The European Parliament,

– having regard to Directive 94/22/EC of the European Parliament and of the Council of 30 May 1994 on the conditions for granting and using authorisations for the prospection, exploration and production of hydrocarbons¹,


– having regard to Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment⁵,


– having regard to Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control)⁷,


¹ OJ L 164, 30.6.1994, p. 3.
⁴ OJ L 312, 22.11.2008, p. 3.
⁸ OJ L 143, 30.4.2004, p. 56.
policy (Water Framework Directive)¹,


– having regard to its resolution of 13 September 2011 on facing the challenges of the safety of offshore oil and gas activities¹⁰,

– having regard to the report on unconventional gas in Europe, of 8 November 2011,

commissioned by the Directorate-General for Energy of the Commission1,

– having regard to the transmission note of 26 January 2012 from the Commission’s Directorate-General for the Environment to Members of the European Parliament on the EU environmental legal framework applicable to shale gas projects,

– having regard to the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, entitled ‘Energy Roadmap 2050’ (COM(2011)0885),

– having regard to Petitions 886/2011 (on the risks associated with shale gas exploration and extraction in Bulgaria) and 1378/2011 (on extraction of shale gas in Poland),

– having regard to the study published by the Directorate-General for Internal Policies, Policy Department A: Economic and Scientific Policy of the European Parliament in June 2011: Impacts of shale oil and shale gas extraction on the environment and on human health,

– having regard to Articles 4, 11, 191, 192, 193 and 194 of the Treaty on the Functioning of European Union,

– having regard to Rule 48 of its Rules of Procedure,

– having regard to the report of the Committee on the Environment, Public Health and Food Safety and the opinions of the Committee on Development and the Committee on Legal Affairs (A7-0283/2012),

A. whereas recent technological advancements have already spurred a rapid, commercial-scale extraction of unconventional fossil fuels (UFF) in certain parts of the world; whereas there is no commercial-scale exploitation in the EU yet and the potential of reserves and possible impacts on the environment and public health have to be further scrutinized;

B. whereas the development of shale gas is not uncontroversial in the EU or worldwide, thereby necessitating a thorough examination of all the impacts (on the environment, public health and climate change) before developing this technology further;

C. whereas the Energy Roadmap 2050 has identified that shale gas and other unconventional sources have become potential important new sources of supply in or around Europe; whereas substitution of coal and oil with gas in the short to medium term could help to reduce GHG emissions depending on their lifecycle;

D. whereas gas can be used to serve base load power generation as well as provide reliable back-up power for variable power sources, such as wind and solar, and this reliability reduces the technical challenges of grid balancing; whereas gas is also an efficient fuel for heating/cooling and numerous other industrial uses which enhance EU competitiveness;

E. whereas the two main techniques deployed in unleashing the UFF potential of shale gas and coal bed methane, horizontal drilling and hydraulic fracturing (fracking), have been used in combination for just a decade, and should not be confused with well stimulation techniques used for the extraction of conventional fossil fuels due to the combination of these two

1 TREN/R1/350-2008 lot 1,
techniques and the scale of intervention involved;

F. whereas the EU is committed to a legally binding target to reduce greenhouse gas emissions and increase the share of renewable energy; whereas any decisions on exploitation of UFF should be seen in the context of the need to cut emissions;

G. whereas to date there has been no EU (framework) directive for regulating mining activities;

H. whereas there is insufficient data on fracturing chemicals and environmental and health risks associated with hydraulic fracturing; whereas important analysis is still ongoing and there is a growing need for further and continuous research; whereas the existence and transparency of data, sampling and tests is of paramount importance to high-quality research in support of proper regulation that will protect public health and the environment;

I. whereas any type of fossil fuel and minerals extraction involves potential risks for human health and the environment; whereas it is essential that the precautionary and the polluter-pays principles are applied to any future decisions about the development of fossil fuel resources in Europe, taking into account potential impacts from all stages of the exploration and exploitation process;

J. whereas EU Member States such as France and Bulgaria have already imposed a moratorium on shale gas extraction due to environmental and public health concerns;

K. whereas shale gas exploitation projects are not generally subject to an environmental impact assessment despite the environmental risks of such projects;

L. whereas the EU has the role of ensuring a high level of human health protection in all of the Union’s policies and activities;

M. whereas many governments in Europe, such as France, Bulgaria, North Rhine Westphalia in Germany, Fribourg and Vaud in Switzerland, as well as a number of US states (North Carolina, New York, New Jersey, and Vermont and more than 100 local governments) and other countries around the world (South Africa, Quebec in Canada, New South Wales in Australia) currently have a ban or moratorium in place on the use of hydraulic fracturing for the extraction of oil and gas from shale or other ‘tight’ rock formations;

N. whereas a number of Member States, such as the Czech Republic, Romania and Germany, are currently considering a moratorium on the exploration and extraction of oil and gas from shale or other ‘tight’ rock formations;

O. whereas the Environmental Liability Directive does not oblige operators to take out adequate insurance considering the high costs associated with accidents in the extractive industries;

General framework – regulation, implementation, monitoring and cooperation

1. Understands shale gas exploration and extraction to refer to any unconventional hydrocarbon exploration and extraction using horizontal drilling and high-volume hydraulic fracturing methods utilised in fossil fuels industries worldwide;

2. Stresses that, notwithstanding the Member States’ exclusive prerogative to exploit their
energy resources, any development of UFF should ensure a fair and level playing field across the Union, in full compliance with relevant EU safety and environmental protection laws;

3. Considers that a thorough analysis of the EU regulatory framework specifically regarding UFF exploration and exploitation is needed; welcomes, to this end, the upcoming conclusion of a number of Commission studies on: identification of risks, lifecycle GHG emissions, chemicals, water, land-use and effects of shale gas on EU energy markets; urges Member States to be cautious in going further with UFF until the completion of the ongoing regulatory analysis and to implement all existing regulations effectively as a crucial way of reducing risk in all gas extraction operations;

4. Calls on the Commission, following the completion of its studies, to conduct a thorough assessment on the basis of the European regulatory framework for the protection of health and the environment and to propose, as soon as possible and in line with Treaty principles, appropriate measures, including legislative measures, if necessary;

5. Stresses that UFF extraction, like conventional fossil fuel extraction, has risks; believes that these risks should be contained through pre-emptive measures including proper planning, testing, use of new and best available technologies, best industry practices and continuous data collection, monitoring and reporting conducted within a robust regulatory framework; considers it crucial, before the start of UFF operations, to require measuring for baseline levels of naturally occurring methane and chemicals in groundwater in aquifers and current air quality levels at potential drilling sites; considers, furthermore, that regular involvement of the Original Equipment Manufacturers (OEM) or equivalent equipment manufacturers could ensure that the critical safety and environmental equipment continues to perform effectively and meet safety standards;

6. Notes the Commission’s preliminary assessment on the EU environmental legal framework applicable to hydraulic fracturing; urges the Commission to use its powers regarding proper transposition and application of key EU environmental acts in all Member States, and issue without delay guidance on the establishment of baseline water monitoring data necessary for environmental impact assessment of shale gas exploration and extraction, as well as criteria to be used for assessing impacts of hydraulic fracturing on groundwater reservoirs in different geological formations, including potential leakage, and cumulative impacts;

7. Calls on the Commission to introduce an EU-wide risk management framework for unconventional fossil fuels exploration or extraction, with a view to ensuring that harmonised provisions for the protection of human health and the environment apply across all Member States;

8. Calls on the Commission, in cooperation with Member States and the competent regulatory authorities, to introduce ongoing monitoring of developments in this area and take the necessary action to complement and extend existing EU environmental legislation;

9. Notes that methane is a powerful greenhouse gas, the emissions of which must be fully accounted for under either Directive 2003/87/EC (ETS) or Decision No 406/2009/EC (the ‘Effort Sharing Decision’);

10. Stresses that the effectiveness of regulation of UFF exploration and extraction – in full compliance with existing EU legislation – ultimately depends on the willingness and
resources of the relevant national authorities; calls on Member States, therefore, to ensure sufficient human and technical capacities for monitoring, inspection and enforcement of permitted activities, including proper training for the staff of the competent national authorities;

11. Notes the importance of the work undertaken by reputable institutions, notably the International Energy Agency (IEA), to prepare guidance on best practice regarding regulations for unconventional gas and hydraulic fracturing;

12. Calls for the development of a comprehensive European Best Available Techniques Reference (BREF) for fracking based on robust scientific engineering practice;

13. Calls on those national authorities which have authorised UFF exploration to review existing state regulations on well construction for conventional fossil fuels and to update those provisions covering the specifics of UFF extraction;

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; considers that the polluter-pays principle should apply in case of environmental pollution; welcomes the progress made by the industry in setting high environmental and safety standards; stresses the importance of monitoring the industry’s compliance by means of regular inspections carried out by trained and independent specialists;

15. Calls on the energy companies active in the field of UFF extraction to invest in research into improving the environmental performance of UFF technologies; urges EU-based undertakings and academic institutions to develop relevant cooperative R&D programmes leading to greater understanding about safety and risks in UFF exploration and production (E&P) operations;

16. Reiterates its call to the Commission and the Member States, expressed in its resolution of 15 March 2012 on a Roadmap for moving to a competitive low carbon economy in 2050, to push for a faster implementation of the G-20 agreement on removing fossil fuel subsidies; considers that exploration and exploitation of fossil fuel sources, including unconventional sources, must not be subsidised from public funds;

17. Considers that mutual non-disclosure agreements regarding damage to environmental, human and animal health, that have been practised between landowners in the vicinity of shale gas wells and shale gas operators in the US, would not be in line with Union and Member State obligations under the Aarhus Convention, the Access to Information Directive (2003/4/EC) and the Environmental Liability Directive;

**Environmental aspects of hydraulic fracturing**

18. Recognises that shale gas exploration and extraction may possibly result in complex and cross-cutting interactions with the surrounding environment, in particular owing to the hydraulic fracturing method employed, the composition of the fracturing liquid, the depth and construction of the wells and the area of surface land affected;
19. Acknowledges that the types of rocks present in each individual region determine the design and method of extraction activities; calls for mandatory baseline analysis of groundwater and geological analysis of the deep and shallow geology of a prospective shale play prior to authorisation, including reports on any past or present mining activities in the region;

20. Stresses the need for scientific studies regarding the long-term impact on human health of fracking-related air pollution and water contamination;

21. Calls on the Commission to ensure the effective implementation of laws on mining environmental impact assessment in national legislation; stresses at the same time that each impact assessment should be carried out as an open and transparent process;


23. Calls on the Commission to bring forward proposals to ensure that Environmental Impact Assessment Directive provisions adequately cover the specificities of shale gas, shale oil, and coal bed methane exploration and extraction; insists that prior environmental impact assessment includes full life-cycle impacts on air quality, soil quality, water quality, geological stability, land use and noise pollution;

24. Calls for the inclusion of projects including hydraulic fracturing in Annex I of the Environmental Impact Assessment Directive;

25. Notes that there is a risk of seismic tremors as demonstrated by shale gas exploration in the north-west of England; supports the recommendations of the UK Government commissioned report that operators be required to meet certain seismic and microseismic standards;

26. Recalls that the sustainability of shale gas is not yet proven; calls on the Commission and Member States to assess thoroughly greenhouse gas emissions during the entire process of extraction and production to prove its environmental integrity;

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;

28. Calls on the Commission to bring forward proposals to explicitly include fracking fluids as ‘hazardous waste’ under Annex III of the European Waste Directive (2008/98/EC);
29. Recognises the relatively high water volumes involved in hydraulic fracturing given that water is a particularly sensitive resource in the EU; highlights the need for advance water provision plans based on local hydrology with consideration for local water resources, the needs of other local water users and capacities for wastewater treatment;

30. Calls on the Commission to ensure that the relevant European environmental standards are met in full, particularly with regard to the water used in hydrofracking, and that breaches are appropriately penalised;

31. Recalls that the Water Framework Directive requires Member States to implement the measures necessary to prevent the deterioration of the status of all bodies of groundwater, including from point sources such as hydrocarbon exploration and extraction;

32. Calls on the industry, in transparent collaboration with national regulatory bodies, environmental groups and communities, to take the measures needed to prevent the status of relevant bodies of groundwater from deteriorating, and thereby maintain good groundwater status as defined in the Water Framework Directive and the Groundwater Directive;

33. Recognises that hydraulic fracturing takes place at a depth well below groundwater aquifers; therefore believes that, as drilling operations cross drinking water sources, the main concern regarding groundwater contamination is often well integrity in terms of the quality of its casing and cementing and its ability to resist the high pressure of the liquid injected and low-magnitude earth tremors;

34. Calls for a blanket ban on hydrofracking in certain sensitive and particularly endangered areas, such as in and beneath drinking water protection areas and in coal mining areas;

35. Stresses that effective prevention requires consistent monitoring of strict adherence to the highest standards and practices in well-bore construction and maintenance; considers that well completion reports should be submitted by operators to the competent authorities; underlines that both industry and competent authorities should ensure, at all stages, regular quality control for casing and cement integrity, as well as baseline groundwater sampling to control the quality of drinking water, conducted in close cooperation with drinking water providers; points out that this requires significant human resources and technical expertise on all levels;

36. Calls on the Commission to issue guidance, without delay, on the establishment of both the baseline water monitoring data necessary for an environmental impact assessment of shale gas exploration and extraction and the criteria to be used for assessing the impacts of hydraulic fracturing on groundwater reservoirs in different geological formations, including potential leakage and cumulative impacts;

37. Recommends that standardised emergency response plans be prepared jointly by operators, regulators and emergency services and that specialised emergency response teams be set up;

38. Believes that on-site closed-loop water recycling, using steel storage tanks, offers the most environmentally sound way of treating flow-back water by minimising water volumes, the potential for surface spills and costs/traffic/road damage relating to water treatment transportation; believes that this type of recycling should be applied as far as possible; rejects the injection of flow-back waste waters for disposal into geological formations in accordance with provisions of the Water Framework Directive;
39. Calls for strict implementation of existing waste water treatment standards and compulsory water management plans by operators, in cooperation with the drinking water companies and the competent authorities; stresses, however, that existing treatment plants are ill-equipped to treat hydraulic fracturing waste water and may be discharging pollutants into rivers and streams; considers, to this end, that a full assessment of all the relevant water treatment plants in the Member States concerned should be carried on by the competent authorities;

40. Stresses that a minimum safety distance should be maintained between drilling pads and water wells;

41. Believes that many of the current controversies over UFF have partly resulted from an initial refusal by the industry to disclose the chemical content of fracturing fluids; maintains that full transparency is required, with a mandatory obligation for all operators to fully disclose the chemical composition and concentration of fracturing fluids and to fully comply with existing EU legislation under the REACH regulation;

42. Considers that mutual non-disclosure agreements regarding damage to environmental, human and animal health, such as those which have been in force between landowners in the vicinity of shale gas wells and shale gas operators in the US, would not be in line with EU and Member State obligations under the Aarhus Convention, the Access to Information Directive (2003/4/EC) and the Environmental Liability Directive;

43. Notes that multi-horizontal well-bores from one drilling pad minimise land use and landscape disturbance;

44. Notes that the production volumes of shale gas wells in the United States are characterised by a sharp decline after the first two years, which leads to a high intensity of continuous drilling for new wells; notes that the storage tanks, compressor stations and pipeline infrastructure further add to the land use impact of shale gas activities;

45. Calls on those Member States which decide to develop shale gas or other unconventional fossil fuel reserves to send national plans to the Commission detailing how the exploitation of these reserves fits in with their national emission reduction targets under the EU Effort Sharing Decision;

46. Recognises that constant technological improvements in hydraulic fracturing and horizontal drilling may help improve the safety of UFF and to limit potential environmental effects; encourages industry to continue efforts to advance technology and to use the best technological solutions in developing UFF resources;

47. Calls upon the competent national geological surveys to carry out baseline seismic monitoring in seismically vulnerable areas where permissions for shale gas extraction are granted in order to establish background seismicity which would allow assessment for the possibility and potential impact of any induced earthquakes;

48. Points out that any favourable comparison of lifecycle GHG balance between shale gas and coal is dependent on a one-hundred-year atmospheric lifetime assumption; considers that the necessity to peak global emissions by 2020 would warrant examination over a shorter period, e.g. 20 years, as more appropriate; calls for further scientific research into fugitive methane emissions to improve accounting for such emissions under Member States’ annual
inventories and targets under the EU Effort Sharing Decision;

49. Urges the Commission to bring forward legislative proposals to make the use of completion combustion devices (‘green completions’) mandatory for all shale gas wells in the EU, to limit flaring to cases where there are concerns about safety and to completely forbid venting of all shale gas wells, in an effort to reduce the fugitive methane emissions and volatile organic compounds linked to shale gas;

Public participation and local conditions

50. Recognises that drilling activities can worsen living conditions; calls, therefore, for this issue to be taken into account at the time of the necessary authorisation for the sourcing and exploitation of hydrocarbon resources and for all the necessary measures to be taken, in particular by the industry through the implementation of best available techniques, and by the public authorities through the application of strict regulations, to minimise the adverse consequences of such activities;

51. Calls on the industry to engage local communities and discuss shared solutions to minimise the impact of shale gas developments on traffic, road quality, and noise where development activities are being carried out;

52. Calls on Member States to ensure that local authorities are fully informed and involved, particularly when examining requests for sourcing and exploitation permits; calls, in particular, for full access to impact assessments regarding the environment, residents’ health and the local economy;

53. Believes that public participation should be ensured through adequate public information and through public consultation before each stage of exploitation and exploration; calls for greater transparency with regard to impacts and to chemicals and technologies used, as well as greater transparency of all inspections and control measures in order to ensure public understanding and confidence in the regulation of these activities;

54. Recognises that in order to address all issues related to UFF a much better exchange of information among industry, regulators and the public is required;

55. Welcomes in this regard the 2012 EU budget appropriation for such a public dialogue and encourages the Member States to make use of this funding so as to ensure that citizens living in potential UFF development areas are better informed and can effectively participate in decision-making in their local and national governance structures;

International aspects

56. Considers that the use of shale gas and other fossil fuels must be consistent with Article 2 of the United Nations Framework Convention on Climate Change (UNFCCC), which calls for the ‘stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system’ and underlines that substantial lock-in to fossil fuel infrastructures such as shale gas could put this international objective out of reach;

57. Considers that increased shale gas exploration and production worldwide will lead to a considerable increase in fugitive methane emissions and that the overall greenhouse
warming potential (GWP) of shale gas has not been evaluated; stresses, therefore, that the exploitation of unconventional oil and gas resources could hamper the achievement of UN Millennium Development Goal (MDG) 7 – ensuring environmental sustainability – and undermine the latest international climate change commitments enshrined in the Copenhagen Accord; notes that climate change already affects poor countries the most; stresses, furthermore, that in addition to the direct effects on health and the environment, the impact of unconventional gas or oil extraction on people’s livelihoods poses a particular threat, particularly in African countries where local communities largely depend on natural resources for agriculture and fisheries;

58. Insists that lessons must be drawn from the USA on the exploitation of shale gas; notes with particular concern that shale gas extraction necessitates very large volumes of water, which may make it difficult to achieve the MDG 7 targets concerning access to clean water and food security, especially in poor countries that already face a severe scarcity of water;

59. Underlines that land acquisitions for oil and gas mining are a major driver of land-grabbing in developing countries, which can pose a significant threat to the world’s indigenous communities, farmers and poor people in terms of access to water, fertile soil and food; notes that, following the 2008 collapse of financial markets, there has been a marked acceleration of global investments in extractive industries from hedge and pension funds, with the effect of encouraging more extraction; underlines, therefore, that all European economic entities should always act in a transparent manner and in close consultation with all appropriate government bodies and local communities on issues of land leases and/or acquisitions;

60. Notes that because it is unclear whether the current regulatory framework of EU legislation provides an adequate guarantee against the risks to the environment and human health resulting from shale gas activities, the Commission is undertaking a series of studies, expected later this year; considers that the lessons learnt from these studies on shale gas exploitation and recommendations related to it must be fully taken into account by European companies in developing countries; is concerned about the effects of oil companies’ activities on the environment, health and development, particularly in Sub-Saharan Africa, given the limited capacity for implementing and enforcing environmental and health protection laws in some countries there; further states that European companies should employ responsible industry standards everywhere they operate;

61. Is worried about potential investment by European companies in unconventional oil or gas resources in developing countries;

62. Stresses that the EU’s obligation to ensure policy coherence for development, enshrined in Article 208 TFEU, must be respected; takes the view that, in hosting companies investing in extractive activities, the EU should influence their behaviour to encourage more sustainable practices, such as by strengthening corporate governance standards and regulations applied to the banks and funds that finance them, including by enforcing the Equator Principles, the principles of responsible investment, and the rules of the European Investment Bank and the Basel Committee on Banking Supervision;

63. Recalls that in addition to regulations in the countries where they operate, international oil companies are also subject to the jurisdiction of the courts in the countries on whose stock exchange they are listed; considers that home country regulation should provide an effective means of protecting human rights in situations where accountability gaps exist, on the
model of the United States Alien Tort Claims Acts;

64. Notes that many instruments exist that could address the negative social and environmental impact of the activities of extractive industries, such as the Global Reporting Initiative, the UN Global Compact and the OECD Guidelines for Multinational Enterprises; points out, however, that voluntary guidelines are insufficient to mitigate the negative impact of extraction;

65. Notes that the EU Accounting and Transparency Directives are currently being revised, which is an opportunity to prevent tax evasion and corruption by extractive industries;

66. Urges the Commission to identify new options for strengthening standards on the responsibilities of transnational corporations with regard to social and environmental rights and possible means of implementation;

67. Is concerned that some unconventional oil and gas companies operate to different safety standards worldwide; calls for Member States to require companies whose headquarters are in the EU to apply EU standards in all their operations worldwide;

68. Instructs its President to forward this resolution to the Council and Commission and the parliaments of the Member States.