EQUITY RESEARCH

PAC PARTNERS

COMPANY	Melbana Energy Limited (MAY)	28th Nov 2023
MCAP	$219m Current share price $0.065c	
VALUATION	Our risked valuation is $0.153/share *(no change)*	
NEWS	Alameda-3 well soon, Cuban oil production growth + more for 2024	

THREE KEY REASONS TO OWN MELBANA ENERGY

Alameda-3 well to start drilling around mid-December with plans to undertake five flow tests of three separate formations with oil shows in a previous well. Progressive announcements are share price catalysts over 180-days budgeted operation, that is fully cash funded as has $31.2m cash on 30th Sep 2023.

MAY moving to oil producer status - Alameda-2 test oil production of the upper formation to resume after Alameda-3 **well mid-2024**. An upwardly revised Resource statement to incorporate much bigger fracture network and appraisal drilling will see perhaps a net 1,500 bbl/day by 2025 and aspirational 10,000 bbl/day by 2030 from the Upper formation only.

Wildcat upside if EOG drill the 1.4 billion boe Beehive Prospect offshore WA/NT during 2024. MAY has a royalty of US$10m per 25 mm bbl produced. MAY also has 100% of a contiguous block with a 1.2 billion boe oil and gas prospect called Hudson in WA-544P and NT/P87.

COMPANY BACKGROUND & PAC RESEARCH

Melbana Energy Limited (ASX – MAY) is an ASX-listed oil & gas explorer and developer in Cuba and Australia. Formerly known as MEO, Melbana has built-up and successfully traded a portfolio of assets in hydrocarbon rich basins. It has done this with technical excellence, value-adding and prudent risk-taking. More drilling, production testing and deal execution can add to valuation.

See also Link to 19-page introduction report: RR_MAY230828

Coming soon… **PAC Partners Webinar with Melbana Energy Limited**

Melbana Energy's (MAY) Andrew Purcell (Executive Chair) will be joining PAC Partners (live from Cuba) on Thursday 14 December at 10:15am.

Contact you PAC Advisor for details and formal invitation link.

Key catalysts for 2024 a huge year with company-making potential of Resources and production

- **Alameda-3 well starts in ~2-weeks with a planned for drilling ~180 days** with the <u>testing up to five zones in three separate formations.</u> *While Alameda-2 demonstrated the potential for commercial flows in the Upper Sheet (Amistad Formation), the two deeper formations have the potential for more oil reserves and possibly of higher quality oil*. Success in these lower formations can translate into big capitalisation lift as it potentially taps into hundreds of millions of bbl of in-place oil resource.

Prospective Resources as at 1 August 2022* (gross unrisked, millions of barrels)

Objective	Low	Best	Mean	High
Amistad 1, 2 & 3	30	88	119	240
Alameda	34	109	148	297
Marti	21	70	95	197
TOTAL	85	267	362	734

[1] McDaniel & Associates, Competent Persons Report August 2022 *See Prospective Resources (

- **Alameda-2 production – around mid-2024** will resume after the Alameda-3 well is completed. *This is a precursor to production phase declaration. Oil trucked to nearby bunkers for "credits" can then be turned into cashflow.*

- **Revised Resource statement – ~ SepQ2024** for the upper lying Amistad Formation. Original estimate of 88 mm bbl was based on 5% in-place oil recovery and 100 metre of net fracture pay. *Alameda-2 encountered ~615m of fracture pay raising hopes of a bigger Resource booking for the Amistad Formation. Amistad-3 can provides extra data for this estimate.*

- **Appraisal well drilling is to commence – perhaps by late SepQ'2024** as step-outs to the Alamdea-2 well. *MAY already have sanctioned four well pads to accommodate multiple appraisal/development wells. This is a step towards reaching a gross 5,000 bbl/day or more by 2025 and ~30,000 bbl/day by 2030 as an aspiration (NB: MAY has 30% equity). <u>This drilling these shallow wells may be fundable with debt and cashflow receipts</u>.*

- **MAY will look to undertake a 3D-seismic program starting late-2024.** The benefit will be to both identify future drilling targets but also to assist development and Reserves calculations that can assist in seeking debt funding.

- **US major oil company EOG is to drill the 1.4 billion bbl Beehive prospect possibly by mid-2024.** *MAY retains a royalty interest of US$10 per 25 mmbboe produced in the WA-488-P block. MAY has also has 100% interest in the adjoining WA-544-P and NT/P87 block with the big Hudson 1.2 billion bbl prospect and MAY is actively seeking a farmin party to progress drilling.*

Key catalysts for 2024 – the Alameda-3 well timetable in detail

Alameda-3 drilling over ~180 days with the testing up to five zones in three separate formations. Alameda-3 is a twinned hole of the original Alameda-1 with design to overcome drilling/testing difficulties.

Key has been the deployment of a massive 10,000 psi blow-out-preventer. Also, the well is targeted to drill to 3,835 m Measured Depth or ~40m (true vertical depth) less than the original well to avoid a major over pressured zone that was problematic in Alameda-1.

- **Spud date for Alameda-3 well is mid-December 2023**. *Alameda-3 well objectives are to obtain detailed logs and up 5 flow tests of three main formations, and hopefully find higher quality crude oil.*

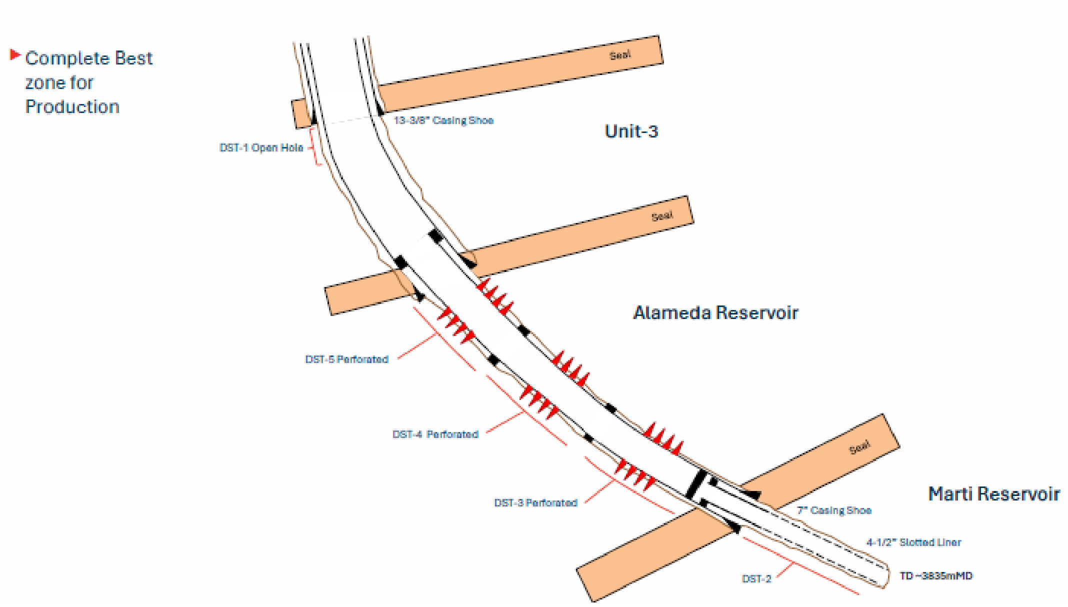
- **~30-days after spud date** - January 2024. While the Upper Amistad formations will be fully logged, only the uppermost 100 metres of <u>the Unit-3 reservoir is planned to be flow-tested</u> from an open hole 12 ¼ inch hole. Good flow rates here may compliment modest success in oil to pipe (but not surface) in the alameda-2 well earlier this year.

- **By Day 50 – Unit 3 will be drilled and logged** and 9 5/8-inch casing set. Extra data can assist compilation of amended Resources for the Amistad formation by mid-2024.

- **By Day 70 to 80 – The entire middle Sheet (Alameda formation)** is planned to be penetrated with an 8 ½ inch drill hole, fully logged and 7-inch liner set. This is to protect the formation as the well drills to higher pressured bottom sheet – the Marti Formation.
- **By Day 80 to 95 – Drilling the Marti Formation down to total Depth** – anticipated to be ~3,835m MD in 6-inch hole. After installation of a 4 ½ inch slotted liner drill stem tests can be started.
- **Days 95 to 180 days – MAY will conduct a further 4 Drill stem tests:**
  - ✓ Starting from base - DST-2 Test through slotted line the entire Marti Formation. One or more reservoirs within the entire drilled section can contribute to flows.
  - ✓ The install a removeable plug to isolate the Alameda Formation from the Marti.
  - ✓ Conduct DST-3 through perforations of the 7-inch line. Location for the perforations in the Alamdea formation will be based on logs and drilling returns information.
  - ✓ Conduct DST4 and 5 in zones of interest.

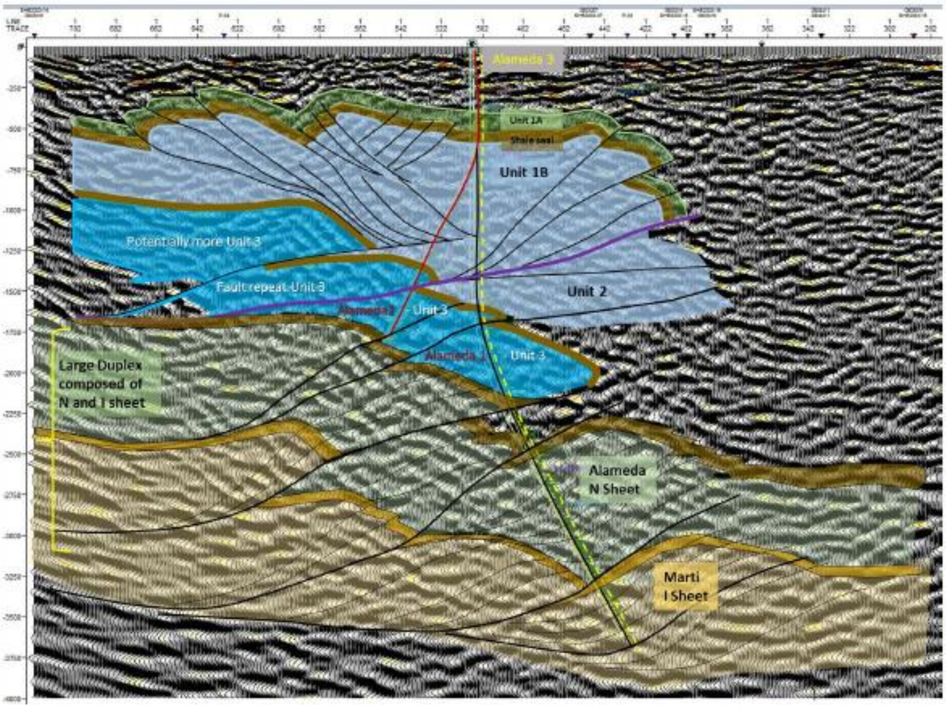
On completion of testing, the Alameda-3 will be suspended aiming for re-entry and extended testing.

Alameda-3 well – Planned program of drilling and up to 5 drill stem tests



Alameda-2 – red line tested the Amistad Units 1A, 1B and Unit 3 down to

Alameda-3 is a much deeper well will parallel original Alameda-1 well to test Amistad Unit 3. Also the mid-placed Alameda Sheet (Formation) and the bottom-most Marti Sheet (Formation).



Source for all tables, pictures is MAY AGM Presentation 16th November 2023

2023 has been a highly successful year for the operator, MAY and its partner, Sonangol

The drilling of Alameda-2 testing the Upper Sheet (Amistad Formation) with multiple tests recovering oil was completed safely and within budget for above expectation results.

- The culmination was the Unit 1B that tested a maximum of 1,900 bbl oil/day of low sulphur 19° API oi of good viscosity. Stabilised flow rates achieved from Unit 1B in Alameda-2 were ~1,235 barrels of oil/day. This oil flow and oil quality is significantly better than average for well in the upper formations in Cuba.
- Horizontal drilling in these reservoirs typically triples the flow rate. This and other techniques for stimulating production rates will be investigated over 2024.
- Staged production testing of Alameda-2 in October 2023 saw 10 days of flows. These resulted in a peak flow of 1,183 bbl/day oil flows, 20 tanker loads sent to bunkers and valuable data to assist in designing a field development.
- Unit 1A and Unit 3 of the Upper Sheet (Amistad formation) also have promise, though with lower API crude oil.
- MAY has been building a first-class exploration and development team. It has appointed an experienced General Counsel, Exploration Manager, Chief Financial Officer, Chief Commercial Officer and Chief Operating Officer, with strong international credentials to build an oil business.

COMPANY BACKGROUND & PAC RESEARCH

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KEY DRIVERS – GIANT IN-PLACE OIL DISCOVERY – LOOKING FOR QUALITY & RESERVOIR

- MAY has found in Block 9 Onshore Cuba a giant structure with between 2 and 12 billion barrels oil in place (with the Alameda-1 discovery). Commercial production needs to find fracture porosity in carbonates and somewhat less heavy oil that can flow more easily and is a more valuable oil (than 11-degree API).

- After drilling in an appraisal well (Alameda-2) oil flowed oil in 3 of 4 tests in the Upper 1/3 of the original find in alameda-1.
- We believe MAY has made a commercial discovery with one zone flowing 1,235 bbl/day of less heavy and more valuable oil (19-degree API).
- Production can start imminently pending installing simple (rented) surface facilities. 1,500 bbl of test oil has already trucked to nearby refinery, i.e. its low opex/transport cost. Production completion will be from Unit 1B of Amistad formation.
- MAY will shortly drill Alameda-3 to test their primary targets – the deeper Alameda and Marti Horizons. We are hopeful that lighter (more valuable) oil will flow. Success here opens up potential for hundreds of millions of bbls of recoverable oil.

INVESTMENT VIEW – WELL POSITIONED

- MAY has 30% equity. MAY's Block 9 also has over 18 other prospects. More seismic and drilling next year is in prospect.
- So MAY is leveraged to a new deeper trend opening up as well as producing from shallow reservoirs.
- Our risked valuation is $0.153/share.
- Success in Alameda-3 opens potential for Alameda field to be a multi-hundred million bbl of oil reserves, and for a big lift in our risked valuation.

Valuation assessment is unchanged at $0.153/share, incorporating project risk factors.

Valuation that risks various assets for unknowns including resource size, operating and capital cost, project timing and possible equity dilution. Exploration risk is also a factor we try to account for in our net risked valuation.

Melbana Energy Ltd AUDUSD	*$0.064* *0.675*	Location *Status*	Equity Melbana %	Resource Best mm boe	Valuation A$/boe	Residual Net of Risk %	Risk Valn Melbana A$m	Risked Valn/share A$/share	Valuation Allocation %	Recovery Factor %
Block 9 PSC		*Cuba*	30.0%	267	*$11.64*	*33.1%*	308	*$0.091*	60%	5.3%
		Status								
* Alameda-2 Net added		*Production tests*	30.0%	21	*$8.96*	*40.0%*	23	*$0.007*	4%	4.4%
* Alameda-3		*Preparing to drill*	30.0%	14	*$12.96*	*28.4%*	16	*$0.005*	3%	5.1%
* Block 9 Exploration		*Prospects*	30.0%	160	*$10.80*	*18.3%*	95	*$0.028*	18%	5.3%
Santa Cruz prodn enhancement		*Offshore Cuba*	100.0%	7	*$10.37*	*20.0%*	5	*$0.001*	1%	
Cuba - Total				470	*$11.26*	*27.2%*	447	*$0.132*	87%	
WA-488-P (Royalty) Beehive Prospe		*Timor Sea, A*	0.0%	75	*$14.44*	*24.0%*	8	*$0.002*	2%	
Tassie Shoals - Methanol & LNG		*Timor Sea, A*	100.0%	3	*$0.00*	*5.0%*	11	*$0.003*	2%	
NT/P87, WA-544-P Hudson+Barnett		*Bonaparte l*	100.0%	99	*$9.02*	*4.5%*	40	*$0.012*	8%	
AC/P70 - Vesta discovery		*Ashmore&C*	100.0%	15	*$11.02*	*4.2%*	7	*$0.002*	1%	
Australia - Total				192			66	*$0.019*	13%	
Total Properties			0.0%	662	*$0.00*	*0.0%*	512	*$0.152*	99%	
Cash @ 30 Sep23							31	*$0.009*	6%	
Dec Q expenditure est.							-13	*-$0.004*	-3%	
Options exercise							0	*$0.000*	0%	
Corporate Costs							-15	*-$0.004*	-3%	
Total Valuation							515	*$0.153*	100%	
Capitalisation							216	*$0.064*		
Valuation upside on Capitalisation								138.8%		

Source: MAY Resource "Best" estimations, PAC valuation estimates

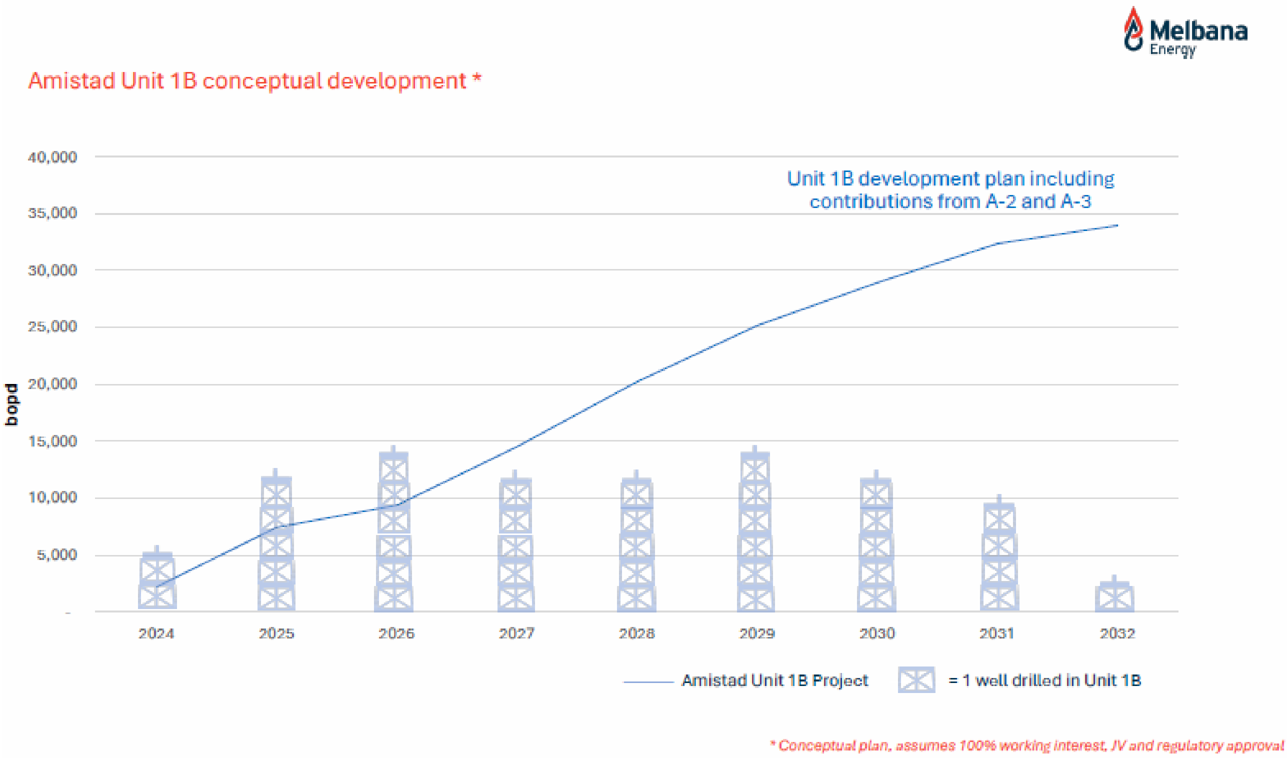
RISKS

Melbana Energy has risks of early-stage oil & gas exploration/development companies, but are not limited to:

- MAY's Block 9 asset has **complex geology**, that makes interpreting 2D seismic difficult. While MAY has made great strides in complimenting seismic with other predictive processes, there remains high exploration risk. *3D-seismic is being considered to aid well siting and resource/reserve estimation.*

- Risks also applies to laterally set appraisal wells, as reservoir quality can change markedly over short distances.
- **Appraisal well programs may fail** mechanically or for unknown reservoir factors. These may downgrade the extent of possibly recoverable oil volumes or value of the resource as the quality and flow rate of oil is variable.
- **MAY does not have operational cashflow** and relies upon farmout, asset sales, equity and other capital raisings. At present, any production is held as a credit. *Upon declaration of Production licence these test production sales credits may be converted to cash.*
- While Cuba has extensive oil and gas operations, it is still adapting to open foreign investment frameworks. While **approvals** have been forthcoming to date, this may not be the case as a program moves to the development stage.
- *While the United States restored diplomatic relation with Cuba in 2015, it maintains its commercial, economic, and financial embargo, making it illegal for U.S. corporations to do business with Cuba.*

Appendix – Melbana's Early and Conceptual Development plan for Amistad Formation



Source: MAY's AGM Nov 2023 Presentation

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Investment View

PAC Partners Investment View is based on an absolute 1-year total return equal to capital appreciation plus yield. A Speculative recommendation is when a company has limited experience from which to derive a fundamental investment view. **Speculative buy** = We expect the stock's total return (nominal yield plus capital appreciation) to exceed 20% over 12 months. The investment may have strong capital appreciation but also has a high degree of risk and there is a significant risk of capital loss.

Buy	Hold	Sell
>20%	20% – 5%	<5%

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