



# LEGISLATIVE ASSEMBLY

FOR THE AUSTRALIAN CAPITAL TERRITORY

---

STANDING COMMITTEE ON ENVIRONMENT, CLIMATE CHANGE AND BIODIVERSITY

Dr Marisa Paterson MLA (Chair), Mr Andrew Braddock MLA (Deputy Chair),

Ms Leanne Castley MLA

## Submission Cover Sheet

Inquiry into Renewable Energy Innovation  
in the Australian Capital Territory

**Submission Number: 13**

**Date Authorised for Publication: 25 May 2021**



**Friday, 14 May 2021**

Standing Committee on Environment, Climate Change and Biodiversity  
By email: [LcommitteeECCB@parliament.act.gov.au](mailto:LcommitteeECCB@parliament.act.gov.au)

Dear committee members

**RE: Response to the Renewable Energy Innovation in the ACT Inquiry**

LGI appreciates the opportunity to respond to the *Renewable Energy Innovation in the ACT* Inquiry being conducted by the Standing Committee on Environment, Climate Change and Biodiversity, including the areas of research, technology, development, innovative financing, collaboration and energy storage.

We welcome the ACT taking a leadership role to accelerate Australia's transition to renewables. Below are our recommendations for how the ACT can best respond to the opportunities and challenges associated with establishing the ACT as a national hub for renewable energy innovation.

**About LGI**

We deliver clean energy and carbon abatement solutions, reliably, effectively and commercially to customers. With over 100 years' combined experience in the waste industry, landfill and renewable energy sectors, we have developed a unique, flexible operating platform of biogas from landfill installations on sites of all scales across Australia.





Our unique, flexible operating platform enables us to create hybridised energy systems which can include biogas to power generation, energy storage, synergistic solar, Green Gas (bio-methane) and innovative commercial solutions to provide dispatchable distributed renewable energy to firm intermittent renewables.

Our vision is to be people engineering a clean energy, zero carbon future, by achieving our mission of expediting the transition to renewables by delivering clean energy and lower carbon solutions, reliably, effectively, commercially for our customers.

Our portfolio of 28 biogas sites across Australia, includes 8 renewable energy sites, all embedded in the distribution network and capable of being converted into renewable hybrids with the addition of battery storage.

With two carbon abatement and biogas to renewable energy projects in the ACT, at Mugga Lane and West Belconnen, we are a long term partner of the ACT Government. At these sites we own, operate, maintain, monitor and report on the biogas collection and management systems to achieve the best environmental outcomes. As the landfills will generate biogas for decades, even post closure, LGI will beneficially use the gas to abate carbon and generate dispatchable renewable energy.

This is a snapshot of the contribution our *Mugga Lane Biogas to Renewable Energy Project* makes to the ACT each year.

			
<b>RENEWABLE ENERGY GENERATED</b> 22 GWh p.a.	<b>BIOGAS CAPTURED</b> 23 million m <sup>3</sup> p.a.	<b>CARBON ABATEMENT</b> 220,000 p.a. (T CO <sub>2</sub> -e).	<b>SEEDLINGS PLANTED</b> 3.6m for 10yrs (equiv. to 12 mths our abatement)



## **Our feedback**

We have received good support from the ACT Government while developing and operating renewable energy projects in the ACT, however these have been the biggest hurdles we have faced:

- Imperfect coordination between the various Government agencies;
- Lack of clarity of what projects best fit the ACT Climate Change Strategy;
- Lengthy Government timelines, specifically in relation to procurement and approvals, resulting in costly project delays and missed commercial opportunities.

Therefore our feedback, which is based on our experience, specifically recommends how items d, e, f and g from the Terms of Reference could address the hurdles we have faced.

### **D) Strategies to address limitations to collaboration and innovation between renewable energy stakeholders;**

The ACT Government could develop a framework for projects to assess their candidacy prior to lodgement to reduce the burden to Government, network providers and developers. The framework would include:

- Renewable energy zones indicating the best locations on the network for storage and renewable energy, potentially akin to the renewable energy zones which have been developed in NSW
- The required outcomes to be achieved and/or energy market issues to be addressed
- The preferred technologies (if any).

### **E) Effectiveness of administration and funding of Australian Capital Territory Government policy and regulatory settings relating to renewable energy, climate action and emissions reduction;**

The ACT Government could expedite procurement and approval timelines, whilst also improving coordination between the various Government agencies by providing:

- project specific endorsement for successful projects of ACT Government run processes, e.g. Tenders, reverse auctions etc.
- development approval pathways to accelerate the installation of endorsed projects, e.g. for the upcoming ACT Big Canberra Battery Project. For your reference we have included our response to the Market Sounding process.

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

We see substantial opportunities for battery storage, in particular batteries suitable for installation within the distribution network servicing neighbourhoods, and the distribution network provider. Battery storage has the potential to reduce network congestion, thereby improving the capacity for further distributed renewable energy, such as rooftop solar without negative impacts on other customers. Distribution scale batteries are becoming economically viable and therefore may only require clear endorsement from the Government on a project by project basis. Thereby reducing project timelines, and enabling the ACT to develop its renewable energy portfolio.



**G) any other relevant matters.**

LGI encourages the ACT Government to support a range of solutions to achieve its Climate Change Strategy and develop the ACT as a national hub for renewable energy innovation. We believe ACT's goals and LGI's vision for a zero carbon future will be achieved sooner through a range of technologies, including transitional ones.

Therefore, in addition to operating a dispatchable renewable power generation at Mugga Lane in the ACT, LGI is pursuing the following opportunities in the ACT.

The ACT Green Gas project

If developed in the ACT, it could displace 5% of ACT's existing fossil fuel gas demand within the next 2 years utilising the bio-methane created and captured from the landfill at the Mugga Lane Waste Management Centre. It would be the first Green Gas project from landfill gas connected into the Australian national gas grid and could therefore accelerate the decarbonisation of the national gas grid, starting in the ACT. Viewing the gas grid as a potential source of energy storage could also assist the national energy market to expedite the transition to renewables.

The Canberra Big Battery Project

LGI has submitted a response to the Big Canberra Battery Project Market Sounding process (see attachment). We are well advanced in the development of converting our existing Mugga Lane project into a renewable hybrid, including batteries and locating batteries at other locations on the ACT electricity distribution network to best suit the needs of the local network.

Supporting these projects in the manner outlined above would expedite the ACT becoming a national hub for renewable energy innovation by leading by example with projects developed and operating in the ACT.

We would be happy to discuss our feedback with you, including how these proposed reform initiatives could expedite batteries being incorporated into our embedded renewable generation sites on the distribution network. In the meantime, we will continue to work in partnership with the ACT Government to operate and develop innovative, renewable energy and carbon abatement opportunities in the ACT.

Kindest regards,

[Redacted Signature]  
Jarryd Doran - Chief Operating Officer  
[Redacted Contact Information]

**Attachments**

LGI's Big Canberra Battery Project Market Sounding Submission



# Big Canberra Battery Project Market Sounding Submission - Submission confirmation

our submission has been successful. Please keep a copy of this receipt for your records.

Date and time

Reference code

06 May 2021 12:50:10 PM

MJDF2HRJ

Environment, Planning and Sustainable  
Development Directorate

batterystorage@act.gov.au

## Organisation details

Organisation name \*

LGI

### Contact person:

Title

Given name \*

Family name \*

Ms

Katrina

Nelson

Email address \*

katrina.nelson@lgi.com.au

Organisation type \*

Installer/developer

Which country is your organisation headquartered in? \*

Australia

Size of organisation \*

Medium business (20 to 199 people)

## Battery proposal

What size batteries is your organisation primarily focussed on?

1 to 10 MW

What is your preferred Government mechanism?

First preference

Second preference

Contract for output

Third preference

If there is any other Government mechanism you prefer, please provide details.

Government support for grid scale battery projects to accelerate the grid application and connection process (EVO Energy)  
Battery development approval pathway to accelerate the installation (EPSDD)  
Project specific endorsement for successful Big Battery proponents

## Battery locations and services

What level of interest do you have in delivering batteries in:

Transmission

High

Distribution - medium voltage

High

Distribution - low voltage/suburb scale

High

Behind the meter

High

Comments

LGI is engaging with EvoEnergy regarding the connection of grid scale batteries within the network. Locations will include LGI's existing Mugga Lane Biogas to Renewable Power Project in addition to multiple locations throughout the EvoEnergy network.

Batteries at Mugga Lane will create a hybrid project allowing for storage and export of renewably generated energy when the ACT needs it due to the unique ability of the existing biogas to renewable energy facility being available 24 x 7.

The requirements of the network to maintain reliability and security will be best served by a network of batteries ~10MWh in size as opposed to a single large battery project. These batteries would be strategically located to be best address EvoEnergy's network constraints and requirements.

What level of interest do you have in delivering batteries that would:

Participate in national electricity arbitrage

Very high

Deliver ancillary services

Very high

Deliver local network support

Very high

Reduce electricity bills

Very high

If there is any other battery scheme you would be interested in, please provide details

Our batteries would also provide a demand enveloping service to smooth the fluctuations in customer's e

Comments

In addition, to chemical batteries for storage, LGI has been investigating the feasibility of Green Gas as a biobattery in conjunction with the existing gas grid with EvoEnergy and the ACT Government. Whilst this is still an option for the ACT Government, we understand it may not be their preferred.

Preferred extent of Government involvement in designing projects

- Government primarily determines battery parameters - location, size etc
- Proponent primarily determines battery parameters - location, size etc
- Other

Other preference

LGI would work in conjunction with Government and EvoEnergy to determine the best battery parameter

Comments

LGI would work collaboratively with ACTNoWaste and the ACT Government to deliver the best outcome. Our preferred approach to develop all our projects is by working in partnership with our customers. Further, LGI is already in a long term partnership with the ACT Government with our biogas projects at Mugga Lane and Belconnen.

How long would you need to prepare a battery proposal, including location, battery size, technology, services targeted and anticipated cash flow forecast?

1-3 months

Why did you select this answer?

We are well advanced in the development of a renewable hybrid project at Mugga Lane consisting of the existing generators and batteries. Therefore, we have a location, understanding of grid connection requirements, battery specifications, project modelling and full management support for the project.

Our proposal could also include additional battery locations to be installed following the Mugga Lane battery project in accordance with the needs of the ACT Government and EvoEnergy.

Quickest possible construction time

15 months

Ideal target date for completion:

Month

Sep

Year

2022

Why did you select this answer?

Other

Other reason

Lead time for chemical batteries and the potential time required for the necessary network upgrades.

Comments

Lead time for Tesla Mega Packs (our preferred technology) is ~15 months.

## Further information

Suggestions for available options:

In this response, we would like to hear suggestions from you about any options for battery storage that were not addressed above.

The integration of batteries into the Mugga Lane Renewable Energy project delivers a unique set of benefits:

- shortest lead time
- batteries storing locally sourced renewable energy
- enhanced ability to cater to the energy needs of ACT customers, i.e. demand enveloping beyond the capacity of the battery with co-located renewable generation
- expansion potential of both biogas generation and storage to meet demand
- potential to incorporate Green Gas as an additional source of local renewable energy, capable of being stored in the gas grid

Is there anything else you'd like to add, or suggestions about how the ACT Government should build the Big Canberra Battery?

The Big Canberra Battery does not need to be a single large scale battery (100MW+). Instead it should be a distributed model to best serve the localised needs of ACT electricity customers, by placing storage where the demand is.