

Carnarvon Petroleum Ltd

(CVN \$0.38) Buy

EUROZ

| Analyst | Date | Price Target |
|-------------|------------------------------|--------------|
| Gavin Allen | 20 th August 2018 | \$1.00/sh |

Maiden 2C Resource of 283mmbboe at Dorado

Investment case

CVN has made a very large commercial oil discovery in the NWS with grounds to suggest substantial upside bias. A second gas condensate development now appears likely with the maiden volumes defined in the Baxter at Dorado. In parallel, CVN can also take the Buffalo oil project through to commercialisation. Dorado is a material oil discovery and one of the largest ever in Australian waters. What we like is that oil discoveries in shallow water and benign jurisdictions have relatively low barriers to commercialisation. Recovering oil prices are stimulating permitting and M&A activity in the E&P industry: this result will clearly shine a corporate spotlight on CVN. The WPL transaction with Finder Exploration is a good example and we believe similar moves are afoot particularly focused on the Dampier Sub-Basin and emerging Triassic play that CVN and Quadrant have identified at the Phoenix Hub. We maintain our Buy recommendation and \$1.00/sh Price Target, improving our Valuation to \$0.94/sh on the back of today's announcement.

Key points

- CVN has tabled a maiden estimate of Contingent Resources at the Dorado discovery:
 - 1C – 128mmbboe (88mmbbls of oil & condensate) gross; CVN 26mmbboe net;
 - 2C – 283mmbboe (186mmbbls of oil & condensate) gross; CVN 57mmbboe net;
 - 3C – 566mmbboe (356mmbbls of oil & condensate) gross; CVN 113mmbboe net;
- Oil 2C Resources for Caley, Crespin and Milne = 171mmbbls (vs Euroz last published est. of 175mmbbls) or 34mmbbls net;
- A gas-condensate 2C Resource of 16mmbbls & 552Bcf gas for the Baxter, additive to our numbers;
- We view an upward bias in the 2C numbers with appraisal noting:
 - Updip potential of each of the Caley, Baxter, Crespin and Milne accumulations from the Dorado location to the crest of the mapped structure;
 - Down-dip extension of the Caley, Baxter and Milne accumulations given no water contact was observed;
 - Potential communication at the Baxter between the Dorado and the Roc locations;
- The release does not include the 20mmbboe 2C Resources booked at Roc-Phoenix and is pre any est. of vol. for Phoenix South-3;
- Dorado represents a standalone oil development, however, the Baxter volumes adds weight to an additional gas-condensate development providing for a combined 884Bcf gas and 36mmbbls condensate;
- Looking at industry comparisons, we determine full cycle after tax margins of +A\$30/bbl at current oil prices on a 100kbbbls/d FPSO;
- Moreover, the upside case to the 2C number offers significant leverage to an economic scenario in this instance;
- On account of Dorado's jurisdiction, shallow water location, oil quality and simple Joint Venture, we ascribe A\$20/bbl to the Dorado 2C oil Resources;
- We continue to ascribe A\$5/boe for the gas-condensate discovered resources;
- Our Valuation of \$0.94/sh (prev. \$0.84) comprises:

| Carnarvon Petroleum Ltd | Year End 30 June | |
|-------------------------|------------------|--------|
| Share Price | \$0.38 | A\$/sh |
| Issued Capital | | |
| FP Ord | 1,189.9 | m |
| Opt @ var prices | 1.0 | m |
| Rights @ var prices | - | m |
| Total Dil. FPOrd | 1,190.9 | m |
| Market Capitalisation | \$452 | m |
| Enterprise Value | \$400 | m |
| Debt | \$- | m |
| Cash | \$50 | m |

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| A Cook | MD |
| W Foster | NE Dir |
| P Moore | NE Dir |

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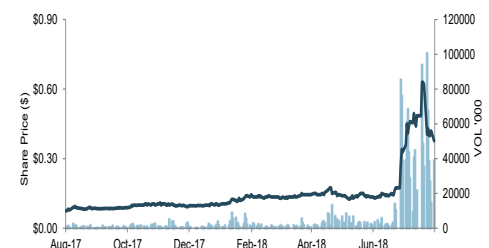
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|------|-----|
| Mgmt | -6% |
|------|-----|

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Share Price Chart



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| ASSET VALUATION | A\$m | A\$/sh |
|--------------------------------|--------------|-------------|
| Dorado (34mmmbbls net est.) | 684 | 0.57 |
| Phoenix-Roc (20mmmbboe 2C net) | 100 | 0.08 |
| Baxter (23mmmbboe 2C net) | 115 | 0.10 |
| Buffalo (risked to 10%) | 33 | 0.03 |
| Exploration - other | 150 | 0.13 |
| Corporate | (14) | (0.01) |
| Unpaid Capital | 0 | 0.00 |
| Debt | - | - |
| Cash est. | 50 | 0.04 |
| Total | 1,118 | 0.94 |

- We see little downside to the current share price as a consequence and contest that CVN will be a target of M&A in the short to medium term. There is clear market precedent of demand for non-op O&G interests:

1. Tap Oil – Risco and Northern Gulf Petroleum;
2. Buru Energy – Fosun;
3. AWE – Mitsui after CERCG, MinRes, Lonestar.

Analysis

Dorado is a material oil discovery with clear standalone potential. It is one of the largest ever in Australia and would rank within the top 5 ever on the NWS (behind the likes of Barrow Island and Wanaea-Cossack).

It is certainly the largest oil discovery of the past 30yrs.

The Resource estimates comprise the oil discoveries at the Caley, Crespian and Milne but also include an assumed gas-condensate phase in determining the volumes in the Baxter.

To that end, there remains a possibility that the Baxter accumulation may yet yield oil or at least an oil leg. Analysis is on-going.

Given the fact that neither the Baxter, Caley nor Milne discoveries encountered a water contact and that there remains substantial aerial closure up-dip to the Dorado well location, we continue view that there is an upward bias to today's estimates: The 3C number of 320mmmbbls should be viewed as a realistic guide to potential as the well is appraised.

There is also potential for the Baxter accumulation to extend laterally within a broader closure capturing the down-dip Roc location.

Today's numbers do not incorporate the Contingent Resource est. booked for the Roc and Phoenix discoveries, not include a determination of potential volumes from the recent Phoenix South-3 location;

What we like is that oil discoveries in shallow water and benign jurisdictions, such as the established oil and gas "Super-basins" of the North West Shelf, have low barriers to commercialisation.

We look to recent adjacent fields in Wanaea-Cossack, Mutineer-Exeter and Legendre as yardsticks.

Wanaea-Cossack (<https://www.onepetro.org/conference-paper/SPE-22986-MS>):

- Discovery in Jan 1990;
- FID taken on 60mmmbbls 2P gross;
- Commissioned in 1995 @ 50,000bbls/d;

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Mutineer-Exeter (<https://www.ogj.com/articles/2005/02/mutineer-exeterreserves-revised-production-sped.html>):

- Mutineer discovered in 1997, Exeter in 2003;
- FID taken on 61mmbbls 2P gross;
- Commissioned in 2005 @ 100,000bbls/d;

Legendre (<https://www.santos.com/media-centre/announcements/approvalfor-legendre-development/>; <https://www.ogj.com/articles/2010/10/legendre-oilfield.html>)

- Discovered in 1968;
- Appraised and extended in 1997;
- FID taken on 40mmbbls 2P gross;
- Commissioned in 2001 @ 45,000bbls/d;

Notably, all took less than 5yrs from appraisal to first oil.

In addition, the Greater Enfield area gave rise to the heavy oil Vincent, Stybarrow and Enfield discoveries, all of which were financially sanctioned on accumulations in the order of 50-60mmbbls 2P.

IMPACT TO VALUATION & PRICE TARGET

Our Valuation inc to \$0.94/sh (prev. \$0.84/sh);

Our Price Target of \$1.00/sh remains.

We are bullish on the economic fundamentals of the Dorado discovery medium to long term however recognise the short termism of the current register, therefore flag to the near to medium term catalysts:

- Upward bias on Dorado volumetrics with on-going wireline and core analysis;
- Phase analysis of the Baxter accumulation;
- Phase and volume analysis of Phoenix South;
- Material prospect portfolio inventory upgrade on account of the Dorado results;
- Material Dorado appraisal and Dorado 'look-a-like' exploration drilling in CY'19;
- A material oil development opportunity at Buffalo emerging;
- Multiple farm-down/corporate opportunities;

Our Valuation takes into consideration the nearest peer in FAR as a relevant comparison, noting that the market ascribes ~A\$9bbl for its net (post Govt carry) 2C discovered 70mmbbls contingent resource.

We now ascribe a higher A\$20/bbl (prev. \$15/bbl) to the 2C volumetric est. for the Dorado oil discoveries (~35mmmbbls net to CVN = \$684m or 57cps) given:

- The jurisdiction of CVN's assets;
- Shallow water development;
- The simplicity of the Joint Venture;
- The commercial motivations of the JVP in Quadrant;
- The relative geological simplicity of the Primary Reservoir; and
- The likely shorter lead time to commercialisation as a consequence.

As a sense check we step through the effective after tax margin on the light oil discovered at Dorado at the current +A\$95/bbl oil price:

- A\$6/bbl development and appraisal capex for 100kbbls FPSO;
- \$20/bbl fixed and variable opex and sustaining capex;
- 40% PRRT and 30% Corporate tax net of PRRT credits and assumed dev opex and capex;

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This would equate to over A\$30/bbl margin before discount rate.

As a further check and on a 100kbbbls/d FPSO development of the 2C Resource of 172mmmbbls gross for 10yrs operating life, we determine an NPV10 of \$1,183m net to CVN unfinanced.

On 34mmmbbls net 2C, this equates to A\$34/bbl on our oil price assumptions ie US\$80/bbl long term from CY'21.

We apply a more conservative A\$5/boe to CVN's current 2C resources discovered at Roc and Phoenix (net -20mmboe = A\$100m or 8cps) given the relative lead time for a gas-condensate development but add the 2C volumes defined in the Baxter (net 23mmmbboe = A\$115m or 10cps) for the first time.

These numbers are pre any volumes defined at Phoenix South-3.

We contest that inclusion of the Baxter volumes into the broader defined Phoenix Hub discoveries go a long way to justifying standalone development.

We est. cash at \$50m (5cps) and broader exploration portfolio at \$150m (13cps). We consider a regional stratigraphic trap may underpin Dorado and Roc discoveries and additional high grade exploration targets have matured as a consequence of the Dorado results.

And in all this, the potential development of 30mmmbbls of oil at Buffalo should not be overlooked: We include 10% of our back of the envelope economic assessment of a Buffalo Development (for \$33m or 3cps) in our total Valuation.

Outside of which, given the open register and material interests in both Phoenix Hub plus Buffalo, there appears little to dissuade corporate approaches in a sector buoyed by rising commodity periods and a 4yr hiatus in terms of field development and exploration.

We note that with the rising oil price, the E&P industry – dormant for the past 3 years – is seeking to re-invigorate its new ventures' portfolios (<http://www.finderexp.com/wp-content/uploads/2017/09/Media-Release-WA-520-P-Finder-Woodside-Farmin-1-Sept-2017-Final.pdf>).

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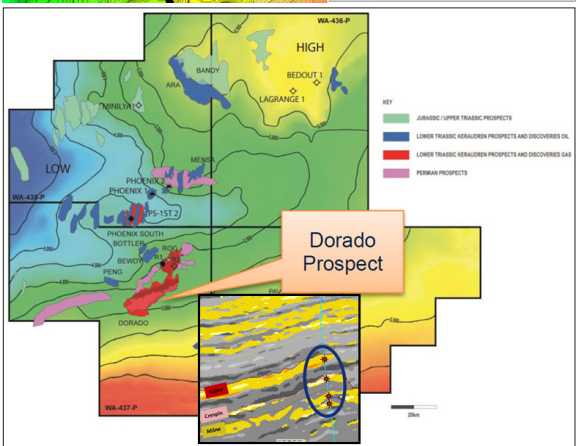
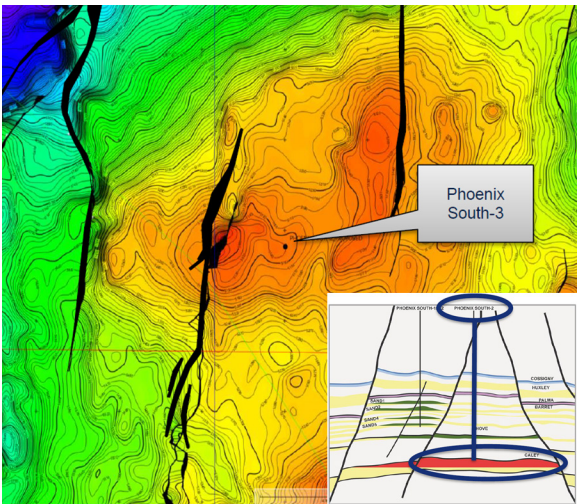
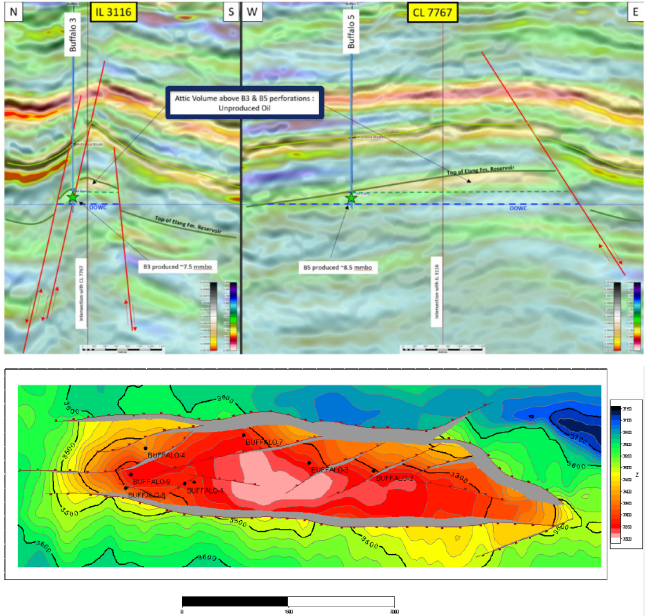
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Key Variables

| Euroz Forecast | FY'18 | FY'19 | FY'20 | FY'21 | FY'22 | FY'23 |
|----------------|--------|--------|--------|--------|--------|--------|
| Brent US\$/bbl | \$64 | \$78 | \$85 | \$85 | \$85 | \$85 |
| WTI US\$/bbl | \$59 | \$68 | \$75 | \$80 | \$80 | \$80 |
| AUDUSD | \$0.78 | \$0.76 | \$0.76 | \$0.78 | \$0.78 | \$0.78 |

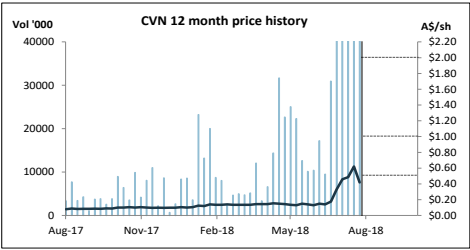


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Our Share Price Sensitivity



Our Market Sensitivity

Valuation - \$0.94/sh

Price Target - \$1.00/sh

Bull Scenario - \$2.00/sh

CVN find additional Dorado or sister oil discoveries. Oil prices continue to rise beyond our long term US\$80/bbl WTI forecast from 2022. High oil price attracts greater opportunistic interest for JV farm-in and debt funding, enabling project development of Buffalo and Labrynth prospects.

Base Scenario - \$1.00/sh

Oil prices trend gradually towards our long term oil price assumption of US\$80/bbl from 2022. CVN have leveraged themselves by exploring undeveloped oil prospects and readying them for M&A opportunities.

Bear Scenario - \$0.50/sh

Oil prices fall to below US\$50/bbl over the medium to long term. Funding for prospect development diminishes. Projects remain idle.

Company Summary

Carnarvon Petroleum Ltd (CVN) is an oil and gas exploration and development company. CVN has secured multiple assets and arceage on the North West Shelf, developing with the aim to attract farm-in or acquisitions.

Drilling campaigns of Phoenix Sth-3 and Dorado-1 represent near-term catalysts for CVN to trade upwards.

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The projections and information above is based on the set assumptions outlined. Due care and attention has been used in the preparation of this information. However actual results may vary from forecasts and any variation may be materially positive or negative. Forecasts by their very nature, are subject to uncertainty and contingencies, many of which are outside the control of Euroz.

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