

'A Guide to Euratom' from The New Scientist (26 March 1959)

Caption: On 26 March 1959, in an article in the British weekly publication The New Scientist, Étienne Hirsch, President of the Euratom Commission, describes the implications and the objectives of Euratom.

Source: The New Scientist. 26.03.1959. London.

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URL: http://www.cvce.eu/obj/a_guide_to_euratom_from_the_new_scientist_26_march_1959-en-b3528159-ad01-40cf-a4b0-7f6a51daf9b8.html

Publication date: 15/09/2012

A Guide to Euratom

The President of the Euratom Commission here outlines the policy and future tasks of the organization. He also shows how it plays an essential part in the three-fold structure of which the European Coal and Steel Community and the “Common Market” are the other constituents.

by Etienne Hirsch

EURATOM is based on two very simple ideas. The first is that nuclear power can be developed most efficiently only on a larger scale than that of the nation state. The second is that this principle, evident enough in the nuclear field, is also true of many other economic activities previously conducted on a purely national basis. These two ideas together underlie the peaceful revolution that in the last decade has been gradually transforming Europe, and incidentally necessitating a reappraisal of our economic and foreign policies.

To take the nuclear question first. At the present moment, with coal stocks accumulating both in Great Britain and on the Continent, it may seem paradoxical to speak of an energy shortage. But if at present supply appears to exceed demand, it is worth remembering how quickly the energy situation changes. Only two years ago, Europe was in the grip of an energy shortage, and no one can say with certainty what the situation may be in two years' time. It is well known that one of the basic reasons for this fluctuation is the comparative inelasticity of the energy-producing industries and particularly the coal industry. But if as a result it is almost as difficult to predict our energy situation in the short term as it is to make a precise short-term forecast of, say, tomorrow's road accidents, nevertheless it is easier to predict it in the long term, just as we can predict the accident statistics of the coming month or the coming year. In other words, our short-term uncertainty should not discourage us from making the necessary long-term projects for roads, fly-over crossings, etc. This, in the energy field, is why Euratom was established.

In the long term, Europe is suffering from an energy deficit which can be made up only by the use of nuclear power. In the nineteenth century, cheap and abundant coal turned Europe into the workshop of the world. In 1870, the United Kingdom and the six Euratom countries (France, the Federal Republic of Germany, Italy and the Benelux countries) produced 75 per cent. of the world's total energy. To-day, although the six Euratom countries alone mine more coal than the world did in 1870, they provide only 15 per cent. of world energy production. At the same time they have to import nearly 25 per cent. of their own energy supplies.

Even in 1955, the energy imports of the six Euratom countries cost them some \$2,000 million. Without nuclear energy, the cost of these imports, which chiefly consist of coal and oil, would rise to \$4,000 million in 1967 and might reach \$6,000 million in 1975. Moreover, as recent events in the Middle East have made clear, there could be considerable political danger in so great a dependence upon outside supplies. While it would be inadvisable and uneconomic to pursue the will-o'-the-wisp of complete self-sufficiency in energy, it is clear that great efforts must be made to mitigate so costly and precarious a situation.

The problem is not, of course, confined to continental Europe. Indeed, Great Britain was perhaps the first to meet it. Partly as a byproduct of her military atomic programme, she became one of the pioneers in the industrial development of nuclear power. Her splendid achievements in this field need no tribute from me. But it would be idle to deny that these achievements have required and still require very large-scale investments not only of capital but also of know-how, technology, research, and scientific man-power.

The nations of Continental Europe, faced with essentially the same problem, quickly came to the conclusion that it would be uneconomic for them to tackle it in isolation one from another. Already, in June 1955, the Foreign Ministers of the six Euratom countries, at their meeting in Messina, had unanimously decided to set up a special conference to see if they could not face their nuclear future together. In April, 1956, this conference reported (in the Spaak Report, named after its chairman, the Belgian Foreign Minister, Paul-Henri Spaak) that such collaboration was not only necessary but technically possible. A year later, on 25 March, 1957, the six countries signed the Treaty establishing the European Atomic Energy Community, now better known as Euratom.

Meanwhile, even before the treaty had been concluded, the six Governments had decided to survey the scope of their energy problem by appointing a committee of “Three Wise Men” to report on the amount of nuclear energy that could be produced in the six countries, and on how this was to be done. As a target for Euratom, the Three Wise Men proposed an installed nuclear capacity of 15 million kW for the late 1960s, which, they said, would enable the six countries to stabilize their energy imports at around their 1963 level, at the equivalent of some 165 million tons of coal, costing at 1957 figures an annual total of some \$3,300 million.

Even by comparison with American, British and Russian programmes, this was an ambitious target; and even today, with the pooling of resources made possible by Euratom, it seems unlikely that it will be reached within the time laid down. But this very fact makes it even clearer that the six countries individually would have had immeasurably greater difficulty in making up their time-lag.

So much for the first principle underlying the creation of Euratom. The second principle is that what is most strikingly true in the field of nuclear energy applies, if less obviously, to many other fields. The Spaak report, in fact, declared that while none of the six Community countries was alone capable of the immense effort in research and basic investment required by the nuclear revolution, the expansion of production made possible by this new source of energy and its new techniques was in danger of being frustrated by the narrow limits of existing national markets. It cited three concrete examples of the way in which the smallness of national markets might act as a brake on economic expansion. One was the development of nuclear power; but secondly, it said, there was no single motor industry in Europe big enough to use in the most economic manner the most powerful existing American machine tools; and thirdly, no single Continental country was able without outside help to build the largest modern transport aircraft. For these reasons, at the same time as the six Euratom countries decided to pool their nuclear resources, they also decided to pool their economic resources as a whole by the gradual introduction of a common market for all goods. At the same time as they signed the European Treaty, they signed the treaty establishing the European Economic Community.

Euratom, therefore, does not stand alone. Indeed, its very name is significant, for it couples in a single word two of the revolutionary changes brought about in the twentieth century. The first is the new industrial revolution unleashed by the peaceful application of nuclear energy. The second is the economic and political revolution that is leading towards the unity of Europe.

This ideal of unity is not new; but only since World War II has it begun to grow into a reality. An early move in the direction of European unity was the establishment in 1948 of the Organization for European Economic Cooperation, which over the past ten years has helped the countries of Western Europe to maintain a rapid rate of economic progress. On the political side, the Council of Europe has provided a broad European forum where many far-reaching if unspectacular achievements have been hammered out. Later bids for unity in Continental Europe owe more than is sometimes realized to the work of these two pioneers. But in the eyes of many Europeans these movements for international cooperation have been handicapped by the limitation of their aims; and as a result the six Community countries decided to move one stage further, going on from international cooperation towards economic integration and the partial merging of national sovereignty in common and so-called “supra-national” institutions.

The first step in this direction was the pooling of certain basic resources in the European Coal and Steel Community, established in 1952. Euratom and the European Economic Community (“the Common Market”) are two further steps along the same road. All three Communities share a similar institutional structure which balances the national and the federal principles. The former is represented in the Councils of Ministers, whose members are delegates of their respective Governments. The latter is represented in the separate executives of the three Communities, whose members are not national delegates but independent servants of the Community; and the same is true of the Court of Justice and the European Parliamentary Assembly, shared by the three Communities and responsible not to national authorities but to the people of the six countries as a whole. No consideration of the technical work of Euratom could afford to ignore its essential role in this complex Community structure.

Euratom's basic task is to provide the conditions for a European nuclear industry. This means action on several fronts at once. A first necessity is to build up a European storehouse of technical knowledge and technical skill. A second is to stimulate necessary investments and encourage coordinated industrial development. A third is to ensure regular and equitable supplies of nuclear fuel and to remove barriers to trade in nuclear products. At the same time, Euratom must work out health and safety regulations and ensure that material destined for peaceful purposes is not diverted to other ends. Last but not least, the very nature of the nuclear industry demands that Euratom collaborate closely with its partners outside the Community who are also engaged in work in the nuclear field.

Since the Euratom Treaty came into force on 1 January, 1958, a brisk start has been made on all these tasks, thanks not only to my present colleagues on the Commission, but also to the remarkable efforts of its first President, my predecessor, Louis Armand. The Commission has already worked out, with the advice of its Scientific and Technical Committee, its first research programme, which includes plans for a Community Research Centre, a Documentation Centre and Standards Bureau, an electromagnetic separator and work on fusion as well as on experimental and prototype reactors. A total of \$215 million will be spent on this programme during the first five years. At the same time, Euratom is making arrangements to facilitate the spread of technical knowledge throughout the Community, subject to normal patent guarantees.

In the field of investments, Euratom has prepared the way for coordinated action by issuing regulations which specify what investment projects shall be communicated to the Commission and in what detail, with the aim of avoiding overlaps and gaps. Meanwhile, on 1 January, 1959, it opened its nuclear common market, with the result that nuclear products can now travel from one end of the Community to another free of national barriers and restrictions. At the same time, it set up a common nuclear tariff around the Community, which varies from a maximum of 12 per cent. to a minimum of zero (on ores, raw materials and special fissile materials), and which has been suspended for three years in the case of reactors, reactor parts, and heavy water.

In the field of health and safety regulations, Euratom has already accomplished one of its major tasks – that is, to set up a very exhaustive series of basic standards which in fact are the most up-to-date and comprehensive of their kind in the world, and which represent a major contribution to human safety in the nuclear era. These standards have now to be translated into national legislation by our six countries, when they will ensure that the most watertight precautions are taken to safeguard not only nuclear workers but also the civil population as a whole. Another safeguard which is actively being worked out at this moment is the inspection and control system which Euratom will apply to ensure that fissile material is not diverted from its proper use. In both these cases, the Euratom regulations, which will be as comprehensive and as practical as human fallibility will permit, are the first instances in the world of such measures being taken on an international scale. Both constitute an effective and recognized guarantee to Euratom's partners in the wider world.

It is in this last respect, indeed, that Euratom has hitherto made the most spectacular progress in its fourteen months of existence. It has always been its intention to collaborate as effectively as possible with all those countries and organizations outside the six which like it are concerned with the peaceful uses of nuclear energy. In nuclear affairs there can be no question of autarky. That is why from the very beginning Euratom has worked in close liaison with the International Atomic Energy Agency in Vienna, with the European Nuclear research Centre in Geneva, and with the OEEC European Nuclear Energy Agency in Paris. With the last-named in particular, Euratom is at present discussing such essential questions as nuclear insurance and the wider application of its health and safety standards; and it has already agreed to participate in the joint OEEC projects of the Halden reactor and the Dragon reactor to be built at Winfrith Heath in England. I might add that before Euratom came officially into being, its six member countries had already subscribed more than half the capital of the "Eurochemic" Company set up in the framework of OEEC.

Finally, apart from these international links, Euratom has recently concluded specific agreements with two leading nuclear powers – the United States and the United Kingdom. The agreement with the United States, signed on 8 November, 1958, provided for joint power and research programmes which will enable the

United States to benefit from the experience of building in Europe large-scale reactors which at present would be uneconomical on the other side of the Atlantic owing to the comparatively low cost there of conventional power, and will enable Euratom to make a rapid start on the nuclear capacity it needs to fill its long-term energy gap.

But this agreement, which provides for a capacity of 1,000 MW during the next few years, will not by any means supply all Euratom's immediate needs, which at present appear to be at least four times as large. This is one reason why on 4 February this year Euratom concluded with the United Kingdom a second cooperation agreement which will effectively open the European market to the sale of British reactors, as well as leading, I hope, to an even closer relationship between the two partners.

As I write, moreover, negotiations are already on the way for an agreement between Euratom and Canada; so that before very long it will be possible, I think, to say that Euratom, itself an example of close economic integration, is in turn taking its place in a growing network of cooperation in the wider world. I said at the beginning that two simple principles underlie Euratom: I might add a third as a postscript – that in the nuclear field, as in life, cooperation is contagious.