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E.C.: A LEADER IN NUCLEAR ENERGY

After the 1973 oil crisis, the European Community intensified its efforts to develop nuclear energy as an alternative to imported oil. While nuclear power produced only 5.4 percent of the Community's electricity in 1973, ten years later its share had increased to 22.4 percent.

That growth is particularly striking when compared with developments in the United States, where the nuclear share of electricity production grew from 4.3 percent in 1973 to only 12.6 percent in 1983.

In a recent report assessing the Community's nuclear capacity, the E.C. Commission calls for continued expansion of nuclear power, describing it as an economical and strategically secure energy option. The Commission, which has vigorously promoted that view during the past decade, notes that nuclear energy has helped reduce the Community's dependence on imported oil from 62 percent of energy consumption in 1973 to 32 percent in 1983.

European industry now covers all essential aspects of nuclear energy production, including the high-technology aspects -- a development that has benefited all branches of engineering, as well as data-processing and software industries, the report says.

Commission Goals

The Commission report, "Nuclear Industries in the Community," outlines these specific goals for the E.C.'s energy strategy:

--By the turn of the century, nuclear energy should produce 50 percent of the Community's electricity.

--Nuclear energy should cover 14 percent of the Community's total energy requirements by 1990. It would thus match the E.C.'s hard coal production, and exceed its production of both natural gas and oil.

--By 1990, there should be 128 nuclear reactors in the Community with a total capacity of 98 gigawatts. (A gigawatt equals one billion watts.) At the end of 1983, there were 95 nuclear reactors with a capacity of 52 gigawatts.

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--The fast-breeder reactor, an advanced nuclear reactor that greatly multiplies the energy potential of uranium, should be economically competitive after the turn of the century. The Community has taken the lead in this high-technology area, with the largest fast-breeder reactor ever constructed, the Superphénix, scheduled to begin operating this year in Creys-Malville, France. Superphénix is a joint project of France, Italy, the Federal Republic of Germany, Belgium and the Netherlands.

The report acknowledges that achievement of those goals may require financial support from the Community and its member states. It also calls for more international cooperation on nuclear energy, praising a 1984 agreement by Belgium, France, Italy, the Federal Republic of Germany and the United Kingdom to pool their resources and programs for developing fast-breeder reactors.

Nuclear Benefits

In describing the advantages of nuclear power, the Commission report emphasizes economics and politics.

Coal-generated electricity costs from 30 percent to 88 percent more than nuclear-generated electricity in the six E.C. member states with nuclear programs, according to Commission figures.

Because of its great energy density, uranium, the raw material for nuclear energy, can be stored in large quantities at low cost. In addition, it expends only a small fraction of its energy content when used in present-generation reactors. The remainder can be utilized by fast-breeder reactors, which thus produce "virtually renewable energy," the Commission explains.

An important strategic advantage of uranium, the report notes, is that the countries that provide it are different from those that supply the Community with oil and natural gas. Furthermore, the uranium producers are not all in the same geographic areas or spheres of political influence.

The report expresses concern, however, about recent cutbacks in uranium prospecting following a drop in uranium spot-market prices. The Community should encourage member states and companies to continue prospecting activities, with E.C. support if necessary, on a scale that is independent of the state of the market at a given moment, it states.

Some Obstacles

On a more pessimistic note, the Commission explains that expansion of nuclear power has been slowed somewhat by problems with public acceptance, uncertainties about energy demands, conflicts between local and national authorities and the priority given by some member states to domestic fossil fuels.

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Furthermore, the commitment to nuclear energy varies widely among the 10 member states, it notes. The strongest advocates of nuclear energy are France, where nuclear power produced 48 percent of electricity in 1983, and Belgium, where the nuclear share was 46 percent. There has also been progress in the Federal Republic of Germany and the United Kingdom, where the nuclear share of electricity production in 1983 was 18 percent and 17 percent respectively.

Nuclear power produced only 3.2 percent of electricity in Italy, and only 6 percent in the Netherlands. Four member states -- Denmark, Greece, Ireland and Luxembourg -- have not adopted nuclear energy programs.

