

## IRISH CONTINENTAL SHELF

## PETROLEUM EXPLORATION LICENCE NO. 1/13 (FRONTIER)

GRANTED BY THE MINISTER OF STATE AT THE DEPARTMENT OF  
COMMUNICATIONS, ENERGY AND NATURAL RESOURCES

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## IRISH CONTINENTAL SHELF

## PETROLEUM EXPLORATION LICENCE 1/13 (FRONTIER)

1. The Minister of State at the Department of Communications, Energy and Natural Resources (hereinafter referred to as “the Minister”) hereby grants to:

- **Kosmos Energy Ireland** having its registered office at c/o Wilmington Trust (Cayman Islands), 4th Floor, Century Yard, Cricket Square, Hutchins Drive, Elgin Avenue, George Town, KY1-1209, Cayman Islands.
- **Antrim Exploration (Ireland) Ltd** having its registered office at 6, Northbrook Road, Dublin 6, Ireland

(hereinafter referred to as “the licensees”) and the licensees hereby accept an exploration licence under Section 8 of the Petroleum and Other Minerals Development Act, 1960, as applied by Section 4(2) of the Continental Shelf Act, 1968, in respect of the area described herein and subject to the provisions hereof.

2. The licensees have agreed to engage in searching for petroleum in the area described in paragraph 3 (hereinafter referred to as “the licensed area”) and in carrying out the obligations which are to be observed and performed by the licensees under this licence, in consideration whereof this licence vests in the licensees with effect from **5 July 2013** the exclusive right of searching for petroleum in the licensed area so long as the licence is valid.
3. The licensed area comprises Blocks Nos. 44/4(p), 44/5(p), 44/9(p), 44/10, 44/14(p) and 44/15(p) (numbered according to the Williams Grid) in the offshore area designated under the Continental Shelf (Designated Areas) Order, 1993 (S.I. No. 92 of 1993), the Continental Shelf (Designated Areas) Order, 2001 (S.I. No. 657 of 2001) and the Continental Shelf (Designated Areas) Order, 2009 (S.I. No. 163 of 2009) respectively within the co-ordinates set out in **Appendix 1** comprising a total area of **1051.75** square kilometres or thereabouts and shown coloured mauve on the map annexed hereto.

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4. This licence is subject to the provisions set out herein and to the Licensing Terms for Offshore Oil and Gas Exploration, Development & Production 2007 (hereinafter referred to as “the Licensing Terms”) with particular reference to Frontier Exploration Licence authorisations and the General Provisions respectively. A copy of the said Licensing Terms, authenticated under the official seal of the Minister, has been delivered to the licensees. The said Licensing Terms are incorporated in and form part of this licence.
5. Pursuant to the Licensing Terms, the licence, being a Frontier Exploration Licence, shall be valid for the period fifteen years from 5 July 2013 to 4 July 2028 unless surrendered or revoked, and shall be divided into four phases as follows:-

First phase -	5 July. 2013 to 4 July, 2016
Second phase -	5 July, 2016 to 4 July, 2020
Third phase	5 July. 2020 to 4 July, 2024
Fourth phase -	5 July. 2024 to 4 July, 2028

6. The licensees shall, during the first phase of the licence, carry out the programme of exploration operations provided for by or under the Licensing Terms and described in Appendix 2 hereto in respect of the area covered by the licence.
7. In accordance with paragraph 19 (4 f) of the Licensing Terms, the licensees shall pay annual contributions to petroleum research programmes as directed by the Minister to support the funding of research and applied research projects that have the aim of developing knowledge of the Irish offshore with a view to assisting in promoting exploration and development activity.

Until otherwise directed by the Minister this condition will be fulfilled by:

- 1) participating in the Petroleum Exploration and Production Promotion and Support programme (PEPPS) through its Irish Shelf Petroleum Study Group (ISPSG) by contributing €87,361 per licence per annum;
- 2) participating in Petroleum Exploration and Production Promotion and Support (PEPPS) through its Expanded Offshore Support Group (EOSG) or its successor by making a single contribution of €17,472 per company per annum.

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Contributions to ISPSG and EOSG, which will be payable on award of this licence and thereafter on the anniversary date of award, will be subject to an annual adjustment in line with movements in the Consumer Price Index (CPI).

8. The Minister, on application by the licensees, shall, in accordance with the Licensing Terms, grant a petroleum lease to the licensees in respect of a petroleum field discovered in the licensed area or enter into an undertaking with the licensees to grant a petroleum lease in respect of a petroleum field discovered in the licensed area.

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### **APPENDIX 1**

#### **Co-ordinates of area reserved for Kosmos Energy Ireland and Antrim Exploration (Ireland) Ltd in respect of Frontier Exploration Licence 1/13 over Blocks 44/4(p), 44/5(p), 44/9(p), 44/10, 44/14(p) and 44/15(p) in the Porcupine Basin.**

1. 52°00'00" N, 12°06'00" W
2. 52°00'00" N, 12°10'47" W
3. 51°58'47" N, 12°10'47" W
4. 51°58'47" N, 12°20'58" W
5. 51°52'41" N, 12°20'58" W
6. 51(0)5241" N, 12°19'41" W
7. 51°47'52" N, 12°19'41" W
8. 51°47'52" N, 12°21'55" W
9. 51°37'14" N, 12°21'55" W
10. 51°37'14" N, 12°20'07" W
11. 51°36'44" N, 12°20'07" W
12. 51°36'44" N, 12(0)18'33<sup>1</sup> W
13. 51°35'27" N, 12°18'33" W
14. 51°35'27" N, 12°10'21" W
15. 51°33'16" N, 12°10'21" W
16. 51°33'16" N, 12°08'23" W
17. 51°30'00" N, 12°08'23" W
18. 51°30'00" N, 12°00'00" W
19. 51°50'00" N, 12°00'00" W
20. 51°50'00" N, 12°06'00" W
1. 52°00'00" N, 12°06'00" W

**APPENDIX 2**

**Work Programme Conditions of Frontier Exploration Licence FEL 1/13  
(being a follow-on licence to Licensing Option 11/5)**

The licensees will, during the first phase of the licence:-

- I. Acquire a minimum of 1050km(2) full-fold 3D seismic data together with marine gravity and magnetic data.
2. Process the new 3D seismic data, to include Pre Stack Time Migration (PSTM) processing.
3. Should geological uncertainties require depth risk reduction, perform Pre Stack Depth Migration (PSDM) reprocessing of the new 3D seismic data.
4. Perform AVO and attribute analysis of new 3D seismic data as well as seismic inversion and frequency and spectral decomposition of the data.
5. Integrate and interpret the new 3D seismic data with existing data.
6. Carry out geological mapping; seismic and depositional facies analysis; and prospect fairway analysis.
7. Perform source rock maturity and hydrocarbon charge modelling.
8. Map and prioritise leads and prospects and perform prospect resource analysis.
9. Perform other G&G studies as required.
10. Complete nominal well design and field development economics.
11. Integrate the work from 1 to 10 above into a play and prospect assessment for the full prospective section of the entire licence area and make it available to Petroleum Affairs Division of the Department of Communications, Energy and Natural Resources, 29 — 31 Adelaide Road, Dublin 2 in the form of a written report and presentation at least three months before the end of the first phase of the licence.



**IN WITNESS** whereof the Official Seal of the **Minister for Communications, Energy and Natural Resources** and the seals of the licensees have been affixed hereto on the dates respectively indicated.

**PRESENT** when the Official Seal of the **Minister for Communications, Energy and Natural Resources** was affixed hereto and authenticated by the signature of Ciarán Ó. Hóibáin

on the 28 day of August, 2013  
a person authorised in that behalf.

)  
)  
)  
) /s/ Ciarán Ó. Hóibáin  
) A person authorised under Section 15(1) of the Ministers and  
) Secretaries Act, 1924 to authenticate the seal of the said  
) Minister

**WITNESS:** Bill Morrissey  
**ADDRESS:** DLENR  
29-31 Adelaide Rd  
**OCCUPATION:** Civil Servant

**PRESENT** when the seal of

**Kosmos Energy Ireland** was affixed hereto

Director: /s/ W. Greg Dunleavy

Director: /s/ Brian Maxted

on the 7<sup>th</sup> day of August 2013

**PRESENT** when the seal of **Antrim Exploration (Ireland) Ltd** was affixed hereto

Director: /s/ Director of Antrim Exploration (Ireland) Ltd

Director: /s/ Director of Antrim Exploration (Ireland) Ltd

on the 16 day of August 2013