

**Bulgaria:**  
**Energy from biomass**  
Wood used to generate electricity



Bulgaria



Certification:  
**Gold Standard**

**Key Facts**



**Background**

Bulgaria has a diverse electricity mix including renewables, thermal, and nuclear. However, it remains one of the most energy inefficient countries in the EU. It relies heavily on coal and gas imports for energy. Technological challenges and a lack of investments further contribute to the low energy efficiency. Bulgaria is traditionally a net exporter of electricity, exporting about 20% of all that it produces. However, the export market has shrunk due to export tariffs and self-sufficiency of the neighbouring countries in energy production. A shrinking market and the EU energy plan have pushed Bulgaria to increase its share in renewable energy production. The European union's energy plan focuses on increasing energy efficiency, adopting renewables and emissions decreasing carbon emissions by 2030. The share of electricity from renewables in Bulgaria has almost doubled in the past 12 years. The country has exceeded the mandatory 16% share of renewable energy production set in the EU 2020 strategy.

Nonetheless, consumers are yet to benefit from this success. The high energy renewable prices remain a sensitive issue, creating discontent and social tension for EU's poorest nation. Following Bulgaria's presidency of the council of the European Union in 2018, the government is seeking to increase the share of renewable energy and enhance cross-border integration of energy infrastructure and markets.



**The Project**

The project is situated in the Sviloza territory, near the town of Svishtov on the right bank of the Danube river. The aim of the project is to utilize available waste biomass residues – byproducts of wood processing at the Sviloza pulp processing plant as fuel. The biomass boiler has a capacity of around 14MW, equating to roughly 157,000 MWh per year, replacing roughly 117,000 MWh of coal-fired electricity. In terms of CO<sub>2</sub> emissions, the project avoids roughly 80.000 tonnes per year. In addition to reduced carbon emissions from the fuel switch, the project also reduces methane emissions from the decomposition of wood waste, which had previously been stockpiled on-site.

**Location:**

Veliko Tarnovo, Bulgaria

**Project type:**

Renewable Energy – Biomass

**Total emission reductions:**

» 83,000t CO<sub>2</sub>e p.a. «

**Project standard:**

Gold Standard

**Project start date:**

January 2004

**Sustainable Development**

By supporting this project you'll contribute to the following Sustainable Development Goals:



**SUSTAINABLE DEVELOPMENT GOALS**

While focusing on reducing greenhouse gas emissions, all our projects also generate multiple co-benefits. These are supportive of the United Nations Sustainable Development Goals.



**Clean water and sanitation**

The project reduces reliance on coal for energy. This is important as coal is a particularly polluting energy source, resulting in respiratory illnesses being the 3rd biggest killer of children under the age of 5, according to the WHO.



**Affordable and clean energy**

The project will displace the use of fossil fuels. Biomass is a clean and cheap source of renewable energy. The project reduces air pollution associated with coal based fuels.



**Decent work and economic growth**

Biomass energy generation technology requires specialized expertise. Implementation of such technology comes with the need for trained manpower to operate and maintain the system. The project employs ten people on a full-time and permanent basis.



**Industry, innovation and infrastructure**

The project helps Bulgaria to stimulate and commercialise the use of biomass energy technologies and markets. It also acts as a good model for further biomass investments in the country.



**Climate action**

The project contributes to the mitigation of climate change and contribute to the UNFCCC 2016 Intended Nationally Determined Contributions, it reduces greenhouse gas emissions. The avoids 83,000 tCO2 annually.



**Life below water**

Energy from biomass does not threaten forests. Biomass is produced from waste by-products. Furthermore, the use of wood pulp as biomass reduces methane emissions which would have been released if the wood were left to decay. This is especially important as methane is a very potent greenhouse gas being 21 times more damaging than CO2.





## Technology brief – how it works

Biomass refers to biological material derived from organic matter such as wood and organic wastes. Biomass may be grown for the purpose of generating heat or power, but in the case of this project, the biomass is locally available agricultural waste. During combustion, biomass releases only the amount of carbon dioxide bound during the lifespan of the plant. As long as the extraction of biomass is less than the annual growth of the plant it derives from, biomass can be considered to be a climate neutral fuel.

The plant operated using suspension-fired boilers, designed to burn ground rice husk in suspension. This particular boiler technology was adopted because of the potential to produce high quality ash, which is suitable as a substitute ingredient for cement. This eliminates the environmental issue of ash disposal while at the same time reduce GHG emissions from cement manufacturing.



## Project Standard



The Gold Standard is an award winning certification standard for results based project finance and is recognised internationally as the benchmark for quality and rigour in certifying environmental and socio-economic project outputs. Established in 2003 by the World Wide Fund For Nature (WWF), the Gold Standard today is trusted and endorsed by NGOs, governments and multinationals including United Nations agencies worldwide.

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