

### September 2024

## Block 9, Cuba Project Summary

#### Melbana Energy Limited

(ASX: MAY) ABN 43 066 447 952

Mezzanine Floor, 388 George St Sydney NSW 2000 Australia p +61 2 8323 6600

e admin@melbana.com

melbana.com



# 267 Million Barrel Discovery - Onshore Cuba<sup>1</sup>

- Close to infrastructure
- Successful appraisal well
- Significant follow up potential in PSC





Flaring whilst drilling Alameda-1 (2022)

First tanker of oil from Alameda-2 (2023)

- Block 9 PSC (Sonangol 70%, MAY 30% & Operator) is a large-scale, up to 734 mmbbl oil discovery in the Gulf of Mexico, in Cuba's prolific north region.
- ► The JV encountered (Alameda-1) and discovered (Alameda-2) a shallow oilfield with first domestic production of c. 5k b/d expected in early 2025 with potential to produce up to c. 40k b/, subject to further drilling.
- The JV appraised (via Alameda-3) a new "playtype" targeting untapped deeper, lighter oil. Further appraisal required.
- Block 9 is a large onshore block (2,344km²) prolific hydrocarbon zone: close to another multibillion barrel (Varadero) oil field with well-developed oil field infrastructure, service providers and international airports.
- Approvals in place to export crude to international oil markets.

Alameda Certified Resources (gross unrisked, millions barrels) <sup>2</sup>

- ▶ Block 9 PSC awarded to Melbana (100%) in 2015 for 25 years on internationally attractive terms.
- ➤ Sonangol (National Oil Company of Angola Africa's largest oil producer) farmed in 2021 to 85% fund drilling two exploration wells for 70% working interest (completed 2022). Melbana retained Operatorship.
- ▶ Alameda-1 well (2022) encountered three geologically separate and vertically stacked oil-bearing formations accompanied by high formation pressure each with oil streaming over the shakers while drilling.
- ► Independently certified oil in place and prospective resources, as per tables below <sup>1,2</sup>.
- Unassisted stable flow rates from Amistad reservoir of up to 1300 barrels of oil per day of high quality, 20° API crude.
- Short lead time to commercialisation, long exploration runway.

Alameda-2 comple

	Low	Best	Mean	High
Oil-in-Place	2,145	5,041	6,355	12,047
Amistad	30	88	119	240
Alameda	34	109	148	297
Marti	21	70	95	197
Total	85	267	362	734

<sup>&</sup>lt;sup>1</sup> 100% gross unrisked best estimate of Prospective Resource



<sup>&</sup>lt;sup>2</sup> McDaniel & Associates Competent Persons Report August 2022



#### **Investment Highlights**

#### Major oil and gas discovery

- Alameda-1 exploration well encountered 3 large independent and highly pressured oil zones (Amistad, Alameda, Marti).
- Certified Resources 2U 267 mmbbl, and 3U 734 mmbbl.

#### **Excellent appraisal results**

- ► Flow rates of up to 1,900 bbl/d, only 20% of net pay perforated.
- ▶ 19° API 30cP oil with low Sulphur, lighter & better than typical Cuban oil.
- Contingent resources appraisal drilling and testing firmed up contingent resources.

#### Alameda-3 new play

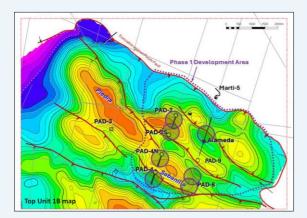
- Alameda-3 targeted deeper reservoirs (Alameda & Marti) & lighter oil.
- ► Significant oil shows and pressure during Alameda-1.
- Lighter crude provides better realised prices & export opportunities.

#### **Extensive exploration fairway**

- ▶ 2,344 km² in single onshore PSC.
- 3D seismic planned for 2024/2025, to optimise development drilling.

#### Amistad development plan

- ➤ Seven development well locations to target Amistad Unit 1B 16 mmbbl (1C) resources.
- Shallow, simple wells designed to produce from entire extensive net pay interval
- Future wells will be drilled based on 3D seismic



#### Rapid pathway to production

- ▶ Potential for a low cost / fast track path to market.
- Close to existing oil field infrastructure (Matanzas Oil Terminal).
- ► Cuban oil demand currently outstrips local supply.

#### **Route to wider markets**

- > 75km to deepwater port with oil storage tanks.
- ▶ Oil can be sold on global markets.

#### **Attractive fiscal terms**

- Recover past costs from majority of revenues until into profit.
- Production is then shared on internationally competitive terms.
- Corporate tax 15%.

#### **Attractive cost pool**

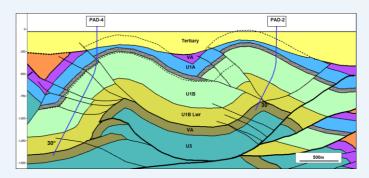
► More than EUR100million spent on exploration and appraisal to date.

#### **Supportive JV and regulator**

- ► Melbana Energy Limited (30% WI &Operator).
- Sonangol (Angola National Oil Company 70% WI).
- ► Supportive regulator (CUPET).

#### **Proven geological setting**

- ▶ Block-9 hosts the high-quality light crude Motembo field.
- ➤ On trend with Varadero field (>11 billion bbl in place & >200 mmbbl produced to date and still producing oil)

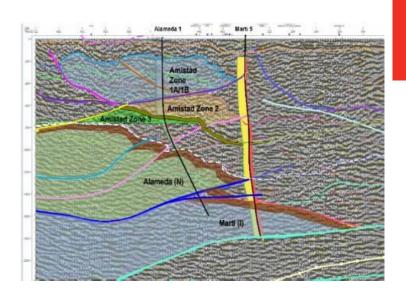




#### 2021-2022 Drilling Program

#### Alameda-1

- In 2021, Melbana spudded the Alameda-1 well to test 3 separate target zones.
- ➤ The well intersected oil starting at 454 metres and continued to intersect reservoirs through to total depth of 3,916 metres when drilling stopped due to a highly pressured influx of oil and gas into the well bore.
- As a result of drilling Alameda-1, net pay zones totalling approximately 300 mMD were defined across gross reservoir intervals totalling circa 2,155mMD.
- ► The Company then elected to shut in the well and designed a 2 well appraisal program.
- ▶ In August 2022, on the back of the Alameda discovery, the Company's Independent Experts, McDaniel and Associates, released updated estimates for Oil in Place and Prospective Resources for the 3 reservoirs intersected by the Alameda-1 well.



#### 2023–2024 Drilling Program

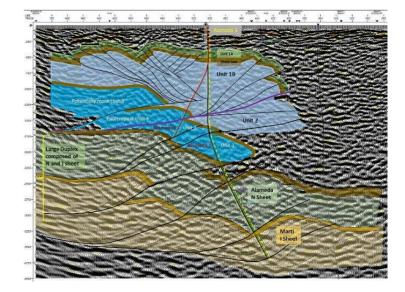
#### Alameda-2

- ► Alameda-2 was spudded in June 2023 and reached total depth of 1975m on 31st July 2023.
- ► The second well was focused on logging, coring and flow testing the Amistad Units 1A, 1B, 2 & 3.
- Unit 3 testing indicated the potential to flow 750 barrels of oil per day, significantly with no water present.
- Unit 1B test flowed at up to 1900 barrels of oil per day and resulted in a third-party Contingent Resource assessment.
- Well results allowed re-determination of net pay in Units 1A, 1B and 2 from 84m to 243m (538m inc. fractures).
- ► Unit 1B completed for production, goal is first crude oil export by end 2024.
- Development planning underway: more wells to be drilled.



#### Alameda-3

- Following the Alameda-2 well, the Company drilled Alameda-3 that targeted deeper reservoirs, Alameda and Marti which hold the potential of 179 mmbbl of prospective resource (gross unrisked best estimate).
- Testing was inconclusive, more analysis underway to determine remediation forward plan.



Alameda-3 was aimed at proving the potential of the deeper horizons to produce lighter, higher API crude, which would achieve a premium on international markets.



#### **Updated Amistad Resources**

- ► Unit 1B in the eastern part of the Alameda structure Contingent Resource (Development Pending)
- ► Unit 1B in the western part of the PSC

  Prospective Resource (Chance of Discovery 70% if additional appraisal well(s) drilled)
- ► Unit 1A

  Prospective Resource (Chance of Discovery of 70%

  will be derisked by additional appraisal well & pump

  testing)

#### Certified Resources <sup>3</sup> (gross unrisked, millions barrels)

	Low	Best	High
<b>Contingent Resources</b>			
Amistad Unit 1B East	16	46	129
<b>Prospective Resources</b>			
Amistad Unit 1B West	29	90	264
Amistad Unit 1A East	11	32	88

<sup>&</sup>lt;sup>3</sup> See announcement 25 March 2024

#### Forward Plans Advanced

- ➤ Alameda-2 demonstrated the potential to flow up to 1,900 bbl/d, thus even a pilot development project could generate significant revenues to reinvest into a full field development.
- ► The Joint Venture is completing a phase 1 field development planning process for the Unit 1B reservoir.
- ▶ Planning, offtake and funding workstreams are being progressed in parallel (see below).
- ► The next few years will involve the drilling of multiple production wells and the acquisition of a 3D seismic survey to optimise drilling.

- Storage tank allocation at terminal
   Staged logistics planning concepts
   Permitting for additional drill pads
   Unit 1B development plan
- Permission to export 100% of joint venture oil entitlement received
- Joint oil marketing
- International marketing of oil
- Farmout process underway
- Offtake/financing discussions with oil traders
- National Oil Company as existing partner (70% working interest)

Planning





**Financing** 

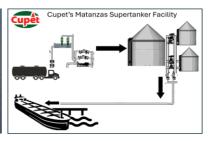


#### Pathway to Export Market

- Oil will be trucked directly to Matanzas Supertanker Facility receiving pits, then stored in tanks dedicated to Melbana Block 9 crude.
- Negotiating access to total storage of 250,000bbl for optimal parcel size economics
- At 5,000 bbl/d production rate initial export frequency would be every other month
- The Joint Venture is completing a phase 1 field development planning process for the Unit 1B reservoir.









#### **Proven Geological Setting**

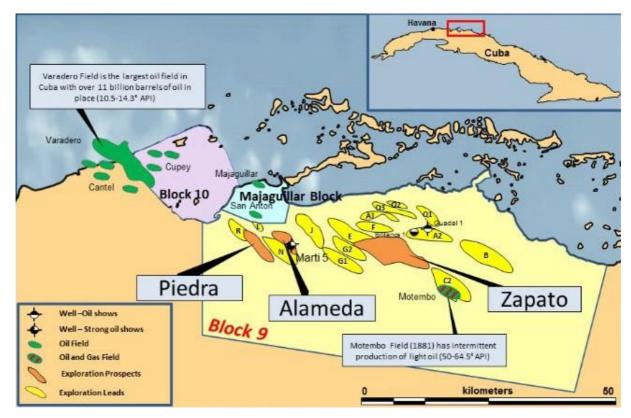
- A key aspect of Melbana's success in Block 9 is the integration of detailed seismic interpretation and structural modelling.
- Melbana's technical team have significant global experience in petroleum systems analogous to Cuba. Melbana's methodology is to integrate structural and stratigraphic data in a subsurface model that can be applied across a wide range of complex settings.
- New data acquired has been instrumental in Melbana building a more comprehensive integrated geological model which is updated real time during drilling.
- ► The geological model is based on a comprehensive dataset, including: plate tectonic and structural modelling; outcrop and well data; biostratigraphic data; gravity and magnetic data and seismic velocity data

#### Large Scale Opportunities

- ► The Lower Sheet Play, which is a fractured carbonate reservoir, similar to existing producing fields in Cuba, is located at depths typically between 2,000 and 3,500 metres.
- In nearby Cuban oil fields, these reservoirs can be highly productive, with reported initial well rates of up to 4,000 barrels of oil per day⁴.
- ► This lower sheet play was a key target for Alameda-3. Whilst testing was inconclusive crude was recovered, and the potential remains for a significant resource to be developed.
- Oil recoveries suggest that the Lower Sheet Play has potential for higher quality crude oil than that produced from adjacent fields with demonstrable prospectivity in the western and central areas of Block 9.

#### Block 9 – Extensive Prospect Running Room

- ► Melbana's technical assessment has prioritised a total of 19 structural prospects and leads of which Alameda-1 was the first to be drilled. The Company plans to explore the wider PSC over the coming years.
- Melbana optimised the drilling program to enable the acquisition of valuable information about both plays during the drilling of wells to the Lower Sheet objectives.

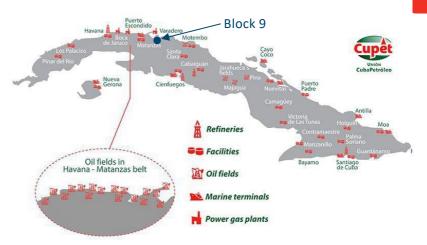


<sup>&</sup>lt;sup>4</sup> Based on our database of well data sourced from over 900 nearby wells and assumes all wells produce average rates of production



#### Doing Business in Cuba

- Cuba currently produces approximately 45,000 barrels of oil per day and 3 million cubic metres of gas. Oil production meets 50% of the domestic consumption, with the balance satisfied by imports.
- ► Most of the oil industry is currently operated by the national oil company, CUPET.
- The Canadian company, Sherritt International, has produced over 200 mmbbl of oil in Cuba for over 25 years.
- ➤ A deep-water port with an oil terminal is within 75km of Block 9 and international airport within 40km.
- ► There are multiple modern land drilling rigs currently operating in Cuba.
- ▶ Block 9 consists largely of low-lying farmland and there are sealed roads that connect Block 9 to Havana.



Oil infrastructure showing proximity of Block-9



Cuba: Sealed Roads



Low lying farmland on Block 9

#### To find out more, contact us

For more information, visit our website **melbana.com** or contact:

#### Dr Chris McKeown

Chief Commercial Officer

- e <u>chris.mckeown@melbana.com</u>
- p +61 2 8323 6600

