

Customer Forum Week 11: Model Standing Offer amendment

To require inverter control for solar



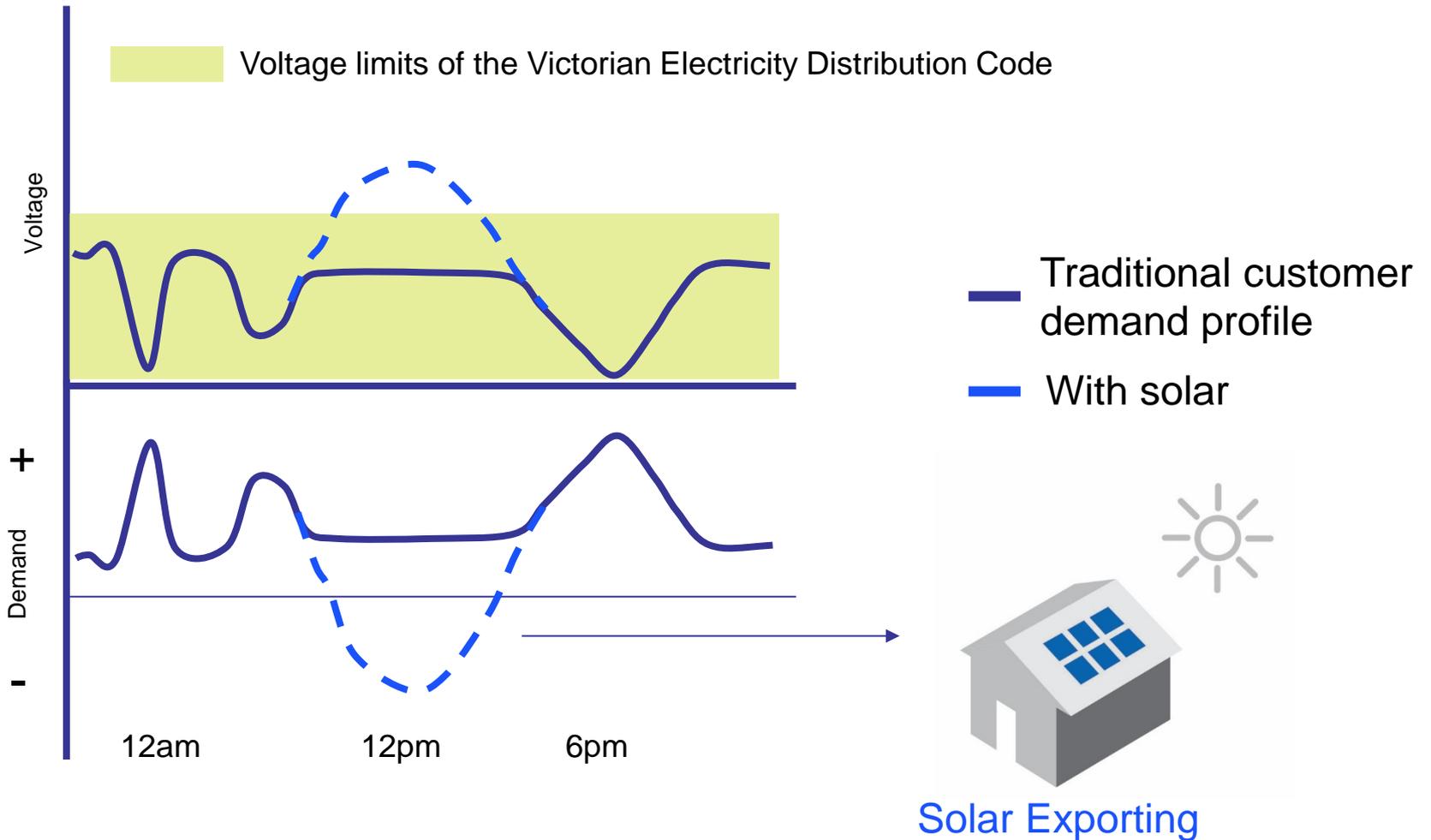
18 February 2019

Solar inverters – voltage rise of supply voltage due to export of solar



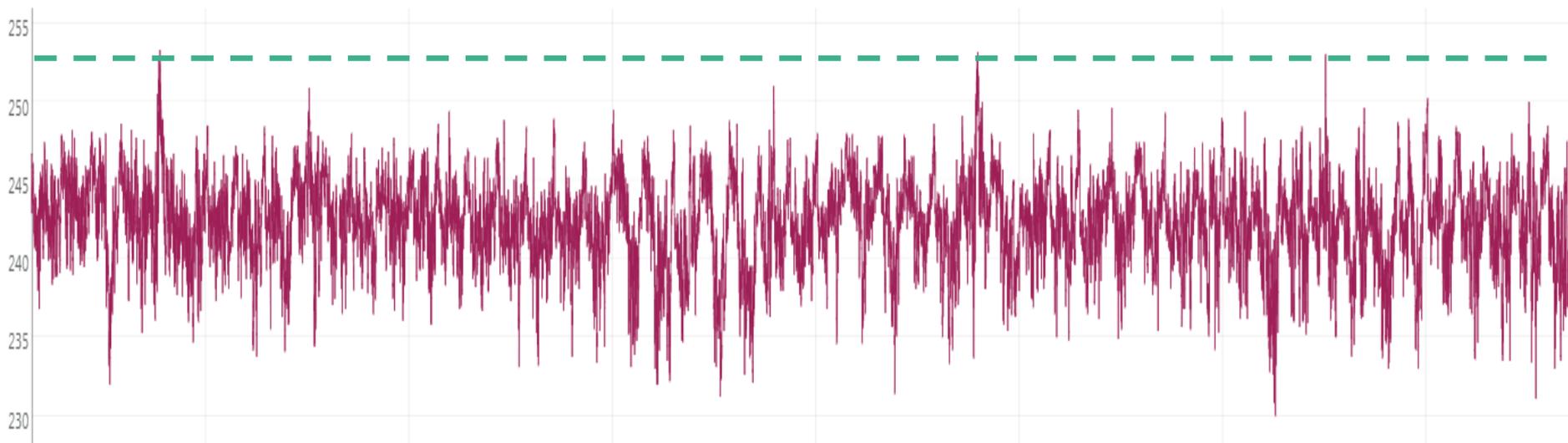
- We are amending the MSO to better manage solar on our network
- We are doing this to minimise solar systems tripping off and to maximise solar generation for our customers
- We have consulted with solar installers and they are comfortable with the change
- We are informing the Customer Forum so you are aware of our actions to better manage solar integration
- This is an preliminary stepping stone for dynamic control

Solar inverters – voltage rise of supply voltage due to export of solar spill



Voltage profile over two months

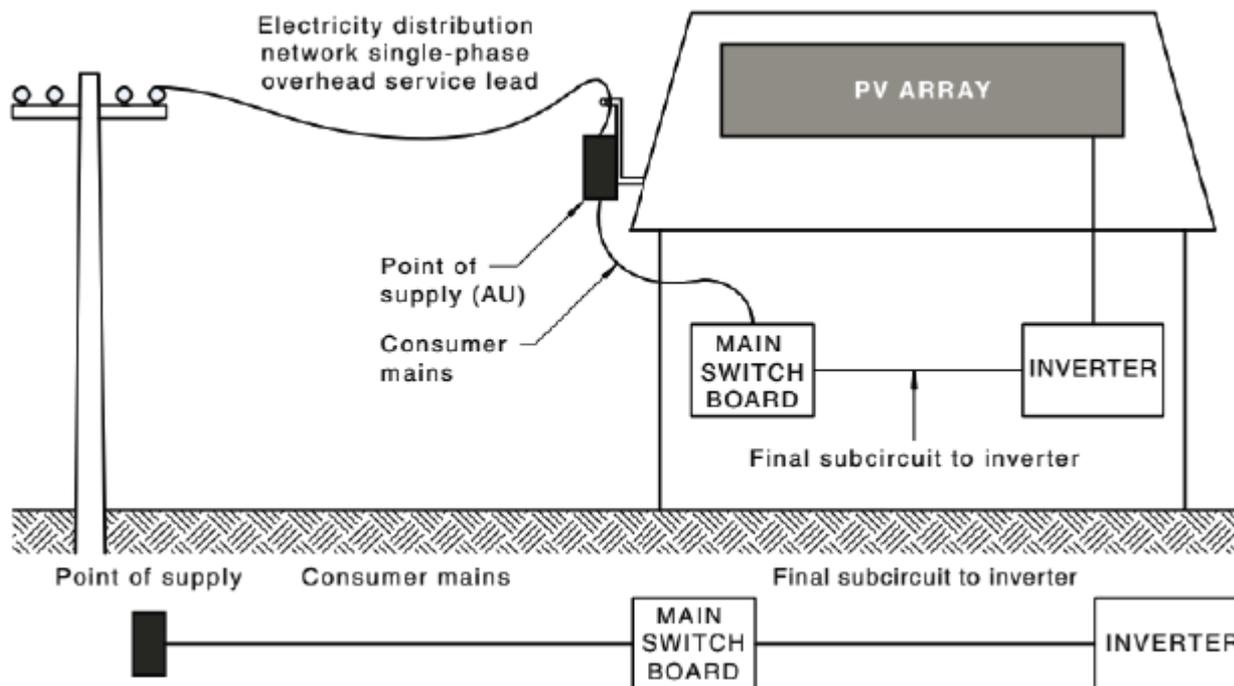
This is the voltage profile, over two months (December and January), from a customer that has made a complaint about high volts. The voltage is out of range 3x times and each time is a 5 minute interval.



Supply voltage = 230V (-6% / +10%); supply voltage range = 216V – 253V

Inverters will trip off when they measure supply voltage to be 260V (instantaneous) or 255V over a 10 minute average.

Solar inverters – anti-islanding



When inverters trip off no solar power is being generated, inverters will not come back online until supply voltage is within range.

The MSO amendment is seeking to minimise this outcome.

Proposed change to MSO and expected customer benefits



Proposed change

- Inverters will be required to have specified capabilities (known as volt-var and volt-watt capability)
- Consistent with ENA and CEC recommendations
- Common settings across Victoria to streamline change for installers

Expected customer benefits

- **Customer with existing solar**
Less tripping of inverter due to voltage rise
- **Customer with no solar**
Grid voltage range maintained to Standard; less tripping of circuits in the house due to voltage rise
- **Customer wanting a new solar connection**
During voltage rise, there is a steady ramping down of inverter output as opposed to a hard trip, which means that customers will enjoy greater leverage of their own generated energy

We presented the scenario below to 9 solar installers and engineers around Victoria:

“As solar penetration increases, AusNet Services may need to specify that all inverters installed within our patch have Volt Watt and Volt Var response mode capability enabled to allow greater penetration of solar and battery. This means there will be certain inverters that currently appear on the CEC list which may not be applicable in the future.”

We asked them: How will this impact your business?



Finding 1 Installers said this would have no negative impact to their business as they only use systems with these settings.

"I would welcome it. They're great settings to have... We should've enforced this for the last two years."

"We mostly only install inverters with these settings"

"It wouldn't impact us as we use inverters that have those settings"

"I only use top quality stuff so it doesn't bother me. A lot of people use very cheap inverters."

Finding 2 Installers welcomed the change. They said these settings would help their business by reducing the prevalence of 'dodgy' inverters and installers.

"It helps me actually. A lot of my competition will be out."

"You've got to keep high standards at the start – going hard early with what you need is a good way to eliminate dodgy installers."

Finding 3 Installers thought this change would have most impact on large-scale installers and wholesalers. They thought these groups might need warning months in advance to have time to prepare.

"We get things through the wholesaler – they are the ones at risk."

"No impact to me, but to overall business it might"

"Preparation would need to be around 6 months but that's just general opinion."

IMPLEMENTATION MILESTONES

DATE	ITEM
7 March	ENA release DER Connection policy
11 March (Review period 6 weeks)	Submit revised contract for connecting solar and/or batteries to the Australian Energy Regulator (AER) for review and approval. If accepted, the Contract is deemed.
March, April & May	Industry workshops with installers, Victorian DBs, AEMO, CEC, ENA, Vic Solar to work through implementation period and define impacts/ grace period/ industry messaging
May 2019	Connections process updated to reflect changes
~June – ~December 2019	Grace period (suggested 6 months)