

Hamburg Institute of International Economics (HWWA) (Ed.)

Article — Digitized Version

## Nuclear power station with helium turbine

Intereconomics

*Suggested Citation:* Hamburg Institute of International Economics (HWWA) (Ed.) (1968) : Nuclear power station with helium turbine, Intereconomics, ISSN 0020-5346, Verlag Weltarchiv, Hamburg, Vol. 03, Iss. 11, pp. 349-, <https://doi.org/10.1007/BF02930060>

This Version is available at:

<https://hdl.handle.net/10419/138071>

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burg (Container via Hamburg). Unfortunately by mistake the data on the "Container Terminal Hamburg" and the "Europakai" were incomplete and not correct. Therefore we publish again the data pertaining to these two installations for container operations in Hamburg.

Until the end of 1968 Hamburg Port will dispose of the following installations for the dispatch of ocean-going vessels used for container operations: 9 berths for container ships (full and semi-container ships) with a total length of quays of 1,700 meters, 180,500 squaremeters of container parks and 36,000 squaremeters of shed areas (for the crating of cargo in containers). At the end of 1968 Hamburg's container installations will consist of:

Container Terminal Hamburg (Waltershof)

7 berths, 146,000 squaremeters of container parks, 3 quay-sheds covering an area of 18,000 squaremeters. In future the container terminal can be further expanded and will then dispose of 14 to 16 berths and an abundant acreage of 1.5 mn squaremeters for operations.

Europakai/Shed 90 (Outerport/Vulkanhafen)

2 berths, 30,000 squaremeters of container parks and quay-sheds of 18,000 squaremeters.

### **Trainees from Developing Countries**

According to reports published by the German Industrial Institute, 8,441 trainees from developing countries have been employed in the Federal Republic of Germany at the end of June, 1968. Of

these trainees 2,313 came from Europe, 2,180 from Africa and 773 from Central and South American countries, while 1,312 originated from the Middle East, 1,184 from the Far East and the rest from South Asia. Of this total, 3,107 or 37 per cent were employed in the iron and metal using industries and 822 or about 10 per cent in the other manufacturing industries; 2,381 or 28 per cent worked for the civil service or services in the interest of the public while the other economic sectors shared the last quarter.

### **German Bank Participation in the Middle East**

Commerzbank is the first German big bank that with a bank participation has gained a direct footing in the Arabian area. Recently this banking institute bought 20 per cent of the capital

stock of Rifbank SAL, Beirut. Moreover, the biggest private bank of the Middle East, the National Bank of Kuwait, is holding a major participation in Rifbank. Apart from Lebanese businessmen Rifbank has the following partners: Commercial Bank of Kuwait, Kuwait Foreign Trading Contracting & Investment Co, Kuwait Investment Co and the Schroder-group,

London. Today Rifbank's fully paid up capital amounts to L £4 mn (approx. \$ 1.25 mn). Already since 1957 Commerzbank as the first German banking house is represented in the financial centre of Beirut. Commerzbank expects of this participation an active support of German-Arabian trade relations.

### **Currency Reserves Covering Imports of Four Months**

As shown by OECD-statistics the German Federal Bank is holding one of the largest official currency reserves with gold and foreign exchange to the value of \$ 7,280 mn, second only to the United States (\$ 13,160 mn). However, as measured by imports, adjusted for seasonal variation, in the 2nd quarter of 1968, the Federal Republic's currency reserves are only covering import requirements of 4.5 months, in the US of 4.9 months, but in France of 5.6 months. In Italy reserves to the tune of \$ 4,180 mn cover imports for 4.9 months, in Austria the reserves amount to \$ 1,340 mn and cover 6.7 months' requirements, while in Switzerland \$ 3,400 mn suffice for 9.5 months.

### **Nuclear Power Station with Helium Turbine**

Within the framework of the German nuclear programme, Gutehoffnungshütte, Oberhausen, will now establish a nuclear power station with a capacity of 25,000 kilowatt. This power station

will be the first one in the world to be equipped with a high-temperature reactor and a helium turbine. Experts are believing that the advantages of a high-temperature reactor can only be fully utilised if it is linked with a helium turbine. For in this case the steam generators, the blowing engines and the water supply pumps are obviated and initial expenditure will decline considerably. Moreover, the efficiency of the installation increases to more than 50 per cent. The result of these two factors is a reduction of power production cost by about 10 per cent.

The helium turbine is based on long practical experiences with gas turbines. In the nuclear power station Geesthacht an electrical efficiency net rate of more than 37 per cent is achieved already at a turbine inlet temperature of the cooling medium of 750° Celsius. This is a relatively high efficiency rate considering the rather small installed capacity of 25,000 kilowatt. The high-temperature reactor is cooled with helium under a pressure of 25 atmospheres, is graphite-moderated and uses rod-shaped fuel elements. Fissionable material is Uranium 235, to which Thorium has been added for the breeding process. In a few years many important problems will be solved in the nuclear power test station Geesthacht, problems that are caused by the direct connection of a high-temperature reactor with a helium turbine.