

7 April 2021

**Lakes Blue Energy NL  
ASX Announcement**

**Nangwarry CO<sub>2</sub> Well Exceeds Expectations**

**Highlights:**

- *Extended production testing of the Nangwarry-1 well is complete.*
- *Gas flowed for two days through a ¾ inch choke at 10.8 million cubic feet per day, with wellhead pressure steady at 1,415 psi (9.8 Megapascals).*
- *Peak, tubing constrained, gas flow rate of 22 MMscfd achieved, confirming carbon dioxide production potential.*
- *Preliminary test results have exceeded expectations.*
- *Resource size and quality evaluation underway prior to commercial development of the resource.*
- *The Nangwarry joint venture is investigating the potential for development of Nangwarry for production of food grade carbon dioxide, with an investment decision targeted for the second half of 2021.*

The Directors of Lakes Blue Energy NL (**Company**; ASX:LKO) are pleased to provide this update regarding flow testing of the Nangwarry-1 well.

**Reservoir Testing Program**

On-site preparations for testing of the Nangwarry-1 well commenced on 10 March 2021. Over subsequent days equipment was delivered to site and rigged up, and the well was completed and swabbed. Production testing commenced in earnest on 22 March with the Upper Pretty Hill Formation perforated between 3,053 and 3,058 metres depth, representing the bottom of the predicted carbon dioxide productive zone.

Immediately following perforation, gas pressure within the well began to rise. Gas flows estimated at between 12 and 14 million standard cubic feet per day (MMscfd) were subsequently achieved through two ¾ inch chokes, with wellhead pressure relatively stable at 900 psi (6.2 Megapascals). On shut-in of flow, the wellhead pressure was observed to rise quickly, indicating high reservoir permeability.

On 26 March the Upper Pretty Hill Formation was perforated between 2,938 and 2,944 metres depth, representing the top of the predicted carbon dioxide productive zone. Gas flow rates remained around 14 MMscfd through two ½ inch chokes, with wellhead pressures higher, at around 1,088 psi or 7.5 MPa.

Over following days, the well was perforated at four further, intermediate intervals (3,035 to 3,040 metres, 3,010 to 3,019 metres, 2,984 to 2,990 metres, and 2,961 to 2,967 metres) before running of a production logging tool on 31 March, and commencement of extended flow testing.

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Extended flow testing operations were carried out from 31 March to 2 April. Over this period the well was flowed at a steady rate of around 10.8 MMscfd through a  $\frac{3}{4}$  inch choke, with wellhead pressure steady at around 1,415 psi (9.8 MPa). A peak, tubing-constrained gas flow rate of around 22 MMscfd was achieved (based upon cross-choke calculations).

The next steps will include independent verification of resource estimates following collection of information from downhole gauges that accurately record reservoir pressure recovery. Analysis of gas samples taken at all stages of testing will allow the composition of Nangwarry gas to be ascertained for the purpose of purification plant design.

### ***Initial Results from Testing Program***

The initial results from the well testing program have exceeded Lakes Blue Energy's expectations. In particular, the height of the productive gas column is much greater than assumed for present resource estimates, suggesting those estimates are likely to be upgraded.

The deliverability of gas from the Nangwarry resource has been confirmed, with a tubing-constrained gas flow rate in excess of 20 MMscfd achieved.

Mr Richard Ash, Chairman of Lakes Blue Energy, said "The initial results from the production testing program have significantly exceeded the Company's expectations. They pave the way for profitable development of Nangwarry."

### ***Nangwarry Development Concept***

The development concept for Nangwarry involves installation of equipment to purify carbon dioxide for sale to food, beverage, medical and industrial applications. The purification process is straightforward, essentially involving:

- removal of contaminants, with activated carbon and other media;
- dehydration (or drying) with silica gel; and
- distillation, to remove methane and nitrogen.

The Nangwarry-1 well could support a substantial operation as a major supplier of carbon dioxide for Australia's \$267 million carbon dioxide market, with a material impact on Lakes Blue Energy once developed. In addition to carbon dioxide, Nangwarry gas contains around 6% methane. Methane produced will likely be used to fuel the purification plant.

Mr Richard Ash said "Lakes Blue Energy plans to work closely with its joint venture partner, to expedite commercialisation of the Nangwarry resource. The Company aims to progress preliminary design and costing of the purification facility in parallel with market investigations with a view to being able to make an investment decision during the second half of 2021."

This announcement is authorised for release to the market by the Board of Directors of Lakes Blue Energy NL.

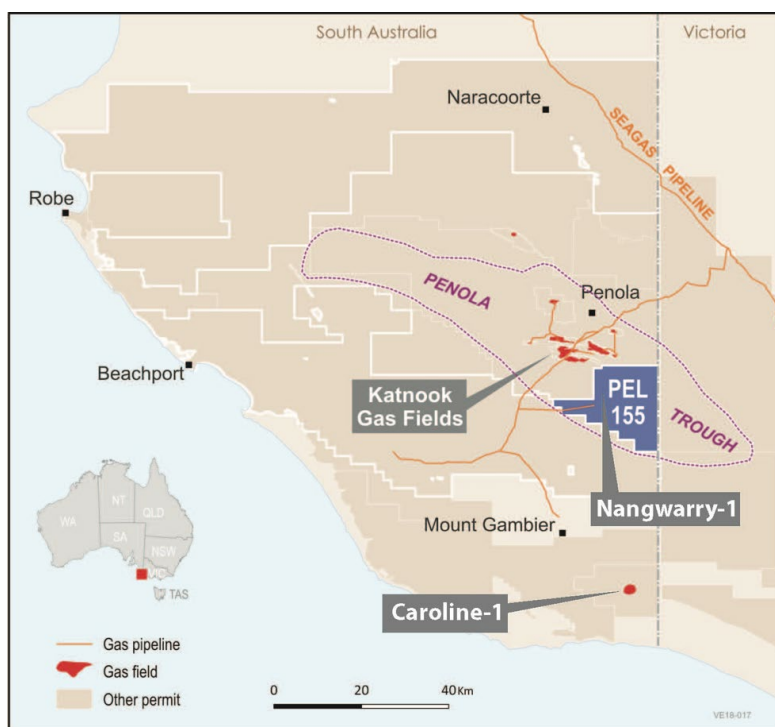
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## About Nangwarry

The Nangwarry project is a 50:50 joint venture between Lakes Blue Energy subsidiary, Otway Energy Ltd (as Operator), and Vintage Energy Ltd. The project is located within Petroleum Exploration Licence 155, South Australia, about 30 km north of Mt Gambier and around 50 km north of the Caroline-1 carbon dioxide project.

A carbon dioxide rich gas resource was discovered at Nangwarry in early 2020 through drilling of the Nangwarry-1 well. Nangwarry has potential for supply of food-grade carbon dioxide for the Australian east coast market, which is presently lacking a reliable source of supply. Historically, a key source of supply was the Caroline-1 well, which ceased production in 2016 after producing 797,272 tonnes over nearly 50 years.



The Nangwarry carbon dioxide resource has been independently evaluated by ERCE (refer to ASX release dated 31<sup>st</sup> August 2020) to contain a best estimate gross carbon dioxide sales gas resource of 25.1 Bcf (12.6 Bcf net to Lakes Blue Energy). Initial results from the March 2021 Nangwarry-1 well testing program indicate that the resource estimate may be increased.

The Nangwarry joint venture is investigating the potential for installation of a purification plant to produce food-grade carbon dioxide for sale. A Memorandum of Understanding in place with Supagas Pty Ltd regarding preliminary design and costing of facilities for processing Nangwarry carbon dioxide.

The Australian carbon dioxide market has annual turnover of around \$267 million<sup>1</sup>, with gas used in food (35%), beverage (32%), medical (10%), chemical manufacturing (9%), other industrial (8%) and construction (6%) sectors. Since closure of the Caroline-1 project periods of tight supply have occurred.

Each 1 MMscfd of Nangwarry gas will produce around 50 tonnes/day of food-grade carbon dioxide. Natural gas produced in association with the carbon dioxide will be used to fuel the proposed purification plant.

<sup>1</sup> IBISWorld Industry Report OD5214 "Carbon Dioxide Production in Australia" December 2019.