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Orcadian Energy PLC
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Orcadian Energy plc

("Orcadian" or the "Company")

33rd Round Licence Awards

Orcadian Energy (AIM: ORCA) is pleased to provide an update on the status of its three licence awards in the 33rd Seaward Licensing Round. Orcadian and the NSTA have now entered into binding licence agreements for all three of its licence awards.

33rd Round Licences:

- **Earlham Licence P2680** - Orcadian is licence administrator and holds 100% - containing an existing discovery, an exciting undrilled prospect and a redevelopment opportunity
- **Mid North Sea High Licence P2650** - Orcadian is licence administrator and holds 50% - containing shallow gas prospects and leads
- **Fynn Licence P2634** - Orcadian 50% interest - containing a very substantial viscous and heavy oil discovery

Steve Brown CEO of Orcadian Energy said:

"We are really pleased to have the licence agreements in place for these three new projects. As a result, we estimate that our contingent resource base has grown to 228 MMboe with our un-risked prospective resource base now 100 MMboe.

"Our strategy has been to focus on the "post-transition" hydrocarbons - gas and viscous oil.

"In a shallow water mature basin, almost by definition, the big fields with great rocks and simple fluids have all already been developed, So, we concentrate on reservoirs with great rocks, while innovating around how to develop complex fluids.

"Our viscous oil projects will all benefit from our expertise in the application of polymer flood technology. A combination of geothermal heat and polymer could unlock the Fynn development which is a project of the same scale as Rosebank.

"On the Mid-North Sea High, we have identified a number of shallow gas prospects with the same characteristics as the A & B block gas fields that have been successfully developed in the Dutch sector. Of course, as the reservoirs are shallow the initial reservoir pressure is correspondingly lower, so development of these gas fields starts with a need for gas compression.

"The Earlham field has a high inert gas content, which has precluded development to date, but the reservoir is proven and no further appraisal expenditure is needed. We, with our industry partner, are confident we have a solution to deal with the high level of inerts and beyond that, we believe we will be able to deliver a reliable supply of near-zero emissions power to the grid.

"Orcadian is no longer a one-trick pony. We have multiple pathways to success and to deliver future value to our shareholders. The Earlham project, in particular, demonstrates that our industry is capable of finding ways to exploit

our natural endowment of hydrocarbons to deliver real energy security and emissions reductions."

The opportunities presented by these new licences are summarised below:

Earlham Licence P2680

The Earlham licence contains an existing discovery with a high inert gas content (Earlham), an exciting undrilled prospect (Clover) and a redevelopment opportunity (Orwell). The licence lies 100 km East of Bacton on the median line with the Netherlands.

Earlham

The Earlham discovery was made by well 50/26b-6 drilled in 1995 by Talisman, encountering gas in the Rotliegendes. This was then followed in 1996 by a long horizontal combined appraisal and development well drilled by BP, intended to be tested at up to 80 MMscf/day of gas. Both wells established that the Earlham field has good permeability and that the wells will flow at commercial rates without stimulation. No further appraisal is needed.

The test was curtailed, and the rate limited to 30 MMscf/day, when it was established that the gas contained 49% CO_2 and 9% N_2. Taking that into account, Orcadian estimate that the Earlham reservoir contains 114 bcf of sales gas (methane) on a P50 basis. Our development concept entails an offshore power station, to be connected to the grid (possibly via a wind farm substation), with integrated CO_2 capture and storage. This concept would deliver a stable and reliable supply of electricity with near-zero emissions.

This approach to off-spec gas development is entirely consistent with the Prime Minister's national mission to make Britain a clean energy superpower with zero carbon electricity by 2030. Orcadian will work with an industry partner to progress development of this resource and intend to rapidly progress the concept select process with NSTA to enable the earliest possible project commitment.

Orwell

The Orwell field produced 309 bcf of wet gas from August 1993 to January 2009 when a subsurface safety valve failed. Given the very limited field life at the host Thames complex, it was decided to decommission the field. Orwell had been developed with three wells and the pressure data confirmed that the wells were connected to a Gas Initially in Place of 368 bcf. At abandonment, the reservoir pressure was about 28 bar. If, by implementing suction compression, it was possible to reduce the pressure to 10 bar, then up to a further 38 bcf of gas could be produced. It is intended that a redevelopment of Orwell will provide additional gas to be used to produce near-zero emissions power in the offshore power station.

Clover

The licence also contains a compelling gas prospect which the Company has named Clover. This is a four-way dip closure reservoired in Bunter sands, analogous to the nearby decommissioned Orwell Field, which produced over 300

bcf of gas. Orcadian estimate that P50 recoverable prospective resources in Clover amount to 153 bcf and the geological chance of success is estimated to be 38%.

Orcadian is licence administrator and holds 100% of the licence. The SNS licence covers blocks 49/25b, 50/21a, 49/30b and 50/26.

Mid North Sea High Licence P2650

The Mid-North Sea High ("MNSH") licence contains shallow gas prospects and leads which contain up to 336 bcf of gross prospective recoverable resource on a P50 basis.

The two largest leads - Glenlough and Breckagh - are estimated to have a prospective resource potential of 131 bcf and 138 bcf respectively. These prospects are analogous to the Block A and Block B shallow gas fields in the Netherlands developed by Unocal and subsequently Chevron which came onstream in 2007. Since then, the fields have been acquired by Petrogas who recently brought two additional fields on stream to bring the total number of shallow gas fields being produced up to six.

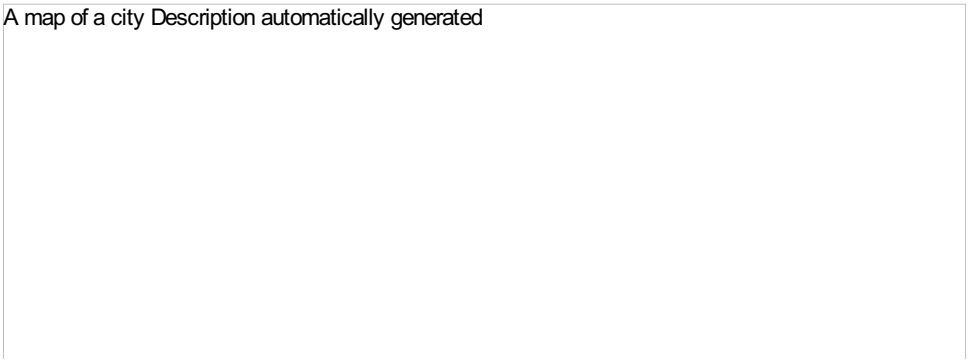
Any gas discovered could be used to power an offshore power station or could be compressed and produced via the CATS line which has a nearby tie-in point.

Orcadian applied in partnership with Triangle Energy, an Australian listed energy company. Orcadian is licence administrator and holds 50% of the licence.

The Mid-North Sea licence covers blocks 29/16, 29/17, 29/18, 29/19, 29/21, 29/22, 29/23, 29/27 and 29/28.

Fynn Licence P2634

The licence contains a very substantial viscous and heavy oil discovery which has a gross P50 contingent recoverable resource of 292 MMbbl, based upon the latest operator estimates.



The Fynn licence is situated in the Outer Moray Firth and comprises blocks 14/15a, 14/20d and 15/11a. Orcadian (50% interest) together with the licence operator Parkmead (50% interest), will leverage expertise gained in developing viscous crudes to work towards commercialisation of Fynn Beauly, which is one of the UK's largest undeveloped discoveries. This oil accumulation has been proven by three wells and is estimated to contain most likely (P50) gross contingent resources of 292 MMbbl, 257 MMbbl of which is on the licence; a resource of the same scale as Rosebank.

The partnership will now begin to progress the approved three-year work programme to work towards a technically and economically viable development, that can be delivered within the context of the NSTA's Net Zero Strategy. By undertaking geophysical, geochemical and reservoir modelling studies the work will assess the feasibility of implementing polymer flooding with geothermal heat uplift to improve recovery.

Why Viscous Oil Matters

The oil within the Fynn reservoir is viscous and made up of long chain hydrocarbons, which means that when refined it contributes little to gasoline supplies, but is a good feedstock for lubricants, asphalt and anode grade petroleum coke (an essential component for fast charge EV batteries). Orcadian believes that gas and viscous oils will be the post-transition hydrocarbons essential to the prosperity of every economy.

Why Domestic Production is Best

Producing heavy oil domestically, under the stewardship of the NSTA, is a considerably better option than importing these oils from Venezuela or Canada. Both these countries produce most of their heavy oil using thermal means - steam assisted gravity drainage, cyclic steam stimulation or steam flood. The measure of efficiency of all these techniques is the steam-oil ratio, which is the number of barrels of cold-water equivalent of steam required to recover a barrel of oil. An outstanding steam oil ratio is two, but steam-oil ratios of four or five are common. The CO_2 emissions from burning gas to generate the steam are approximately 30 kgCO_2/bbl of water. So, emissions per barrel from imports from Canada or Venezuela are typically 60 to 150 kgCO_2/bbl, even before the transportation emissions are accounted for. It is these high emission levels, and the strip mining and chemical processing often used for extra-heavy oil extraction that have given heavy oils such an undeserved reputation.

With a polymer flood approach, by incorporating heat from geothermal sources to reduce reservoir oil viscosity, and by electrifying production systems using green energy, the emissions per barrel in the production process can be reduced to single figures, better than most UK light oil fields. The UK and her allies need viscous oils both for strategic security of energy and for the petroleum-derived products that support both the transition and the post-transition economy.

Buying these products made from imported petroleum rather than our own oil also damages the balance of payments, eliminates great jobs, and increases actual greenhouse emissions.

In summary we are delighted to have the Fynn licence in hand and we are committed to finding a way to produce this essential oil with the least emissions possible.

Resource Summary

The award of these three licences has significantly boosted Orcadian's contingent and prospective resource base, see tables below. The company now has over 228 MMboe of 2C contingent resources and 100 MMboe of prospective

resources in high graded leads and prospects. About 14 MMbbl of these resources relate to the Pilot field where Orcadian is carried through to first offload of production from the development.

For further information on the Company please visit the Company's website: https://orcadian.energy

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Qualified Person's Statement

Pursuant to the requirements of the AIM Rules and in particular, the AIM Note for Mining and Oil and Gas Companies, Maurice Bamford has reviewed and approved the technical information and resource reporting contained in this announcement.

Maurice has more than 34 years' experience in the oil & gas industry and 3 years in academia. He holds a BSc in Geology from Queens University Belfast and a PhD in Geology from the National University of Ireland. Maurice is a Fellow of the Geological Society, London, and a member of the Geoscience Energy Society of Great Britain. He is Exploration and Geoscience Manager at Orcadian Energy.

About Orcadian Energy

Orcadian is a North Sea focused, low emissions, oil and gas exploration and development company. Orcadian may be a small operator, but it is also nimble, and the Directors believe it has grasped opportunities that have eluded some of the much bigger companies. As we strike a balance between Net Zero and a sustainable energy supply, and petroleum-derived products, Orcadian intends to play its part to minimise the cost of Net Zero and to deliver reliable energy to the UK.

Orcadian's key asset is the Pilot oilfield, Pilot was discovered by PetroFina in 1989 and has been well appraised. The field has excellent quality reservoir and contains 263 MMbbl of a viscous oil ranging in gravity from 17º API in the South of the reservoir to 12º API in the North. In planning the Pilot development, Orcadian has selected polymer flooding and wind power to transform the production of viscous oil into a cleaner and greener process. Polymer significantly reduces fluid handling requirements and hence energy consumption as well as boosting recovery. Ithaca Energy, operator of the Captain field in the Inner Moray Firth, has enjoyed consistent success in applying polymer flood to the highly analogous Captain field. Following the recent farm-down of Pilot, the project is now under the stewardship of Ping Petroleum UK PLC ("Ping") and is intended to be amongst the lowest carbon emitting oil production facilities in the world.

Ping is progressing a low-emissions, phased, field development plan for Pilot based upon a polymer flood of the reservoir, a Floating Production Storage and Offloading vessel (FPSO) and provision of power from a floating wind turbine or a local wind farm.

Orcadian has an 18.75% fully carried interest in licence P2244 (block 21/27a) and a 100% interest in licence P2482 (blocks 28/2a and 28/3a). Ping is operator of P2244 and the Pilot development project.

The Mid-North Sea High licence, P2650, contains shallow gas leads. Orcadian applied in partnership with Triangle Energy, an Australian listed energy company. Orcadian would be licence administrator and would hold 50% of the licence. The Mid-North Sea High licence covers blocks 29/16, 29/17, 29/18, 29/19, 29/21, 29/22, 29/23, 29/27 and 29/28.

The Fynn licence, P2634, contains a very substantial heavy oil discovery. About 88% of the resource on a best technical case is estimated to lie within the area of the licence. Orcadian has a 50% working interest in the Fynn licence, operated by the Parkmead Group. The Fynn licence covers blocks 14/15a, 14/20d and 15/11a.

The SNS licence, P2680, is held 100% by Orcadian, contains the Earlham discovery, a low-calorie gas discovery with 114 bcf of methane resources on a P50 basis, the Clover prospect which has P50 prospective resources of 153 bcf, and the decommissioned Orwell field which has redevelopment potential, alongside a number of smaller prospects.

Contingent Resources

Asset	Gross			Net			PRMS sub-class	Phase & units	Commercial risk factor	Licence
	1C	2C	3C	1C	2C	3C				
Pilot*	58.4	78.8	110.5	9.8	13.6	19.7	Development pending	Oil, MMbbl	100%	P2244 Source 2
Pilot periphery	5.9	9.8	17.6	1.1	1.8	3.3	Development unclarified	Oil, MMbbl	80%	P2244 Source 2 & 7
Elke Main §	26.0	45.5	94.9	25.7	45.0	94.0	Development on hold	Oil, MMbbl	79%	P2482 Source 3
Narwhal	4.3	9.2	17.6	4.2	9.1	17.4	Development on hold	Oil, MMbbl	79%	P2482 Source 1
Fynn (Beauly)	175.6	292.3	480.6	77.3	128.6	211.5	Development unclarified	Oil, MMbbl	25%	P2634 Source 5 & 7
Lowlander & Midlander	17.5	11.6	31.9	8.8	5.8	16.0	Development unclarified	Oil, MMbbl	15%	P2634 Source 6 & 7
Orwell	4.2	5.2	6.3	4.2	5.2	6.3	Development unclarified	Gas, MMboe	50%	P2680 Source 8
	25.0	31.0	38.0	25.0	31.0	38.0		Gas, bcf		
Earlham	12.5	19.0	29.0	12.5	19.0	29.0	Development unclarified	Gas, MMboe	67%	P2680 Source 4
	75.0	114.0	174.0	75.0	114.0	174.0		Gas, bcf		
Total contingent resources					228.2			Oil & gas, MMboe		
Total contingent resources factored by commercial risk					106.2			Oil & gas, MMboe		

Prospective Resources

Asset	Gross			Net			PRMS sub-class	Phase & units	Geological risk factor	Licence
	Low	Best	High	Low	Best	High				
Elke Main - West (3C outline §)	13.0	22.8	47.5	12.9	22.5	47.0	Prospect	Oil, MMbbl	90%	P2482 Source 3 & 7
Elke Updip	5.5	17.5	39.0	5.4	17.3	38.6	Prospect	Oil, MMbbl	87%	P2482 Source 1
Elke Area 2	4.2	12.3	25.4	4.2	12.2	25.1	Prospect	Oil, MMbbl	64%	P2482 Source 1
Clover	13.8	25.5	45.3	13.8	25.5	45.3	Prospect	Gas, MMboe	38%	P2680 Source 4
	83.0	153.0	272.0	83.0	153.0	272.0		Gas, bcf		
Glenlough	12.0	21.8	36.7	6.0	10.9	18.3	Lead	Gas, MMboe	31%	P2650 Source 4
	72.0	131.0	220.0	36.0	65.5	110.0		Gas, bcf		
Upper Breckagh	3.3	5.5	9.2	1.7	2.8	4.6	Lead	Gas, MMboe	55%	P2650 Source 4
	20.0	33.0	55.0	10.0	16.5	27.5		Gas, bcf		
Lower Breckagh	9.5	17.5	30.3	4.8	8.8	15.2	Lead	Gas, MMboe	20%	P2650 Source 4
	57.0	105.0	182.0	28.5	52.5	91.0		Gas, bcf		
Total prospective resources					99.9			Oil & gas, MMboe		
Total risked prospective resources					59.5			Oil & gas, MMboe		

Asset	Gross			Net			PRMS sub-class	Phase & units	Geological risk factor	Licence
	Low	Best	High	Low	Best	High				

Source	
1	Sproule CPR 2021
2	Sproule CPR 2021 - equity updated
3	Sproule CPR 2021 - management modified
4	Orcadian management estimate - Licence application to NSTA
5	Operator estimate - as presented to NSTA
6	Operator - earlier Relinquishment Report & Licence Application - both for NSTA
7	Orcadian management estimate of risk factor
8	Orcadian management estimate

Notes	
*	Pilot field net resources include a reduced revenue interest of 10% until the carry is repaid
§	Elke high case is limited to the 2C outline as we have reclassified the 3C extension as the Elke Main West prospect

END

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