# AusNet Electricity Services Pty Ltd

## Electricity Distribution Price Review 2022-26

### Appendix 3N: Deep Dive 4 - Innovation and DER - Summary Report

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**PUBLIC**

Seed Advisory

# Deep Dive Workshop Four – Summary Report

AusNet Services Electricity Distribution Price Review
2021 – 2025

20 August 2019

**Innovation and Distributed Energy Resources**

# Contents

**Disclaimer**

This report is only a summary of key items discussed at the deep dive workshop held on 23 May 2019.

The information in this report is not necessarily reflective of the views of each attendee at the workshop, AusNet Services or Seed Advisory.

# 1.  Introduction

## 1.1.  Background

AusNet Services owns and operates a regulated electricity distribution network delivering electricity to more than 750,000 customers in Melbourne's north, east and across all of eastern Victoria.

Regulated electricity network businesses must periodically (typically every five years) submit a Regulatory Proposal which outline their plans and proposed expenditure to the Australian Energy Regulator (AER) for assessment.  AusNet Services is currently developing its 2021 – 2025 Regulatory Proposal.  On 12 February 2019 AusNet Services released its draft Regulatory Proposal.

As part of developing its Regulatory Proposal, AusNet Services is undertaking an extensive customer engagement program.  One component of this engagement program is a series of 'deep dive' workshops with attendees including customer representatives, consumer advocates, Customer Forum members, AER representatives, consumer challenge panel representatives and other stakeholders.

These workshops are designed to:

- share detailed information;
- consult on and enable open and frank discussion of AusNet Services draft Regulatory Proposal and plans with attendees; and
- enable AusNet Services to consider the feedback and views of attendees while developing its plans and respond accordingly.

AusNet Services engaged Seed Advisory to assist in the preparation and facilitation of these workshops and to develop a summary report for each workshop.

At the time of publishing this report, AusNet Services will have held the following five workshops:

- Workshop 1:  Overview of the draft Regulatory Proposal, customer experience, operating expenses and innovation;
- Workshop 2: Public Lighting;
- Workshop 3: Replacement Capital Expenditure;
- Workshop 4: Innovation and Distributed Energy Resources (DER); and
- Workshop 5: Information and Communications Technology expenditure.

## 1.2.  Purpose of this report

This report summarises the key items of discussion from Workshop Four on Innovation and the integration of Distributed Energy Resources, which was held on 23 May 2019 in Melbourne.  The names and organisations represented by the attendees at the workshop are included in Appendix A and the complete agenda for the workshop is included in Appendix B.

In brief, the workshop agenda covered four broad areas:

- An overview and discussion of the innovation program and innovation portfolio of projects;
- A discussion on possible approaches to the governance of the innovation program;

- An overview and discussion on the current environment for DER; and
- A discussion on 'smart networks' and potential options for network augmentation in the context of improving the ability for AusNet Services' network to host DER.

It is important to note that the information in this report is not necessarily reflective of the views of each attendee at the workshop, AusNet Services or Seed Advisory. This report provides a summary of key items discussed at the workshop. The workshop was held under "Chatham House" rules, so no comments from attendees have been attributed to any one attendee. AusNet Services' responses or comments in relation to matters raised by attendees has been noted as such.

## 1.3.     Other related documents

This report should be read in conjunction with three key documents which are co-located on the same page of the AusNet Services website that contains this report. The documents will provide important information and context when reading this report, the documents are:

- Pre-reading materials developed by AusNet Services for the relevant workshop – this document contains background and other information provided to workshop attendees to prepare them for their workshop attendance;
- Presentation materials developed by AusNet Services for the relevant workshop – this document contains the material presented at the workshop; and
- AusNet Services draft Regulatory Proposal for the 2021 – 2025 period – this document contains the full draft Regulatory Proposal published by AusNet Services on 12 February 2019.

# 2. Key discussion items

This section contains the key items discussed at the workshop and broadly follows the flow of the agenda. AusNet Services' responses or perspectives provided either during or post the workshop are included where relevant and required in the shaded boxes.

## 2.1. Innovation program

The discussion on the innovation program covered the following areas.

### 2.1.1. Approach to innovation

The majority of attendees supported the need for innovation and for AusNet Services to undertake and be involved in innovation related activities. Views expressed on the approach to innovation included:

- The need for networks to respond to changing dynamics and the rapid transformation in the sector. This includes being clearer on the role and level of shareholder investment versus customer investment in innovation.
- Many projects are viewed as important, but also relatively small instead of innovation activities focused on regions or communities at a larger scale.
- Perceptions of insufficient collaboration and knowledge sharing amongst electricity network businesses in relation to innovation. A stakeholder for example raised the question of the differences between the battery trial undertaken by Powercor and AusNet Services
- A need to more clearly communicate the benefits to (all) customers of innovation related activities. An example of Electric Vehicle (EV) trials was mentioned as having benefits for all customers, however has generally been communicated as primarily benefitting EV owners.
- A need to more clearly communicate and demonstrate the transition pathway from innovation to business as usual practice and AusNet Services' future product and service offerings.
- Some questioned if the current regulatory framework is appropriate to support innovation and if there needs to be a broader industry level mechanism to fund longer term network innovations.

AusNet Services noted the comments from stakeholders and discussed that:

- The business does directly invest in innovation using shareholder's funds. Customer funding for innovation is only proposed where it is not supported namely where:
    — Benefits extend to the entire market not just our network, customer base – these wider benefits would not be considered in the economic case for network funding
    — Benefits accrue over multiple regulatory periods – hence incentive schemes are not capable of properly funding innovation
    — Limitations on the scope of incentive schemes constrains necessary innovation in energy system transformation and customer experience improvements
    — The innovation is strategic in nature and in the long-term interests of customers (for example when the AER established the Demand Management Incentive Allowance) and therefore should be incentivized or funded under the regulatory framework to an appropriate level.
- Innovation trials are generally designed to be small scale to obtain learnings with minimal innovation cost. The approach to Innovation has been to maximize learnings for minimum spend.
- There is a track record of collaboration amongst networks and examples of where innovation has transitioned into business as usual, such as:
    — Industry working groups on topics such as demand management and embedded generation
    — Government and regulatory processes such as advisory panels and ARENA incubation workshops
    — Industry guidelines and standards such as embedded generator connection guidelines and Australian Standards (AS4777)
- There are opportunities for the businesses to better communicate their collaboration activities and the benefits for customers.

### 2.1.2. The innovation portfolio

The discussion on the innovation portfolio proposed by AusNet Services covered the following areas:

- Many noted that the Customer Forum rightly has a strong customer focus and that 'they are directing innovation to customers'.
- However some commented that there is also a need for system wide/network innovations and that customers may not be aware of the benefits of this innovation. These network transformation projects also need to be funded or 'else we may have a grid that is not fit-for-purpose'.
- There was interest in the proposed innovation activities, with again many commenting on the need for:
    — a stronger narrative of why the innovation is important
    — how this innovation leverages or extends prior studies and trials
    — clearer communication of the benefits for customers versus the business
    — why innovation funding is required and not already funded e.g. by other incentive schemes..
- There was support for the need to test grid sensing and dynamic hosting of DER. However some also highlighted that it is important to know 'what is happening in the transmission network'.

- There was also support for common platforms and standards where needed e.g. inverter standards.
- A question on the stand alone power trials was raised and the need to be clear what was learnt already from similar trials in Western Australia and how these learnings can be translated to the proposed AusNet Services trial.
- For the proposed customer experience related innovation ideas AusNet Services needs to 'define the best practice, and then show what the step change is that is expected'. In other words to better define the gap between the base level of service and the proposed innovation and why this innovation is important and how it will benefit customers. Many thought that in the absence of these criteria being met that these type of 'innovation' initiatives are really just business as usual. An example of the public lighting fault reporting was cited, where other networks already have tools so a query was raised about this being a core business activity and not innovation.
- Some commented that further innovation on the integration of EVs is important now and not to wait for the subsequent regulatory period.
- Innovation should not only be thought of as technical, there is a need to focus on areas such as tariff reforms and market reform related innovation.

> AusNet Services noted the discussion and commented that:
> - The stand alone power trial in Western Australia will have differences given their different network configuration.
> - AusNet Services is seeking to understand how to bring the costs down so the systems can be used beyond a few niche applications, understanding how to monitor remotely, etc.

### 2.1.3.  Innovation and governance

The discussion on possible approaches to the governance of the innovation program highlighted that there is a need for strong governance of innovation related expenditure to ensure appropriate customer input and benefit. The discussion covered the following areas:

- There was discussion on Ausgrid's approach to innovation governance with many noting this approach to be effective and appropriate. It provides an appropriate forum to discussion technical issues and a filter process to give customers increased confidence that a business case for innovation has been tested.
- Some suggested AusNet Services may wish to establish a new sub-committee of the CCC with the requisite skills and capabilities to focus on these technical related issues.
- The need for flexibility in these meetings was raised, with examples of shorter teleconferences or video conferences to ensure all parties are available.
- However, some questioned if there is sufficient 'actual customer' representation on AusNet Services' Customer Consultative Committee (CCC) including non-metro customer representation
- A need for increased transparency surrounding the CCC discussions was raised, with examples such as minutes of meetings and member details to be published online.
- The proposed governance process also needs the capacity for other customers to provide input and express and opinion in key decision making meetings. Examples such as rural and remote customer was raised, as well as an example where other

networks require their CCC members to 'go back to speak to their group and report on their thoughts and concerns'.

AusNet Services noted the strong support for the Ausgrid governance model.

## 2.2. Distributed Energy Resources

### 2.2.1. Overview of the current environment for DER
The discussion on the current regulatory, market and technological environment for DER was discussed, it covered the following areas:

- The growth in solar PV relative to other technologies such as batteries and electric vehicles was noted and that (some) action is required to ensure customers can benefit from the installation of solar PV.  However some also discussed that whilst EVs and batteries have smaller growth forecasts, the future network design also needs to accommodate these technologies in a cost effective and efficient manner.
- The discussion of voltage issues with increased solar PV penetration noted the information presented but also raised some comments and questions:
  — Has there been an increase in the volume of complaints from customers due to over voltage?
  — Does the process for addressing over voltage issues leverage the use of smart meters and smart meter data?
  — Customer communications regarding export limitations (if any) need to be clear before the solar PV is installed.
  — There was general agreement on the need for network optimization and dynamic voltage management at the zone substation level (like some other networks already do).
  — The forecasts and underpinning data on voltage issues and the customer impacts for not addressing them is critical to any business case for investment.  These should be emphasized, clearly communicated and presented in a transparent and granular manner.
- Some commented on the need for cost reflective pricing to be considered as part of any solution, as some customers may be disadvantaged by others.
- Others however noted this was a policy issue and questioned if this is fair and how any change to pricing may be managed for any customers who had already invested in solar PV.
- Automated systems that help customers respond was also raised as a requirement rather than the expectation of customers manually responding to a tariff signal.
- Some noted the role and need for community solutions such as community batteries.

AusNet Services noted the discussion and provided the following comments:
- Voltage related complaints have increased and they were predominately from solar customers.
- Smart meter data is used to identify voltage related issues, but site visits are still required to check for any other issues.
- AusNet Services is and will be proactive and clear in providing initial advice to customers who connect solar PV of any size and export limitations.
- Automated voltage management is already being used at zone substation transformers to address voltage issues where appropriate, and dynamic management in response to customer voltages is being considered.
- Cost reflective pricing is being considered as part of any solution, but networks are reliant on the support of Government policy and retailers to pass the prices through.
- Community solutions (such as Mooroolbark) are being trialed for these purposes but some complexities may arise in the sharing of benefits.

### 2.2.2.  Smart Networks program

The Smart Networks program refers to the introduction of DER connection offers that utilise smart technology to dynamically manage customer DER export levels in order to maximize the amount of DER and exports that the network can economically host within technical limits.  Stakeholders had some support for orchestration and the smart network program, noting that some raised questions and made the following comments:

- There was support for the bottom-up approach to forecasting of solar/DER uptake and network demand. Some noted that AusNet Services have 'moved the goal posts' in a positive way with this methodological assessment which appears to be an improvement on other networks methodologies.
- There was broad recognition that the Smart Networks proposal is similar to that of SAPN. Some stakeholders expressed that they felt this was the way of the future, others expressed some reservations.
- There needs to be clarity on the voltage envelope and when / how it is applied to customers.
- Customer expectations need to be carefully managed, as some noted that there may be confusion, loss of trust and also customer backlash if not clearly communicated, articulated and understood by customers.  Many customers would just expect to be able to install solar and export with no constraints and have a fear of a 'big brother' approach being implemented.
- The need for a shared communications standard and high level approach was noted and it should be common to all networks.
- Equity concerns were raised by comments that 'all' customers are paying for activities that allow only 'some' customers to export.  Some noted that maybe these costs should be targeted (where possible) to solar PV customers.
- Others stressed the need to be transparent in the communication of the 'solar cross subsidy' to enable customers to make an informed decision of the costs and benefits of any further investment.
- A comment was raised that there may likely be a time when the 'value' of solar PV generation will be zero.  So how will the cost recovery be justified then? As the added value of solar generation will not be reducing the wholesale price of electricity for all,

and arguably the customers without solar aren't seeing a benefit. Some noted that batteries may help in this regard.

- Some stakeholders confused the smart networks proposal with cost reflective pricing more generally.

> AusNet Services noted the discussion and provided the following comments:
> - Smart network costs will not be recovered via a new or additional charge to customers, rather via applying conditions on the maximum size of a solar PV for example for connection to new solar customers. Customers may choose pay an increased connection fee to allow them to export more.
> - The Smart Network program will work with batteries and the value will be increased as more batteries are installed on the network.
> - The electricity networks are working together on a common communications protocol and API.

### 2.2.3.   Network Augmentation program

Stakeholders appreciated the analysis presented and supported the need for (some) augmentation. Stakeholder discussion raised questions and made the following comments:

- There was general support for the principle of removing constraints when it is economically efficient to do so.
- Some questioned why South Australia doesn't have these issues with a high penetration of Solar PV and why does Victoria have these problems?
- There was support for using a feed in tariff as a measure for defining the benefit / value of exported generation. However, there was discussion about whether the FIT sufficiently captures benefits to all customers, including non-solar customers, including environmental benefts.
- However some strongly noted that this may not be appropriate for non-solar There is a need to demonstrate the benefits to non-solar customers and that they accept the costs. The use of surveys and research was discussed as being useful in this regard. An example of such surveys conducted by SAPN was raised.
- The modeling approach (bottom up) to forecasting DER uptake and voltage impacts was noted as being highly valuable and not something that all networks currently undertake.
- It will be important for AusNet Services to clearly communicate the customer impacts, costs and benefits of the augmentation options as part of any Final Proposal.
- Stakeholders appreciated that having more data on the overvoltage issues allow responses to be more efficient and strategic. With a focus on solving the root cause, versus reactive solutions.
- There was a request and need for more transparency of data and results including some sensitivity analysis and the impact of any conclusions for a change in forecast uptake of solar PV.
- Some questioned the whether a 45 year net present value period is appropriate. However others noted this was based on the asset life of typical network investments.
- There was some technical discussion on the comparison of the voltage requirements for the Victorian distribution businesses and the Australian Standard and the need to involve the Australian Energy Regulator (AER). For example some questioned if the

focus be on compliance with the standards or instead another metric which better maps to customer outcomes.

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AusNet Services noted the discussion and provided the following comments:

- The voltage issues in Victoria arise from requirements to comply with the specific voltages in the Victorian Distribution Code that do not exist in South Australia.
- For simplicity the modelling however used compliance with the Australian Standard as the test.
- The business case and supporting analysis has been developed with an economic focus, overvoltage problems have only been proposed if it is economically beneficial to do so. Not on the basis of purely addressing compliance issues.
- The need for further data and information is noted and we will consider how to best provide this in the Final Regulatory Proposal.

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# A.      Workshop attendees

| Name | Organisation |
|---|---|
| Faye Adams | Manningham City Council |
| Leigh Clemow | Department of Jobs, Precincts and Regions (Victorian Government) |
| Susan Davies | Energy Innovation Co-Op |
| Andrea Espinosa | Department of Environment, Land, Water and Planning (Victorian Government) |
| Darren Gladman | Clean Energy Council |
| Mark Grenning | Energy Users Association of Australia |
| Dean Lombard | Renew |
| Catherine O'Neil | Energy Consumers Australia |
| Bridget Ryan | Greensync |
| Jack Terry | Greensync |
| Ashley Bradshaw | Australian Energy Regulator |
| Tyana Del Campo | Australian Energy Regulator |
| Andrey Ley | Australian Energy Regulator |
| Anthony Seipolt | Australian Energy Regulator |
| David Prins (by phone) | Consumer Challenge Panel |
| Mike Swanson (by phone) | Consumer Challenge Panel |
| Helen Bartley | AusNet Services Customer Forum |
| Greg Camm | AusNet Services Customer Forum |
| John Mumford | AusNet Services Customer Forum |
| Di Rule | AusNet Services Customer Forum |
| Tony Robinson | AusNet Services Customer Forum |
| Monico Aquino | AusNet Services |
| Andrea Dickinson | AusNet Services |
| Tom Hallam | AusNet Services |
| Greg Hannan | AusNet Services |
| Justin Harding | AusNet Services |
| Stephanie Judd | AusNet Services |
| Tom Langstaff | AusNet Services |
| Michael Larkin | AusNet Services |

| Name | Organisation |
|---|---|
| Deirdre Rose | AusNet Services |
| Peter Eben | Seed Advisory |
| Tom Strawhorn | Seed Advisory |

## B. Workshop Agenda

| AGENDA | |
|---|---|
| Workshop: | AusNet Services Innovation and Distributed Energy Resources Deep Dive |
| Date: | Thursday 23rd May, 2019 | Time: | 9.30am – 4.30pm |
| Location: | CPA Building 28 Freshwater Place, Southbank, Victoria 2006 | Security: | Public |
| Pre-Reading: | Background reading – DER pack Background reading – Innovation pack |
| Chairperson: | Peter Eben (Seed Advisory) | |

| | | |
|---|---|---|
| 9.30 (10 min) | Welcome and Introductions | Peter Eben |
| **Innovation** | | |
| 9.40 (15 mins) | Our innovation journey | Tom Hallam |
| 9.55 (25 mins) | Open discussion<br>- Initial reaction | All |
| 10.20 (10 mins) | Innovation portfolio | Deirdre Rose |
| 10 mins | Morning tea | |
| 10.40 (60 mins) | Open Discussion of innovation portfolio | All |
| 11:40 (10mins) | Approach to innovation and governance | Deirdre Rose |
| 11:50 (30 mins) | Open Discussion on innovation and governance | All |
| 12.30 (40 mins) | Lunch | |
| **Distributed Energy Resources** | | |
| 1.10 (10 mins) | Overview of current environment | Kate O'Carrol |
| 30 mins | Open Discussion - Initial reactions | All |
| 10 mins | Smart Networks | All |
| 60 mins | Open Discussion | Justin Harding |
| (10 mins) | Afternoon tea | |
| 10 mins | Network augmentation | Tom Langstaff |
| 60 mins | Open Discussion | All |
| 5 mins | Next Steps | Peter Eben |
| 4.30pm | Meeting Close | |

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