

Setting

Country	Poland
Location	Turów
Project start date	
Project end date	2009
Technology keywords	Biomass co-firing
Host sector	Polish Energy Group - PGE S.A.

Technical summary of the project

Objective of the project	reduction of emissions to atmosphere
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Project description

The new installation for biomass co-firing has been put into operation in June 2009. It is integrated with two lignite fired fluidized bed boilers. This investment is PGE's another project resulting in reduction of emissions to atmosphere.

This solution enables much more efficient chemical energy usage in comparison with pulverized bed boilers. The installation capacity is on the level of 80 tones of biomass per hour. Biomass supply to the FBC boilers takes place three times per shift - totally 12 hours per working day.

In accordance to the assumption data, Turów Power Plant will consume max. 180.000 tones of agro- and wood biomass.



Project reasons

The investment was voluntary action of the company but influenced by EU/national regulations.

Project Appraisal and Estimation Methods

The project resulted in significant environmental (e.g. lower CO₂ emissions), economic (e.g. lignite savings) and social (e.g. image improvement) benefits.

Calculation of CO₂ emissions reduction is based on chemical energy consumption during generation process. Average annual chemical energy is on the level of 746.730 GJ.

Emission without project:

Calculation is based on chemical energy of lignite, that would have been burned to achieve the same generation level:

- chemical energy = 746.730 [GJ]
- oxidation factor = 0,99 - *Wu*;
- CO₂ emission factor = 0,115 [CO₂/GJ] - *WeCO₂*;

Average annual emission without project (coal):

$$ECO_2 = En_{chem.} \times WeCO_2 \times Wu = 85.015 \text{ Mg}$$

Emission with project:

Emission with project comes from biomass burning and is recognized as avoided emission. According to this fact, CO₂ reductions have been estimated on the basis of avoided emission for the same amount of heat production using lignite.

Emission with project (biomass): $ECO_2 = \text{recognized as non emitted} = 0 \text{ [tCO}_2\text{]}$

Avoided CO₂ emission = emission without Project - emission with Project

Avoided CO₂ emission ~ 85.015 during 6 months of operation.

Environmental and social benefits

(Estimate of) Greenhouse Gases abated	Annual: Up to and including 2012: tCO ₂ -equivalent Up to a period of 10 years: tCO ₂ -equivalent Up to a period of 15 years: tCO ₂ -equivalent
Number of reduction units	
Socio-economic aspects	
Methodology used	
Host organisation	
Name of Host organisation	Polish Energy Group - PGE S.A.
E-mail and/or web address	Karolina.Modlinska@pgesa.pl
Contact person	Karolina Modlińska