

## Grupa Enea's new 1075 MW power plant transferred to operation

12/19/2017



On 19 December 2017 an official ribbon-cutting ceremony of one of the most important investment projects on the Polish energy market has taken place. The project, implemented in the EPC-formula (Engineering, Procurement, Construction) by Polimex-Mostostal, involved the construction of a new 1,075 MW coal-powered unit, operating on supercritical steam parameters, at Enea's power plant in Koźienice. This is the largest and the most modern facility of this type in Europe.

Grupa Enea is opening a new chapter in the history of the Polish energy sector, by transferring to operation an investment that is important for the national power and electricity system -- a 1075 MW gross supercritical parameters power unit in Elektrownia Koźienice (power plant). On 19 December 2017 an investment transfer to operation certificate has been signed, thus officially confirming completion of the unit construction. The most modern power generating unit in the country strengthens Poland's energy security and Grupa Enea's market position.

The so-called B11 [Unit 11], as referred to by its abbreviation, is the Grupa Enea's largest investment. A high-performance power unit has a gross power of 1,075 MW.

Through the use of advanced technological solutions for supercritical steam parameters the unit achieves the efficiency at the level of 45.6%, which allows for the reduction of carbon dioxide emissions by about 25% in relation to emissions from the existing coal-fired units.

The most modern solutions in the scope of boiler, turbine and generator design of the new unit in Koźienice, allow to obtain the same amount of electrical power

with with a lower consumption of fuel, which is hard coal. . This allows the B11 to achieve the best environmental parameters and to optimize the cost of power generation.

1075 MW power, high efficiency and high availability of the unit of over 92% make the B11 a record-breaker in the history of the domestic energy sector. The unit is also one of the largest and most efficient of this type in the world.

The B11 strengthens exponentially the Grupa Enea's and Poland's power-generating capacities, thus increasing the country's energy security.

### **Environment-friendly power**

The unit has been designed to meet the most stringent environmental standards introduced in the European Union. The B11 not only meets, but also exceeds the requirements coming into effect from the 2021, pursuant to the guidelines of the Industrial Emissions Directive. This result has been achieved through the use of modern systems and installations, including the SCR (selective catalytic reduction), electrofilters and Flue Gas Desulphurization (FGD) with wet lime method. For the environmental protection also the unit's high efficiency is of significant importance. The new unit in Elektrownia Koźienice also saves water - the unit operates in the so-called closed circuit. This is allowed by the 185-meter high cooling tower. Its task is to lower the temperature of water used in a closed circuit for cooling the entire system. During the unit's operation, this gigantic structure mainly emits water vapor.

### **Challenging investment from the safety perspective**

Construction works on the 1,075 MW unit began in 2012 and the cornerstone for the B11 was laid on 21 November [2012]. The General Contractor for the investment was a consortium consisting of Hitachi Mitsubishi Power Systems Europe GmbH (MHPSE) - one of the world leaders in power-generation installation and Polimex-Mostostal - a Polish leader in the implementation of power and infrastructure investments. The Mitsubishi Hitachi Power Systems Group supplied the boiler with coal bunkers, mills and combustion control instrumentation/devices.

The turbine and generator set that are the heart of the new unit, along with their components and flue gas desulphurization equipment come from the Japan-based

parent company Mitsubishi Hitachi Power Systems Ltd. Polimex-Mostostal was responsible for key civil, structural and finishing works.

At its peak, some 3200 specialists were working on the construction site at the same time. The entire project was composed of about 30 thousand specific tasks. Their precise execution has resulted today, following many successful tests and trials, that the entire complex installation generates electricity.

### **Grupa Enea strengthens its market position**

The new unit has increased the Grupa Enea power-generating capacities to 6.2 GW. The Kozenice power plant itself has increased its power-generating capacity by one-third -- to the level of about 4,000 MW. Some 13 percent of the electrical power generated in Poland will come from Elektrownia Kozenice, second-largest power plant in the country.

Construction of the B11 is part of the implementation of the most important objectives of the Enea Group's development strategy. Along with the successful completion of the acquisition of Elektrownia Połaniec, the Enea Group confirms and strengthens its position of an innovative resource and power company, the runner-up in power generation in Poland, with key influence on the country's energy security.

The electrical power generated by B11 with respect for the environment, distributed through the national grid, will reach Polish households, large and small industrial plants, factories and enterprises. The investment is consistent with the policy of strengthening the energy security and promotes the economic development of the country.

### **KRZYSZTOF TCHÓRZEWSKI, MINISTER OF ENERGY:**

In the coming years the Polish energy sector will face many new challenges among others, in connection with the need to meet the requirements of EU climate policy. [To confront these challenges] new investments in power generation facilities are needed. Enea's modern and technologically advanced project in Kozenice is an important element of the energy sector modernization. Its implementation is consistent with the Ministry of Energy policies.

## **MIROSŁAW KOWALIK, ENEA CEO:**

Transfer to operations of a modern, supercritical steam parameters unit in Elektrownia Koźienice is a special moment in the history of the Enea Group. We have completed our largest and technologically-advanced investment in history with the involvement of many people, companies, institutions, authorities and banks. The new unit in Elektrownia Koźienice is an important pillar of Poland's energy security, and the Polish electrical power grid. The B11 proves that we can generate electricity in Poland on the basis of the carbon fuel with respect for the environment. This success has been possible thanks to the work and commitment of many people. It is also an example of professional cooperation of all parties. A warm thank you is deserved to all those involved in the investment project.

Our group, in accordance with the Development Strategy, consistently, step-by-step, increases its electricity-generation capacities. Our new, modern, high-performance unit satisfies the growing demand for electricity of the national economy. The B11 is a stable source of electrical power using domestic fuel and will be an important foundation for the energy security of the Polish power sector and the economy.

Elektrownia Koźienice is a strategic point on Poland's energy map. We are taking care here of the country's energy security and [provide] electrical power in the households of many millions of Poles. I would like to extend a special thank you to everyone involved in the project and the implementation of the investment at its different stages. Thanks to an excellent organization and cooperation of many entities, and most of all, work of many thousands of specialists, the B11 is generating electrical power for our Customers. This has been our joint, great success.

## **KRZYSZTOF FIGAT, CEO of ENEA WYTWARZANIE:**

The B11 is the largest investment from the time of construction of our power plant. The new unit gives us -- as electrical power generating entity and the employer- a perspective of functioning at this location for at least another 40 years. 19 December 2017 is the crowning achievement of a hard work of all involved in the project

and proof that the investment has been implemented with the utmost care and commitment. I would like to thank [all those involved] for this effort. We are proud that such a modern unit is now in operation at Elektrownia Koźienice, and that the

electric power generated here is supplied to every ninth person in Poland.

Today, we are becoming a permanent fixture in the history of the Polish energy sector. The B11 is the first such a modern installation in our country generating electricity from coal. With this project we have paved the way for subsequent modern energy units, which are currently under construction in Poland. With the transfer to operation of the B11 we are confirming the importance of the energy sector professionals' mission to Enea, which is ensuring the availability of electricity supply.

### **ANTONI JÓZWOWICZ, CEO of POLIMEX-MOSTOSTAL:**

Construction of the unit in Kozenice is a huge project -- some 130 buildings on the area of 37 ha, involvement of some 25 thousand persons, over 2 thousands activities in the project's schedule, 210 thousand of cubic meters of concrete, 40 thousand tons of steel structure manufactured by Mostostal Siedlce; it is a joint project of professionals from many countries. The construction and transfer to operation of one of the most modern and efficient power units in the world has again confirmed that Polimex Mostostal, as the leader of the Polish construction sector, has the proper competences to carry out very difficult and ambitious projects.

This is our joint success- a success of the Polimex Mostostal and Mitsubishi Hitachi Power Systems consortium's professionals. Together, we have completed a world-class project. It is a great satisfaction for us that our Capital Group has played a part in increasing the energy security of the country, while maintaining respect for the environment. It is another step in the development of the Polish energy sector.

### **SATOSHI UCHIDA, CEO OF MITSUBISHI HITACHI POWER SYSTEMS**

Mitsubishi Hitachi Power Systems (MHPS) has supplied all core components, such as steam turbine, generator, coal-fired boiler and associated components as well as the flue gas cleaning system. It is a great honour for us to contribute to Poland by completing Kozenice Unit 11 and by dispatching stable and economical electricity to this beautiful country. During the construction phase we successfully overcame challenges and hardships owing to the sincere support by ENEA and all Polish people involved.

## **YASUO FUJITANI, SENIOR EXECUTIVE VICE PRESIDENT OF JAPANESE PARENT MHPS**

Poland is definitely a key market for our company, and successful cooperation with our Polish partners under the leadership of Enea in the Kozenice project 11 is important in the context of building our market position. Therefore, it was important to begin commercial operation in accordance with the project schedule. This was only possible with many efforts and great involvement of all interested parties. We are very proud of this most modern power plant and work of the teams involved.

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