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REPORT

on industrial, energy and other aspects of shale gas and oil
(2011/2309(INI))

Committee on Industry, Research and Energy

Rapporteur: Niki Tzavela

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MOTION FOR A EUROPEAN PARLIAMENT RESOLUTION

on industrial, energy and other aspects of shale gas and oil

(2011/2309(INI))

The European Parliament,

- having regard to the Treaty on the Functioning of the European Union (TFEU), and in particular Article 194 thereof, which states that application of its provisions establishing Union measures in the field of energy is, inter alia, without prejudice to the application of the other provisions of the Treaties, including in particular Article 192(2),
- having regard to its resolution of 25 November 2010 entitled ‘Towards a new Energy Strategy for Europe 2011-2020’¹,
- having regard to its resolution of 29 September 2011 on developing a common EU position ahead of the United Nations Conference on Sustainable Development (Rio+20)²,
- 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 hydrocarbons³,
- having regard to Regulation (EU) No 994/2010 of the European Parliament and of the Council of 20 October 2010 concerning measures to safeguard security of gas supply and repealing Council Directive 2004/67/EC⁴,
- having regard to the EU environmental legislation relevant to the development of shale gas, including: Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment⁵; Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment⁶; Directive 2006/21/EC on the management of waste from extractive industries⁷; Directive 2000/60 establishing a framework for Community action in the field of water policy⁸; Regulation 1907/2006/EC on the registration, evaluation and authorisation of chemicals⁹; Directive 98/8/EC on the placing of biocidal products on the market¹⁰; Directive 96/82/EC on the control of major-accident hazards involving dangerous substances¹¹; Directive 2004/35/EC of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental

¹ P7_TA(2010)0441.

² P7_TA(2011)0430.

³ OJ L 164, 30.6.1994, p. 3.

⁴ OJ L 295, 12.11.2010, p. 1.

⁵ OJ L 175, 5.7.1985, p. 40

⁶ OJ L 197, 21.7.2001, p. 30

⁷ OJ L 102, 11.4.2006, p. 15.

⁸ OJ L 327, 22.12.2000, p. 1.

⁹ OJ L 396, 30.12.2006, p. 1.

¹⁰ OJ L 123, 24.4.1998, p. 1.

¹¹ OJ L 10, 14.1.1997, p. 13.

damage¹ ; Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control)² ; Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within The Community³ ; and Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020⁴ ,

- having regard to the European Council conclusions of 4 February 2011,
 - having regard to the Council conclusions of 24 November 2011 on strengthening the external dimension of the EU energy policy,
 - having regard to the Commission communication on the Energy Roadmap for 2050⁵,
 - having regard to the Commission proposal for a regulation of the European Parliament and of the Council on guidelines for trans-European energy infrastructure and repealing Decision 1364/2006/EC⁶,
 - having regard to Rule 48 of its Rules of Procedure,
 - having regard to the report of the Committee on Industry, Research and Energy (A7-0284/2012),
- A. whereas the International Energy Agency estimates that global liquefaction capacity will increase from 380 billion cubic metres (bcm) in 2011 to 540 bcm in 2020,
- B. whereas according to the EU Treaties, Member States have the right to determine their own energy mix,
- C. whereas shale gas development can have a significant impact on the natural gas market in terms of dynamics and prices, as well as on power generation;
- D. whereas chemicals used for hydraulic fracturing have to be registered with the European Chemicals Agency and cannot receive approval unless it is ensured that they do not cause damage to the environment or that such damage is mitigated (under the REACH regulation);
- E. whereas unconventional gas in the form of tight gas, shale gas and coal bed methane already contributes to more than half of gas production in the US, with shale gas showing the largest increase;

¹ OJ L 143, 30.4.2004, p. 56.

² OJ L 334, 17.12.2010, p.17.

³ OJ L 275, 25.10.2003, p.32.

⁴ OJ L 140, 5.6.2009, p.136.

⁵ COM(2011)0885.

⁶ COM(2011)0658.

- F. whereas oil is already produced from oil shales in Estonia and exploration for oil from shale formations has taken place in the Paris basin;

Energy aspects

Potential resources

1. Notes that various estimates of shale gas resources in Europe have been made, among them those by the US Energy Information Administration and by the International Energy Agency (IEA), and that several Member States have reserves; recognises that although these estimates are, by their very nature, imprecise they point to the existence of a potentially considerable indigenous energy resource, not all of which, however, might be economically viable in extraction terms; notes also that some Member States have oil shale reserves and that other sources of unconventional oil have yet to be explored on a wider scale;
2. Believes that policymakers should have at their disposal more accurate, up-to-date and comprehensive scientific data to enable them to make informed choices; agrees, therefore, with the European Council that Europe's potential for the sustainable extraction and use of shale gas and shale oil resources, without putting the availability and quality of water resources at risk, should be assessed and mapped in order to potentially enhance security of supply; welcomes the assessments made by Member States and encourages them to continue this work, and asks the Commission to contribute to assessing the potential of shale gas and shale oil reserves in the EU by assembling results from Member States' assessments and available results from exploration projects, as well as by analysing and evaluating the industrial, economic, energy and environmental and health aspects of domestic shale gas production;

Energy markets

3. Points out that the shale gas boom in the US has already had a significant positive impact on the natural gas market and on gas and electricity prices, in particular by causing liquefied natural gas that was intended for the US market to be redirected elsewhere; observes that US spot prices have fallen to a historic low, thus widening the price gap between the US and a Europe bound by long-term contracts, and having an impact on the competitiveness of Europe's economies and industry;
4. Notes that according to the US Energy Information Administration, domestic production in the US is projected to provide 46 % of gas supply by 2035;
5. Notes that gas prices in the US are still falling, which poses additional competitiveness challenges for the EU;
6. Notes that, as the gas market becomes ever more global and interconnected, the development of shale gas will increase global gas-to-gas competition and will therefore continue to have a major effect on prices; points out that shale gas will help to strengthen the position of customers vis-à-vis gas suppliers and should therefore lead to lower prices;
7. Notes, on the other hand, that significant investments are needed for the establishment of

all the necessary infrastructures related to the drilling and to the storage, transport and reprocessing of gas and fracking fluid, which have to be entirely covered by the industry;

8. Calls on the Commission, in the face of gas market evolution and the growth of hub-based pricing in Europe, to address, at the next meeting of the EU-US Energy Council, the potential impact of worldwide shale gas development on the LNG market and the lifting of possible restrictions to global LNG trade;
9. Stresses that at EU level the principle of subsidiarity in terms of energy mix solutions applies to shale gas exploration and/or extraction; notes, however, that shale gas exploration may have a crossborder dimension, especially when drilling is conducted near a land border with another Member State or when it affects the underground waters, air or soil of more than one country; calls for full disclosure of all technical and environmental issues relating to shale gas exploration and appropriate cooperation with all stakeholders before and during concessions;
10. Observes that the global consumption of natural gas is currently on the rise, and that Europe remains among the regions with the highest gas import needs; notes that according to the International Energy Agency, domestic gas production in Europe is projected to decline and demand to increase, pushing up imports to around 450 bcm by 2035; recognises, therefore, the important role of worldwide shale gas production in ensuring energy security and diversity of energy sources and suppliers in the medium to long term; is aware that domestic production of shale gas could offer an opportunity for some Member States to further diversify their natural gas supply sources, bearing in mind Member States' dependence on natural gas imports from third countries; recognises that as a result of the growth of production of natural gas from shales in the US, more LNG supplies are now available for Europe, and that a combination of increased domestic supply of natural gas and greater LNG availability provides attractive options for gas supply diversity;
11. Stresses, however, that it is crucial to adopt other security-of-supply measures and policies with long-term perspectives, such as significantly increasing the take-up of renewable energy sources and improving energy efficiency and energy savings whilst ensuring sufficient infrastructure and storage facilities, diversifying supplies and transit routes, and building reliable partnerships with supplier, transit and consumer countries on a basis of transparency, mutual trust and non-discrimination, in accordance with the principles of the Energy Charter and the EU Third Energy Package;
12. Reiterates its call on the Commission to come forward by the end of 2012 with an analysis of the future of the global and EU gas market, including the impact of the gas infrastructure projects already planned (such as those developed in the context of the Southern Corridor), new LNG terminals, the impact of shale gas on the US gas market (notably on LNG import needs), and the impact of possible shale gas developments in the EU on the future of security of gas supply and prices; believes that the analysis should reflect, and take as a starting point, the current state of infrastructure development and the EU's 2020 CO₂ targets; stresses that all relevant stakeholders should be consulted;
13. Stresses that a fully functioning, interconnected and integrated internal EU energy market is also essential, inter alia from the viewpoint of taking full advantage of possible shale

gas production in the EU, which should not adversely affect the environment and the local communities close to this type of operation; calls on the Commission and the Member States to pursue this objective vigorously, in particular by ensuring a smooth transition and application of the requirements of the EU third internal energy market package and the energy infrastructure package, with a view to harmonising and fully liberalising the European wholesale energy markets by 2014;

Transition to a decarbonised economy

14. Is of the view that shale gas has in the short to medium term a role to play in the EU, contributing to achieving the EU's goal of reducing greenhouse gas emissions by 80-95 % by 2050 compared to 1990 levels in the context of reductions by developed countries as a group, while at the same time ensuring security of energy supply and competitiveness, which is the basis of the Energy Roadmap for 2050;
15. Agrees with the Commission that gas will be significant for the transformation of the energy system, as stated in the above-mentioned Roadmap, since it represents a quick, temporary and cost-efficient way of reducing reliance on other, dirtier fossil fuels before moving to fully sustainable low-carbon power generation, thereby lowering greenhouse gas emissions; believes that shale gas could play a critical role in this, particularly in those Member States that currently use large amounts of coal in power generation, should the impact studies conclude that these operations do not adversely affect either the environment, particularly groundwater, or the adjoining local communities;
16. Calls on the Commission's Joint Research Centre, given the lack of comprehensive European data on the carbon footprint of shale gas, to swiftly finalise its full life-cycle analysis of greenhouse gas emissions from shale gas extraction and production, with a view to ensuring that they are correctly accounted for in future;
17. Remarks also that certain forms of renewable energy – for example wind power – are variable and need to be backed up or balanced by a reliable and flexible energy technology; expresses the view that natural gas – including shale gas – could be one of the options available for that purpose among several other solutions such as increased interconnection, better system management and control via smart grids at all network levels, energy storage and demand side management; recognises the importance of CCS in ensuring the long-term sustainability of gas as an energy source;
18. Calls on the Commission to analyse the economics of CCS for gas in order to speed up the development and deployment of this technology; also calls on the Commission to examine the likely impact of CCS technology on the flexibility of gas power generation, and therefore on its role as back-up for renewable energy sources;
19. Calls on the Commission, in line with the EU Energy Roadmap 2050 strategy, to evaluate the economic and environmental impact of and prospects for unconventional gas in the EU, taking into account what can be learnt from the USA's experience and regulation in this field, whilst recognising that the extent of unconventional gas use in the EU will ultimately be decided by the market and the decisions of the Member States acting within the framework of the EU's long-term climate and energy policy objectives;

20. Calls on public authorities to produce an underground regional impact assessment in order to optimise resource allocation between geothermal energy, shale gas and other underground resources, and therefore maximise the benefits for society,
21. Calls on the Commission to ask the European Environment Agency (EEA) to prepare a full-scale scientific environmental analysis of shale gas and shale oil exploitation and the potential impact of available techniques;

Industrial and economic aspects of unconventional oil and gas

Industrial environment

22. Recalls that the massive increase in US shale gas production has been supported by an established industrial environment, including sufficient numbers of rigs, the necessary manpower and an experienced and well-equipped service industry; is aware that in the EU it will take time for the necessary service sector to build up adequate capacity and for companies to acquire the necessary equipment and experience to support a high level of sustainable shale gas production, and that this is also likely to contribute to higher costs in the short term; encourages cooperation between relevant EU and US companies with a view to applying green completions, Best Available Technologies and environment-friendly industrial processes while reducing costs; believes that expectations about the pace of shale gas development in the EU should be realistic and that any potential commercial extraction should be gradually phased and paced, in order to avoid boom-and-bust economic cycles with their significant adverse local impacts;
23. Points out that a stable regulatory framework is essential both to create the right environment for gas companies to invest in much-needed infrastructure and research and development, and to prevent market distortions;
24. Urges the Member States interested in developing shale gas to introduce the necessary skills required into their mainstream education and training systems, in order to prepare the necessary skilled labour force;
25. Underlines the importance of supporting the development of the shale gas industry by establishing the necessary infrastructure, particularly in terms of pipelines, provided that shale gas exploitation projects are financially and socially sustainable;
26. Points out that the exploration of shale gas and oil potential is not unique to Europe and that there is a vast interest in developing new oil and gas resources as a means of improving energy and economic competitiveness in various countries and regions in Asia, North America, Latin America, Africa and Australia; underlines the need to include shale gas and oil in bilateral EU dialogue and partnerships with countries that are already developing unconventional resources or interested in their development and/or use, in order to exchange expertise and best practice;
27. Notes that the EU's energy and climate policy needs to recognise and tackle the potential investment barriers to shale gas development in the EU;
28. Emphasises the need to remain open to all new future technologies in the field of energy

research; calls for further research and development activity relating to tools and technologies, including CCS, so as to explore the possibility of a more sustainable and safe development of unconventional gas; recognises, therefore, the wider role that technology and innovation in the gas sector can contribute to the EU's skills base and competitiveness;

29. Notes the technological developments in Austria, where the industry is proposing the use of fracking fluids containing only water, sand and cornstarch; recommends that other Member States and the Commission examine the possibility of extracting shale gas without the use of chemicals, and calls for further research and development activity relating to such techniques and/or practices that would mitigate potential impacts on the environment;
30. Urges the Commission to put forward recommendations for all shale gas wells in the EU for reducing fugitive methane emissions;

Licensing framework

31. Calls on the Member States to put in place a robust regulatory regime and ensure the necessary administrative and monitoring resources for the sustainable development of all shale gas-related activities, including those required by EU environmental and climate protection legislation; recalls that in accordance with the subsidiarity principle each Member State has the right to decide for itself on the exploitation of oil and shale gas;
32. Notes that the current licensing procedure for shale gas exploration is regulated by general mining or hydrocarbon legislation; notes that according to the Final Report on Unconventional Gas in Europe of 8 November 2011 prepared for the Commission and the Transmission Note on the EU environmental legal framework applicable to shale gas projects of 26 January 2012 prepared by the Commission, the EU legislative framework adequately covers all aspects of shale gas licensing, early exploration and production; notes, however, that large-scale extraction of shale gas may require the comprehensive adaptation of all the EU's relevant existing legislation, including REACH, to cover the specificities of unconventional fossil fuel extraction; calls on the Commission and public authorities in the Member States, without delay, to check and, if necessary, improve the regulatory frameworks in order to ensure their adequacy for shale gas and shale oil projects, especially with a view to being prepared for possible future commercial-scale production in Europe as well as for addressing environmental risks;
33. Stresses the importance of transparency and fully consulting the public, particularly in the context of the introduction of a new approach to gas exploration; points out that in certain Member States there is a lack of public consultation in the authorisation phase; calls on the Member States to evaluate their legislation to see whether proper account is taken of this aspect, including the full application of the provisions of the Aarhus Convention and the corresponding provisions in Union law;
34. Expresses the view that Member States undertaking shale gas projects should adopt a one-stop-shop approach to authorisation and licensing and the examination of compliance with environmental regulations (including mandatory environmental impact assessment), which is the usual practice in certain Member States for all energy projects;

35. Calls on the Commission and the Member States to ensure that the modifications to the legal framework necessary for the licensing of shale gas exploration require the mandatory approval of the local authorities affected;

Public opinion and best practice

Public attitudes

36. Is well aware that public attitudes to shale gas development vary between Member States, and that negative attitudes might be caused by lack of information or misinformation; calls for improving and better provision of public information on shale gas operations to be provided in a transparent and objective manner, and supports the creation of portals providing access to a wide range of public information on such operations; urges companies considering extraction of shale gas in the EU to provide full information on their activities, to consult with local communities and local authorities prior to drilling, and to publicly disclose all chemicals used by them in hydraulic fracturing, including the concentrations used, following the assessment of the shale formation;
37. Believes that the best way of ensuring the meaningful and timely engagement of local communities is through mandatory environmental impact assessment, a high level of transparency, and public consultation on proposed shale gas projects, regardless of project duration and scale;
38. Notes that it is particularly important for EU shale gas operators to engage with and build strong relationships with local communities at every stage of their operations, given that the EU has a higher population density than the US and landowners in Europe do not own underground resources and so do not benefit directly from extraction as in the US; calls, in this regard, for the establishment of frameworks which are competitive for industry but at the same time allow national and local communities to benefit from shale gas resources; also calls on shale gas companies to establish responsible community practices, ensure that local communities benefit from shale gas development, ensure application of the 'polluter pays' principle, and cover the costs of any direct or indirect damage they might cause;
39. Recognises that there should be an emphasis on a transparent and open dialogue with civil society during both the ex ante and the monitoring phases, based on the scientific evidence available and clearly tackling the issues of gas leaks and the impact of shale gas extraction on groundwaters, the countryside, agriculture and the tourist industry; recalls that the 2012 EU budget includes an appropriation intended to fund pilot projects and other support activities with a view to encouraging such a dialogue; considers that this should be organised in a neutral manner and in close cooperation with the Member States, including national authorities, local communities, the general public, businesses and NGOs;
40. Emphasises the importance of transparent corporate governance of the oil and gas companies involved in shale gas and oil shale activity;

Best practice

41. Stresses the importance of applying the highest safety standards, the best available technologies and the best operational practices in shale gas exploration and production, and of continuously improving technologies and practices and minimising adverse effects; stresses, in this respect, the importance of ensuring significant levels of R&D investment on behalf of the industry; welcomes initiatives by the IEA and oil and gas producers' associations in defining best practices in shale gas and oil exploration and production;
42. Believes that concerns over the potential of shale gas development to damage water supplies through leakage from wells can be addressed through the adoption of best practices in well development and construction, especially casing, cementing, and pressure management, together with pressure testing of cemented casing and state-of-the-art cement bond logs to confirm formation isolation; invites the Member States to ensure that these practices are followed in shale gas development, inter alia by means of site inspections;
43. Stresses that by developing better technologies and practices based on robust regulations, operators and service industries will not only improve public acceptance of shale gas projects but will also gain business opportunities and improve export opportunities, given the worldwide environmental challenges of unconventional gas exploration; recommends, therefore, that Member States take into account the recommendations of the IEA comprehensive Best Available Techniques (BAT) reference document on hydraulic fracturing, as soon as it is available;
44. Highlights the need for the highest safety and environmental standards and regular inspections at safety-critical stages of well construction and hydraulic fracturing; stresses, in particular, that operators should reduce flaring and venting and should recover gas, capture fugitive emissions and re-use/treat waste water; calls on the EU to follow the US lead in shale gas environmental standards for fracking that require companies to capture methane and other pollutant gas emissions, as introduced by the US Environmental Protection Agency (EPA);
45. Calls, in addition, on shale gas operators to test domestic water wells close to their wells both before and during production, and to disclose the resulting information to the public in an accessible, understandable and transparent manner;
46. Underlines the importance of operators reclaiming and restoring the land used and conducting post-operational monitoring on completion of their activities;
47. Urges the exchange of best practices and information between the EU Member States, but also between the EU, the US and Canada; in particular, encourages the pairing of European and North American cities and municipalities which have discovered shale gas; stresses the importance of the transfer of knowledge about shale gas development from industry to local communities;
48. Urges the shale gas and oil industry to employ, on a uniform basis, the highest environmental and safety standards wherever in the world companies are operating; calls on the Commission to examine what mechanisms might be appropriate to ensure that EU-based companies operate globally according to the highest standards; believes that corporate responsibility should also be a key driver in this area, and that Member States'

licensing regimes could take global incidents involving companies into consideration when awarding licences, provided those incidents are accompanied by thorough reviews;

49. Highlights the importance of supporting and co-funding activities that aim to create independent platforms composed of industry and science representatives aiming to provide opinions and establish good practices related to clean shale gas extraction technologies;
50. Recalls that the ‘polluter pays’ principle must be consistently applied to shale gas and shale oil operations, particularly regarding waste water treatment, and that companies must be fully liable for any direct or indirect damage they might cause; urges the Commission to assess the need to put forward proposals for specifically including hydraulic fracturing and other activities related to shale gas extraction in the Environmental Liability Directive and to oblige shale gas operators to provide compulsory financial security or insurance requirements in case of any environmental damage linked to their activities, in order to provide legal certainty for the populations concerned;
51. Instructs its President to forward this resolution to the Council, the Commission and the Governments of the Member States.

RESULT OF FINAL VOTE IN COMMITTEE

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| Date adopted | 18.9.2012 |
| Result of final vote | +: 32 -: 23 0: 1 |
| Members present for the final vote | Josefa Andrés Barea, Jean-Pierre Audy, Zigmantas Balčytis, Ivo Belet, Bendt Bendtsen, Jan Březina, Maria Da Graça Carvalho, Giles Chichester, Jürgen Creutzmann, Pilar del Castillo Vera, Christian Ehler, Vicky Ford, Gaston Franco, Adam Gierek, Norbert Glante, Fiona Hall, Jacky Hénin, Edit Herczog, Romana Jordan, Krišjānis Kariņš, Lena Kolarska-Bobińska, Béla Kovács, Bogdan Kazimierz Marcinkiewicz, Jaroslav Paška, Aldo Patriciello, Vittorio Prodi, Miloslav Ransdorf, Herbert Reul, Teresa Riera Madurell, Paul Rübig, Salvador Sedó i Alabart, Francisco Sosa Wagner, Konrad Szymański, Patrizia Toia, Evžen Tošenovský, Catherine Trautmann, Ioannis A. Tsoukalas, Niki Tzavela, Marita Ulvskog, Vladimir Urutchev, Adina-Ioana Vălean, Alejo Vidal-Quadras |
| Substitute(s) present for the final vote | Antonio Cancian, António Fernando Correia de Campos, Ioan Enciu, Satu Hassi, Roger Helmer, Jolanta Emilia Hibner, Ivailo Kalfin, Zofija Mazej Kukovič, Mario Pirillo, Vladimír Remek, Algirdas Saudargas, Hannu Takkula |
| Substitute(s) under Rule 187(2) present for the final vote | Morten Løkkegaard, Indrek Tarand |