

# Quarterly Activities Summary for Period Ended 31 March 2018

## Highlights:

### **Cuba – Santa Cruz Oil Field**

- Exclusive right to assess potential for the enhancement of oil production from the Santa Cruz oil field and negotiate incremental oil recovery agreement
- Accelerated pathway to becoming an oil producer in Cuba

### **Cuba - Block 9 PSC**

- Farmout process for Block 9 PSC remains active with multiple potential farminees
- Permitting received to commence civil works at first well site
- Tenders received for drilling rigs, including turn key proposal
- Alameda-1 presents an opportunity to drill three objectives with combined exploration potential of 2.5 billion barrels Oil-in-Place and 130 million barrels of recoverable oil (Best Estimate, 100% basis)\*

### **Australia – WA-488-P (Beehive)**

- Environmental permit application submitted to regulator during February 2018
- Tenders for acquisition of 3D seismic survey issued and bids received
- Acquisition of 3D seismic survey expected to commence around mid- 2018

### **New Zealand - PEP51153**

- Successful oil flow during test of Pukatea-1 Mt. Messenger oil zone
- Potential development plans being considered

MELBOURNE, AUSTRALIA (20 April 2018)

Melbana Energy Limited (ASX: **MAY**) (“**Melbana**” or the “**Company**”) provides the following summary in relation to its activities during the quarter ended 31 December 2017.

## Overview

The quarter saw Melbana continue to progress its key high impact projects and included finalization of a significant new Cuban business development opportunity.

On 8 March, Melbana announced it had executed an agreement with Cuba’s national oil company, Cubapetroleo, for the assessment of opportunities to enhance current oil production from the Santa Cruz oil field. The agreement grants Melbana an exclusive right to assess potential for the enhancement of oil production from the Santa Cruz oil field which has been producing from multiple wells since 2004. Melbana’s

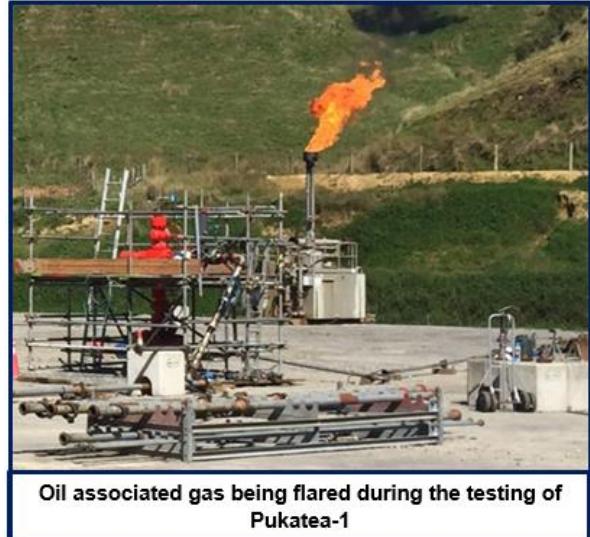
assessment will focus on how best to achieve incremental oil recovery. The agreement provides Melbana with an accelerated pathway to becoming an oil producer in Cuba.

Melbana continued to progress planning and permitting for a drilling campaign in Cuba Block 9 where it is aiming to commence drilling up to two wells, Alameda-1 and Zapato-1 in 2018. The procurement process for a drilling rig and other major equipment and services and well permitting was advanced during this period with tenders received for the supply of drilling rigs, including a turn key proposal, currently being evaluated.

During the quarter Melbana was notified by the regulator of the approval of its application to vary the WA-488-P (Beehive) work program by suspending and extending Permit Year 2 by 6 months to 21 September 2018 with a commensurate extension for subsequent years. This extension provides sufficient time for the WA-488-P stakeholders (Total, Santos and Melbana) to obtain the pre-requisite regulatory approvals to enable the Beehive 3D seismic survey to proceed mid-year as targeted.

In February, the Company submitted an Environmental Permit Application to the Regulator to conduct a 3D seismic survey over the giant Beehive prospect offshore Australia. A competitive tender process was conducted for the acquisition of the 3D seismic survey with bids received being evaluated. The 3D survey is targeted for around mid-2018.

In New Zealand, the drilling of the Pukatea-1 well was undertaken, with a successful discovery in the secondary target. The discovery in the Mt Messenger oil zone successfully flowed oil upon test at an initial rate of 600bbls per day on a 28/64" choke, exceeding expectations.



Subsequent to the end of the quarter Melbana entered into a Loan Facility (see ASX Release of 19 April 2018) for US\$2.5 million. As at 20 April 2018, Melbana's gross cash position is A\$6.1 million, with available working capital in excess of A\$3.1 million after taking into consideration the bank guarantee Melbana has put in place for Block 9 in Cuba. Melbana is now well funded to progress its portfolio of projects.

#### **Commenting on the Quarter's activities Melbana Energy's CEO Robert Zammit said:**

*"The quarter saw progress in some key focus areas. Significantly, CubaPetroleo granted us exclusive rights to study the Santa Cruz oil field and negotiate a long term incremental oil recovery project. We also progressed our Block 9 drilling approvals and key procurement activities. Our Block 9 farm out efforts are front of mind and we continue to have positive dialogue with a number of potential farminees. In Australia progress on the Beehive 3D survey planning was pleasing and we anticipate some further milestones being reached during the second quarter. We were also pleased to make a discovery in the Mt. Messenger oil zone whilst drilling Pukatea-1 in New Zealand and will be looking at opportunities for development."*

*Melbana looks forward to keeping the market informed as it progresses with Cuba, New Zealand, Beehive and our other projects."*

**Robert Zammit**  
**Chief Executive Officer**

Attachments: Activity Summaries by Project Area

\*Refer to Cautionary Statement in this report (page 6) relating to estimates of Prospective Resources.

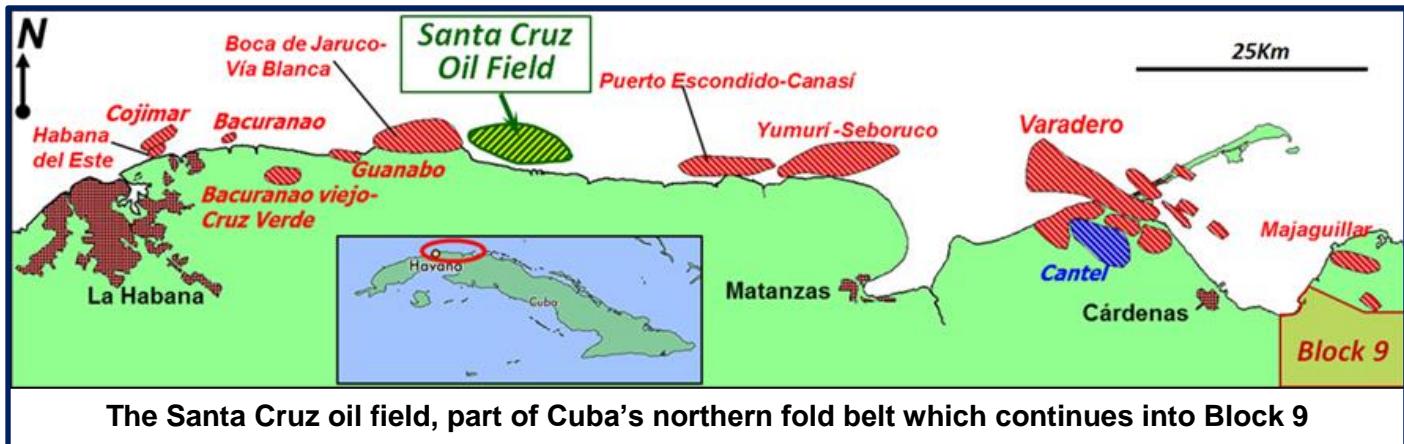
**Contingent and Prospective Resources:** The information that relates to Contingent Resources and Prospective Resources for Melbana is based on, and fairly represents, information and supporting documentation compiled by Dean Johnstone, Senior Geologist at Melbana. Mr Johnstone B.Sc has over 34 years of relevant experience, is a member of the American Association of Petroleum Geologists, and consents to the publication of the resource assessments contained herein. The Contingent Resource and Prospective Resource estimates are consistent with the definitions of hydrocarbon resources that appear in the Listing Rules. Conversion factors: 6 Bscf gas equals 1 MMboe; 1 bbl condensate equals 1 boe.

## Cuba

As an early mover into Cuba, Melbana is now one of the few western companies (and the only ASX listed company) with an established footprint in the high potential Cuban hydrocarbon sector. The geology of Cuba has analogies to petroleum systems in which Melbana's technical personnel have significant experience, and Melbana sees substantial hydrocarbon potential in Cuba overall and Block 9 in particular, which is on-trend with Cuba's northern fold belt.

### Santa Cruz Incremental Oil Opportunity

The Santa Cruz oil field is located approximately 45km from Havana between Boca de Jaruco and Canasí oil fields and approximately 150 km west of Melbana's existing Block 9. Santa Cruz is in the northern foldbelt of Cuba – the trend that is responsible for the vast majority of Cuba's oil and gas production.



The Santa Cruz oil field was discovered in 2004 when drilled via a land based rig as a deviated well out to the offshore structure. It initially tested at 1,250 barrels per day, with oil quality varying from 10°API to 22°API, typical of most Cuban oil production. Initial estimates reported that Santa Cruz had up to 100 million barrels of recoverable oil with appraisal drilling confirming a field area of greater than 20km<sup>2</sup> and a significant oil column of 250 metres. Santa Cruz was declared commercial in 2006 and produced in excess of 1 million barrels in the first year. By 2012 production was approximately 1,600 barrels/day and the field had produced 7.4 million barrels from 18 wells.

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field. The agreement grants Melbana an exclusive right to assess potential for the enhancement of oil production from the Santa Cruz oil field and negotiate a long term incremental oil recovery agreement.

## Block 9 Drilling Permitting

During the quarter, regulatory authorities in Cuba issued Melbana with a Certificate of Microlocalisation representing the successful completion of the first phase of the Block 9 drilling permitting process. Granting of the Certificate confirms that Melbana has satisfied all Cuban regulatory authorities, local municipal agencies and community representatives with respect to the potential environmental and land use impacts of the proposed drilling program on Block 9.

Melbana now has approval to access the land area at the Alameda-1 well site that is required for construction of the access road, camp and drilling rig 'hard-standing' surface working areas and to proceed to the next phase of the permitting process.

The regulatory and stakeholder engagement required for final approval of Block 9 drilling is continuing on schedule. The second phase of the permitting process includes environmental licencing, approval of operational plans, permission to install drilling equipment through to final regulatory approval to undertake drilling operations.



**Melbana's Cuba Representative Dr Rafael Tenreyro reviews drilling plans with local stakeholders**

## Block 9 Drilling Rig & Services

During the quarter, the tender was completed for the supply of a drilling rig for Block 9 in late 2018. Bids are currently being evaluated, including options that provide for a "turn key" type arrangement which has been submitted by an established operating entity in Cuba. This option is potentially attractive for this initial drilling program as it uses established local logistics and service providers.

The procurement process for major service contractors and long lead items has also commenced. Melbana's Cuba based team have undertaken a number of site visits for potential civil works and supporting contractors.

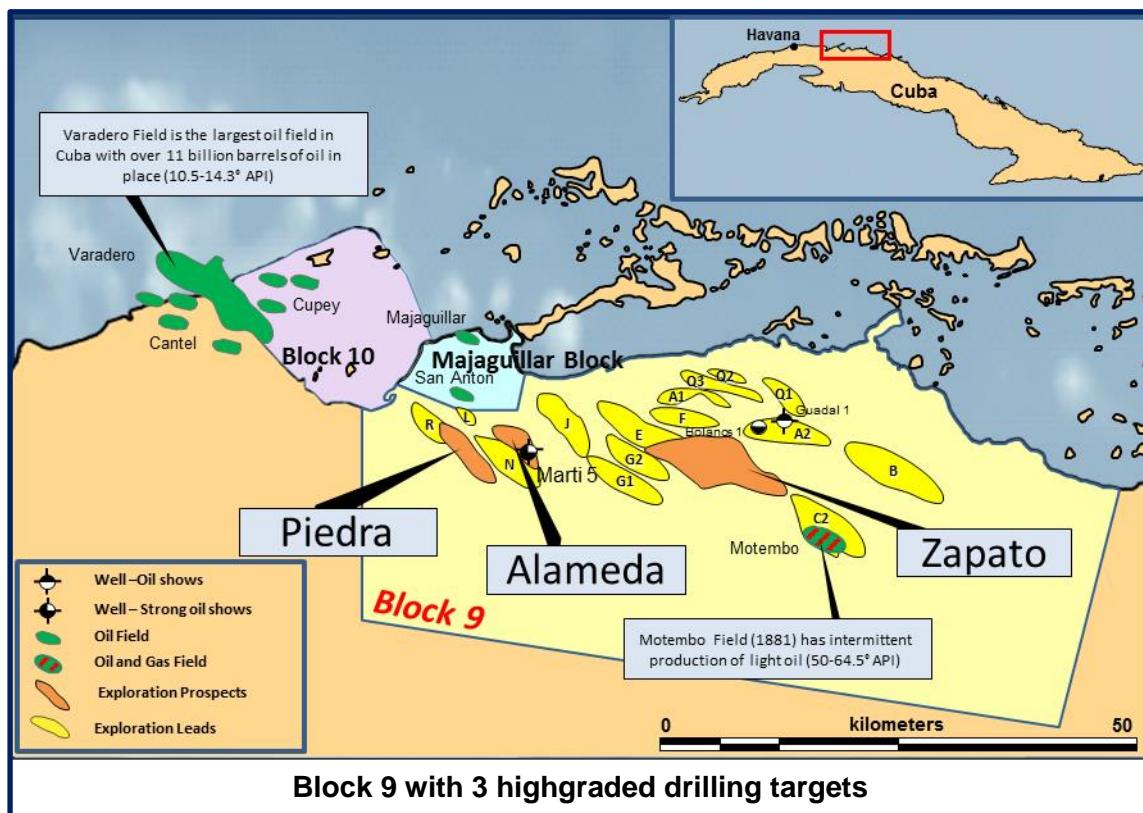
The procurement process for a drilling rig and other major equipment and services and well permitting was also progressed during the quarter.



**Melbana staff inspect modern drilling rig in Cuba**

## Block 9 Work Program

The minimum work program for the Block 9 second exploration sub-period, which commenced on 3 November 2017 and continues for two years, includes the completion of a gravity study and the drilling of one exploration well. During the quarter, Melbana completed the gravity study component of the work program.

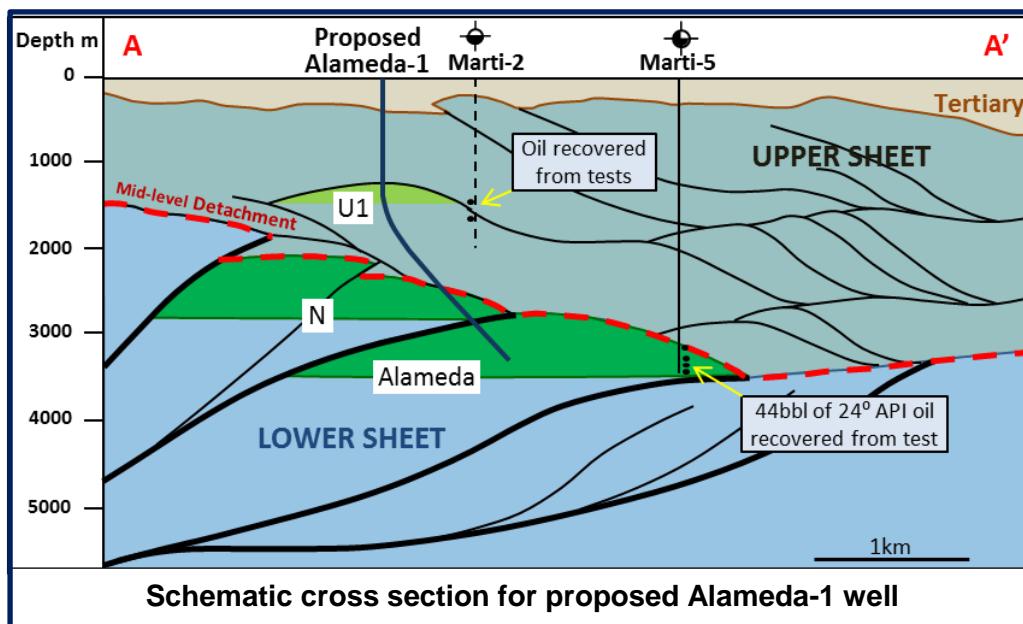


Melbana has identified Block 9 as one of the world's most exciting exploration plays with exploration potential for approximately 12.5 billion barrels of Oil-in-Place with a Prospective (Recoverable) Resource of 637 million barrels (Best Estimate, 100% basis)\* of potentially high quality oil. The prospectivity assessment also identified 19 individual prospects and leads which the Company has been prioritising so as to focus on the highest impact, lowest risk drill opportunities.

### Alameda-1 – High Priority Exploration Opportunity

The highest ranked exploration drilling opportunity is the proposed Alameda-1 well which will test a combined exploration potential of over 2.5 billion barrels Oil-in-Place and 130 million barrels of recoverable oil on a 100% unrisked, Best Estimate basis\* and over 400 million recoverable barrels aggregate high side potential (Table 1 and Table 2). This exploration well has been designed as a mildly deviated well, with a total measured depth of 4,000m to enable the well to penetrate three independent exploration objectives; the primary Alameda objective as well as the shallower N and U1 objectives.

\*Refer to Cautionary Statement in this report (page 3) relating to estimates of Prospective Resources.



The U1 objective is a structure indicated on seismic as being updip of the tested oil recoveries in the Marti-2 well. While characterised as an exploration well, the chance of success at Alameda-1 benefits from two old wells, Marti-2 and Marti-5, both of which recovered oil from the objectives targeted in Alameda-1. Alameda-1 is estimated to take approximately 80 days to drill.

Objective	Chance of Success	Oil-in-Place (MMstb)			
		%	Low	Best	High
<b>U1</b>	17%	40	503	1,851	759
<b>N</b>	22%	75	818	2,580	1,114
<b>Alameda</b>	32%	62	1,293	4,278	1,829

**Table 1: Exploration Oil-in-Place estimates for objectives of proposed Alameda-1 well**

**\*Prospective Resources Cautionary Statement:** The estimated quantities of petroleum that may potentially be recovered by the application of a future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Future exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.

Objective	Chance of Success	Recoverable Prospective Resource (MMstb)			
		%	Low	Best	High
<b>U1</b>	17%	2	25	93	38
<b>N</b>	22%	4	41	129	56
<b>Alameda</b>	32%	3	65	214	91

**Table 2: Exploration Prospective Recoverable Resource estimates for objectives of proposed Alameda-1 well**

Melbana's focus is currently on detailed planning for a drilling campaign in Block 9. The Company's aim is to drill up to two wells in Block 9 commencing in 2018. Based on a range of potential drill targets, a two well campaign would cost in the range of US\$20-30 million, and ongoing subsurface studies may yield further high quality, attractive drilling objectives. Melbana has commenced farmout activities for Block 9, with a data room opened in its Melbourne office.

In Cuba, the key focus for the Company during the coming months will be:

- Continuing Block 9 farmout activities;
- Seeking Cuban regulatory approvals required for Block 9 drilling in 2018;
- Identification of long lead procurement and contracting actions for planned Block 9 drill program;
- Detailed contractor evaluation and selection in preparation for Block 9 field contract commitments; and
- Progressing the Santa Cruz Oil Field Study

## New Zealand: Taranaki Basin

**PEP51153 (Melbana 30%, TAG 70% & Operator)**

Melbana holds a 30% interest in PEP51153 operated by TAG Oil ("TAG", 70%), which covers an area of approximately 85 square km (21,000 acres) and is located in the productive onshore Taranaki Basin of New Zealand.

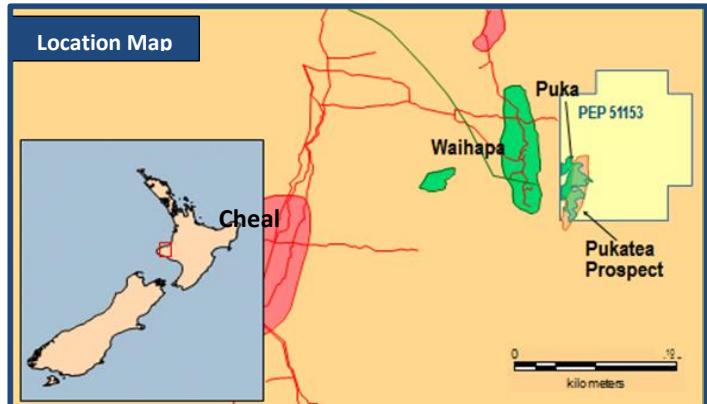
TAG operates the nearby Cheal production complex, less than 10km from the Pukatea location.

PEP51153 contains the suspended Puka oil field. Three wells have been drilled since the Puka oil field was discovered in 2012, with the Puka-1 and Puka-2 wells producing 100 barrels/day from the Mt. Messenger formation before being shut in due to low oil prices and mechanical issues. Recently, the Pukatea-1 well which was primarily targeting a deeper objective successfully intersected the Mt Messenger formation.

A successful production test of the Pukatea-1 oil zone found in the Mt. Messenger formation has flowed oil at an initial rate of 600bbls per day on a 28/64" choke. The well flowed naturally without the aid of artificial lift. Testing of the zone at various flow rates is continuing using a variety of choke sizes.

The oil produced was combined with other oil produced in the area and sold to the market at Brent oil pricing.

An independent expert values TAG's 2P reserves in nearby fields at ~A\$20/barrel (on an NPV10 basis)<sup>#</sup>.



**Oil associated gas being flared during the testing of Pukatea-1**

### Puka Contingent Resource (pre February 2018 Mt Messenger Result) \*

100% MMboe*	1C	2C	3C
Puka	0.3	0.6	1.8

**\* Prospective Resources Cautionary Statement:** The estimated quantities of petroleum that may potentially be recovered by the application of a future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Future exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.

**\*\* COS means "Chance of Success" #TAG Oil media release 20 June 2017**

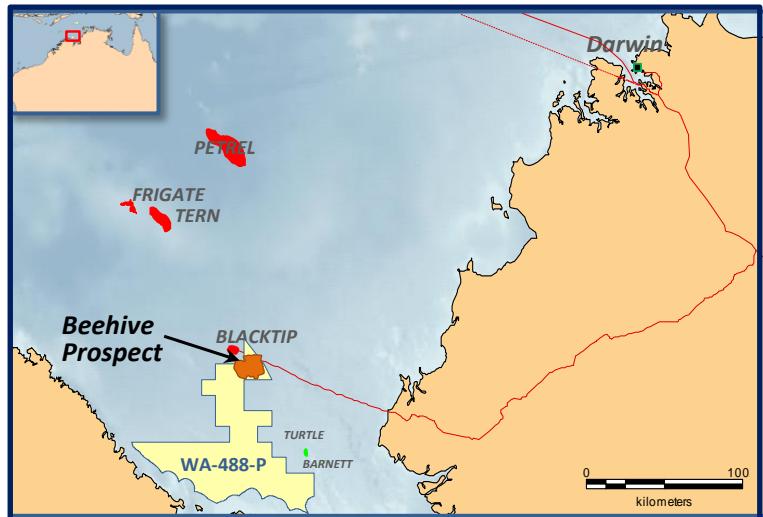
## Australia

### Bonaparte Gulf: Petrel sub-Basin: WA-488-P (Melbana 100%##)

WA-488-P is located in the southern Bonaparte Gulf and covers an area of 4,105km<sup>2</sup>. The permit was awarded to Melbana in May 2012 as part of the acreage Gazettal Round.

Leveraging the 2011 Ungani-1 oil discovery in Carboniferous aged reservoirs in the nearby Canning Basin, Melbana has identified the giant Beehive prospect, analogous to the giant Tengiz field in the Caspian Sea but a new play type within the Bonaparte Basin.

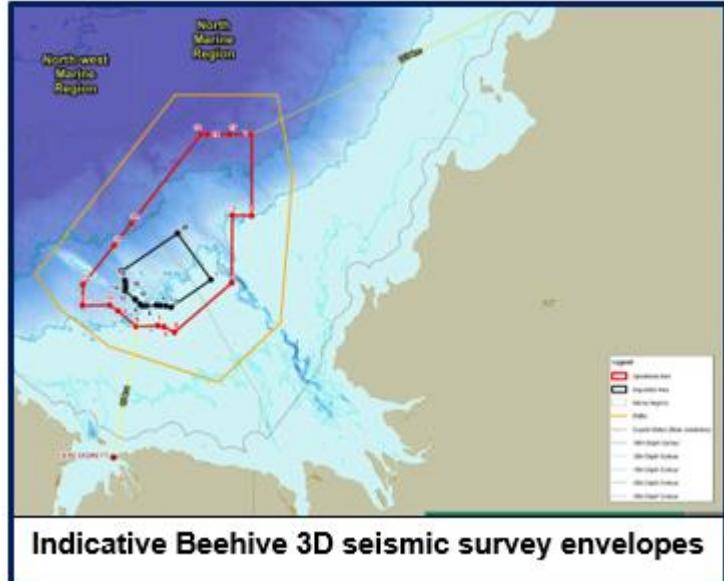
On 12 December 2017, a Seismic Funding and Farmin Option Agreement was signed with Total and Santos. The agreement provides for Total and Santos to fully fund 100% of the cost of a 3D seismic survey over the Beehive prospect\* in consideration for which, they are granted an option (exerciseable together or individually) to acquire a direct 80% participating interest in the permit. If the option is exercised, Total and/or Santos will fully fund the costs of all activities until completion of the first well in the WA-488-P permit. In the event of a commercial discovery, Melbana will repay carried funding from its share of cash flow from the Beehive field. Melbana will have no re-payment obligations for such carried funding in the event there is no commercial discovery and development in WA-488-P.



Pursuant to an Operations Services Agreement, Melbana has engaged Santos to perform operational services in connection with the acquisition of 3D seismic survey data over the Beehive prospect. Melbana submitted an application for an environmental permit to the Australian regulator (NOPSEMA) in February 2018 to undertake the Beehive 3D Survey.

The survey acquisition area is approximately 975 km<sup>2</sup> with a larger operational area around it to allow for vessel turns and testing of equipment.

The survey will take a maximum of 30 days and is likely to be undertaken around mid-2018.



Bids have been received from service providers for the acquisition of the 3D survey and are currently being evaluated.

\* Subject to regulatory approvals and tendered cost of seismic acquisition being within an acceptable range

## Total and Santos hold a cumulative 80% option to acquire a Participating Interest in WA-488-P

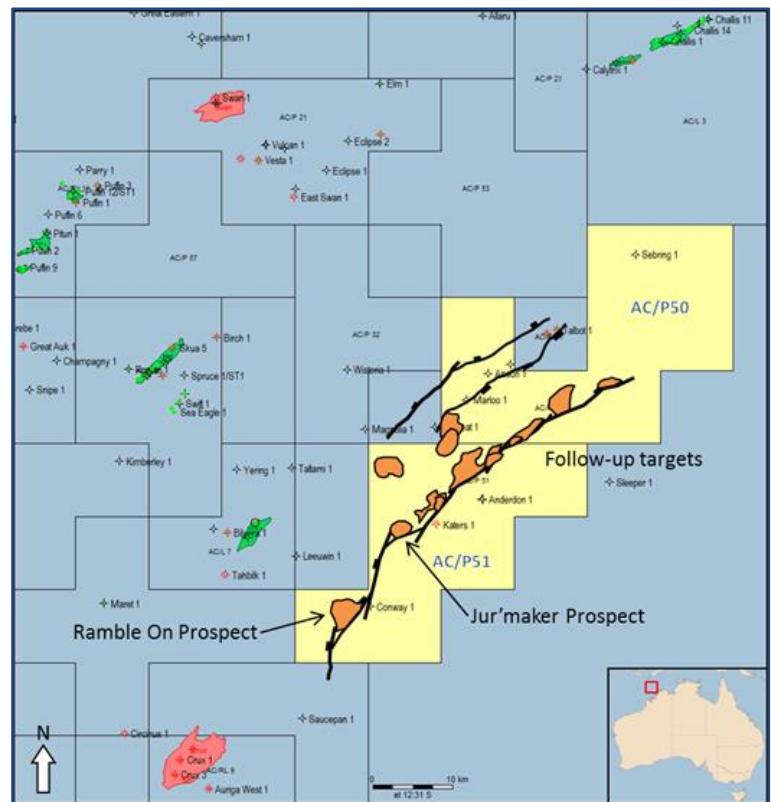
## Ashmore Cartier Region, Timor Sea: Vulcan Sub-Basin

### AC/P50 and AC/P51 (Melbana 55%\*)

AC/P51 contains the Ramble On prospect, a new play type that has proven analogues in other Basins. This prospect is on trend with the recently reported Auriga West-1 gas discovery near Crux gas/condensate field, resulting in renewed industry interest in the region.

The seismic reprocessing undertaken earlier in 2017 has resulted in significantly improved data quality. Melbana's preliminary assessment of the recent 3D seismic broadband reprocessing results has identified the potential for additional prospectivity in the Permits resulting from improved data quality, including an amplitude-supported objective immediately above the existing Ramble On prospect. In the right conditions, an amplitude anomaly can be a direct indicator of hydrocarbons.

Melbana considers the Ashmore Cartier area as non-core and is considering divestment options.



\*Subject to option granted for 5% participating interest for both permits

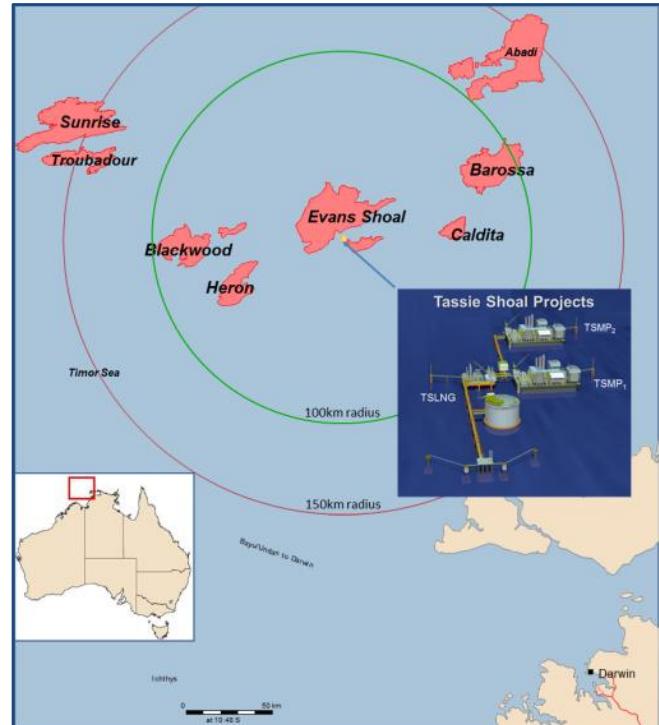
\*\*Continuation into the 4<sup>th</sup> Permit Year is discretionary

## Tassie Shoal Gas Processing Projects

### (Melbana 100%)

The Tassie Shoal Projects encompass a single offshore LNG and two world scale offshore Methanol production facilities. Australian Federal Environmental approval has been granted to construct the production facilities offshore on Tassie Shoal, a unique shallow water site. The Tassie Shoal Projects were designed to process raw gas from surrounding discovered but undeveloped natural gas fields.

Industry participants are expected to seek opportunities to collaborate to secure lowest cost and efficient resource development in Australia, especially as titleholders with stranded discoveries are under resource tenure pressure. The unique concept of the Tassie Shoal Projects represents an opportunity for collaboration with Melbana to develop a commercialisation path for the significant, discovered but undeveloped resources in the region, for the benefit of all stakeholders.



In July 2017 it was reported by ConocoPhillips that the Barossa gas field is proposed to be developed as feedstock to the Darwin LNG facility from 2023\*. This leaves the Evans Shoal Gas field (~28% CO<sub>2</sub>) without a publically stated development path.

During the 3Q2017, Shell Australia obtained regulatory approval for the sale if its 32.5% interest in NT/RL7 (Evans Shoal Gas field) to Eni Australia in consideration for a range of matters and that Eni agrees to pay Shell a success fee if the Evans Shoal Title continually produces gas for no less than one week#.

The Tassie Shoal LNG and/or Methanol Projects, with their long term environmental approvals in place, remain as potential development paths for stranded Evans Shoal gas. The Tassie Shoal LNG Project, with its shallow water platform fixed to seabed design, remains a low cost development option for LNG production should a means of disposing of the the high CO<sub>2</sub> content in Evans Shoal gas be economically achieved. Alternatively the Tassie Shoal Methanol Project, with its ability to receive and process raw gas with a 30% CO<sub>2</sub> content, remains an alternative development path should the titleholders prefer to proceed with a known achievable low cost development plan.

\*ConocoPhillips announcement 13 July 2017

#See NEATS website [Melbana Energy Limited](https://neats.nopta.gov.au>TitleRegister/TitleDetailsRetentionLease/b90e973c-756c-4e5b-af26-34aa38795eb7</a></p>
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