Electricity Generation and Distribution in Poland

Electrical Power Systems in Poland

U.S. Commercial Service Poland

Overview

Production of machinery and equipment for electrical power industry has traditionally been well developed in Poland. Moreover, several international power concerns, specifically ABB, Alstom, Siemens and Foster Wheeler have made significant equity investments in Poland and have developed the production capacity of local manufacturing.

The production of energy boilers is dominated by three manufacturers: Rafako (coal, lignite, gas and oil fired conventional boilers, fluidized bed boilers, heat recovery steam boilers and parts), Foster Wheeler Energia Polska (industrial boilers, mainly circulating fluidized-bed boilers CFB and parts) and Sefako (water-tube and steam boilers, and parts). Alstom is involved in the manufacturing of steam and gas turbines and parts, while ABB manufactures power station generators, power system transformers, high and medium voltage electric generator sets and apparatus. Siemens manufactures gas turbine and generator parts.

Current market demand does not satisfy production capacity of local manufacturers, and significant a portion of production is exported. Polish and international companies that have production facilities in Poland are contracted for modernization works in power industry abroad, which results in the export of adequate equipment. Machinery and equipment that are not manufactured locally, including the more technically advanced equipment that is needed to fulfill contract obligation in the local market, are imported. Many international power concerns have successfully been examining sales opportunities in Poland.

Complete statistical information on domestic production of power industry equipment is not publicly available; however the export data shows that the value of local production must be extensive. In 2008, exports achieved the level of $ 1.2 billion, representing an increase of 32% in comparison to 2007. Production of central heating boilers and radiators was $ 963 million in 2008, with exports of central heating boilers reaching a value of $ 304 million.
Production of steam generating boilers and parts was $557 million in 2008, while exports were valued at $307 million. The production of steam and gas turbines is mainly directed at the local market since exports are not significant ($24 million), while export of parts for steam and gas turbines was substantial and achieved respectively $264 million (steam turbine parts) and $79 million (gas turbine parts) in 2008. Electric generating and distribution sets export value reached $114 million and landed on the top of the Poland’s 2008 electrical power system export list. The geographical scope of Poland’s export of electrical power systems is diversified and depends on each product category, with Germany, Italy, Great Britain, Finland, Romania, and Russia usually leading the list.

The total import figures of electrical power systems equipment in 2008 reached $772 million, which represented a 25% increase in comparison with 2007. The majority of Poland’s imported products in 2008 were: central heating boilers and parts $203 million (imported mainly from Germany, Italy, France, Czech Republic and Netherlands), turbine pumps $149 million (Italy, Germany, Spain, France and China), electric generating sets $130 million (Germany, United States, France, Spain and Italy), parts of steam turbines $109 million (Switzerland, Germany, Mexico, and Great Britain).

Total imports from U.S. were valued at $28 million representing a 73% increase in value compared to 2007. The major products imported from the U.S. included electric generating sets ($19 million in 2008), turbine pumps ($4 million) and parts of steam turbines ($3 million). The U.S. is the second largest exporter of electric generating sets into Poland. The Polish market presents significant sales opportunities for U.S. companies that manufacture electrical power equipment, as Polish companies are familiar with and extremely receptive to U.S. products in the power sector. The U.S. is particularly strong in co-generation and clean-coal technology, two primary areas of interest to the Poland power sector. U.S. manufacturers may also benefit from the heavy environmental emphasis of the new power sector’s strategic focus.

**Best Prospects/Services**

- Circulating fluidized-bed boilers CFB
- Steam generators of supercritical parameters
- Parts of steam turbines
- Turbine pumps
- Electric generating sets and rotary converters
Opportunities

According to the Ministry of Economy document “Forecast of demand for energy and fuels by 2030”, Poland’s final energy demand is planned to grow from 111 TWh in 2007 to 172 TWh in 2030, constituting a 55% increase. Electric energy demand is estimated to rise from 151 TWH to 217 TWh during that time. This demand is going to be met by construction of new power plants and the modernization of existing facilities. From 2008 to 2015, investments of 3758 MW new power blocks are planned, and 6324 MW will be modernized. Currently, 80% of energy boilers, turbines and generators installed in Polish power plants are above 20 years. In order to meet the strict EU environmental requirements (Poland committed to limit CO2 emissions by 20% and set 20% share of renewable sources in Poland’s energy production balance in 2020) the modernization of existing installations is necessary. It will also be important that investments are undertaken in the area of improving energy efficiency in the Polish power generation and transmitting sectors.

Current Polish power plants energy efficiency is calculated at 36%, with energy loss by power plants estimated at 24 TWh annually. The Polish power transmission and distribution system generates energy losses of 9.36%, which is one of the highest in Europe. Existing power generation and network losses constitute of 25% of total energy production.

New investments are planned especially in the area of renewable energy, high-effective cogeneration systems and nuclear energy. Poland has been obliged by EU cogeneration directive to introduce a policy that will facilitate the development of electric energy production from cogeneration sources (system of red certificates, obligation of purchase electric energy produced from CHP plants). Highly effective cogeneration systems do not pollute the environment.

According to Poland’s energy policy, by 2030 the Polish government plans to introduce nuclear energy into Poland. The program envisages construction of two nuclear power plants of 3000 MW each, with the first plant to be commissioned in 2020. The National Program for Nuclear Energy Development plans to be ready for consultations by the middle of 2010, with plans approved by the Polish Parliament by the end of 2010. The Polish Energy Group PGE has been assigned the task of organizing a consortium to build and operate the first power plant. PGE is currently in the process of signing memoranda of cooperation with interested partners and creating several working groups consisting of nuclear technology providers and investors interested in financing the project. The working groups will analyze the technical and financial viability of the introduction of each particular technology in Poland. The final decision on PGE’s partner is expected to be completed by October 2010. Then the consortium, with 51% control by PGE, is expected to execute the project.

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