Friday, 17 January 2025

Gavin Fox
General Manager
Australian Energy Regulator
GPO Box 3131, Canberra ACT 2601

Dear Gavin

RE: Letter of Support for Energy Queensland's (Energex's) 2025-2030 Tariff Structure Statement

LGI would like to take this opportunity to provide feedback to the Australian Energy Regulator (AER) regarding EnergyQueensland's (Energex's) Tariff Structure Statements (TSS) for the 2025-2030 period. In particular, we would like to voice our support for Energex's Dynamic Flex Storage Tariffs and the trial Dynamic Price Storage Tariff, since we believe new tariffs are crucial to encouraging the development of commercially viable energy storage systems on the distribution network.

About LGI
We deliver clean energy and carbon abatement solutions, reliably, effectively and commercially to customers. With over 100 years' of combined experience in the waste industry, landfill and renewable energy sectors, we have developed a unique, flexible operating platform for 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 and innovative commercial solutions to provide dispatchable distributed renewable energy to support in firming 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, and 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. See **https://www.lgi.com.au**

This letter of support focuses on the positive impacts that Dynamic Storage Tariffs will have on the emerging technology of battery storage. Please find below our comments and support for sections of Energex's TSS:

1. **Energy Storage and its ability to support the distribution network**

Energy Storage is a key piece in the energy transition, especially when connected to the distribution where rooftop solar during the day and peak household loads at night cause drastic shifts in network loading. Distributed Energy Storage can be deployed to provide localised grid support, improving the reliability and stability of residential feeders, and when managed correctly will result in higher utilisation of the existing regulated assets without the need for further investment in poles and wires; therefore enabling a reliable, cost effective energy system. Being closer to the demand and faster to implement, DES combined with the growing segment of Consumer Energy Resources (CER), can increase reliability and reduce demand for power from transmission assets which take longer to develop.

2. **The importance of Tariffs to incentivise (or remove dis-incentives)**

Tariffs are one of the key components of the commercial considerations of a battery. Tariffs that impose extreme network use of service (NUOS) costs, typically in the form of $/kVA/month, will often single-handedly cease the commercial viability of distribution storage, especially considering many of these tariffs do not consider the time of use. EQ's Dynamic Tariffs encourage battery systems on the distribution network by significantly reducing the $/kVA/month costs, instead replacing them with a $/kWh dependent on the time of day. We believe this method

enables recovery of 'network use' by considering the volume of energy and the fact that batteries commonly import during minimum demand and export during maximum demand.

3. **The distribution system is no-longer uni-direction, 2-way power flows need to be considered in Tariffs**

The prevalence of rooftop solar has required Network Service Providers (NSPs) to reconsider how the network is configured. The general assumption that the distribution network is always a load is no longer valid and requires a re-work of how bi-directional flexible assets can be incentivised to provide support, reducing the impacts of intermittent generation. Dynamic Storage Tariffs can enable storage to be deployed on the distribution network to optimise the use of the rooftop solar when and where it is being generated.

4. **Combination of Dynamic Connection Agreements and Smart Tariffs**

The energy sector relies on solving both economic and engineering problems, the combination of Dynamic Operating Envelopes (DOEs) and Dynamic Tariffs is pivotal to unlocking higher utilisation on distribution networks, ultimately resulting in lower costs to consumers. As DOEs become a key option for developers to consider in their connection agreements it is vital there are tariffs that consider the non-guaranteed nature of the connection capacity, thereby offering reduced costs to the developer on an ongoing operational basis. The eligibility criteria for the Dynamic Flex Tariff require developers to have entered into a DOE, ensuring that the network is not put at risk while still allowing operators to utilise the existing infrastructure.

5. **Behind the Meter Storage and Future Tariffs**

As emerging technologies are adopted into the NEM, there is a need to consider how the combination of old and new assets will impact the network and how the incentives or cost structures need to be altered to allow for the new normal. The introduction of Storage Tariffs to Energex's tariff structure provides certainty to developers that there will be support for battery storage on the distribution network. It is also important to endorse trial tariffs, since this enables flexibility to test different technologies and commercial frameworks together, speeding up the development process.

LGI is supportive of both the Dynamic Flex Storage Tariff and Dynamic Price Storage Trial Tariff proposed by Energex since we believe these tariffs allow developers to consider bi-directional assets, due to the favourable commercial structure, without inadvertently putting additional cost on other network users. By way of example, LGI has already added a battery to an existing renewable power station on the Energex network at Bunya (see case study here), near Brisbane, which was enabled by a trial tariff. With access to Dynamic Flex Storage Tariffs and the trial Dynamic Price Storage Tariff, LGI could deploy a pipeline of other battery projects to increase reliability on the distribution network within the next 2 to 5 years.

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.

Kind regards,

[redacted]
Jarryd Doran - Chief Executive Officer
[redacted]

[redacted]
Matthew Tap - Projects and Innovations Manager
[redacted]

Queensland First - Storing, Dispatching and Distributing Renewable Energy from Landfill

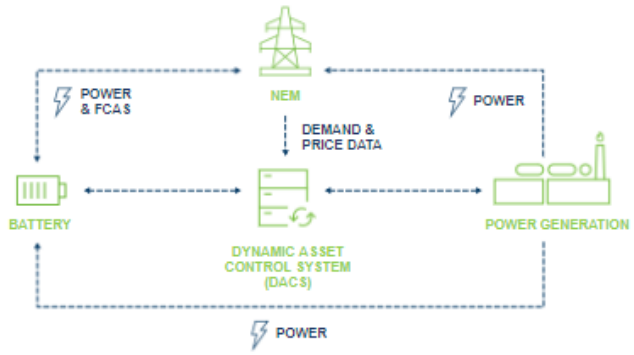
Storing landfill-generated power in an onsite battery and dispatching it into a local distribution power grid. A world first - connecting a battery to a Jenbacher 312 engine to the distribution grid with active voltage management.

Capturing landfill gas before it enters the atmosphere is a major step in solving the problem of harmful methane emissions from waste. Converting this gas into renewable energy, storing and then dispatching it to the grid maximises the potential available in every last molecule.

In close collaboration with Moreton Bay Regional Council, this is exactly what LGI does at the Bunya Waste Management Facility. Initially installing an extraction and management system to capture the gas and abate methane emissions using a flare, LGI upgraded the site in 2018 to produce renewable power. In 2023 LGI transformed it into a renewable hybrid by adding a Battery Energy Storage System (BESS) with a 1MW/2MWh Tesla Megapack.

LGI's Dynamic Asset Management System (DACS) integrates the battery with the power station, the landfill, the local power grid and the National Energy Market (NEM).

Dynamic Asset Management System (DACS)



After two years in development, this pioneering battery technology sets up significant benefits for Council, the region and its residents. Where previously the generator could respond in minutes, with batteries the project can store and dispatch renewable energy generated with biogas from this landfill within seconds.

"Landfills are sizable emitters of harmful greenhouse gas. However, the Bunya Renewable Power Station significantly reduces the emission rate and the battery pack means we'll be able to store power and export it more efficiently during high demand periods and when other sources of renewable energy like solar are less available."
City of Moreton Bay Mayor, Peter Flannery

"This means LGI can generate and store or dispatch and distribute renewable energy in seconds from the Bunya Waste Management Facility, when and where it is needed, helping to stabilise the local electricity system."
LGI Chief Operating Officer, Jarryd Doran

The success of the project makes room for the rollout of onsite batteries at other renewable energy sites across Eastern Australia.

Since 2018, the environmental benefit of removing harmful methane from the Bunya landfill has been significant, with benefits mounting exponentially as the years of operation climb.

Here are the stats so far*

Biogas Captured m^3
18.6 million m^3

Energy Generated
23 GWh generated since December 2018

Operational
24hrs/day, 7 days/week

Emissions (t CO_2e) reduced by
176 thousand tonnes

That's the equivalent benefit of planting 2.8 million seedlings over the next 10 years!

FOCUS YOUR ENERGY

* Results Achieved to March 2023

www.lgi.com.au | Ph 07 3711 2225

FOCUS YOUR ENERGY

LGI's partnership with Moreton Bay City Council comes at no cost to local ratepayers and provides Moreton Bay City Council with a percentage of power station revenue and Australian Carbon Credit Units (ACCU) generated by the project.

This has turned a costly waste management facility into a highly productive asset that no longer poses a risk to environmental or human health.

- ✓ **Creates an income stream**
- ✓ **Supplies consistent power**
- ✓ **Stabilises local electricity supply**
- ✓ **Reduces dependence on power generation**
- ✓ **Converts methane to less harmful CO_2**
- ✓ **Scalable up or down**

This is another example of how sustainable energy generation continues to reach new heights and expand into territories previously thought impossible. It's an exciting time to be part of such important work and at LGI, we are focused on maximising the layers of benefit across Australia, one landfill at a time.

It takes a negative and puts it into a positive for the community and Go Green as we Grow is our focus in Moreton Bay.

- Peter Flannery,
Moreton Bay City Countil Mayor

People engineering, a clean energy, zero carbon future

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