

Customer Forum Week 12: Innovation expenditure

Update

26 March 2019



Updates

- ▶ **Customer focused narrative**

- › Discussion of two examples provided to the Customer Forum

- ▶ **Governance and funding**

- ▶ **Next steps**

Customer focused narratives

- **Stand alone power systems**
- **Advanced voltage regulation**



Customer Focused Narrative 1: Stand-Alone Power Systems (SAPS) pilot

1. Description

A small number of remote, rural customers would have on-site, complete power supply solutions installed at their properties, consisting of a rooftop solar system, battery storage and a back-up diesel generator. These Stand Alone Power Systems (SAPS) would replace power supplied via the traditional network.

If the trial is successful (and planned changes to regulations are made to enable widespread use of SAPS), customers could start realising benefits from around 2022.

2. Significant potential customer benefits

Cost savings for customers: The cost of supplying remote customers in high bushfire risk areas using SAPS solutions can be much lower than via traditional network services.

After the black Saturday bushfires ten years ago, new regulations require power lines in high bushfire risk areas to be replaced over time with either underground wires or wires covered with protective insulation. This is expensive, costing over \$470,000 per km. If five customers were supplied on a remote network spur requiring replacement, the need to replace much more than three km of network would outweigh the cost of providing the 5 SAPS, even accounting for the shorter life of the SAPS.

With around \$47 million planned to be spent over 2021-25 replacing 100km of network in high bushfire areas, and investment continuing into the future to eventually replace all lines in bushfire risk areas, potential future cost savings could extend to tens of millions.

The cost saving will be spread among all customers.

Improved reliability of supply: Customers with SAP systems will not experience interrupted supply due to trees/vegetation falling on power lines, animals on our equipment or weather events. Therefore, they are likely to experience more reliable (that is, uninterrupted) supply.

Improved bushfire safety: Communities where powerlines have been completely removed will benefit from a lower bushfire risk. Although we are installing a lot of technology to reduce the chance that our electricity network causes fires, this is a risk that is difficult and expensive to remove completely. Removing powerlines in fire-prone areas altogether is an effective way to improve community safety – this can potentially be achieved by the use of SAPS.

Improved security of supply: Customers that have a SAPS would avoid electricity interruptions when insufficient electricity is available from generators to supply all customers. This may happen on rare occasions, such as on extremely hot summer days. The 25 January 2019 load shedding events would not have affected customers with SAPS.

3. Costs and delivery

We are proposing to trial 5 SAPS at a cost of \$1 million, which would cover buying and installing the systems, monitoring and reporting of outcomes.

We need to trial the SAPS in our network to test the degree of cost savings, its practicality and performance, and whether our customers would be satisfied with this form of electricity supply. AusNet Services would also draw on the lessons of recent SAPS trials in Western Australia and Tasmania thereby ensuring we are collaborating with other electricity distributors.

Customer Focused Narrative 2: Allowing more solar exports on the network – network device testing

1. Description

The increasing solar exports from customers can stress our network, which has been built to deliver electricity in one direction from generators to customers. Excess solar generation raises voltage levels and this can damage both our network and our customers' appliances.

We would like to support our customers by finding innovative ways to address this challenge and enable more exports onto the grid. Our customers have made it clear that they expect to be able to export their excess solar to the grid.

There are many different potential ways to provide more customer opportunities to export, some involving network-side solutions, and some requiring a blend of network and customer responses. We are working closely with our industry peers and research experts to find innovative solutions that can make a difference quickly and at least cost. This project involves testing a low-cost solution using equipment within the network, and whether this is likely to be effective in our network.

The project applies three technologies in combination that control voltage:

- Equipment on high voltage lines that control voltage
- Equipment on low voltage lines that control voltage
- Distribution network equipment that can automatically regulate voltage.

2. Significant potential customer benefits

Reduced future network cost: If successful, the trial would reduce the amount we need to spend on our network to manage voltage and allow solar exports.

Reduced electricity bills for customers: More than 100,000 of our customers already have solar installations and this number is expected to more than double by 2025 given the Victorian Government's support for solar uptake. This technology would reduce our need to limit solar exports onto the grid, allowing customers to be paid for their solar exports, reducing their electricity bills. Unlocking electricity supplies from solar exports can also reduce electricity costs for all customers.

Improved power quality, safety and lower costs: Our network is required to maintain strict power quality and safety standards, including by managing voltage levels on the network. Managing the voltage impacts of solar reduces the likely problems and costs of damage to our network and customers' appliances and allows us to comply with our regulated safety standards.

3. Costs and delivery

The cost of the proposed trial is \$0.75 million. This would cover buying and deploying the technology, along with the monitoring and reporting of outcomes.

We need to trial these technology solutions in our network to test the degree of cost savings, their practicality and performance given our network configuration. This trial will also draw on previous industry experience from related new technology trials.

Innovation funding and governance



Funding

► Options have previously been discussed

Option	Operation	Pros	Cons
Fixed allowance	Allowance included in the opex and capex expenditure allowances. These could be excluded from the incentive schemes (so no incentive to reduce expenditure)	Provides an incentive for innovation to occur – that does otherwise not exist	If the funds are not spent they are not fully returned to customers
Use it or lose it allowance	Like the demand management innovation allowance (DMIA). Instead of supporting funding for DM R&D it is designed to fund broader R&D. Unspent funds returned at end of period & business bears any overspend	Provides a stronger incentive for innovation to occur as funds are at risk If the funds are not spent they are fully returned to customers	Greater complexity for the AER to allow and implement

► Recommended funding option

- › Use it or lose it
- › AusNet Services consistently collaborates and leverages joint/external funding

Governance

▶ Potential range of governance objectives

- › Customer input to design of innovation program
- › Technical input to prevent duplication of effort and validate rigour of projects
- › Ensure projects are in the long term interests of consumers
- › Filter and prioritise projects
- › Monitor project delivery
- › Guarantee sharing of innovation lessons and outcomes

▶ Principles for design of the governance arrangement

- › Effectiveness, proportionality (balancing performance and costs), transparency, clarity, not too complex

▶ Ausgrid model is not proportionate

- › Ausgrid proposing to spend significantly more than us - ~\$40 million
- › Ausgrid does not have our existing strong track record of award winning partnership projects and published outcomes

Governance

▶ Governance options for discussion

- › Formalised consultation with industry and academic experts
- › AusNet Services CCC advisory role
 - Customer input
 - Project prioritisation
- › Formalised reporting and sharing – as per DMIA

Next steps including research



Next steps

▶ **Customer input/research on 2021-25 proposal**

- › 2nd deep dive session – 23 May
 - Half day
 - Content and objective: Confirm lack of incentive for innovation, explain our proposed program in customer terms, seek input on innovation priorities including preparing for EVs, test proposals for funding and governance

▶ **Final negotiation with Customer Forum**

- › Early June