

Santos Basin Brazil: Resource Volumes and Development Concepts

17 September 2015



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*"Olinda Star" Semi Submersible Drilling Rig,
Echidna-1 Production Test*

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Corporate Overview:

Managing Director, Robert Hosking

Corporate Overview

Karoorn seeks to create shareholder value through an exploration led growth strategy

- Karoorn is a global oil and gas independent
- Current market cap A\$460 million (17/9/15, A\$1.87ps)
- A\$553 million cash at bank as at 30/6/15, No debt
- 246.8 million ordinary shares on issue, 6.2 million unlisted rights and options
- Member S&P / ASX 200 Index



The Development Pathway



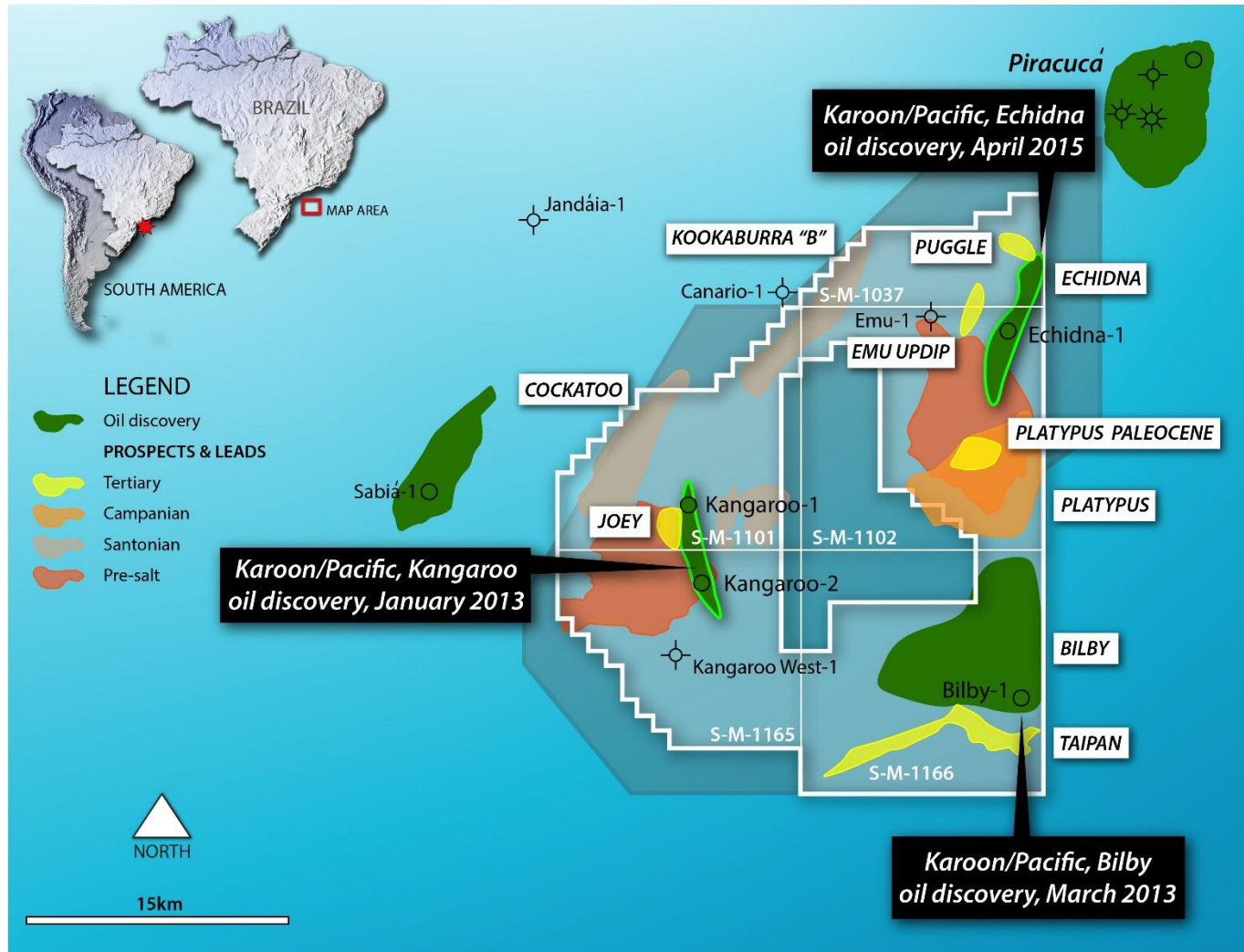
Upon appraisal success in the Santos Basin, Karoon is looking to transition into an oil producer

- The Kangaroo and Echidna oil discoveries have a combined gross contingent 2C resource of 129mmbbls (84mmbbls net to Karoon)
- Further appraisal drilling will better define the contingent resources and recovery factors which are required prior to moving into an early production system
- Analysis of pre-FEED development options in this setting show that a FPSO style development is feasible (an analogue is the producing Baúna e Piracaba field to the south)
- A staged appraisal and development program is planned with a decision point for an early production system expected post the 2016 appraisal program
- A staged program is optimal for managing project risk and capital requirements, on success first oil from an early production system is expected in 2019
- The exploration and appraisal success in Brazil to date is due to the quality of the exploration and engineering team
- Karoon is building on these capabilities with a new highly experienced project development team

Resource Update:

Exploration Manager, Antonio Tisi

Santos Basin Brazil: The Setting



Field Evaluation Progress

Geoscience Evaluation:

- Detailed mapping with 2 millisecond 3D seismic data set, geological correlation and facies interpretation
- Integration of all wireline and sampling data (cores, cuttings and recovered oil)
- Building detailed calibrated reservoir distribution and properties models
- Generating matching and integrating seismic attribute models tied to well data



Generating integrated field production simulation models for optimizing resource recovery and development design

Engineering and Economic Evaluation:

- Pre-FEED studies identifying and assessing a range of development options
- Evaluate early production system ('EPS') versus full field development ('FFD') project economics
- Assessing economic sensitivity to the recoverable resource range and oil price
- Identifying and costing development components preparing for a final investment decision ('FID'), eg FPSOs, Storage vessels etc.



Generating integrated field production simulation models for optimizing resource recovery and development design

Contingent Resource Volumes*

Contingent Resource Volumes					
Gross	Interest	Type	1C	2C	3C
Echidna	100%	Oil (mmbbls)	25	75	152
Kangaroo	100%	Oil (mmbbls)	20	54	100
Total**			45	129	252
Net	Interest	Type	1C	2C	3C
Echidna	65%	Oil (mmbbls)	16	49	99
Kangaroo	65%	Oil (mmbbls)	13	35	65
TOTAL NET TO KAROON**	65%		29	84	164

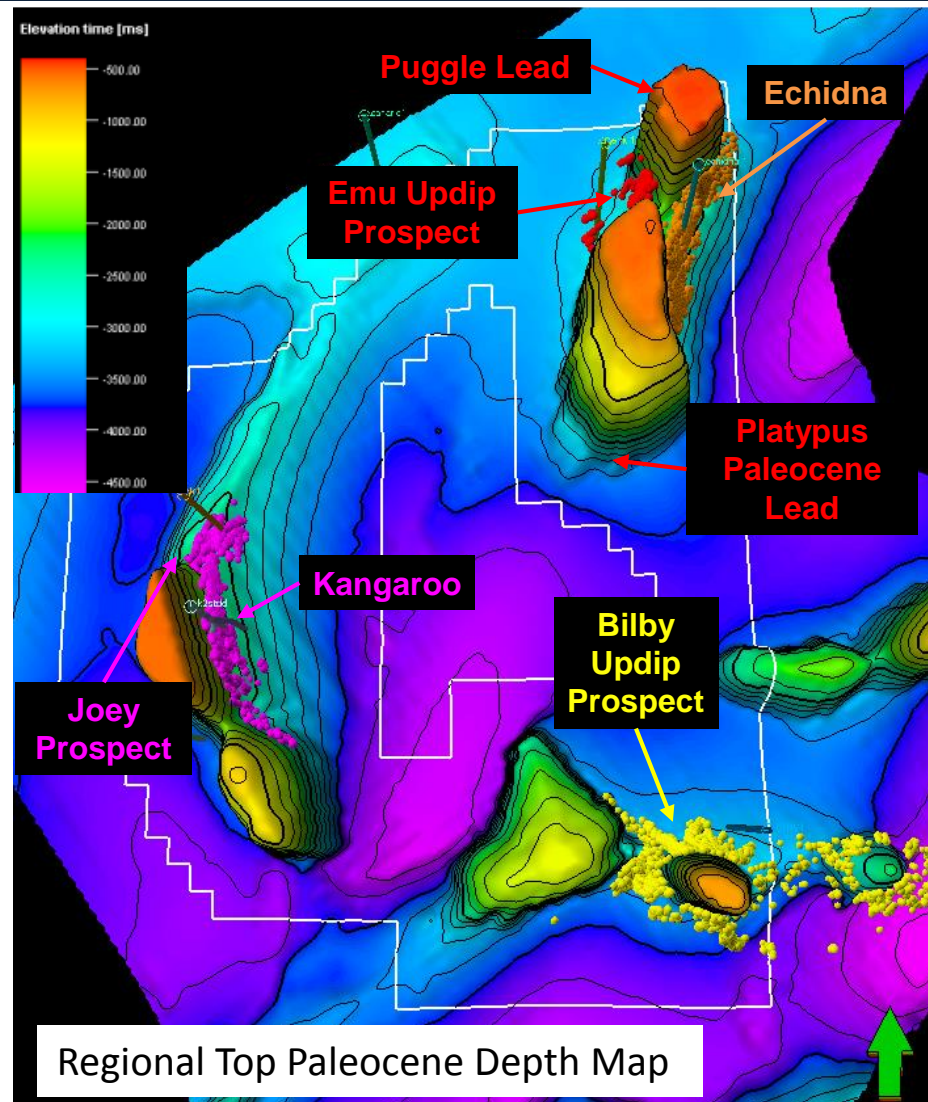
* The contingent resource volumes represent Karoon's internal management estimates and have not necessarily been validated or agreed by joint venture partner Pacific Exploration and Production Corporation.

** Arithmetic summation by category

The Kangaroo and Echidna contingent resource volumes in the table above have been disclosed in Karoon's announcement 'Contingent Resource Volume Update: Santos Basin Brazil', posted alongside this presentation on the ASX 17 September 2015.

Karoon is not aware of any new information or data that materially affects the resource estimates and all material assumptions and technical parameters underpinning the estimates in the 'Contingent Resource Volume Update: Santos Basin Brazil' announcement continue to apply and have not materially changed.

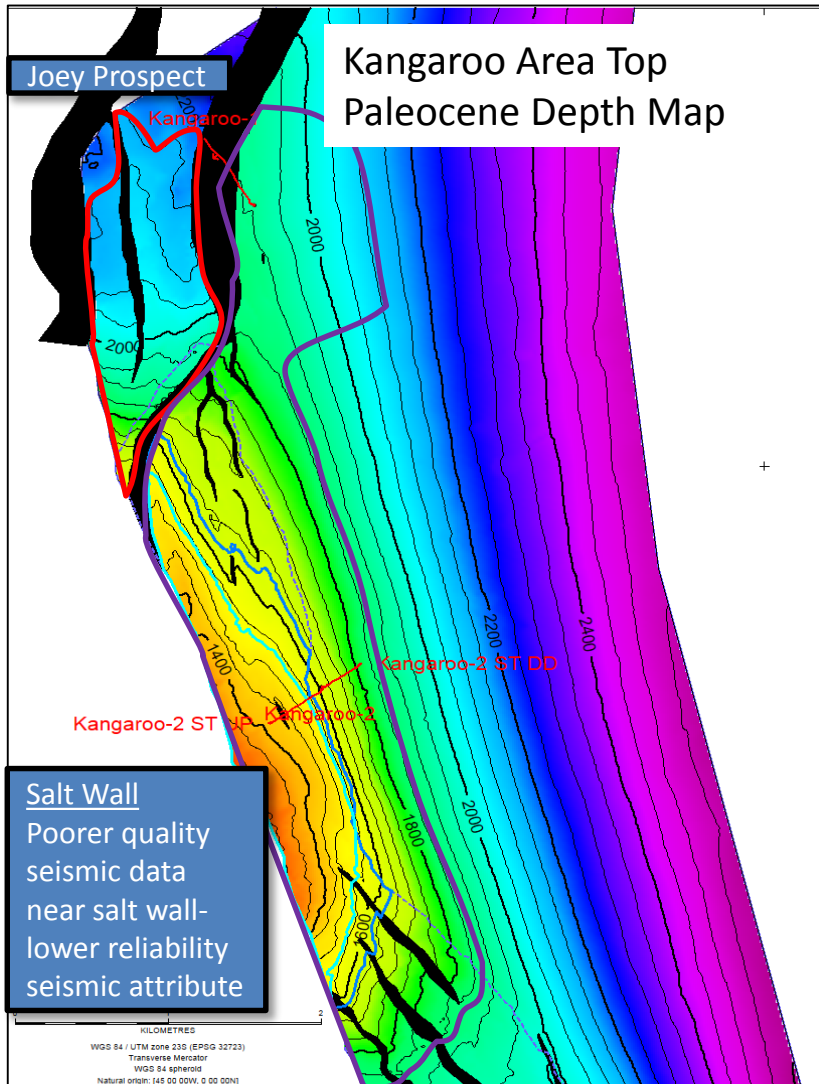
Mapping and Seismic Attributes



AVO calibrated at Paleocene level shows;

- Excellent match of AVO anomaly results with mapping and pressure data defining the distribution of oil at Echidna and Kangaroo
- Additional potential identified at the Emu Updip, Joey and Bilby Updip prospects to date
- Additional prospectivity possible at Puggle Lead and Platypus Paleocene Lead

Kangaroo Field



Greater confidence in resource certainty at Kangaroo due to:

- Greater well control post Kangaroo-2 and side tracks
- Higher quality 2 millisecond 3D seismic data
- Core samples (MSCT*) obtained, providing good data on reservoir characteristics

This has resulted in a model that shows a close correlation between the observed oil columns and the seismic attributes.

Note: Joey prospect volumes are not included in the Kangaroo contingent resource

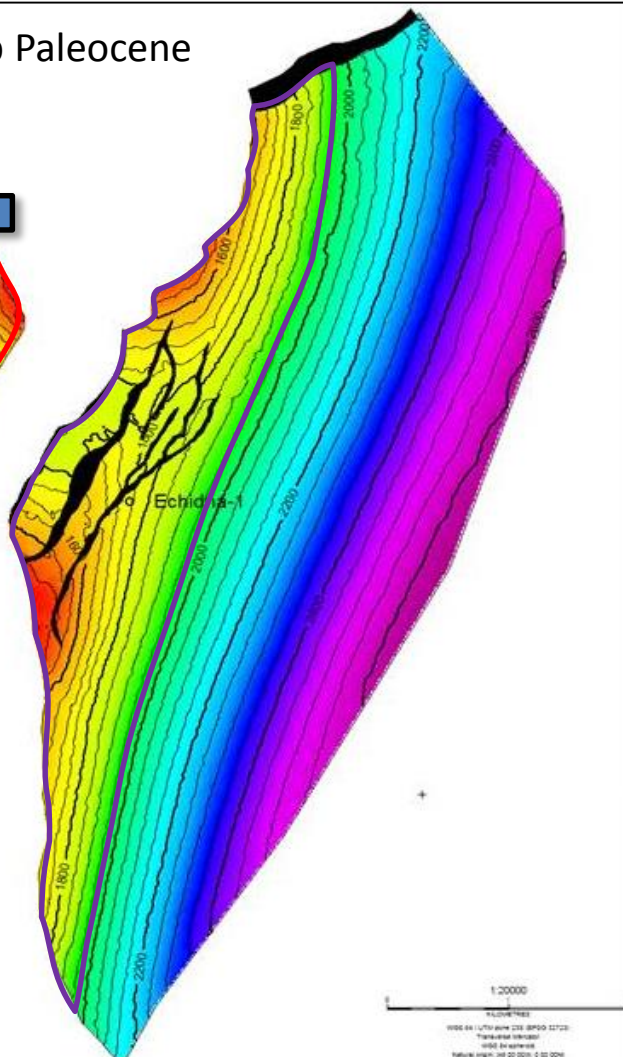
* MSCT: Mechanical sidewall coring tool

Echidna Field

Echidna Area Top Paleocene
Depth Map.

Emu Updip Prospect

Salt Wall
Poorer quality
seismic data
near salt wall-
lower reliability
seismic attribute



Greater confidence in resource certainty at Echidna due to:

- A good match between the seismic amplitude anomalies and the oil water contacts calculated from pressure data.
- Higher quality seismic indicates faulting intensity and steepness of dips are both significantly less than that seen at Kangaroo
- Core samples (MSCT*) obtained, providing good data on reservoir characteristics

Note: Emu Updip prospect volumes are not included in the Echidna contingent resource

* MSCT: Mechanical sidewall coring tool

ANP Approved Appraisal Plan



The Appraisal Plan ('PAD') was approved by the Brazilian oil and gas regulator, the Agência Nacional do Petróleo, Gás Natural e Biocombustíveis ('ANP') during August 2015.

Firm Commitments – Period ends 31 December 2018

- Two wells (expected) in the Emu / Echidna area
- Acquisition and processing of a 3D seismic survey over the full PAD acreage
- Pre-stack depth migration of existing 3D seismic data in 2 millisecond frequency

Contingent Commitments – Period commencing 1 January 2019

- Drilling up to four contingent wells
- Each contingent well drilled will result in a 6 month extension to the contingent period
- Therefore maximum time for the contingent commitment period is 24 months

Project Management Team & Development Concepts:

Project Development Advisor, José Formigli
Project Manager, Ricardo Abi-Ramia

Project Development Team



José Formigli
*Project Development
Advisor*

- > A petroleum engineer with over 30 years experience in planning, designing, implementing and operating production systems in shallow, deep and ultra-deep waters in Brazil
- > Worked for 32 years with Petrobras in several activities related to well construction, subsea and topsides engineering. Occupied managerial positions mostly in the Campos and Santos Basins, including Pre-salt Executive Manager.
- > Held position of Chief Exploration & Production Officer at Petrobras, becoming a member of the Executive Board and supervised all domestic E&P activities for 3 years.
- > Key responsibilities include oversight of the overall project and due diligence review

Ricardo Abi-Ramia
Project Manager

- > Petroleum Engineer with Petrobras for 22 years. Roles included General Manager of Rio de Janeiro Business Unit, the biggest Production Unit of Petrobras, Operations Manager for 3 years at Petrobras America in Houston and Asset Manager of the Manati field (210 MMscf/d offshore gas field in northeast Brazil), the Marlim field, and the Albacora Leste field (160,000bbl/d field in Campos Basin Brazil) including the responsibility for the field development.
- > Production Development Executive Manager for OGX for 3 years in charge of all installation of Tubarão Azul facilities.
- > Key responsibilities include project design, and implementation along with ongoing maintenance

Oliver Seybold
Reservoir Team Leader

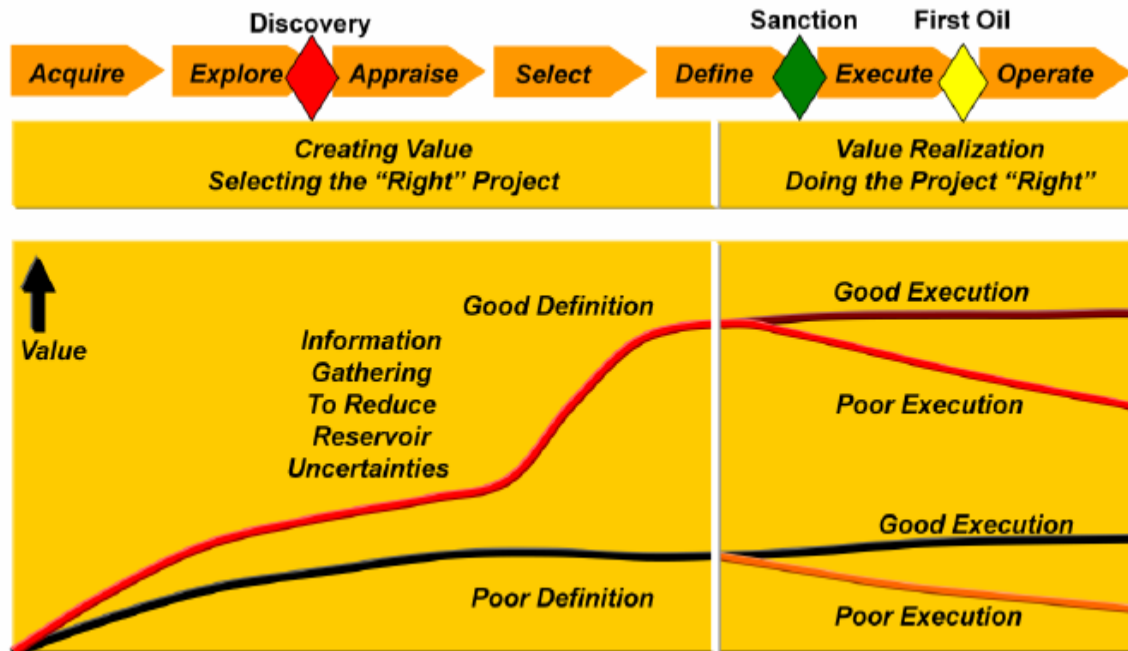
- > Reservoir Engineer with 25 years experience as Reservoir / Simulation Engineer in Australasia, Europe, the Middle East, Africa and South America
- > Reservoir experience includes work on clastic and carbonate reservoirs, fractured basements and oil (light, heavy, sour), gas and gas condensate fields.
- > Key responsibilities include leading reservoir modelling for Echidna and Kangaroo

Lino Barro
*Engineering Manager
(based in Melbourne)*

- > Over 35 years experience in reservoir and development engineering and project economic evaluation
- > Lead roles in subsurface development planning, field development plan preparation and implementation, and economic evaluation of projects located in Australia, the Persian Gulf, South America and Tunisia.
- > Previously worked in Australia and internationally with BHPB, Kufpec and Delhi
- > Head office Engineering Manager

Planning the Field Development

Offshore projects are capital intensive and complex undertakings requiring a phased 'gated' process to select and execute on development.



Key Phases and Elements:

Appraisal and Selection:

- Develop a robust reservoir model
- Maximise well performance
- Select the right subsea and surface facility

Selection:

- Establish the design basis
- Generate development scenarios
- Develop decision drivers

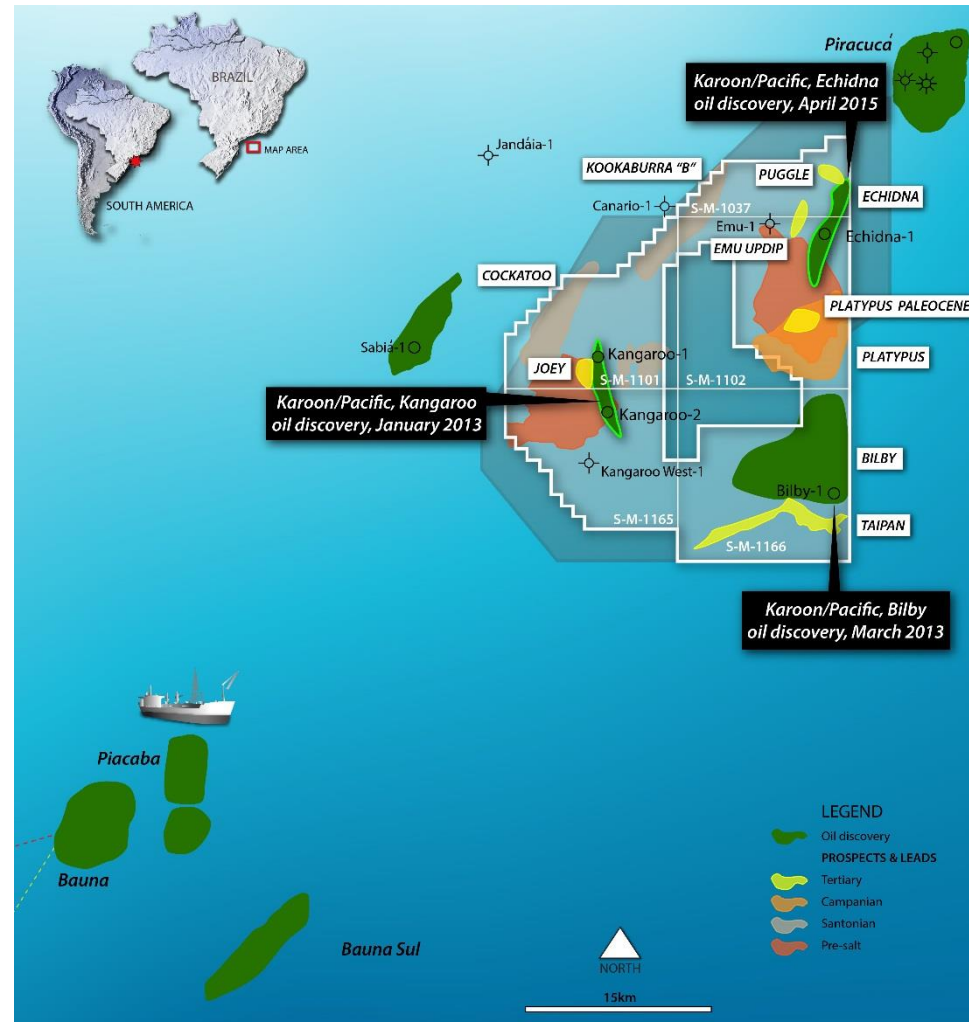
Development Considerations

Key Attributes of Karoon's Blocks

- Water Depth: 270 – 400 meters
- Oil API Gravity: 33 – 40 degrees
- Estimated oil production per well: 10,000 bpd

Key Development Drivers

- Flexibility to adapt to reservoir behaviour
- Minimise technical risks
- Maximise hydrocarbon recovery
- Schedule to first oil
- Flexibility for expansion
- Reducing upfront capex
- Operability, reliability and availability
- Capitalise on market conditions
- Maximising returns on capital invested



Development Strategy

A FPSO facility with subsea completions connected through flexible lines is the primary choice for this kind of offshore field scenario in Brazil

Consideration	Strategy / Advantages
FPSO Production Unit	<ul style="list-style-type: none">- Flexibility for expansion- Minimise technical risks- Proved field development solution- FPSO lease rate differential between smaller and larger vessels is compressing- Capitalising on market conditions- Operability, reliability and availability- Utilising the same unit for EPS and FFD will expedite the FFD first oil
Subsea Completions	<ul style="list-style-type: none">- Better positioning of wellheads- Flexibility to adapt to reservoir behaviour- Maximise hydrocarbon recovery- First Oil schedule
Well Performance and Reservoir Behaviour	<ul style="list-style-type: none">- Appraisal wells- Phased development
Advantages of an EPS	<ul style="list-style-type: none">- Reduction of uncertainties on well performance and reservoir behaviour- Expediting production start-up- Obtain information to optimise the FFD

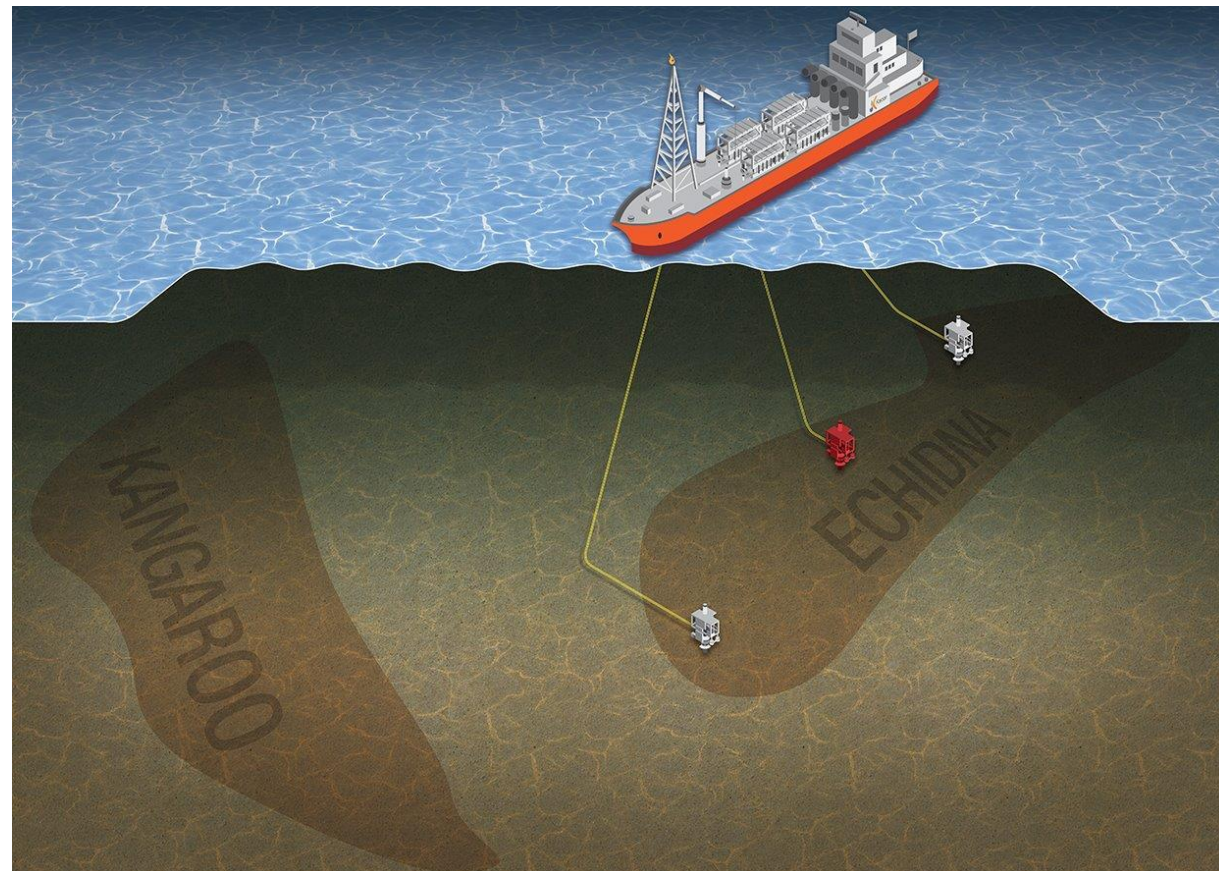
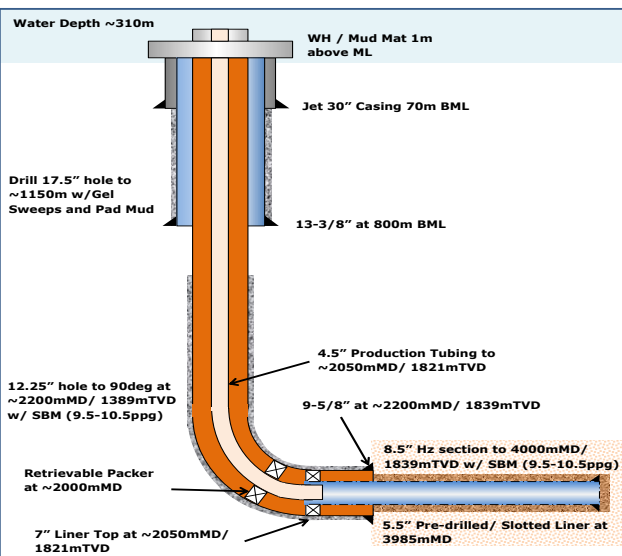
The three development concepts outlined in this presentation all consider an EPS as phase one

Early Production System (EPS)

The objective of an EPS is to evaluate reservoir behavior and as a result get technical parameters required for a better design of the Definitive System.

The EPS likely comprises:

- Leased FPSO
- 2 horizontal production wells
- 1 gas injector well
- Estimated production: 20,000 bpd
- Flexible lines



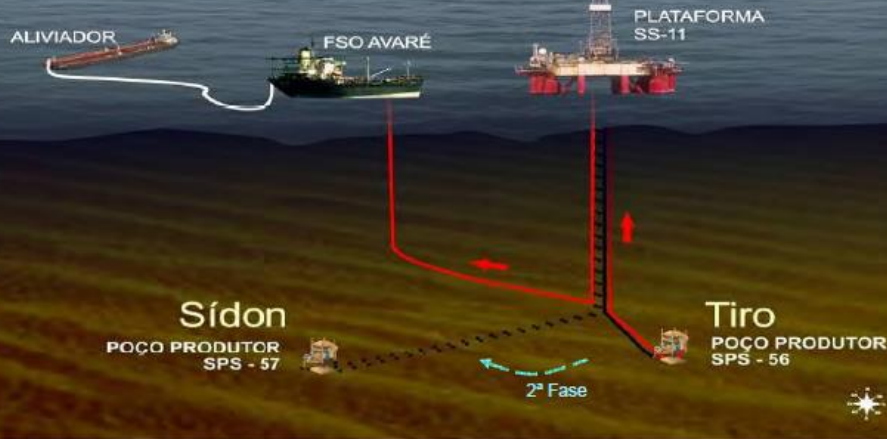
EPS Example: Baúna e Piracaba

An EPS followed by FFD is a proven field strategy. This approach was used recently in Brazil in the following development:

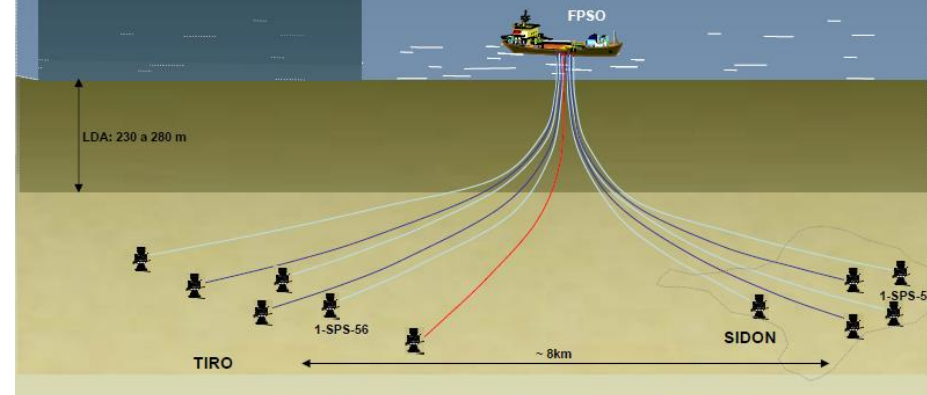
1 - Tiro e Sidon (now Baúna e Piracaba) EPS

Full Field Development

Early Production System: 20.000 bpd
2 Production Wells
Investment: US\$ 160MM



Definitive System
Production: FPSO 100.000 bpd
Production wells: 6
Water Injection Wells: 4
Gas Injection Well: 1



Ref: UN-BS Presentation – Situação dos Projetos na Bacia de Santos COGEN website

Citigroup's March 2014 Global Oil Vision estimated Baúna e Piracaba breakeven oil price was approximately US\$40/bbl.

Significant Cost Components

Capital Expenditure

- | | |
|------------------------------|-------------------------------|
| - Appraisal wells (vertical) | US\$30-40 million per well |
| - Horizontal producers | US\$140-185 million per well* |
| - Gas and water injectors | US\$100-145 million per well* |

Capex includes:

- Well costs
- Subsea completions, well heads, umbilicals, risers and flowlines
- Insurance, engineering costs, project management and contingency

* The high side is a result of the flowlines and umbilicals required to tie Kangaroo back to the FPSO located over the Echidna field (approximately 15km away) in a combined development case.

Operating Expenditure

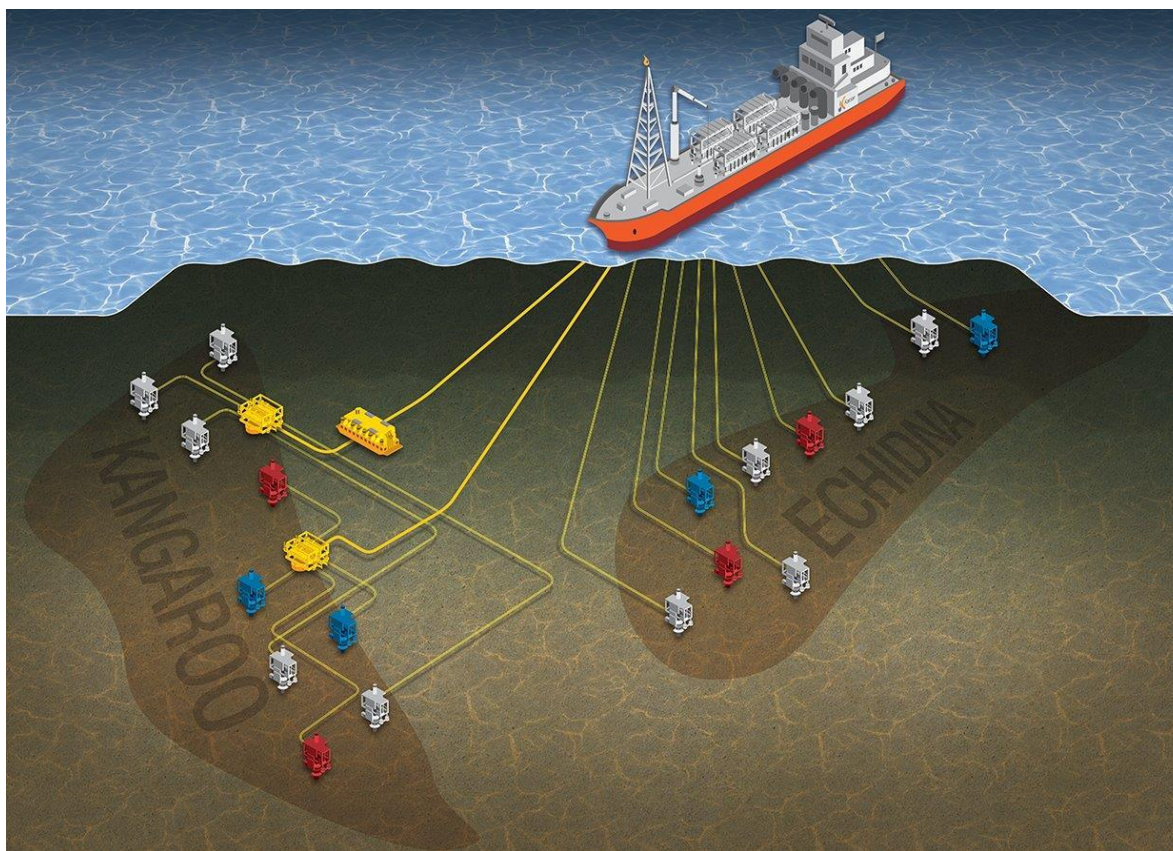
Total operating expenditure is expected to be approximately US\$400-450k per day

Opex includes:

- FPSO leasing costs
- Logistics
- Chemicals / Helicopters / Shore Base

Note: All cost estimates provided above are based on current information and are estimates only.

Concept 1. Echidna and Kangaroo



Development Concept:

Contingent 2C Resource:
129mmbbbls
(84mmbbbls net to Karoon)

EPS

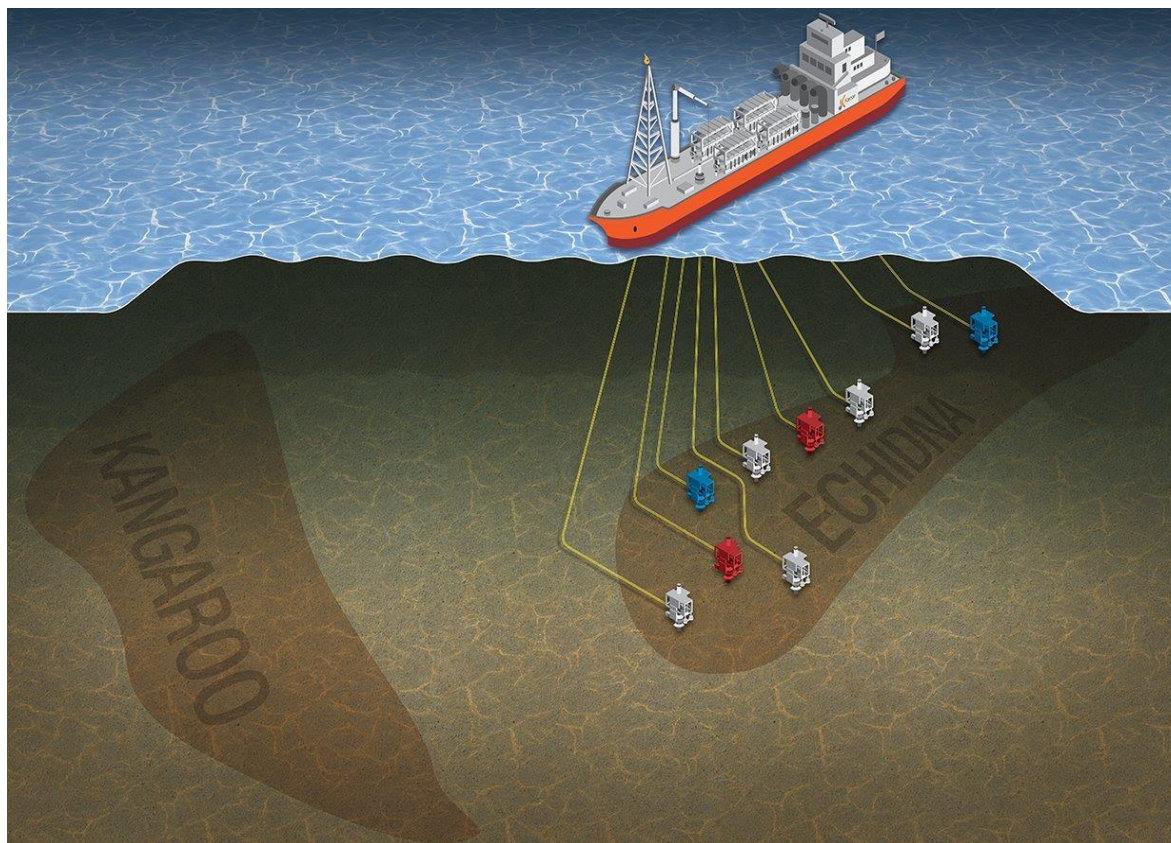
- Production per well: 10kbpd
- 2 Horizontal Producers
- 1 Gas Injector

FFD*

- Production per well: 10kbpd
- 10 Horizontal Producers
- 4 Gas Injectors
- 4 Water Injectors

* The FFD total well count includes the wells drilled in the phase one EPS.

Concept 2. Echidna Standalone



Development Concept:

Contingent 2C Resource:

75mmbbls

(49mmbbls net to Karoon)

EPS

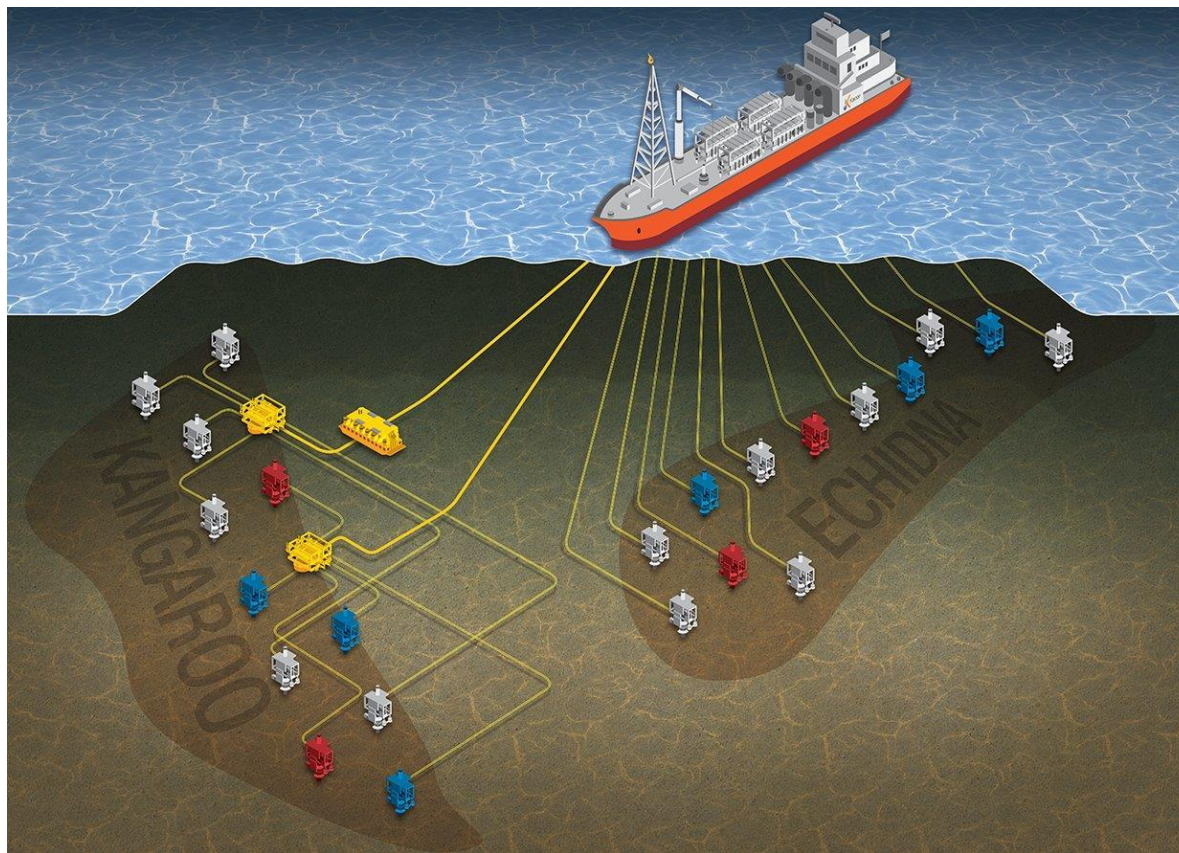
- Production per well: 10kbpd
- 2 Horizontal Producers
- 1 Gas Injector

FFD*

- Production per well: 10kbpd
- 5 Horizontal Producers
- 2 Gas Injectors
- 2 Water Injectors

* The FFD total well count includes the wells drilled in the phase one EPS.

Concept 3. Echidna and Kangaroo



Development Concept:

Contingent 3C Resource:

252mmbbls

(164mmbbls net to Karoon)

EPS

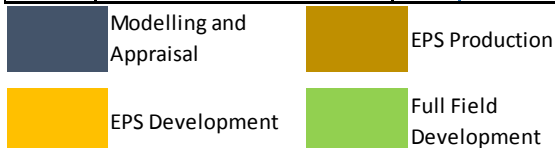
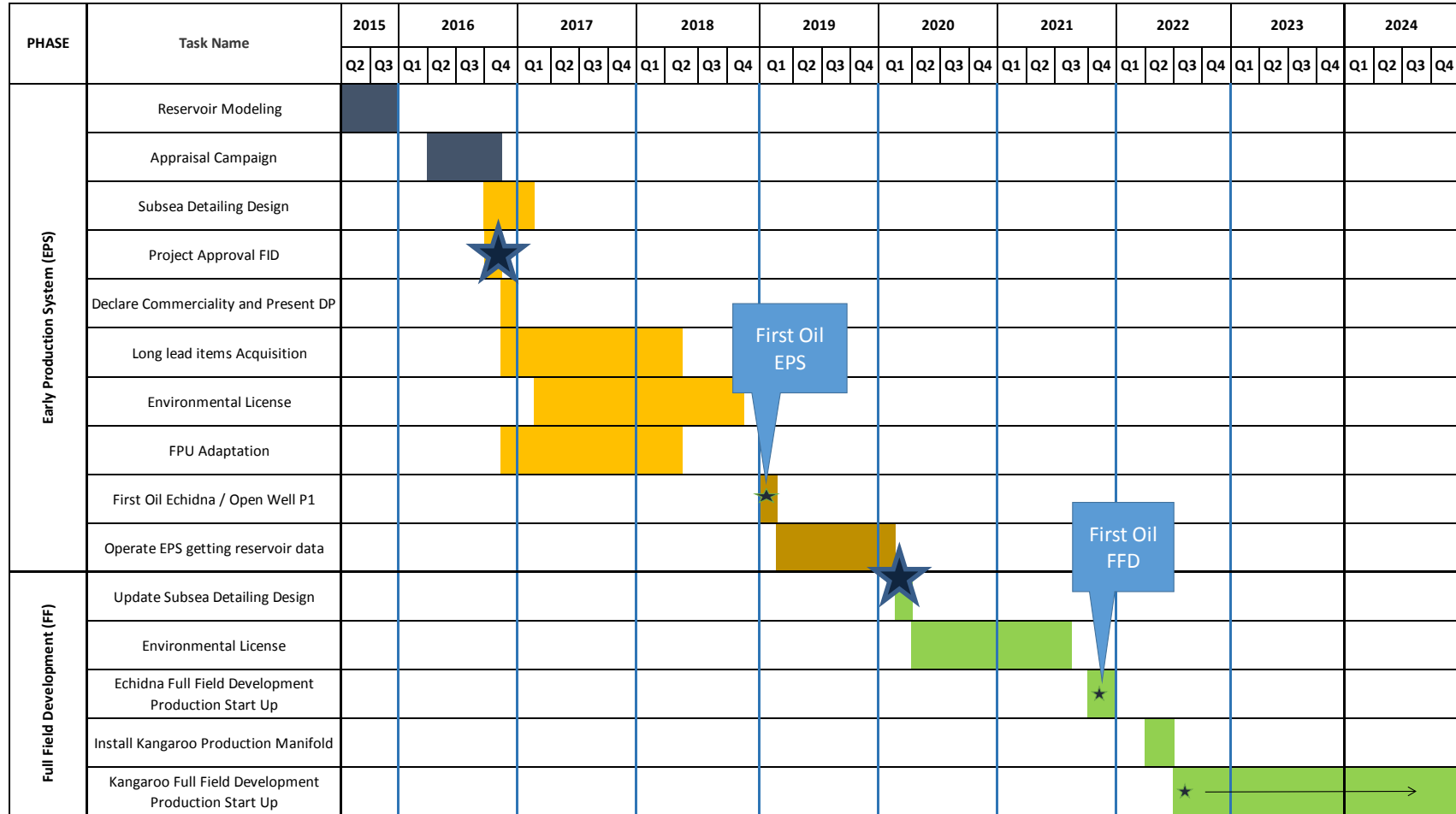
- Production per well: 10kbpd
- 2 Horizontal Producers
- 1 Gas Injector

FFD*

- Production per well: 10kbpd
- 13 Horizontal Producers
- 4 Gas Injectors
- 6 Water Injectors

* The FFD total well count includes the wells drilled in the phase one EPS.

Current Estimate Milestones



★ Decision points to consider EPS and FFD project sanction

Summary:

Managing Director, Robert Hosking

Key Points



- Increased confidence in the contingent resource volumes, strong production test results, and the shallow water and shallow reservoir setting continue to support the potential for a combined or standalone development option
- The development type under consideration, subsea development to an FPSO, is a proven, reliable and uncomplicated system
- Karoon has put in place a very experienced project management team
- Appraisal drilling is the next step for the project and represents a critical decision point
- Size of development is manageable and appropriate for Karoon's size
- Karoon's high equity interest gives significant flexibility for funding through farm-out, alternatively debt finance is expected to be available following a successful appraisal program
- Karoon's cash at bank as at 30/6/15 was A\$553 million
- Maximum Economic Exposure for the phase 1 EPS is estimated to be approximately US\$530M on a 100% basis

Contact Information



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