

Botala Energy

ASX Announcement

Monday, 15 April 2024

GAS DESORPTION TESTING EXCEEDS EXPECTATIONS

Highlights:

- Excellent initial desorption testing results 2.0 scc/gram at day 61:
- Ongoing gas desorption testing to continue for a further 2 months until rates plateau.
 Recertification currently underway previous modelling targeted a desorption rate of
- 2.4scc/gram and 5 exploration wells (vs 11 currently drilled):
 - Exceeding the 2.4scc/gram threshold has potential to further increase gas volumes within the acreage.

Botala Energy Ltd (ACN 626 751 620) (**Botala**) is pleased to provide an update on its technical progress at its 100% owned Serowe CBM Project. The initial results of the ongoing gas desorption testing are promising. The gas desorption testing is a three-stage programme designed to determine the amount of gas held within a gram of coal and the coals' ability to release the gas under flowing conditions in production. The testing programme includes drilling and taking core samples of the coal seams from the Serowe 3-4 well, refer to Figure 5 below. The core samples are then placed in a water bath, the temperature of the water bath is maintained at a constant temperature to replicate underground conditions. Once in the water bath the coals undergo the following 3 stages of testing:

- Stage 1 Lost gas (Called Q1): Gas pressures are measured every minute within the first 15 minutes, this initial data is used to predict the amount of gas which may have been lost in the process of drilling and handling.
- Stage 2 Desorpable gas (called Q2): A slow desorption process measuring gas pressures daily over a 4-month period.
- Stage 3 Crushed gas (called Q3): Core samples sent to a lab are crushed, the amount of gas produced is measured, this generally adds 10-20% more gas volume to the total gas content.
- The total gas content (QT) is calculated as the sum of Q1, Q2, and Q3.

Since starting the desorption testing the combined Q1 and Q2 gas values are approximately 2.0 scc/g over 61 days. Figure 1 below is a graph of Serowe coal seam gas pressure, the Q2 pressure measurements continue to increase and may have the potential to exceed the target rate of 2.4 scc/g which was used previously in the certification process. Botala considers this target threshold may be exceeded based on the results to date. Exceeding this threshold would provide an increase in the potential gas volumes within the acreage. Figure 1 does not include the Q3 testing results which are ongoing.



Figure 1 - Representative Q2 desorption data from the Serowe coal seam.

Highlights of the work completed to date:

The following highlights provide background information previously disclosed. It outlines the work completed and the future work programme:

- Remapped Botala's leases using all Botala and open file data, delivering new coal seam thickness maps.
- Drilling of initial 5 exploration wells with selected use of NMR logs to establish gas content.
- Certification by independent certifier Sproule of a 317BCF 2C gas resource (2022).
- Since initial certification Botala has drilled 6 additional wells (2 exploration and 4 production) as Project Pitse, all wells were logged with 1 well, Serowe 3-4, being cored.
- 5 additional AMT geophysical surveys (vertical resolution) and 2 magnetic surveys (horizontal resolution) were taken for optimising well locations.
- All new data is now with the resource/reserve certifier for recertification of the gas resource, expected in May 2024.

General Geology:

The Serowe Coal Bed Methane (CBM) Project is located in the Central Kalahari Karoo Basin of Botswana.

The basin is the location of the Permian/Carboniferous aged Ecca group. This group contains 3 coal seam formations the Serowe, Upper Morupule and Lower Morupule.

Figure 2 outlines the lithology of the regional geology for the three reservoirs. The Serowe seam is the upper seam with the Morupule seams splitting into an upper and lower seam.



Figure 2 - Regional geology type log of the three CBM reservoirs.

Serowe Coal Seam:

Botala is targeting the upper coal seam known as Serowe coal seam. This has been the main focus for exploration and development. To date it has exhibited a higher gas content than the other seams and demonstrated that it is highly gas saturated coal with liberated gas bubbles being observed at surface during drilling. The Upper and Lower Morupule seams have also shown significant gas content. However, the gas saturations are not as high as the Serowe seam.

Figure 3 shows the area of interest that Botala has mapped over the region for the Serowe coal seam. The map contours are estimates of the Serowe coal seam thickness in metres. The mapping indicates Botala has a significant portion of the thickest seams within its acreage. The seam thins to the south where the Morupule seam also thins making this area less desirable at this current stage of exploration.



Figure 3 - Serowe Regional Contour Mapping for current certification.

Resource Certification:

In 2022 Sproule as an independent certifier, completed a Resource Certification based on 5 exploration wells, which had been completed prior to Botala listing on the ASX. Sproule is currently recertifying the resource based on the following work completed:

- Additional 6 wells drilled and logged with the Serowe 3-4 well cored.
- Flow-testing the Serowe 3-1 well and flaring of the gas.
- Desorption testing.
- Regional gravity surveys and AMT mapping.

The methodology applied by Sproule_in calculating the 2C resource is as follows:

- Establishing the coal volumes from Botala's mapping.
- Coal volumes were multiplied by the coal density from logs to establish coal tonnage.
- Coal tonnage was multiplied by gas concentration to determine gas volumes, then a recovery factor applied.
- The gas concentration is determined from 3rd party offset wells and NMR logs. These parameters were then used in the determination of 2C resources within a 2.5km radius of the Serowe 1, Serowe 3 and Serowe 4 wells.

Figure 4 below shows the regional well correlations, the green shaded coals are the Serowe seam which has been consistent throughout the acreage. A key observation are the blue shaded areas where intrusive dolerites have been encountered and have replaced the corresponding coal seam. Botala has completed an extensive regional gravity survey and Audio Magnetotelluric surveys (AMT) which has successfully been used to determine the location of the dolerite intrusions as verified by subsequent drilling. In the 2022 certification Sproule accounted for the intrusions and the current resource estimates include a regional discount factor for coals being replaced with dolerites. The work completed to date and proven through drilling has resulted in a reduction of the discount factor applied regionally which may see an increase in the 2C estimate on recertification.



Figure 4 - Botala well correlation.

Coring:

In the most recently drilled well, Serowe 3-4, continuous cores were taken from 299.7m to 442.32m from within the Thabala mudstones and shales and through the full sequence of the Ecca Group coals, shales and siltstones to the bottom of the hole (or total depth).



Figure 5 - Examples of the cores taken from the Serowe seam.

These are the first cores taken within Botala's tenement holdings. Within the Serowe seam the coals were bright, contained vitrinite and the development of calcareous cleats was extensive both along bedding planes and along shrinkage cracks. Dissolved cleats become a significant conduit for the movement of gas within the coals.

The following analyses are currently being conducted:

- Gas desorption.
- Gas composition using GCMS to establish gas content and gas concentration.
- Mineralogy and petrography to determine porosity, permeability, vitrinite reflectance, mineralogy, ash and moisture content.

This data will form a new integrated mapping exercise which will be used as input to the updated resource certification planned for later in 2024 post the Project Pitse commercial flow-testing.

Whilst the immediate focus of drilling is concentrated on the 3 coal seams, the intervening shales and siltstones are also expected to contribute gas content. This will be the subject of a later review.

The results of this work will be used in optimising the design of the stimulation and injection testing in the 2 most suitable wells (Serowe 3-4B and Serowe 3-5B), based on data from the 4 recent production wells. This will provide certified gas production rates from each of the 3 coal seams.

Planned work:

Gas exploration and early production remain Botala's main activities. Obtaining commercial gas flows is the key focus of Botala's ongoing exploration and advanced gas flow studies at its Project Pitse pilot wells and proposed for its Serowe 7 well (26km Northwest of Project Pitse): The planned work is as follows:

- New integrated mapping commenced including full integration of wells, geophysical data and structural review.
- Planning for production: stimulation and injectivity testing of the S3-4B and S3-5B wells.
- Slim holes for delineation of the coal basin, resource certification and licence obligations to keep licences in good standing.
- Flow testing of the Serowe 7 well.
- Planning for the drilling of a second commercial production hub around Serowe 7, well by flow testing the Serowe 7 well and then drilling 3 to 4 production wells.



Figure 6 – Progress status to first revenue.

Botala CEO Kris Martinick commented "We are very pleased with the initial gas desorption testing. Based on the initial results there is strong potential that we may exceed our target rate of 2.4 scc/g which was used previously in the certification process. These results are in line with gas desorption rates that you would expect in Queensland and gives us strong confidence in our CBM Project as we rapidly advance towards development."

This ASX announcement was approved and authorised for release by the CEO.

Yours faithfully BOTALA ENERGY LTD

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Kris Martinick Chief Executive Officer

For more information please contact:

Kris Martinick on 0421 322 737; or email kris.martinick@botalaenergy.com.au

This report is lodged on Botala's website, www.botalaenergy.com

About Botala

Botala Energy Ltd (ACN 626 751 620) is an ASX-listed coal bed methane (**CBM**) exploration and development company focussed on developing production from its 100% owned Serowe CBM Project located in a high-grade CBM region of Botswana (and related early-stage renewable energy opportunities). Botala (as Operator) is focussed on developing the Serowe CBM Project and believes that there is a considerable opportunity for it to commercialise the project due to the demand for stable power supply in Botswana. Botala is listed on the Australian Securities Exchange and the Botswana Stock Exchange.

Forward-looking Statements

This document may contain certain statements that may be deemed forward-looking statements. Forward looking statements reflect Botala's views and assumptions with respect to future events as at the date of the Announcement and are subject to a variety of unpredictable risks, uncertainties, and other unknowns that could cause actual events or results to differ materially from those anticipated in the forward-looking statements. Actual and future results and trends could differ materially from those set forth due to various factors that could cause results to differ materially include but are not limited to: industry conditions, including fluctuations in commodity prices; governmental regulation of the gas industry, including environmental regulation; economic conditions in Botswana and globally; geological technical and drilling results; predicted production and resources estimates; operational delays or an unanticipated operating event; physical, environmental and political risks; liabilities inherent in gas exploration, development and production operations; fiscal and regulatory developments; stock market volatility; industry competition; and availability of capital at favourable terms. Given these uncertainties, no one should place undue reliance on these forward-looking statements attributable to Botala, or any of its affiliates or persons acting on its behalf. Although every effort has been made to ensure this Announcement sets forth a fair and accurate view, we do not undertake any obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

Appendix A – Listing Requirements

The following information is provided in respect of this announcement and the reporting of contingent resources and prospective resources.

Listing	Rule	Response
5.30	An entity publicly reporting material exploration and drilling results in relation to petroleum resources must include all of the following information in that report and give the report to ASX for release to the market. (a) The name and type of well. (b) The location of the well and the details of the permit or lease in which the well is located. (c) The entity's working interest in the well. (d) If the gross pay thickness is reported for an interval of conventional resources, the net pay thickness. (e) The geological rock type of the formation drilled. (f) The depth of the zones tested. (g) The types of test(s) undertaken and the duration of the test(s). (h) The hydrocarbon phases recovered in the test(s). (i) Any other recovery, such as, formation water and water, associated with the test(s) and their respective proportions. (j) The choke size used, the flow rates and, if measured, the volumes of the hydrocarbon phases measured. (k) If flow rates were tested, information about the pressures associated with the flow and the duration of the test. (l) If applicable, the number of fracture stimulation stages and the size and nature of fracture stimulation applied. (m) Any material volumes of non- hydrocarbon gases, such as, carbon dioxide, nitrogen, hydrogen sulphide and sulphur. (n) Any other information that is material to understanding the reported results.	 a) Well title is Serowe 3-4 and is an appraisal well targeting Coal Bed Methane. b) Serowe 3-4 is located at Latitude -22.2479999 and Longitude 26.19159856 in Prospecting Licence PL-400. c) Botala Energy Ltd working interest is 100% in the well. Coal seam thickness is 33m. d) Not Applicable. e) The Geological rock type is coal. f) The Serowe Seam was encountered at a depth of 346m, the Upper Morupule was encountered at a depth of 374m and the Lower Morupule was encountered at a depth of 374m and the Lower Morupule was encountered at a depth of 401m. g) Gas Desorption in progress, logging and coring completed, as part of the Commercial Pilot Project. h) Logging results have confirmed presence of hydrocarbon content which will be further tested via gas desorption testing. Free gas has been observed at surface from the Serowe seam. i) Produced water from the well dewatering process. j) Mineralogical and petrophysical evaluation of the cores is ongoing. k) Water volumes will be tested in subsequent flow-testing. l) Not Applicable. m) Not Applicable. n) Not Applicable.