



# Shale gas exploration in the EU

**Florence Limet**  
**DG Environment, European Commission**  
**Unit B.3. Waste Management & Secondary**  
**Materials**



**30 November 2016**

Picture: PGI



- It is up to each Member State to decide whether or not to allow O&G on its territory, while respecting the need to protect the environment.
- Need to ensure that these activities comply with EU law.
- Recent Paris Agreement on climate change: need to decarbonise the energy sector.

# Unconventional fossil fuels in the EU



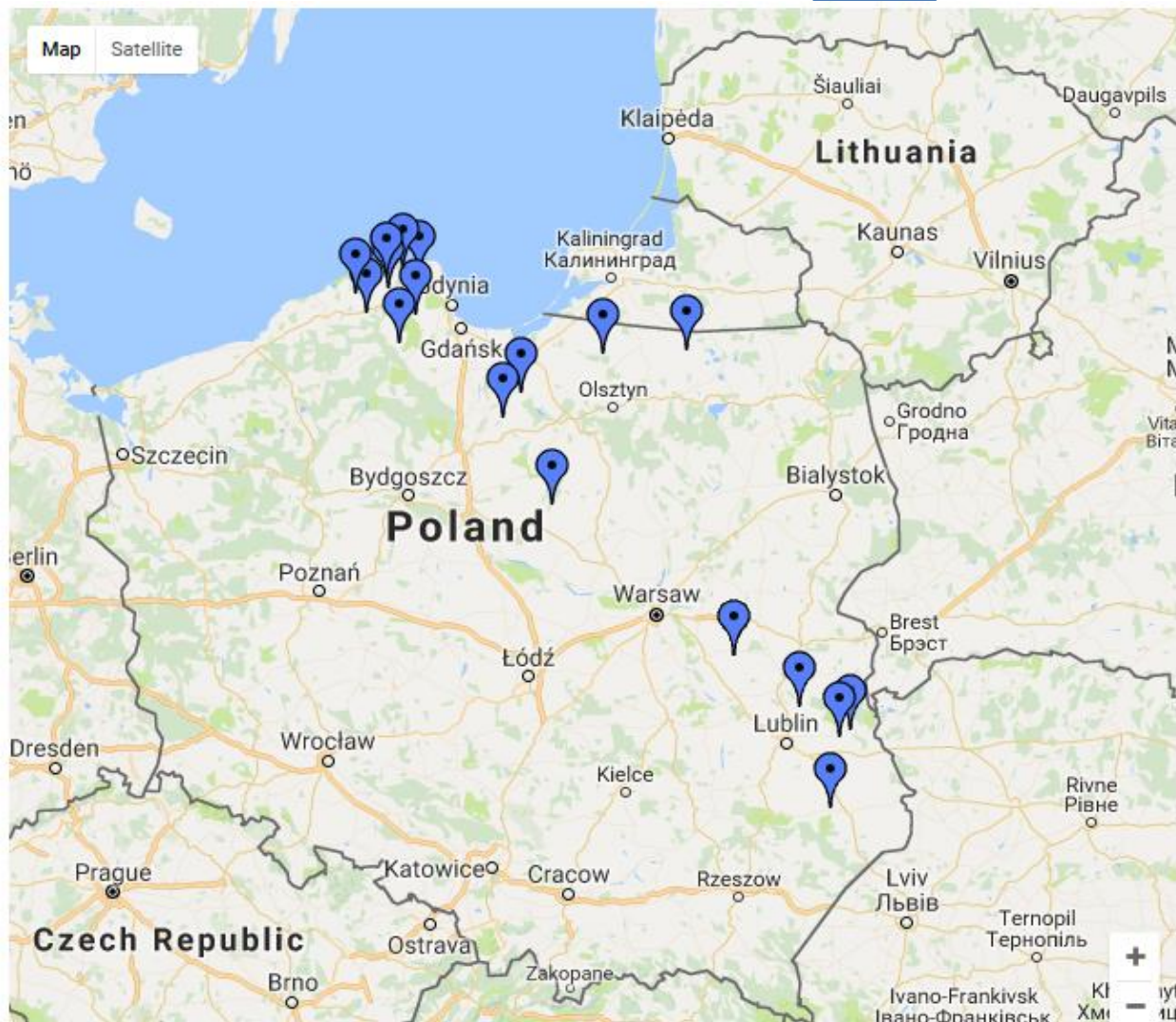
	Member States which have granted or may grant authorisations
Shale gas	UK (England); PL; NL (tests); DK; LT; DE (tests); HU; ES; RO; AT; PT
Tight gas	UK, PL, NL, DE, HU, ES
Tight oil	UK, PL, NL
Coal bed methane without fracturing	UK; PL; FR; BE; DE
Coal bed methane using fracturing	PL; DE ("partially"); ES

Source: Official replies from Member States to the Commission, early 2016:  
[http://ec.europa.eu/environment/integration/energy/unconventional\\_en.htm](http://ec.europa.eu/environment/integration/energy/unconventional_en.htm)

# Shale gas exploration in the EU

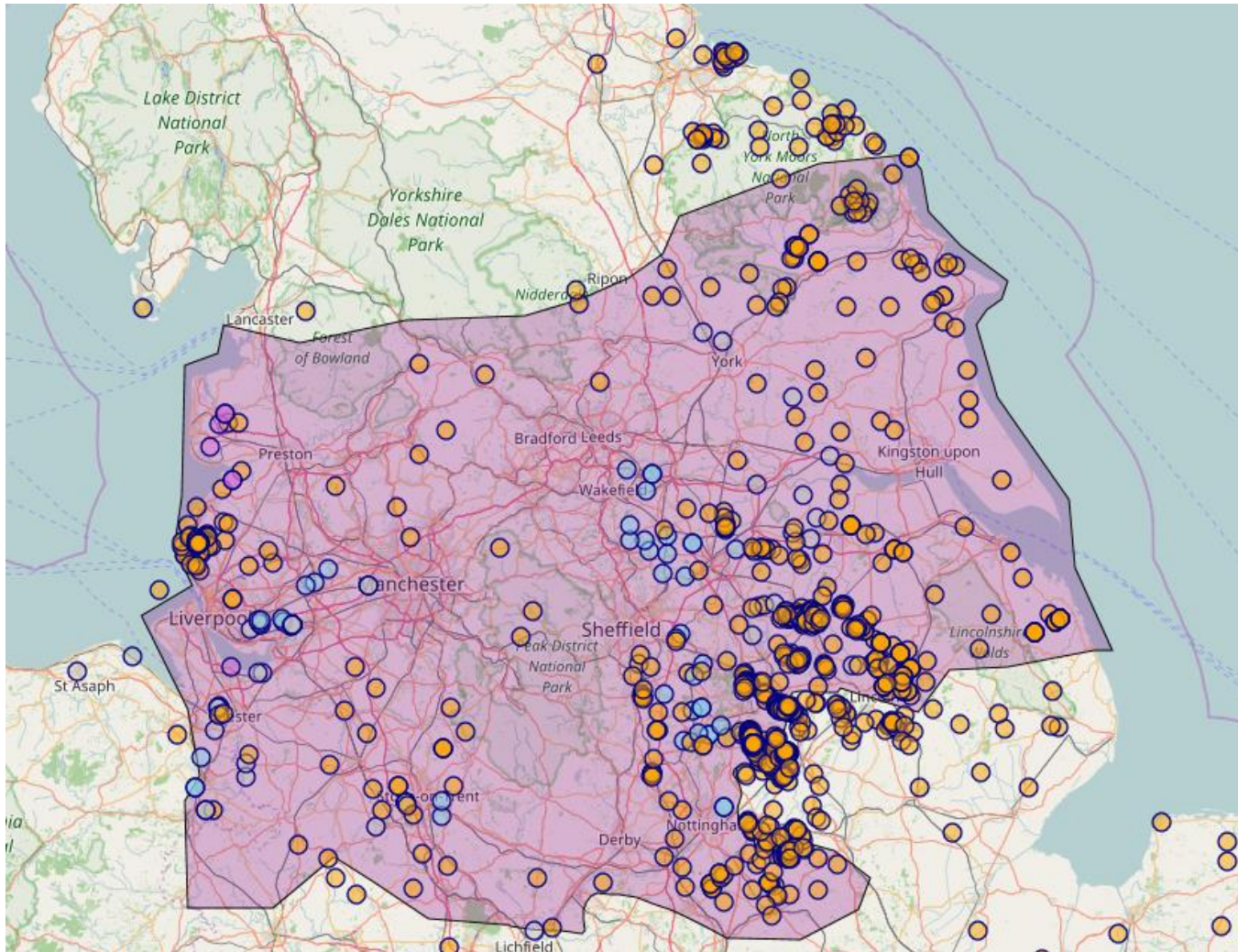


- Around 80 exploration wells drilled (incl. at least 16 fractured with high volumes)
- Mostly in Poland, with a few wells drilled also in Germany, Denmark, UK (England), Romania
- Public acceptance issues in several countries (except PL)



- Environmental monitoring carried out at selected sites in 2011 (Lebien) and 2015 (7 sites)
- Recommend i.a. an "independent long term monitoring of the environment (...) in prospective and developed areas"

# Shale gas in England



## Legend

### DECC - Wells

- Coal Bed Methane
- Conventional Oil and Gas
- Gas Storage
- Mine Gas
- Shale Gas

### BGS/DECC - Shale Study Areas



Source:

<https://ogauthority.maps.arcgis.com/apps/webappviewer/index.html?id=29c31fa4b00248418e545d222e57ddaa>

# Shale gas exploration in the United Kingdom



- Fracturing operations suspended in the UK in May 2011, after two seismic tremors near Preese Hall, Lancashire.
- Recent consent granted to several shale gas operators in England; further permit applications expected next year.
- On-going environmental baseline monitoring by the British Geological Survey (e.g. Lancashire; North Yorkshire) and operators

Source: UKOOG, BGS and Milieu country study Feb. 2016:  
[http://ec.europa.eu/environment/integration/energy/uff\\_studies\\_en.htm](http://ec.europa.eu/environment/integration/energy/uff_studies_en.htm)

# Studies on the management of environmental and climate impacts of shale gas



Technical support for assessing the need for a risk management framework for shale gas extraction, 2014

Mitigation of climate impacts of possible future shale gas extraction in the EU: available technologies, best practices and options for policy makers, 2014

Potential risks for the environment and human health arising from shale gas extraction in Europe, 2012

Climate Impact of Potential Shale Gas Production in the EU, 2012

*Studies available at:*

[http://ec.europa.eu/environment/integration/energy/uff\\_studies\\_en.htm](http://ec.europa.eu/environment/integration/energy/uff_studies_en.htm)



# Recommendation 2014/70/EU



- Minimum principles for the exploration and production of O&G using high-volume hydraulic fracturing (e.g. shale gas) adopted in 2014
  - Aims to help ensuring that:
    - public health, climate and environment are safeguarded
    - resources are used efficiently
    - the public is informed
  - Complements the existing EU environmental legislation
- <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32014H0070>

# Key elements



- **Plan ahead** and assess environmental impact **strategically** before granting licences
- **Carefully assess** environmental **impact and risks** before authorising projects
- Ensure that **wells are leak-proof**
- **Assess environmental conditions** before operations start, so that change can be monitored and liability determined
- **Inform the public** about the chemicals used for each well, and share the baseline data and monitoring results
- Keep **air emissions** down
- Ensure firms engaged in fracking **apply best practices** throughout the project

# Next steps



- Report reviewing the effectiveness of Recommendation 2014/70/EU- end 2016
- Annual reporting of developments by Member States to EC
- Summary of Best Available Techniques for hydrocarbons exploration and production-2018
- Revision of the Best Available Techniques reference document (BREF) on extractive waste management- 2017
- Research projects on environmental impacts and risks of shale gas funded under Horizon 2020



**Thank you for your attention**

*For further information on DG ENV's activities on unconventional fossil fuels:  
[http://ec.europa.eu/environment/integration/energy/unconventional\\_en.htm](http://ec.europa.eu/environment/integration/energy/unconventional_en.htm)*