

TOR Reference No.: 2019/02	Author: Marion Malone Reduced by: Horst Büther Amended by: Elisabete Dias Ramos
Version: 3	Date: 07 August 2019
TERMS OF REFERENCE FOR WORK UNDER THE AUSPICES OF IMPEL	

1. Work type and title

1.1 Identify which Expert Team this needs to go to for initial consideration	
Industry	<input checked="" type="checkbox"/>
Waste and TFS	<input type="checkbox"/>
Water and land	<input type="checkbox"/>
Nature protection	<input type="checkbox"/>
Cross-cutting tools and approaches	<input type="checkbox"/>
1.2 Type of work you need funding for	
Exchange visits	<input type="checkbox"/>
Peer reviews (e.g. IRI)	<input type="checkbox"/>
Conference	<input type="checkbox"/>
Development of tools/guidance	<input type="checkbox"/>
Comparison studies	<input checked="" type="checkbox"/>
Assessing legislation (checklist)	<input type="checkbox"/>
Other (please describe):	<input checked="" type="checkbox"/> Site visits
1.3 Full name of work (enough to fully describe what the work area is)	
Sharing regulatory best practice in lessons learned from regulating onshore oil and gas industry, and applying those lessons to other subsurface activities, such as geothermal.	
1.4 Abbreviated name of work or project	
Onshore oil and gas regulation and lessons learned for other subsurface activities.	

2. Outline business case (why this piece of work?)

2.1 Name the legislative driver(s) where they exist (name the Directive, Regulation, etc.)
The onshore oil and gas industry, including the emerging unconventional fossil fuels industry, is regulated to protect the environment under several different legislative instruments, including where relevant (but not exclusively):

- Water Framework Directive;
- Groundwater Directive;
- Management of Waste from Extractive Industries Directive (the Extractive Waste Directive);
- Waste Framework Directive;
- Industrial Emissions Directive (IED);
- Environmental Impact Assessment Directive;
- REACH Regulation;
- Environmental Liability Directive;
- Control of Major Accidents and Hazards Directive (Seveso III).

In addition, in January 2014 the European Commission published a Recommendation on minimum principles for the exploration and production of hydrocarbons (such as shale gas) using high-volume hydraulic fracturing. The effectiveness of the Recommendation was reviewed by the Commission in December 2016¹.

Finally, the Commission has conducted a review of the Best Available Techniques reference document (BREF) for the extractive waste industry (including the energy sector) and is also working on a hydrocarbons BAT guidance document.

The European Commission has expressed its explicit support for this project as one way of understanding the regulatory needs in this sector.

2.2 Link to IMPEL MASP priority work areas

- | | |
|---|-------------------------------------|
| 1. Build capacity in member organisations through the IMPEL Review Initiatives. | <input checked="" type="checkbox"/> |
| 2. Work on 'problem areas' of implementation identified by IMPEL and the European Commission. | <input checked="" type="checkbox"/> |
| 3. Sustainable Development of Industrial Activities. | <input checked="" type="checkbox"/> |

2.3 Why is this work needed? (background, motivations, aims, etc.)

The regulation of the onshore oil and gas industry, and in particular the protection of groundwater at depth, presents many lessons which can be applied to other subsurface activities, which we regulate. This could assist the sustainable development of industrial activities.

The project will look at the risks to groundwater from onshore oil and gas activities by comparing the regulatory controls that have been put in place in member states and their effectiveness based on groundwater monitoring data. This will include the extensive monitoring data that will have been generated by shale gas activities in England, which has started in the autumn of 2018.

Consideration would then be given to other subsurface activities, many of which are emerging technologies such as geothermal. These may present seismic risks and a risk to groundwater at depth and we could identify relevant legislation and best practice which could be applied to these other industries.

¹ http://ec.europa.eu/environment/integration/energy/pdf/Report_com_2016_794.pdf

2.4 Desired outcome of the work (what do you want to achieve? What will be better / done differently as a result of this project?)

1. A more coherent understanding of the onshore oil and gas industries, and other subsurface activities' impact on groundwater at depth and what lessons there may be for emerging technologies.
2. A fuller picture of what regulators consider to be best practice in groundwater monitoring and protecting groundwater across several subsurface industries.
3. Consistency in implementation and enforcement of regulation across IMPEL members.
4. Capacity building for regulators.
5. Greater public trust in regulators and their decisions.
6. Useful and reliable information for policy makers and BREF authors.

2.5 Does this project link to any previous or current IMPEL projects? (state which projects and how they are related)

It is directly linked to the learning from the IMPEL projects on best practice in regulating the onshore oil and gas industry 2015, 2016, 2017 and 2018.

It is also linked to the IMPEL 2017 report on liabilities.

3. Structure of the proposed activity

3.1 Describe the activities of the proposal (what are you going to do and how?)

1. Establish project team and hold initial telephone conference(s) to agree on the project plan.
2. Agree and circulate a questionnaire to gather information on the nature of subsurface activities in project member countries and how groundwater is protected. This will include the type of monitoring undertaken, related incidents, pollution resulting from surface activities including traffic incident and occurrences of, and impacts from, well integrity failure.
3. A site visit to a shale gas site in England and a geothermal site in Scotland to discuss protection of groundwater at depth.
4. One meeting to finalise the report and decide the next steps.
5. Agreement upon the draft of the final report so it can be adopted by IMPEL.

3.2 Describe the products of the proposal (what are you going to produce in terms of output / outcome?)

A full report on the project and its findings, including any identified need for further collaborative work.

3.3 Describe the milestones of this proposal (how will you know if you are on track to complete the work on time?)

- Planning activities, including defining the work and finalising project team members: January 2019.
- Circulate a questionnaire: February /March 2018.
- Workshop on protecting groundwater at depth: April/May/June 2019.
- Draft of the final report: August 2019.
- Meeting to discuss and agree on the report and its outcomes: September 2019.
- Finalise and submit the final report: September/October 2019.

3.4 Risks (what are the potential risks for this project and what actions will be put in place to mitigate these?)

Risk 1: That the project team will not be able to gather adequate information.

Mitigation 1: There is a strong working relationship between member states involved in previous IMPEL Oil and Gas projects, with a core group of 7 countries who have been involved in each project. This will be a good foundation to build knowledge, ensure a good flow of information and identify any problems at an early stage.

Risk 2: That groundwater monitoring data from oil and gas sites, and shale gas sites in particular, are inconclusive.

Mitigation 2: The questionnaire will ask project members for relevant summaries of datasets, which may be able to give us an understanding of the impact on groundwater from oil and gas sites. In addition to that, the workshop will include a detailed consideration of the monitoring data from boreholes and seismic arrays at the shale gas site in England. This is already generating data from downhole micro seismic arrays and it should be able to build a picture of the impact that this activity has on groundwater.

Risk 3: That information on the risks to groundwater at depth from subsurface technologies, other than oil and gas, is not yet fully available.

Mitigation 3: The questionnaire will provide a way of gaining information on subsurface activities in member countries and will allow us to use this to focus discussions at the site visits.

Risk 4: That project team members do not attend the workshop.

Mitigation 4: There is a strong working relationship and a strong participation record on this subject in previous IMPEL projects. There was also interest from other countries who were unable to attend previously but who may be able to take part in the 2019 project given the wider brief.

4. Organisation of the work

4.1 Lead (who will lead the work: name, organisation and country) – this must be confirmed prior to submission of the TOR to the General Assembly)

Sarah Scott, Environment Agency, England.

4.2 Project team (who will take part: name, organisation and country)

The project team is:

- Sarah Scott, Environment Agency, England.
- Julien Biard, Ministry of Ecology, Sustainable Development and Energy, France.
- Gabriel Boulesteix, Ministry of Ecology, Sustainable Development and Energy, France.
- Szilvia Banyacski, Mining and Geological Survey of Hungary, Hungary.
- Neil McAllister, Department of Environment, Northern Ireland.
- Aleksandra Skąpska, Chief Inspectorate of Environmental Protection, Poland.
- Emma Taylor, Scottish Environment Protection Agency, Scotland.
- Paul Butler, Scottish Environment Protection Agency, Scotland.
- David Willey, Cyfoeth Naturiol Cymru/Natural Resources Wales, Wales.

4.3 Other IMPEL participants (name, organisation and country)

Christian Wimmer, European Commission.

4.4. Other non-IMPEL participants (name, organisation and country)

David Hardie, Alberta Energy Regulator, Canada. (All of David's Costs will be met by Alberta Energy Regulator).

5. High level budget projection of the proposal. In case this is a multi-year project, identify future requirements as much as possible

	Year 2019 (exact)	Year 2	Year 3	Year 4
How much money do you require from IMPEL?	10,600 €			
How much money is to be co-financed?				
Total budget	10,600 €			

6. Detailed other costs of the work for year 2019

6.1 Are you using a consultant?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
6.2 What are the total costs for the consultant?	The consultants will be the British Geological Society (BGS).

	The costs for their involvement in the site visit (event 1) will be 705 €. This cost has been included in the budget above.
6.3 Who is paying for the consultant?	IMPEL will pay for travel, accommodation and catering costs for one member of staff from BGS to take part in the site visit. Staff time will not be charged for and will be met by the BGS.
6.4 What will the consultant do?	The BGS will provide specialist geological advice on the subsurface, including a review of the seismic data from the hydraulic fracturing operations in England.
6.5 Are there any additional costs?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Namely:
6.6 What are the additional costs for?	N/a.
6.7 Who is paying for the additional costs?	N/a.
6.8 Are you seeking other funding sources?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Namely:
6.9 Do you need budget for communications around the project? If so, describe what type of activities and the related costs.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Namely:

7. Communication and follow-up (checklist)

	What		By when
7.1 Indicate which communication materials will be developed throughout the project and when. <i>(all to be sent to the Communications Officer at the IMPEL Secretariat)</i>	TOR [✓] * Interim report [✓] * Project report [✓] * Progress report(s) [✓] Press releases News items for the website [✓] * News items for the e-newsletter [✓] Project abstract [✓] * IMPEL at a Glance [✓] Other, (give details):	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	December 2018 Spring, Summer and Autumn and winter 2019 After site visit
7.2 Milestones / Scheduled meetings (for the website diary).	See 3.3.		
7.3 Images for the IMPEL image bank.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
7.4 Indicate which materials will be translated and into which languages.	All documents to be written in English. No translation required.		
7.5 Indicate if web-based tools will be developed and if hosting by IMPEL is required.	N/a.		
7.6 Identify which groups/institutions will be targeted and how.	N/a.		
7.7 Identify parallel developments / events by other organisations, where the project can be promoted.	N/a.		

[✓]) Templates are available and should be used. *) Obligatory

8. Remarks

Is there anything else you would like to add to the Terms of Reference that has not been covered above?

This is the proposal for Year 5 of this project.

*In case of doubts or questions please contact the
IMPEL Secretariat.*

*Draft and final versions need to be sent to the
IMPEL Secretariat in word format, not in PDF.*

Thank you.