18 April 2016

ASX Release

ASX : BRU

ABN 71 130 651 437
Level 2, 88 William Street
Perth, Western Australia 6000
Ph: +61 8 9215 1800
Fax: +61 8 9215 1899
www.buruenergy.com

# Laurel Formation Tight Gas Independent Resources Review for Permit EP 371

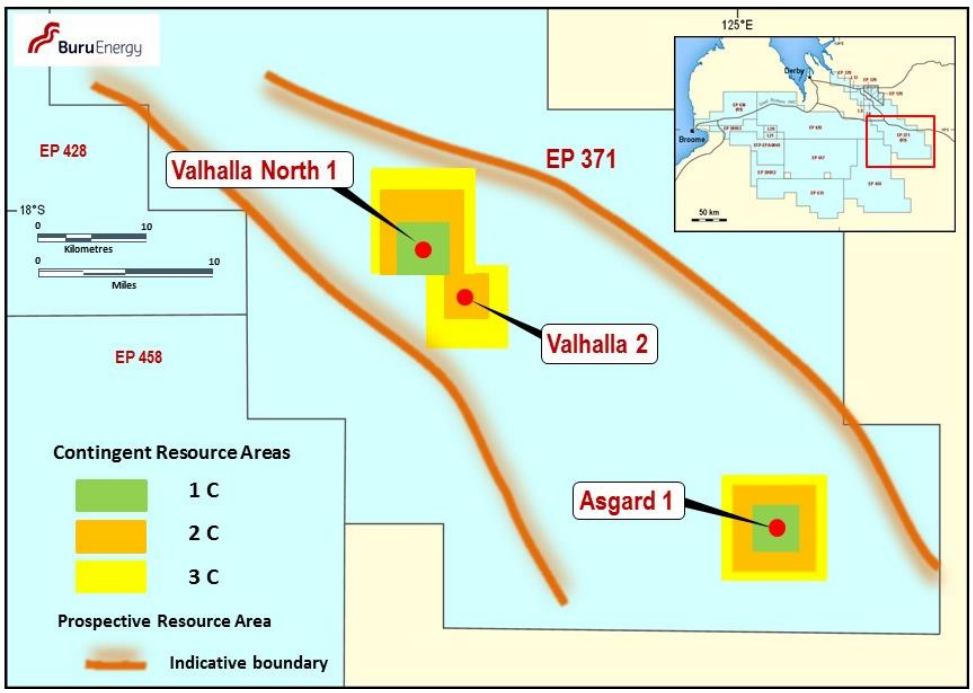
## Background

Subsequent to the successful completion of the 2015 tight gas stimulation program at the Valhalla North 1 and Asgard 1 wells, DeGolyer and MacNaughton (**D&M**), a specialist North American tight gas and unconventional resource assessment consulting group (www.demac.com), were commissioned to undertake an independent assessment of the gas and liquids resources of the Laurel Formation in the Valhalla area of the Canning Basin. This independent assessment has confirmed Buru Energy's view that the Valhalla area contains a nationally significant multi TCF wet gas accumulation.

## Contingent Resource and Prospective Resource context

The assessment was carried out using the results of the recent TGS fracture stimulation program and was focused on the evaluation of the Contingent Resources and Prospective Resources around the two stimulated wells.

Defining initial Contingent Resources is a very important step forward in the route to commercialisation of the tight gas resources of the Canning Basin. There is a well-defined pathway of increasing certainty from Prospective Resources to Contingent Resources to Petroleum Reserves, and this independent review is a significant step forward in that process. The Contingent Resources defined by D&M are located close to and surrounding the two stimulated wells as shown in the following map. The Prospective Resources lie on the previously identified Laurel fairway along the EP 371 permit area.



The analysis also considered the Prospective Resources in the immediate area, and as part of the review there has also been an analysis by Buru Energy of the forward program required to convert Prospective Resources to additional Contingent Resources. This program could include, amongst other activity, and subject to further technical review and Joint Venture and all other necessary approvals; additional seismic data acquisition, a further well between the two stimulated wells, and further flow tests and potentially stimulation of additional zones in the Valhalla North and Asgard wells.

**Resource Summary Highlights**

**(Buru Energy has a 50% equity share of the following gross resources)**

- D&M are of the opinion that the Valhalla accumulation immediately surrounding the Valhalla North and Asgard wells, contains a gross 2C unrisked contingent recoverable volume of 1.53 TCF of gas and 32 million barrels of hydrocarbon liquids (condensate and LPG), noting that this estimate includes both wet gas and dry gas zones combined. Full details of the range of resources estimated by D&M are set out in the table below.

- D&M are of the opinion that the unrisked mean recoverable Prospective Resource in the Valhalla accumulation on EP 371 is 13.02 TCF of gas and 232 million barrels of hydrocarbon liquids.

- The resources estimated by D&M are consistent with Buru Energy's and previous independent reviewers previously announced estimates of the potential recoverable volumes from the Valhalla area, but now importantly include an estimate of Contingent Resources.

- Buru Energy is of the view that a work program including an additional well and flow tests has the potential to extend the Contingent Resources between the wells and add up to an additional 3 TCF of Contingent Resources, depending on the outcome of further drilling and well testing.

**Resource Assessment**

The resource assessment has been prepared using the probabilistic method and an evaluation date of 31 March 2016. Buru Energy's equity interest in the permits that D&M have assessed is 50%. The gross estimated recoverable volumes of Prospective and Contingent Resources for the Valhalla accumulation on the EP 371 permit, as determined by D&M are summarised in Tables 1 and 3 respectively.

**Prospective Resources**

Prospective Resources are the estimated quantities of petroleum that may potentially be recovered by the application of a future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration, appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons. D&M's estimate of the range of the gross estimated recoverable volumes of Prospective Resources for the Valhalla accumulation is provided in Table 1.

**Table 1**

| Product | Unrisked | | | | Risked |
|---|---|---|---|---|---|
| | Low Case (MMbbl/BCF) | Best (MMbbl/BCF) | Mean[iv] (MMbbl/BCF) | High (MMbbl/BCF) | Mean (MMbbl/BCF) |
| Condensate | 79 | 191 | **232** | 445 | 83 |
| Natural Gas | 5,607 | 11,482 | **13,024** | 22,368 | 5,234 |
| Total BOE[iii] | 1,014 | 2,105 | **2,403** | 4,173 | 956 |

i. *The low, best, high and mean case estimates in this table are P90, P50, P10 and mean respectively.*
ii. *Pg (chance of geological success) has not been applied to the unrisked volume estimates in this table.*
iii. *BOE refers to Barrels of Oil Equivalent – gas quantities are converted to BOE using 6,000 cubic feet of gas per barrel. Quoted estimates are rounded to the nearest whole BOE.*
iv. *The mean is the average of the probabilistic resource distribution.*
v. *The unconventional prospective resources are based on the statistical aggregation method*

In accordance with ASX Listing Rule 5.36 the following information is provided:

The previous Prospective Resource evaluation was carried out by McDaniel & Associates Consultants Ltd (McDaniel) and was set out in a Buru Energy ASX release of 7 May 2012.

This evaluation covered the following areas and no specific evaluation was made of the EP 371 permit area:

| Permit / Application | Buru Interest |
|---|---|
| EP 371 | 50% |
| EP 428 | 50% |
| L10-7 | 100% |
| L10-8 | 100% |
| L11-1 | 100% |

The McDaniel evaluation estimated the following quantities of Prospective Resources in Table 2 **net to Buru** over the permits set out above, of which the EP 371 was some 15% of the gross area evaluated.

**Table 2**

| Product | Unrisked | | | | Risked |
|---|---|---|---|---|---|
| | Low Case (MMbbl/BCF) | Median (MMbbl/BCF) | Mean (MMbbl/BCF) | High (MMbbl/BCF) | Mean (MMbbl/BCF) |
| Condensate | 36 | 224 | 432 | 1,025 | 187 |
| Natural Gas | 2,326 | 9,858 | 15,051 | 33,409 | 6,502 |
| **Total BOE** | **423** | **1,867** | **2,941** | **6,594** | **1,270** |

The following statements are provided in accordance with the requirements of ASX Listing Rule 5.36:

- The changes to the types of permits or licenses held by Buru Energy in respect of the previously reported estimates of prospective resources by McDaniel are the relinquishment of the L10-7, L10-8 and L11-1 application areas and the current estimates by D&M apply to the EP 371 permit area.
- The new data and information relied upon for the changes in Prospective Resources include the hydraulic stimulation (frac) and flow testing of the Valhalla North 1 and Asgard 1 well, and reinterpretation of geological and geophysical data in the EP 371 permit area.
- The frac and flow test data has provided definitive results in regard to the ability to fracture stimulate the reservoirs, and additional information regarding the composition of the gas, and the potential gas flow rates.

- The risked estimates have been derived by the probabilistic multiplication of Pg (estimated geological risk) and the resources distribution. These results were then stochastically summed (zero dependency) to produce the statistical aggregate Pg-adjusted mean estimate of unconventional prospective resources.

**Contingent Resources**

Contingent Resources are defined as those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations, but the project is not yet considered mature enough for commercial development due to one or more contingencies. D&M's estimate of the range of the gross estimated recoverable volumes of Contingent Resources for the Valhalla accumulation on EP 371 are provided in Table 3:

**Table 3**

| | Unrisked | | |
|---|---|---|---|
| **Product** | **1C (MMbbl/BCF)** | **2C (MMbbl/BCF)** | **3C (MMbbl/BCF)** |
| Condensate | 9 | **32** | 66 |
| Natural Gas | 455 | **1,533** | 2,981 |
| Total BOE[(i)] | 85 | **288** | 563 |

i. *BOE refers to Barrels of Oil Equivalent – gas quantities are converted to BOE using 6,000 cubic feet of gas per barrel. Quoted estimates are rounded to the nearest whole BOE.*
ii. *The estimates of contingent resources are the statistical aggregates of unconventional resources*
iii. *Application of any risk factor to contingent resources quantities does not equate contingent resources with reserves.*
iv. *There is no certainty that it will be commercially viable to produce any portion of the resources evaluated.*
v. *Contingent resources in this report have an economic status of Undetermined, since the evaluations of those contingent resources are at a stage such that it is premature to clearly define the ultimate chance of commerciality.*

The following statements are provided in accordance with the requirements of ASX Listing Rule 5.33:

- This evaluation is in relation to Exploration Permit EP 371.
- The basis for confirming the existence of a significant quantity of potentially moveable hydrocarbons and the determination of a discovery is that gas and condensate have flowed to surface from the Asgard 1 and Valhalla North 1 wells following hydraulic stimulation. The Valhalla 2 well has been cased and suspended but not yet stimulated and is also considered to be a hydrocarbon discovery on the basis that this well had gas recoveries at surface and encountered significant over-pressure while drilling, petrophysical evaluation, and a detailed comparison with Asgard 1 and the nearby Valhalla North 1 well.
- The estimates of contingent resources are the statistical aggregates of unconventional resources.
- The analytical procedures used to estimate the contingent resources are based on Monte Carlo Simulation using ranges for each parameter of the volumetric equation. The output of this simulation is a range of original gas in place (OGIP) and gross contingent resources. The estimates of contingent resources were prepared by the use of appropriate geologic, petroleum engineering and evaluation principles and techniques that are in accordance with practices generally recognised by the petroleum industry and in accordance with the definitions established by the Petroleum Resources Management System (PRMS) approved in March 2007 by the Society of Petroleum Engineers, the World Petroleum Council, the American Association of Petroleum Geologists and the Society of Petroleum Evaluation Engineers.
- The key technical contingencies that prevent the contingent resources from being classified as petroleum reserves are that the discovery wells have not produced at sustained commercial rates, uncertainties exist about the extent of the prospective intervals over large areas, and the necessary facilities and infrastructure in the area are insufficient to support the development plan associated with these contingent resources.

- Further appraisal drilling and evaluation work to assess the potential for commercial recovery could include, amongst other activity and subject to further technical review and Joint Venture and all other necessary approvals, additional seismic data, a further well between the two stimulated wells and further flow tests and potentially stimulation of additional zones in the Valhalla North and Asgard wells.
- In relation to this estimate for contingent resources of unconventional petroleum resources, the gross area of the permit of which this estimate was made is 3,675 square kilometres (908,000 acres), and the specific wells for which the assessment was made were Valhalla North 1, Valhalla 1 and 2 and Asgard 1.

**Background and geological analysis**

The Valhalla accumulation is located within the Canning Basin in the southwest Kimberley region of Western Australia, approximately 2,300 kilometres north of Perth. The area assessed by D&M lies in EP 371.

A number of wells have been drilled in the Valhalla area by Buru Energy and by previous holders of the acreage. Buru Energy has acquired an extensive suite of logs and sidewall core samples and conducted comprehensive tight rock analysis to support the interpretation of the presence of a continuous gas accumulation, or BCGS (Basin Centered Gas System), within the Laurel Formation in the Fitzroy Trough.

The primary data used by D&M for its assessment included all of the data acquired by Buru Energy and consisted of digital well logs, core analysis, tight rock analysis, well test information, the results of the 2015 fracture stimulation program and geochemical and pressure analysis and digital time and depth surfaces for the main seismic horizons.

**Forward Plan for the Valhalla Accumulation**

To convert the identified Contingent Resources and Prospective Resources to Petroleum Reserves will require additional data to be acquired, and drilling to be carried out, including vertical and horizontal wells, together with extended production tests.

There is extensive production from tight gas reservoirs internationally and there is a well understood and systematic process that can be undertaken to progress the resources to commercial production.

**Buru Energy's Executive Chairman, Eric Streitberg, commented on the results of the D&M review report:**

*"We are extremely pleased with the results of the D&M review which validates Buru Energy's assessment of the very significant potential of the Valhalla accumulation and provides a very important step along the process from Prospective Resources to Contingent Resources and then to Petroleum Reserves. It is anticipated that the Contingent Resources can be systematically converted to Petroleum Reserves by the planned forward program."*

**Qualified Petroleum Reserves and Resources Evaluator Statement**

DeGolyer and MacNaughton is one of the world's leading petroleum consulting firms based in Dallas, Texas, and specialising in geological studies, reserves evaluations, resource assessments, economic evaluations and petroleum engineering studies (www.demac.com).

D&M are qualified petroleum reserves and resources evaluators and their estimates of contingent resources and prospective resources included in this release are:

1) Based on, and fairly represent, information and supporting documentation prepared by, or under the supervision of, Dennis W. Thompson, P.E. and Charles F. Boyette, P.E.
2) Dennis W. Thompson, P.E. and Charles F. Boyette, P.E. are employees of D&M and are not employees or related parties of Buru Energy
3) Dennis W. Thompson, P.E. and Charles F. Boyette, P.E. are members of the following professional organisation's: The Society of Petroleum Engineers
4) Dennis W. Thompson, P.E. and Charles F. Boyette, P.E. and D&M have provided prior written confirmation as to the form and context in which the estimated contingent resources and prospective resources and the supporting information are presented in this release

Visit www.buruenergy.com for information on Buru Energy's current and future activities.

For investor inquiries please contact Buru Energy:
Telephone: +61 8 9215 1800
Freecall: 1800 337 330
Email: info@buruenergy.com

Media Enquiries:
Paul Armstrong
Read Corporate
+61 8 9388 1474/ 0421 619 084

**About Buru Energy**

Buru Energy Limited (ASX: BRU) is a Western Australian oil and gas exploration and production company headquartered in Perth with an operational office in Broome. The Company's petroleum assets and tenements are located onshore in the Canning Basin in the southwest Kimberley region of Western Australia. Its flagship high quality conventional Ungani Oilfield project is owned in 50/50 joint venture with Diamond Resources (Fitzroy) Pty Ltd. As well as Ungani, the Company's portfolio includes potentially world class tight gas resources.

The company's goal is to deliver material benefits to its shareholders, the State of Western Australia, the Traditional Owners of the areas in which it operates, and the Kimberley community, by successfully exploring for and developing the petroleum resources of the Canning Basin in an environmentally and culturally sensitive manner.