

# Country Report:

IRELAND

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**Roinn Cumarsáide, Gníomhaithe ar son na hAeráide & Comhshaoil** Department of Communications, Climate Action & Environment



### NDR key parameters

Name of the NDR	Irish National Petroleum E&P Data Repository (IPAS)
Type of organisation	Government
Operating since:	1997 (structured data)
Employees:	15
Government Department:	Petroleum Affairs Division, Department of Communications, Climate Action and Environment, Ireland (DCCAE)
State Supervisor:	Petroleum Affairs Division, DCCAE

Type of data	
Onshore	Yes
Offshore	Yes
License information	Yes
Production information	Yes



### Objectives

- Ensure that the regulatory framework is robust and clear and is in keeping with international best practice in order to promote certainty and investment
- Maximise the development of Ireland's offshore petroleum potential consistent with Ireland's energy and climate policies, while complying with the highest standards of environmental protection.
  - Ensure that the data release policy for Ireland <u>is robust and facilitates</u> <u>effective exploration</u>
  - Ensure the Department continues to meet its responsibilities in relation to the receipt, management and release of petroleum exploration and production data



### Licences



#### Number of Exploration Licences at an all time high





### Seismic



### New Seismic Data Acquisition

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

35,000km<sup>2</sup> 14,000km



### Wells

#### Wells Spudded and Drilled Offshore Ireland

Utrecht, The Netherlands



### Data Release



Licensing Terms for Offshore Oil & Gas Exploration, Development and Production (for authorisations issued since 1 January 2007)

- Well data 4 years
- Proprietary geophysical data 4-7 years
- All other data 4 years
- Reduced confidentiality periods
- 3 years after expiry of the authorisation, 2 years after surrender, or immediately after revocation.
- In 2014 confidentiality period for non-proprietary / speculative seismic data anywhere offshore Ireland was increased from 7 to 10 years

### Data Release





PAD, DCCAE	Data Agents
Well and Geophysical Data for research or	Well and Geophysical Data for exploration
value-add purposes	purposes (O&G companies)
Regional Seismic Survey 2013/2014	
Technical Studies & Regional Reports	
Rock & Fluid Samples	
Data Rooms	

- Small charge for access to data from Data Agents (by O&G companies).
- No charge for access to data for research or value-add purposes. Data provided under licence, which ensures that value-added data and products based on access to data in NDR are released after a set period. This ensures that high quality datasets are available to industry and researchers, thereby facilitating effective exploration, and reduces the need for repeat analyses (sample preservation).



### Challenges

#### Data Management

- Digital capture of legacy hard copy data currently being addressed.
- Very limited volume of seismic field data in NDR leads to delays in accessing data for reprocessing.
- There has been a significant increase in volumes of data acquired in recent years.

#### Technology

- Some legacy seismic data delivered in specific platform formats and not SEGY.
- NDR comprises individual databases.
- Pre-stack seismic data storage.

#### Organisational.

• Additional resources required to build archive of seismic field data.



### Successes

- Ireland has good control over the regulation of data acquired, data received and data released.
- Ireland publish live metadata from its NDR (iPAS).
- Majority of seismic data are available in SEG-Y format, which has been properly QC'd and ready to load welcomed by industry and researchers.
- Ireland has a complete suite of data for every well, including all associated contractor reports and sample analytical data.
- Ireland's dataroom facility has played an important role in facilitating effective research and exploration.
- The inclusion of Government sponsored data in the NDR not only helps Ireland's promotional efforts but also encourages new additional data acquisition.
- Value-added data and products based on access to data in NDR is released after a set period. This reduces the need for repeat analyses (sample preservation) and ensures that high quality datasets are available to industry and researchers.



### Ireland's Stratigraphic Framework





- Ongoing initiative to construct an updated stratigraphic framework for all basins offshore Ireland.
- Integrated analysis of lithology, biostratigraphy and seismic data currently underway by Merlin Energy Resources Consortium. The project is funded by Ireland's Petroleum Infrastructure Programme (PIP) and is supported and steered by members of PAD, PIP and academia.
- Long-awaited project to improve our understanding of the offshore basins, and aid in future exploration and research initiatives.
- Atlas to be released as a PAD Special Publication upon completion

### Study nearing completion





#### New Lithostratgraphic Framework for Offshore Ireland

Age	Nomenclature Theme
Neogene and Quaternary	Irish artefacts/jewellery
Paleogene	Irish bays and harbours
Upper Cretaceous	Fish in Irish waters
Lower Cretaceous	Fish in Irish waters – fresh water for Celtic Sea, salt water for west of Ireland
Upper Jurassic	Irish headlands (west and south coast as appropriate to basins)
Middle Jurassic	Irish Birds
Lower Jurassic	Irish lakes for new names. Existing Hebrides and south of England nomenclature possible at group level and three formations
Triassic	<ul> <li>Historical and archaeological features and Irish musical instruments for west of Ireland basins.</li> <li>Existing south of England/Bristol Channel nomenclature for Celtic Sea; existing East Irish Sea nomenclature for Irish Sea basins.</li> </ul>
Permian	Use 'Zechstein Group' for west of Ireland, and 'Manchester Marl Formation' and' Collyhurst Sandstone Formation' for Kish Bank and Irish Sea basins
Upper Carboniferous	Native Irish plants
Lower Carboniferous	Sea shells
Devonian	Irish colours/translations of key features for new names
Igneous events	Irish Folklore, underworld

A Stratigraphy Committee was established to develop a formal lithostratigraphic nomenclature scheme, covering the whole drilled stratigraphic interval from Lower Palaeozoic to Quaternary. The new scheme will be used as the standard across the Irish offshore area.



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Beicip-Franlab - 2017

#### **New Geochemistry Database**

All available geochemical data for each well offshore Ireland have been digitised and compiled into a single geochemical analytical database, allowing data to be interrogated and trends to be observed



Data type	Samples
Total Organic Carbon (TOC)	12,725
Rock Eval pyrolysis	6,472
Pyrolysis gas chromatography	177
Maceral analysis	613
Vitrinite Reflectance ( $R_{o}$ )	3,179
Gas chromatography (GC)	1,182
GC-MS (biomarkers)	389
Gasoline composition	470
Bulk fraction carbon isotopes	252
Gas composition	2,118
Gas carbon isotopes	206







Upper Jurassic - by Basin







The oils of the Connemara Field (specifically 26/28-1) and Spanish Point (35/8-2) make up of Porcupine Family C and show close relations as illustrated by CG-MS biomarker and gas chromatography ratios with both oil of the Flemish Pass (Bay du Nord C-78 and Mizzen O-16 and particularly with the Jeanne d'Arc Family A3 (represented by Ben Nevis I-45).





#### North Atlantic Geochemical Study Conclusions





**Kimmerigian paleogeography** (based on Geoarctic plate reconstruction for PIP/Nalcor, 2013)



## Digital Data Capture

- 26,000 film records contained in 1490 tubes of seismic data (1969 – 2000 vintage)
- Majority of these records exist in hard copy format only
- Older records vary from good to brittle or damaged. For damaged records (small volume of approx. 1.5% of total number), some reparative work required prior to scanning. Later records are in good to excellent condition.
- Film capture completed paper sections to be scanned in the current phase of digital data capture
- Removal of hard copies to Iron Mountain for permanent storage
- Disaster recovery system in place and work also allows for old seismic data to be readily reconstructed to SEG-Y





The baseline aerial and acoustic data acquisition (2015 - 2017) of the ObSERVE programme is completed and results and impact are currently being analysed.

Data is now publically available from DCCAE

#### 28 TB of data

Acoustic and aerial environmental baseline programme of marine wildlife



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An Roinn Cultúir, Oidhreachta agus Gaeltachta Department of Culture, Heritage and the Gaeltacht



### Future Plans

- Full digital capture of hard copy data paper seismic sections, licence reports, maps, montages, historical well files (daily reports, correspondence etc.)
- Re-read of all well log tapes
- Continue to support cuttings Photostrat, XRF QEMSCAN, core and slide scanning multi-client project
- Core store re-location
- New build of iPAS
- Build national archive of seismic field data







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