WASTE POWERING GLADSTONE’S GREENER FUTURE: THE BENARABY LANDFILL GAS-TO-POWER PROJECT

Dr Jessica North, CEO – LGI Limited
LANDFILL GAS TO POWER 101

LANDFILL CAP/Cover

GAS EXTRACTION WELLS

GAS MAINLINE

FLARE

GRID

LANDFILLED WASTE

LINER

BASE

GAS ENGINE
APPROACH – THE ‘WHY?’

2011: Carbon Tax Liability

Need to minimise methane emissions from Benaraby Landfill

Want to implement best-practice landfill gas infrastructure – duty-of-care to local and global communities

Want to explore beneficial reuse of landfill gas and create green energy infrastructure
APPROACH – THE DEEPER ‘WHY?’

An inherently sustainable solution: abate harmful methane and generate renewable energy for the community

Demonstrate that regional governments can achieve industry best-practice through innovation and collaboration

An opportunity to achieve the above at no cost to Gladstone community

Have the courage to be an early mover and lead by example
Unique, time-critical opportunity identified by Council and supported by community

Unconventional approach to tender process – an example of agility

Long-term, alliance-type contract sought with private sector

Tender awarded to specialist supplier, LGI Limited (LGI)

12 months to ‘prove’ gas field through flaring

3 years to achieve interconnection to electricity grid with Ergon

Bespoke 1.065 MW landfill gas-to-power facility commissioned November 2016

...green energy for over 1,600 Gladstone homes
LEADING PRACTICE

A benchmark project for local government initiative in environmental, economic, and social sustainability:

- Alliance-type contract with the private sector
- Best-practice infrastructure for landfill gas management
- Regional source of green, baseload energy
- Cost-positive – revenue from energy, RECs, and ACCUs

Planned installation of 1.5 MW solar PV plant at Benaraby Landfill

A regional hub for green energy infrastructure
LEADING PRACTICE - RESULTS

Early-mover achievements:
Carbon liability eliminated
First ‘new’ landfill gas abatement project registered under the Carbon Farming Initiative to create carbon credits
Cost-positive agreement for delivery of the landfill-gas-to-power project
First LFG-to-power project in Central Queensland
Environmental:
Minimising risk of landfill gas
Reducing GHG emissions by more than 60%
Producing a green source of power
Social:
Doing the right thing
Future-proofing energy supply for the community
Aligning with Gladstone Community’s vision
Economic:
- Eliminating carbon liability
- Creating revenue streams
- Generating local jobs in infrastructure development, operation, and management
SUCCESS FACTORS – ACHIEVING INNOVATION

- Leadership that promotes and nurtures ‘outside-the-box’ thinking and action
- People who query the status quo
- An organisational model that allows teams to work with agility
- Courage
- Vision
- Commitment
Questions are welcomed!

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