

owned by the Crown and managed by English Heritage, while the surrounding land is owned by the National Trust.

Stonehenge was produced by a culture that left no written records. Many aspects of Stonehenge remain subject to debate. This multiplicity of theories, some of them very colourful, are often called the "mystery of Stonehenge". There is little or no direct evidence for the construction techniques used by the Stonehenge builders. Over the years, various authors have suggested that supernatural or anachronistic methods were used, usually asserting that the stones were impossible to move otherwise. However, conventional techniques using Neolithic technology have been demonstrably effective at moving and placing stones of a similar size. Proposed functions for the site include usage as an astronomical observatory, or as a religious site.

When Stonehenge was first opened to the public it was possible to walk amongst and even climb on the stones, but the stones were roped off in 1977 as a result of serious erosion. Visitors are no longer permitted to touch the stones, but are able to walk around the monument from a short distance away. English Heritage does, however, permit access during the summer and winter solstice, and the spring and autumn equinox. Additionally, visitors can make special bookings to access the stones throughout the year.

УДК 621.548

## **PROSPECTS OF WIND POWER DEVELOPMENT IN THE REPUBLIC OF BELARUS**

Орлюк К.С., Тимохова А.Ю. (ЭФ), Острейко С.В.  
Белорусский национальный технический университет  
Минск, Беларусь

Belarus has no indigenous energy resources. Only 15% of its energy resources cover the needs of the country, the remaining 85% is imported - mainly from Russia. In recent years there has been a constant rise in prices on fuel and imported electricity. This growth will continue until the world prices are reached. In this connection, it is extremely important for Belarus to include renewable energy sources, one of which is a wind, in the fuel and energy balance of secondary energy resources.

The potential of wind energy is estimated to equal 1.9 – 2.0 million tons of oil equivalent (Mtoe) per year. The potential of wind farm energy

is estimated at 220 billion kWh. The wind energy sector is growing rather slowly in Belarus, as investors are faced with significant problems in the Republic of Belarus, and the development of wind farms is not too profitable for local power systems. There are only two regular wind turbines existing in Belarus at present. Their power rating equals 270 kW and 660 kW respectively and they are situated in the village of Druzhnaya in the Myadel Region. Architectural designs have been worked out for the construction of Belarus largest wind turbines with the power rating of 1.2 MW, to be situated in the village of Grabniki (Unitary Republican Enterprise "Grodnoenergo"). The government has commenced an analysis of the wind energy sector development program in Belarus for the years 2008–2014. It is expected that wind farms should be commissioned in 2012 with the total power output of 5.2 MW, by 2014 – 15 MW. The projects are currently under development and envisage establishing partnerships with local power systems in order to construct wind farms with the estimated total power output of 20 – 30 MW each. In order to effectively implement wind energy related projects, it is necessary to carry out actual measurements to determine the size of wind energy resources, to launch the production of equipment suitable for Belarus climatic conditions as well as to gather experience in designing, implementing and running wind farms.

The latest wind turbine Lagerwey 80 was installed in the area of Zhukov on May 22, 2011. The station optimally uses the power of wind flow, which allows to produce energy with the stable wind speed of 2-3 m/s. When the wind speed is above average, the station goes to a nominal power for 80 kW. This station is connected to the central power grid and all the energy that is produced by the wind farm is acquired by the state.

The Republic of Belarus has 0.41% of the total regional capacity for wind energy and ranks at #70 in the world for Wind Energy installed capacity.