

21 September 2022

Company Announcements Office  
ASX Limited

Dear Sir / Madam

**Brazil Field Trip Investor Presentation**

Enclosed is a presentation to be made by Karoon Energy's Chief Executive Officer and Managing Director and other Karoon Energy executives later today.

As set out in the presentation, it is noted that:

- the timing for the BAN-1 oil well intervention is currently being reviewed; and
- the workover to install a new electric submersible pump in the SPS-92 oil well has been completed with the well being brought back online. Karoon Energy currently intends to update the market once stabilised production rates from SPS-92 are attained.

This announcement was authorised for release by the Chief Executive Officer and Managing Director.

Yours faithfully



**Philip Thomas**  
Company Secretary

# Karoon Energy Brazil Field Trip

September 2022



# Disclaimer



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Petroleum exploration and operations rely on the interpretation of complex and uncertain data and information which cannot be relied upon to lead to a successful outcome in any particular case. Petroleum exploration and operations are inherently uncertain and involve significant risk of failure. All information regarding reserves and resource estimates and other information in relation to Karoon's assets is given in the light of this caution.

This presentation may contain certain 'forward-looking statements' with respect to the financial condition, results of operations and business of Karoon and certain plans and objectives of the management of Karoon. Forward looking statements can generally be identified by words such as 'may', 'could', 'believes', 'plan', 'will', 'likely', 'estimates', 'targets', 'expects', or 'intends' and other similar words that involve risks and uncertainties, which may include, but are not limited to, the outcome and effects of the subject matter of this presentation. Indications of, and guidance on, future exchange rates, capital expenditure, earnings and financial position and performance are also forward-looking statements.

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Julian Fowles

CEO and Managing Director

Welcome

# KAROON'S STRATEGIC OBJECTIVES



Deliver base production and sanctioned projects to create foundation for further growth

- ▶ Execute Baúna base business, with focus on safety, reliability, strict capital controls
- ▶ Deliver sanctioned intervention and Patola development projects
- ▶ Re-evaluate and seek to de-risk Neon with control well(s), advancing potential development concepts
- ▶ Acquire value-accretive producing or development asset(s), leveraging existing capabilities
- ▶ Maintain resilient balance sheet, strengthened by cash flows and expanded debt capacity
- ▶ Operate sustainably, with carbon neutral<sup>1</sup> target on Baúna-Patola Scope 1 and 2 GHG emissions from FY2021 and Net Zero<sup>2</sup> by 2035, plus voluntary social projects in Brazil
- ▶ Consider capital allocation between high value growth and returns to shareholders
- ▶ Operate in line with core values:

Safety | Respect | Collaboration | Integrity | Commitment

<sup>1</sup> Carbon neutral refers to having a balance between emitting and offsetting greenhouse gas (GHG) emissions. Achieved through acquiring carbon offsets for Scope 1 and 2 GHG emissions.

<sup>2</sup> Net zero refers to reducing GHG emissions as far as possible and balancing the residual GHG emissions produced and GHG emissions removed from the atmosphere. To be achieved through future transition planning for Scope 1 and 2 emissions.





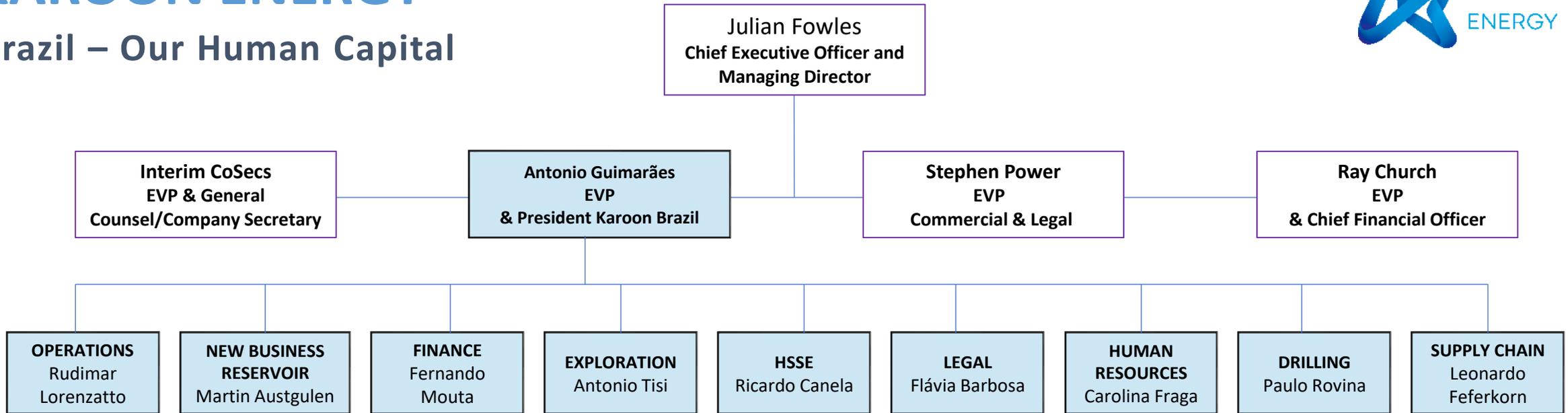
Antonio Guimaraes

EVP and President Karoon Brazil

# Introduction

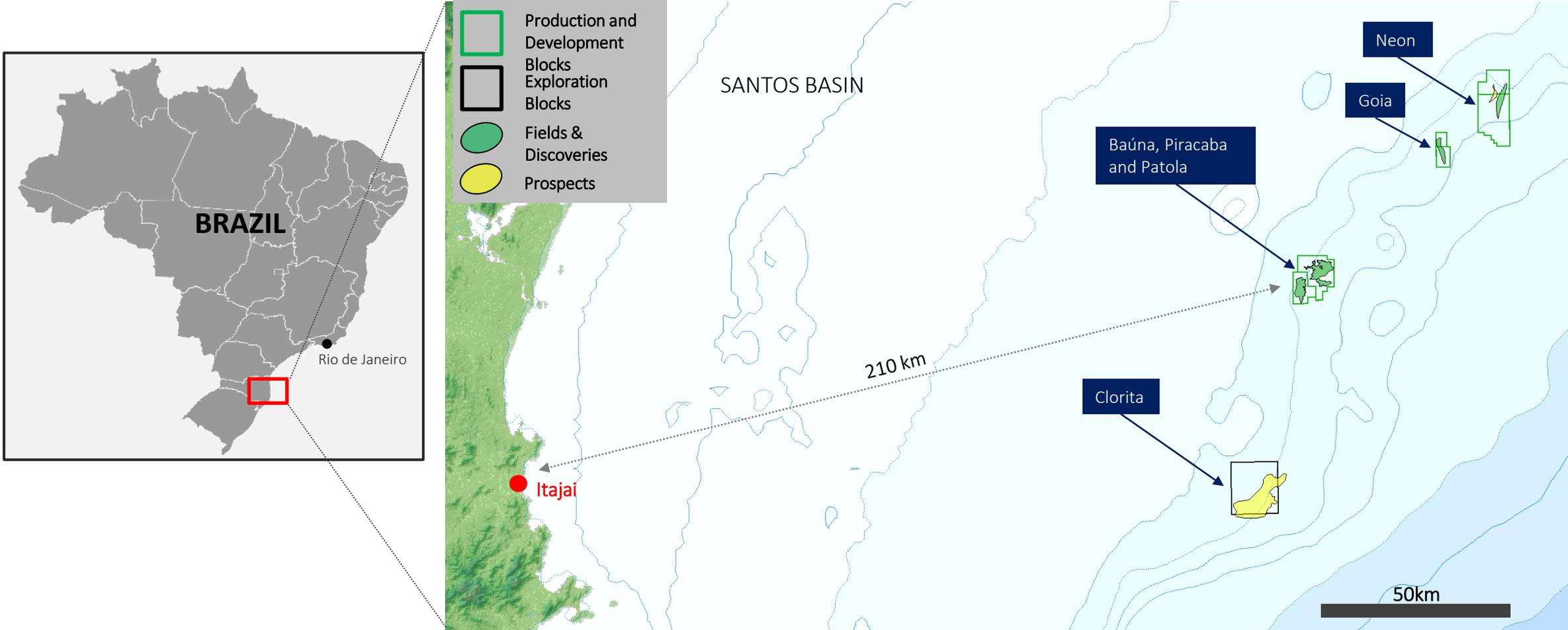
# KAROON ENERGY

## Brazil – Our Human Capital



- › Over 2,000 years of accumulated professional experience
- › 20% with at least 20 years of experience in O&G sector
- › 10 PhD and Professors. Several Recognized and Awarded in the O&G sector

# KAROON INTERESTS IN THE SANTOS BASIN, BRAZIL



# PROSPECTIVITY AND FAVOURABLE FISCAL TERMS



## Brazil: Attractive location to invest

- › Oil and gas industry well established with stable regulator
- › Long tradition of respecting contracts already in place
- › Favourable tax royalty contract terms for post salt licenses
- › Seeking to attract more investment in upstream sector
- › Large petroleum sector with numerous foreign companies present
- › Brazil is world's 9th largest oil producer, set to become fifth by 2030





Rudimar Lorenzatto  
Senior Operations VP

# Operations Overview



# BAÚNA OPERATIONS OVERVIEW



## Safe and reliable operations

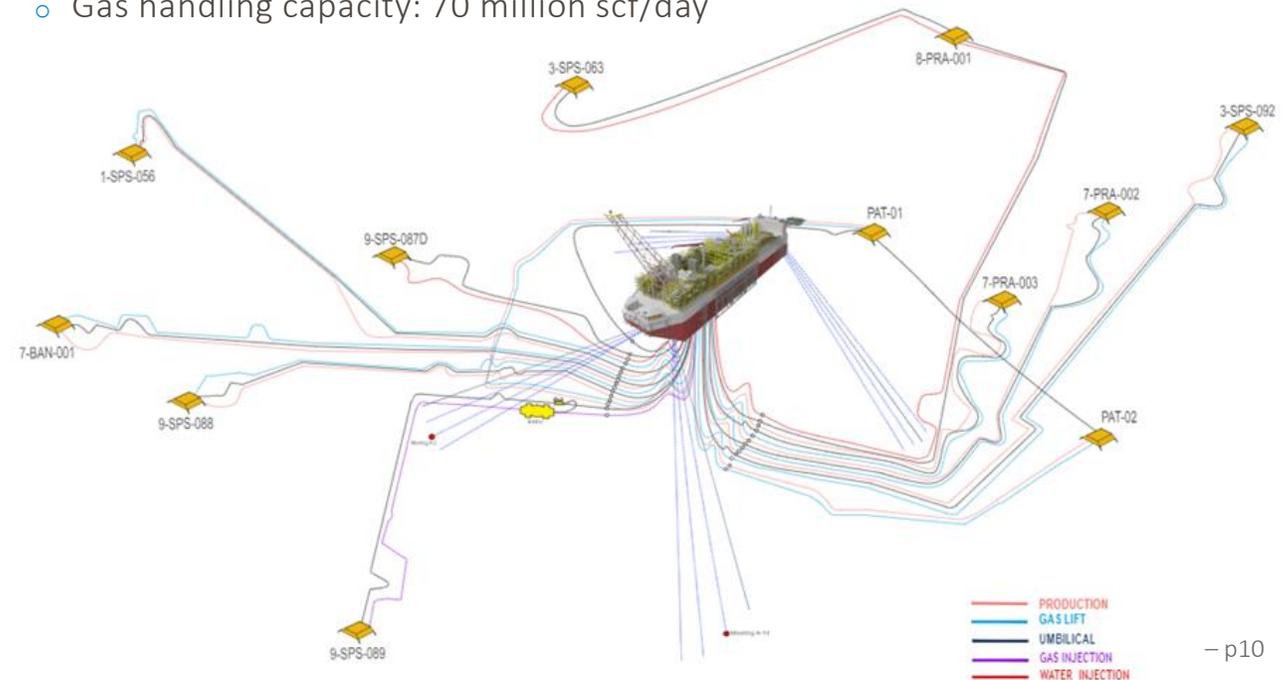


Baúna Production Unit: FPSO Cidade de Itajaí – chartered and operated by **Altera & Ocyan joint venture (A&O)**

- ▶ First Oil registered on 16 February 2013
- ▶ As at 19 September, production ~12,300 bopd of high quality, 34 °API light oil (excludes SPS-92)
- ▶ FPSO Process and Storage Capacities
  - Oil Production: 76,000 bbl/d
  - Liquids (oil & water) Production: 80,000 bbl/d
  - Crude storage: 631,000 bbl
  - Gas handling capacity: 70 million scf/day



Shuttle Tanker (Shell) Bossa-Nova performing Offloading operation



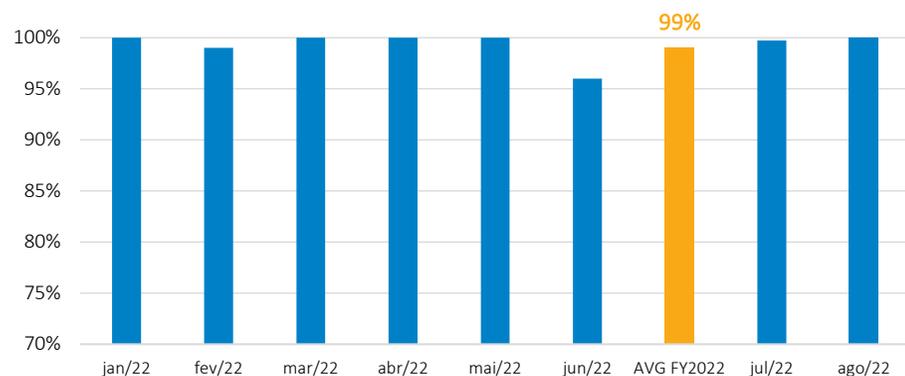
Baúna Wells and Subsea Systems of Baúna Field Layout

# BAÚNA ASSET OPERATING PERFORMANCE

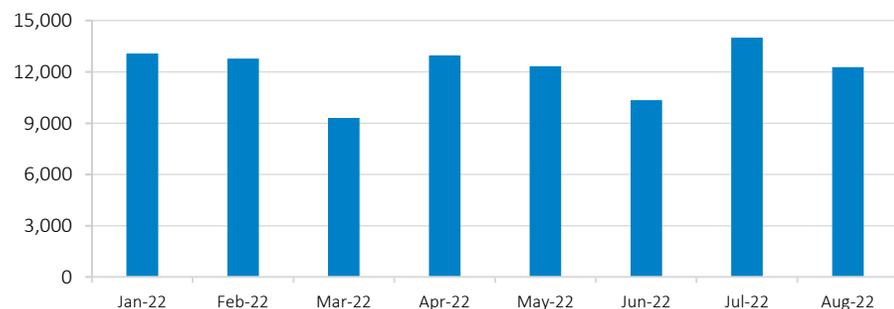


High facilities uptime and active well management

FPSO FACILITIES UPTIME IN FY2022<sup>1</sup>



PRODUCTION RATE (BOPD)



## FOCUS ON PROCESS SAFETY, FACILITY INTEGRITY AND PREVENTIVE MAINTENANCE

- › Average operational uptime over 99% in FY2022, excluding scheduled shutdowns
- › Reflects work undertaken on FPSO:
  - › Improved maintenance plan
  - › Integrity management (e.g., approx. 100 tonnes of piping replaced since Jan 2021)
  - › Re-established process plant redundancies (two production trains)
  - › Re-establish equipment that was out-of-service, to improve operational robustness of unit
  - › Changed four out of five gas turbines
  - › Main gas compressors overhaul ongoing
  - › Offloading hose replacements (forward hose installed in 2021, aft planned for 2H2022)
- › Production from May onwards impacted by intervention campaign (see slide 15)

1. Excluding scheduled shutdowns for maintenance

# BAÚNA MAINTENANCE EXAMPLES

## FPSO Cidade de Itajaí Preservation and Painting Plan

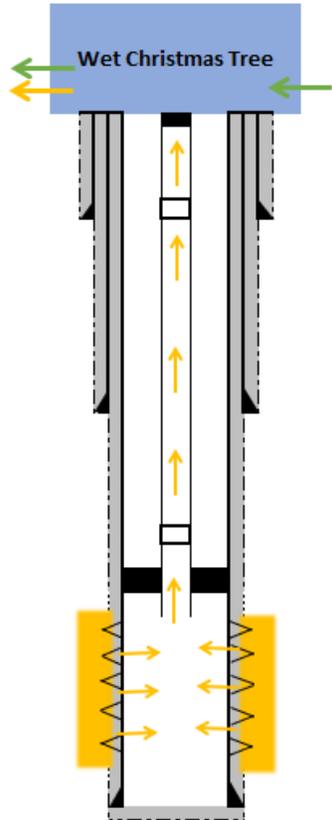


Water Injection System *before* (left) and *after* (right) treatment



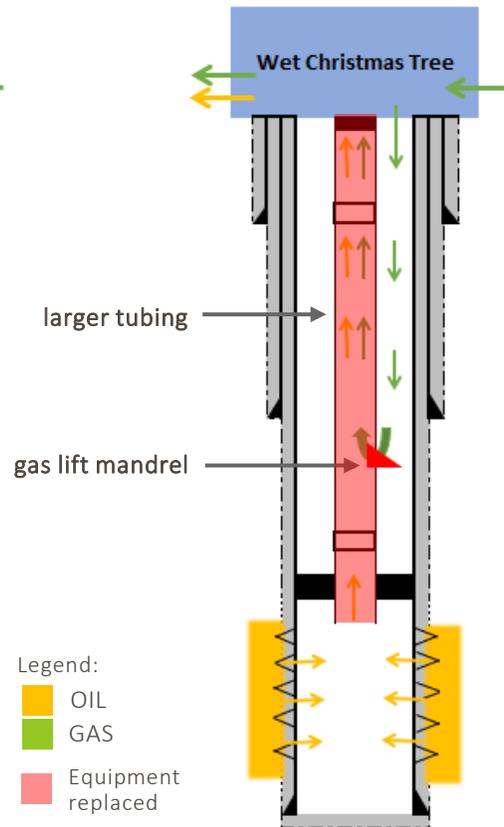
# BAÚNA WELL WORKOVERS

## 1-SPS-56 WELL BEFORE INTERVENTION



750 bopd

## 1-SPS-56 WELL AFTER INTERVENTION



oil production

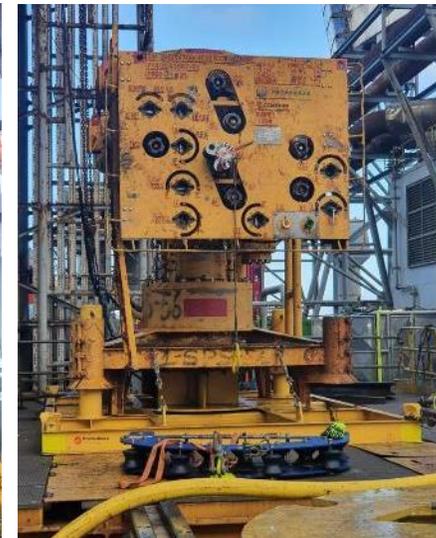
3,700 bopd

- › Objective of Karoon's intervention campaign is to increase oil production by improving completion equipment (ESP, gas lift system and subsea Christmas tree)
- › Artificial lift study was implemented to determine the optimal intervention approach for each well

## KAROON'S SUBSEA AND COMPLETION EQUIPMENT ON MAERSK RIG



Tubing Hanger



Wet Christmas Tree



Electrical Submersible Pump (ESP)

# MAERSK DEVELOPER RIG CAPABILITIES

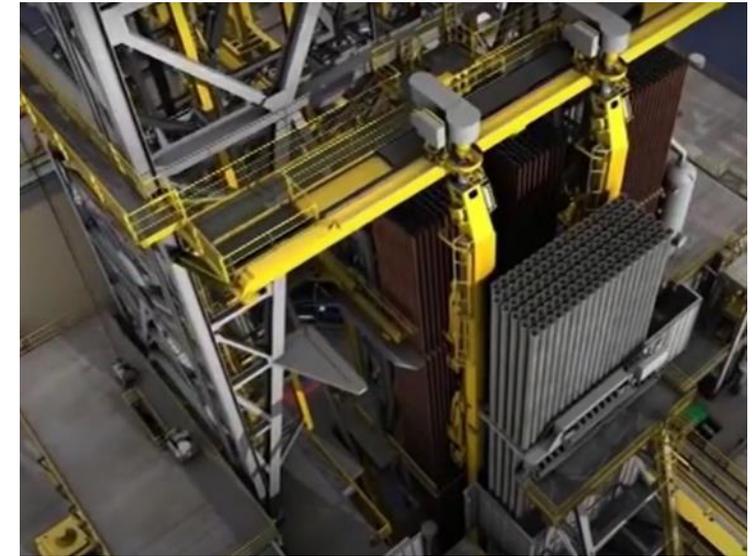
Technology and automation enabling safe operations



- ✓ Dual derrick – simultaneous operations, e.g drill and run casing
- ✓ Large cargo and storage capacities enabling efficient Drilling, Completion and Workovers
- ✓ Good safety record



Clip riser connected without manual handling – fast and safe BOP running

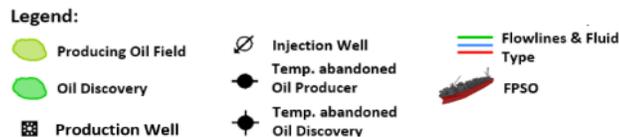
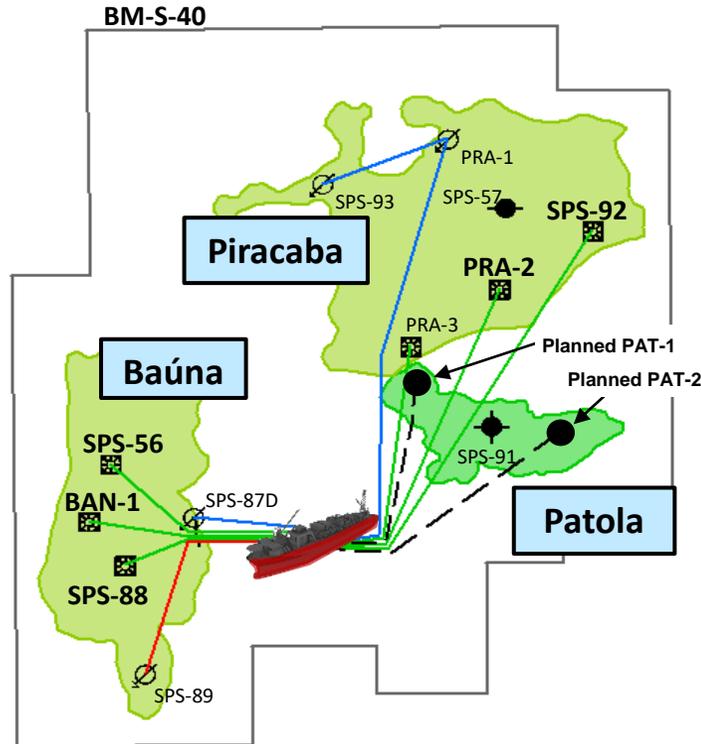


Large capacity for drill pipes and casing storage

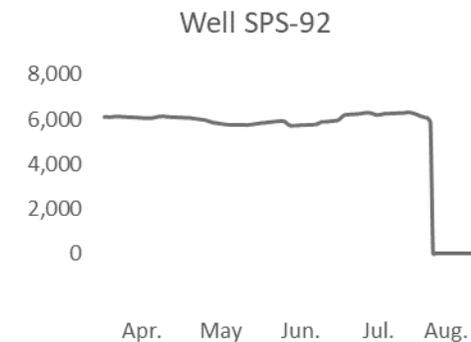
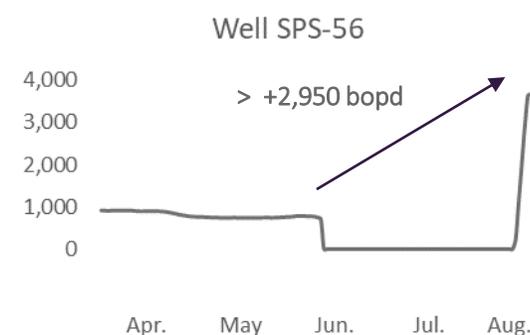
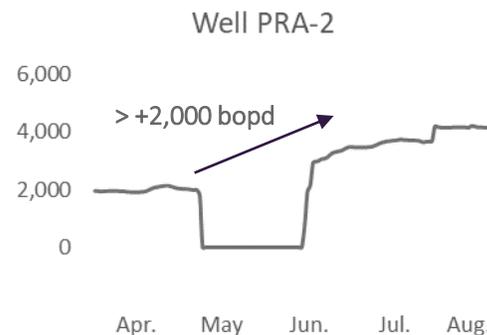
# BAÚNA INTERVENTION OBJECTIVES



Targeting 5 – 10,000 bopd increase over pre-intervention rates



- ▶ First well entered (replace failed ESP in PRA-2) late May 2022. Completed late June 2022. Production stable at over 4,000 bopd vs approximately 1,900 bopd previously
- ▶ Second intervention to install gas lift on SPS-56 completed in late August 2022, well brought back online, currently producing ~3,700 bopd vs ~750 bopd previously
- ▶ Workover to install new ESP in SPS-92 completed ahead of expectations. Well being brought back-online
- ▶ Targeting 5,000 – 10,000 bopd incremental production from intervention campaign, with additional ~5,000 bopd delivered from first two interventions
- ▶ BAN-1 intervention timing being reviewed. Production impact expected to be relatively small at a few hundred bopd

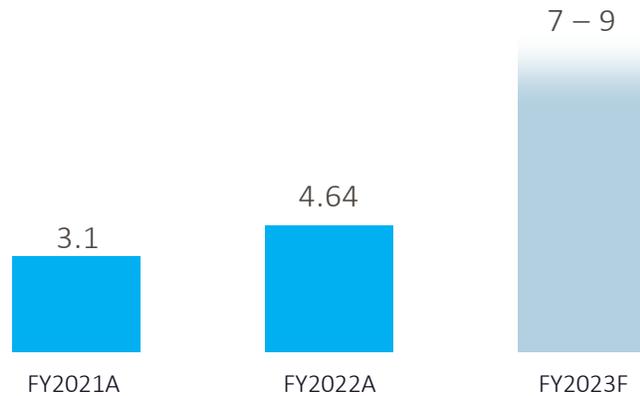


# INDICATIVE PRODUCTION AND COST PROFILE<sup>1</sup>

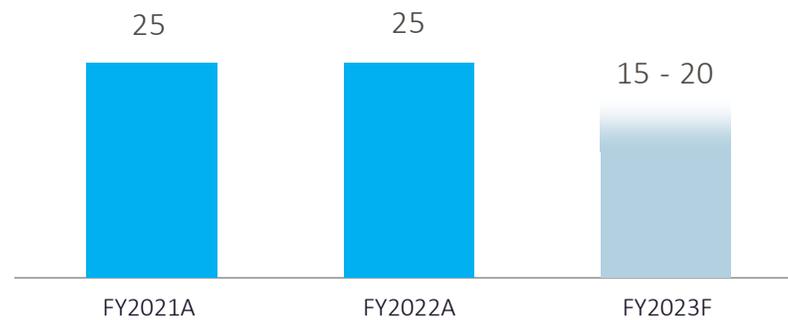


Based on development projects underway

## INDICATIVE PRODUCTION PROFILE (MMBBL)



## INDICATIVE UNIT OPERATING COST (US\$/BBL)



## TARGETING MATERIAL PRODUCTION INCREASE/UNIT COST REDUCTIONS

- › Production from BM-S-40 base case assumes 92 – 97% facilities uptime (excluding scheduled outages), ongoing optimisation of reservoir management and facilities integrity work
- › With operating costs largely fixed, increased production expected to reduce operating cost per barrel materially in FY2023
- › Charter, operations and maintenance (O&M) contract costs reduced to 85% of historical rate from Feb 2022, which will increase to 90% of historical rate once production > 15,000 bopd and Brent price ≥ US\$60 per bbl

1. Production profile and cost outlook in FY2023 indicative only and assume Baúna intervention and Patola projects are delivered within updated target timeframes



Martin Austgulen

Reservoir and New Ventures Manager

# Patola Development

# CURRENT BAÚNA/PATOLA/NEON SCHEDULE<sup>1, 2</sup>



Calendar Year	2022				2023	
	Q2	Q3	Q4		Q1	Q2
<b>Workover campaign</b>	PRA-2	SPS-56	SPS-92	BAN-1		
<b>Patola Campaign</b>						
			Drill PAT-1	Drill PAT-2	Complete PAT-2	Complete PAT-1
						Subsea installation
						Patola first oil
<b>Neon control well drilling<sup>3</sup></b>						

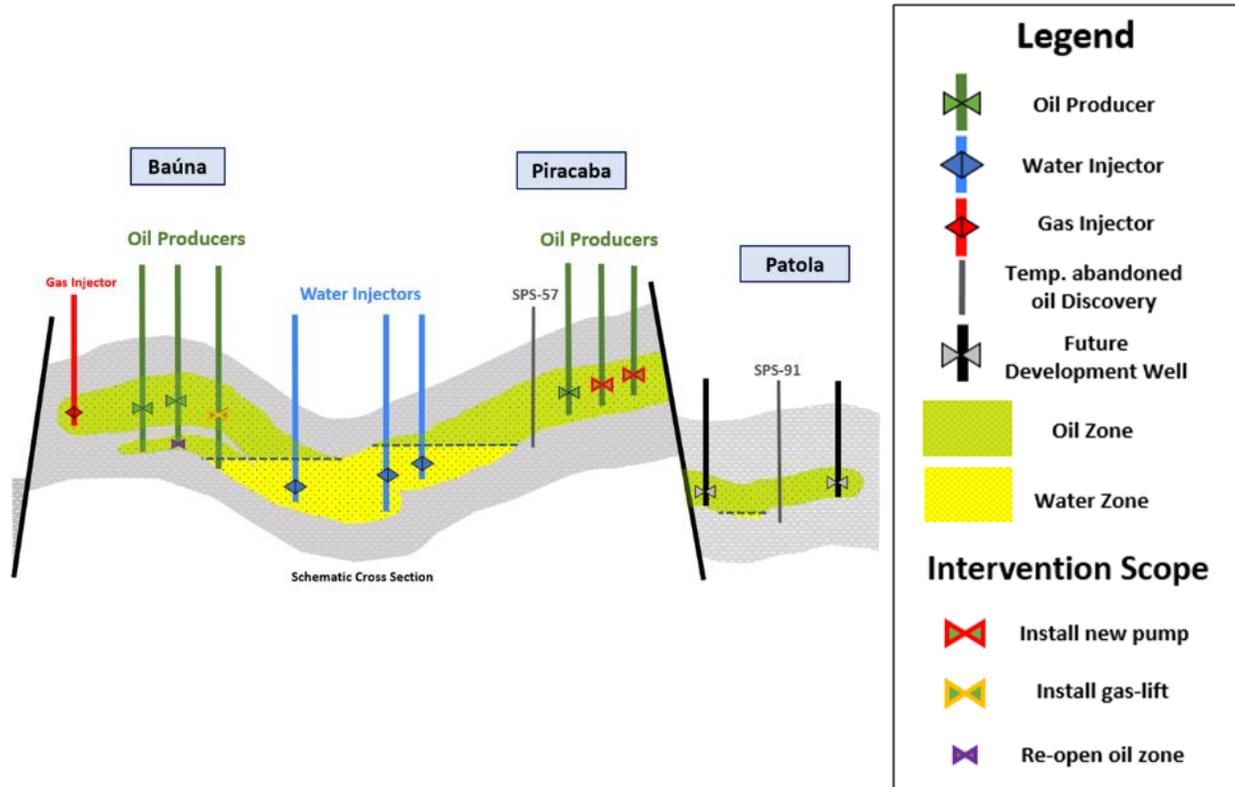
1. Assumes no further material weather or drilling delays

2. Subject to decision on BAN-1 drilling timing

3. Subject to receipt of required approvals

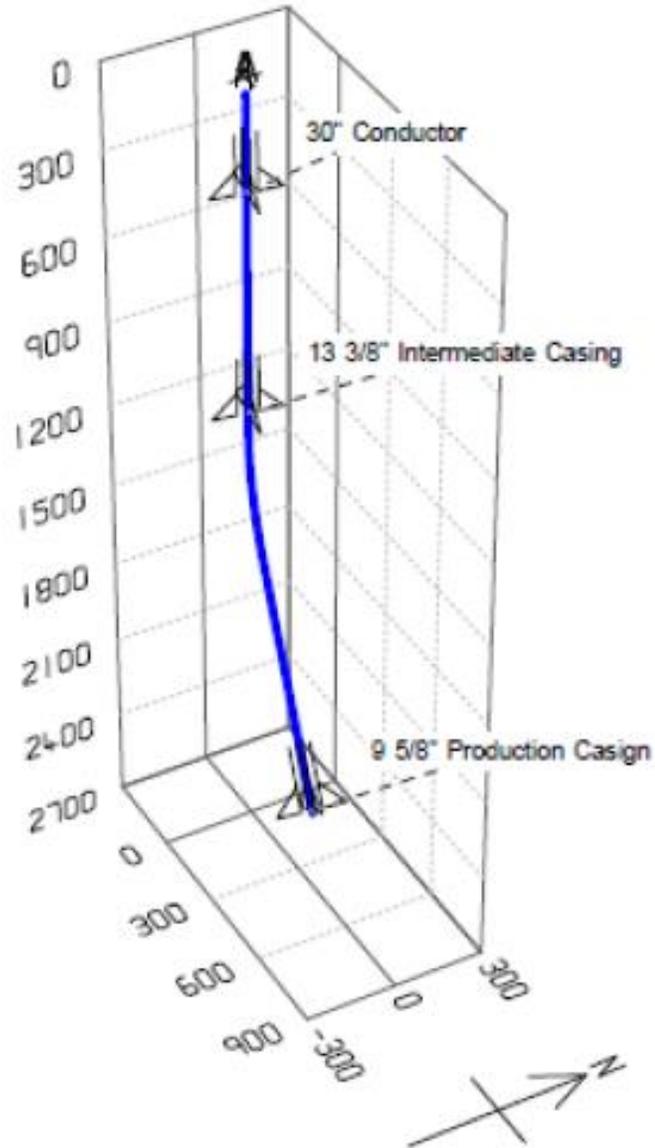
# PATOLA DEVELOPMENT

Expected to add ~10,000 bopd to production in early CY2023



- ▶ Patola oil discovery well (SPS-91) confirmed same high quality geological reservoir interval as Baúna, with 38 API oil
- ▶ Analogous seismic response of Patola area has de-risked hydrocarbon pool extent and allowed for optimised development planning
- ▶ Development comprises two subsea production wells, installation of subsea infrastructure and tie back to spare riser slots on Bauna FPSO
- ▶ Forecast peak production rate of ~10,000 bopd prior to natural decline
- ▶ Potential to convert one of wells to water injector for pressure support, if required

# SCHEMATIC PATOLA WELL DRILLING



- ▶ Planned 2,400m total depth, ~270m water depth
- ▶ Each well targeted to take ~ 60 days to drill and complete
- ▶ Materials inspected and available
- ▶ Reputable contractors
- ▶ High efficiency Rig
- ▶ Patola equipment fabrication progressing as planned. Delivery currently underway
- ▶ Pending receipt of final environmental approvals

BHA and Bit





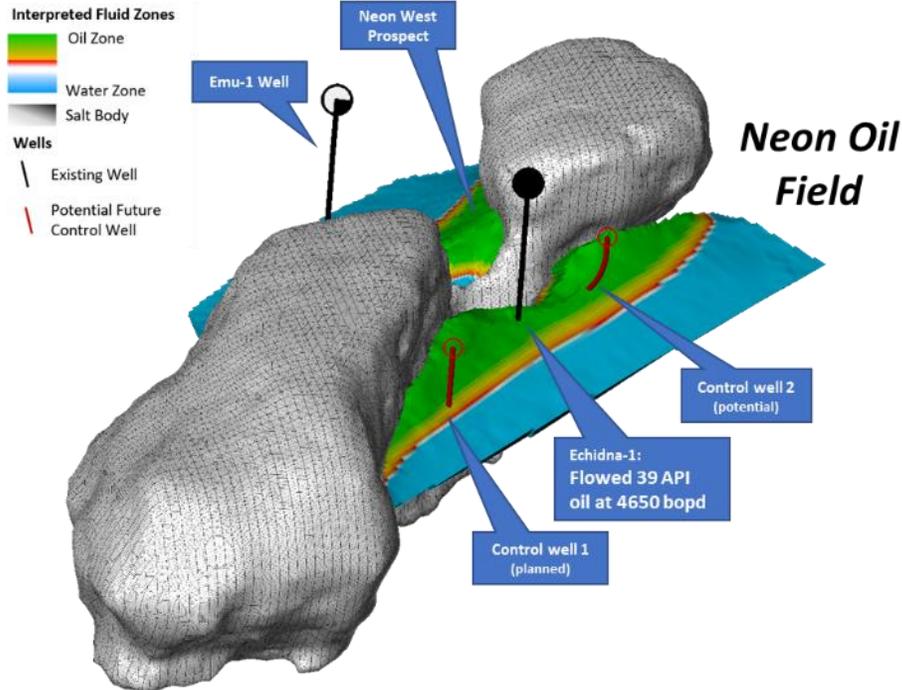
Martin Austgulen

Reservoir and New Ventures Manager

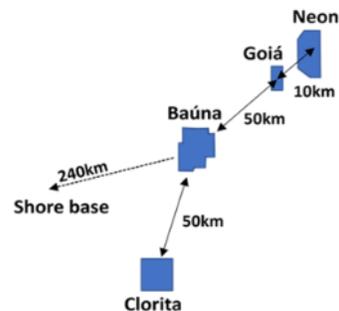
# Neon and New Ventures

# NEON DRILLING

## Control well drilling aimed at de-risking structure



FIELD	CONTINGENT RESOURCES <sup>1</sup>		
	1C (MMbbl)	2C (MMbbl)	3C (MMbbl)
Neon	30	55	92
Goiá	16	27	46



## NEON EVALUATION

- Neon, Goiá light oil discoveries 50-60km NE of Baúna, 300m water depth
- Revised preliminary development concepts confirmed sufficient commercial potential to justify control well drilling campaign
- Control well(s)<sup>2</sup> designed to address subsurface uncertainty, better constrain resource estimates and progress through Concept Select, FEED and potentially FID
- Key uncertainties relate to OWC, reservoir quality and distribution
- Second control well contingent on success in first, to minimise cost exposure to down-side outcomes (both contingent on regulatory approvals)
- Neon success would partly de-risk Goiá and Neon West

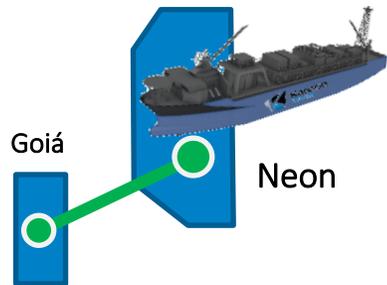
1.Contingent resource volume estimates presented for Neon and Goiá were disclosed in the 8 May 2018 ASX announcement “Resources Update” and published in the 2022 Annual Report. Karoon is not aware of any new information or data that materially affects these resource estimates and all material assumptions and technical parameters underpinning the estimates in the relevant ASX announcement continue to apply and have not materially changed.

2.Subject to necessary approvals

# POTENTIAL NEON DEVELOPMENT CONCEPTS

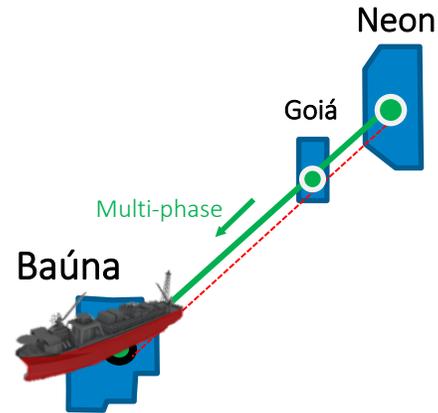
Subject to Neon control well(s), several alternative development concepts being explored, including a standalone development and a tieback to Baúna

## STANDALONE DEVELOPMENT



- ▶ Project currently in Concept Definition Phase
- ▶ If successful, new well data will help define preferred concept (which could be one of the above) prior to Concept Select decision, followed by pre-FEED engineering definition studies, ahead of FEED

## TIEBACK TO BAÚNA



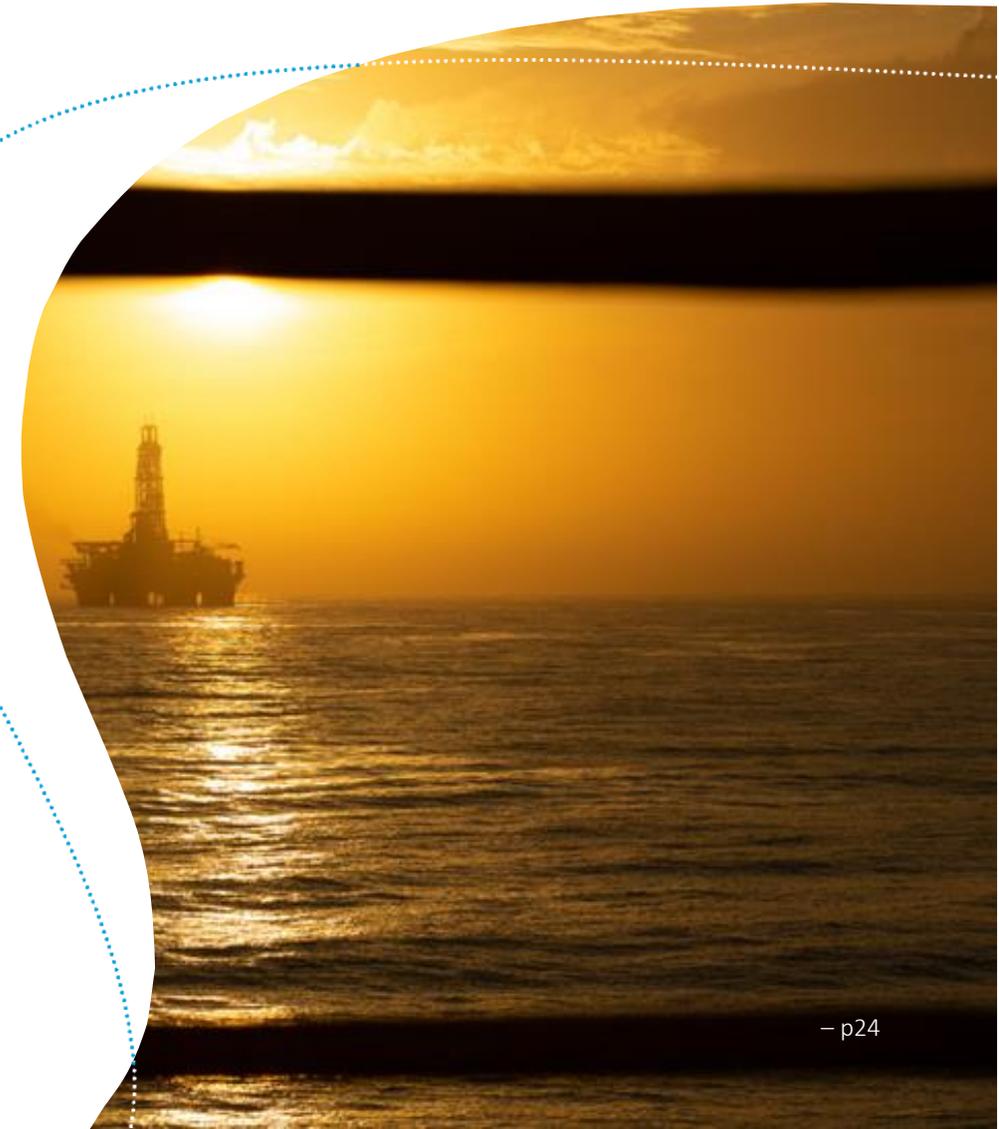
- ▶ Preliminary development options envisage Neon oil being produced through subsea wells tied back to either:
  - ▶ Standalone local FPSO
  - ▶ Existing Baúna FPSO
  - ▶ New, Neon-optimised FPSO at Baúna
- ▶ Engineering studies ongoing to expedite timeline in control well success scenarios
- ▶ Reservoir simulation modelling estimates potential initial oil plateau rate of up to 30,000 – 50,000 bopd

# ASSESSING INORGANIC GROWTH OPTIONS



Disciplined process to identify and pursue value-accretive growth opportunities

- › Continuing to actively screen inorganic growth opportunities
- › Rigorous screening process used, with key criteria including:
  - › Value accretive, with acceptable risk profile
  - › Fundable
  - › Producing or at least close to FID if pre-production
  - › Complementary to Karoon's footprint and/or capabilities
  - › Can be accommodated within Karoon's GHG management strategy
- › Any acquisition balanced against returns to shareholders
- › Disciplined approach





Julian Fowles

CEO and Managing Director

# Sustainability

# CLIMATE STRATEGY

Carbon neutral in FY2021, targeting Net Zero by 2035



- › Climate targets:
  - › Carbon neutral<sup>1</sup> on Baúna operations from FY2021 - achieved for FY2021 and planned to be achieved for FY2022, with Net Zero by 2035<sup>2</sup>
  - › Scope 1 and 2 emissions in FY2022 were 82,870 tCO<sub>2</sub>e (82,805 tCO<sub>2</sub>e Scope1, 65 tCO<sub>2</sub>e Scope 2) reflecting first full year of production and Maersk Developer operations
  - › Emissions intensity of 18.3 kgCO<sub>2</sub>e/bbl in FY2022, expected to decline to <12 kgCO<sub>2</sub>e/bbl by end CY2023

1 Carbon neutral refers to having a balance between emitting and offsetting GHG emissions. Achieved through acquiring carbon offsets in respect of Scope 1 and 2 GHG emissions.

2 Net zero refers to reducing GHG emissions as far as possible and balancing the residual GHG emissions produced and GHG emissions removed from the atmosphere. To be achieved through future transition planning in respect of Scope 1 and 2 emissions.



# GHG MITIGATION



- › Priority to reduce emissions where possible. Emissions reduction projects implemented in FY2022:
  - › Optimisation of support vessel movements avoided ~1,000 tCO<sub>2</sub>e Scope 1 emissions
  - › Mooring buoy project, allowing vessels to anchor safely while at FPSO, reduced emissions by ~1,850 tCO<sub>2</sub>e
- › Active review of potential investment in high quality projects with social benefits to offset residual emissions, including MOU with Shell to investigate equity and/or development opportunities in Nature Based Solution offset projects
- › Two carbon offset purchase agreements signed, including purchase of >480,000 Verified Emission Reductions (VERs) from Shell between 2022 and 2030



# SOCIAL PROJECTS

Aiming to generate lasting benefits for communities



- In addition to regulatory social projects, committed to four voluntary social projects in Brazil, focused on Education, Sustainable Economic Development and Biodiversity:
  - Pro-CREP – comprises container production warehouse and waste recycling centre, allowing waste to be repurposed/recycled. Provides work for socially vulnerable families and reduces landfill solid waste by ~25 tonnes per month
  - Atelie Tabuleiro project – raises awareness of local indigenous culture and traditions by providing educational tours of Serro do Tabuleiro State Park
  - Prea de Moleques do Sul – environmental education program for conservation of Santa Catarina's native guinea pig, Cavia Intermedia, which is critically endangered
  - Music and Citizenship project – sponsorship of network of music schools within disadvantaged communities



# Appendix: Definitions



<b>2H</b>	Financial period from 1 January to 30 June
<b>ANP</b>	Agência Nacional do Petróleo, Gás Natural e Biocombustíveis
<b>API</b>	American Petroleum Institute’s Inverted scale for denoting the “lightness” or “heaviness” of crude oils and other liquid hydrocarbons
<b>bbl or barrel</b>	Barrel of oil = 42 United States gallons; equivalent to approximately 159 litres
<b>bopd</b>	Barrels of oil per day
<b>CY</b>	Calendar year
<b>DD&amp;A</b>	Depreciation, depletion and amortisation
<b>EBITDA</b>	Earnings Before Interest, Tax, Depreciation and Amortisation
<b>ESP</b>	Electric submersible pump (downhole equipment).
<b>FEED</b>	Front End Engineering and Design
<b>FID</b>	Final Investment Decision
<b>FPSO</b>	Floating, production, storage and offloading vessel
<b>FY</b>	Financial year ending 30 June
<b>FY2022</b>	Financial year ending 30 June 2022

<b>GHG</b>	Greenhouse gas
<b>k</b>	Thousand
<b>Karooon</b>	Karooon Energy Ltd and its subsidiaries
<b>LTI</b>	Lost time incident
<b>MMbbl</b>	Million barrels of oil
<b>m/million</b>	Million
<b>OWC</b>	Oil/water contact
<b>1C, 2C, and 3C contingent resources</b>	Those quantities of hydrocarbons estimated, as of a given date, to be potentially recoverable from known accumulations by application of development projects, but which are not currently considered to be commercially recoverable (as evaluation of the accumulation is insufficient to clearly assess commerciality). <ul style="list-style-type: none"><li>• 1C – Denotes low estimate scenario of contingent resources.</li><li>• 2C – Denotes best estimate scenario of contingent resources.</li><li>• 3C – Denotes high estimate scenario of contingent resources.</li></ul>