



Agreement No. 76/2014/Wn05/OA-xn-04/D concerning the Project "Construction of installation for reduction of nitrogen oxides emissions from units 1-3 at Turów Power Plant" co-financed by the funds of the Norwegian Financial Mechanism 2009-2014

On **13.03.2014** between PGE Górnictwo i Energetyka Konwencjonalna S.A. and the Minister of Environment acting in the capacity of the Programme Operator PL04 "Energy Saving and promoting renewable energy sources" on behalf of which the National Fund for Environmental Protection and Water Management in Warsaw operates, Agreement **no. 76/2014/Wn05/OA-xn-04/D** concerning the Project "**The construction of installation for reduction of nitrogen oxides emissions from units 1-3 at Turów Power Plant**" co-financed by the Norwegian Financial Mechanism was signed.

The co-financing granted amounts to **PLN 5,892,000.00**.

The aid received originates from the funds of the Norwegian Financial Mechanism. The aid was granted pursuant to the Agreement concluded between the Financial Mechanism Committee in Brussels and the Minister of Regional Development as the National Focal Point in relation to the Programme on "Energy saving and promoting renewable energy sources" of 28 January 2013.

Basic scope of the task: Under the project there will be executed complete flue gas denitrification plant that will treat flue gas from fluidized bed boilers of type CFB-670 on units 1, 2, 3 at Turów Power Plant, reducing the NO_x emission level to the value of $\leq 200 \text{ mg/Nm}^3$ (temperature 273 K, pressure 101.3 kPa in dry flue gas, with the 6% O₂ content in flue gas) including unloading, storage and distribution of the reagent to individual units.

Description of the task: For each boiler 1, 2, 3 there have been executed separate reagent injection units, whereas the unloading, storage and distribution of reagent injection systems belonging to each unit are common. The reagent storage system which is common for three units consists of: storage tanks, pumps for unloading, circulation and feeding, air compressors, I&C systems, unloading tray, system of access roads as well as service container. The urea supply system to units consists of: pumping units, piping systems and fittings.

To reduce emissions of nitrogen oxides from units 1, 2, 3 the SNCR method (Selective Non Catalytic Reduction) has been used. It is a method for nitrogen oxides (NO_x) reduction consisting in injecting ammonia or urea as an aqueous solution to the combustion chamber above the combustion zone. SNCR allows 40-70% reduction of nitrogen oxides.

Total cost of the task: PLN 24,410,223.12 (including VAT)

Level of co-financing from the funds of the Norwegian Financial Mechanism: The amount of the grants received: **PLN 5,892,000.00**.
The amount of the grants has been disbursed in two tranches:

- ✓ Interim payment in the 4th quarter 2014
- ✓ Interim payment in the 3rd quarter 2015.

Objectives and benefits arising from the implementation of the task:

The basic objective of the construction of the plant is to improve air quality by installing flue gas denitrification with fluidised bed boilers for units 1, 2, 3 at Turow Power Plant lowering NO_x emissions to ≤ 200 mg/Nm³.

Stage of implementation of the task:

The project is completed.

Photo documentation of the task:



Reagent unloading and storage station



Reagent unloading and storage station



Urea dilution station



Pump units for reagent dosing



Unit of unloading and circulation pumps



Unit of reagent separator

Link to the website: www.eog.gov.pl