# **ASX** Release



31 January 2017

Activities Report
Quarter Ended 31 December 2016

# **HIGHLIGHTS**

#### **COPORATE AND FINANCE**

 A two tranche placement totaling 114,624,241 shares at 0.7 cents per share was completed to raise \$802,000 before costs. Investors participating in the placement received one free attaching unlisted option for every two shares subscribed.

#### **ADX Energy Ltd**

#### **AUSTRALIA**

Level 2, Suite 14, 210 Bagot Road Subiaco WA 6008

PO Box 63 Subiaco 6904

T+61 (08) 9381 4266 F+61 (08) 9381 4766 E admin@adxenergy.com.au

ABN 50 009 058 646

#### **AUSTRIA**

Wassergasse 11 A 2500 Baden, Austria T+43 (0) 2252 206 506 F+43 (0) 2252 206 506 20

www.adxenergy.com.au

#### **OPERATIONS**

# Offshore Italy - Nilde Oil Field Redevelopment

- Following the completion of the 3D geological model (with a best technical estimate OIIP of 300 mmbo) several dynamic reservoir simulation scenarios were built in order to achieve a reliable and stable history match of oil, water and gas production. These scenarios were then used to dynamically simulate future oil production and estimate ultimate recoverable oil volumes on a production well by well basis. The announcement of dynamically estimated resources and production profiles is now planned for early February 2017.
- The concept definition studies were progressed and an MOU was entered in to with Calm Oceans Pte Ltd (COPL) to jointly progress a Field Development Plan for the Re development of the Nilde utilising COPL's leased self-install platform facility.
- A number of potential farminees and potential purchasers were engaged prior to the commencement of a formal farm-out process which will commence in the coming quarter.



#### **Offshore Tunisia**

- A scope of work for a Concept Design Study was prepared to determine an optimal development option, together with associated cost estimates, for the Dougga gas condensate discovery. It is intended that the work is undertaken with a reputable international engineering firm.
- The scope for geomechanical studies was developed with the objective of demonstrating the
  potential for permeability enhancement based on the anticipated fracturing at the crest of the
  Dougga structure (up dip of the original discovery well). It is intended that this scope of work
  will be undertaken by local carbonate experts who will make use of the high resolution 3D
  acquired by ADX.

#### Onshore Romania – Parta license

Romanian authorities have now ratified the work program extension for the Parta Exploration permit in Western Romania. The ratification provides a further 30 months to complete the phase 1 exploration work program for the permit. Following completion of the permitting of the few remaining land plots a seismic tender will be commenced in Q1 2017.

#### **NEW VENTURES**

• During the quarter, ADX undertook the assessment of a gas field redevelopment opportunity in Romania, which is located inside the ADX Parta license, but belongs to another operator. ADX owns the rights to the oil exploration target found underneath the gas field.



#### **OPERATIONS**

# Offshore Italy Pantelleria Permits & d363C.R-.AX permit (Operator, 100% equity interests)

## The Nilde Field Redevelopment Project

During the quarter, ADX focused on completing reservoir engineering studies, concept definition work and developing a relationship with facilities provider which is expected to be an important enabler for the commercialization of the Nilde project.

# **Reservoir Engineering Studies**

ADX utilized the recently generated 3D geological model for the field to history match past oil, water and gas production. A number of equally valid geological scenarios were investigated through dynamic modelling (reservoir simulation). Two scenarios which differ in the depth of the OWC and the sealing nature of some faults have both achieved a good history match. Scenarios with a very shallow OWC and hence significantly reduced resources did not deliver a production history match and hence were excluded as credible scenarios.

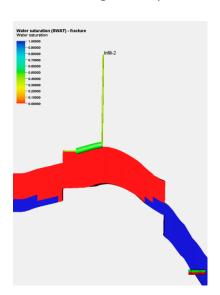


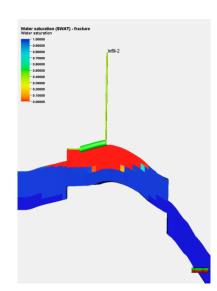
Good history match at oil producer Nilde-2.

This specific model assumes that most of the upper layer was drained but substantial amounts of oil are left undrained in deeper oil reservoir layers.



Utilising geological scenarios which provided a good production history match, several production forecast runs were undertaken. This work is still ongoing and will be presented in an announcement in February 2017. The figure below is a schematic example of the forward modelled fracture oil saturation over time for a hypothetical horizontal infill well. The left hand side schematic being at the recommencement of production from Nilde and the right side being at the end of field life. Note that the simulation work indicates significant recharging of oil at the Nilde 2 crestal location during the 20 years since production was ceased.





## **Concept Definition**

On the 23rd of December 2016, ADX announced that it had entered in to an MOU with Calm Oceans Pte Ltd (COPL) to jointly progress a Field Development Plan for the Re development of the Nilde Field utilising COPL's leased self-install platform facility.

COPL has developed and constructed a self-installing Mono Column Platform (MCP) and is designing a gravity based mooring, storage and offloading system (RPSO) which appears ideal for the redevelopment of the Nilde Field.

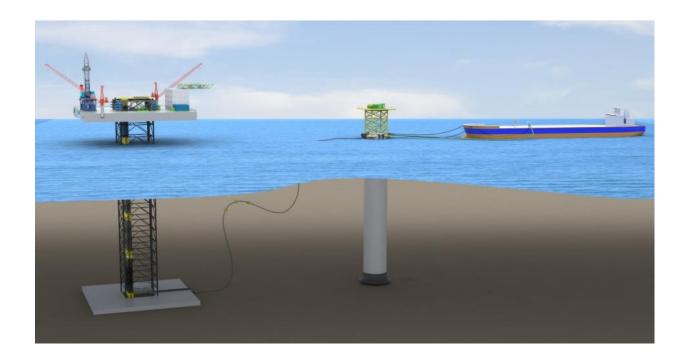
The MCP is capable of supporting a drilling rig, production processing equipment, water and gas reinjection facilities as well as accommodation. This innovative option enables the field to be re developed with reduced well costs (saving 60%) by utilising a platform drilling rig. This enables the use of dry (Xmas) trees and thus provides the opportunity to more cost effectively reinject produced fluids to provide a high level environmental compliance and minimising CO2 emissions and the discharge produced water.



COPL intends to supply the MCP and RPSO to ADX on an agreed lease dry boat charter basis. COPL will assist ADX to secure additional topside facilities (production and drilling) at competitive rates from third parties or purchase equipment on an open book basis and lease these to ADX at an agreed lease rate based on an agreed rate of return.

COPL has already undertaken substantial feasibility work collaboratively with ADX and has agreed to provide estimates for surface facilities capital costs, operating costs, lease rate data and engineering design details required to submit a Development Plan to the Italian Authorities.

ADX believes the MCP and RPSO is superior option providing significant capital cost and operating cost savings as well as superior operability due to the ability for well intervention though out the project life. Importantly for ADX and the Nilde project the owner of COPL, Mr Brian Chang, brings an extensive track record in development engineering, fabrication and installation.



The MCP and RPSO development concept schematic – incorporating production, storage and drilling capability with dry well heads. Source: Calm Oceans Pte. Ltd, Mono Column Platform and storage technologies are proprietary, patented and patent pending.



## **Feasibility Study Status**

The status of feasibility work completed to date is as follows:

- 3D geological modelling honouring all available core, log, drilling and test data is now complete
- Reservoir simulation history matching to field production with a range of geological scenarios
- Reservoir simulation predictive modelling utilising history matched models to predict future reservoir fluid recoveries for a range of well development scenarios
- A potentially optimal development option has been developed in conjunction with facilities provider COPL.
- The MCP and RPSO development option is now costed with realistic predevelopment capital costs and equipment lease rates.
- An alternative indicative FPSO lease rate scenario has also been developed with a credible FPSO provider to provide an alternative development scenario.
- Economic analysis based on the Senergy Independent Resource Estimates announced on the 17th of February 2016 and the MCP development option.

Current ongoing feasibility work is as follows;

- Revision of the expected resource range based on the reservoir simulation results.
- The development of a likely production case for process design and well design optimisation.
- Revised economic analysis based on the revised resource range the MCP development option and the FPSO alternative option.
- Completion of an information memorandum and finalisation of an online data base.

#### **Farmout Status**

ADX has had early engagement with a number of potential farminees and/or purchasers of a partial interest in the license. To date management has not actively pursued a farmout since the project has not been sufficiently technical and commercial defined. The Company is now in a position to aggressively pursue investment in the Nilde project via farmout or partial sale. ADX will continue to advise shareholders of progress with these discussions.

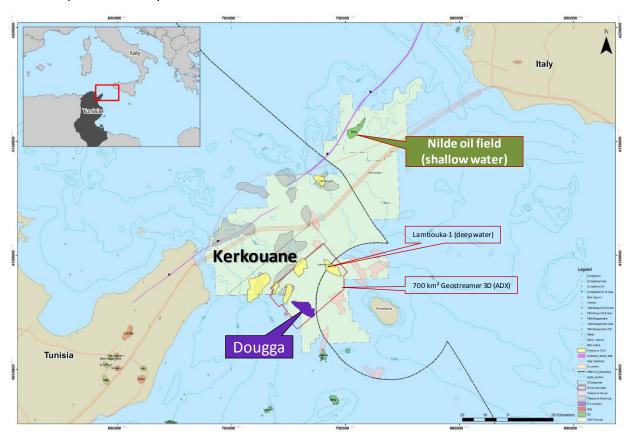
## **Regulatory Approvals**

ADX commenced Italian Government Authority engagement to accelerate licensing with the potential to enable Nilde appraisal drilling during 2017. Meetings are planned during the first quarter of 2017 to facilitate licensing of appraisal work and determine the optimal process for development planning submissions.



# Offshore Tunisia Kerkouane permit (Operator, 100% equity interest)

The 3,080 sqkm large Kerkouane license contains a number of large sized exploration prospects and the Dougga gas condensate discovery. The license is contiguous with the ADX Sicily channel licenses as per below map.



## **Resources Estimates**

ADX announced the renewal of Kerkouane license on the 14<sup>th</sup> of October 2016 and indicated its intention to pursue the commercialisation of the large independently assessed resource at Dougga (ASX release 14 October 2016, see summary table on next page). ADX intend to demonstrate a more simplified, fit for purpose development concept, based on a subsea tie back to an onshore liquids removal and gas conditioning plant is the optimum development concept. ADX believe that this scenario can deliver reduced CAPEX and OPEX which will result in improved project economics.



<b>DOUGGA</b> CONTINGENT + PROSPECTIVE RESOURCES	1C+LOW	2C+BEST	3C+HIGH
Total Oil Equivalent [mmboe]	127	220	333
Liquids: Condensate & LPG [mmbls]	66	116	176
Sales Gas [bcf]	325	570	862

Refer to ASX announcements 26/9/2012 (contingent) and 4/11/2014 (prospective). ADX confirms that it is not aware of any new information or data that affects the information included in that market announcement and that all the material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

## **Previous Commerciality Assessments**

Previous commerciality studies and resulting farmout discussions where based on a concept incorporating an offshore facility for condensate separation, storage and offloading as well as onshore plant for gas conditioning. ADX believes this concept is sub optimal and would result in substantially higher capital and operating cost when compared to a subsea tie-back to an onshore processing plant. This previous studies do not take advantage the substantial advances in subsea technologies, and corresponding cost reductions, that can be realised.

Furthermore the older studies did not consider the potential for significantly higher fracture density and hence gas condensate flow rates at the undrilled crest of the Dougga structure. This potential will be investigated through a geomechanical study with experts specialized in carbonate reservoir of the Sicily Channel.

## **Development Concept Studies**

During the quarter ADX finalised the scope and cost for a development concept study with a major engineering contractor with the suitable technology, products and experience that is well suited to a major subsea development project. The planned engagement of a large reputable supplier and engineering group to undertake a development concept study for the Dougga Gas Condensate field is expected to enable ADX to present a credible development case to the Tunisian Authorities for the appraisal and development of Dougga as well as assisting ADX to secure funding for a Dougga project.



## Geological, Drilling and Productivity Studies

In addition to the development concept studies ADX is finalising scopes of work for a geological study utilising the high quality 3D seismic over the structure. This geological study will investigate the potential for improved reservoir quality at the crest of the Dougga structure (up dip from the Dougga discovery well) and will result in an appraisal drilling and productivity testing programme.

The intention is to present a compelling investment case for an appraisal well targeting the up dip potential identified with high quality 3D seismic. The key appraisal objective is to confirm the Dougga reservoir can produce at commercial rates, as predicted based on past reservoir studies and offset fields.

## Gas Market Summary

Tunisia's energy demand is growing at approximately 4%. Energy requirements are predominantly for power generation. Over 90% of its power generation needs are generated from gas. Tunisia has gone from a gas exporter in recent years to a gas importer, resulting in approximately 50% of its requirements being satisfied by gas-imports. In addition to the domestic market there is the alternative of high value gas markets in Europe which are readily accessible via the Transmed pipeline connecting Tunisia to Italy. Dougga is a potentially valuable resource given the high liquids content and the strong demand for gas in Tunisia which is sold at an oil equivalent basis.

## Farm-out Process

ADX has received unsolicited interest in Dougga but intends to commence actively pursuing farmout discussions upon completion of the development concept studies, geological studies and well planning work at the end of the January quarter.

#### Onshore Western Romania, Parta Concession (Operator, 50% equity interest)

Romanian authorities have now ratified the work program extension for the Parta Exploration permit in Western Romania. The ratification provides a further 30 months to complete the phase 1 exploration work program for the permit.

During the quarter 3D seismic permitting and land access agreement work continued successfully. With most of the 3D area now permitted and only one relatively small area in the SE part of the area proofing difficult to access, ADX is ready to start the seismic tender process.

In addition ADX has successful obtained, from another operator, a small (20 sqkm) modern 3D seismic acquired over the recently abandoned lecea Mare oil field. The now relinquished lecea Mare oil field area is inside the Parta license and the 3D seismic covers mainly parts outside the oil field license but inside the ADX area. Prospect mapping has started and it is intended to provide



updates in the next quarterly report. The Icea Mare 3D demonstrates the excellent visualization that can be obtained from 3D seismic in this prolific hydrocarbon area.

#### **NEW VENTURES**

During the quarter New Venture activities focused on a gas field within the Parta license. This field, which belongs to another operator, is for sale. The area is of high interest to ADX not only because of its position and the potential for undrained gas resources, but also because of the deeper oil potential underneath the gas producing reservoir to which ADX and its JV partner have exclusive rights.

A quick technical evaluation was performed on a gas production opportunity in Italy.

ADX will provide further details of these opportunities if transactions reach an advanced status in terms of potential commitment.

#### **FINANCE AND ADMINISTRATION**

A two tranche placement to raise \$802,000 before costs was completed during the quarter. Investors participating in the first tranche (Tranche 1) acquired an equivalent proportion of shares in the second tranche (Tranche 2) of the placement. Tranche 1 of the placement consisted of 46,014,748 new shares at 0.7 cents per share to raise gross proceeds of \$322,000. Tranche 2 of the placement consisted of 68,609,493 new shares at 0.7 cents per share to raise gross proceeds of \$480,000. Tranche 2 of the placement was conditional upon a shareholder approval obtained at a General Meeting.

One free attaching unlisted Option (exercisable at \$0.02 each on or before 30 November 2017) was provided for every two shares subscribed for and issued under the placements.

The funds raised are primarily being used to continue the funding of the Company's appraisal and feasibility work programs on the Nilde Oil Field Development Project offshore Italy, the commencement of feasibility studies on the Company's Dougga gas condensate discovery offshore Tunisia as well as ongoing working capital requirements.

ADX's cash at the end of the December 2016 quarter was \$ 737,000.

## **SHARE INVESTMENTS**

ADX Energy holds 26.7 million shares in ASX listed Riedel Resources Limited (ASX:RIE) (http://www.riedelresources.com.au).



#### **TENEMENT TABLE**

Tenements held at the end of the quarter, their location, ADX's percentage held at the end of the quarter and changes thereof:

Permit	Percentage held	Percentage held at	Percentage acquir
	at the beginning	the end of the	
	of the Quarter	Quarter	
Offshore Tunisia, Kerkouane	100%	100%	=
Offshore Italy, d363C.RAX*	100%	100%	-
Offshore Italy, Pantelleria	100%	100%	=
Offshore Italy, d364C.RAX	100%	100%	-
Onshore Romania, Parta	50%	50%	-

<sup>\*</sup> ADX has commenced a process with the Italian Designated Authority to convert the exclusively awarded application to a ratified licence. This process was commenced after the award by the Ministry of Industry. ADX believes ratification will occur during the last quarter of 2016.

Yours faithfully,

Paul Fink

**Ian Tchacos** 

**CEO/Technical Director** 

Park for

**Executive Chairman** 

PERSON 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 Ltd. 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).

DISCLAIMER: The estimated quantities of petroleum that may potentially be recovered by the application of a future development project relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.