

4. Liability of UFF operators

4.1. Liability for environmental damage during UFF exploration and extraction

UFF extraction has rapidly developed in the United States. While residents – as owners of the mineral rights – have sometimes benefitted from UFF activities on their land, they have also been faced with the challenge of proving causal links between environmental damage and UFF activities (e.g. a shale gas well and groundwater contamination of a private water well). The UFF industry continues to state that there are “no cases of groundwater contamination” with thousands of UFF wells drilled in recent years.¹ Yet, scientists from Duke University and residents have told a very different story.²³ This is why the liability regime in Europe for UFF operators needs to be urgently revised.

We strongly support the European Parliament’s request to include all UFF activities under the same strict liability regime as other risky activities.

14. Recognises that the industry bears primary responsibility for preventing and reacting effectively to accidents; calls on the Commission to consider including operations related to hydraulic fracturing in Annex III of the Environmental Liability Directive and on the relevant authorities to require sufficient financial guarantees by operators for environmental and civil liability covering any accidents or unintended negative impacts caused by their own activities or those outsourced to others;

A 2012 report by the European Environment Agency about the precautionary principle, entitled ‘Late lessons from early warnings’, offered the following recommendation:

Many case studies also demonstrate the long time lags between evidence of harm and the additional injustice and time of forcing victims to pursue their case through civil compensation claims. [...] Prompt and

1 For example: <http://www.lngworldnews.com/gastech-energy-leaders-discuss-dispelling-shale-gas-myths-uk/>

2 S. G. Osborn et al., “Methane Contamination of Drinking Water Accompanying Gas-Well Drilling and Hydraulic Fracturing,” Proceedings of the National Academy of Sciences USA 108(20) (2011): 8172-6.

3 http://switchboard.nrdc.org/blogs/amall/incidents_where_hydraulic_frac.html

anticipatory no-fault compensation schemes for victims of harm and damage to ecosystems could be set up and financed in advance of potential harm by the industries that are producing novel and large-scale technologies, thereby helping to correct this market failure. These schemes increase incentives for innovating companies to carry out more a priori research into the identification and elimination of hazards.

The Environmental Liability Directive is limited in scope. Art. 2(1) limits the scope of the Environmental Liability Directive to covering damage to protected species and habitats, water damage and land damage. As a result, the Environmental Liability Directive does not cover some of the most important risks, associated with UFF, such as the possible deterioration of local air quality.

In addition, the Environmental Liability Directive defines damage as “a measurable adverse change in a natural resource or measurable impairment of a natural resource service which may occur directly or indirectly”. The link between the Environmental Impact Assessment Directive and the Environmental Liability Directive becomes apparent here, as determining “a measurable adverse change” requires a clear comparator to the situation prior to the start of e.g. UFF activities. One of the reasons for the intensity of the debate about the environmental reputation of the UFF industry in the US is the lack of baseline studies prior to drilling. Baselines are very important for establishing that environmental damage has occurred. If no baseline study is conducted before commencement of a certain activity, it can be very difficult to establish causation if harm occurs. This is apparent in discussions whether or not UFF activities have led to groundwater contamination. Without proper baseline studies, conducted before exploration starts, it becomes very challenging to establish the levels of biogenic vs. thermogenic methane in an aquifer.

The Environmental Liability Directive (Art 14.1) provides Member States discretion not to require operators to carry financial security. While some Member States have set up national systems requiring mandatory financial security, obtaining financial security is voluntary in most. The establishment of a financial mechanism, as included under Articles 19 and 20 of the CCS Directive, shall be obligatory for all Member States that permit UFF activities.

Particularly with complex industrial activities such as UFF development, where many companies operate on the same well pad, the link between an activity of a specific operator and environmental damage can be difficult to establish. Proving a causal link between the damage and the activities of individual operators is often very complicated for local residents. Given this complexity, UFF operators need to prove that there is no causal link between their operations and environmental damage in areas with well pads. The Commission should bring forward proposals to reverse the burden of proof for shale gas operators, where, in view of the nature of the disturbance and its adverse effects, other possible causes and any other circumstances, the balance of probability indicates that shale gas operations were the cause of the environmental damage. For example, it shall be presumed that any UFF operator shall be liable for environmental damage, unless they can prove that the environmental damage occurred before UFF got underway in the area or that the environmental damage occurred as the result of an identifiable cause other than the UFF operations. This proposal has also been supported by a wide majority of MEPs in its 2012 resolution of the environmental impacts of UFF.

27. Considers it appropriate, in the context of liability, to provide for the reversal of the burden of proof for shale gas operators, where, in view of the nature of the disturbance and its adverse effects, other possible causes and any other circumstances, the balance of probability indicates that shale gas operations were the cause of the environmental damage;

4.2. Longer-term liability in the post-abandonment phase

One of the main uncertainties about large-scale UFF operations is the fate of the thousands of unconventional wells, after hydrocarbon production ceases. Typically, tubing is removed from the well and the well bore is permanently plugged, typically with cement. However, the use of fracking does not extract all the gas that is contained in the shale or tight sand deposits. Only about 20% of the gas in the fracked zone is actually extracted. This stands in sharp contrast to the more permeable deposits that are extracted with conventional drilling techniques, where 95% of the hydrocarbons are extracted⁴. The gas will continue to migrate long after the shale gas wells are abandoned

⁴ Marc Durand, Les dangers potentiels de l'Exploitation des Gaz et Huiles de schist Analyse des aspects géologiques et géotechniques Colloque du Conseil régional Île-de-France , 7 février 2012, Paris, available at <http://www.facebook.com/gazdeschiste2>

and the well bore is plugged, which can lead to long term development of reservoir pressure.⁵ This increased pressure means that the well bore can provide a conduit for the gas to migrate to the surface. Little is known about how the longer-term migration of the remaining gas – measured over decades - and how contact between gas and aquifers could be avoided. As the EU allows UFF activities to proceed, regulators need to recognize that the post-abandonment phase addresses has an extremely long time horizon of hundreds, if not thousands, of years. The DNV recommended practice for shale gas states that “[t]he well shall be abandoned with an eternal perspective”. In other words, regulators and operators need to assess this risk in geological time frames.

This long-term UFF migration and other not yet identified risks raise the question about the longer-term liability for shale gas companies for environmental damage that might occur, long after the well is abandoned. The high number of wells required for commercial-scale UFF extraction further increases this risk. UFF companies are aware of these risks, but they have not been obliged to take the long-term risks into account in their business decisions.

A long-term liability obligation needs to be elaborated for UFF activities. Limiting liability for UFF operators to 20 years – as it is the case for CCS storage – is clearly insufficient, given the “eternal” time frame recommended by DNV. No transfer of responsibility to the competent authority for potential environmental damages in the future should be possible for UFF activities. One way to organize the long-term liability of UFF operators could be a long-term lease of 99 years for the well pad, which could be automatically renewed after 99 years for another 99 years.⁶

⁵ DNV recommended practice for shale gas further identifies “possible deterioration of material used, sagging or settling of weight-increasing materials in well fluids, etc” as post-abandonment risks (pp. 34-35).

⁶ Durand, Marc (2012, March) *Les dangers potentiels de l'Exploitation des Gaz et Huiles de schiste: Analyse des aspects géologiques et géotechniques*, in Risques potentiels de l'exploration et de l'exploitation des hydrocarbures non conventionnels en Ile-de-France (Rapport du Conseil scientifique régional d'Ile-de-France), available [here](#).