



Oil & Gas
Authority

The Oil and Gas Authority is an Executive Agency of the
Department of Energy and Climate Change (DECC)

Regulators Question Time

by invitation of Kevin Hollinrake MP

Malton School 7-9pm

12 October 2015

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Onshore oil and gas

Role of OGA with other regulators

New Licensing

Regulating seismicity

Hydraulic Fracture Plan



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UK onshore oil and gas

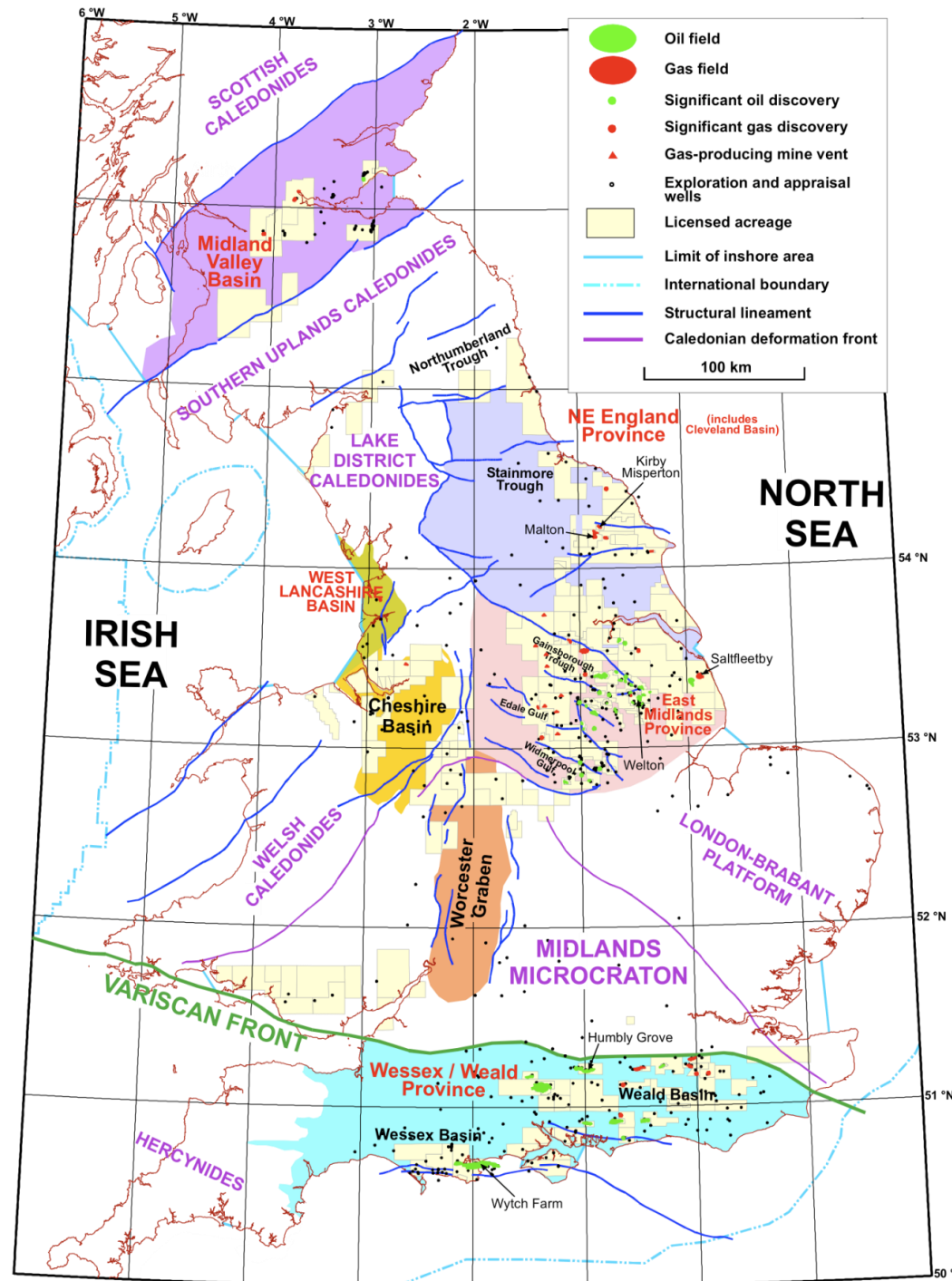
Over 2100 wells drilled

Producing fields

- 30 Oil fields
- 8 Gas fields
- 2 Coalbed Methane fields

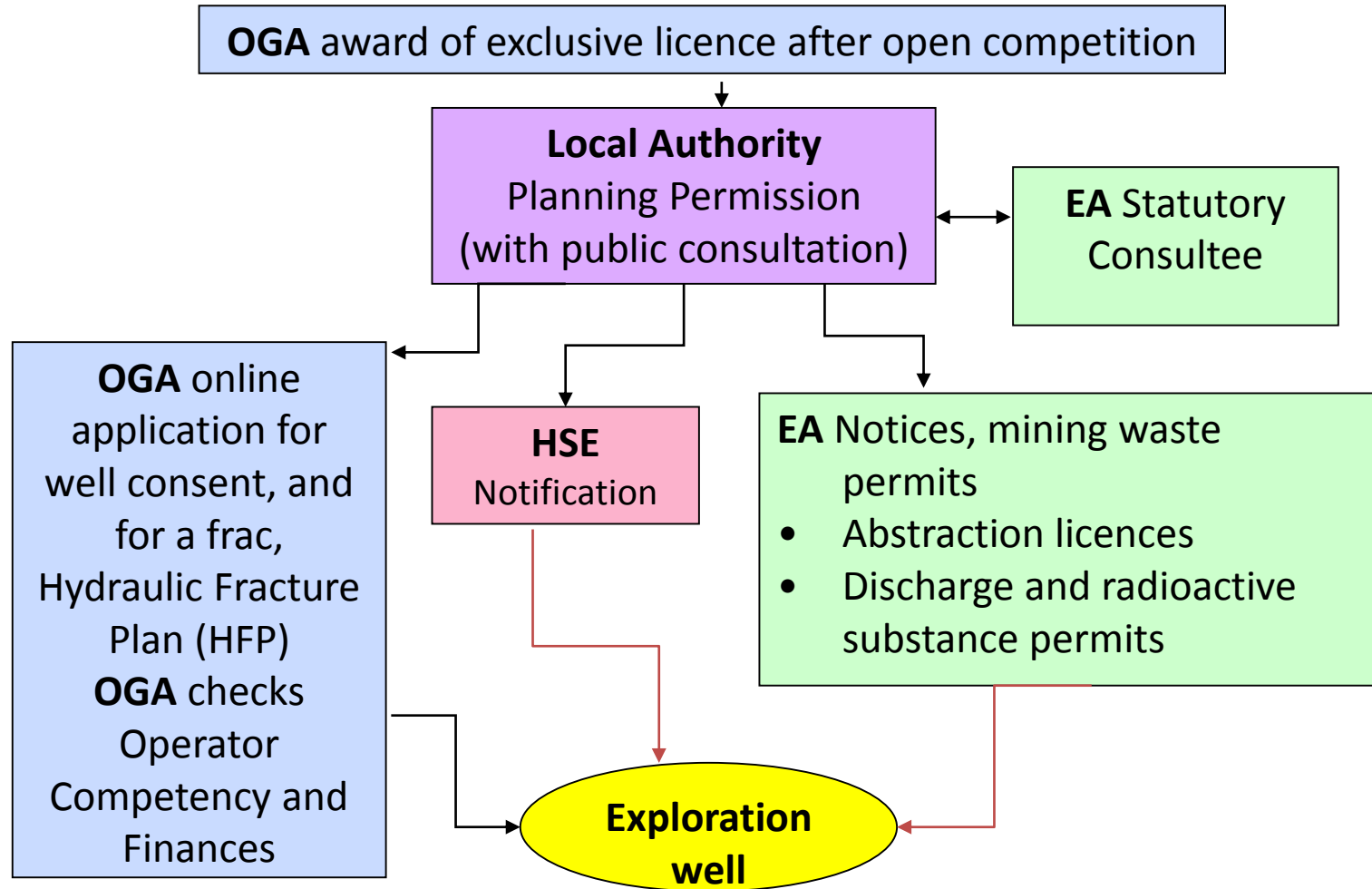
2014 onshore production

- 1.2 million cubic meters oil
- 80 million cubic meters gas





Regulatory Regime in England





Petroleum Exploration and Development Licence (PEDL)

- A PEDL grants exclusive rights “**to search and bore for and get petroleum**” in all the various stages of oil and gas exploration, appraisal; production and eventually abandonment of the wells.
- **Licences do not give permission for operations**, only grant exclusivity to licensees within a defined area.
- **Drilling, fracking or production require local planning permission, Access agreement(s) with relevant landowner(s), Environment Agency permits, HSE scrutiny and DECC well consent before any operations can commence**
- PEDL licence covers conventional oil and gas, tight gas, coalbed methane (CBM), mine vent gas, oil shale and **shale gas**. A PEDL licence does not allow for underground coal gasification (UCG) or CO₂ sequestration.



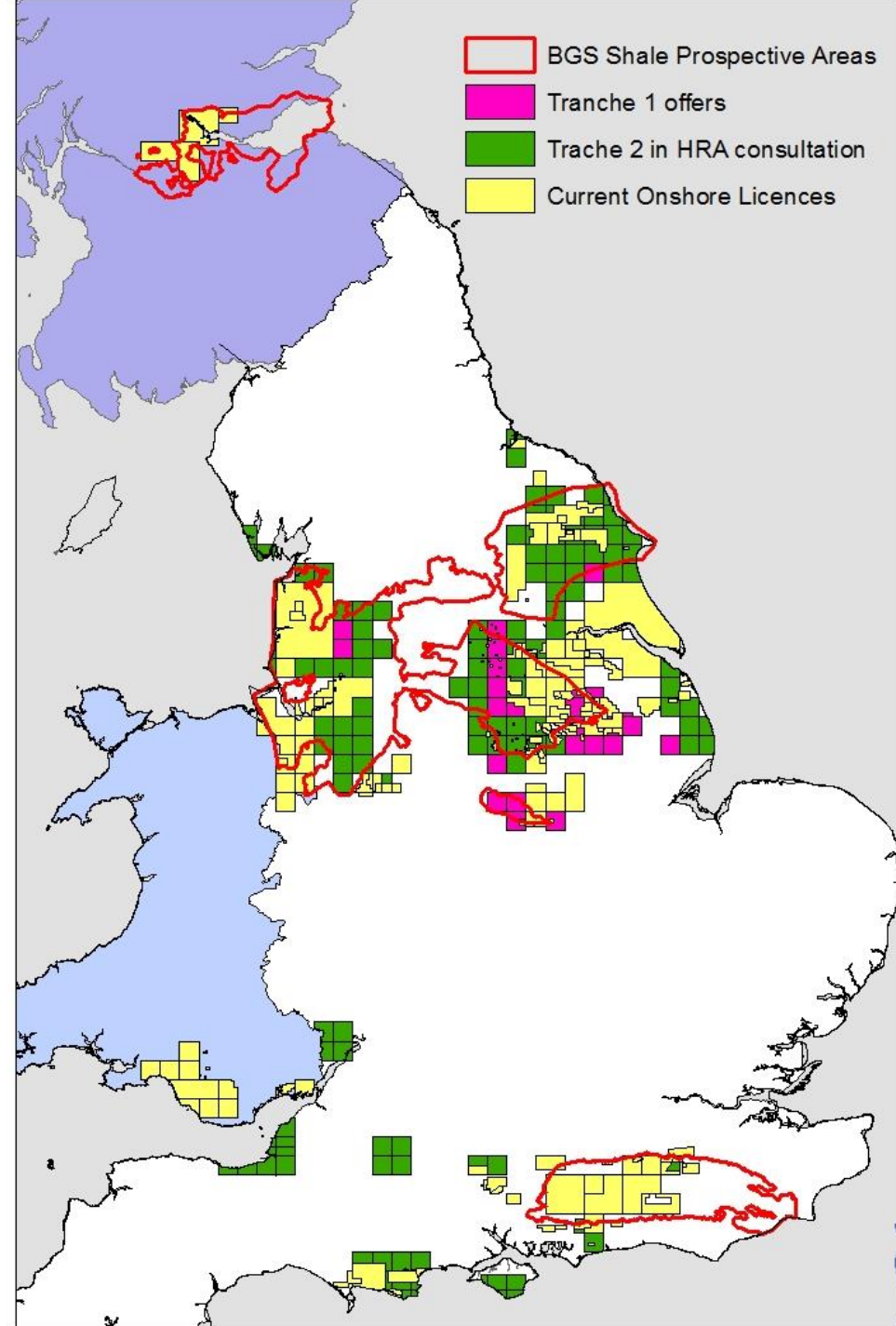
Licence Rounds

- To apply for a licence, the applicant submits information and later is interviewed by an expert panel who consider the **Geotechnical Analysis** and their proposed **Work Programme**, the minimum amount of work that the Applicant must carry out if the licence is not to expire at the end of its Initial Term. Their technical analysis and work programme are assessed against a published marks scheme.
- Only companies with the necessary **Operator Competency** and **Environmental Sensitivity** are considered for award. OGA must also be confident that any company that receives a licence will continue in sound financial health for the foreseeable future (**Financial Viability**) and has adequate **Financial Capacity** to cover its share of the proposed Work Programme.



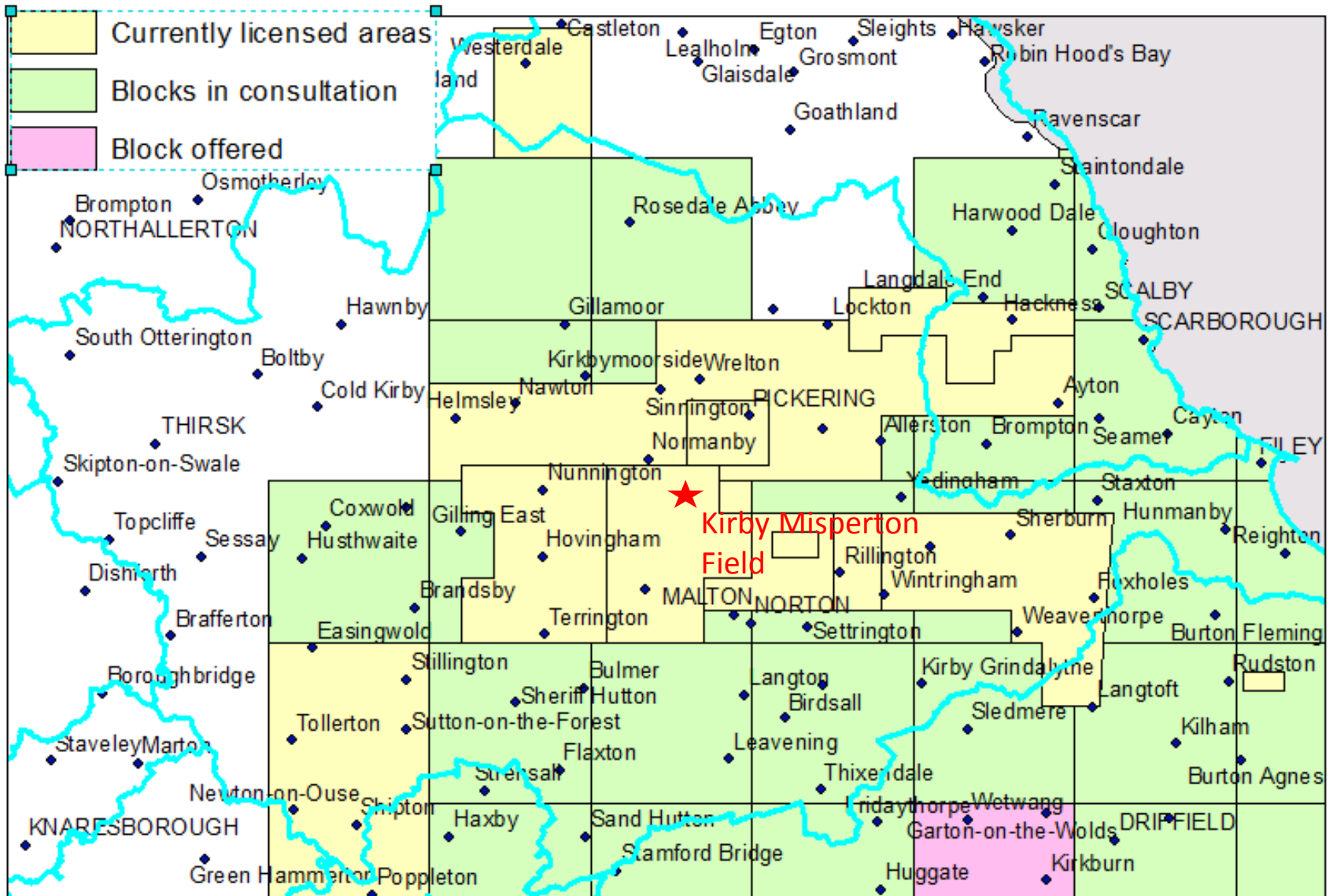
14th Round

- Oct 2014 - Received 95 Applications for 295 blocks
- Jan 2015 - decisions devolved to the Scottish Parliament
- Feb 2015 – decisions devolved to Welsh Assembly
- Aug 2015 – Announced who will be offered 27 Blocks not requiring detailed Habitats Regulations Assessment (HRA) because the proposed activities within these blocks will have no likely significant effect upon protected habitats
- 132 further Blocks may be offered follow HRA consultation





Existing and 14th Rnd Licences





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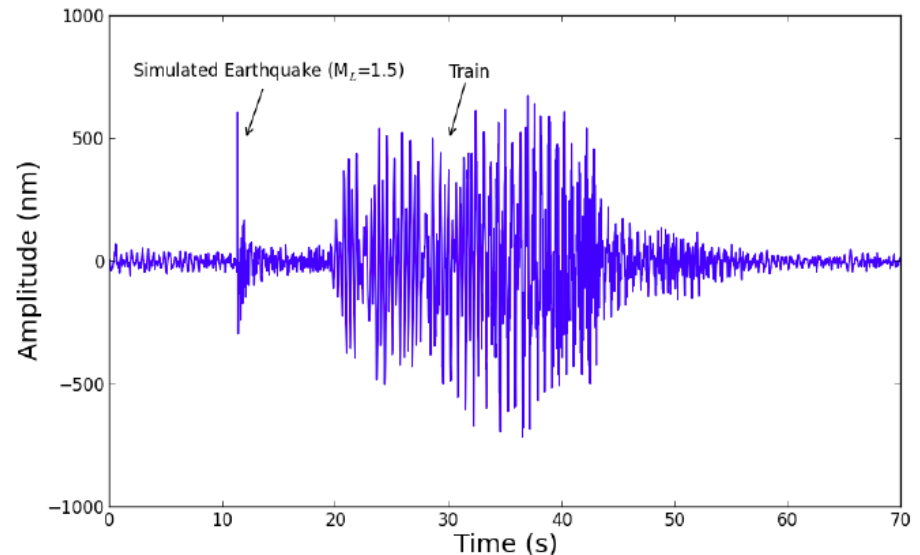
Frac-induced seismicity and the Hydraulic Fracture Plan (HFP)



Frac-induced Seismicity

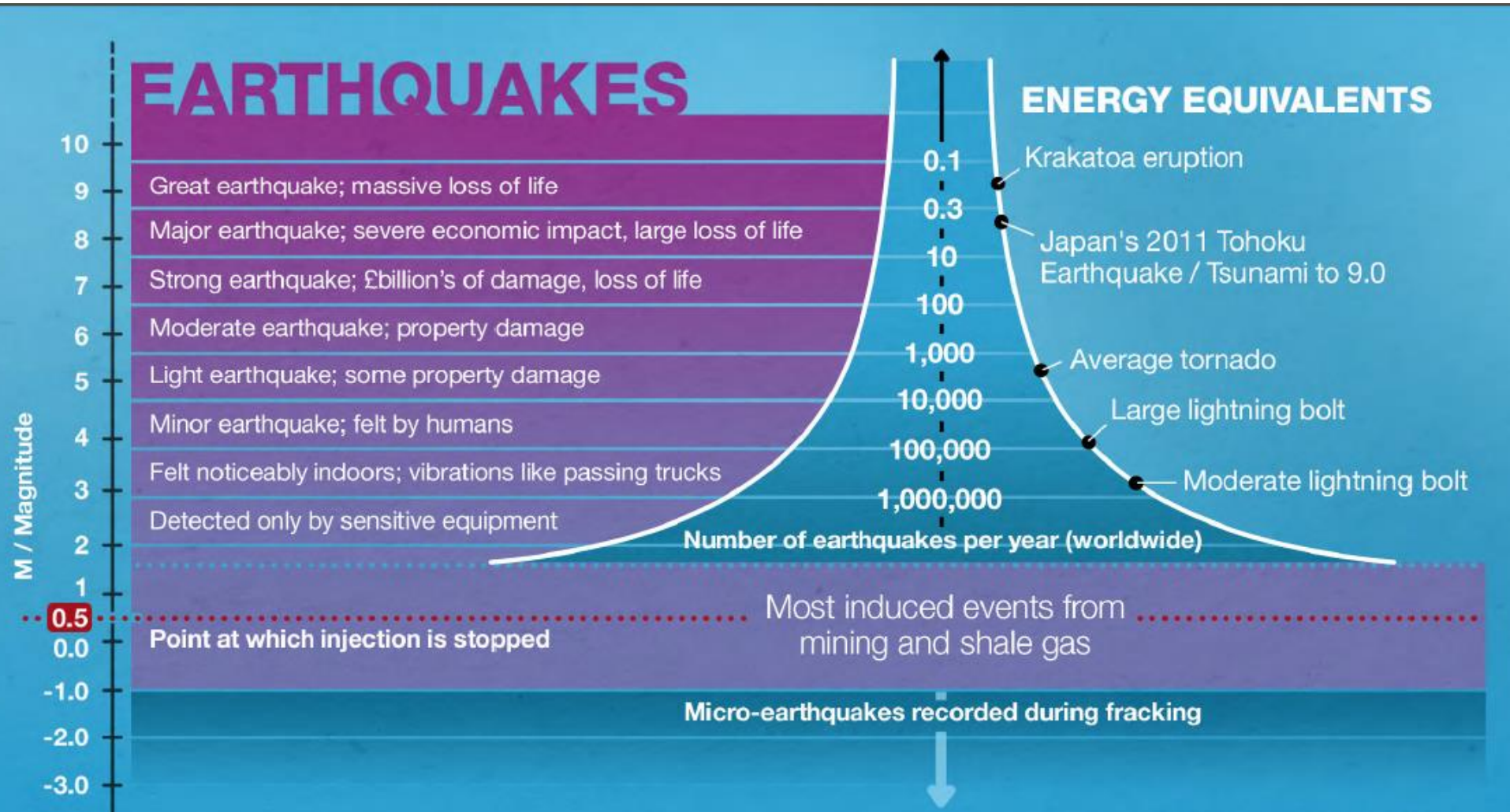
- Hydraulic fracturing operations near Blackpool in 2011, resulted in two earthquakes (1.5 and 2.3 M_L). This magnitude is barely detectable by people and well below the size which would cause damage to property (requiring an event of magnitude of about 5.5 M_L or about a 1000 times more powerful)

A train from a distance of 150 m recorded at Balcombe, W Sussex by the University of Bristol is equivalent to a 1.5 M_L seismic event such as one that occurred near Blackpool





Richter Earthquake Magnitude





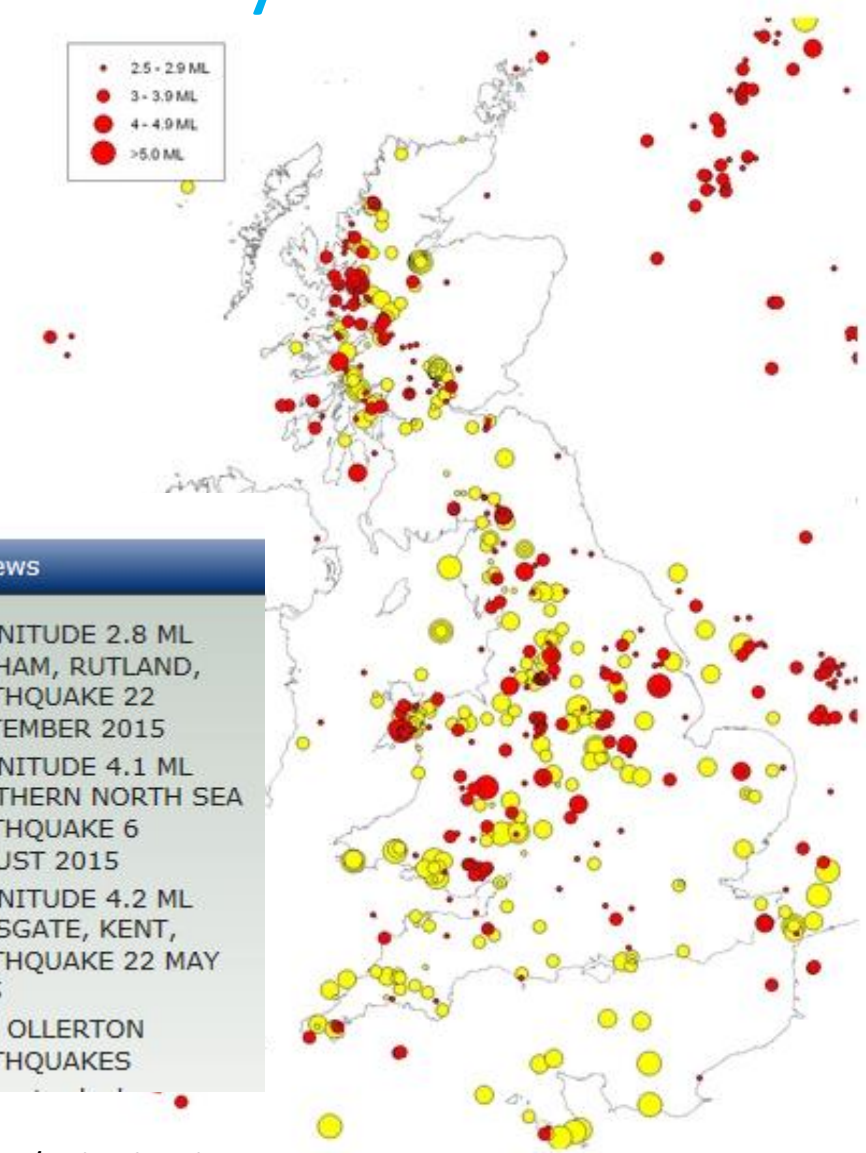
BGS Historical Seismicity

Date	Depth	Mag	Region
2008/02/27	17.8	5.2	MARKET RASEN,LINCS
2007/04/28	5.3	4.3	FOLKESTONE,KENT
2002/09/22	14.0	4.7	DUDLEY,W MIDLANDS
2001/10/28	14.4	4.1	MELTON MOWBRAY,LEICS
2000/09/23	14.4	4.2	WARWICK,WARWICKSHIRE
1999/03/04	19.0	4.0	ARRAN,STRATHCLYDE
1994/02/15	7.3	4.0	NORWICH,NORFOLK
1990/04/02	14.1	5.1	BISHOP'S CASTLE,SHROPS
1986/09/29	23.3	4.1	OBAN,STRATHCLYDE
1984/08/18	21.0	4.3	LLEYN PENIN,NW WALES
1984/07/29	21.2	4.0	LLEYN PENIN,NW WALES
1984/07/19	20.7	5.4	LLEYN PENIN,NW WALES
1979/12/26	4.5	4.7	LONGTOWN,CUMBRIA
1976/11/03	2	4.5	WIDNES
1975/11/27	11	4.1	KINTAIL
1974/08/10	22	4.4	KINTAIL



Latest News

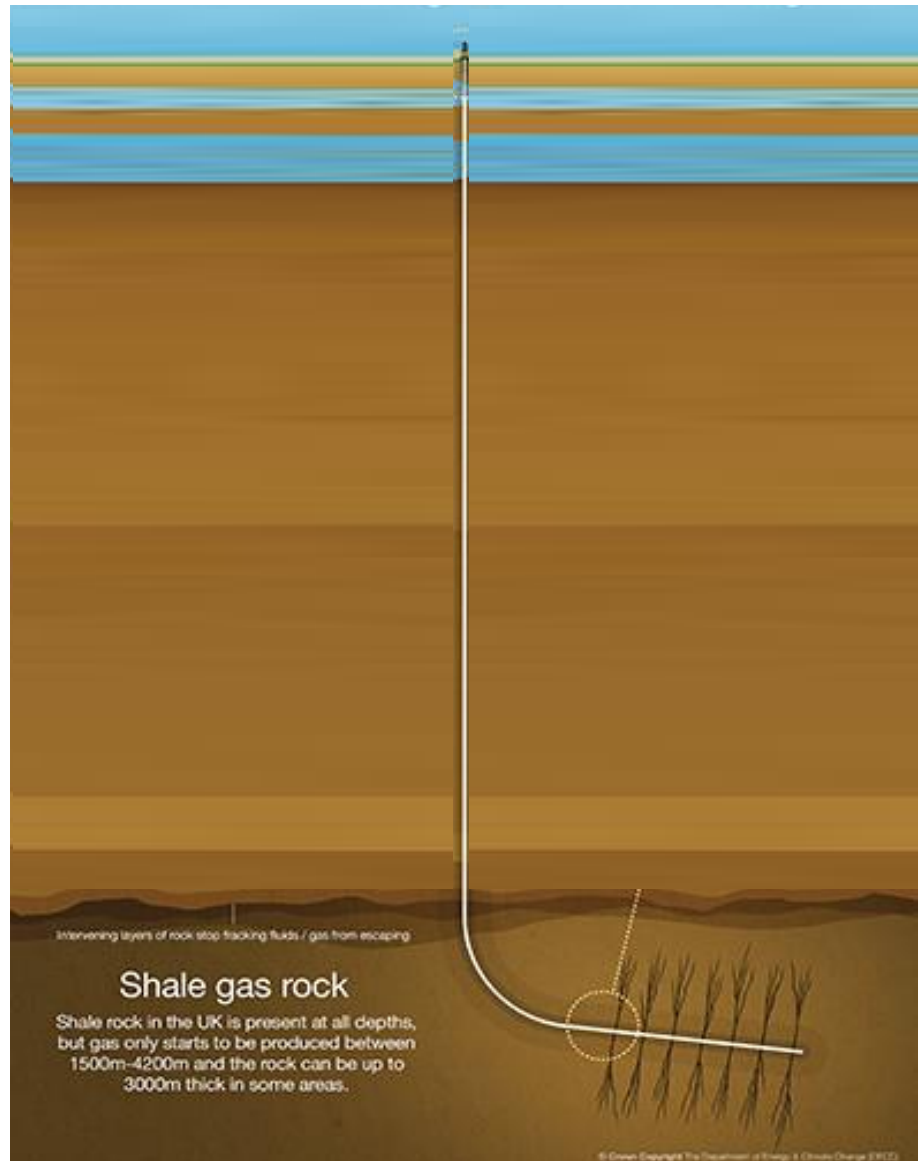
- MAGNITUDE 2.8 ML OAKHAM, RUTLAND, EARTHQUAKE 22 SEPTEMBER 2015
- MAGNITUDE 4.1 ML SOUTHERN NORTH SEA EARTHQUAKE 6 AUGUST 2015
- MAGNITUDE 4.2 ML RAMSGATE, KENT, EARTHQUAKE 22 MAY 2015
- NEW OLLERTON EARTHQUAKES





Hydraulic Fracture Plan

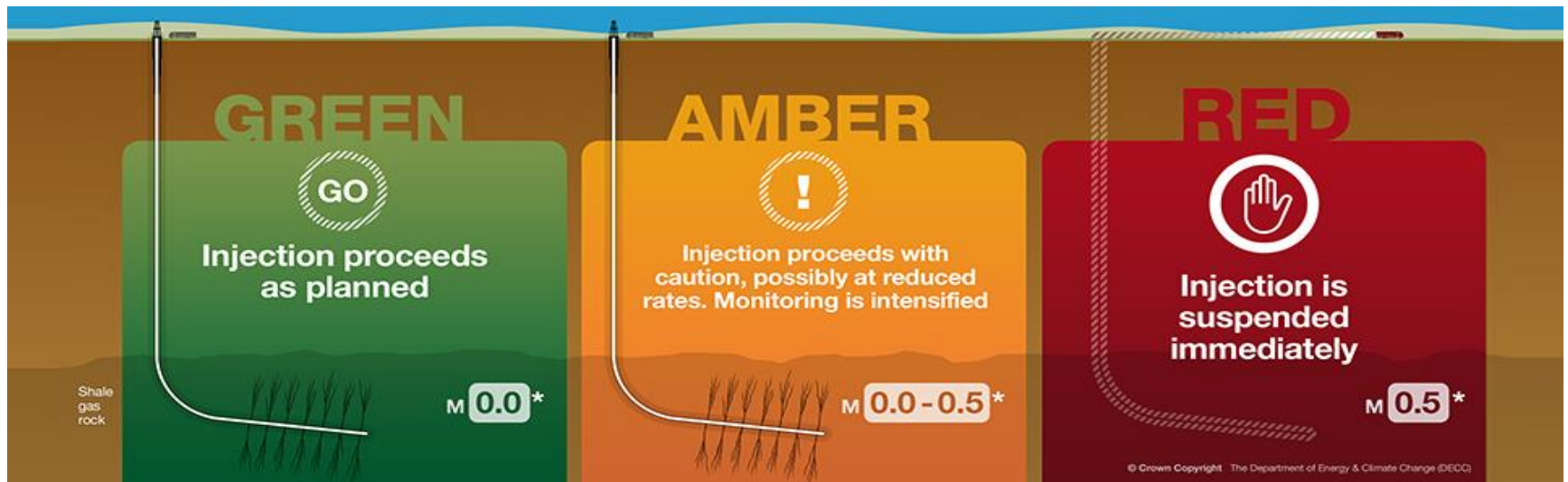
- 1) A depth structure map showing **mapped faults** near the well and along the well path, with a summary assessment of faulting and formation stresses in the area and the risk that operations could reactivate existing faults.
- 2) Information on the local background seismicity and assessment of the risk of induced seismicity.
- 3) Summary of the **planned operation**, including perforation stages, pumping pressures and volumes.





Hydraulic Fracture Plan

4) A description of proposed **real-time traffic light scheme** for seismicity, and proposed **method for interpreting fracture growth height**.





Long history of onshore oil and gas

OGA roles

PEDL award only grants exclusivity no consent

Hydraulic Fracture Plan

Reduce risk of induced seismic events using Traffic Light System



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Thanks!