

'The nuclear age is also beginning in West Germany' from the Süddeutsche Zeitung (6 March 1957)

Caption: On 6 March 1957, the German daily newspaper Süddeutsche Zeitung highlights the growing importance of using nuclear power as an energy source in Europe and in the rest of the world.

Source: Süddeutsche Zeitung. Münchner Neueste Nachrichten aus Politik, Kultur, Wirtschaft und Sport. Hrsg. Friedmann, Werner; Goldschagg, Edmund; Schöningh, Dr. Franz Josef; Schwingenstein, August ; R Herausgeber Friedmann, Werner. 06.03.1957, Nr. 56; 13. Jg. München: Süddeutscher Verlag. "Das Atomzeitalter beginnt auch in Westdeutschland", p. 7.

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The nuclear age is also beginning in West Germany

Electricity from nuclear energy to be cheaper than that from coal / securing sources of uranium supply

(SZ) In the question of *electricity generation from nuclear energy*, as with all new discoveries and developments, there is a sharp divergence of view on the need for and the efficiency of the process. The calculations of the cost involved vary between 2.3 and almost 18 pfennigs per kWh, while the price for a remote coal-fired power station would be about 5-6 pfennigs per kWh. All the major countries are not only paying a great deal of attention to the problem, they are also, in a number of cases, already devoting large sums of money thereto. This is because it has, of course, been recognised that, in the long term, the universally increasing demand for electricity can no longer be met exclusively from traditional energy sources. Even North America and Canada, which have huge coal deposits and suitable sites for hydroelectric power at their disposal, are building large nuclear power stations as fast as they can with support from the state. Great Britain published a White Paper outlining a ten-year plan for a development programme as long ago as 1955 (and later added further amendments). This proposes spending around three hundred million pounds on building 11 plants to generate a total of 4 million kW, in addition to the Calder Hall power station that is already on stream.

For the *Federal Republic* it was not possible to give consideration to nuclear energy until the nuclear ban was lifted. Now it has to catch up quickly, since it does not possess sufficient raw materials and water power sources to meet the demand for electricity which will probably double within 10 years and triple within 15 years. On the other hand, the lack of capital and the high capital costs mean that experiments with possibly uneconomic power stations are out of the question. The investment required amounts to approximately three times as much as for the construction of thermal power stations.

Few uranium deposits in the Federal Republic

Until recently, it seemed that the intention in West Germany was to wait and see what the experiences of the USA and Britain, in particular, would reveal before adopting the most economically efficient of the well over 100 reactor systems. Now things are apparently moving more rapidly. The Federal Minister for Nuclear Energy, Dr Siegfried Balke, will be travelling to Canada and the United States in the next few days (cf. SZ No 51). There, he is expected to conclude a second treaty on the provision of nuclear fuels as well as on the operation of future power stations. In his view, the uranium deposits in West Germany are sufficient only for the operation of the Karlsruhe reactor.

The Minister will be accompanied by Dr H. Römer (honorary adviser on the use of nuclear chemistry and physics in industry for the Süddeutsche Bank AG, Munich). In his view, West Germany should build nuclear-powered power stations as quickly as possible. An initial consideration would be to use plants that are fuelled by simple uranium, which costs \$40 per kg, as against 9 % strength uranium which, at present, costs almost \$15 400 per kg. However, it must be taken into account here that plant costs, an important factor for West Germany, are in inverse proportion to the quality of the fuel. Our country would probably be better off in economic policy and technology if it were to gear its later plans to the new development of thorium-powered reactors.

There are now reports that the *Rheinisch-Westfälisches Elektrizitätswerk AG* (RWE), Essen, is planning to order a small nuclear power station generating 10 000 kW from the USA (cf. SZ No 52), although the company management does not give a very optimistic assessment of the electricity pricing that will result from this. They emphasise that every cost increase of one pfennig per kWh would increase the burden on RWE by an annual amount of about DM 200 million.

Canada calculates 0.4 pfennigs per kWh

Other cost calculations are also considerably higher than the 2.3 pfennigs per kWh arrived at by the nuclear industry department of a large American bank. The Director of the American Oak Ridge Atomic Research

Center, Mr Lane, calculates the cost per kWh at a minimum of 1.1 pfennigs (provided that the theoretical possibility of producing more fuel than is consumed can be realised in practice) and a maximum of 6.9 pfennigs. The British White Paper arrives at 2.9 pfennigs. In the view of Sir Edwin Plowden, Director of the UK Atomic Energy Authority, this price will definitely be held in the planned *British* power stations. However, this does not apply to Calder Hall, where the figure is 5.2 pfennigs per kWh, since that facility is not so much concerned with the generation of electricity as with the production of the plutonium to be used for weapons. The calculations by the *Canadians* seem nothing short of Utopian. The hope there is to bring the price down to as low as 0.4 pfennigs per kWh at a later stage.

The calculations for *West German* power stations could be approaching those of the Americans, because the high capital costs must be offset to some degree by the lower expenditure on construction. What is more, the USA clearly intends to be accommodating towards the Federal Republic if it buys American reactors. It is still unclear as to whether the state will bear the considerable costs of safety measures at the plants that are to be operated by the private sector.

Bavaria is taking action

Given this cross section of costs, it is important to ask whether the prime consideration should be economic efficiency or meeting the demand for electricity in the Federal Republic. Our shortage of coal should be the guide. In 1956, we had to import 20 million tonnes (20 000 fully laden goods trains) of coal from the USA. Any disruption of import supplies could have incalculable consequences. We obviously do not have enough time left to wait for the calculations of operating costs from the more than 120 nuclear power stations now being built in other countries. Preparations are already being made in Bavaria to cope with coming events. A *permanent* nuclear industry group is to be set up in order actively to promote the projects. There is a view in some quarters that a power station with a capacity of 100 000 kW should be built, which would cost an estimated DM 120–150 million. The future experience of other countries would be the deciding factor in further planning. However, in the distant future, there is already the prospect of not only atomic fission but also of achieving an even greater energy yield from *fusion* which might generate even cheaper electricity from nuclear power.