



Implementation of EC Directive 2004/8/EC in Slovakia *Paper Summary*

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There are 30 Figures in PPT format attached to this Summary

Introductory Facts

On 21st March 2007 the Ministry of Economy proposed a Bill entitled "Promotion of high efficiency cogeneration (CHP) production based on the heat demand on the internal energy market". The Bill is intended to define the conditions for supporting high efficiency CHP production, the rules for issuing certificates of origin for electricity produced by high efficiency CHP, and obligations for state administration bodies and CHP producers.

The following eleven (11) categories of CHP are covered by Directive 2004/8/EC :

- (i) Combined cycle gas turbine with heat recovery
- (ii) Steam backpressure turbine
- (iii) Steam condensing extraction turbine
- (iv) Gas turbine with heat recovery
- (v) Internal combustion engine
- (vi) Microturbines
- (vii) Stirling engines
- (viii) Fuel cells

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- (ix) Steam engines
- (x) Organic Rankine Cycles
- (xi) All other technologies in line with definition of CHP.

Brief descriptions, schematic diagrams, photos and flow-sheets describing technology principle of the said categories are shown in Figures 4-21.

The Bill targets for electricity production to be considered high efficiency CHP, the following criteria must be met:

- A) Cogeneration production must provide primary energy savings of at least 10 % compared with the separate production of heat and electricity;
- B) Production from small scale and micro cogeneration units providing primary energy savings may qualify as high-efficiency cogeneration.

Benefits from High Efficiency CHP

Under the Bill, high efficiency CHP electricity producers would be entitled to preferential transmission, distribution and delivery of their electricity. System operators would also be required to buy highly efficient CHP electricity (in the absence of an agreement between the producer and system operator) at a preferential fixed purchase price.

This price has been set by the Regulatory Office for Network Industries for following periods:

- Six (6) years for plant being in operation before Jan 1st 2008
- Eight (8) years for plant being refurbished after Jan 1st 2008, if gain in efficiency is higher than 2%
- Ten (10) years, for new plant set in operation after Jan 1st 2008

Guarantee of origin certificate

The highly efficient CHP electricity producer can apply for a guarantee of origin certificate, establishing that electricity sold is produced by high-efficiency CHP process. The Bill defines input data (general and technical parameters) the application must include; the guarantee of origin is issued by the contributory organisation of the Ministry of Economy after the verification of the data and relevant calculations evaluation.

Responsibilities of Government

Ministry of Economy of the Slovak Republic by its Regulation/Decree define :

- Criteria for the high-efficiency CHP
- Calculation method for electricity produced by CHP process
- Calculation method for the amount of exploitable heat
- Method of calculation of the primary energy savings
- Method of calculation of the CHP efficiency
- Boundary and harmonised reference values for the calculation of CHP electricity and for the calculation of the CHP production efficiency and for the calculation of primary energy savings

Ministry of Economy report on the progress of the share of high efficiency CHP every four years. For the purpose of the high-efficiency CHP monitoring and reporting, the Ministry of Economy and relevant contributory organisation are entitled to request necessary data from those state administration bodies keeping records of CHP electricity producers and those recording produced emissions data. CHP electricity producers are obliged to keep the records on the CHP operation – monthly energy balance of production and delivery of electricity and heat (the Bill defines the list of necessary data in detail). Annual data is to be provided to the contributory organisation by the CHP producer by 25th January the following year.

CHP Potential in Slovakia

First group of CHP sources is formed from small industrial sources. Biggest contributors are following four heavy industries:

- Metalurgy
- Crude oil processing and Petrochemistry
- Chemical Industry
- Pulp & Paper Industry

Own energy production of these plants produce 2800 GWhe/a of electric power.

Remarkable Cogeneration Projects in the Slovak Republic are

- Combined Cycle Power Plant Bratislava, 218 MW, the biggest in Slovakia Aquacity
- Slovakia's Green Water Park Resort
- Combined Cycle Power Malzenice, to be commissioned in 2012

The Share of CHP in the Slovak Republic is among the highest in Europe, as shown in Slide 30 from the presentation and in the map (right).

