

9 September 2019

ADX Energy Ltd

## Ilecea Mica-1 Well - Results & Operations Update

- Pannonian New Discovery and Appraisal Sands substantially exceed Pre-drill Expectations
- Well deepening suspended due to hole problems
- Well being prepared for production testing

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### SUMMARY OF REPORT (DAY 32 since spud date)

@ 6.00 AM 8th of September 2019 Eastern European Summer Time (EESC)

#### Results based Independent Petrophysics Evaluation and Revised Mapping.

- Mapping of PA IV sands (appraisal target) as well as the PA III and PA V (new discovery zones) incorporating independently assessed petrophysical results from Ilecea Mica-1 modern logs indicates 2C Contingent Resource of 20 Bcf compared to best estimate predrill appraisal resources of 6.1 bscf (2C) and exploration resources of 12.7 bscf (best technical prospective), i.e. a total unrisks potential of 18.8 Bcf <sup>Note 1</sup> (see Attached ERCE Independent Resources results - first Announced on 11/7/2018)
- Good productivity for gas expected from 14.5 meters Net Pay with significantly better than expected porosity and permeability based on modern logs and petrophysical interpretation by Weatherford Atlas GIP SA for the Pa IV reservoirs (*International Logging Contractor with extensive operating experience in Romania*)
- Excellent Economic Potential is anticipated for recoverable volumes exceeding 5 Bcf  
*For example 20 BCF resource development is estimated to have a value of US\$ 40 million at a gas price of US\$ 6 per mcf for Romanian fiscal terms.*

#### Suspension of well deepening operations.

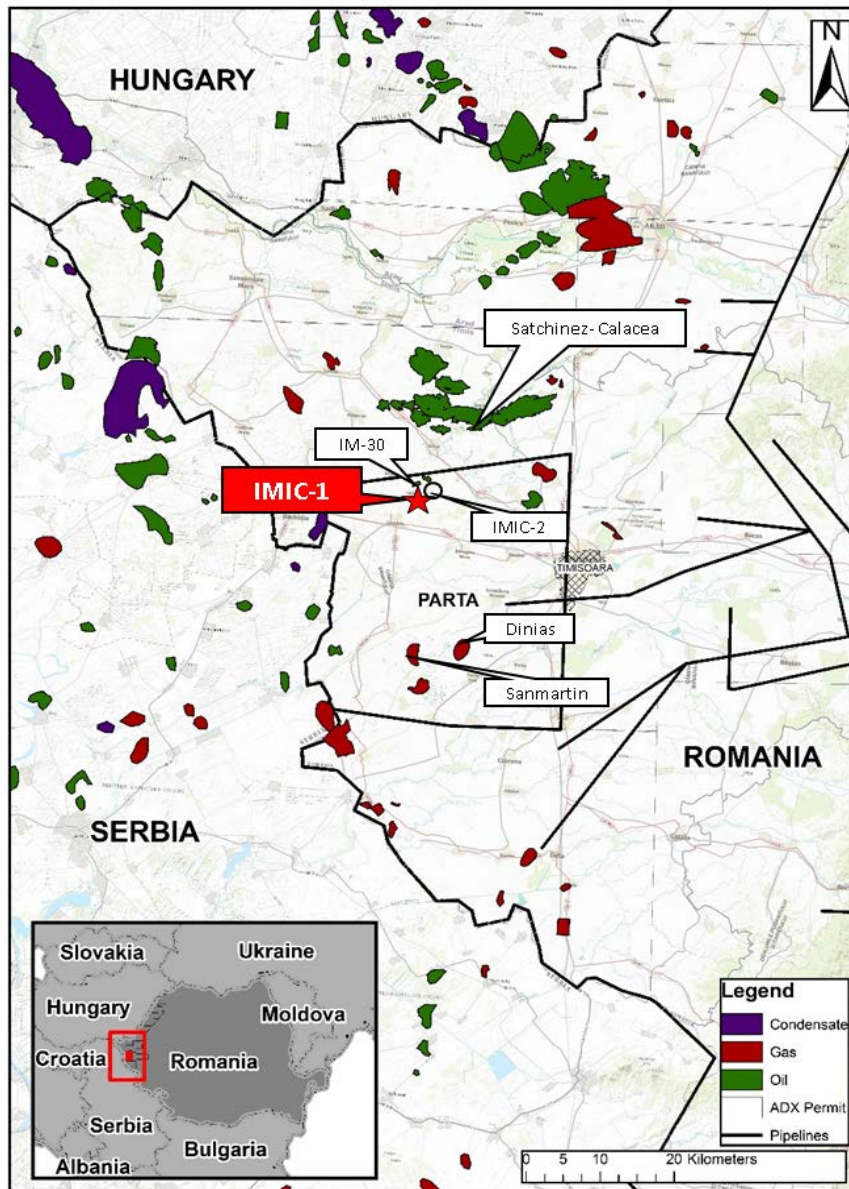
- Attempts to deepen the well below the highly over-pressured zone at 2407 meters were not possible due to a combination of high pressure, fluid losses and well bore deterioration resulting in an unacceptably high risk of getting drilling string stuck in hole and loss of well control.
- Due to success in the top hole ADX and its partner Reabold have decided not to compromise the successful Ilecea Mica-1 well bore, avoid exposure to excessive costs and will test the deeper prospective exploration potential at a later stage.

#### Preparation of well for production testing.

- The bottom of the well has been plugged and cemented in 7" casing to a depth of 2230 meters, below the deepest PA V pay zone.
- The well will be secured and prepared for production testing with a cheaper work over rig in the near future.

Future well operations – circulate well to completion brine and install surface plug.

ADX Energy Ltd (ASX Code: **ADX**), is pleased to advise that it is preparing the Iecea Mica-1 Well (IMIC-1) in the Iecea Mare production license for production testing following the evaluation of Pannonian appraisal and discovery zones resulting in a potentially valuable commercial project that has exceeded pre-drill expectations. Of particular significance are the excellent **Pa IV** porosities and estimated permeabilities determined by the detailed independent petrophysical analysis undertaken by Weatherford Atlas GIP SA (“Weatherford”) utilising the modern electric line logging tools used in the IMIC-1 well not available in the historic wells drilled in the 1980s.



The **Pa V** reservoir section represents a discovery containing a total gross hydrocarbon section of approximately 30 meters, and contains at least 5 meters of net reservoir with excellent quality sandstone layers. The strong correlation between the mud log and gas chromatography shows provide a perfect match. The hydrocarbon gas shows included C1 to C4, heavier hydrocarbons which are indicative of gas and condensate. The possibility for valuable condensates is supported by the 60 meter downdip IM-30 well (2.5 km further north, see location map above), which tested oil at a rate of 126 bopd in the eighties.

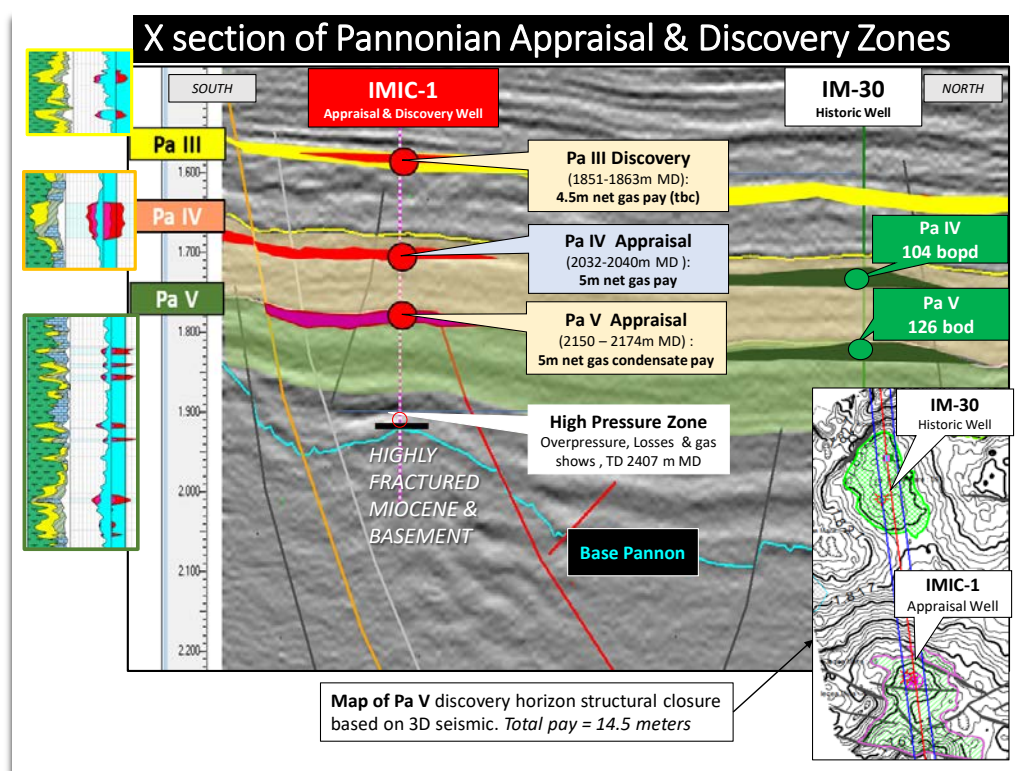
Another additional exploratory success are two relatively shallower **Pa III** interval sandstones which are also associated with mud log gas shows and petrophysical pay. Despite their relatively modest resource potential at the IMIC-1, this discovery is of substantial significance for the proposed follow up IMIC-2 well, which is planned to be drilled 1.8 km NE of the IMIC-1 discovery (see map above for location of IMIC-2). The shallowest exploration target with a best case technical prospective resource of 15.6 bscf (ERCE independent evaluation) is within the same stratigraphic interval as the IMIC-1 Pa III gas sand and hence the IMIC-2 prospect is significantly de-risked.

### Summary of Well Results (Pannonian Sands)

ADX has undertaken the remapping and volumetric analysis of the **PA IV** appraisal zone and the **PA III** and **PA V** discovered intervals utilising the Weatherford petrophysical results given their extensive knowledge and experience in the area.

The Weatherford independent petrophysical interpretation results can be summarised as follows;

- Two hydrocarbon bearing reservoir zones with better than expected reservoir qualities (the Pa IV and PA V zones). Also another shallower reservoir with interpreted hydrocarbon pay that is not yet proven as producer in the northern part of the Parta license (the Pa III zone) but has gas shows in other nearby wells, such as Carpinis-55, which is the control well for the ADX IMIC-2 drilling prospect and located downdip and 600 meters to the north of proposed IMIC-2. (Pa III equivalent sands have produced in excess of 50 bscf in the Sanmartin and Dinias fields in the southern part of the Parta license, see regional location map above for reference).
- The Pa V reservoir which was not included in the predrill resource assessment is assessed to be a gas condensate discovery. A well (IM-30) just 2.5 km further north and approximately 70 meters deeper at Pa V level tested 126 bpd of oil.
- The Pa IV reservoir came in as expected although at the upper end of reservoir quality predictions. Porosities in excess of 20% and calculated permeabilities in the order of 50 to 100 mD are expected to provide good production rates.



The revised Most likely (2C) Contingent Resources <sup>Note 1</sup> based on the IMIC-1 results and ADX remapping are summarized in the table below can be described as follows;

- For the **PA III** sands – 3 Bscf based on a structural interpretation
- For the **PA IV** sands – 11 Bscf based on a structural case with updip sealing faults well defined on 3D seismic. The large 3C upside case of 40 bscf is based on a three way dip closure against an updip pinchout (shale out), partly defined by well data where the reservoir is absent (shaded out) and 2D and 3D seismic amplitude variations. The planned new 3D seismic will cover the entire trap and it is therefore possible that the resources for Pa IV will be upgraded. (Further details on the 3C case at the end of the release).
- For the **PA V** sands – 6 Bscf based on a structural interpretation.

The total arithmetic sum for the three zones is 20 Bcf for the 2C case, compared to pre drill Most Likely Contingent Resource plus Best Case Prospective Resource <sup>Note 2</sup> of 18.8 Bscf (6.1 bscf 2C plus 12.7 bscf best technical prospective)

<b>IMIC-1 Contingent Recoverable Resources Estimates</b> (Note 1)					
Discovery Well	Hydrocarbon Reservoir	Reservoir Top Depth (meters MD)	1C (bscf)	2C (bscf)	3C (bscf)
IMIC-1	Pa III	1851	1.9	2.7	3.9
IMIC-1	Pa IV	2033	3.0	11.0	40.0
IMIC-1	Pa V	2140	2.3	6.3	10.8
<b>TOTAL Arithmetic Sum of Recoverable Volumes (bscf)</b>			<b>7.2</b>	<b>20.0</b>	<b>54.7</b>

It should be noted that the 3C case for the PA IV sand represents credible stratigraphic potential based partially on mapping using 2D seismic.

**Note 1:** Contingent Resources are those quantities of petroleum estimated, as at a given date, to be potentially recoverable from known accumulations but, for which the applied project(s) are not yet considered mature enough for commercial development due to one or more contingencies. 1C, 2C, 3C Estimates: in a probabilistic resource size distribution these are the estimates that have a respectively 90% (P90), 50% (P50) and 10% (P10) probability that the quantities actually recovered will be exceeded

**Note 2:** Prospective Resources are those estimated quantities of petroleum that may potentially be recovered by the application of a future development project(s) related to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further explorations appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.

#### Basement Play Potential

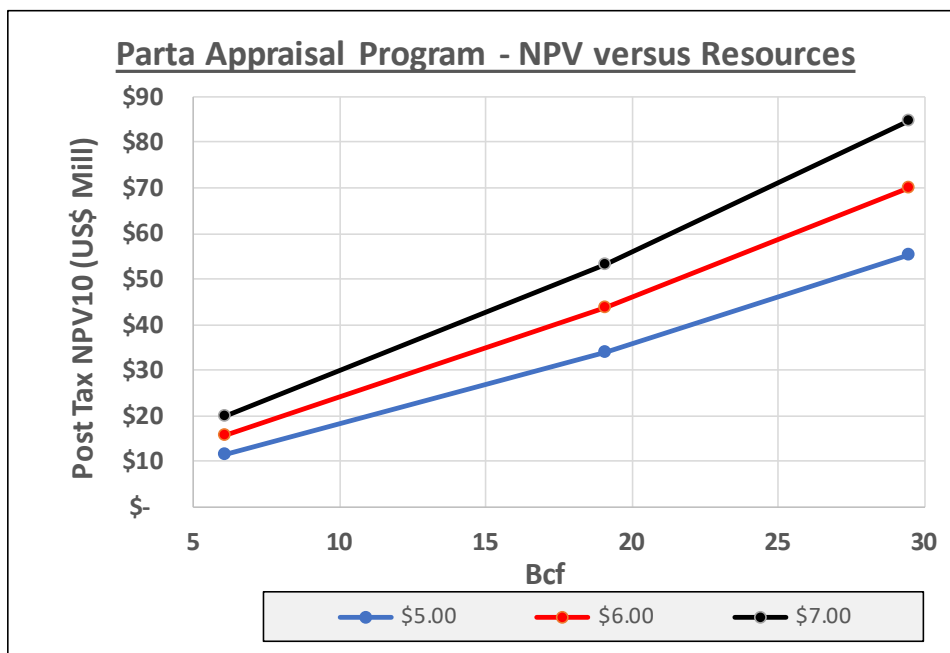
The overpressure zone intersected at 2407 meters TVD associated with a strong drilling break indicates formation porosity and permeability as well as associated hydrocarbons indicated from an instant increase in mud gas shows and 3% trip gas. Severe mud losses experienced subsequently indicate open fractures in the formation. The presence of highly permeable fractured zones proximal to the basement target and together with the gas shows encountered has upgraded the prospectivity of the play in the license. As discussed for technical, commercial and safety reasons the drilling of the basement play which was not originally a pre drill target has been deferred to a later date.

#### Economic Potential

ADX primary objective from the Parta Appraisal Program incorporating the IMIC-1 and IMIC-2 well has been to confirm sufficient resources to secure the commercial production from Romania. The following graph is a plot of post tax NPV versus gas resources based on the tie in of a Parta Appraisal Program development to the nearby Satchinez - Calacea gas plant (see regional location map above). Subject to



successful testing, the Pannonian sand potential intersected in the IMIC-1 well can be viewed as very promising yielding excellent NPV's compared to the investment for recoverable resource volumes exceeding 5 Bcf.



### Well Operations

ADX and its partner Reabold Resources PLC have decided to suspend the drilling of the lower section of the well below the previously reported potential blow out zone at 2407 meters MD due to ongoing hole problems, high pressures and mud losses despite increasing mud weight by approximately 70%. The observed well pressures were at the limit of well integrity and rig capability, putting the primary investment objective of a commercial production well at risk.

The well is being plugged back at the base of the 7" casing with a view to preparing the well for future production test operations utilising a work over RIG.

**ADX Executive Chairman Ian Tchacos commented:** *"The excellent results to date exceed our pre drill resource expectations for the Iecea Mica-1 well. The 20 BCF Best Case Contingent Resource Estimate from the PA III, IV and V sands provides exceptional economic potential from the successful completion and tie-in of the well. Significant further upside exists from the stratigraphic potential of the PA IV sand as well as the deeper basement play potential which can best be accessed at a future date. At this time, it is much more compelling from a value generation perspective to concentrate our operational focus and available funds on the production testing and commercialisation of the resources encountered in the well to date".*

### Asset Ownership Structure

ADX holds a 63% shareholding in Danube Petroleum Limited (Danube). The remaining shareholding in Danube is held by Reabold Resources Plc. Danube via its' Romanian subsidiary, ADX Panonia, holds a 100% interest in the Parta Exploration license (including a 100% interest in the Parta Appraisal Sole Risk Project) and a 100% interest in the Iecea Mare Production license.

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#### *Disclaimer*

This document has been prepared by ADX Energy Ltd for the purpose of providing an update in relation to interpreted data with respect to the Iacea Mica-1 well. Any statements, opinions, projections, forecasts or other material contained in this document do not constitute any commitments, representations or warranties by ADX Energy Ltd or its directors, agents and employees. Except as required by law, and only to the extent so required, directors, agents and employees of ADX Energy Ltd shall in no way be liable to any person or body for any loss, claim, demand, damages, costs or expenses of whatsoever nature arising in any way out of, or in connection with, the information contained in this document. This document includes certain statements, opinions, projections, forecasts and other material, which reflect various assumptions. The assumptions may or may not prove to be correct. ADX Energy Ltd recommends that potential investors consult their professional advisor/s as an investment in the company is considered to be speculative in nature.

#### *Persons compiling information about Hydrocarbons.*

Pursuant to the requirements of the ASX Listing Rules 5.41 and 5.42, the technical and resource information contained in this presentation has been reviewed by Paul Fink, Technical Director of ADX Energy Limited. Mr. Fink is a qualified geophysicist with 23 years of technical, commercial and management experience in exploration for, appraisal and development of oil and gas resources. Mr. Fink has reviewed the results, procedures and data contained in this presentation and considers the resource estimates to be fairly represented. Mr. Fink has consented to the inclusion of this information in the form and context in which it appears. Mr. Fink is a member of the EAGE (European Association of Geoscientists & Engineers) and FIDIC (Federation of Consulting Engineers).

## **IECEA MICA-1 PRE-DRILL WELL SUMMARY (PRE DRILL PROGNOSIS)**

### ***Key Points***

- The upper 2350 metres of Iacea Mica-1 (IM-1) appraisal well is effectively a redrill of a historic discovery well drilled in the 1980's.
- IM-1 will evaluate multiple gas zones mapped on 3D seismic including a flow tested gas zone and a deeper uncontrolled gas flow in the historic discovery well.
- The Contingent Resources based on an Independent Experts Report of well data with recently acquired 3D seismic is 6.1 Bcf 2C and Prospective Gas Resources are 13 Bcf Best Estimate. <sup>Note 1</sup>

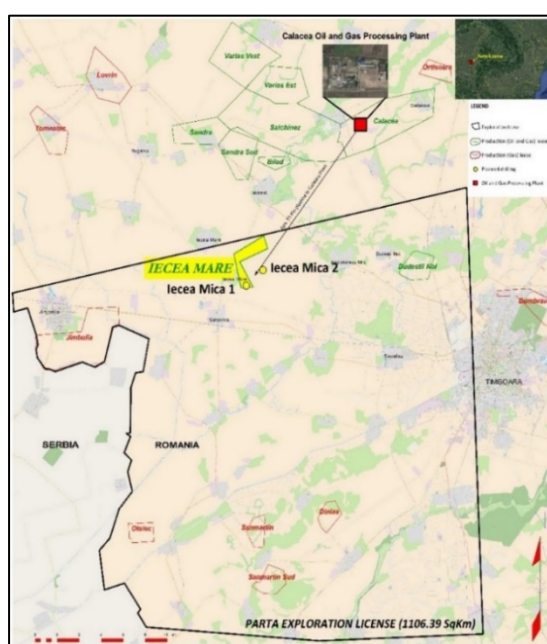
***Prospective Resources*** are those estimated quantities of petroleum that may potentially be recovered by the application of a future development project(s) related to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further explorations appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.

- The well will be deepened to a depth of 2600 meters to evaluate larger untested exploration potential which is a proven Oil play in other fields in the basin (“Basement Play”).
- The *Best Case Prospective Resource* for the deeper exploration upside potential accessible by the well is 16 Bcf (for a gas success case) and 2 MMBBLS (for an oil success case) <sup>Note 1</sup>.
- If the deeper exploration target is successful it is expected to de-risk several follow up prospects with good upside potential which ADX has identified both on 3D and 2D seismic.
- The well has the additional benefit of being proximal to infrastructure for both gas, oil and electricity enabling low cost, highly profitable commercialisation.

**Note 1:** Refer to ASX announcement 20/3/2019, ADX confirms that it is not aware of any new information or data that materially affects the information included in that market announcement and that all the material assumptions and technical parameters underpinning the estimates in that market announcement continue to apply and have not materially changed.

### Well Overview

ADX together with Danube’s 37% shareholder, Reabold have elected IM-1 as the first drilling candidate for the two well Parta Appraisal Program. IM-1 is located in the Iecea Mare Production License which is within the Parta Exploration License in the Panonian Basin, onshore Romania.



Location Map – Showing IM-1 Well location, Iecea Mare Production License and Parta License

### Well Prognosis and Resource Potential

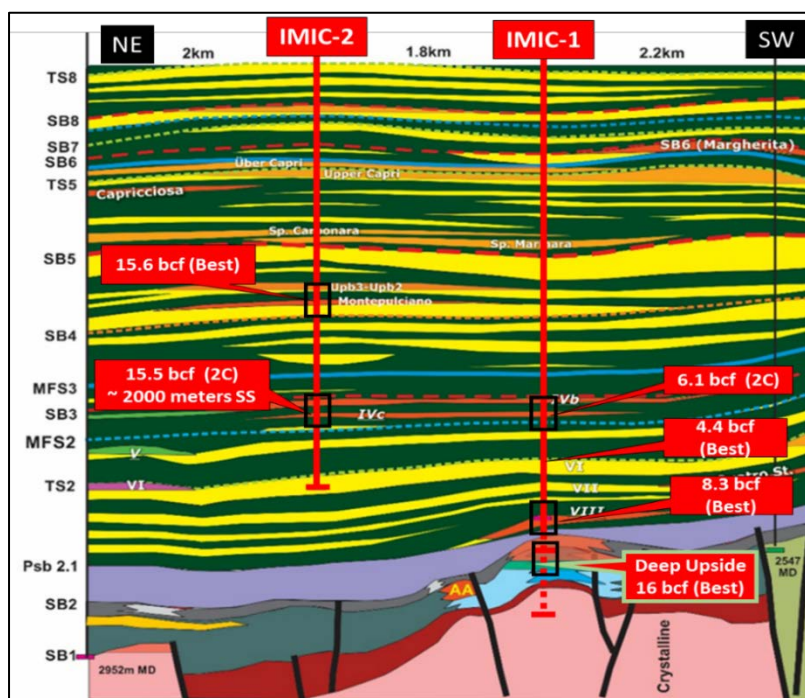
IM-1 is a structural trap targeting multiple (Pliocene to Miocene) pay zones including established appraisal potential from historic wells drilled in the 1980’s that were tested but never produced as well as deeper not tested exploration potential defined on recently acquired 3D seismic. The independently assessed contingent and prospective resource potential of IM-1 is summarised in the following table extracted from the ERC Equipose Independent Report (ERCE). This evaluation excludes deeper exploration potential which can be accessed by the IM-1 well. The first proven, previously flow tested gas reservoir section is the Pa IV sand in the IM-1 well. That zone is expected to be encountered at a depth of ca. 1940 meters TVDSS.

### ERCE Independent Resource Estimates\* for Parta Appraisal Program

Recoverable Hydrocarbon Volumes			ERCE Estimates		
Prospect	Target Reservoir	PRMS Category	P90 (bscf)	P50 (bscf)	P10 (bscf)
IM-1	Pa IV	Contingent <sup>1</sup>	2.0	6.1	16
IM-1	Pa VI	Prospective <sup>2</sup>	2.4	4.4	7.3
IM-1	Pa VIII inf.	Prospective	2.7	8.3	21.3
IM-2	PsB4.3	Prospective	5.4	15.6	39.1
IM-2	Pa IV	Contingent	4.8	15.5	43
<b>Total Program</b>		<b>Contingent</b>	<b>6.8</b>	<b>21.6</b>	<b>59.0</b>
<b>Total Program</b>		<b>Prospective</b>	<b>10.5</b>	<b>28.3</b>	<b>67.7</b>

\* Refer to ASX announcement 11 July 2018, ADX confirms that it is not aware of any new information or data that materially affects the information included in that market announcement and that all the material assumptions and technical parameters underpinning the estimates in that market announcement continue to apply and have not materially changed.

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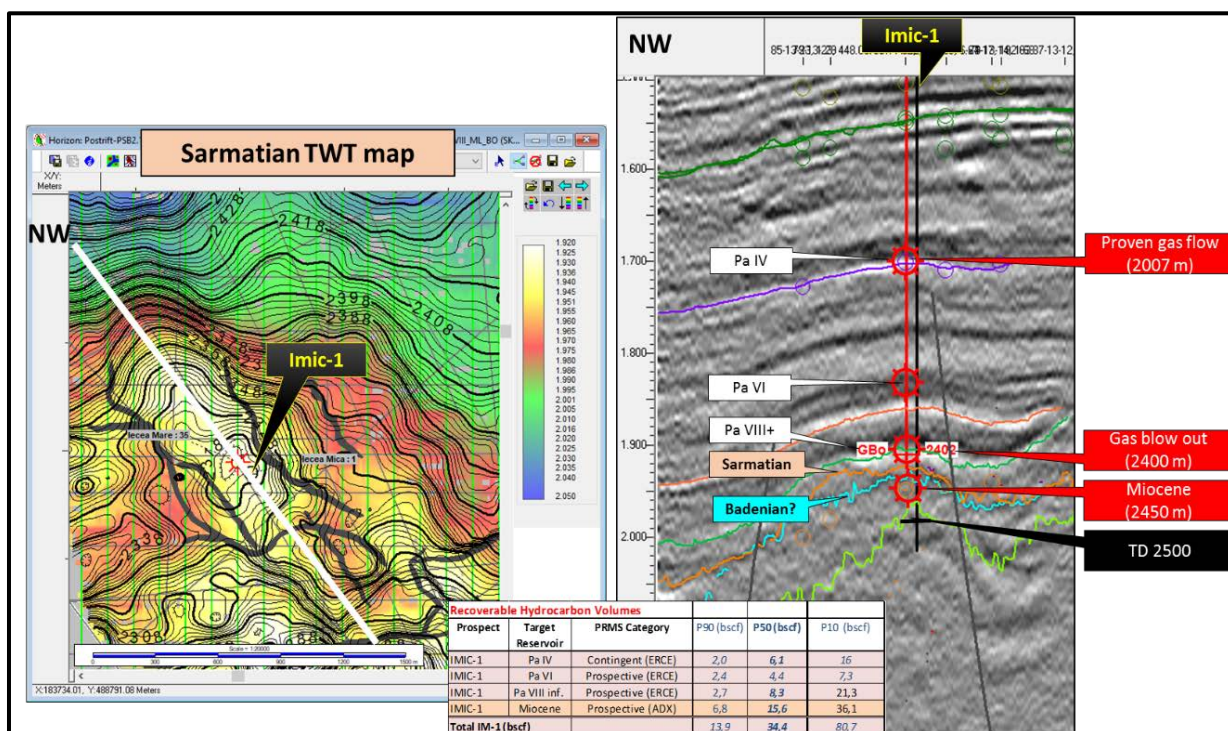


A Simplified Stratigraphic X section through IM-1 and IM-2 showing the potential deeper Badenian (Miocene) build up carbonate play or the alternate fractured basement play.



In addition to the ERCE independently assessed Contingent and Prospective Resource volumes shown in the previous table, IM-1 offers a larger deeper exploration potential which was not included in ERCE's estimates that can be reached within the current planned 2500 meters TD of the IM-1 well. It is predicted that the well will test a Badenian (Miocene) calcareous sandstone and/or a proven fractured basement play which has been successful in the Satchinez and Calacea fields 12km to the north of IM-1 well location. The Miocene Badenian age carbonate build up play is proven by gas discoveries to the East. Either one of, both of, or none of the deeper upside exploration plays may be present.

The Pa IV (Pannonian – Pliocene) horizon intersected in the original exploration discovery well tested at a rate of 1 MMSCFPD in 1989. It is expected the IM-1 well, with modern drilling and completion practices, will achieve significantly higher rates from this zone. Depending on which hydrocarbon charge model is assumed for the previously undrilled, deeper exploration plays there is also potential for an oil discovery at basement level. It should be noted that the previous Iecea Mare production license operator assessed the potential of the for the basement play to be in excess of 2 mmbbls of recoverable oil. ADX estimates 16 bscf for a best case recoverable prospective gas resource, assuming the intersection of a Miocene Badenian age (Miocene) calcareous sandstone is encountered as a gas bearing reservoir in a deeper exploration play success case. Based on nearby well data the intersection of potential basement reservoir is considered the most likely outcome.

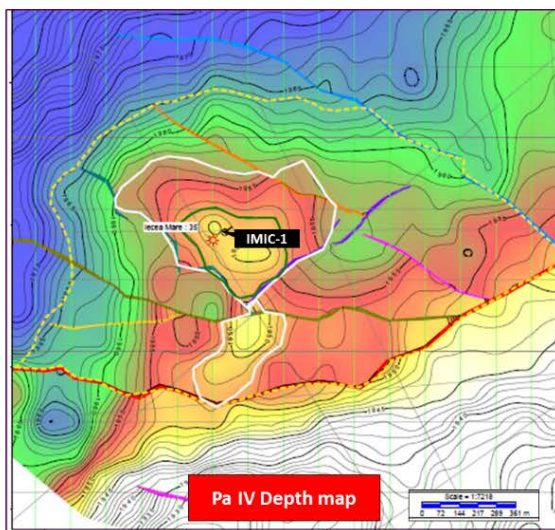
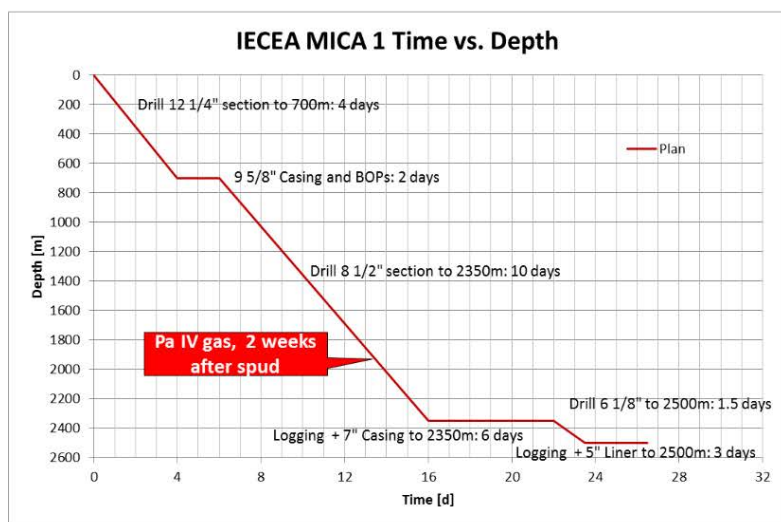


**IM-1 Map and 3D Seismic Section through IM-1 well location**

The above 3D seismic section through the IM-1 well location highlights the various currently identified reservoir targets and their respective depths. Note that the original exploration well only had electric logs down to the Pa VIII reservoir. The well was deepened further but experienced a major kick and overpressure around 2400 meters TVD that was not able to be tested. This is described as an uncontrolled flow in some old well reports for the discovery well.

### Well Design

Due to expected overpressure starting around 2400 meters (“the historic well blow out reservoir”) 7” casing is programmed to be run to a depth of 2350 meters TVDSS. The well will then be drilled through the overpressure zone in a smaller 6 1/8” hole size and will reach TD around 2600 meters.



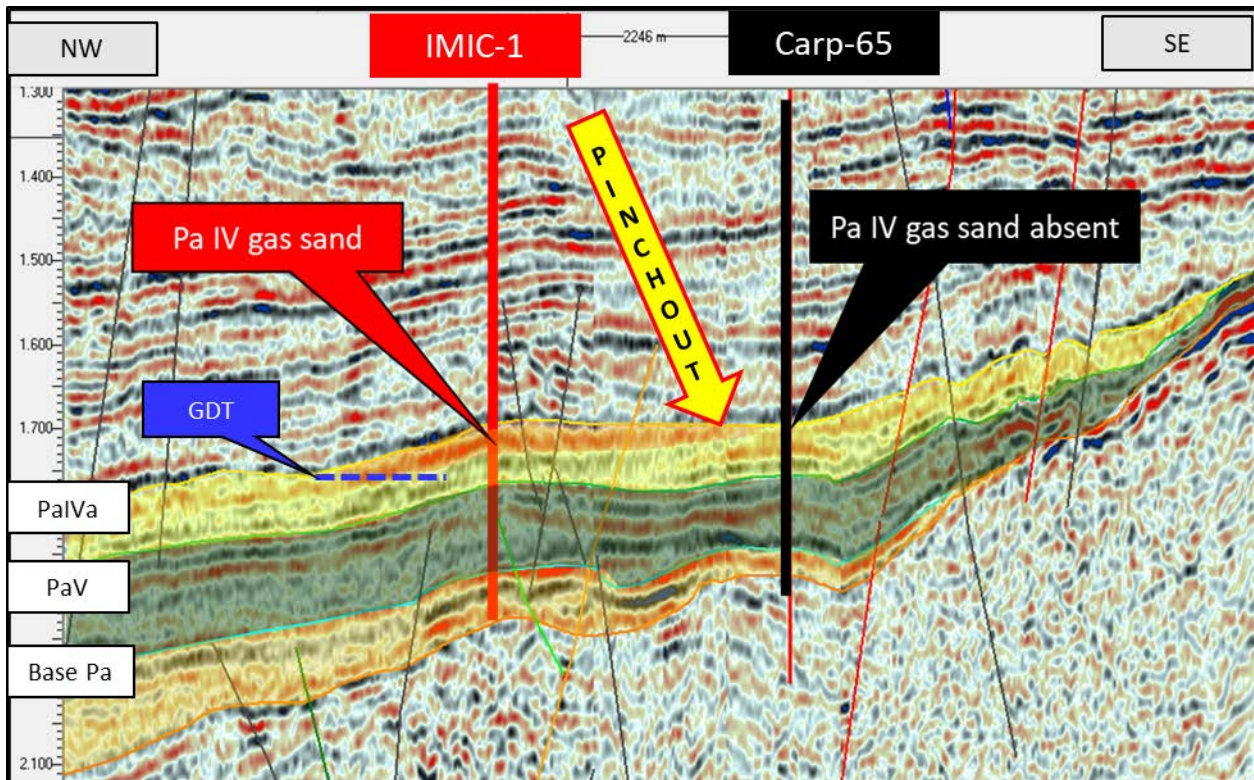
The most likely well cost estimate for the well is approximately US\$3 million, including evaluation, logging and running casing. The above mentioned cost estimate does but not include well testing operations which are planned to be undertaken with a much smaller and cheaper work over unit. Included in the well cost estimate is a well head and production tubing which has already been purchased.

The IM-1 well is designed to enable the evaluation of an over pressured zone encountered in the original discovery well as well as highly prospective and potentially material deeper exploration targets not reached previously. These deeper exploration targets which are now mapped on 3D seismic are particularly exciting due to their materiality and the fact they can potentially be reached at minimal incremental cost.

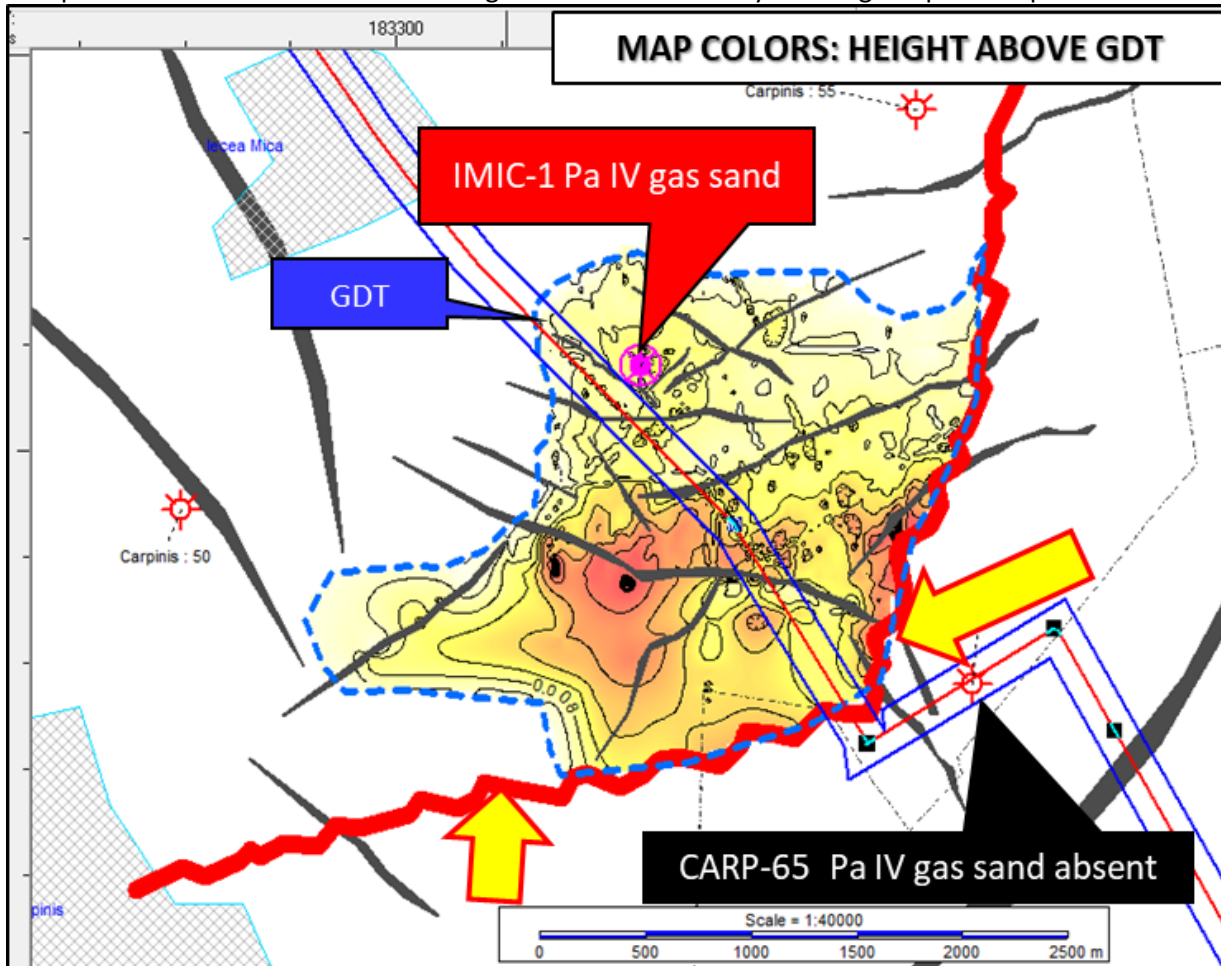
### Proven Pa IV gas reservoir 3C upside potential

The figure below shows a composite 2D seismic section through wells IMIC-1 and Carp-65. The Pa IV gas reservoir is not present in Carp-65 but is represented by a non reservoir shale interval. Seismic amplitudes (2D and partly 3D) and well data further support the possibility for a large sized 4.7 sqkm area structural – stratigraphic trap. Downdip the trap follows the blue dashed structural contours (“gas down to” GDT) and updip a pinchout (or faulting) provides trapping. This case is represented by the 3C case as shown in the Contingent Resource table on page 4 of this release. IMIC-1 is the only well inside the trap.





Composite 2D seismic cross section trough the IMIC-1 discovery showing the possible pinchout location.



Pa IV map showing gross hydrocarbon column above structurally defined spill point which is assumed to be the GDT (gas down to) or GWC (gas water contact). The highlighted trap area is 4.7 sqkm. Yellow arrows point at the red interpreted gas reservoir pinchout line.

**End of Release**