

## Inside Information

### **ČEZ is building its first large gas-steam power plant in the Czech Republic**

**Today, the ČEZ energy company has signed a gas supply contract for its planned 841MW gas-steam power plant in Počerady with the RWE Group; the general contractor of the investment amounting to approx. CZK 20 billion should be ŠKODA PRAHA Invest.**

“Development in the energy industry has been converging upon low-emission or zero-emission sources, which are primarily represented by gas-steam power plants, as these are highly environmentally friendly sources of electricity generation, the operation of which has nearly insignificant impact on the environment. In addition, with respect to the fact that the construction as such could start as early as in the next year, the project of the gas-steam power plant in Počerady is one of the anti-crisis measures, which the Czech economy may have a significant benefit from,” said Martin Roman, the Chairman of the Board of Directors and the CEO of ČEZ.

Due to the lowest investment cost of a megawatt installed, a short period of construction and a high thermal efficiency, gas-steam power plants have been considerably favoured in comparison to other sources utilizing fossil fuels. The penalty of these advantages is the need for high-quality and expensive fuel for the operation of the gas turbine.

“The realization of the gas-steam power plant project is enabled by stipulation of a fifteen-year gas supply contract with the RWE Group as provision of a long-term supply from a reliable partner is of key importance,” said Daniel Beneš, Senior Deputy Chairman of the Board of Directors and Managing Director of ČEZ upon signature of the contract, and added: “Another great advantage of the project is the fact that the new source is to be built within the premises of the existing power plant.”

Gas-steam power plants are highly flexible sources, which are able to stabilize the electrical power system. The ČEZ production portfolio has been experiencing a lack of such a source for the time being. Operation of gas-steam power plants serves to cover peak hours of electricity consumption. This source may be connected to the grid in a few minutes after its start-up. Only hydro-electric power plants are able to respond faster.

“Upon increase of production from renewable sources fast regulation of output will play more and more important role. A characteristic feature of gas-steam power plants is their high flexibility, due to which they are able to respond promptly to the needs of the electrical power system and thus to provide balance between consumption of electricity and its generation,” said Alan Svoboda, Sales Division Director of ČEZ.

The installed output of the gas-steam power plant in Počerady is to be 841 MW. Today, the general contractor of its construction, ŠKODA PRAHA Invest, has signed a contract for delivery of two gas turbines, both with the capacity of 284 MW, with the supplier, the Siemens company. ŠKODA PRAHA Invest also concluded a contract for delivery of a gas turbine with the capacity of 273 MW with ŠKODA POWER and a contract for delivery of an exhaust-heat boiler with SES Tlmače.

At present, proceedings concerning the analysis of impacts of the project on the environment (EIA) are being held; ČEZ submitted the respective application as early as in December last year. The construction of the gas-steam cycle as such is to be commenced by the contractor in October next year, however, certain activities have started to be performed this year already, in particular, the designing stage, or, within the premises of the power plant, for

instance a repair of the water channels, etc. The power plant could generate first megawatts of electricity as early as in April 2013.

The attained guaranteed net efficiency of the gas-steam cycle amounts 57.4 %. Gas-steam power plants produce considerably less emissions in comparison to coal plants, they do not produce any sulphur oxides emissions or dust, emission of nitrogen oxides are ten times lower and CO<sub>2</sub> emissions are considerably lower as well – by up to 70% lower in comparison to the existing standard brown-coal units.

From the energy industry point of view, the Czech Republic counts itself as being dependent on import of energies. In addition, such dependence of ours is going to increase, as we will be running out of our deposits of brown coal, regardless the efforts aiming at reduction of energy demand. The only way how to achieve maximum energy security is diversification, namely both from the point of view of countries, from which we import sources of energy, and from the point of view of decision concerning sources used for electricity generation. We certainly have a scope for construction of gas-steam power plants. This type of electricity generation has no significant representation in the Czech Republic. Based on statistics of the Energy Regulatory Office (Energetický regulační úřad), production of electricity using gas sources in the Czech Republic amounts to 3% annually.

At present, the ČEZ Group has been developing several projects of gas-steam power plants - in cooperation with the MOL Group it has been developing gas-steam power plants in Slovakia and in Hungary and at the same time it is considering the possibility of construction of gas-steam units in its own power plants Skawina (Poland) and Varna (Bulgaria). At the end of April, the ČEZ management approved a business plan of a new gas-steam power plant in Mělník location.

#### Information on Počerady power plant:

The preparation of the project of Počerady power plant started in October 1959, the construction started in February 1964. In the first stage, the construction of Počerady I Power Plant was performed, which means units 1 through 4. These were put into operation during 1970 and 1971. In the second stage, Počerady II Power Plant was built, specifically its units 5 and 6, which were put into operation in 1977. The power plant thus became the first power plant in the then Czechoslovakia where exclusively units with output of 200 MW were installed. At the beginning of 1994 however, with respect to the reduction programme for coal power plants, unit No. 1 was put out of operation. In October of the same year, units Nos. 5 and 6 became the very first units subject to desulphurization in the Czech Republic. Desulphurization of the remaining units was completed in autumn 1996. The present output of Počerady power plant amounts to 5x200 MW.

During 2000 through 2003, gradual general repairs of units 3, 2 and 4 were performed and during 2006 and 2007, units 5 and 6 were shut down for the same reason. As the operation period of the generating unit is eight to ten years, unit No. 3 was subject to general repair in 2003 again. In two years, unit 2 will be shut down as well. It is possible to say that in case of these units, this will concern final inspections and repairs as after ten more years of operation, the units will have reached the end of their service lives.

At present, the Počerady power plant counts itself as being one of the largest production sources among coal power plants of the ČEZ Group. On an annual basis, the Počerady power plant generates approximately 7 TWh of electric energy upon the average consumption of heat in fuel reaching 10.25 GJ per MWh generated.

Originally, the power plant was intended to be built in Egypt but as the contract failed to be realized in the 1950s, the completely prepared African project was used in Počerady instead. For this reason, the turbine halls of the units are built from prefabricated blocks of reinforced

concrete and they lack basement. The turbines and generators as such are placed in individual boxes, which are separated from the each other. Each box has two sliding roofs and above the boxes, there are two bridge cranes enabling assembly and disassembly of the turbines or generators. This design therefore lacks a typical turbine hall, which is present in most of the other coal-burning power plants. The once-through boilers are of the so-called semi-outdoor design. This means that all floors are made of steel structure and they are only steel-plated on the outdoor side in the height ranging from 15 to 50 metres. The coal-feeding facilities are made of metal sheet as well.