

AusNet Services Deep Dive Innovation

Presentation pack

23 May 2019



Contents



- ▶ **Our innovation journey**

- ▶ **Innovation portfolio**

- › Network innovation (supporting transformation of the energy system)
- › Customer experience innovation

- ▶ **Approach to innovation funding, governance and knowledge sharing**

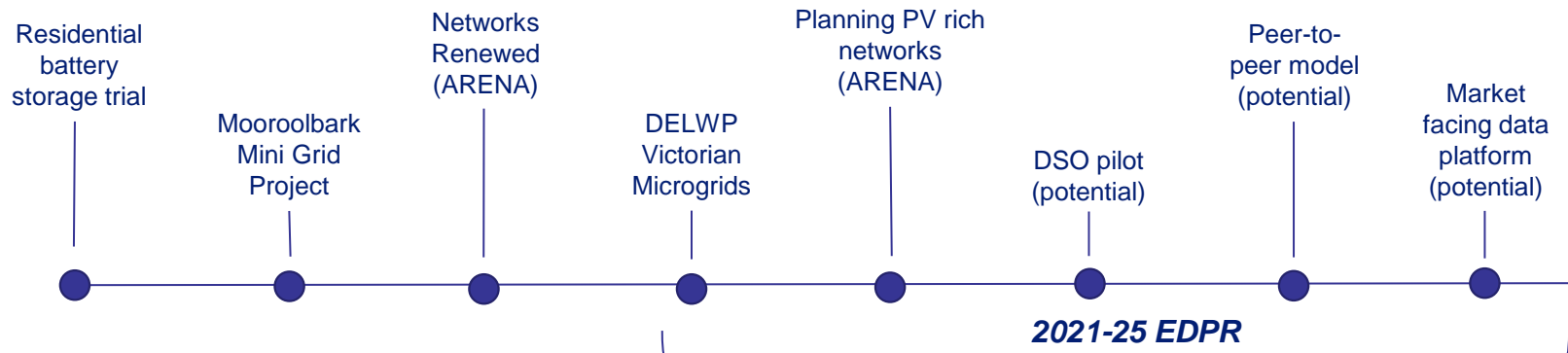
Innovation journey



We work closely with industry and academia on first-of-a-kind projects



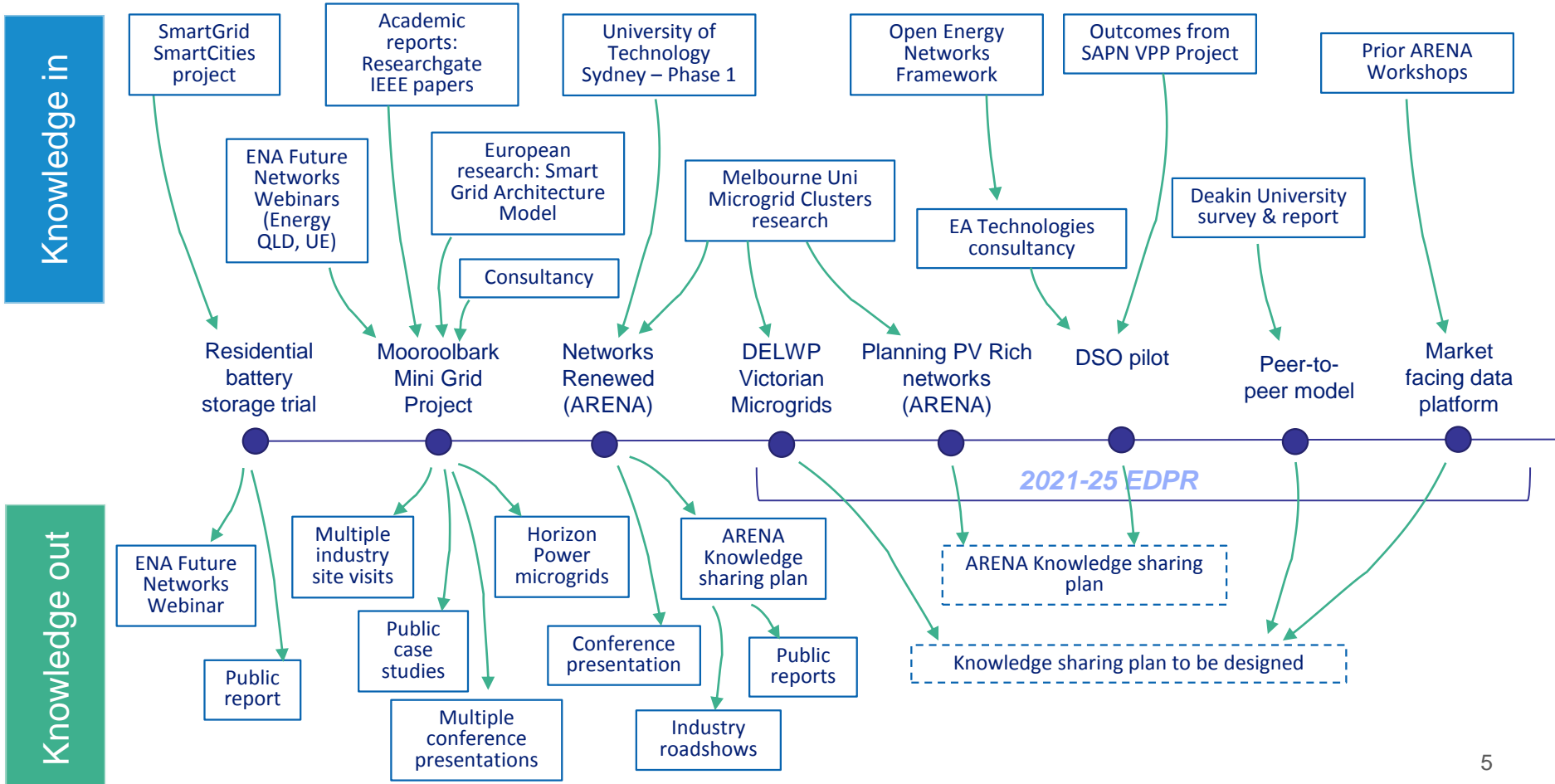
◆ Example: Innovating towards a capability for seamlessly interacting with customer DER



Key partners		 	 	 		 	 	To be determined
What are we testing?	Hardware tech How do batteries work and what impact/benefit do they have?	Control Can a cloud-based control interface coordinate a fleet of customer DER	Customer use case Can we use controls to enable more solar to connect?	Suite of services What range of network services can a microgrid deliver?	Advanced analytics How do we know how much solar the local network can host.	Integrated market Can DER be coordinated across wholesale, DNSP and cust?	Future markets How can Peer-to-peer energy flows be harnessed to benefit cust and network?	Open enablement What is the value to customers of opening up network data?
What is unique, or industry first?	Network-focussed residential battery trial under DMIA	100% fully inverter based microgrid in an existing network area	Dynamic control of reactive power from customer solar	Community focussed microgrids delivering local optimisation	New analytical technique using smart meter data	Puts into practice leading thinking within industry	Unique business model that can work within Regulations	Still only a concept within industry but potential large benefits

We leverage the knowledge from other trials and share our learnings

◆ *Example: Innovating towards a capability for dynamically interacting with customer DER*



We integrate innovation results into industry processes



- ◆ *Example: Innovating towards a capability for dynamically interacting with customer DER*

- ◆ *The knowledge that we gather from our innovation projects is embodied in our contributions to a multitude of industry sources*
- ◆ **Industry working groups and forums such as:**
 - ◆ *ENA Demand Management and Embedded Generation working group*
 - ◆ *ENA Future Networks series*
 - ◆ *Clean Energy Council Directorates (Solar, Storage, Grid)*
 - ◆ *Innovation working groups and technical specifications*
- ◆ **Government and regulatory processes such as:**
 - ◆ *Government advisory panels*
 - ◆ *Submissions to regulatory reviews and rule change proposals*
 - ◆ *ARENA incubation and acceleration workshops*
- ◆ **Industry guidelines and standards such as:**
 - ◆ *ENA Embedded Generation Connection guidelines*
 - ◆ *Product performance and safety guidelines*
 - ◆ *Customer guidelines*
 - ◆ *AS standards (AS4777, 4755 etc)*

Questions/discussion

- ▶ **Is there a requirement for distribution network innovation?**
- ▶ **Do electricity networks have a role in delivering innovation? If not, why not?**
- ▶ **If so, how can innovation be supported?**

Innovation portfolio



Draft Proposal innovation expenditure

- ▶ To respond efficiently to the pace of change within the electricity sector, we are proposing a modest network innovation expenditure program of \$7.5 million (\$2020)
- ▶ AusNet Services initially suggested a program of \$11.4 million (\$2020) for 15 network innovation projects to the Customer Forum
- ▶ The Customer Forum:
 - › considered the customer research did not support proposed innovation expenditure on electric vehicle (EV) preparation & expected modest take up of EVs
 - › Sought a more modest contribution per customer - approximate average of \$2 per year for each customer
 - › Also seeking to ensure that the projects include innovation to improve customer experience
 - › Have outlined principles to assess the innovation projects (next slide)
- ▶ The quantum of innovation expenditure and innovation projects put forward will be subject to further negotiation with the Customer Forum

Customer Forum principles

- ▶ **The Customer Forum has provided the following principles to refine the innovation projects**
 - › Innovation projects/outcomes should directly benefit and result in improved service to customers
 - › Innovation needs to be driven by customer needs and expectations which should be identified through customer research. Customers will support innovation if they see the benefits
 - › The language surrounding innovation must be easy for customers to understand and offer a compelling potential benefit
 - › Innovation needs to be strategic and should include an evaluation
 - › All initiatives to be published on AusNet Services website and shared with industry
 - › Projects must show evidence of collaboration with retailers and other distribution businesses and/or retailers

Potential innovation projects provided to the Customer Forum



LV network	HV network	Network mgt, operation & control	Data availability	Electric Vehicle
Active load balancing	22kV network monitoring pilot	Distributed Energy Network Optimisation Platform (DENOP) development	Automated customer DER connection portal development	EV Network impact and EV clustering demonstration
Advanced voltage regulation	Predictive network “state-estimation”	Distributed Energy Resource Management capability development	Market facing data and information platform trial	Explore Vehicle to Grid opportunities
Dynamic DER control	Stand Alone Power Systems (SAPS)	Distributed system operator trial		
Leverage solar for network benefit		Predictive analytics to leverage DER fleets for abnormal weather events		

* Refer to pre-reading for project descriptions

Innovating to improve customer experience



- ▶ A further challenge is to focus innovation thinking and action on how customers experience our services

- ▶ This has many synergies with the transformation challenge
 - › e.g. allowing customers to get value from their energy investment, ensuring services to customer particularly vulnerable customers are not undermined

- ▶ AusNet Services has delivered many customer experience innovations -supported by smart meter technology
 - › Safety: loss of neutral fault detection; prioritising life support customers in unplanned outage
 - › Keeping bills down: alert solar not functioning; reduced energy theft; myHomeEnergy, minimal connection/disconnection cost for house moves
 - › Better outage management: improved network mapping, call centre access to real time information if meter is on supply
 - › Solar/battery connection: Re-launched online tool linked to smart meter data/export capacity by location. Around 4,000 customers will no longer wait 65 days

Customer Experience innovation – possible projects (note these are untested by AusNet Services)



- ▶ Power quality improvement advice for customers
 - › Advise on solutions for customers experiencing problems such as dairy industry (momentary outages)

- ▶ Better outage communications
 - › Timely, online tool

- ▶ Public lighting fault reporting
 - › Online reporting tool/app

- ▶ Outage relief program
 - › Practical relief e.g. care packages, community support during sustained outage events

Questions/discussion

- ▶ What do you think about the innovation ideas offered by AusNet Services?
 - › Both for network innovation and customer experience innovation

- ▶ What ideas do you have for innovation projects?
 - › Both for network innovation and customer experience

- ▶ What factors do you think should be considered in the assessment and subsequent prioritisation of innovation expenditure?

For new project ideas



What is the project idea	Are you aware of examples of this from elsewhere?	What is the intended customer benefit / outcome?

Funding, governance and knowledge sharing



Funding

- ▶ AusNet Services is proposing a use it or lose it allowance like the Demand Management Innovation Allowance
 - › Ensures that customers will not finance innovation expenditure unless the projects or trials proceed
 - › Instead of supporting funding for demand management-related R&D it is designed to fund broader R&D
 - › Unspent funds would be returned at the end of each regulatory period i.e. if the funds are not spent they are fully returned to customers
 - › Any overspend must be met by the business i.e. expenditure above the allowance is not recouped in future periods
 - › We also support Ausgrid's proposed approach of excluding innovation expenditure from the efficiency incentive schemes (EBSS/CESS)

- ▶ AusNet Services would also continue to collaborate and leverage joint/external funding to combine with the modest innovation proposal

Innovation expenditure governance

- ▶ The Ausgrid Network Innovation Advisory Committee (NIAC) model has not been recommended – designed for a \$42m network innovation program
 - › Includes customer advocates and technical experts
 - › Will be a sub-committee of the Ausgrid Consumer Consultative Committee
 - › Will meet at least three times per year

- ▶ The principle of having customer and technical input for our innovation governance is strongly supported
 - ▶ Customer input
 - › the evolving nature of innovation means that customer representatives should have an on-going role in driving the direction of the expenditure
 - › will ensure innovation is directed to achieving outcomes desired by customers
 - › ensuring projects are in the long term interest of consumers

 - ▶ Technical input
 - › to prevent duplication of effort and validate the rigour of projects

Innovation expenditure governance

- ▶ Other key functions of the governance arrangements
 - › Filter and prioritise projects
 - › Monitor project delivery
 - › Guarantee sharing of innovation lessons and outcomes

- ▶ AusNet Services needs governance arrangements that are fit-for-purpose for a much more modest program

- ▶ Principles for the design of the governance arrangement
 - › Effectiveness, proportionality (balancing performance and costs), transparency

Innovation program governance and knowledge sharing



▶ **A lower cost but effective governance arrangement is proposed**

- › Formalised consultation with industry, academic experts and customers to frame the innovation program
 - Accessing existing forums to keep costs down

- › AusNet Services CCC advisory role
 - Alignment to customer preferences
 - Project prioritisation

- › Formalised reporting and sharing
 - Consistent with report standards for DMIA projects and projects that involve external funding

Questions/discussion



- ▶ Do you have any concerns or feedback on our proposed funding model?
- ▶ Given the modest innovation program, what governance do you consider is appropriate?
- ▶ What governance and reporting features or ideas would you like to see AusNet Services adopt?