoria is supporting the PV and battery installers through training and guidance

Solar Victoria provides solar industry guidance, training and mentoring to help keep workers and customers safe and put industry leading standards into practice.

Audit checklists and guidance

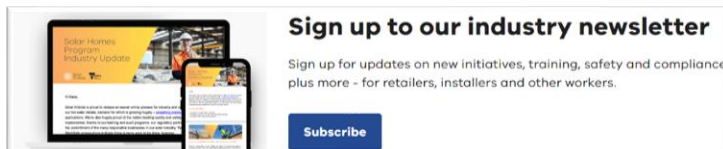
- Solar PV audit checklist and guidance
- Battery audit checklist and guidance
- Hot water audit checklist and guidance

Technical solution and guidance sheets

- Series 1: Working safely at height
- Series 2: Battery installation safety
- Series 3: Solar PV installation safety
- Series 4: Hot water installation safety
- Series 5: Electrical safety (in development)

Training and workforce development

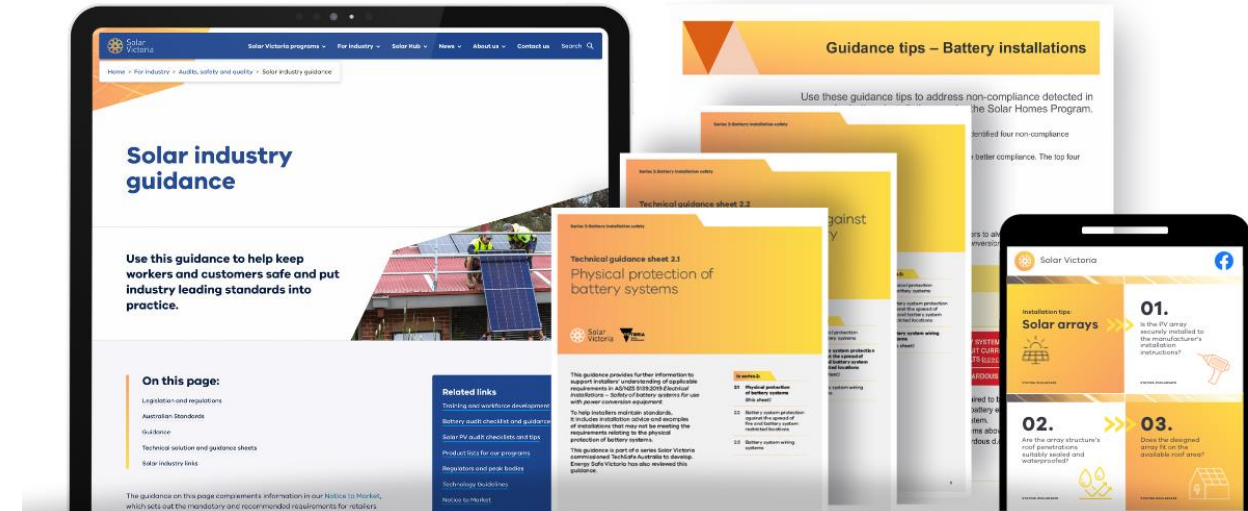
- Upskilling for electricians
- Technical mentoring and support
- Solar Victoria apprenticeships for women
- Career mentoring for women in solar industry
- Work safely in the solar industry
- Solar energy and construction industry training



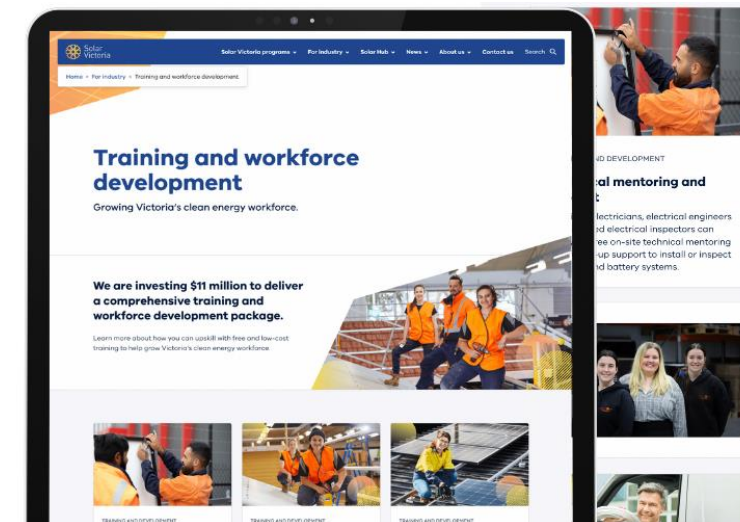
Sign up to our industry newsletter

Sign up for updates on new initiatives, training, safety and compliance plus more - for retailers, installers and other workers.

[Subscribe](#)



A screenshot of the 'Battery audit checklist and guidance' page. It features a photo of a woman in a yellow safety vest inspecting electrical equipment on a brick wall. The text reads: 'AUDITS SAFETY AND QUALITY', 'Battery audit checklist and guidance', and 'Installers can use our audit checklist and guidance to help keep pace with growth in technology and advance their understanding of compliance standards.'



A screenshot of the 'Training and workforce development' page. It features a photo of a man in an orange safety vest working on a solar panel. The text reads: 'Training and workforce development', 'Growing Victoria's clean energy workforce.', and 'We are investing \$11 million to deliver a comprehensive training and workforce development package. Learn more about how you can unlock with free and low-cost training to help grow Victoria's clean energy workforce.'

PV and Battery Design and Install training

Solar Victoria is supporting the industry to access free design and install PV and Battery training .

- Fully subsidised training is available for A grade electricians and fourth year apprentices to gain skills and knowledge to become a qualified solar photovoltaic (PV) designer and installer or a battery storage system (BSS) designer and installer.
- Training is available through a number of TAFEs in metro Melbourne and regional Victoria however there are limited places now available.
- A Grade electricians and 4th year apprentices are also able to access non subsidised training through Victorian based TAFEs and registered training organisations.

Mode	Content
In-person theory and practical (metro and regional locations)	<ul style="list-style-type: none">• Design Grid-connected Photovoltaic Systems• Design Grid-connected Battery Storage Systems• Install Grid-connected Photovoltaic Systems• Install Grid-connected Photovoltaic Systems

For more information visit: [Upskilling for electricians | solar.vic.gov.au](https://www.solar.vic.gov.au)



Notice to Market

Mandatory Requirements:

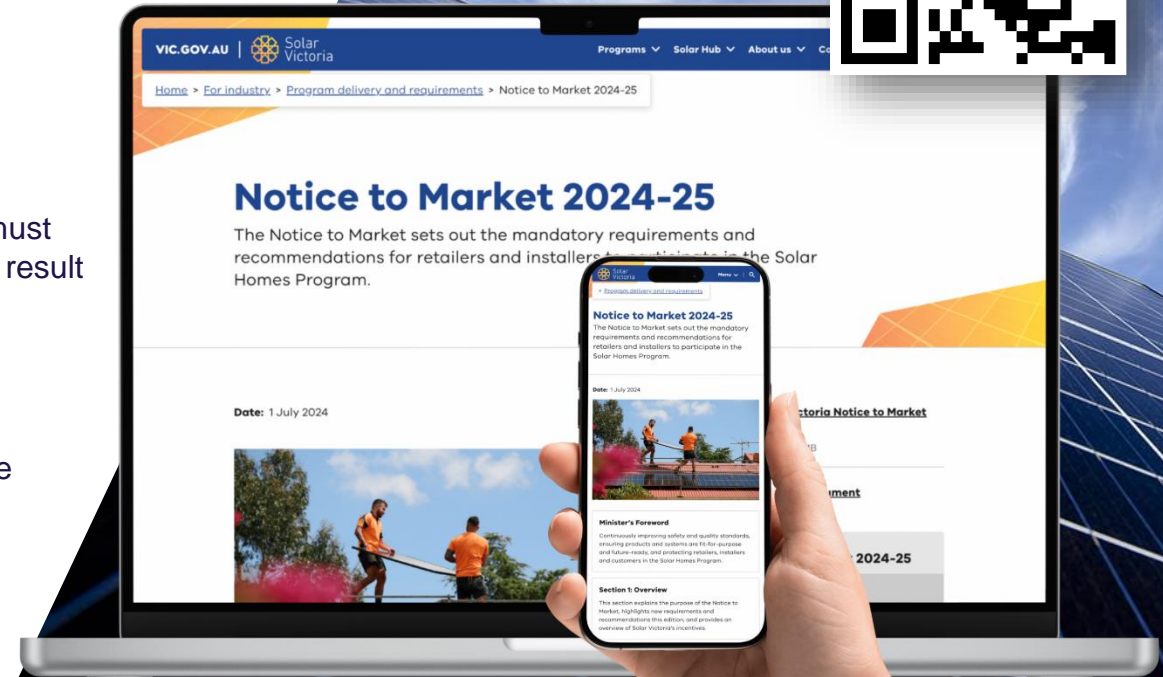
- *NEW* Telemarketing and door-to-door sales ban
- *NEW* Active internet connection for solar PV and batteries
- *NEW* Retailer obligation to ensure installers are provided with an AS/NZS 5139 compliant battery labelling kit
- *NEW* Removal of solar PV panels and components from residence
- *NEW* Consumer protection for solar sharing technology
- *NEW* Interface protection for Inverter Power Sharing Devices greater than 30 kVA
- *UPGRADED* Financial performance estimate to solar PV/battery system owners
- *UPDATE* Smoke alarm installation in a room under the same roof as a residence must comply with AS 3786:2016 or AS 3789:2023 or, where the use of the area is likely to result in spurious triggering, with AS 1670.1

Recommendations:

- *NEW* Retailers maintaining evidence of panel and system disposal to a lawful place

Emerging policy considerations:

- Increasing customer benefits of DER: User controls, integration, orchestration
- Product safety, cyber security, big data
- Circular economy, end-of-life stewardship



Thank you

