LEGISLATIVE ASSEMBLY
FOR THE AUSTRALIAN CAPITAL TERRITORY

STANDING COMMITTEE ON ENVIRONMENT, CLIMATE CHANGE AND BIODIVERSITY
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Submission Cover Sheet

Inquiry into Renewable Energy Innovation in the Australian Capital Territory

Submission Number: 14

Date Authorised for Publication: 25 May 2021

Submission to the Inquiry into Renewable Energy Innovation in the ACT

14 May 2021

evoenergy

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Evoenergy submission to the ACT Government, Standing Committee on Environment, Climate Change and Biodiversity Inquiry into Renewable Energy Innovation in the ACT

Introduction

Evoenergy owns and operates the electricity network in the Australian Capital Territory (ACT) and gas networks in the ACT and surrounding regions, distributing energy to local residential and business customers. As the ACT's gas and electricity distributor we have a wealth of knowledge and experience in gas and electricity network infrastructure. In total, we own and operate 4,720 kilometres of gas mains supplying nearly 160,000 gas customers, and 5,280 kilometres of electricity lines supplying over 202,000 electricity customers.

Evoenergy supports the ACT Government's target of achieving net zero greenhouse gas emissions in the ACT by 2045 (Net Zero by 2045), noting the challenge of decarbonising the gas network while maintaining 100 percent renewable energy in the electricity network is an extremely complex one. To achieve a responsible transition to Net Zero by 2045 we must continue expansion of the electricity network in response to population growth and urban planning and subject to regulatory approval, while simultaneously exploring options for renewable and zero-emissions gas alternatives in the gas network.

We welcome this opportunity to share our expertise and experience, including lessons learnt, from our efforts in renewable energy innovation to date. We also welcome the opportunity for continued engagement and collaboration with the ACT Government, broader energy industry, regulators and the community. Collaboration is essential to ensuring all decisions on renewable energy innovations in the ACT capitalise on opportunities for network development and modernisation, and, most importantly, have impacts on customers as a central, primary focus

In this document, we highlight what we see as key opportunities and challenges with renewable energy innovation in the ACT on the path to Net Zero by 2045.

a) Opportunities and challenges to boost renewable energy research, technology development and new zero emissions industries in the ACT

Evoenergy envisages a future ACT with a technology-driven net zero emissions energy eco-system, where energy users make safe, informed energy choices supported by a network optimised for user-generated energy and two-way energy flows.

Evoenergy's focus on this future vision is reflected in our Distribution System Operator (DSO) Strategy and Roadmap developed to identify and realise the opportunities presented by the increasing integration of Distributed Energy Resources (DER) (such as solar and batteries) into the ACT's electricity network. We recognise the transition will require changes to our networks, while ensuring we continue to meet customers' changing energy needs and expectations with the impacts on affordability, reliability, security and safety front of mind.

Globally we are seeing unprecedented investment in energy innovation. The speed and quantum of this investment means we will see many different initiatives adopted or developed nationally and within the ACT. Not all innovation will be practical, and the challenge will be to determine which initiatives deliver most in terms of reducing emissions without compromising on safety, reliability, security and affordability.

On a national level, major developments include:

- thousands of customer-owned solar and battery installations are being aggregated in Virtual Power Plants for grid support and energy market and contingency services by Australian technology providers;
- a national hydrogen strategy and roadmap developed by the Federal Government and CSIRO respectively;
- 579 renewable energy innovation projects with $1.67 billion in grant funding through the Australian Renewable Energy Agency (ARENA).[7]

In the ACT, the Canberra Virtual Power Plant has been at the forefront of technological advancement and has received national recognition for its community and electricity network benefits. Local collaborations are making a substantial contribution to renewable energy research and development including the Battery Storage and Grid Integration Program (BSGIP) at the Australian National University, the Battery Test Centre, the DER Lab, the hydrogen test facility, and the Realising Electric Vehicle-to-Grid Services project.

Over the next five years, we see the following as key opportunities to boost renewable energy research, technology development and new zero emissions industries in the ACT:

- ACT Government collaboration with Evoenergy to continue to explore the use of 'regulatory sandboxes' to ensure new markets emerge in an effective and sustainable way.
- ACT Government support to research organisations and innovative businesses that enable customers to use existing energy infrastructure in new ways.
- Reviewing the objectives of the ACT's Utilities Act to reflect those of the Sustainable Energy Policy, to ensure the policy is addressed in a balanced way alongside existing public safety, worker safety, environment, property, and loss of supply objectives.
- Government and industry collaboration to test a coordinated, highly distributed energy resources energy system, exploring both the DSO and Distribution Market Operator (DMO) models of operation, tariff optimisation, and smart meter deployment.
- Increased support to industry, trades and academia to introduce a greater mix of targeted investments and broad programs that encourage collaboration, research and development, and knowledge sharing.

Over the next five years, the key challenges to boosting renewable energy research, technology development and new zero emissions industries in the ACT are:

- Ensuring that policy measures are structured in a way that limits impact on household energy bills and avoids disproportionate impact on low-income customers.
- The requirement to invest significantly in the electricity network to accommodate two-way energy flows resulting from the rapid acceleration in distributed energy resources uptake or shifts in demand on existing infrastructure.

Accessing these opportunities and overcoming these challenges will play a key role in enabling a responsible transition to Net Zero by 2045.

b) Opportunities and challenges to establish the ACT as a national hub for renewable energy technologies and industries including zero emissions vehicles

As we work toward the 2045 target, Evoenergy has been actively exploring and engaging in renewable energy innovation opportunities in the ACT, including the integration of the Next Generation residential batteries into a VPP and visualising in our real time control system. We have introduced new technology such as on-load tap changers for distribution substations to manage quality of supply issues in mandated 100 percent solar photovoltaic (PV) suburbs. We are also participating in innovative projects related to the integration of electric vehicles into the electricity network such as the Realising Electric Vehicle-to-Grid Services project.

We regularly discuss these projects with Evoenergy's Energy Consumer Reference Council (ECRC), an independent forum comprising representatives of the community and peak bodies, given the opportunity to provide considered input into operations and long-term network planning.

We are also undertaking an innovative solar tariff trial to encourage battery charging and discharging at times that benefit both the network and customers. This trial is being run in conjunction with the Ginninderry residential battery trial funded through the ACT Renewable Energy Innovation Fund (REIF) grant program. The trial aims to coordinate residential battery response as a non-network solution to resolve network constraints.

The ACT Government's renewable energy initiatives, including the REIF and Next Generation Energy Storage (Next Gen) Program, have played a significant role in the advancement of renewable energy technologies in the ACT.

In addition, we are also participating in several innovation projects focussing on grid integration and orchestration of DER and Electric Vehicles (EVs) and are supporting the installation of small, medium, and large-scale batteries in the ACT.

Over the next five years, the key opportunities to establish the ACT as a national hub for renewable energy technologies and industries including zero emissions vehicles include the following:

- Leverage knowledge generated through past and continuing initiatives such as the ACT Government Sustainable Household Scheme and reverse auctions to ensure the efficient integration of emerging technologies into existing infrastructure.
- Establish a community consultation process to explore natural gas alternatives and the impact of changes to natural gas usage, which includes quantified costs and benefits.
- ACT Government support for the development of a local bio-methane pilot plant to blend bio-methane from existing waste sources into the local gas network, and continued support for the development of cost-effective hydrogen generation and blending pilot projects like Evoenergy's Hydrogen Test Facility.
- Develop a coordinated policy to support the uptake of zero emissions vehicles (ZEVs), including requirements to standardise the use of EV chargers and how they integrate with the network.
- Consider links to a national distributed energy resource registration system when looking at local requirements for deployment of EV chargers. Share insights with industry on the observed uptake of ZEVs to date, to inform the development of plans for the integration of ZEVs.

Over the next five years, the key challenges to establish the ACT as a national hub for renewable energy technologies and industries including zero emissions vehicles include the following:

- The combination of rapid changes on the uptake of ZEVs and the 'just in time' investment model of the National Electricity Market may result in generation and network capacity shortfalls. Investing in pilot programs, knowledge sharing and greater collaboration across industry can reduce this risk.

- Stop-start approaches, or discontinued initiatives or programs may lead to local skills loss, increase the difficulty in developing the next initiative, and discourage investment in local innovation.

c) Opportunities and challenges to innovatively finance and/or manage renewable energy in the ACT

Evoenergy (as a regulated business), small businesses and research centres face financial and regulatory challenges in pursuing research and demonstration projects in technologies that are not yet commercially viable. The REIF and similar initiatives play a critical role in furthering R&D and preparedness of the network to host these technologies.

d) Strategies to address limitations to collaboration and innovation between renewable energy stakeholders

Early, proactive engagement on renewable energy innovation decisions between renewable energy stakeholders is critical to ensure we achieve a prudent, efficient and affordable energy transition for the customer whilst maintaining safety, reliability, security and affordability.

Effective and coordinated collaboration between renewable energy stakeholders facilitates the sharing of expertise between industry and Government and enables Evoenergy, as the local electricity distributor, to provide timely advice on network opportunities and constraints, to maximise community benefits from Government and commercial investment.

Over the next five years, the key opportunities to address limitations to collaboration and innovation between renewable energy stakeholders are:

- Continued development of an industry engagement model that encourages collaboration, research, skills development and knowledge sharing through activities such as the inflight regulatory sandbox.

- Establishment of a dedicated body that provides secretariat services and is tasked with responsibility to advance renewable energy collaboration, including industry stakeholders and representative customers drawn from the broader community.

- Establishment of a working group, including key renewable energy stakeholders such as Evoenergy, to develop a net zero transition roadmap for the ACT and work towards a sustainable, net zero greenhouse gas emissions energy future.

- Continued progress with initiatives such as the proposed co-design workshop with key industry stakeholders for delivery of ACT Government initiatives associated with large batteries.

e) The effectiveness of administration and funding of Australian Capital Territory Government policy and regulatory settings relating to renewable energy, climate action and emissions reduction

Evoenergy operates under the ACT Utilities Regulatory Framework and Codes administered by the Independent Competition and Regulatory Commission (ICRC) and the National Electricity and Gas Laws and Rules (NEL, NGL, NER, NGR), National Energy Retail Law and Rules (NERL, NERR) and National Energy Customer Framework (NECF) administered by the Australian Energy Regulatory (AER) and Australian Energy Market Commission (AEMC). Evoenergy continues to work closely with regulators on technical regulatory matters with Australian Energy Market Operator (AEMO) and Utility Technical Regulator.

Regulatory frameworks are evolving to remove barriers and to provide support for future growth in the levels of renewable energy generation and transportation. Current examples include the following:

- Changes to the National Gas Laws and National Gas Regulations to allow hydrogen (including green) injection into the gas network.
- Changes to rules for access, pricing and incentive arrangements for Distributed Energy Resources (DER). Evoenergy plans to trial new tariffs designed to incentivise efficient use of the network by residential and large-scale batteries, subject to AER approval.
- Allowing distributors to own stand-alone power systems and energy storage devices in places lacking private sector options, subject to AER approval.
- Development of new network support services required to facilitate DER through AEMC consultations.

Regulators have strengthened their stakeholder engagement on changes to regulations, through consultation processes that are open to submissions from interested parties, including jurisdictional stakeholders.

f) Opportunities and challenges in battery storage including neighbourhood-scale batteries and vehicle-to-grid technologies;

Neighbourhood-scale batteries and vehicle-to-grid technologies provide opportunities for communities to store their solar energy generation for potential participation in the new downstream markets for supplying network services.

Collaborative efforts like the Ginninderry Energy Pilot Project, REVS project, and the Jacka Community Battery project should inform future Government strategies. (REVS is the first innovation project in Australia exploring vehicle-to-grid or V2G).

Evoenergy is well placed to provide technical advice on the integration of new technologies in our network. Our DSO Strategy's two main objectives are to effectively integrate DER into the network and to leverage these resources to provide cost efficient outcomes to customers while maintaining reliability, security, and safety in the electricity network.

We are supportive of battery deployment (small, medium and large) and recently received several enquiries from industry. As part of the AER's Regulatory Investment Test for Distribution (RIT-D) process, we identified a large battery as a credible option for deferral of the Molonglo zone sub-station. We are currently progressing the installation of the battery with the successful proponent.

Please refer to section **(b)** for opportunities and challenges associated with V2G technology.

Conclusion

Achieving net zero greenhouse gas emissions in the energy network while providing affordable energy to customers that is safe, reliable and secure is our challenge. It is a multifaceted issue encompassing major strategic, technical, social and operational considerations, all within a highly complex regulatory environment.

Collaboration on energy innovation will be key to success and Evoenergy welcomes any mechanism designed to facilitate ongoing collaboration with the ACT Government, the broader energy industry, regulators, the community and our customers. This level of engagement is critically important for Evoenergy as it enables us to continue to plan, build, operate and maintain the networks in line with regulatory requirements and, most importantly, it ensures the customer is at the centre of all that we do.