

Emergency Backstop Mechanism

Installer Workshop
September 2024



“We acknowledge the Traditional Owners of the land on which we operate and recognise their continuing connection to land, waters and culture. We pay our respects to their Elders past, present and emerging.”



Housekeeping

Welcome to the Emergency Backstop Mechanism Installer workshop

- Introduction
- All microphones off
- Questions in the chat
- Session will be recorded and shared after the event

Supporting a renewable future ...

**Introducing the emergency
backstop**

Video- Emergency Backstop



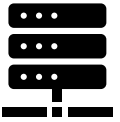
[Link to video- YouTube](#)

Supporting a renewable energy future

The challenge and the opportunity



Rapid uptake of renewable energy



More energy is being pushed into the grid

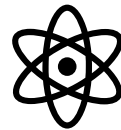


There are currently limited options in managing this additional energy

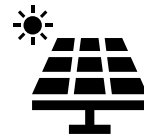


The current electricity network isn't built to support future demand

Supporting a renewable future with the emergency backstop



Improve stability of the electricity grid



Future proof solar technology



Support flexible exports and tariffs

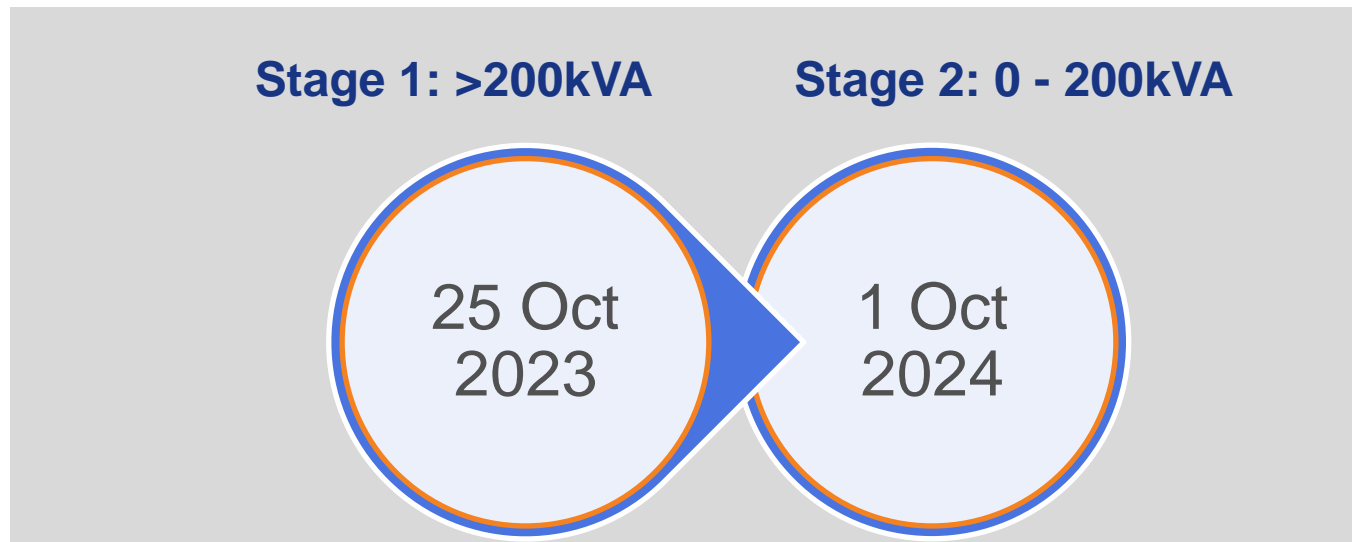


Support other distributed energy resource options

As more Victorian's embrace renewable energy solutions, we need mechanisms in place to support this.

The emergency backstop mechanism

Effective from 1 October 2024, all new, replacement and upgraded solar installations must be **emergency backstop enabled**.



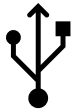
Any completed* **'Approve my Generation or Battery Storage'** (pre-approval) applications submitted prior to 1 October 2024 will not require the emergency backstop mechanism.

*For your application to be considered as 'completed' the pre-approval application must be submitted with all necessary supporting information for Jemena to complete the assessment of your installation.

Installations from 1 October 2024

For most installations (retail customers and small businesses), connection will be via CSIP-Aus inverter.

What installers need to know about connections from 1 October 2024



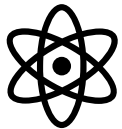
All installations **MUST** meet emergency backstop requirements



Inverters must be AS4777.2 CSIP-Aus compliant and on the **CEC list of approved inverters** And Jemena's approved list of inverters for full export



The inverter must have a **reliable internet connection** (or the static export limit will be reduced to 0.5kVA) – ethernet connection is suggested



The whole system must be backstop enabled – this is applicable for installations where the existing system is being upgraded.



There are **new steps for installers to complete during registration** and for Jemena to complete in commissioning the inverter to our system.



Connecting the CSIP-Aus inverter

Until 31 December 2024, Jemena is allowing all CSIP-Aus inverters on the CEC list to be connected to the Jemena network. However, if the inverter is not also on the list of inverters that have been approved for connection to the Jemena network, the export limit will be reduced to 0.5kVA (see website for details).

Is CSIP-Aus inverter on CEC list of approved inverters	Is the inverter ALSO on the list of inverters approved for Jemena connection?	Is there a reliable internet connection at the premises?	Maximum export limit that can be applied	Notes
✗	Inverter must not be installed and cannot connect to the Jemena network			
✓	✗	✓	0.5kVA	Min export limit will remain in place until all manufacture is approved for Jemena connection *
✓	✗	✗	0.5kVA	As above, installer will need to return to site to complete installation process **
✓	✓	✗	0.5kVA	Installer will need to return to site to complete installation process **
✓	✓	✓	5kVA	

* Once Jemena testing and commissioning is complete, the export limit will automatically increase to up to 5kVA

** An internet connection is required to complete Jemena testing, and on an ongoing basis

The Jemena Connection process

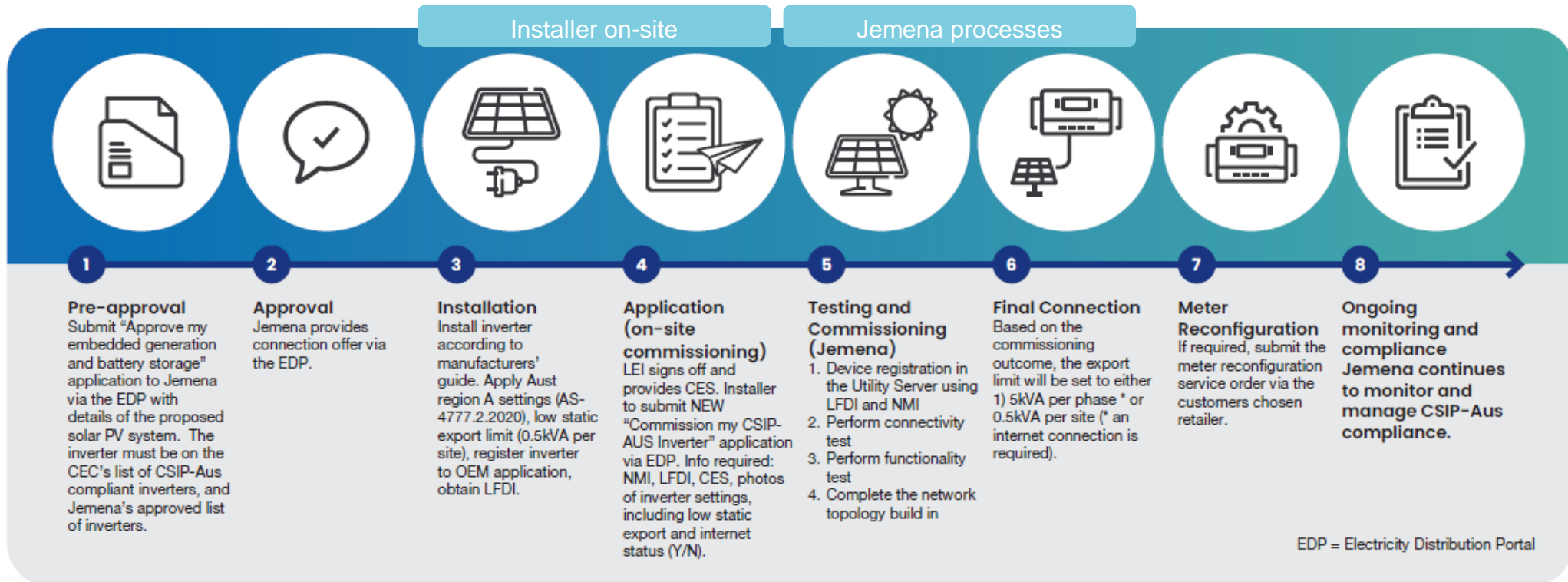
Video- What installers need to do?



[Link to video- YouTube](#)

Jemena's connection process (basic connections)

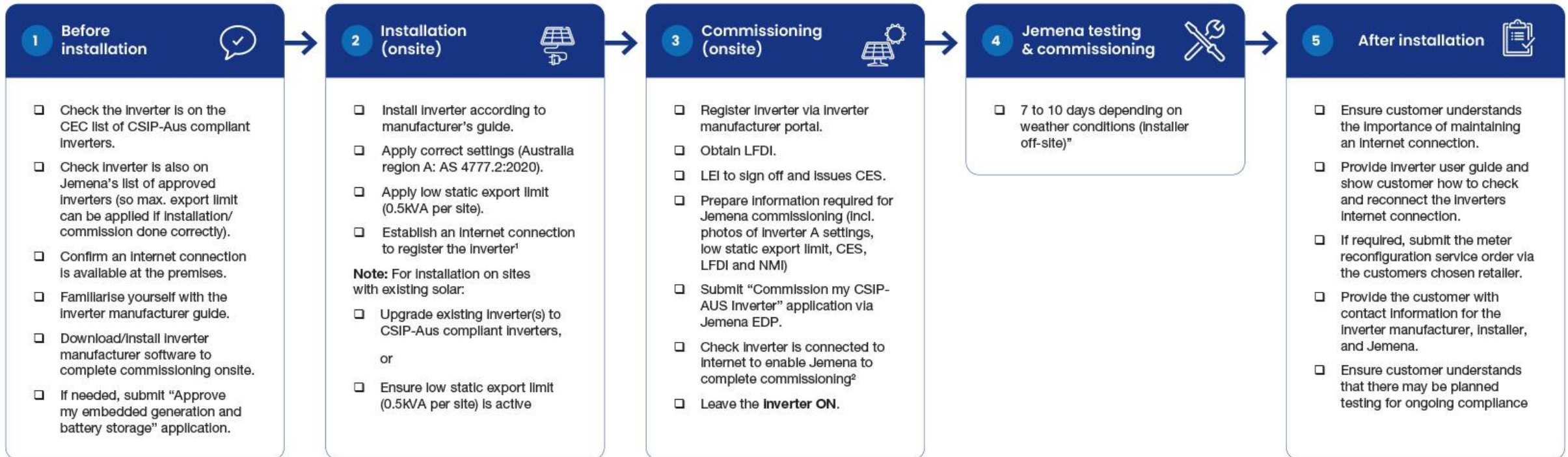
To accommodate the requirements of the emergency backstop, there are some changes to the registration process for installers when connecting to the Jemena network.



There are also additional testing and commissioning steps for Jemena in connecting the inverter to our Utility Server. This is expected to add 7-10 business days to the process.

Installer Check List

Solar installers checklist for Jemena connections



¹Installers may need to establish an Internet connection via a mobile hotspot if one is not available on site

²If there is no Internet on-site, Jemena will be unable to test and commission the inverter until a connection can be established

Jemena Electricity Distribution Portal

Video- How to submit an application in EDP?

To support the new requirements of the emergency backstop, Jemena has made changes to the Jemena Electricity Distribution Portal.



[Link to video- YouTube](#)

Commission my CSIP-Aus Inverter - Outcomes

Successful outcome



Un-Successful outcome



Minimal System Load Events

Enacting the emergency backstop

Having solar PV systems that are emergency backstop enabled allows the Australian Energy Market Regulator (AEMO) to manage the generation of solar within the Victorian Electricity Network, and therefore protect the stability of the grid during times of peak demand (a Minimal System Load event).



If AEMO issue an order to curtail, this means Jemena will:

- remotely **reduce the generation** of solar PV - customers will still be able generate solar for self-consumption, however, excess solar will not be fed into the electricity grid, or
- **switch off the generation of your solar PV system.** This will prevent the system from generating solar during the MSL event.

These situations will be only be used as a last resort and will apply for a short period of time (a few hours). If your customers notice a MSL event is happening (the solar app will show zero solar exports), they don't need to do anything.

What does this mean for customers?

If solar generation is reduced

- ✓ Continue to generate solar for self-consumption
- ✓ No expected interruption to their electricity supply
- ✗ No feed-in tariffs for excess solar

If solar generation is turned off

- ✗ The system will not generate any solar for the duration of the curtailment order
- ✗ No feed-in tariffs for excess solar

- MSL events will happen infrequently
- They will only impact installations that are emergency backstop enabled (ie: > 1 Oct 2024)
- Jemena will advise Retailers of these events and list a history of these events will be published on our website.

Keeping customers informed

Communicating with customers

Now / Pre- installation

- Educate customers on:
 - the new requirements, including the need for the system to be emergency backstop enabled
 - the importance of maintaining an internet connection (for CSIP-Aus connections) – discuss the benefits of installing an ethernet connection.
- Let them know installation will take longer due to additional testing requirements.
- For connections >30kVA, there will be additional costs.

During installation / commissioning

- Keep them up-to-date with what's happening during the installation process.

After installation

- Ask them to contact their retailer to reconfigure the meter (if necessary).
- Educate them on how to check their inverter is connected to the internet and show them how to reconnect a lost internet connection.
- Trouble shooting - how to access the manufacturer's inverter guide.

Support and additional information

Additional resources

Across the Industry, there are several available resources:



- [Solar and other technologies page](#) – overview of new connections process and links to technical documents
- [Emergency backstop](#) – information specific to the emergency backstop
- List of [inverters approved](#) for connection to the Jemena network
- Comprehensive FAQs



- [Customer Information](#) (fact sheet to share with customers)
- [Industry guidance](#)

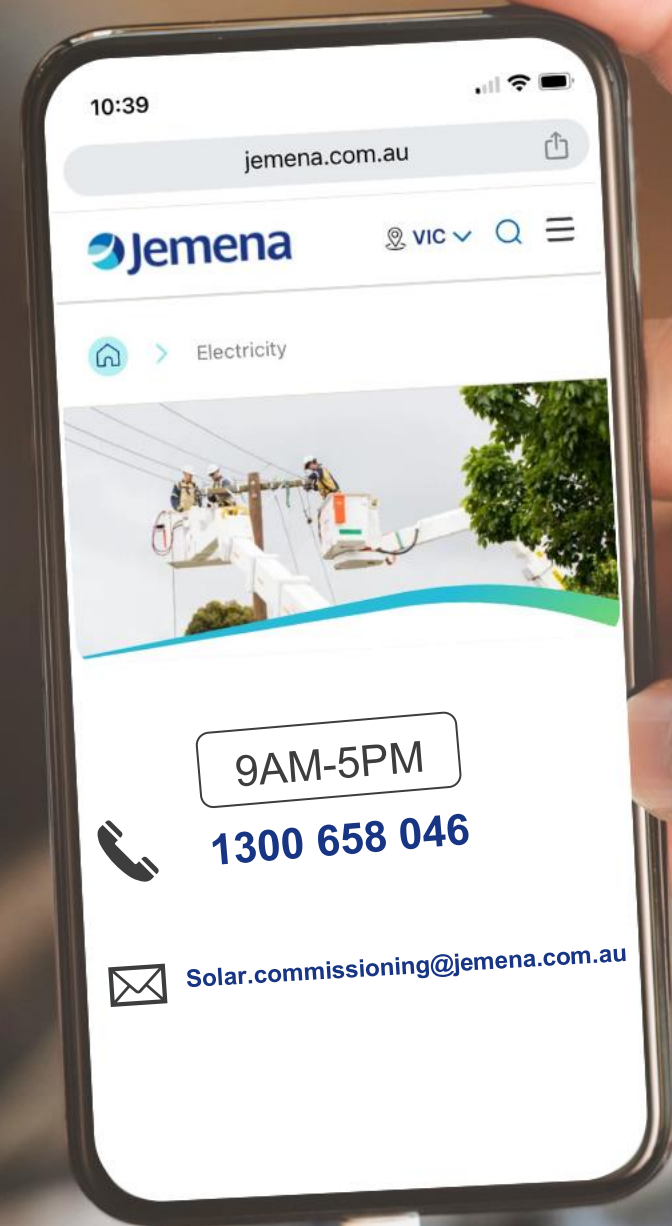


- Link to [CEC list of approved CSIP-Aus inverters](#) (refer to section 'Inverters with Software Communication Clients').



- [Installer training and guidance](#)

Available support



An aerial photograph of a residential neighborhood, overlaid with a semi-transparent blue filter. The houses are arranged in neat rows, and many of the roofs are covered with solar panels. The text "Thank you!" is centered in the middle of the image in a large, white, sans-serif font.

Thank you!

Any questions?



Q&A

#	Question	Answer
1	Are there expiries on pre-approvals with Jemena?	<ul style="list-style-type: none">- Any pre-approval applications submitted to Jemena prior to 1 October 2024 will be grandfather. NOTE: this is subject to a complete application. If an application is deemed to be incomplete or missing information, Jemena will reject the application, forcing the application to re-submit and introducing the needed for Emergency Backstop.- Once an offer is made it must be accepted within 45 business days, and once accepted, it is valid for 90 days (the system must be connected in this time). This is outlines in the Model Standing offer.
2	Is the CSIP-Aus technology internet failsafe? (does the inverters goes offline when the internet is lost)?	The inverters won't go offline but will reduce to a low static export. If the internet connection is lost or doesn't respond within a certain time, the export limit will drop to the low static export. Once the connection is restored, the utility server will provide a new command to increase that export limit back to the 5KVA per phase.
3	<p>Does the capability test require export?</p> <p>Many of the solar PV systems installed for our customers are ≤ 200 kVA but are on premises with consistently high loads (with base loads often higher than the maximum solar generation). Examples includes supermarkets, processing facilities, defence contractors, hospitals etc. In most circumstances, it is not possible to guarantee 0.5 kW of export during the commissioning period. Additionally, these facilities will not permit load shedding during the day as it causes serious disruption to business operations (and costs tens of thousands of dollars per hour for many customers). This can apply to systems ≤ 30 kVA as well as those 30 – 200 kVA. Can Jemena please provide a clear procedure regarding how they situations will be handled?</p>	Jemena will be able to use the meter data and LV analytics to proceed with the commissioning. For the commissioning test, Jemena performs test on export and generation. The export limit test is mainly to check if the system export limit remain below 0.5 if there's a loss of interoperability or the Internet. The generation test is to test the curtailment capability.



Q&A

#	Question	Answer
4	Despite the backstop we still have a 5kVA/15kVA default export limit? And all existing systems will also be limited to 0.5kVA?	The existing systems are not impacted by emergency backstop unless they're upgraded or replaced. The 5 or 15 KVA default export limit will stay static unless there's any changes to the inverter, at which point it will be emergency backstop enabled. It will need to be emergency backstop enabled with that default 0.5kVA.
5	When you say offer for Pre approval , will we get document with approved export limit?	Yes, in both case- whether it's a basic connection below 30 kVA offered through the Model Standing Offer, or a negotiated connection with a contract and specific terms- both will clearly outline the approved export limits.
6	Do we still need to submit an EWR with the COES and Aust A settings?	Not for Jemena, the EWR is more for the retailer and the metering reconfiguration request. So, it will still be required for the retailer application. However, for the "Commission My CSIP-AUS" application it's just the CES, Australia A settings and other screenshots (photos of low static export and internet).
7	If the weather is good and everything is working OK, how long is the commissioning likely to take?	Jemena is looking to automate the process in the coming months. For Go-live date, the commissioning test will be done in 5-10 business days.



Q&A

#	Question	Answer
8	Will JEN provide an annual report showing the number of MSL events where curtailment and switching off have occurred?	We will maintain a list of all the MSL events, dates, start time, end time. So, we'll keep a historical log on our website accessible to anyone who needs it.
9	With a Solar and Battery Solution with back up supply - what happens if you turn off the inverter - will this actually revert to an off grid mode or shut down completely?	This depends on the size of the battery and will be discussed as part of the negotiated connection application (for basic connections, it will be a complete switch off). So, the system may be completely shut down during an event (please note that Jemena will further investigate this matter).
10	For sites with multi-inverters, is a master slave configuration needed? How inverters with multiple brands can be controlled by EB?	One inverter should act as the master, connecting to the software communication client and coordinating with all inverters on-site. Alternatively, you can use a gateway device to manage all inverters. Our backend system will only communicate with one on-site device, and testing will be conducted at that interface point.
11	What about a solar inverter and an AC coupled battery- a Powerwall can export 5kW if programmed to. How can we have a master / slave setup with a solar inverter and an AC coupled battery?	When we send the curtailment or runback of generation, we'll be running controls that are related to generation not load. Inverter charging is fine, but generation should be switched off. Jemena will further investigate this matter.



Q&A

#	Question	Answer
12	We do new home builds, our sites will not have consistent internet connection after installer leaves and till home owner moves in. how do we commissioning testing?	You can still submit the application, but it will likely fail since you would have left the site and probably set it up using a hotspot. Jemena created a guide for new homeowners to set up their internet and connect with the installer. So, even if you submit the commissioning application, it will fail, and you'll need to redo it once the internet is established and the customer is in touch.
13	New builds don't have NMI - In this case how will pre-approval take place?	Pre-approval can't take place without an NMI. So, there's some steps that need to occur. The electricity supply is expected to be established before you can go through pre-approval and install.
14	Will VPP programs be also restricted or curtailed in an event	In most cases, anything that's sizable enough to be part of a VPP will be a negotiated connection. So, there'll be a much more intricate backstop mechanism built in. If the generation system is directly controlled by VPP, Then that will need to be coordinated with the priority of that control. If we send a curtailment signal directly to the inverter, the local control system should prioritise that signal over the VPP schedule, which may serve other market purposes. The emergency backstop will always take precedence over any other requirements.



Q&A

#	Question	Answer
15	So, AC Coupled batteries on VPP will also need to be backstop protected - is Tesla Powerwall2 current approved for this function	Tesla system validation is in progress.
16	Can we take secondary protection off of our >30kVA Jemena designs from oct 1 as they are not longer required on the standards?	The decision is yet to be determined.
17	Does this new EG backstop methodology supersedes the DNP3-scada requirement for systems above 200kVA?	At the moment, No. For systems above 200, it will still be DDLE over SCADA.
18	Are there any extra steps required for multiple inverter sites?	Depends on the size- if above 30KVA, it will be a negotiated connection and require additional steps.
19	If we're having a new system to our site with an existing converter, does the existing inverter also need to be compliant with emergency backstop?	If the existing inverter can be uninterrupted and the new system can be installed without requiring change or integration. Then the old system can be grandfathered.



Q&A

#	Question	Answer
20	When will the in-band registration be ready?	The in-band registration will be available shortly after (1-2 months)
21	How Long's the time period between the install and submitting the commissioning info for manual test?	It could be done on the same day. The application gives you flexibility where you could either do it while you're on site or once you're back at the office or you could give it to an administrative support person to submit that for you as well.
22	Can you please provide a link to the specific page on the Jemena website where MSL events will be listed?	Refer to Jemena's Emergency Backstop Page. There will be a link to the MSL page from here.
23	Will no customer be able to export more than 5kVA per phase, no matter how big the system may be?	For negotiated connections in a lot of cases, it's subject to the area. So, if the area is export constraint, then a lot of the times those export limits will just be 0. Where they're not constrained and there are areas in our network that are still capable of handling export, you will get an export limit larger than 5KVA. The 5 kVA limit is a general rule for what we consider a basic connection (30 kVA or below).



Q&A

#	Question	Answer
23	What can we do if we can't achieve export during Capability testing (e.g., 30 kW system with 200 kVA base load)?	Jemena can still complete the capability testing by monitoring the LV analytics and responses to the import and export of the connection point.
24	How can we find the Single line diagrams of the Emergency backstop?	Please visit Jemena's website for the guidelines.