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Government of Ireland

# Exploration Offshore Ireland

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# Petroleum Affairs Division



PAD Role includes:

- Licence and regulate oil and gas Exploration and Production (E&P) activities offshore Ireland.
- Build awareness of the exploration opportunities and regulatory regime in Ireland.
- Initiate and participate in national and international research projects.
- Maintain and manage the national archive of petroleum E&P technical data.

# Content



- Exploration History
- Licensing Offshore Ireland
- Current Activity – Licence Conversion and New Seismic Data
- Current Research
- Open Acreage – Celtic Sea Basins



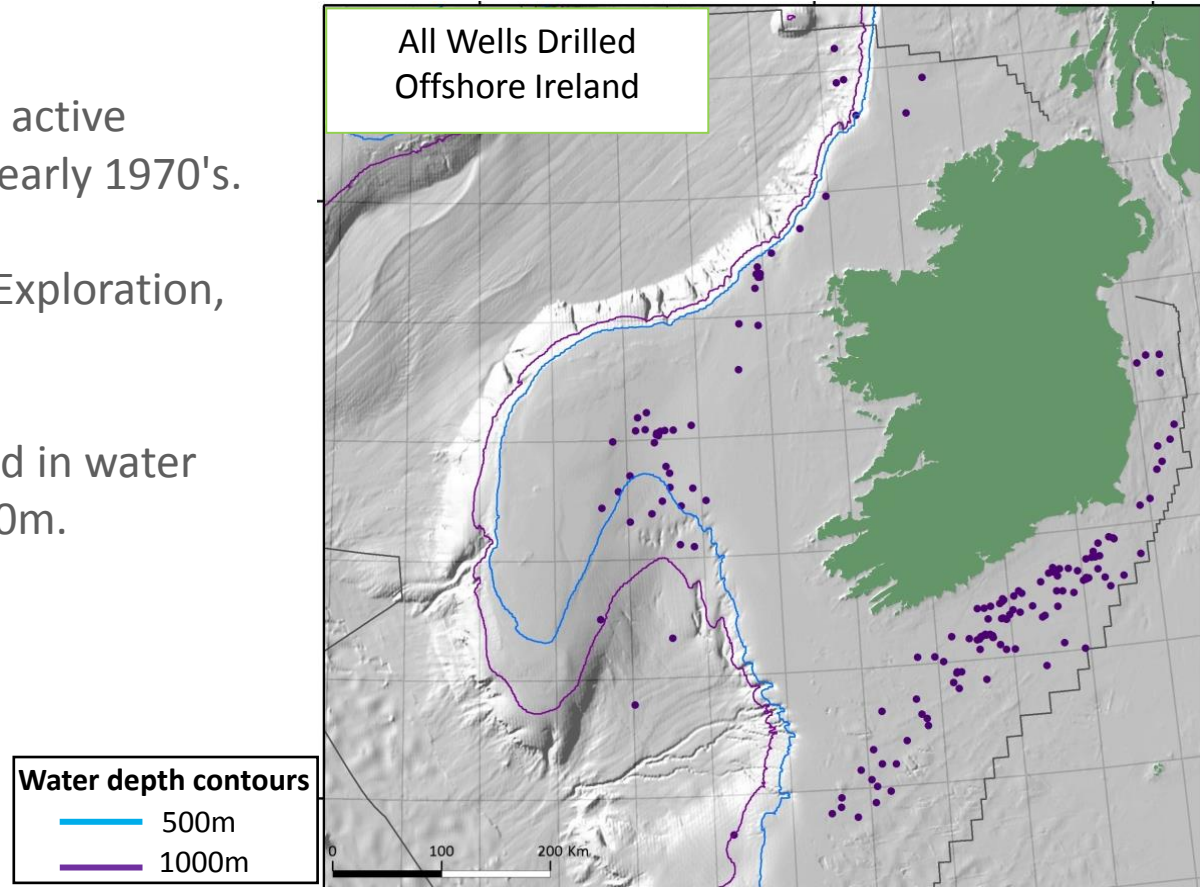
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# Exploration History Offshore Ireland

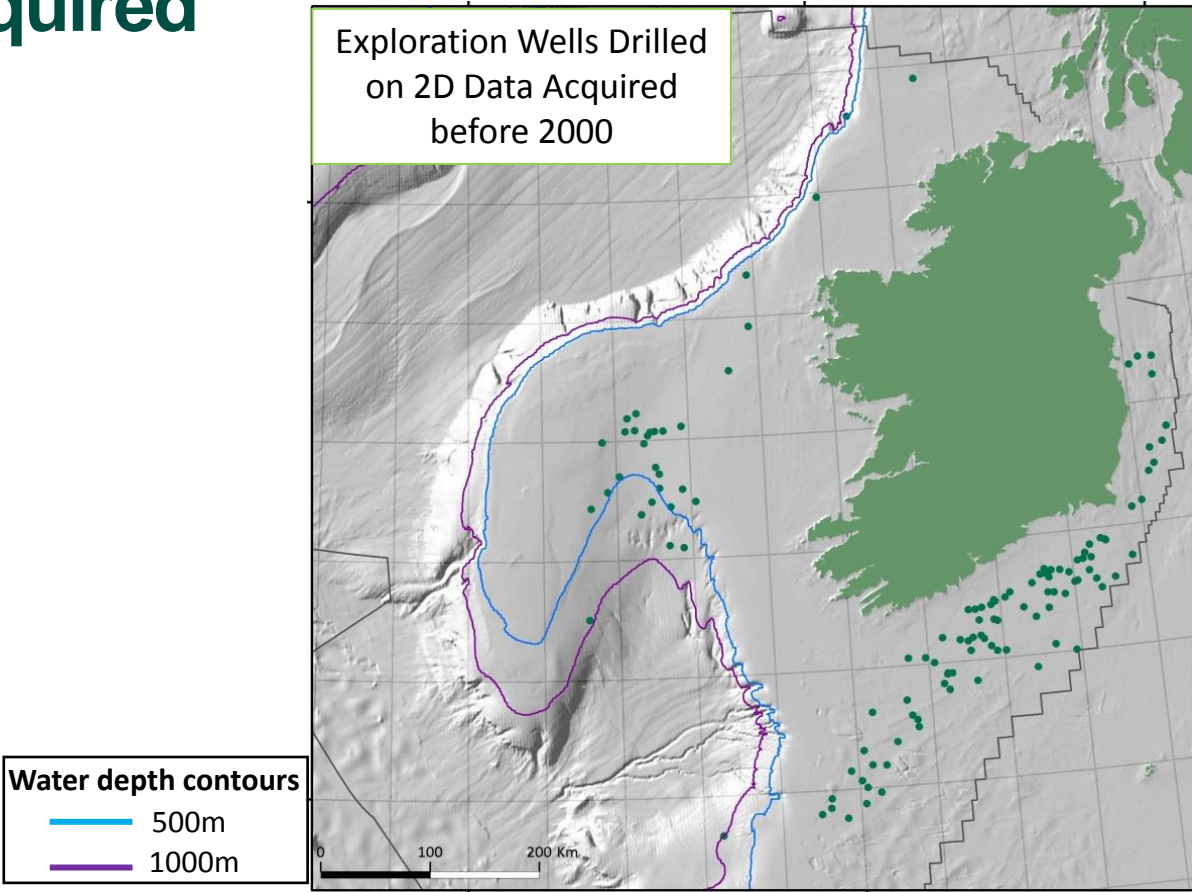
# Exploration & Appraisal Wells



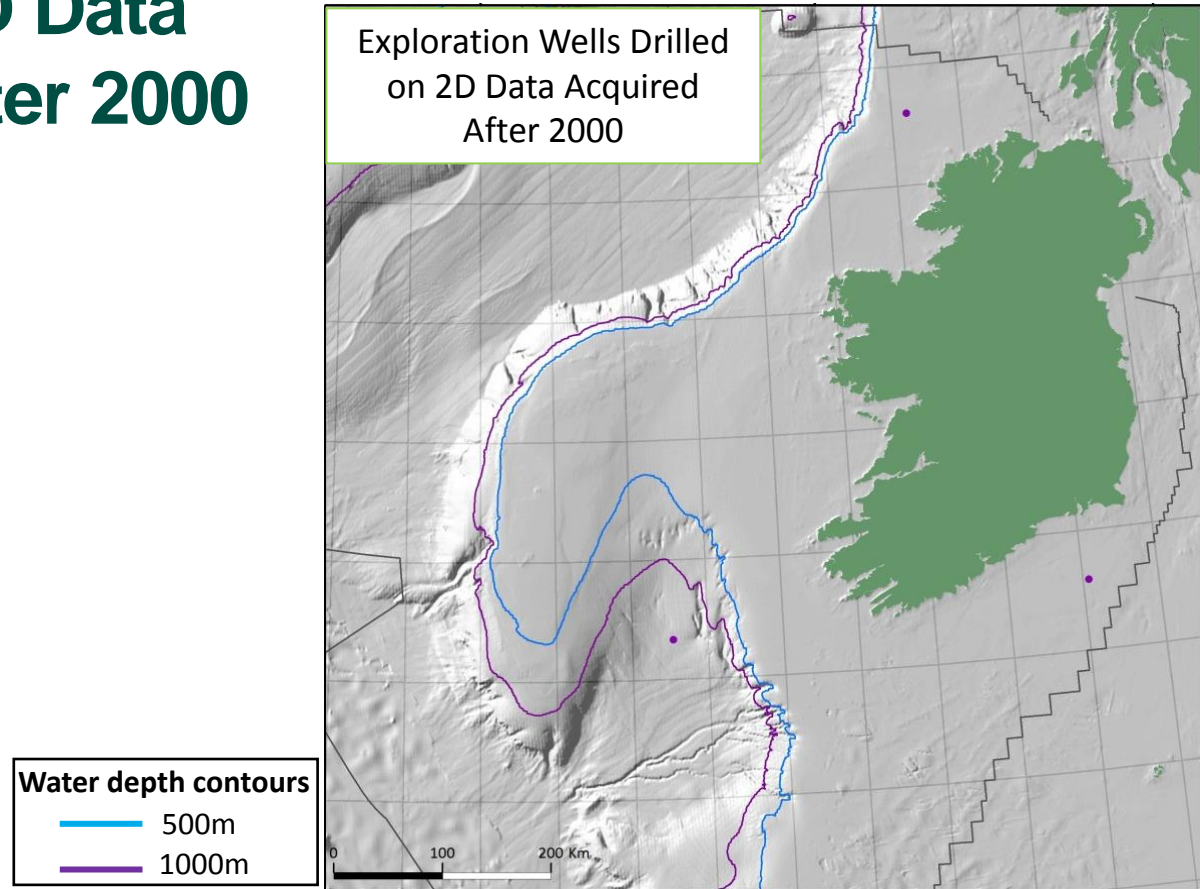
- Petroleum exploration active offshore Ireland since early 1970's.
- 160 wells drilled (132 Exploration, 28 Appraisal).
- Majority of wells drilled in water depths of less than 500m.



# Exploration Wells Drilled on 2D Data Acquired before 2000



# Exploration Wells Drilled on 2D Data Acquired After 2000



# Exploration Wells on 3D Data

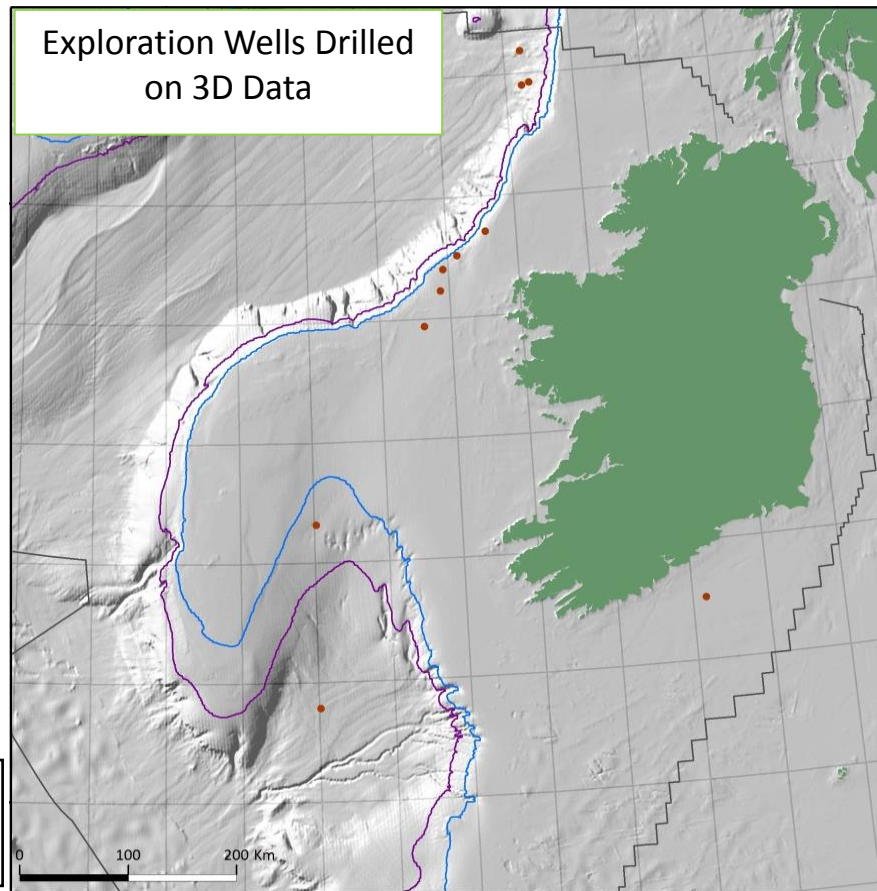


Majority of Wells drilled in  
shallow water on poor quality  
2D seismic

**Water depth contours**

— 500m

— 1000m

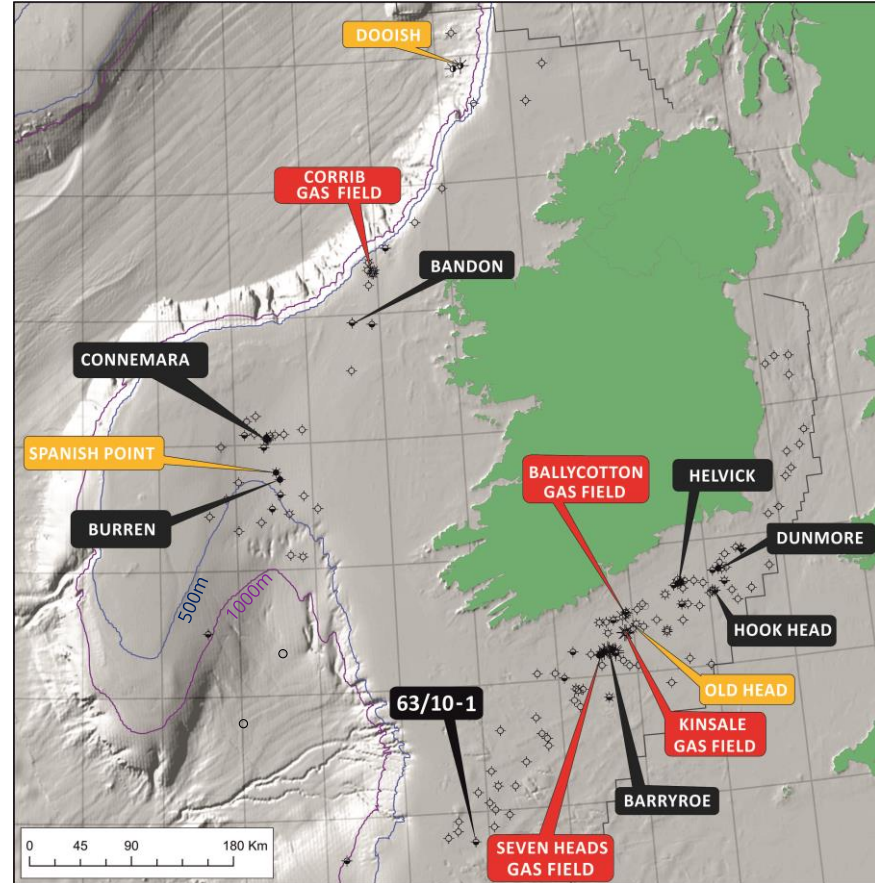
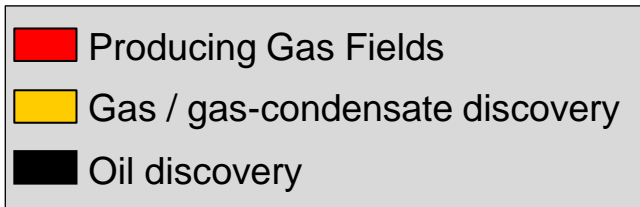




# Producing Fields and Discoveries



- 4 Commercial gas discoveries.
- Numerous undeveloped oil and gas condensate discoveries.





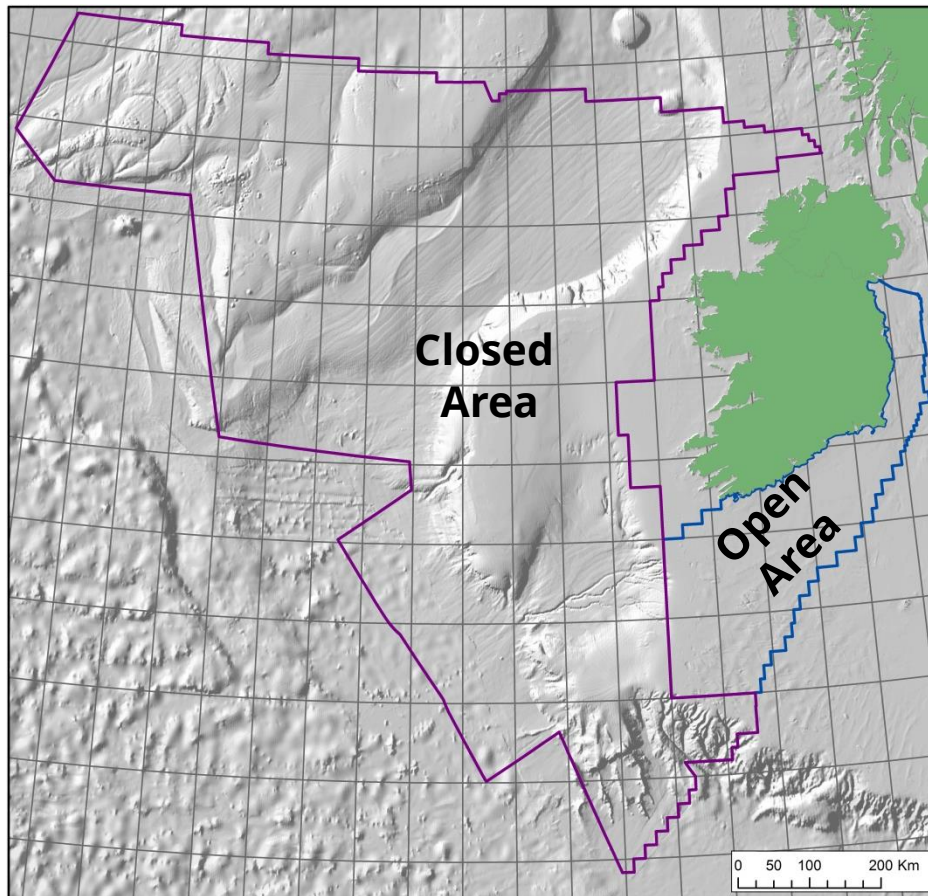
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# Licensing Offshore Ireland

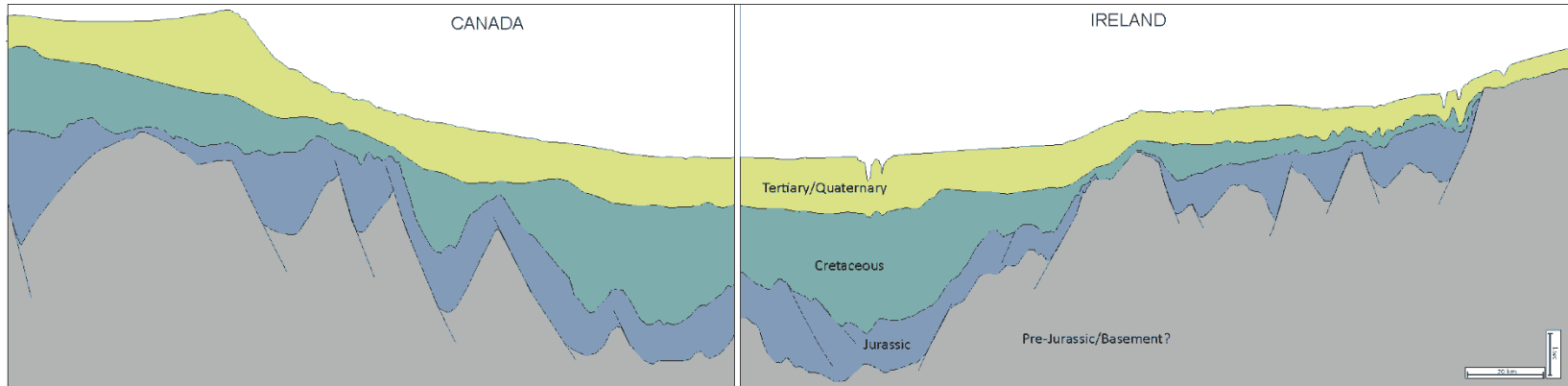
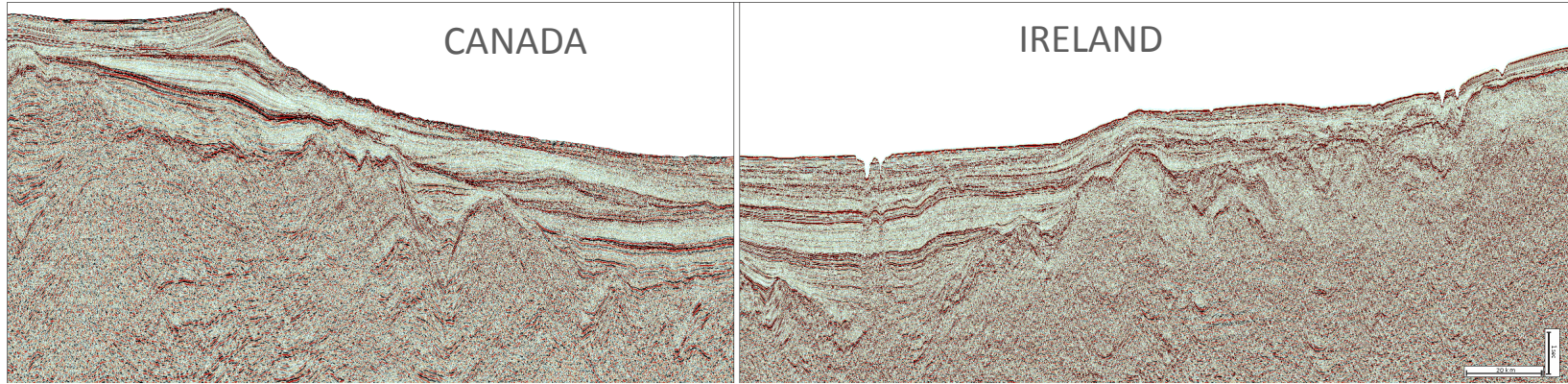
# Licensing Offshore Ireland



- Large Offshore Area - 10 times the size of Ireland's land mass.
- Celtic Sea Open Area - Applications Anytime.
- Atlantic Closed Area - Licensing Rounds (Farm-In opportunities available).
- 2015 Atlantic Ireland Licensing Round most successful round to date.
- 2 factors largely influential in the success of the round.

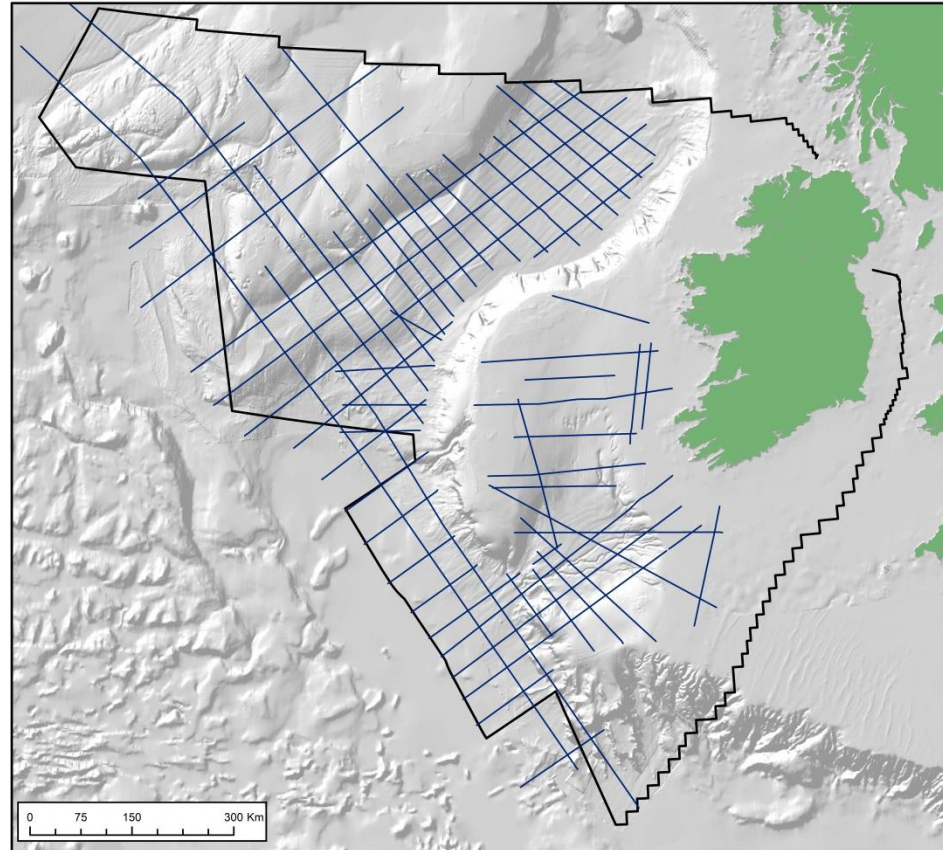


# 1. Canada – Ireland Conjugate Margin





## 2. PAD/ENI Regional Seismic 2013-2014

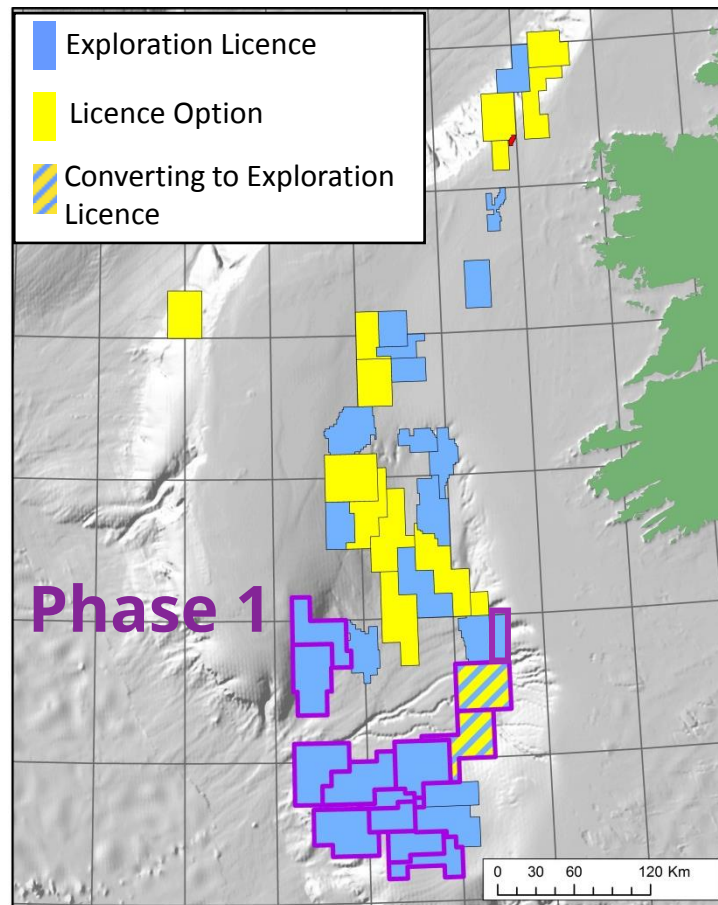




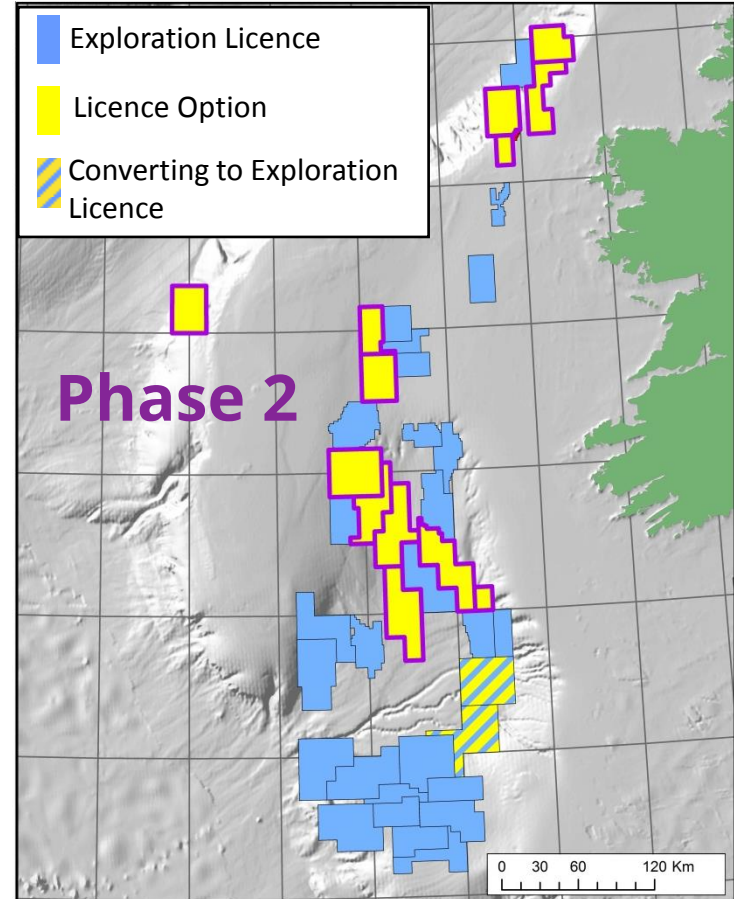
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# Current Activity Offshore Ireland

# 2015 Atlantic Margin Licensing Round



# 2015 Atlantic Margin Licensing Round

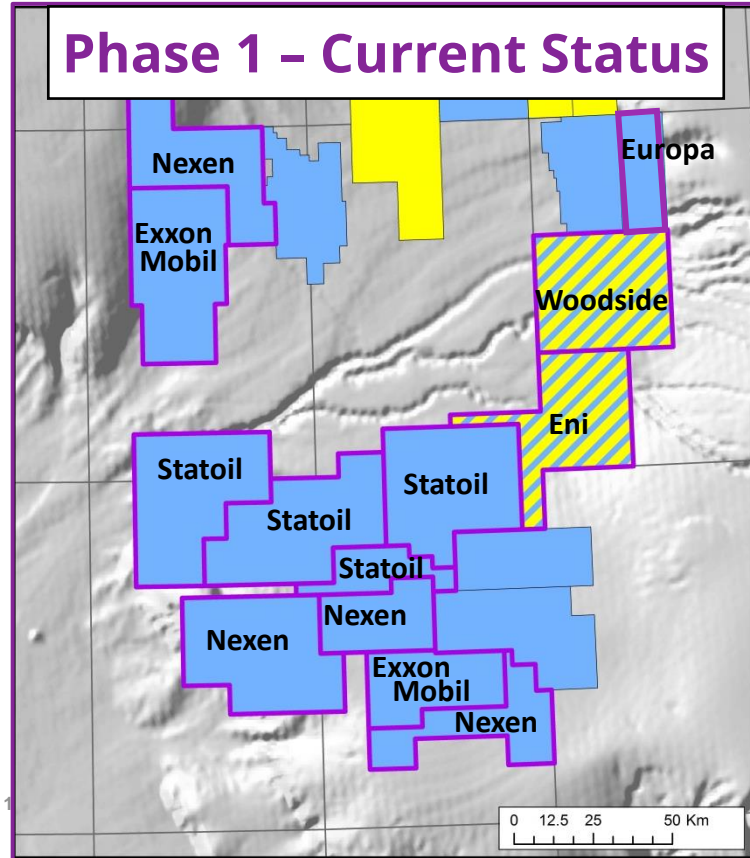




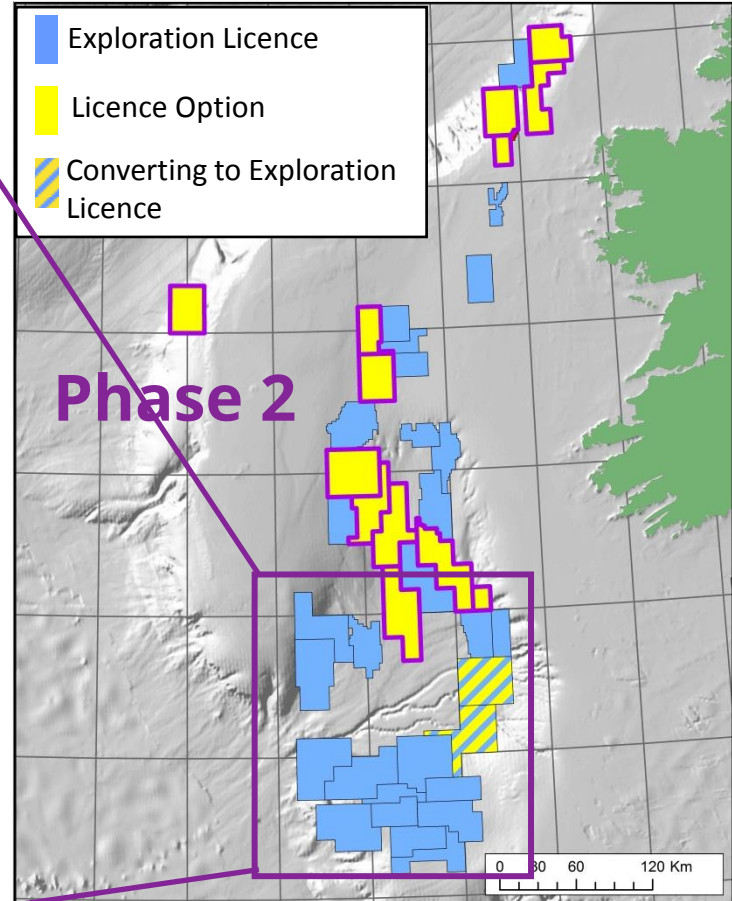
# 2015 Atlantic Margin Licensing Round



## Phase 1 – Current Status

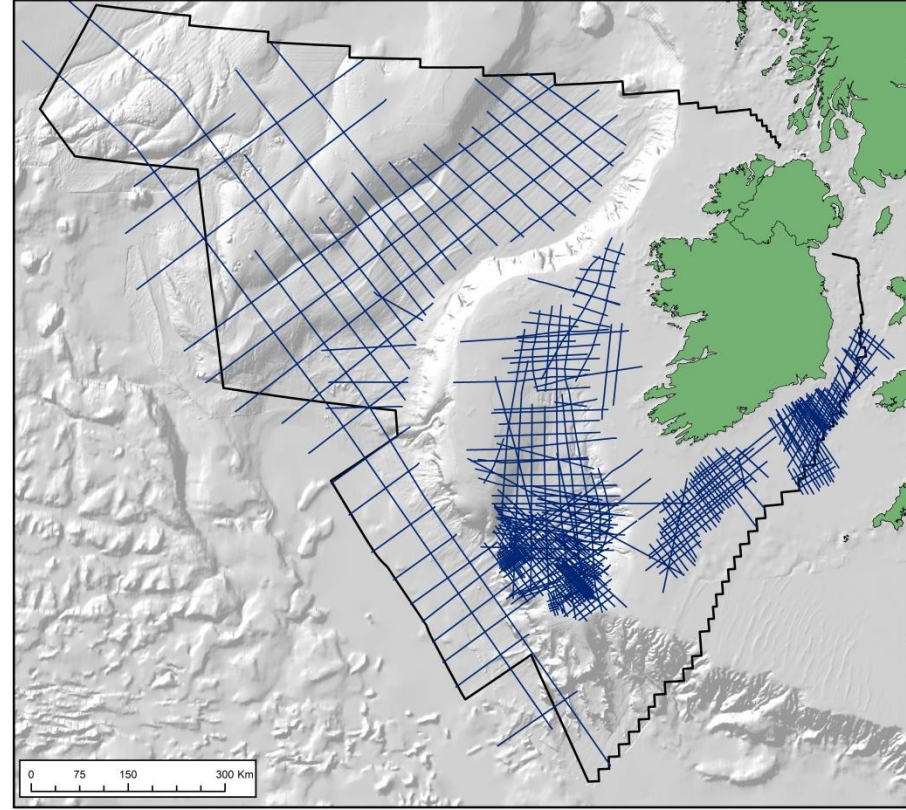
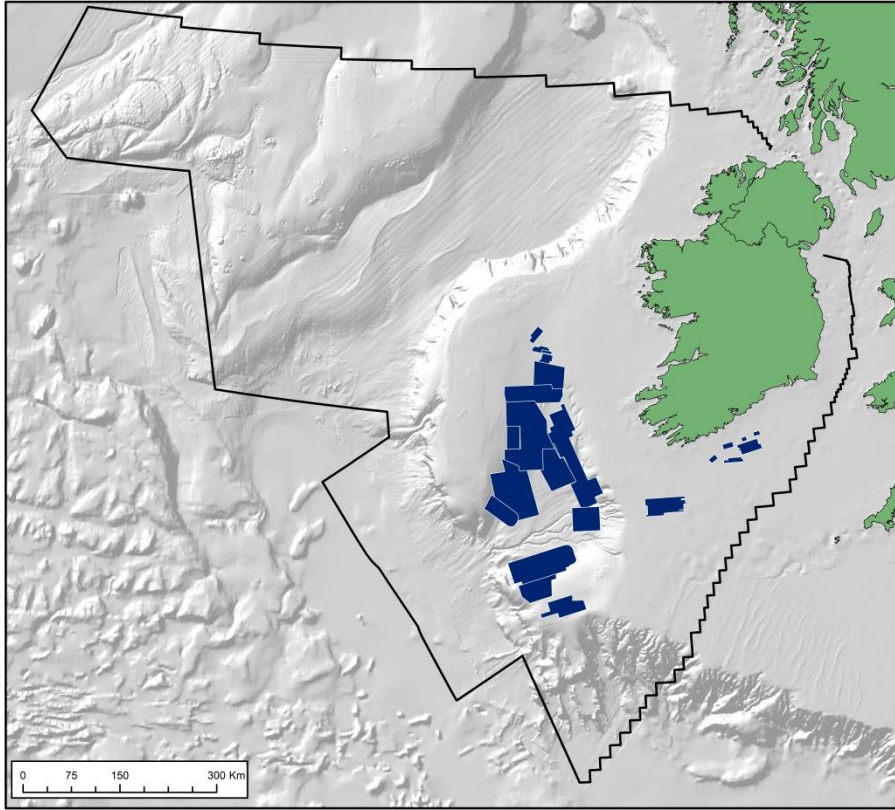


## Phase 2



# New Seismic Data Acquired

Since 2011 the Irish Offshore has seen extensive acquisition of long offset high quality seismic data both regional 2D and large 3D surveys





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# Current Research

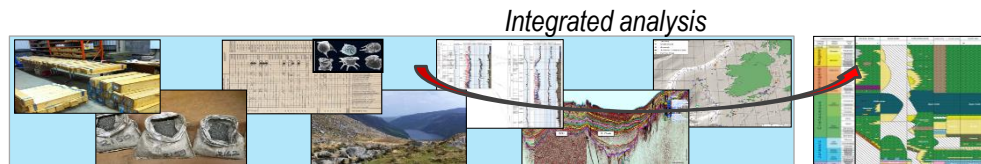
# Research Initiatives



## Two Major Projects Underway – PAD/PIP led initiatives

### A New Stratigraphic Framework for Ireland

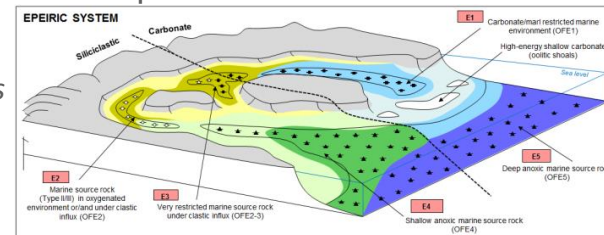
- Systematic review and synthesis of all offshore stratigraphy to create a new official framework
- Ongoing - Release date Q4 2018



### Trans-Atlantic Source Rock and Oils Study (Ireland-Newfoundland-Labrador)

- Objective: A comprehensive review and comparison of oils and source rocks from all Mesozoic basins offshore Ireland and Newfoundland-Labrador
- Findings from source rock study :
  - 15 source rocks across the area.
  - Late Jurassic sediments are the primary source rocks for the oils discovered in these basins to date.
  - The establishment of a single database has allowed for a number of Trans-Atlantic relationships to be recognised.

### Completed - Available now



**For additional information on these research Initiatives please visit us at Booth 310**



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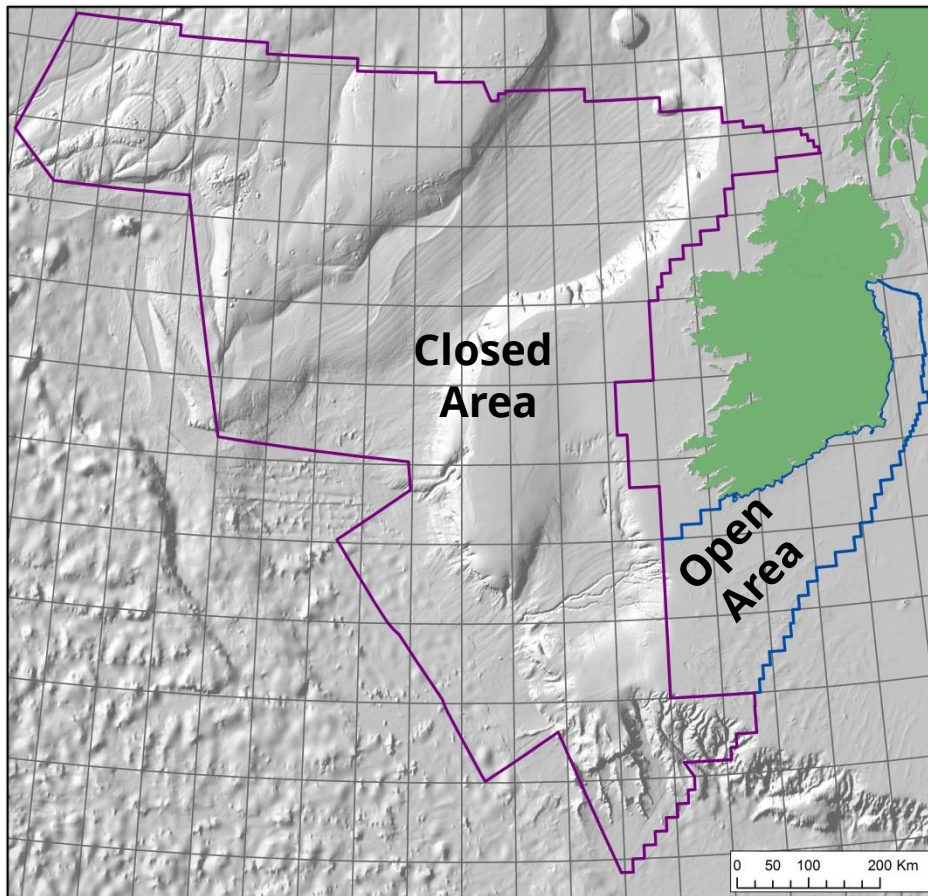
# Open Acreage - Celtic Sea Basins



# Licensing Offshore Ireland



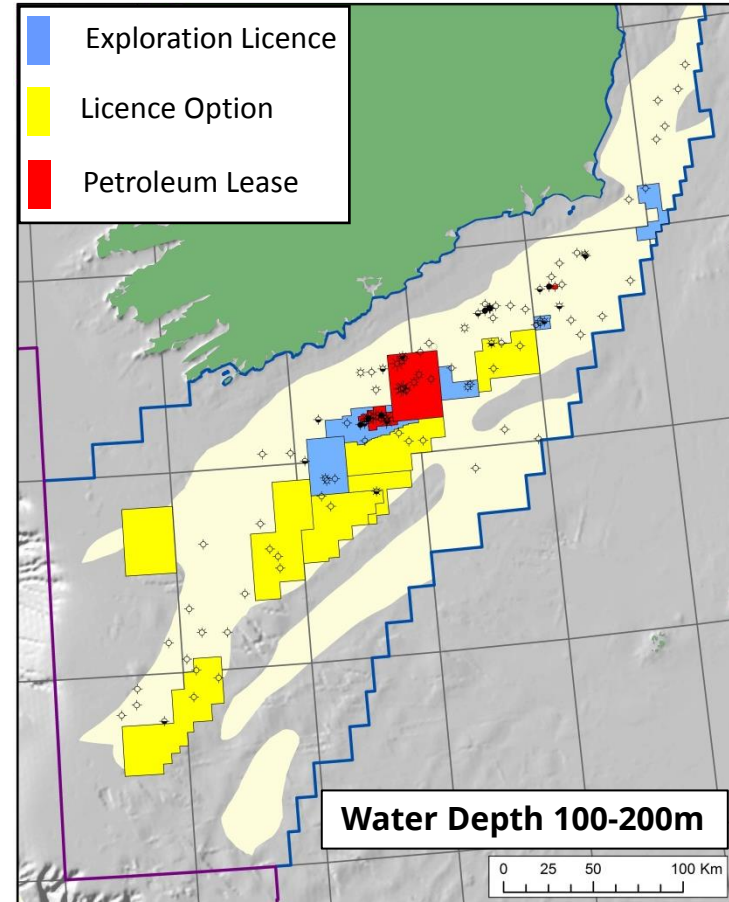
- Atlantic Closed Area - Licensing Rounds (Farm-Ins available).
- Celtic Sea Open Area - Applications Anytime.
- Licensing round on the UK margin adjacent to the Celtic Sea expected in 2018.
- The seismic data acquired by OGA (UK Oil & Gas Authority) ties into data on the Irish Margin.



# Celtic Sea Licences

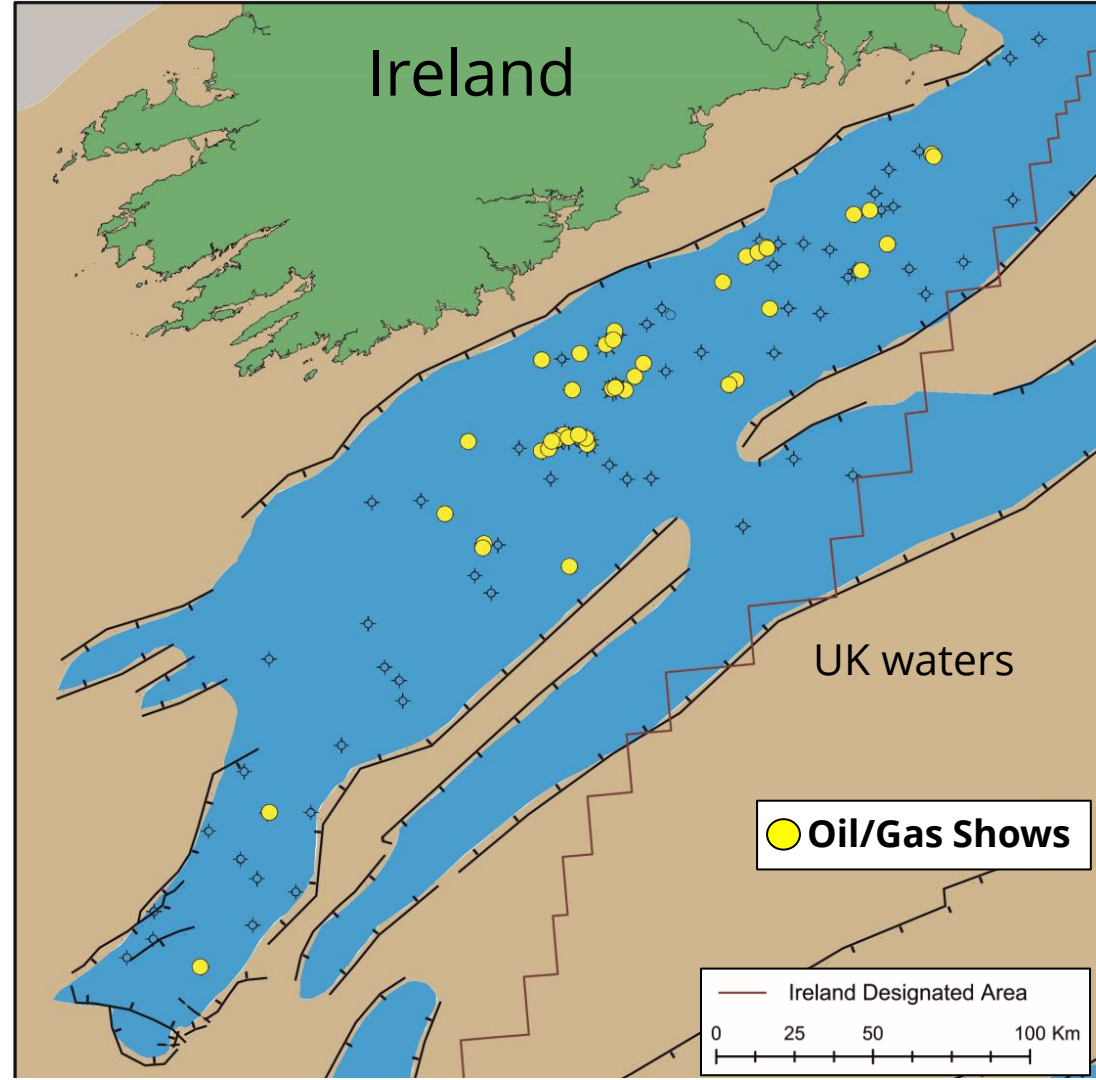


- Licence Options up to 3 years awarded, followed by two-phased 6 year Standard Exploration Licence.
- Production ongoing since late 1970's. Approximately 1.7 Tcf produced to date from the Kinsale Area Gas Fields.
- Market demand, proximity to coast, shallow waters and new data provide new opportunities for exploration investment.



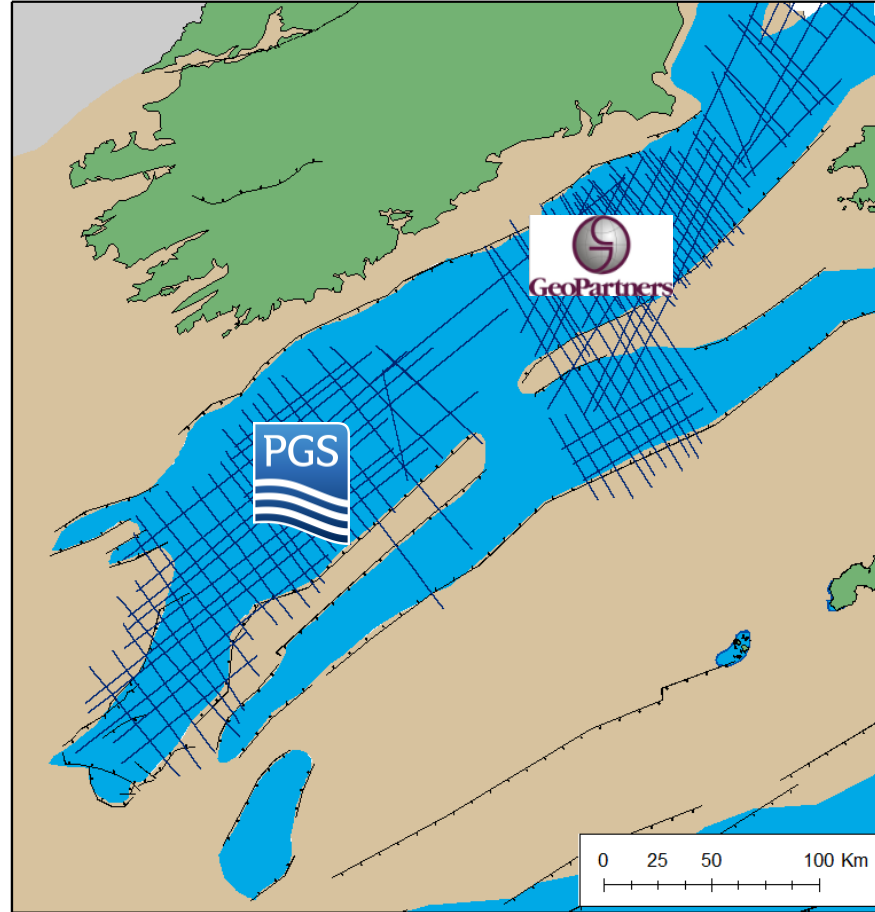
# Discoveries and Shows in the Celtic Sea

- Approximately 50% of wells drilled in the Celtic Sea have encountered hydrocarbons.
- Multiple source and reservoir levels (Cretaceous, Jurassic, Triassic).
- Majority of wells have been drilled on vintage, poor quality 2D data.
- New data would likely increase success rate due to enhanced trap definition.





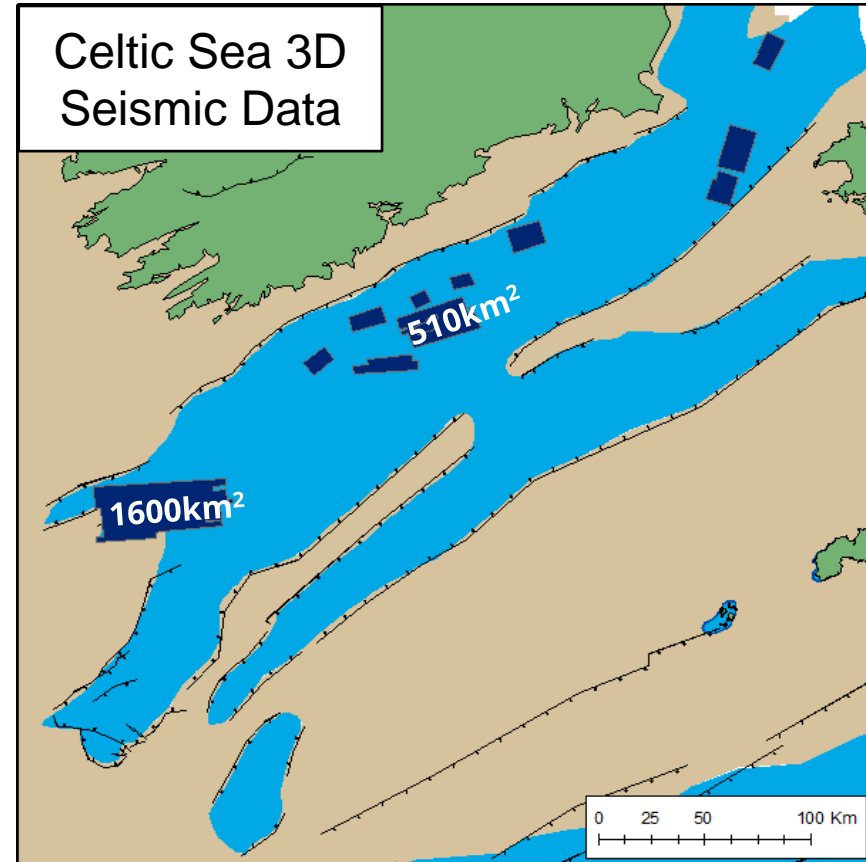
# Recent 2D Regional Seismic in Celtic Sea Basins



# Regional 3D Seismic Survey lacking in Celtic Sea



- The most recent 3D surveys were acquired in 2013 and totalled 2110km<sup>2</sup>.
- Compared to 10,550km<sup>2</sup> acquired in the Porcupine Basin in 2017.



# CONCLUSIONS



- Exploration has been on-going offshore Ireland since the 1970's.
- Exciting opportunities available for Farm-Ins in the Atlantic Ireland Basins.
- Celtic Sea is currently open for licensing. 2D Seismic data coverage and quality has improved significantly in recent years.
- New data and on-going research initiatives enable a new evaluation of the basins. Results indicate significant prospectivity offshore Ireland.
- We provide a comprehensive Dataroom facility in our Dublin Office.



# Thank you for listening!

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## Booth 310