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Enhancing Europe's energy security through greater use of liquefied natural gas

Report¹

Committee on Economic Affairs and Development

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Summary

This report highlights the importance of energy security for the smooth functioning of European states and the competitiveness of their economies in the context of globalisation. Achieving optimal levels of energy security remains a serious economic and political challenge which requires closer interstate and institutional co-operation in Europe. This is particularly pertinent for developing underexploited energy options such as liquefied natural gas (LNG) systems which could serve not only as a complementary element in case of failures of conventional power supply structures but also as a strategic part of the European energy system.

Making better use of LNG systems would enable European countries to take full advantage of the rapidly growing global market of natural gas, to achieve large long-term savings on their energy expenditures and to enhance their storage and back-up capacities in order to minimise disruptions at any time. Moreover, countries with well-developed inland waterways could consider an integrated management process for their waterway networks and energy systems, notably in respect of LNG shipments.

The report therefore welcomes the European Union Energy Security and Solidarity Action Plan together with energy infrastructure research and investment programmes aimed at supporting, *inter alia*, the development of LNG facilities, not least in the new member states of the European Union and candidate countries. The report also proposes a series of practical steps that Council of Europe member states should take to tackle vulnerabilities in their energy use.

1. Reference to committee: [Doc. 11827](#); Reference 3537 of 29 May 2009.



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A. Draft resolution²

1. Energy security is a crucial condition for the smooth functioning of states and an essential factor of the competitiveness of European economies in the context of globalisation. It is an ongoing concern across all of Europe as a series of recent gas crises and other incidents have demonstrated. The Parliamentary Assembly believes that achieving optimal levels of energy security in the Council of Europe member states is an ambitious economic task and a compelling reason for closer political co-operation.
2. Seeking to develop a common understanding of energy security risks and possible policy responses in the Greater Europe, the Assembly has repeatedly insisted on the importance of the diversification of energy products, technologies and supply routes, in addition to the need for energy savings, sound investment choices and better co-ordinated energy policies across Europe. It is convinced that, despite current economic hardships, policy makers must keep focus on the strategic aim of sustainable long-term development underpinned by sufficient, affordable, accessible and clean energy, as well as a certain degree of cross-border solidarity and co-operation in the energy sector.
3. Although European countries employ a wide range of energy resources for serving their economies and households, most of them rely overwhelmingly on imported oil and gas. Moreover, many countries of central and eastern Europe depend on oil and gas imports from a single supplier and limited transport routes, which renders them particularly vulnerable to supply shocks, with direct economic, political and social consequences.
4. The security of future supplies of natural gas as one of the most important energy sources can be better secured by expanding the use of underexploited options such as liquefied natural gas (LNG) systems. The Assembly notes that efforts aimed at developing LNG in Europe can make a significant contribution to enhanced national energy security, especially in central and eastern Europe. LNG systems could not only serve as a complementary element in case of unexpected failures of conventional energy supply structures but also as a strategic part of the European energy system.
5. Making more extensive use of LNG systems would enable European countries to take full advantage of the rapidly growing global natural gas market, to make substantial long-term savings on their energy bill and to optimise storage and back-up capacities to compensate for shortages at peak times or in order to minimise disruptions in energy supplies in general. Moreover, countries with well-developed river and canal networks could envisage the development of LNG transportation to end users via inland waterways, thus creating a virtual pipeline network that avoids traffic congestion and permits LNG shipments to locations where geographic, demographic or environmental specificities do not justify laying down traditional pipelines.
6. In this context, the Assembly recalls that Europe has an extensive network of inland waterways that offer a comparatively cheap, efficient, clean and reliable mode of transport. As it stressed in its [Resolution 1473 \(2005\)](#), this network offers a strong, but largely untapped, potential for development, such as through the Danube-Oder-Elbe Canal project. With a view to fostering regional economic co-operation, multimodal transport links and LNG use, European countries should pay greater attention to the integrated management of their waterways and energy systems.
7. The Assembly welcomes the 4 billion euro energy infrastructure investment plan adopted by the European Union in 2009, the European Union's Energy Security and Solidarity Action Plan, and the Strategic Energy Technology Plan together with the 7th Framework Programme for Research and Technological Development for the 2007-2013 period, which could serve, among other things, to support the development of LNG facilities in the new European Union member states and candidate countries.
8. The Assembly therefore asks the Council of Europe member states to:
 - 8.1. study current and future vulnerabilities in their energy use at national level with a view to putting in place adequate safety measures for coping with emergencies and making structural improvements towards a further diversification and more effective use of their energy supplies;
 - 8.2. initiate regional co-operation schemes for a co-ordinated development of their LNG infrastructure and cross-border transport networks;
 - 8.3. accelerate the preparatory works aiming at the implementation of the Danube-Oder-Elbe waterway connection;

2. Draft resolution adopted unanimously by the committee on 5 October 2010.

- 8.4. launch an international feasibility study on the development of an LNG transport network using the Danube River Basin;
- 8.5. work on the integrated management of their waterways and energy systems;
- 8.6. seize existing investment opportunities in the field of LNG infrastructure and technologies presented by the European Union's 2009 energy infrastructure investment plan, Energy Security and Solidarity Action Plan, and Strategic Energy Technology Plan;
- 8.7. review the feasibility of creating an independent European transmission system operator in the framework of the European Union's third liberalisation package for gas and electricity markets.

B. Explanatory memorandum by Mr Melčák, rapporteur

1. Introduction: the Parliamentary Assembly's vision of energy security

1. The Committee on Economic Affairs and Development raised the issue of Europe's growing energy vulnerability as early as 2005.³ It warned that the seemingly insatiable appetite of most European countries for energy consumption and a related dependence on imported fossil fuels was a source of concern due to stiffening global competition over primary energy resources. Moreover, this trend seemed hardly compatible with Europe's ambitious environmental commitments under the Kyoto Protocol.

2. The economic and political implications of such growing addiction to energy imports are all the more obvious as energy co-operation between European countries remains limited, even in the European Union's single market. Our alarm bells rang loud in January 2006, as well as in January 2009, when Russian gas supplies to central and western Europe via Ukraine were dramatically curtailed⁴ as a result of a unilateral and arbitrary decision by Europe's major supplier country. We realised that energy supplies – and in particular natural gas and oil supplies – can be used as an instrument of political pressure⁵ and become an issue that divides or unites our member states.

3. Whilst the Czech Presidency of the European Union, in the first half of 2009, made energy security a top priority for 27 countries, your rapporteur believes that the 47 countries of the Council of Europe must also have a say in the search for smart solutions in this field. Current economic difficulties should not make us lose sight of our strategic aims in terms of sustainable long-term development underpinned by sufficient, affordable, accessible and clean energy, as well as a certain degree of cross-border solidarity and co-operation in the energy sector.

4. The unreliability of partners as regards production and transfer, as well as insufficient enforceability of contracts, which became evident when natural gas supplies were halted, are a warning sign for the future. Besides internal political and economic uncertainties in some supplier states, deviations from once extensive investment plans or their reduction are clearly visible against the backdrop of the ongoing economic crisis. Further aggravation of problems related to technological limitations and the capacity of existing production and transfer systems can therefore be expected and this may lead to changes in the volume of gas available to consumers in Europe.

5. In these circumstances, the solution for the future supply and distribution of natural gas, as one of the most significant energy commodities, cannot be obtained solely by "improving" the current supply system. The search for and application of quite new, or hitherto overlooked, options must start immediately. In this context, the related problem of transport security has emerged in its full urgency; this relates not only to the transport of gas through pipelines located in territories over which the consumer states have no influence but also to the multinational level.

6. Working towards developing a common understanding of energy security risks and possible policy responses, this Assembly's members have suggested that the diversification of energy products and technologies, technology transfer, energy savings, sound investment choices, technological innovation and better co-ordinated energy policies could help secure stable energy flows across Europe, the so-called transport security. Your rapporteur will seek to highlight the role that the transport of liquefied natural gas (LNG), including by inland waterways, could play in contributing to improved energy security in many European countries. This contribution could also constitute a response to the ongoing economic crisis.

2. The importance of natural gas in the energy balance of European countries

7. European countries employ a wide range of energy resources for their economies and households. Varying proportions of fossil fuels (oil, gas and coal), nuclear power and renewable energy sources (geothermal, wind and water movements, biomass, agrofuels and sunlight) make up national energy mixes, yet most countries rely overwhelmingly on oil and gas. At the same time, few countries are self-sufficient in

3. See [Resolution 1434 \(2005\)](#) on Europe's growing energy vulnerability. See also [Doc. 10458](#) (Rapporteur: Mr Radu Mircea Berceanu, Romania, SOC).

4. Public authorities have estimated that the last gas crisis resulted in losses of some €800 to €900 million, notably in Bulgaria, Hungary, Croatia, Serbia, the Czech Republic and the Slovak Republic.

5. See [Recommendation 1779 \(2007\)](#) and [Resolution 1531 \(2007\)](#) on the danger of using energy supplies as an instrument of political pressure. See also [Doc. 11116](#) (Rapporteur: Mr Marko Mihkelson, Estonia, EPP/CD).

energy: only Azerbaijan, Denmark, Norway, the Russian Federation and the United Kingdom produce more energy than they consume. Moreover, most countries of central and eastern Europe rely on oil and gas imports from a single supplier.

2.1. Main features of natural gas markets

8. Natural gas is the second most important source of energy for Europe. It accounts for about 25% of the European Union's energy consumption while oil represents 37%. Most natural gas is extracted from British, Dutch, Italian, Romanian, German and Danish fields. Varying quantities are also imported from Russia, Norway and Algeria.

9. Given the distances over which natural gas is transported, long-distance transport is currently the most demanding link in the whole natural gas transport chain from the source to the customer. Modified natural gas can be transported either through pipelines or in a liquefied state by tankers.

10. Europe has a dense network of gas pipelines. Operational pressure in the newest systems reaches up to 10 MPa and the pipe diameters often exceed one metre (such as in the Czech Republic where pipelines of 1 400 mm in diameter are operated). Some of the pipelines are laid on the sea bed, thus enabling, for instance, the transport of natural gas from the North Sea or Africa to continental Europe.

11. Tankers are used for long-distance transport over the sea. Compressed or pressurised natural gas (CNG or PNG) and liquefied natural gas are thus brought to Europe from Algeria, Nigeria, Australia or Qatar. Natural gas is compressed or liquefied on the shore and then it is pumped into the tanker. In the terminal of destination it is pumped into storage tanks and gas pipeline systems.

12. Gas imports from Russia – mostly transiting via Ukraine – account for some 26% of European Union consumption, representing about 40% of the imported gas consumed by households and industries. In central and eastern Europe, Russian gas accounts for up to 87% of total imports and 60% of consumption. For instance, in the case of Estonia, Latvia, Lithuania and the Slovak Republic this share reaches 100% of supplies; in Bulgaria and the Czech Republic, 94% and 82% respectively; in northern Europe, Finland covers 100% of its natural gas needs with imports from neighbouring Russia.

2.2. Natural gas as a “cleaner” source of energy

13. Worldwide demand for natural gas is growing on average by 1.6% every year and is expected to rise significantly over the next decades. European countries have chosen to increasingly rely on natural gas for environmental reasons: there is a clear tendency to replace highly polluting fossil fuels, in particular coal and lignite but also oil, with cleaner burning natural gas⁶ and, in some countries, nuclear power. However, the latter, as debates in this Assembly have shown, continues to polarise public opinion due to concerns over security and waste disposal. Renewable energy sources would seem like providential allies in this situation but the reality proves that their potential is not so easy to tap for technological reasons and their contribution to energy security is useful but limited.

2.3. Price and supply issues

14. As European demand for natural gas rises, reserves and production of gas fields in western Europe will decline, with gas imports increasing. Currently, most natural gas is transported over the continent via pipelines, which are fixed routes that cannot be modified rapidly in reaction to changing market conditions or political situations. Consequently, any disturbances in supply cannot be promptly resolved and are more than likely to affect the economy in many European countries.

15. In addition to being the cleanest fossil fuel that is widely used in all of Europe, natural gas offers important saving opportunities on the energy bill. Traditionally, gas prices would follow oil or oil product prices but with a discount in terms of energy output and value, leading to a relative cost attractiveness of gas versus oil. Whilst the international economic slowdown has temporarily depressed the demand for oil and gas, the evolution of prices has shown an interesting disconnect between these two types of fuel.

16. From a high of about US\$140 per barrel in July and August 2008, the oil price declined, in autumn 2008, to US\$40 per barrel before stabilising at about US\$70 per barrel at present. However, the dynamics of equivalent gas prices throughout the same period showed a constant decrease (from US\$7-8 per mmBtu⁷ to

6. The reduction in CO₂ emissions, besides other pollutants, when burning natural gas to produce the same amount of heat as with oil and coal amounts to about 25% compared with oil and 65% compared with coal.

US\$4-5 per mmBtu) due to excess supply of gas on the international market, which dramatically boosted the competitiveness of gas versus oil. This trend is likely to persist in future, with new technologies enabling major gas-producing countries to recover large additional quantities of gas from layers of shale rock. Experts regard this technology as no less than a major breakthrough for unlocking gigantic resources around the world that will radically transform the geopolitics of natural gas.⁸

17. The security of future supplies and distribution of natural gas as one of the most significant energy sources cannot be ensured solely by “improving” the current system. Underexploited options, such as LNG, must receive greater attention. Efforts aimed at speeding up the development of the LNG system have been evaluated as the most realistic way forward in terms of national energy security. LNG systems should not only serve as an “operational complementary element” in case of unexpected failures of conventional energy sources but also as a strategic part of the European energy system.

3. Liquefied natural gas deliveries by inland transport – An alternative for landlocked countries

3.1. The specificities of liquefied natural gas production and transportation

18. Liquefied natural gas accounts for about 26% of the international trade in natural gas,⁹ but only 12% in Europe. This trade is growing due to the decline in domestic resources of natural gas in gas-consuming countries, the wish to diversify supplies and the increasing commercialisation of LNG by gas-producing countries. LNG also represents an attractive supply option that is not constrained by the capacity of existing pipeline networks or political factors. It is particularly suitable for long-distance shipments, enables countries to diversify energy imports and allows significant reserve storage capacity.

19. Once delivered to import terminals or local storage areas, LNG can be used for further small-scale distribution by road, rail or waterways to satellite plants or vehicle fuelling stations, as is the case in the United States, some Asian countries and Australia. However, the situation is different in Europe where LNG import terminals mostly re-gasify LNG and send it out in a gaseous form via pipelines to end consumers. There are some experimental schemes in Spain and the United Kingdom for LNG transport by rail, road or waterways.

20. To obtain LNG, cooling technologies are used for the condensation process and special insulation techniques are needed for transportation. Although liquefying gas and adjusting infrastructure is not cheap, greater recourse to LNG would help reduce investment and operational costs in the medium and long term. Looking into the future, it is essential to develop this energy option and to provide suitable policy guidance to European decision makers both in the private and the public sectors.

21. The processes of liquefaction, storage and regasification of natural gas are technologically demanding, but the technology used is state of the art. The supply of LNG by maritime transport from developing countries with large natural gas reserves to developed countries with high natural gas consumption has been carried out on a large scale since the 1960s.

22. The liquefaction of gas makes it much easier to transport this commodity from remote production areas overseas by reducing volumes: one litre of LNG corresponds to about 600 litres of natural gas extracted naturally. This technique – cooling gas to minus 163° centigrade – has been in use since the 1960s, making a huge contribution to meeting the world’s energy needs. With worldwide production projected to double between 2004 and 2010, LNG could soon represent about a third of global gas movements and its volumes could reach over 300 million tons per year.

23. In Europe, natural gas was delivered through pipelines until the end of the 1960s when the first LNG terminal was built in Spain in 1968 and another was put into operation in Italy in 1971. Nowadays European Union countries import natural gas mainly from the Russian Federation (24%), Norway (17%) and Algeria (11%). Their remaining needs are covered by domestic production (some 36%) and LNG deliveries (some 12%) to coastal LNG terminals.

24. Although there are no direct LNG deliveries inland beyond the pipeline routes to the end consumers in Europe, LPG (Liquefied Petroleum Gas) and CNG (Compressed Natural Gas) transport by road is well developed in countries such as Turkey, Spain, Portugal, Poland, Norway, Russia, Finland, and, outside

7. “mmBtu” stands for million British thermal units; US\$7-8 per mmBtu is the equivalent of an oil price at about US \$40-50 per barrel.

8. “Europe looks to US to reach vast gas stocks”, International Herald Tribune, 8 October 2009.

9. The LNG share in national gas supplies of industrialised countries ranges from about 2% in the USA to 100% in Japan.

Europe, in the United States, Japan, Korea and Australia. Some countries – including Germany, Indonesia, Pakistan, Chile and Brazil – use CNG as a transport fuel. To the rapporteur's knowledge, only the United States (California) and Australia use LNG as a transport fuel.

25. Because of its high density and low pressure, compressed gas is widely prized as a transport fuel. It enables longer running and cheaper refuelling, as CNG is about 30% cheaper than diesel and, depending on the country, can benefit from lower tax rates. Moreover, compared to oil per unit of weight, CNG and LNG have 31% higher heating value. LNG also competes relatively well against pipeline gas: the cost of liquefaction and transport is comparable to that of the compression and recompression of pipeline gas.

26. LNG is odourless, non-toxic and non-corrosive, and is not explosive in its liquid state. If spilled accidentally, it evaporates quickly and leaves no soil contamination. As with all fuels, certain precautions are necessary when handling LNG to avoid flammable leaks. Technologies in use foresee LNG storage and transportation in double-hull tanks that resemble giant thermoses. Minor losses through evaporation are possible depending on the efficiency of insulation. When LNG is shipped in tankers, these leaks are usually diverted to the engines to power the vessel. Thus, up to 100% of this gas can be utilised.

27. The world tanker fleet mainly consists of sea-going vessels with 120 000 m³ to 140 000 m³ capacity, whilst new ships will soon double shipping capacity per vessel. For inland transportation of LNG, vessels are of course smaller, with a capacity of up to 2 000–4 000 m³. Technically speaking it is possible to increase this capacity to about 20 000 m³ – adjusting to local circumstances where rivers have sufficiently high bridges. The draught required for river-going LNG vessels is rather small given the low gravity of LNG (LNG is 2.5 times lighter than water). This property of LNG makes its transport less dependent on water levels during the year. For instance, it is estimated that transport of LNG on the Elbe River from Hamburg to the Czech Republic could be operated for about 70% of the days of the year and on the Danube River from Romania to Hungary, the Slovak Republic and Austria practically all year round.

28. Using inland waterways for LNG transport is a particularly relevant option for landlocked countries in central Europe where river and canal networks are particularly dense and geographic, demographic or environmental specificities do not justify laying down pipelines. Another reason for resorting to LNG is the exploitation of small gas fields of limited capacity whose productive lifetime cannot justify building pipelines. Europe's inland waterways offer an attractive transport option for LNG. In fact, LNG deliveries by rivers and canals in containers could be seen as a virtual pipeline network in addition to traditional pipelines.

Planned European LNG terminals (by 2010)¹⁰ – the map is not exhaustive.



29. The starting points for such a virtual pipeline network can be marine terminals or intermediate LNG storage areas. The storage tanks can be built above or below ground. The maximum capacity of storage tanks currently in operation is 160 000 m³ above ground and 200 000 m³ under ground – roughly the size of an average LNG carrier.

3.2. Some economic considerations for the expansion of LNG use

30. In 2005, there were about 50 LNG import terminals across the globe. Nine Council of Europe member states – Belgium, France, Greece, Italy, Norway, Portugal, Spain, Turkey and the United Kingdom – have at least one LNG import terminal. These countries absorb about 25% of global LNG shipments. A number of new LNG terminals are currently under construction or planned, including in Croatia, Cyprus, Germany, Italy, the Netherlands, Poland, Romania and Ukraine. Russia, the world's biggest gas producer, opened its first LNG export terminal on Sakhalin Island in February 2009 and is planning to build three more export terminals (at Shtokman offshore field in the Barents Sea north of Murmansk,¹¹ on the Yamal peninsula in the north, and in the far eastern city of Vladivostok) by 2020. However, in general the countries of central and eastern Europe are clearly lagging behind in embracing opportunities offered by LNG technologies.

31. Western European countries that have LNG reception facilities appear to be little affected by occasional disruptions in gas supplies, such as those experienced by central and eastern European states that import most of their gas via pipelines from Russia. In fact, the last two Russia-Ukraine gas crises have revealed energy vulnerability of countries in central, eastern and South-Eastern Europe, making arguments for expanding LNG capacities in that region even more relevant. At the same time, the world's largest gas producing country – Russia – has compelling reasons for expanding its own capacity to produce and trade LNG on the global market.

32. The ongoing increase in LNG production worldwide and falling gas prices is stimulating the pursuit of LNG projects in gas-importing countries as part of diversification and “cleaner energy” strategies for their supplies. For countries that choose to make greater use of LNG for vehicle fuelling, additional benefits (multiplied by three) are in sight when compared to the use of conventional natural gas facilities. LNG is also a very suitable fuel option for storage and back-up systems to compensate for shortages at peak times or in order to minimise disruptions in energy supplies in general. New LNG uses, such as for heating family homes and greenhouses, are currently being tested in China and could in future lead to massive practical applications in Europe.

33. A number of interrelated reasons speak for this:

- LNG is a systemic resource which has yet not been taken into consideration in the energy balance by many countries;
- its use is clearly complementary in terms of the energy balance, even if many countries are technically not yet ready to use LNG;
- trading sources of LNG are often separated from primary sources of common natural gas both geographically (Qatar, Algeria, Nigeria, but also Norway, Russia, Australia, etc.) and technically (liquefying stations);
- transport systems for LNG are in up to 98% of cases totally separated from transport routes of natural gas;
- LNG can be used to boost strategic storage capacities;
- maritime routes are used for the basic supplies from sources of origin and maritime transport can continue the shipping also by inland (continental) waterways;
- the incorporation of maritime transport makes it possible to optimise both economically and environmentally the transport network with road and rail transport, which in many key points (European harbours) is quickly reaching its capacity limits;
- practical experience with the deliveries, transfer and use of LNG in many European maritime nations shows a strong business development potential;

10. Šebor G., Pospíšil M. and Žákovec J.: Technicko-ekonomická analýza vhodných alternativních paliv v dopravě. Vysoká škola chemicko-technologická v Praze. 2006

11. This joint project between the Russian Gazprom, France's Total S.A. and Norway's Statoil ASA might start the first deliveries of LNG in 2014 if all the technical and financial aspects of the project are implemented on time.

- in this respect, a basic network for the import of LNG into Europe is largely in place and it is its transfer and consumption within Europe that is becoming the focus of further development.

34. Adopting LNG technologies requires important investments. Whilst production¹² and long-haul transportation costs are borne by exporters, most European countries are only concerned by the reception, local distribution and regasification processes. These need to be based on careful feasibility and cost analyses, and require long-term political backing at national and regional levels. Moreover, if inland waterways are considered for the distribution chain, as your rapporteur suggests, additional development studies are required.

35. A major element related to the enhanced use of LNG in Europe is the fact that it also provides an exceptionally strong impetus for investment across various economic sectors, in particular from the commodity infrastructure point of view. Besides influencing the energy choices of both wholesale and retail consumers, LNG provides a strong impetus for the development of metallurgy, mechanical engineering, regulation technology and also to the same or an even greater extent for the construction sector, water management, agriculture, chemical industry (fertilisers) and transport. LNG therefore represents an exceptionally attractive field for economic development in Europe and beyond. The inclusion of LNG as a factor in energy policy must therefore be based on acceptance of the fact that LNG is set to become a permanent feature of the energy system, rather than serving only as a back-up source of energy.

3.3. The Danube – The case for an international feasibility study

36. Europe has an extensive network of inland waterways that offer a comparatively cheap, efficient, clean and reliable mode of transport,¹³ but only three European countries make significant use of their waterways. Thus the share of inland water transport in the Netherlands, Belgium and Germany represents, respectively, about 44%, 14% and 13% of all transport. In this connection, your rapporteur wishes to draw attention to the huge potential of the Danube River and its basin for LNG transport.

37. The Danube, Europe's second longest river, connects Germany, Austria, the Slovak Republic, Hungary, Croatia, Serbia, Montenegro, Romania, Bulgaria and Ukraine and is an essential, though underutilised, part of the inland transport network. Its depth permits the navigation of large vessels and offers bridges of sufficient height for the passage of river- and sea-going LNG tankers. Moreover, the river links important gas-consumption centres (metropolitan and industrial areas) in Romania, Serbia, Hungary, the Slovak Republic and Austria, as well as main gas storage facilities and a variety of gas supply routes. The Romanian Government is planning the construction of an LNG terminal in Constanta for importing LNG from Azerbaijan via Georgian gas liquefaction facilities. With the European Union's support, this project could be expanded in order to involve neighbouring countries and to provide them with access to strategically important LNG supplies.

38. With a view to fostering economic co-operation and multimodal transport links in central Europe, there have been renewed efforts to link up the Danube with the North Sea and the Baltic Sea via artificial canals and the Elbe and Oder rivers. Czech, Slovak and Austrian investors are looking forward to the realisation of the Danube-Oder-Elbe Canal project in the framework of the EU's Trans-European Transport Networks and the European Agreement on Main Inland Waterways of International Importance. This project aims to eliminate missing links in the waterways network. Its implementation would enable the region's countries to maximise the benefits of trade, including via expanded facilities for the transport of commodities such as LNG and their storage in existing underground reservoirs in the south-eastern part of the Czech Republic, western part of the Slovak Republic and eastern Austria.

39. When assessing the economic and environmental feasibility of this strategic project, the need to remedy the effects of long-term neglect of water transport development in central Europe clearly comes to the forefront. Considering the importance of the Danube-Oder-Elbe water corridor – originally the Danube-Oder-Elbe Canal – it is necessary for the relevant European bodies to intervene in order to ensure an optimal protection of the environment in the territory earmarked for the construction of the proposed corridor, notably in the Czech Republic. Such an approach should seek to neutralise one-sided pressures – from either environmentalists or local industrial lobbies – in line with the legislation of the European Union and the Council of Europe.

12. The liquefaction process might represent nearly half of the investment cost in the entire LNG production chain.

13. See [Resolution 1473 \(2005\)](#) on European waterways: focus on the Danube-Oder-Elbe Canal project. See also [Doc. 10730](#) (rapporteur: Mr Márton Braun, Hungary, EPP/CD).

40. From this perspective, the Danube and the main adjacent rivers (the Oder and the Elbe) can be considered as a highly useful additional corridor for the transportation of natural gas in central Europe along the north-south axis and could help intensify regional co-operation in several domains. At issue is not only the opening of a significant transport route, but also the prospect of gaining valuable side benefits in the fields of water management, energy, flood protection, recreation and employment.

41. Your rapporteur therefore proposes that the Committee on Economic Affairs and Development and the Parliamentary Assembly as a whole reiterate their support for the accelerated completion of preparatory works aiming at the implementation of the Danube-Oder-Elbe connection and call for an international feasibility study on the development of LNG transportation using the Danube River basin. Furthermore, as the discussion in the committee has shown, any safety and environmental implications of this project on the maritime traffic through the Bosphorus straights and the entire region should be studied with particular care.

4. Innovative energy co-operation as a means for greater unity in Europe

42. Over the last few years, we have seen major upheavals in the global and European energy markets. The ongoing financial crisis and related economic hurdles across Europe have severely reduced growth and energy consumption. Experts from international energy bodies – such as the International Energy Forum, the World Energy Council, the International Energy Agency, the Energy Charter – and major energy companies – including Gazprom, E.ON Ruhrgas, Statoil and ENI – reported a major slowdown of some 20% in energy production and investment activities for 2009 (although gas consumption fell less dramatically – by about 9%) as a result of the economic crisis.¹⁴ This reaction to market signals is expected to last for about two years.

43. The energy sector feels the squeeze mainly due to reduced economic activity, lower demand for energy, more expensive borrowing and price volatility. Key actors hesitate about long-term commitments, which might lead to future shortages and breakdowns in energy supply. Yet major investment is needed today so as to ensure smooth development when Western economies recover and resume growth. The importance of natural gas and LNG is set to grow over time, especially for European countries. As fossil fuels will continue to dominate Europe's energy mix,¹⁵ natural gas can serve as a bridge to a cleaner energy future.

44. There is a strong need for more co-ordination and solidarity at the regional level in order to optimise major technological and investment decisions. Greater energy security for the future should mean fair interdependence of buyers and suppliers, guided by clear political incentives, long-term vision and greater market transparency. "The scale and breadth of the energy challenge is enormous – far greater than many people realise. But it can and must be met", as the International Energy Agency underscores in its latest *World Energy Outlook*. Just to replace ageing infrastructure for electricity and gas, Europe will need to invest at least €1.6 trillion by 2030, according to a study by the European Commission.¹⁶ In 2009, European Union member states adopted a €4 billion energy infrastructure investment plan as a stimulus measure whose first effects could become visible as early as 2010.

45. Central and eastern European countries remain too dependent on a single supplier of natural gas (mainly Russia), while western European countries need to maintain their diversity of supplies in the light of gradually declining North Sea natural gas resources. Energy experts estimate that increasing the LNG component in the overall energy mix would enable European countries to access about 80% of worldwide proven gas reserves and thus provide enhanced supply diversity, as well as greater access to more favourable spot market prices for gas. This requires adequate LNG import terminal and storage capacities.

46. Capgemini studies have shown that if all planned new European LNG terminals are built, there will be sufficient and maybe even excess capacity. However, most of these terminals are being built in western Europe. The construction of new major gas pipelines is encountering many financing challenges. Your rapporteur is convinced that the main challenge for European countries is to switch from national security of supply concerns to a broader Europe-wide view and to join forces in implementing a truly European energy policy along with adequate national efforts.

14. Findings presented during the workshop on "Energy security and the financial crisis", organised in the framework of the 18th Annual Session of the United Nations Economic Commission for Europe (UNECE) Committee on Sustainable Energy in Geneva from 18 to 20 November 2009.

15. Currently, three quarters of power stations under construction are designed to operate with fossil fuels, while investments in energy efficiency and renewables are beginning, very slowly, to make a tangible difference in the situation.

16. Inter-connecting Europe – New perspectives for trans-European energy networks, European Commission, DG-Tren, 2008.

47. The European Union can certainly play a major leadership role in this respect, especially as regards policy guidance on enhanced energy security, the implementation of energy efficiency standards and the development of smart energy technologies. The European Union's Strategic Energy Technology Plan (SET Plan), together with the 7th Framework Programme for Research and Technological Development (FP7), which runs from 2007 to 2013 with a €2.35 billion budget, focus on non-nuclear energy research and innovation. Although these plans are relatively modest compared with the recent initiatives of the United States, Japan, China and Korea, they could serve to initiate a feasibility study on the better integration of LNG terminals with the inland waterways transport network and prospects for developing the LNG sector in central and eastern Europe.

48. Energy security is now a concern across Europe. This implies close political attention to the issue and the need to better understand our current and future vulnerabilities¹⁷ in terms of energy use. In this context, your rapporteur wishes to underline that a growing European reliance on imports of certain primary sources of energy does not automatically mean that our countries are becoming more vulnerable. In fact, importing more energy at a sustainable cost and from diverse sources might boost local competitiveness while also stimulating development in energy exporting countries. It is therefore important to distinguish between our short-term energy vulnerability with requisite safety measures for coping with emergencies and long-term vulnerability that requires structural measures for the diversification of energy supplies. Your rapporteur believes that European co-operation in developing an LNG network across the continent can and must contribute to more balanced economic development and enhanced energy security for all users.

17. The UNECE has identified no fewer than 150 risk factors on energy security and is currently conducting a major survey.