

TGF Project Profile : Biomass and Natural Gas Fuel Switch Project in Kirov Oblast, Russia

The Project Activity

The biomass and natural gas fuel switch project is a Joint Implementation project developed between the Russian Federation and the investor countries and companies of the Baltic Sea Region Testing Ground Facility (Iceland, Norway, Sweden, Denmark, Finland and Germany, DONG Naturgas, Fortum, Kymmivoima, Kerevan Energia, Gasum, Outukumpu, Vapo and Vattenfall Europe (Berlin) and Vattenfall Europe (Generation)) and the Danish Environmental Protection Agency (DEPA) for the account of the Kingdom of Denmark. The project proponent is the Energy Saving Agency of the Kirov Oblast, a State Unitary Enterprise. The project developer and author of the Project Design Document is the Danish company Force Technology and its subsidiary FORCE Technology Rusland (St. Petersburg), which has been working in conjunction with DEPA.

The project proposes conversion of 120 municipal boiler houses from coal and mazut to biomass and natural gas. The project will reduce GHG emissions by reducing the carbon intensity of the fuels consumed in the region.

Technology

The project activity focuses on conversion of 75 boiler-houses from mazut and coal to natural gas and 45 boiler-houses from mazut and coal to biomass. The project involves installation of new modern gas- and biomass-fired boiler-houses through retrofitting of old currently inefficient ones and installation of new modular-type boiler-houses, with new boiler equipment produced and installed at the sites. The project will apply modern fuel-combustion technologies both for gas-fired and biomass-fired boiler-houses. The average wear level of boiler equipment for Kirov oblast is 75 %, and in some districts this indicator is as high as 100 % and efficiency of the boilers is as low as 45 %. At the same time, up to 40 % of heat is lost due to the high wear level of the heating networks, 54 % of the total heating

networks in Kirov oblast require urgent replacement.

As a result, the quality of heating services provided at present is extremely low, whereas heat prices are high due to high specific fuel consumption and constant increases in coal and mazut prices.

Nature of Emission Reductions

The proposed project activity aims to reduce the emissions of greenhouse gases by converting the boiler-houses to less carbon-intensive natural gas and carbon-neutral biomass and increasing their thermal efficiency.

The old municipal boiler-houses cannot provide stable and reliable heat supply, but the municipalities have no budget to invest in new equipment. Whilst, both the federal and regional authorities have issued a number of documents encouraging replacement of old inefficient boiler equipment, there is insufficient financial support to undertake actual investments.



Example of Existing Boiler House in Kirov Oblast

The investment project is expected to result in an emission reduction of 1,945 million tCO₂e over

