

GOOD PRACTICE EXAMPLE

Heating Plant in Belgrade - Senjak



1. General description of selected process or SCORPS

Belgrade plants are engaged in the production and distribution of energy for heating and domestic hot water delivery, the transformation of electricity for EDB / EMS, construction and maintenance of heating and gas installations, the implementation of heating system programmes (connection conditions, approval of projects and construction works and approval of objects in the system), providing information about the failures and planned outages. For thermal energy the following are used: natural gas about 85.6 %; heavy fuel oil - crude oil ca. 13.5 %; coal ca. 0.4 %; fuel oil ca. 0.13 %; biomass - pellets 0.24 %. The heating plant in the Belgrade Senjak neighbourhood uses pellets as a supplement for energy production. During an average winter, the heating plants use approximately 2,000 tons of pellets for residential heating.



2. Why this process or SCORP was selected

This company has been selected as a best practice example because it does not use only fossil fuels for the production of thermal and electric energy, and it has already begun using pellets and briquettes for energy production, i.e. they are added as a supplement in the production of energy to reduce greenhouse gas emissions.

3. Who is involved in this process or SCORP?

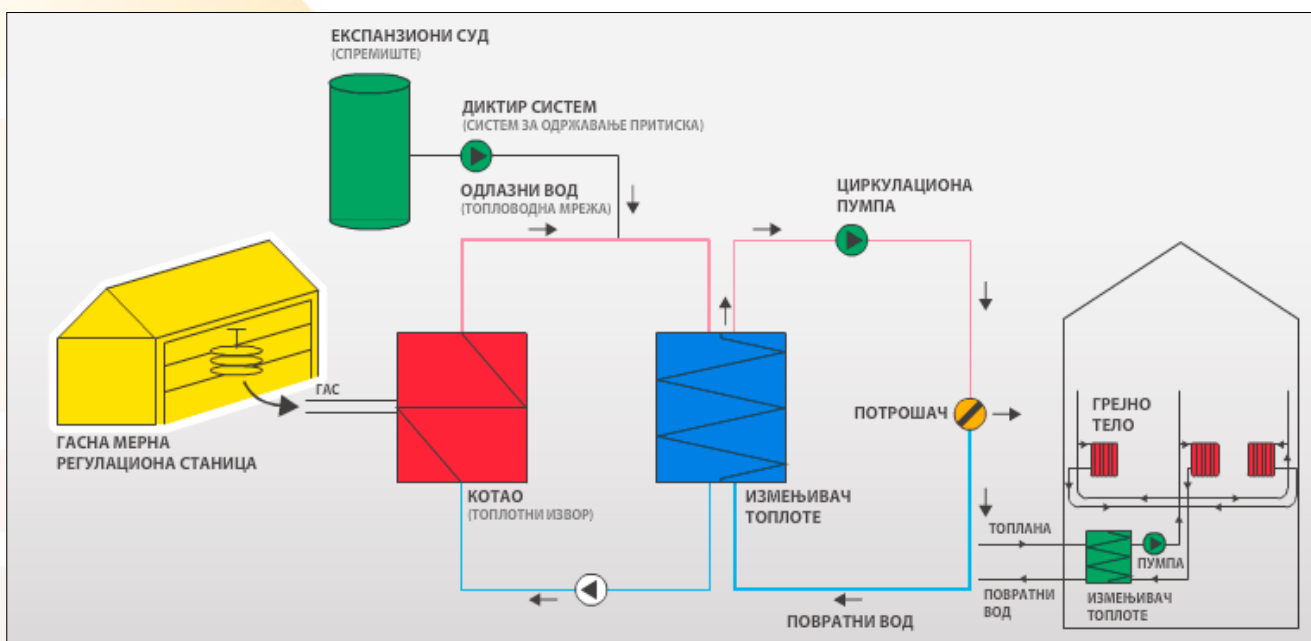
This process includes all employees working in the Heating Plant, as well as pellet distributors. It is important to note that in this case the distributor is Bioenergy Point, that we find interesting, because it is located in the Timok region.

4. Technical description

The district heating system consists of a heat source (boiler) within which the heat exchanger is heated (water, steam, etc.). The heat exchanger is then lead through a distribution network (pipelines) to a heat transmitting station (substation) and from it to the heating bodies (radiator, underfloor heating pipes, air heater, etc..) located on the premises. In this way, the heat from the heat exchanger is directly transferred to the air on the premises that are heated. The total nominal installed capacity is 2,832MW + 36MW (economizers in heating plants "New Belgrade", "Konjarnik", "Vozdovac", "Cerak" and "Danube"). The average annual heat production is about 3,500,704 MWh.

5. Legal aspects

The use of biomass and wood pellets is not yet regulated by law in Serbia.



6. Economic information

Total revenues in 2012 amounted to 221,341,766.00 €, while total expenditure amounted to 215,372,748.00 €. Profit before tax amounted to 5,969,018.00 €. Net profit after tax amounted to 3,201,538.00 €. These economic indicators apply to the entire District Heating Company, and as an example of good practice only one part of the company is considered.

7. Environmental aspects

The state-of-the-art system for monitoring emissions of air pollutants from boilers was put into operation in the heating plant “Danube”, and by the end of 2013, the PUC “Belgrade Power Plants” will introduce such systems on ten more heat sources of a capacity exceeding 100 MW.

8. Socio-economic aspects

At the end of 2012, there were 2,267 employees in Belgrade power plants. Compared to year 2002, the company's number of employees decreased by as many as 535, or 20 %, while in the same period consumption (consumers - heating surface areas) increased by ca. 27%, or by more than 4,427,017 m² (conditional) office and residential space. Job optimization and increase in consumption are issues that are constantly worked on.

