Pavo resource estimate

2 May 2022

Highlights

- **Pavo-1 well proved the existence of a substantial volume of light oil in excellent quality reservoirs**
- **Contingent resources are estimated at 43 million barrels (gross, 2C)**
- **Additional prospective resources are estimated at 55 million barrels (gross, Pmean)**
- **Pavo already being assessed for production through the Dorado facilities**

Carnarvon Energy Limited ("**Carnarvon**") (ASX:CVN) has completed its Pavo resource assessment and is pleased to report on the contingent and prospective resources. The successful Pavo-1 oil discovery significantly increases Carnarvon's oil resources for potential development through the Dorado facilities, located around 46 kilometres from Pavo.

The greater Pavo closure comprises a northern structure, from which the Pavo-1 well recovered hydrocarbons (Pavo North contingent resource), and a southern structure (Pavo South prospective resource). The two structures are separated by a narrow syncline, with the depth of the syncline being shallower than an interpreted residual oil-water contact noted in Pavo-1. This supports the position that Pavo South is likely filled with the same oil encountered in Pavo North.

Carnarvon Managing Director and CEO, Mr Adrian Cook, said:

"As we reported a little over a month ago, the Pavo-1 well result is another stellar exploration success in Carnarvon's history in the Bedout Sub-basin.

I'm now pleased to be in a position to report on the contingent and prospective resources within the Pavo structure.

When we consider Carnarvon's share of the Dorado field oil resource is 32 million barrels (2C), the addition of 13 million barrels (2C) in Pavo North and 16 million barrels (prospective Pmean) in Pavo South holds great significance to the company and its shareholders.

Importantly, Pavo has the potential to maintain high flow rates through the Dorado production facilities and thereby preserve the field's low operating costs per barrel for an extended period of time.

The success of the Pavo-1 well has also led the joint venture to consider its upcoming appraisal and exploration campaigns in the Bedout Sub-basin. Carnarvon is working closely with the operator, Santos, to define these targets and will provide more information to shareholders in due course."

ASX disclosure: Prospective resources are the estimated quantities of petroleum that may potentially be recovered by the application of a future development project and may relate to undiscovered accumulations. These prospective resource estimates have an associated risk of discovery and risk of development. Further exploration and appraisal will be required to determine the existence of a significant quantity of potentially moveable hydrocarbons.

Contingent and prospective resources

Gross Contingent Resource (Pavo)	1C	2C	3C
Oil (million barrels)	26	43	62
Gas (billion cubic feet)	6	11	17
Barrels of oil equivalent (million barrels)	**27**	**45**	**65**

Net Contingent Resource (Pavo) - CVN 30%	1C	2C	3C
Oil (million barrels)	8	13	19
Gas (billion cubic feet)	2	3	5
Barrels of oil equivalent (million barrels)	**8**	**13**	**19**

Gross Prospective Resource (Pavo South)	P90	P50	Pmean	P10	Pg
Oil (million barrels)	13	47	55	107	51%
Gas (billion cubic feet)	3	12	14	28	
Barrels of oil equivalent (million barrels)	**14**	**49**	**57**	**112**	

Net Prospective Resource (Pavo South) - CVN 30%	P90	P50	Pmean	P10	Pg
Oil (million barrels)	4	14	16	32	51%
Gas (billion cubic feet)	1	4	4	8	
Barrels of oil equivalent (million barrels)	**4**	**15**	**17**	**34**	

Equity participation

The Dorado field and facilities are located in the WA-64-L production licence, in which Carnarvon holds a 20% interest. Pavo is located in the WA-438-P exploration permit, in which Carnarvon holds a 30% interest.

Approved by:

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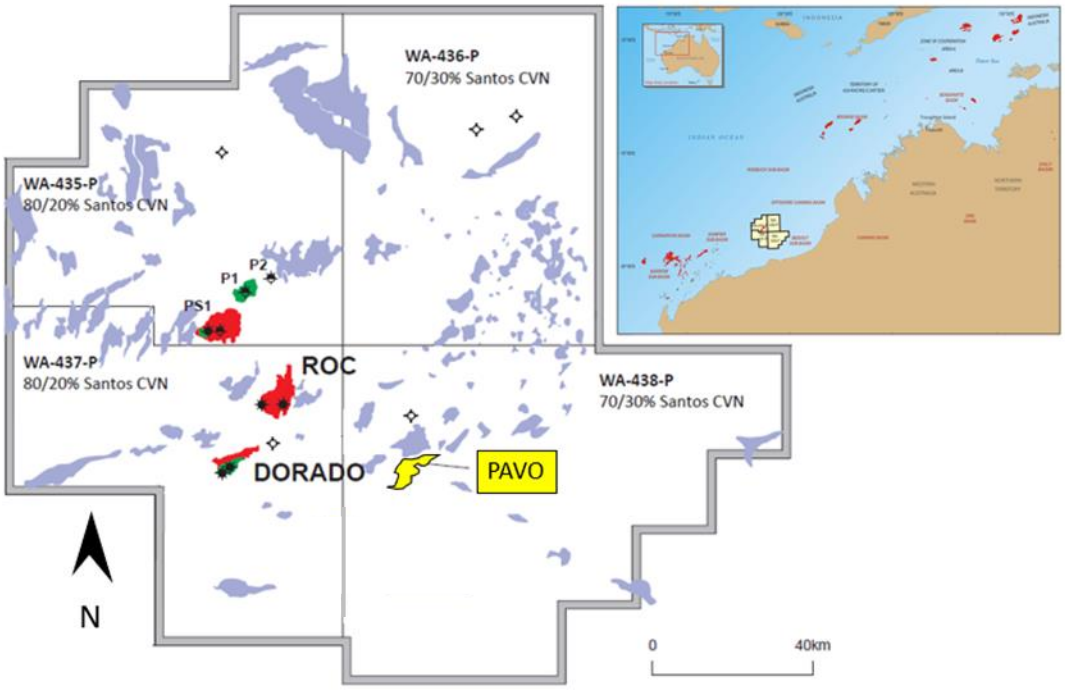
Pavo field location map



Potential development

The Pavo structure is located around 46 kilometres east of the proposed location of the Dorado production facilities.

The Dorado production facilities will consist of a wellhead platform connected to a Floating Production, Storage and Offloading ("**FPSO**") vessel located approximately 2 kilometres from each other. The design for the facilities allows for flexibility to bring in hydrocarbon fluids (liquids and/or gas) from other fields for processing and storage, with provision for a future phase of gas production and export.

During initial oil production of the Dorado field (Phase 1), gas will be re-injected to enhance the oil recovery. This will result in very high initial rates of oil production, with the facilities being designed to handle rates of up to 100,000 barrels of oil per day.

Fluid production rates from Dorado are expected to naturally decline after a plateau period of 1-2 years, at which time there will be spare capacity in the crude oil handling facilities, allowing for back-fill from new fields such as Pavo.

The Pavo field lies within industry standard ranges for tie-back distance and could be delivered to the Dorado facilities at a time and rate that enables very efficient utilisation of the Dorado facility and extends the period of time the Dorado project can produce at capacity (see Figure 1).

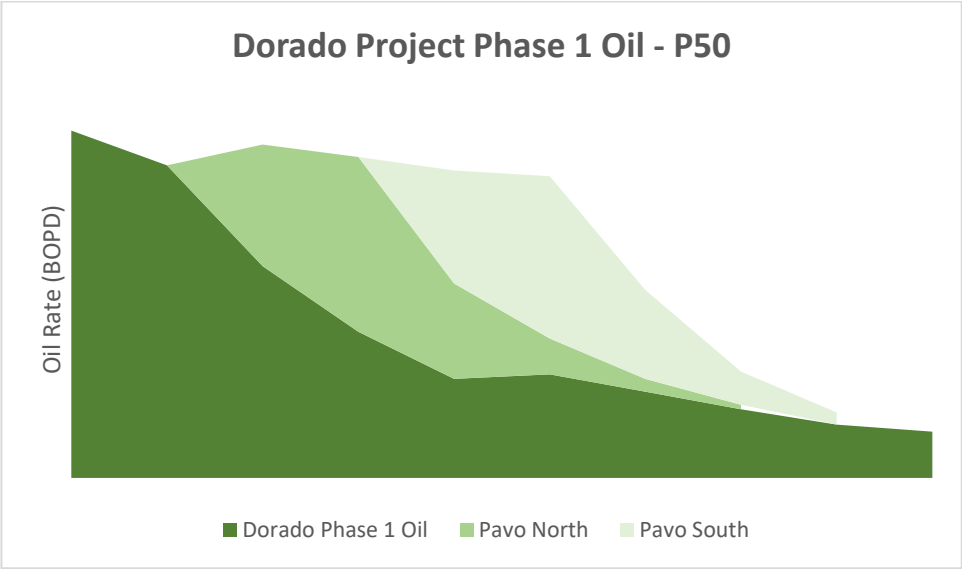


Figure 1: Illustration of the potential to optimise the Dorado facilities' production capacity, and demonstrating the flexibility to incorporate future resources such as Pavo

Given the excellent reservoir quality in the Caley Member, the Pavo North field could be developed with a relatively low number of production wells and tied-back to the Dorado FPSO. The Pavo South accumulation (once drilled and confirmed) could also be tied-back with additional wells potentially being connected to the Pavo facilities (see Figure 2).

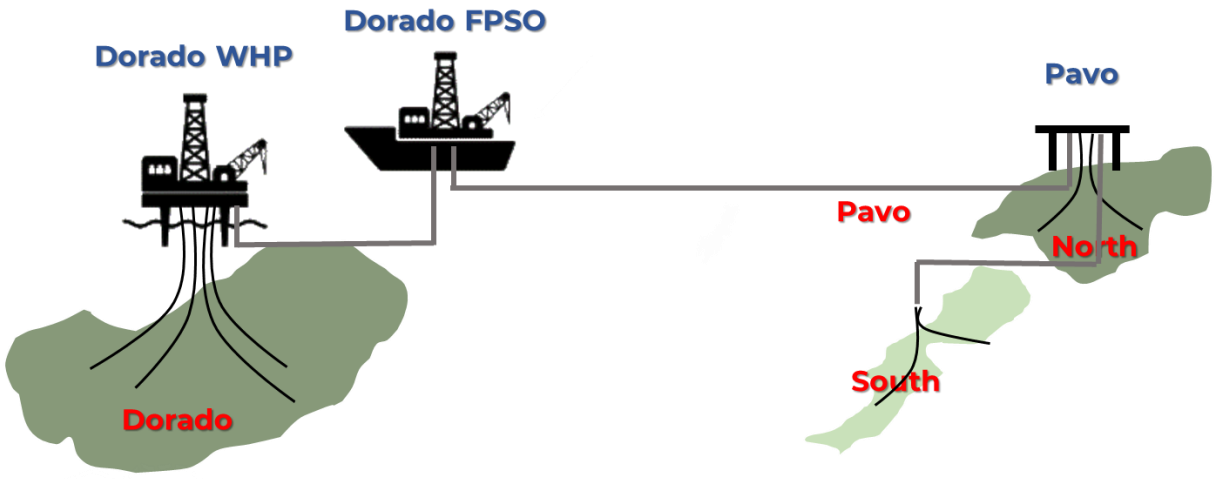


Figure 2: Illustration of potential Dorado FPSO tie-backs of Pavo North and Pavo South

Technical overview

The Pavo structure is interpreted to consist of two separate accumulations, Pavo North and Pavo South (see Figure 3).

The Pavo-1 well was drilled on the northern culmination of the greater Pavo structure and encountered a 60-metre gross hydrocarbon column in the primary Caley Member reservoir target.

Wireline data confirmed 46 metres of net oil pay within the 60-metre gross oil column, with an oil-water contact ("**OWC**") intersected at 3,004 metres measured depth ("**MD**"), or 2,960 metres sub-sea ("**mss**"). The oil column is wholly contained within the northern culmination of the Pavo structure (Pavo North) (refer Figure 4).

Excellent Caley Member reservoir quality is interpreted from wireline logs, with 19 per cent average porosity, permeabilities in the 100 to 1000 milliDarcy range and hydrocarbon saturations averaging 80 per cent, like those encountered in the Dorado Field.

Oil samples collected from Pavo-1 indicate that the crude is a light, sweet oil (~52 degrees API) with a relatively low GOR (~300scf/bbl) compared to the Dorado fluids. The GOR is high enough to suggest that sufficient gas is available on production to ensure efficient lifting of fluid from the reservoir.

The recovery factors are inferred to be extremely good due to the excellent reservoir parameters, the light nature of the fluid, and the very likely strong aquifer drive.

Given its close proximity to Pavo North, and the similar interpretability from seismic data, the Pavo South structure is interpreted to have an excellent geological chance of success, with a Pg of 51%. The key risk is primarily related to oil migration from Pavo North to Pavo South.

Indications of a deeper, residual or palaeo-oil-water contact ("**POWC**") in the Pavo-1 well at around 3,045 metres MD, or 3,001 mss (see Figure 4) may indicate that the two Pavo culminations were connected at a previous point in time. If this was the case, a common deeper contact supports the charging of both structures with the same oil that was discovered in the Pavo North accumulation.

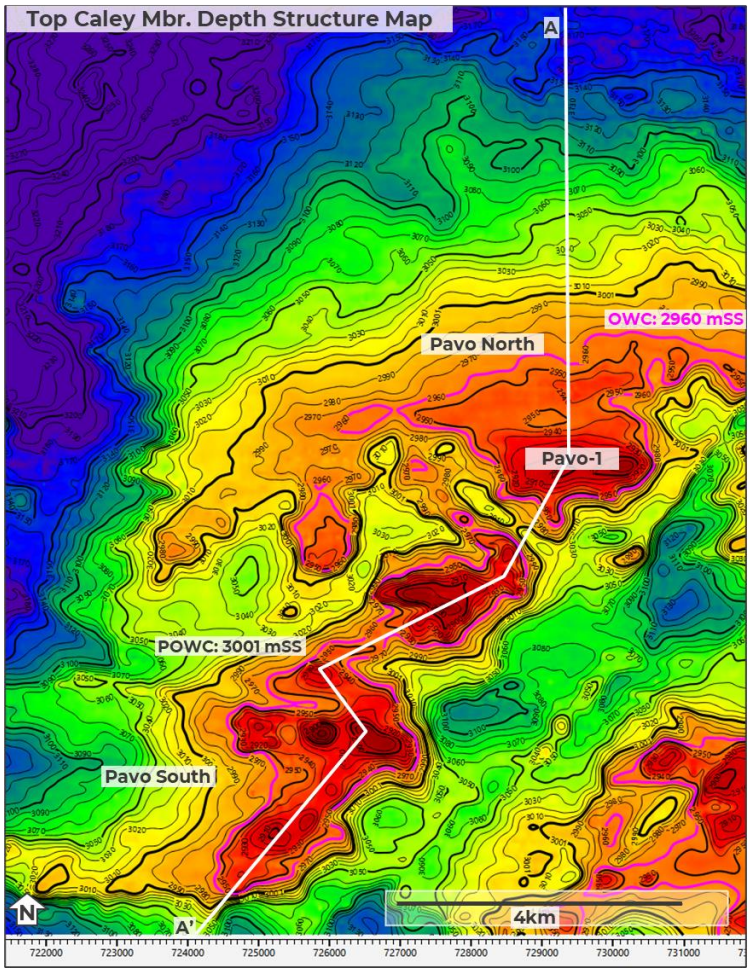


Figure 3: Depth structure map of Top Caley Member, indicating Pavo North OWC and palea-oil water contact (POWC) with the section in Figure 6 indicated

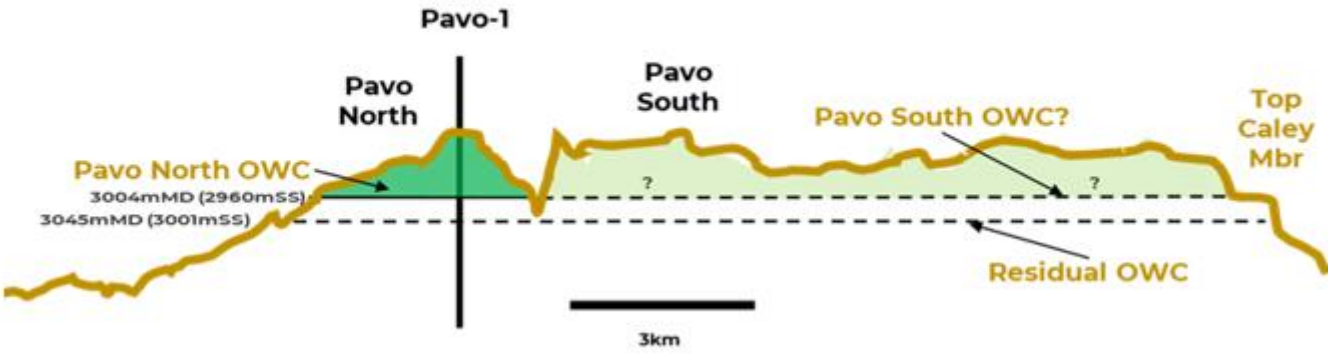


Figure 4: Schematic illustrating the North and South accumulations of the Pavo structure

SPE definitions

Reserves represent that part of resources which are commercially recoverable and have been justified for development, while contingent and prospective resources are less certain because some significant commercial or technical hurdle must be overcome prior to there being confidence in the eventual production of the volumes. Carnarvon does not yet have reported reserves.

Contingent resources are less certain than reserves. These are resources that are potentially recoverable but not yet considered mature enough for commercial development due to technological or business hurdles. For contingent resources to move into the reserves category, the key conditions, or contingencies, that prevented commercial development must be clarified and removed. As an example, all required internal and external approvals should be in place or determined to be forthcoming, including environmental and governmental approvals. There also must be evidence of firm intention by a company's management to proceed with development within a reasonable time frame (typically 5 years, though it could be longer).

Prospective resources are estimated volumes associated with undiscovered accumulations. These represent quantities of petroleum which are estimated, as of a given date, to be potentially recoverable from oil and gas deposits identified on the basis of indirect evidence but which have not yet been drilled. This class represents a higher risk than contingent resources since the risk of discovery is also added. For prospective resources to become classified as contingent resources, hydrocarbons must be discovered, the accumulations must be further evaluated and an estimate of quantities that would be recoverable under appropriate development project(s) prepared.

Resource information

Carnarvon calculates reserves and resources according to the Society of Petroleum Engineers Petroleum Resource Management System ("**SPE-PRMS**") definition of petroleum resources. Carnarvon reports reserves and resources in line with the ASX Listing Rules.

There are numerous uncertainties inherent in estimating reserves and resources, and in projecting future production, development expenditures, operating expenses and cash flows. Oil and gas reserve engineering and resource assessment must be recognised as a subjective process of estimating subsurface accumulations of oil and gas that cannot be measured in an exact way.

"Gross Contingent Resources" are 100% of the volumes estimated to be recoverable from the discovery without any economic cut-off being applied. Volumes reported are "unrisked" in the sense that no adjustment has been made for the risk that the project may not be developed in the form envisaged or may not go ahead at all (i.e. no "Chance of Development" factor has been applied).

The Chance of Development for the Contingent Resources shown here has been estimated to be 75%. This is based on further appraisal, development being at concept assess phase and distance to infrastructure.

Contingent Resources have been sub-classified as "Development Unclarified" under the SPE-PRMS.

Unless otherwise stated, all petroleum resource estimates are quoted at standard oilfield conditions of 14.696 psi (101.325 kPa) and 60 degrees Fahrenheit (15.56 deg Celsius).

Carnarvon uses probabilistic methods for estimation of petroleum resources in this report. Unless otherwise stated, all petroleum estimates reported at the company level are aggregated by arithmetic summation by category.

MMBOE means millions of barrels of oil equivalent. Dry gas volumes, defined as 'C4 minus' hydrocarbon components and non-hydrocarbon volumes that are present in sales product, are converted to oil equivalent volumes via a constant conversion factor, which for Carnarvon is 5.7 Bcf of dry gas per 1 MMboe. Volumes of oil and condensate, defined as 'C5 plus' petroleum components, are converted from MMbbls (million stock tank barrels) to MMboe on a 1:1 ratio.

Competent person statement information

The resource estimates outlined in this report were compiled by Carnarvon's Chief Operating Officer, Mr Philip Huizenga, who is a full-time employee of the Company. Mr Huizenga has over 25 years' experience in petroleum exploration and engineering. Mr Huizenga holds a Bachelor's Degree in Engineering, a Master's Degree in Petroleum Engineering and is a member of the Society of Petroleum Engineers. Mr Huizenga is qualified in accordance with the ASX Listing Rules and has consented to the form and context in which this statement appears.

Forward-looking statements

This announcement contains certain "forward-looking statements", which can generally be identified by the use of words such as "will", "may", "could", "likely", "ongoing", "anticipate", "estimate", "expect", "project", "intend", "plan", "believe", "target", "forecast", "goal", "objective", "aim", "seek" and other words and terms of similar meaning. Carnarvon cannot guarantee that any forward-looking statement will be realised. Achievement of anticipated results is subject to risks, uncertainties and inaccurate assumptions. Should known or unknown risks or uncertainties materialise, or should underlying assumptions prove inaccurate, actual results could vary materially from past results and those anticipated, estimated or projected. You should bear this in mind as you consider forward-looking statements, and you are cautioned not to put undue reliance on any forward-looking statement.