

# Corporate Presentation

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EUROZ HARTLEYS

8 March 2022

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The resource estimates outlined in this presentation are based on and fairly represent information and supporting documentation prepared 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 Degree in Engineering, a Masters 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.

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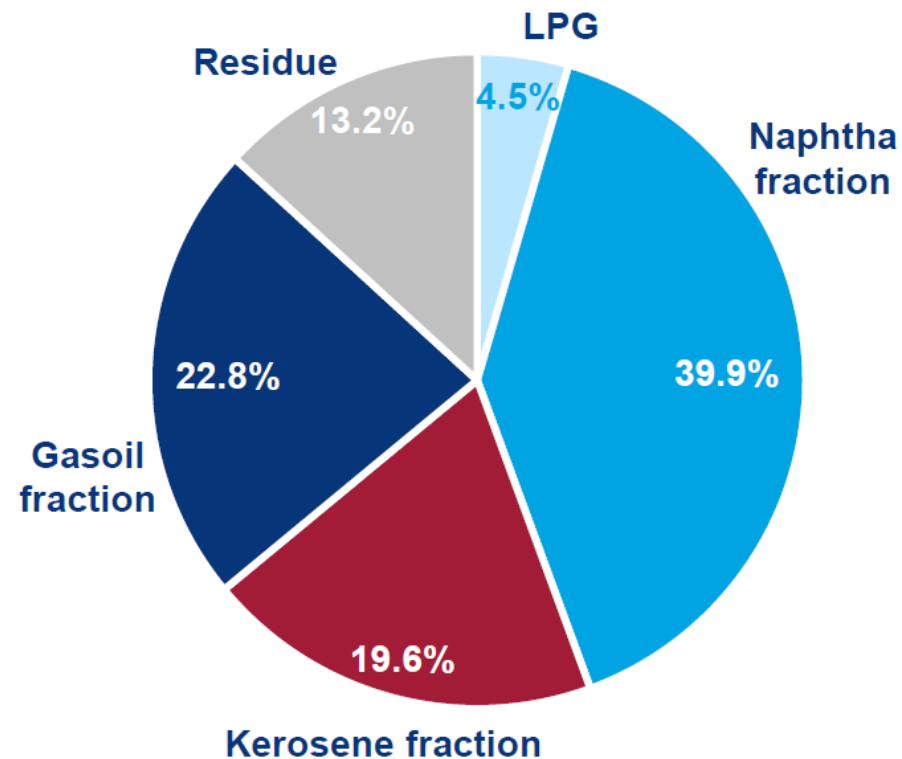


*Today's presentation highlights*

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- *Dorado oil* Strong macro & Dorado specific product demand
- *Dorado development* 2022 will be transformational for Carnarvon on FID
- *Bedout basin holding* Very large potential & Pavo de-risks many prospects

## *Dorado crude properties* (% by volume)



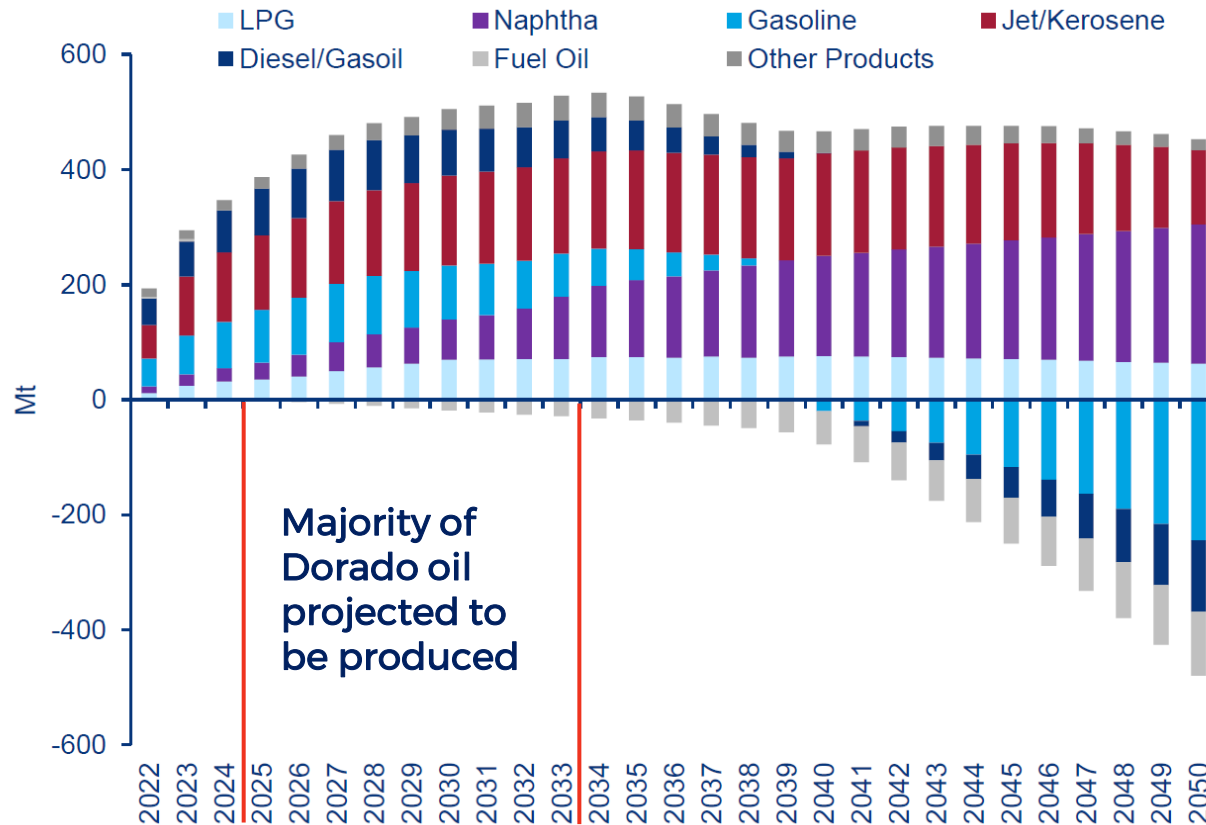
### Examples of Dorado crude uses

- Petrochemicals
- Jet & other transport fuels

### Dorado crude is categorized as

- Light / extra light (51° API)
- Sweet (defined by its low 189 ppm Sulphur content)

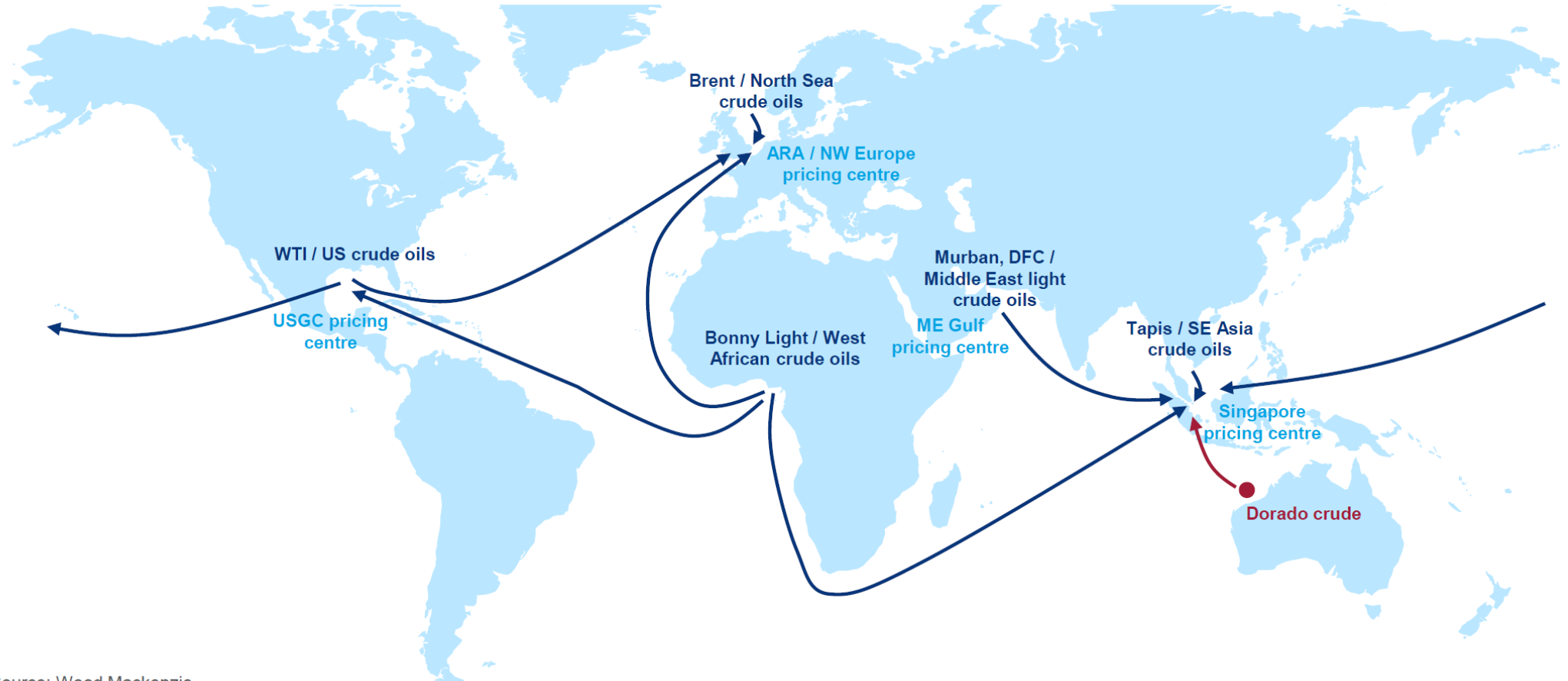
# Changes in product demand from light / extra light crudes



- ✓ Naphtha demand growth (petrochemical feedstock)
- ✓ Jet/kerosene demand growth
- ✓ Dorado crude refined products weighted to growth areas
- ✓ Dorado production well timed into forecast growth profile

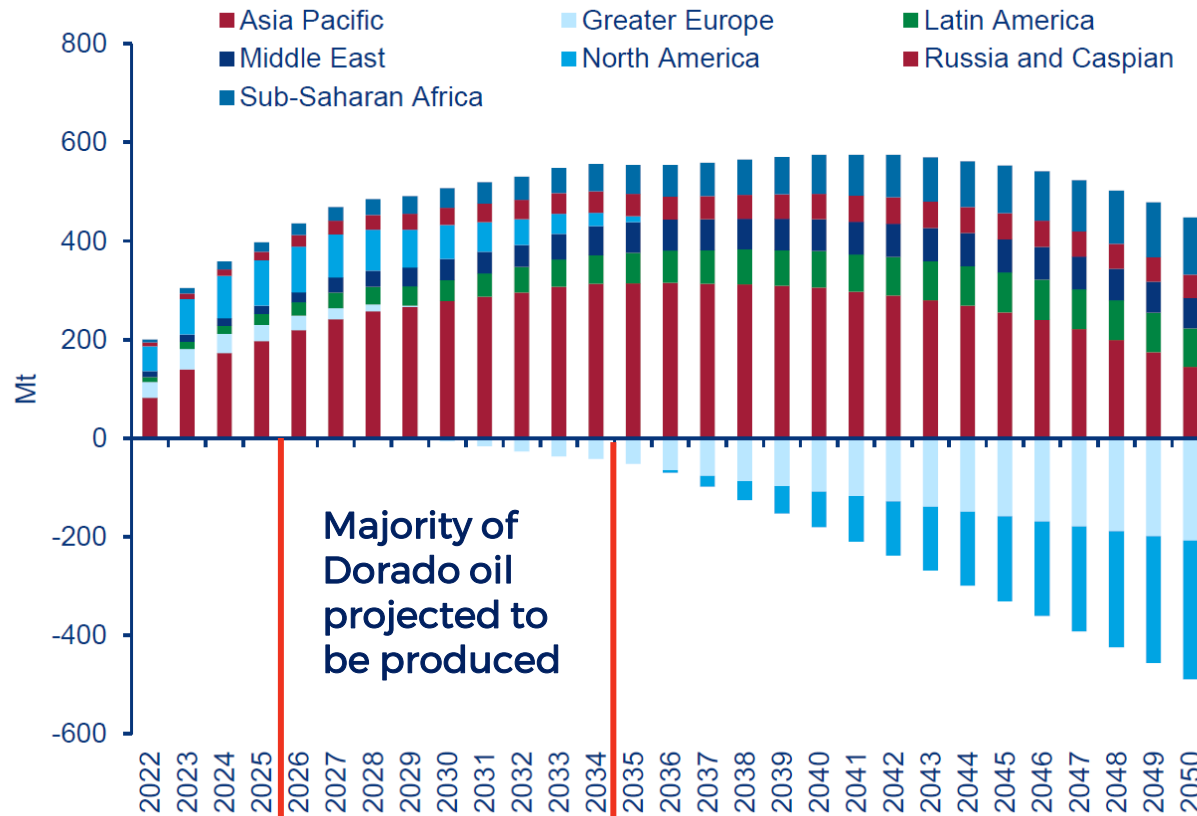
Source: Wood Mackenzie

 *Dorado positioned to support Asian demand growth*



Source: Wood Mackenzie

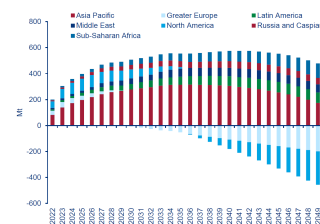
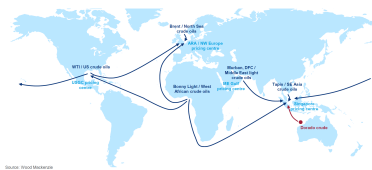
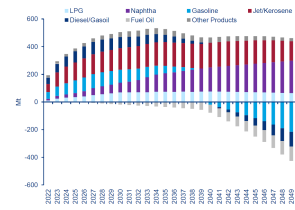
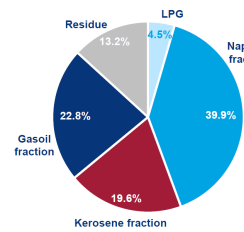
# Changes in regional demand for light / extra light crudes



- ✓ Strong demand growth
- ✓ Driven from Asia Pacific
- ✓ Dorado production timing and location is ideal

Source: Wood Mackenzie

# Dorado refined products and demand forecasts are attractive



## ✓ Dorado refined products right

- Naphtha for petrochemicals
- Jet and other transport fuels

## ✓ Dorado timing right

- Demand growth projected in Dorado's main production window

## ✓ Dorado location right

- Well located to supply growth projections in the Asian markets
- Fuel security benefits

Source: Wood Mackenzie



## *Recap on the Dorado project (CVN 20%)*

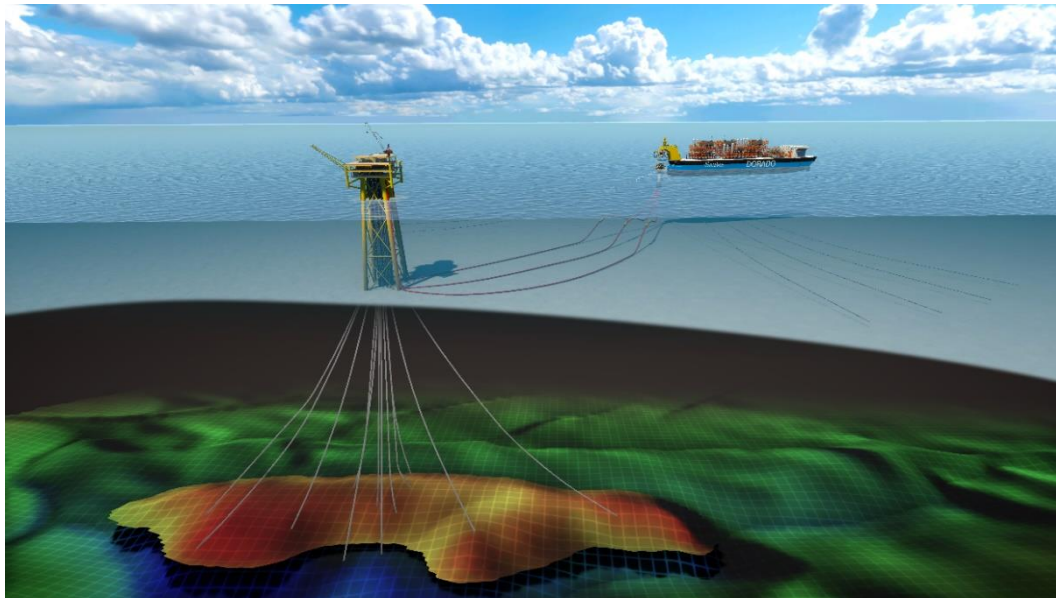


Dorado discovered in 2018 & appraised in 2019.  
Photo of Noble Tom Prosser drilling rig.

- **Contingent resource of 162mmbbls**  
(gross 2C basis)
  
- **Phase 1 – liquids production**
  - ✓ Working to be FID ready by mid-2022
  - ✓ Targeting initial 75,000 to 100,000 bopd flow rate (gross) in 2026
  
- **Phase 2 – gas and LPG production**
  - ✓ In concept phase, with timing objectives to align with oil production decline

## *Dorado phase 1 current status (CVN 20%)*

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The development plan includes multiple production and injection wells, a well head platform supplying an FPSO

- **Conceptual design** work complete on subsurface, WHP and FPSO
- **FEED work** advancing to finalise capital cost and execution plan, along with required contracts
- Production License and Offshore Project Plan prepared for **regulatory approval**, Field Development Plan well advanced

# *Optimizing Carnarvon's Dorado funding position*

## Dorado's attraction for financiers

- Strong debt servicing capacity
  - Low operating cost per barrel
  - Material early free cash flows
- Australian jurisdiction
- Experienced operator

## Senior debt

- Technical DD commenced Sept 2021
- Commercial engagement commencing in Q2, 2022
- In discussion with >10 quality lenders

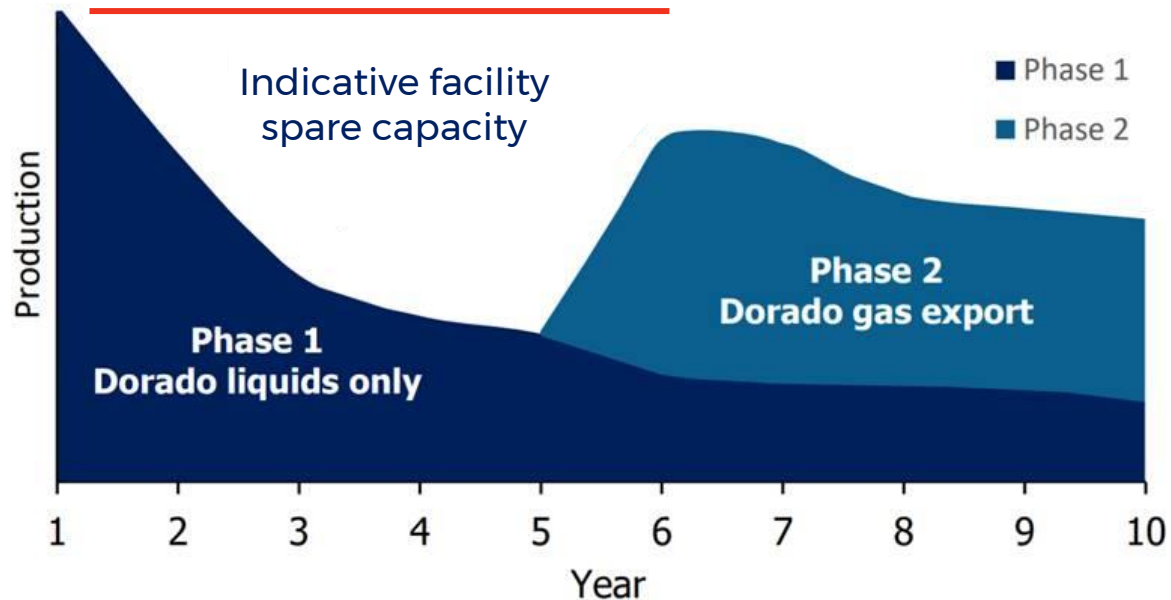
## Mezzanine finance

- Finance in addition to senior debt
- Junior debt, offtake prepayment and royalty funding
- In discussion with >5 providers

## Divestment

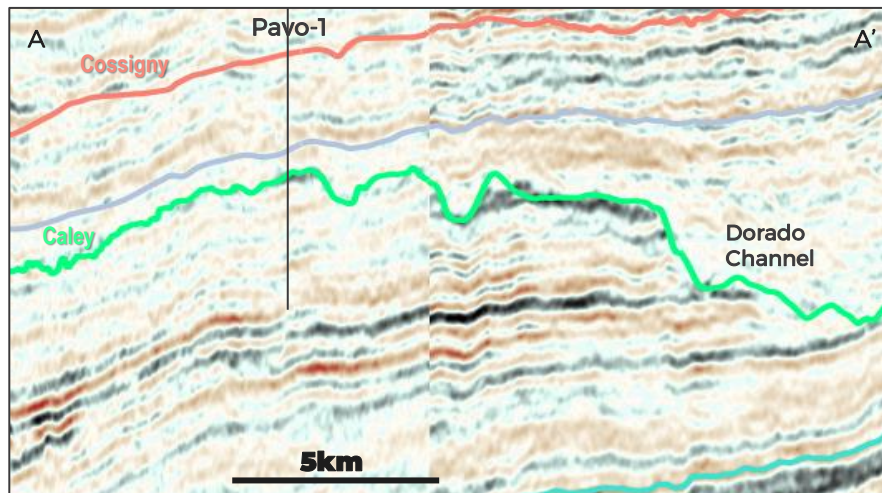
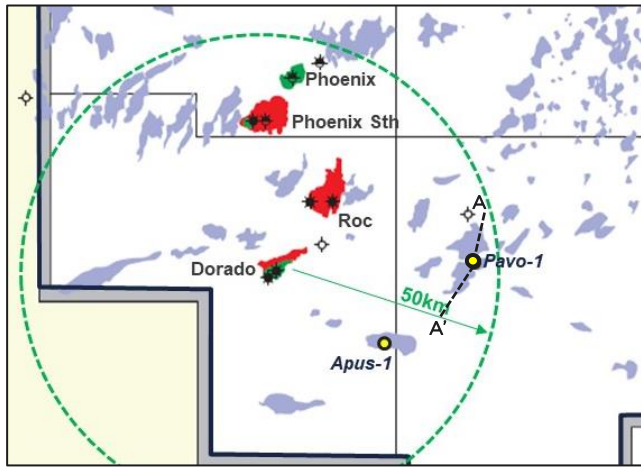
- Azure Capital engaged Jan 2022
- Process commencing in March 2022
- Reducing project equity lowers net capex and increases cash for funding

## Dorado phase 2 (CVN 20%)



- ✓ Near field discoveries are compelling
  - Value in utilizing existing facilities
  - Pavo & or Apus near term wells
  - Substantial future Bedout potential
- ✓ WHP has options to expand capacity
- ✓ Flexibility exists in timing of gas export

# Pavo-1 exploration well (CVN 30%)



## In Progress

**Location**

42 km east of Dorado

**Key Risks (pre-drill)**

Charge & top-seal

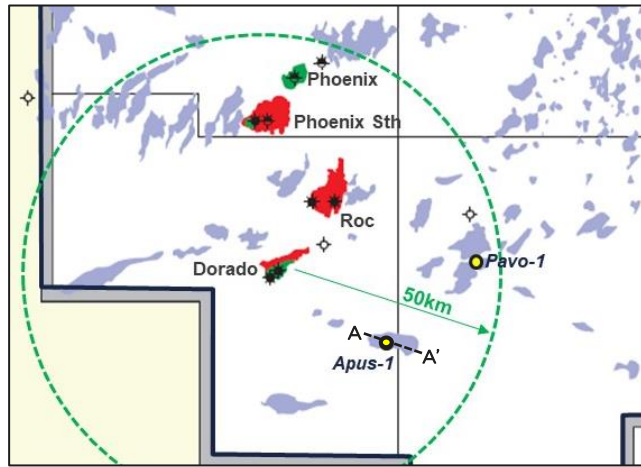
**Status**

- ✓ Elevated gas & increased resistivity over 57m interval ( 2,944-3,001m MD)
- ✓ Strong indications of hydrocarbons
- ✓ Wireline logging next phase

### Positive outcomes so far:

- Hydrocarbon charge 40+km east of Dorado
- Reduction of key risks for many prospects

# 📍 Apus-1 exploration well (CVN 20%-30%)



## To follow Pavo-1

**Location**

31 km southeast of Dorado

**Targets**

Caley & Milne Member sands

**Key Risks**

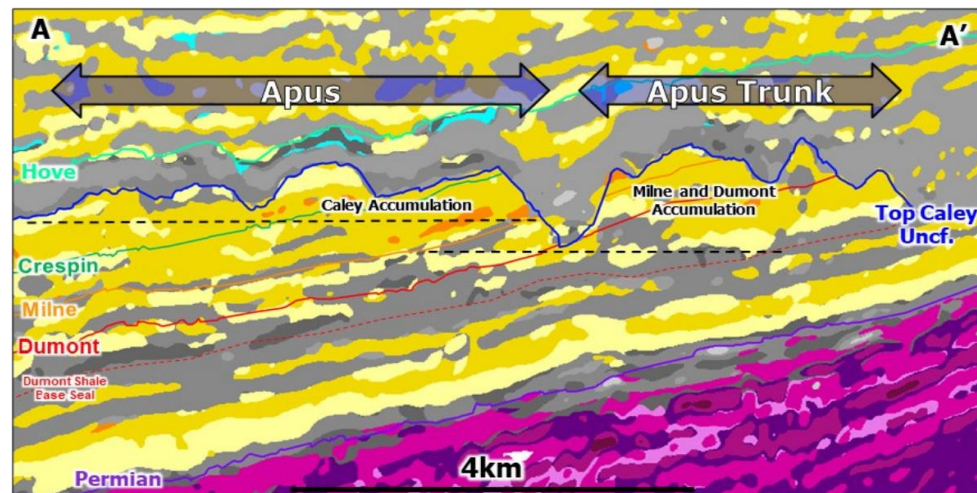
Charge & Top-seal

**Volumes\***

- ✓ Liquids: 235 mmbbl; and
- ✓ Gas: 408 Bcf (100%, mean)

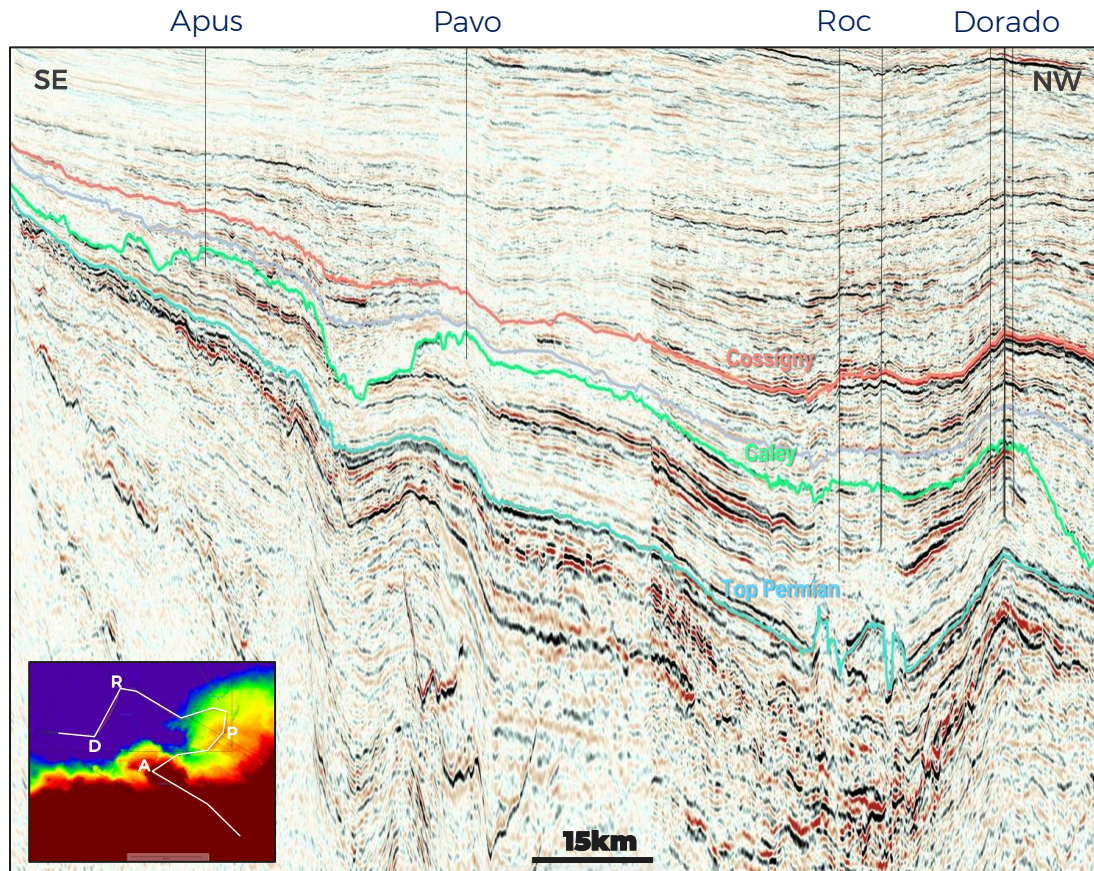
**Risk**

- ✓ 23% Pg
- ✓ Pavo-1 positive for key risks
- ✓ HRDZ's possible mitigations



*\*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 is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.*

# *Bedout basin is being de-risked*



## All geological elements are in place

- Reservoir – clean, porous, quartzose, preserved at depth
- Source – widespread, interbedded, rich (liquids/gas)
- Seal – four excellent regional; many semi-regional seals
- Trap – wide range, stratigraphic & structural

## Hydrocarbon generation, pooling, preservation

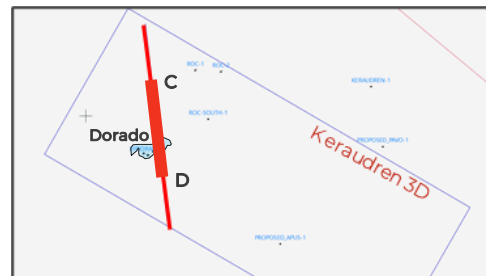
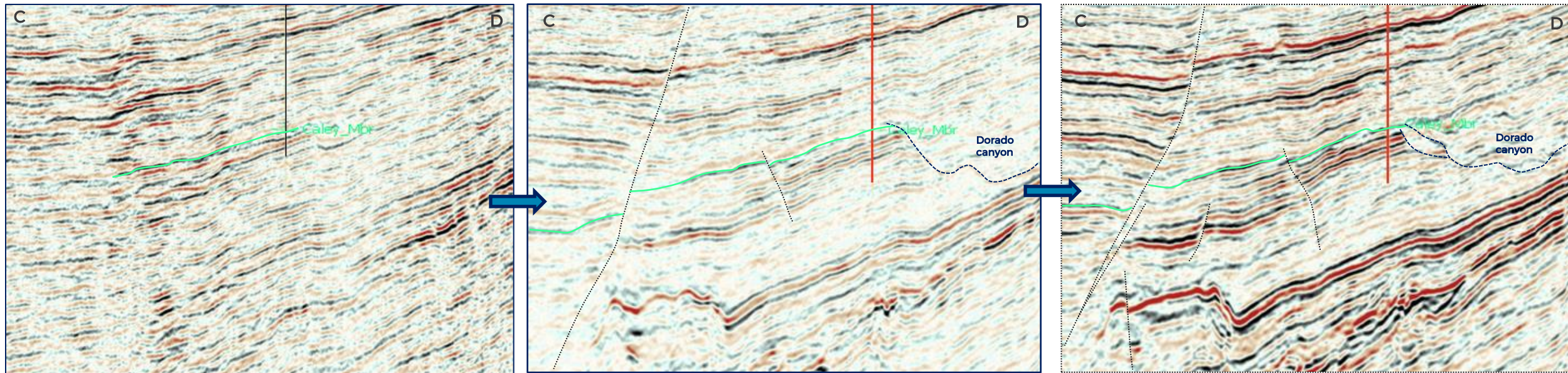
- Timing - favourable depositional and event sequences
- Structuring - early, gentle; no disruptive tectonic uplift
- Temperature - gently ‘cooked’ source rocks, preserved sands
- Efficiency - many traps, local source; minimized dispersion

**Quality 3D seismic data are contributing to Bedout results**

2D (1987, repro.)

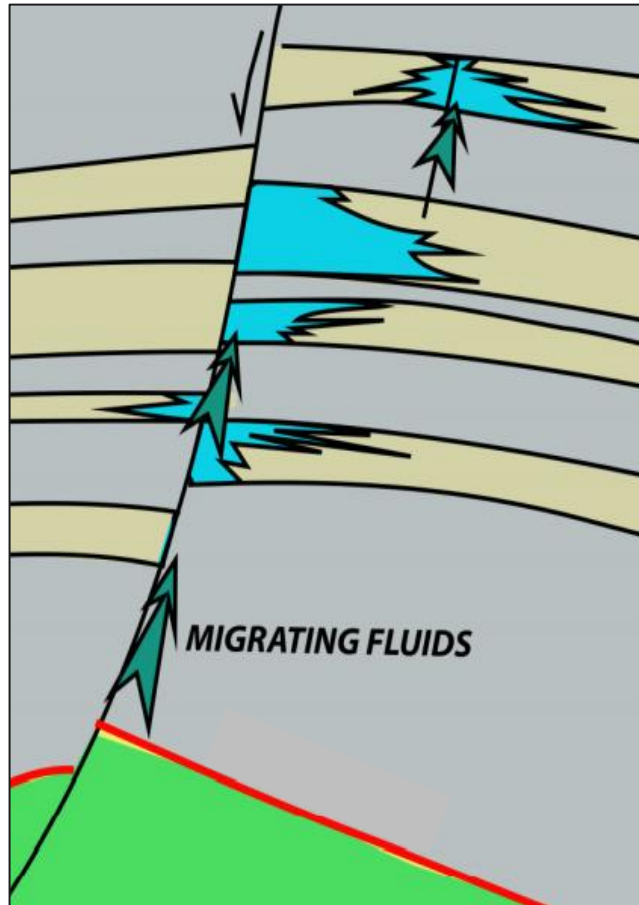
3D (2019)

3D (2021 repro.)





# An exciting possibility for seismic data to de-risk future prospects

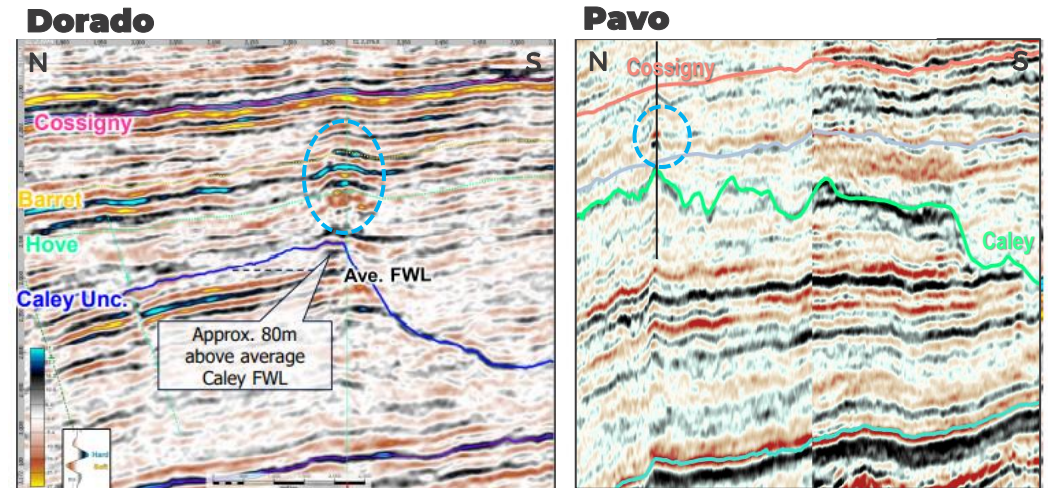


## Fluid Escape Features (FEF's)

Fluids that escape from a structure can create a seismic signature – often a sign that hydrocarbons are, or were, present

## An interpretation

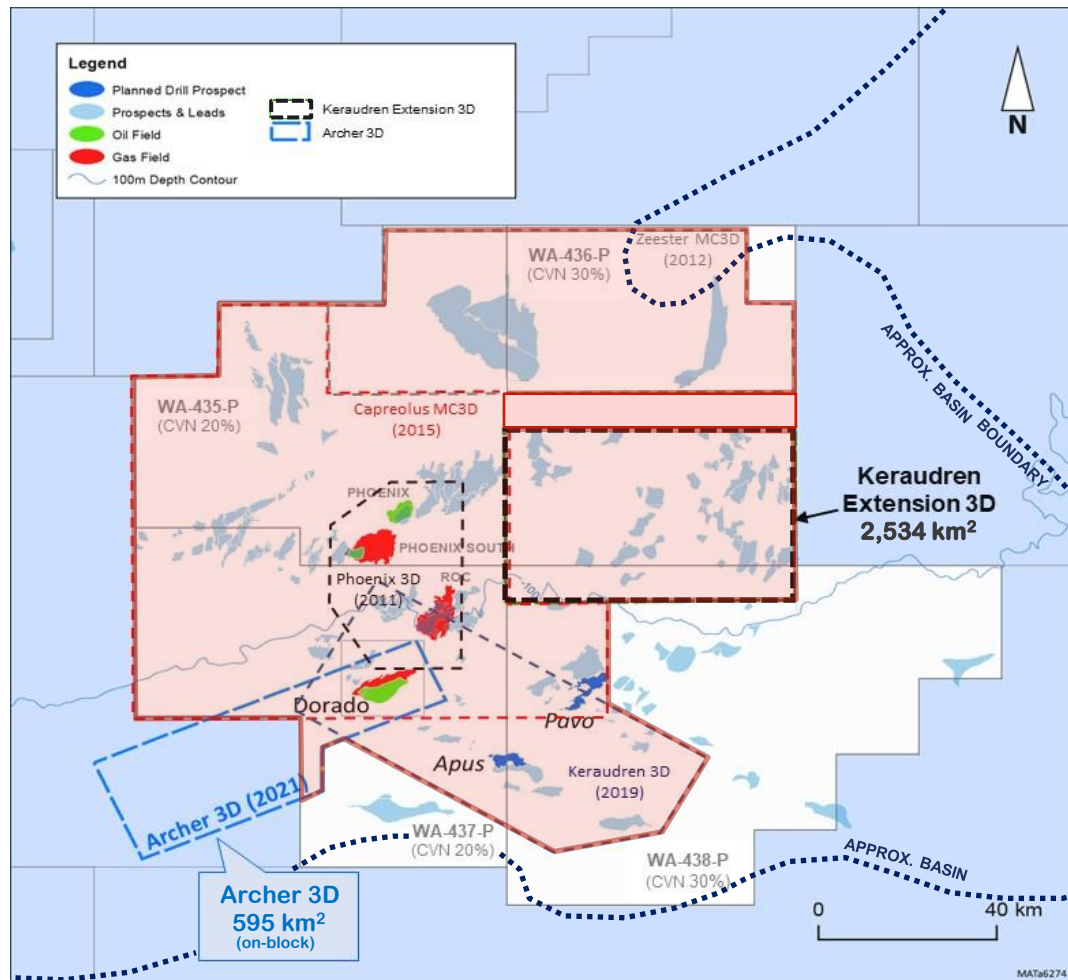
Positive indications of an 'over-supplied' petroleum system, with partial leakage of migrating hydrocarbons



## In the Bedout

- A FEF looks to have been intersected at Roc-2 in tight, cemented sandstones with good shows
- FEF like seismic signatures are present at Phoenix, Roc and Dorado; but absent at the dry holes at Keraudren-1 & Roc South-1
- There are FEF like seismic signatures at Pavo and Apus; and many other Bedout basin prospects

# Quality 3D seismic data now covers most of the Bedout basin



## Two new 2021 3D seismic surveys will mature and de-risk key leads and prospects

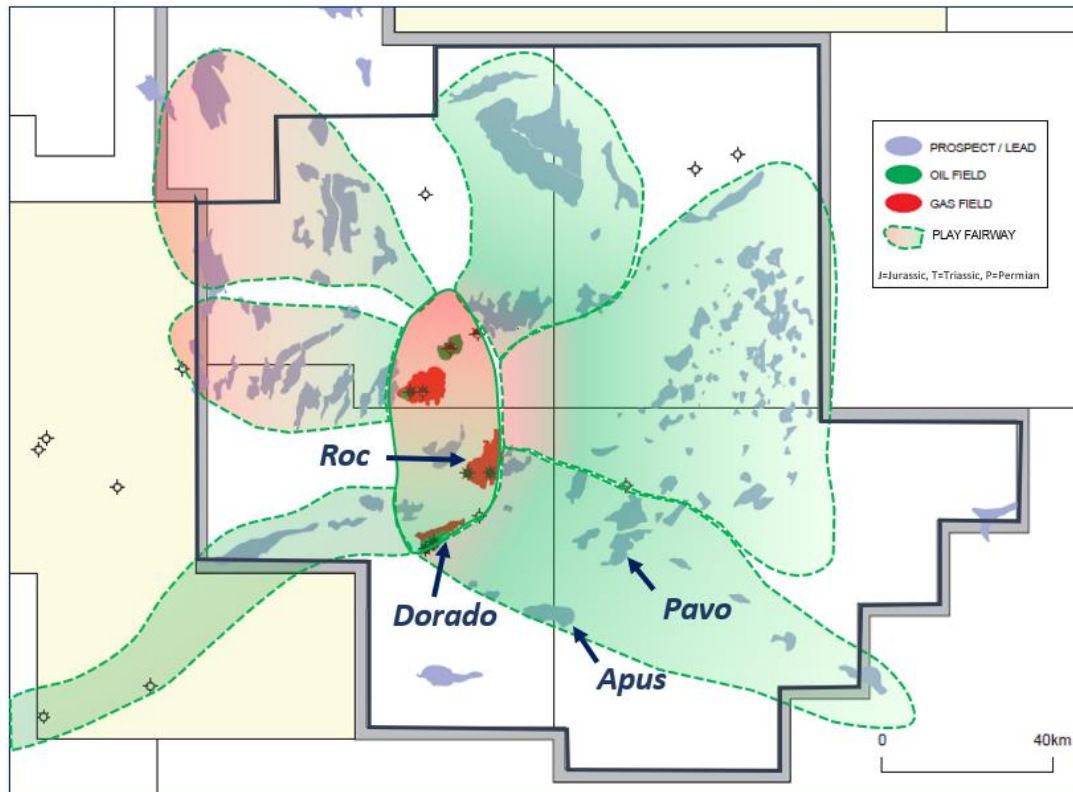
- Archer 3D, 595 km<sup>2</sup> – Dorado near-field prospects
- Keraudren Ext. 3D, 2,534km<sup>2</sup> – eastern lead complex

Processed data available early 2022

Permits now 68% covered by 3D seismic, imaging the most prospective basin area

Some residual areas may be covered in future seismic programs

## *Bedout basin offers significant potential (CVN 20%-30%)*



Green shading is indicative of liquids weighted hydrocarbon potential and red shading is indicative of gas weighted hydrocarbon potential.

- ✓ ~100 drill targets identified
- ✓ Prospective for both liquids and gas
- ✓ ~70% of the basin now covered in modern 3D seismic data
- ✓ Only <10% of the area, and 2 of 12 plays, have been explored up to 2022

### **Pavo-1 outcomes very encouraging:**

- Charge proven outside core area
- Key risks reduced for many prospects

# Renewable “oil”

Plan to produce renewable diesel and biochar in Western Australia (CVN 50%)

## Commercial highlights:



Renewable diesel production is a strategic initiative



Complements our world class conventional energy portfolio



Strengthens Carnarvon's ESG credentials



Business has multiple avenues to scale-up



Carbon sequestration and feedstock harvesting through energy crop plantations



Internationally based technology - operating for the past six years



Produces renewable diesel, high-grade biochar and wood vinegar



Feedstock sourced from a wide range of sustainably sourced waste biomass and energy crops



Projected to be earnings accretive with up to 20 opportunities identified in Western Australia



Carbon neutral with the potential to generate ACCUs (ie be carbon negative)

	RENEWABLE DIESEL	BIODIESEL
End-use	Replacement for conventional diesel	Needs to be blended with conventional diesel (typically 80/20 ratio)
Feedstock	Waste woody biomass	Vegetable oils or animal fats
Typical vehicle modification requirements	None	Fuel system upgrades typically required
GHG emissions profile*	90 - 120% less than conventional diesel	10 - 15% less emissions than conventional diesel

First Project Target FID in late 2022



# Carnarvon's ESG commitments and investment in the transition

**Net zero emissions by 2050**  
6 July 2021



**Highlights**

- Carnarvon commits to achieving net zero emissions by 2050, if not earlier
- All of Carnarvon's current existing emissions will be offset
- The immediate business focus remains on delivering value in Dorado and Buffalo projects
- In parallel the Company is developing a roadmap to achieve its net zero emissions objective

Carnarvon Petroleum Limited ("Carnarvon") [ASX:CVN] recognises that climate change is an important global challenge that requires action to transition to a lower carbon environment.

Carnarvon has an important role to play in this transition, which offers unique challenges and opportunities for the Company.

We are currently in the process of developing our roadmap to a lower carbon economy and expect that the direction we take will evolve over time utilising a variety of technologies.

As world population grows energy usage will rise. The challenge is to meet this demand in a manner that is within the UN Sustainable Development Scenario and achieves the Paris Agreement commitments.

Carnarvon recognises the challenges associated with reducing and offsetting emissions from oil and gas operations as well as the opportunities that the transition presents in alternative technologies and materials.

Carnarvon supports the commitments of the Paris Agreement and the need to reduce and offset greenhouse gas emissions.

We commit to achieving net zero emissions by 2050, if not earlier. Accordingly, Carnarvon has adopted a Climate Policy which is available on our website.

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

*"In our first step to achieving net zero emissions by 2050, Carnarvon will offset all its current Scope 1 and Scope 2 emissions, which at this time are derived from our head office.*

*With respect to our future assets such as Buffalo and Dorado, we are committed to working with our partners to reduce emissions from the proposed operations and will continue to develop our plans to offset emissions from these projects as they mature.*

*Carnarvon will also seek to diversify its portfolio over time into lower carbon intensive assets which provide appropriate returns to shareholders. However, in the near term, our short-term goal is to deliver our core projects safely and responsibly."*

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Net zero commitment

**2021 SUSTAINABILITY REPORT**







Carnarvon Petroleum Limited  
ABN 60 002 688 851

Sustainability reporting



Renewable diesel investment

## 1. Corporate snapshot (ASX code: CVN)

-  2022 will be transformational for Carnarvon upon Dorado liquids development FID
-  Dorado funding plans advancing across senior and mezzanine debt and divestment
-  Substantial growth potential with ~100 Bedout exploration targets & positive drilling results

## 2. Market value of ~A\$420 million

-  Current share price of A\$0.27 (52 week range of A\$0.21 to A\$0.36)
-  Cash of A\$77 million at 31 December 2021, no debt

## Appendix 1: Resource tables

# Bedout Basin Contingent Resources

Gross resources (100% basis)

	Oil and Condensate			Natural Gas			Barrels of Oil Equivalent <sup>1</sup>		
	MMbbl			BCF			MMboe		
	1C	2C	3C	1C	2C	3C	1C	2C	3C
Dorado	86	162	285	367	748	1358	176	344	614
Roc	12	20	35	205	332	580	48	78	137
Bedout Project Sub Total	98	182	320	572	1080	1938	224	422	751

Net Resource (CVN's shares)

	Oil and Condensate			Natural Gas			Barrels of Oil Equivalent <sup>1</sup>		
	MMbbl			BCF			MMboe		
	1C	2C	3C	1C	2C	3C	1C	2C	3C
Dorado	17	32	57	73	150	272	35	69	123
Roc	2	4	7	41	66	116	10	16	27
Bedout Project Sub Total	20	36	64	114	216	388	45	85	150



# Bedout Basin Selected Prospective Resources

## Prospective Resources (100% basis)

	Light Oil				Natural Gas				Barrels of Oil equivalent				Pg
	MMbbl				BCF				MMboe				%
	P90	P50	Mean	P10	P90	P50	Mean	P10	P90	P50	Mean	P10	
Pavo	Resource estimate to be revised following completion of the Pavo-1 well												
Apus	26	160	235	537	537	211	408	963	31	197	307	706	23%
Petrus	12	36	46	90	15	53	79	170	15	46	60	120	29%
Kepler	3	8	12	26	3	12	21	47	3	11	16	34	30%
<b>Bedout Project Total</b>	<b>41</b>	<b>205</b>	<b>293</b>	<b>653</b>	<b>48</b>	<b>276</b>	<b>509</b>	<b>1180</b>	<b>50</b>	<b>253</b>	<b>382</b>	<b>860</b>	

## Prospective Resources (Net to CVN basis)

	Light Oil				Natural Gas				Barrels of Oil equivalent				Pg
	MMbbl				BCF				MMboe				%
	P90	P50	Mean	P10	P90	P50	Mean	P10	P90	P50	Mean	P10	
Pavo	Resource estimate to be revised following completion of the Pavo-1 well												
Apus	7	40	59	134	7	53	102	241	8	49	77	177	23%
Petrus	2	7	9	18	3	11	16	34	3	9	12	24	29%
Kepler	1	2	2	5	1	2	4	9	1	2	3	6	30%
<b>Bedout Project Total</b>	<b>10</b>	<b>49</b>	<b>70</b>	<b>157</b>	<b>11.2</b>	<b>66</b>	<b>122</b>	<b>284</b>	<b>12</b>	<b>61</b>	<b>92</b>	<b>207</b>	

*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 is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.*



# **Generating value through the energy transition – a contemporary approach that integrates conventional assets and renewables**

## **HEAD OFFICE**

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