



BARLINEK 2020

**NON-TECHNICAL SUMMARY**


**BIOMASS BASED TRI-GENERATION**

**BARLINEK INWESTYCJE**



## CONTENTS

1. Barlinek Inwestycje
2. Strategic goals of the project
3. Project compliance with the environmental policy and legal conditions
4. Project location
5. Current status of the heating plant
6. Project scope
7. Environmental impact study



Barlinek Inwestycje Spółka z o.o. company is the follower of almost 100 years old tradition of wooden flooring and other wood-based product manufacturing. The company deals with comprehensive processing of raw round wood and produces a wooden floor planks exported to over 50 countries all over the world.

Barlinek Inwestycje has launched a project for the construction of a high efficiency cogeneration system to produce electric power and heat, using the waste biomass fuel as the renewable energy source in order to limit CO<sub>2</sub> emissions in the original energy at the balance boundary of the plant. In order to supplement the plant needs, installation of absorption chillers capable of producing cooling energy from heat is also planned. This process will significantly enable stabilizing energy production, increasing at the same time the work comfort in production halls and actually improving the production quality and raw material consumption through the unification of process climatic parameters.

On 7.11.2016, a contract was signed with the EKOL-ENERGIKA consortium for a comprehensive implementation of the CHP. The completion of the project is scheduled for the end of 2018.

On 21.09.2019, the President of the Energy Regulatory Office announced another bidding tender for the selection of projects for improving energy efficiency for which energy efficiency certificates can be obtained. Following the results of the audit of energy efficiency improvement in the implemented projects, tendering declaration was submitted with the application for the certificates for the amount of 25,359.674 toe. The conclusion of the tender is expected in the third quarter of 2017.

## STRATEGIC GOALS OF THE PROJECT

- The main goal of the project is to increase the efficiency of biomass use by means of simultaneous production of heat and electricity for internal consumption and cooling with the excess of heat in the summer period, in particular:
  - maintaining power supply stability and production process continuity,
  - reduction of power supply costs,
  - using the raw material in the form of biomass fuel for energy production,
  - increasing the efficiency of heat production in the plant heating network,
  - possibility of integration of regulatory solutions in the Barlinek Inwestycje system.
- The project fits all the programs both at the EU, and Polish level in the scope of environment protection, application of distributed industrial power engineering of high efficiency, and guaranteed operation availability for a length of time exceeding 4000 h of operation a year, according to the Renewable Energy Sources act.

## PROJECT COMPLIANCE WITH THE ENVIRONMENTAL POLICY AND LEGAL CONDITIONS

- Current Polish Power Engineering Policy up to 2030 rightly promotes the development of cogeneration by assuming a twofold increase of electric power production in that technology by 2020 (as compared to the production in 2006), and also by replacing the heating plants supplying centralized heating system of Polish cities with cogeneration sources by 2030. It is a justified direction due to the advantages of cogeneration in the context of increased efficiency of fuel utilization, the related reduction of CO2 emissions, and also strengthening the energy supply security in Poland in the context of the necessity to decommission a significant amount of heat production capabilities in relation to the regulation set forth in the industrial emissions directive.
- An additional impulse to invest in cogeneration comes from applicable 2004/8/EC and 2012/27/EU directives from 25 October 2012 on energy efficiency. The second legislative act is all the more important as it orders building cogeneration units wherever there is a possibility of grid heating market development.
- Both the planned investment, and other installations used by Barlinek Inwestycje are not subject to obtaining an integrated permit. Nevertheless, the Company holds a number of current sector permits resulting from the current provisions of law:
  - Permit for emission of gases and dust into the air, ref. No.: BOŚ.6224.11.2015.MSz from 04.01.2016, valid through 04.01.2026.
  - Decision on production and processing of waste, ref. No.: WŚR.6220.4.2014.RL from 21.10.2014, valid through 21.10.2024.
  - Water law permit to draw groundwater from Quaternary formations, from three deep water wells, ref. No.: BOŚ 6223/17/09 from 18.11.2009, valid through 18.11.2029.
  - Decision on the allowable level of noise penetrating the environment, ref. No.: OSR.III.7611/3/05 from 26.08.2005, permanent.

## PROJECT LOCATION

The newly built plant will be erected in Barlinek, at 1 Przemysłowa Street, West Pomerania Province. The boiler house will be situated within the premises of Barlinek Inwestycje Sp. z o.o. at the place currently occupied by flat biomass storage, on the plane of the existing 50 year old boiler house. Furthermore, a part of the boiler hall, occupied today by the existing units will be decommissioned and demolished, freeing up space for the further development of the plant. The current boiler chimneys will be replaced by a new flue gas system equipped with an electrofilter and bag filters.

## CURRENT STATUS OF THE HEATING PLANT

- The demand of the Barlinek Inwestycje plant for thermal energy is satisfied by the boiler house situated in two detached buildings. One of the buildings houses boilers fueled with sawdust. The other building houses water boilers fueled with wood chips, being the plant production waste.
- The boiler house produces heating water for the following needs:
  - technological needs of the plant,
  - central heating,
  - production of domestic hot water,
  - boiler house own needs.
- The thermal power in the form of hot water produced in five production units is used to supply the technological heat receivers in the form of heat nodes. The utility transport is carried out by pre-insulated pipelines.

## SCOPE OF THE PROJECT

- The implemented installation is to be a conventional steam installation and will comprise of a boiler where the steam will be generated, a steam turbo generator, a steam - technological water heat exchanger, and absorption chillers converting the excess heat energy into cooling for the air conditioning.
- Such a system will enable simultaneous production of heat for the production process, electric power for the plant power needs, and will allow the excess heat to be converted into cooling to air condition the production halls in the summer period.
- Utilization of clean waste biomass, in the meaning of the Renewable Energy Sources act, by the newly built plant will result in the cogeneration plant becoming the alternative source of energy production, and consequently will result in avoiding CO<sub>2</sub> emissions into the atmosphere. The new power plant will reduce the stream of original energy supplied on the plant balance border. Highly efficient cogeneration will increase the effectiveness of incineration of pure biomass fuel obtained from production waste. The investment will partially replace the existing boiler house which uses worn out boilers with retort furnace of lower efficiency and higher dust emission parameters.
- The designed system will be built in a conventional way - using a heat source and a steam-powered turbine.

## BARLINEK – boiler houses

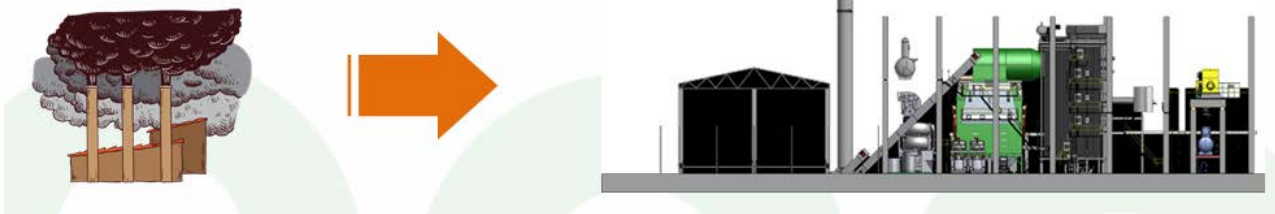
### Current and target heat production

The old worn-out boiler house will be replaced with a modern and more efficient CHP operating in an associated system and producing electric power and cooling besides heat.

The newer boiler house (2000-2006)



The older boiler house (1968-1978)



## ENVIRONMENTAL IMPACT STUDY

- The project will influence the environment in a positive way, eliminating significant air pollution caused by the operation of professional power stations.
- The changes on the balance border are described in emission per unit of energy consumed by technical installation of the plant. In the situation of energy production for internal use from waste biomass in a pure form of wood chip, the emission on the balance border is significantly improved - limiting the use of electric power produced from coal of low fuel processing efficiency.
- Implementing the assumptions of the project, we will achieve reduction of CO<sub>2</sub> emissions as compared to the reference consumption values by nearly 40 thousand tons CO<sub>2</sub> annually.

## ADDITIONAL INFORMATION

All requests for additional information relating to the project must be directed to the Company:

**BARLINEK INWESTYCJE SP. Z O.O.**

ul. Przemysłowa 1  
74-320, Poland

Tel. +48 (95)7471300, Fax +48 95 7479301  
e-mail: [office@barlinek.com.pl](mailto:office@barlinek.com.pl)