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Nuclear energy and sustainable development

Committee Opinion¹

Committee on Economic Affairs and Development
Rapporteur: Ms Anna LILLIEHÖÖK, Sweden

A. Conclusions of the committee

1. The Committee on Economic Affairs and Development welcomes Mr Bill Etherington's report on "Nuclear energy and sustainable development" and concurs with the main conclusions and suggestions in the draft resolution presented by the Committee on the Environment, Agriculture and Local and Regional Affairs.
2. While acknowledging the many strengths of nuclear energy, the Committee on Economic Affairs and Development emphasises that preservation of the environment and sustainable development must at all costs remain the priorities of all forms of energy supply. It therefore very much hopes that the fundamental issue of nuclear waste management will be taken into account and that true international co-operation on this matter will be started so as to ensure complete environmental safety.
3. While nuclear energy today represents one of the various forms of energy supply, the committee calls on the governments of member states to continue their research with a view to developing other forms of energy, particularly from renewable sources.

B. Explanatory memorandum

1. Introduction

1. The oil and financial crises have underlined the importance of anticipating the major challenges facing our societies, in particular that of energy supplies. This requires European governments to take more effective action. Once the economy recovers and demand for energy rises, nuclear energy seems to offer one of the possible economic solutions.
2. The budgets of the Council of Europe's different member states all include large items linked to various recovery and rescue plans to deal with the effects of the crisis. More spending will go on economic and social measures to deal with rising unemployment, the downturn in industrial activity and growing inequalities, the first signs of which can now be seen in Europe.
3. It is therefore crucial for governments concerned with their countries' energy supplies to undertake long-term financial investment in a system that will guarantee independence and an economic return in the energy field, while ensuring that these measures are fully consistent with respect for the environment and sustainable development.
4. A well-controlled nuclear energy industry is now able to supply all these economic guarantees, but without supplying all the requisite guarantees in ecological terms.

1. See [Doc. 11914](#) presented by the Committee on the Environment, Agriculture and Local and Regional Affairs.



2. The advantages of uranium

5. As with other types of energy, the choice of nuclear power is bound up with the cost of its fuel source. As we have seen, energy based on fossil fuels such as oil and gas is heavily dependent on international prices, which surged in the third quarter of 2008. In July of that year, the price of a barrel of oil was over US \$140. For some Council of Europe member states, this dependence has created a form of economic and political dependence, as shown by the “gas war” between Russia and Ukraine.

6. In this context, uranium, the required fuel for nuclear power plants, has the advantage of being available in sufficient quantities. According to some estimates,² uranium reserves amount to 5.3 million tonnes, mainly located in Australia (23%), Kazakhstan (16%), Canada (11%) and the United States (10%). About 64 000 tonnes of uranium are consumed each year, meaning that there are eighty-five years’ worth of supplies. According to experts this figure can be multiplied by 100 with the advent of fourth generation reactors that use uranium 235 as well as uranium 238.

7. Moreover, whereas there is a very marked link between rises in the price of oil and the price of petrol, the cost of electricity to the consumer bears little relationship to the price of uranium. In economic terms, nuclear energy offers diversification and greater security in so far as costs remain stable at a low level after the initial investment and are less subject to short-term fluctuations in raw material supplies. The uranium price represents barely 7% of the price of a kWh, on account of the numerous chemical and physical processes that the uranium passes through before its transformation into electricity. However, uranium extraction techniques still cause a great deal of pollution.

8. Finally, from the price standpoint, uranium as a raw material appears to be used less than gas as an economic weapon, since numerous producer countries, such as Niger and Namibia, do not have nuclear programmes. Altogether, 70% of uranium production entering the international market comes from countries without such programmes. International co-operation ought to be organised in order to guarantee this freedom of access to the uranium market.

9. This relatively secure market for uranium does not prevent the major producers of fossil fuels from intervening in the nuclear market to establish a strong, or even dominant, position. Via Rosatom, the state nuclear energy corporation, the Russian Federation, which in December 2008 invested €22 billion in its nuclear power programme and which holds 8% of the world’s uranium resources, has established a policy on the development and control of nuclear energy in Europe. Thus, according to the Russian newspaper *Izvestia*, Russian uranium is used in German, British, Swiss, Dutch and Finnish nuclear power stations. Rosatom holds 40% of the market for the enrichment of natural uranium. One nuclear power station in six in the world uses Russian fuel.

10. Against this background, in January 2007 the Committee on Economic Affairs and Development noted that “long-term solutions in the form of sustainable energy projects and coherent energy policies should be sought to ensure ongoing and short-term energy security. This presupposes the gradual emergence of a single energy market in Europe based on sound regulation, efficient co-operation, sufficient investment and solid networks”.³

3. The cost of nuclear plants

11. Apart from fuel costs, the other major factor to be taken into account when considering long-term energy investments is the cost of nuclear plants.

12. Among the Council of Europe member states, Russia, Finland, the United Kingdom, Albania, Croatia, Italy, Ukraine, Bulgaria and France have decided to build new nuclear power stations. France, 76.9% of whose electricity is nuclear, faces major challenges. It is planning to build a new European pressurised reactor (EPR) and the market for nuclear plant is of fundamental economic importance to it. France has the largest stock of nuclear power stations and is also a major exporter of nuclear material, through its company Areva. However, it faces increasingly stiff competition following the recent memorandum of understanding between the Russian Rosatom and its German counterpart, Siemens. At all events, these joint ventures are evidence of certain countries’ commitment to long-term investment in financially sound energy sources, at a time when energy requirements are continuing to grow.

2. “Forty years of uranium resources, production and demand in perspective”, OECD, 2007.

3. Opinion of the Committee on Economic Affairs and Development, “Peril of using energy as an instrument of political pressure” (rapporteur: Mrs Jelleke Veenendaal, Netherlands, ALDE), [Doc. 11132](#).

13. However, it is expensive to build new nuclear plant – about €4 billion for an EPR, not to mention the construction time required, estimated at five to seven years for each new power station, and the various preparatory works which have very often increased the financial burden. This is the challenge faced by Italy, which plans to build four or five new reactors of 1 800 megawatts each in the next five years. Several countries, particularly ones with an ageing stock of nuclear plant, plan to invest in extending the life of reactors by thirty to forty years, which would only cost €400 million, in other words a tenth of the cost of new plant. For consumers, this investment only represents €0.012 on the price of electricity, compared with €0.028 for new plant.

14. Extending reactor life inevitably raises the fundamental question of safety, which is absolutely critical for both human beings and their natural environment. Mr Etherington's report⁴ showed what a major contribution nuclear energy makes to sustainable development because of its minimal production of greenhouse gases. Safety is now universally recognised to be the primary concern and maximum vigilance is required in, for example, the construction of the planned joint Albanian and Croatian nuclear power plant on the banks of Lake Shkoder in Albania. Investments in nuclear power stations will have to include budgets specifically set aside for safety, to ensure still greater reliability. The European Commission is currently drawing up a directive on this major issue.

15. Finally, another major challenge facing nuclear energy is how to manage nuclear waste. This has often been the subject of criticism but has received particularly close attention from countries that have decided to invest in nuclear energy. Clearly, there has to be considerable financial investment in this area, which is so important for both safety and sustainable development. Sufficient financial resources are therefore required to cover the long-term costs of nuclear waste management. It would be highly desirable for real international discussions to be organised on the crucial issue of waste.

4. Long-term investment

16. Apart from the benefits associated with uranium and the cost of plant, nuclear energy also offers valuable economic prospects in the form of long-term investment in nuclear research and education.

17. Investing in nuclear research is not just concerned with energy and electricity production. Very few persons are aware that such research has beneficial applications in numerous areas that affect citizens' everyday lives, such as health, including medical equipment using radioisotopes and cancer research, the social field and of course the environment, through the reduction of greenhouse gas effects. Naturally, strict control has to be exercised over nuclear commerce, which could lead to the use of this technology in the military field and culminate in the production of nuclear arms.

18. Certain universities in Belgium and Germany have established nuclear research training courses. Finally, policies to finance nuclear research in both the public and private sectors have been adopted in Spain, Hungary, Germany and the United Kingdom, which invested more than £10 million in this area in 2000. All these initiatives offer the prospect of establishing solid expertise in this field.

19. Training in nuclear skills also represents a formidable economic challenge. Most specialists agree that there is a shortage of nuclear professionals and engineers. Their training is certainly expensive but it represents above all an investment in experience and know-how for the countries concerned. Certain countries that have become uncompetitive in sectors of the economy where they cannot compete with the extremely low labour costs of India and east Asia will be able to export their skills in nuclear energy, whose economic importance will grow in the coming years. For some countries, nuclear energy also represents the economic exploitation of an internationally recognised national *savoir-faire*. This is the path taken by France, for example, where Areva builds the EPR, which is competing strongly with its American and Japanese equivalents.

20. In addition, the construction of nuclear power plants creates thousands of jobs at a time when the economic crisis is causing rising unemployment in most of the Council of Europe's member states. And as well as creating jobs, nuclear energy offers the prospect of electricity at a stable price, which is essential for economic growth, industrial prosperity and the jobs of those employed in those same industries.

4. Committee on the Environment, Agriculture and Local and Regional Affairs, "Nuclear energy and sustainable development" (rapporteur: Mr Bill Etherington, United Kingdom, Socialist Group), [Doc. 11914](#).

5. Conclusion

21. There is no ideal energy policy. All have their shortcomings, in terms of their implications for the environment or sustainable development or of the safety of their plant. Despite its undeniable strengths, nuclear energy must continue to progress and improve, especially where uranium mining and waste management are concerned.

22. Nevertheless, this form of energy does appear to be one of the most efficient and economical energy sources in a Europe whose electricity consumption will rise in the coming years. It also provides a bridge with research and the development of our societies. But this bridge must also take us towards the acquisition and development of other sources of energy, even more respectful of the environment and sustainable development, such as energy sources which are both renewable and soft.

Reporting committee: Committee on the Environment, Agriculture and Local and Regional Affairs.

Committee seized for opinion: Committee on Economic Affairs and Development.

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Secretariat of the committee: Mr Newman, Mr de Buyer, Mr Chahbazian and Mr Pfaadt.