Grid support and CHP

NEW B36:45 V20 IN OPERATION

Medium speed engines from Rolls-Royce provides 60 MWe electricity for companies and homes in the town of Tabor and Sezimovo Ústí in the South Bohemian Region of Czech Republic.

The independent power provider C-Energy has an overall strategy to reduce heat and electricity production from coal and expand their energy business. In 2015 they upgraded parts of an old coal fired central heating plant into a modern power plant with four 20-cylinder B35:40 gas engines. At the time, Plana was the very first natural gas power plant based on medium-speed gas engines in the region to go into operation supplying heat and power to the local grid.

In 2019 the plant was extended with two 20-cylinder gas engines from the new B36:45 series, supplying additional 23 MWe to the grid. At 600 KW per cylinder, this is the largest and most powerful medium speed engine that has been developed and manufactured by Rolls-Royce. It set a new standard in power and efficiency with exceptionally low fuel consumption and emissions of NOx, CO2, SOx and particulates.

With the extension, the gas engines of the power plant have the capacity to deliver more than 60 MWe electricity, and a similar amount of heat. The gas fired plant is considered as an additional step towards a green future for the region and country where electricity and heat are still predominantly generated by coal-fired plants.
The extended plant with the two new B36:45V20 engines went into operation in the beginning of 2020.

The Rolls-Royce medium-speed engines will enable C-Energy to operate the plant efficiently, both in terms of cost and time. Both the B35:40 and the new B36:45 medium speed gas engines are flexibly designed for different operating modes. They can be used to generate base-load or peak power or can operate in combined cycle. Heat from the engines can be used to generate steam in the heat recovery steam generators, and the power plant can also be used for district heating by utilizing hot water from the engines.

The engines quick-start capability means the engines can ramp up to their rated load within five minutes, giving the plant access to the amount of power and heat needed within just a short space of time. In addition, the new engines will be certified to provide primary and secondary grid regulation.

“CHP plants with Rolls-Royce natural gas engines are a reliable alternative to coal-based plants and are significantly more environmentally friendly. Our medium-speed engines enable C-Energy to operate the plant efficiently, both in terms of cost and time,” explained John Kristian Johnsen, Regional Sales Manager Europe at Bergen Engines.