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Slovakia: Slovenské elektrárne a.s. case study

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About

Case study name:

[The greening of industries in the EU](#)

Country:

Slovakia

Organisation Size:

500+

Sectors:

Energy

Slovenské elektrárne a.s. (SE) is Slovakia's biggest producer of electricity, and green business practice is significant in minimising the company's negative impact on the environment. SE preferentially uses nuclear and hydropower plants, and since 2010 it has replaced fossil fuels with biomass in conventional power plants in Vojany and Nováky. These measures reduced the volume of the greenhouse gas CO₂ produced in these plants. In 2010, photovoltaic power plants were also installed in Mochovce and Vojany.

Introduction

The energy sector, dominated by electricity and gas, plays an important role in the Slovak economy. The sector accounts for 9–10% of the country's GDP. Slovak energy policy is based on the reduction of energy consumption and cutting the sector's share of GDP. Besides the use of nuclear energy, the main priorities in the sector include cutting production in thermal power plants and increasing the use of renewables for the production of electricity.

Slovenské elektrárne a.s. (SE) is the biggest electricity-producing company in the country with almost 5,000 employees. Its green business practice (GBP) contributes significantly to climate change mitigation. SE was established in 2002 as a state-owned joint-stock company and in 2006 it became a member of the Italian multinational Enel Group, which owns 66% of company shares. SE operates 34 hydroelectric, 2 nuclear and 2 thermal power plants and in 2010 it added 2 photovoltaic power plants to its portfolio. SE also produces and supplies heat and provides services for the electricity supply network in Slovakia. Almost 89% of supplied electricity in 2010 was produced from water and nuclear resources. The rest was produced in thermal power plants.

This study focuses on selected GBP measures of SE in the field of reduction of the volume of the greenhouse gas CO₂. Selected GBP measures concern implementation of renewables in two thermal power plants and the installation of two photovoltaic power plants. The study is mainly based on information provided by company representatives.

Drivers and motivations

SE's green business practices are diversified and several motivators played important roles in their implementation. The GBP measures described in this case study were mainly motivated by implementation of EU as well as related national legislation.

Implementation of EU Directive 2003/87/ES on creation of the EU Emission Trading System (ETS) allowed SE, through savings in the usage of allocated emission quotas, a better return on investments made in GBP. The aim of achieving the 20/20/20 statement of European duty is an important driver of selected GBP in SE. The Slovak Republic adopted an Action Plan to increase the use of renewables in electricity production to 20% by 2020. Implementation of selected GBP measures was also motivated by the necessity to fulfil the international duties of the country. Act No. 309/2009 on the Promotion of Renewable Energy Sources and High-Efficiency Cogeneration supports GBP in SE by making provision for feed-in tariffs for a 15-year period. Implementation of the legislation played an important role in the use of biomass in fossil-fuel power plants and the installation of photovoltaic panels.

The following motivators also played a role in the implementation of selected GBP measures at SE:

- Increasing pressures from stakeholders to explore available business opportunities in order to increase the competitiveness of SE within

the Enel Group and in a free European energy market.

- SE activities aimed at savings in natural resources through their substitution by the use of scraps as fuel in thermal power plants.
- The possibility of receiving additional financial support from EU funds and national grants.

Green business practices

Among the wide range of GBP in SE, the replacement of fossil fuels with biomass in power plants in Vojany and Nováky were selected for this study.

SE aims to increase the share of renewables used for electricity production by more than 40% from 2010 to 2020. In order to decrease greenhouse gas emissions, SE decided to implement a project of combined combustion of biomass at the Vojany Power Plant. In 2010, the permanent combined combustion of wood chips in the FK16 fluidised bed boiler was launched there and 4.9% of the heat input in this boiler was replaced with wood chips, while the basic fuel for this boiler is black coal. Combined combustion of the wood chips contributed to the generation of 3.4% of the supplied electricity from the Vojany plant from renewables. The volume of CO₂ fell by 22,184 tons, which amounted to a 3.5% decrease in 2010 compared with the previous year. In 2011, the volume of CO₂ in Vojany plant decreased by a further 25,673 tons. The continuing decrease of SE's impact on air pollution is mainly the result of only 11% of the total delivered electricity coming from combusting fossil fuels in 2010.

In October 2011, a similar project involving combined combustion of biomass was also implemented at Nováky Power Plant. The volume of CO₂ produced there decreased by about 2,837 tons by the end of 2011. It is assumed that the combustion of 1 ton of biomass decreases the volume of greenhouse gas CO₂ produced in fossil-fuel power plants by about 1 ton. In the second stage of the project, biomass share is expected to reach about 9%.

The installation of photovoltaic power plants in Mochovce and Vojany in 2010 can be mentioned as another example of implementation of renewables in SE. In Mochovce nuclear power plant, 4,136 photovoltaic panels were installed with 1 MW capacity. Electricity produced there is used to meet the needs of the nuclear power plant. Similarly, 1 MW capacity was installed in the form of 3,400 photovoltaic panels at the fossil-fuel power plant in Vojany. The electricity produced there is sold to external customers through the electricity supply network. The operation of photovoltaic power plants increases the use of renewables in SE's electricity production.

Anticipation and management of the impact of green change on quantity and quality of jobs

Impact on quantity of jobs

According to interviewed representatives of SE, the implementation of the GBP measures described did not have a significant impact on the number and structure of jobs. In 2010, SE employed 4,919 employees – 416 fewer than in the previous year. The fall was caused by organisational changes, optimisation of operations and a high rate of retirement of employees in the year. The economic crisis also reduced demand for electricity in the economy. For instance, a fall of almost 9% in electricity consumption was reported in 2009. The decrease in electricity consumption had an impact mainly on the operation of thermal power plants, which could respond particularly effectively and flexibly to fluctuating customer demands in the peak hours. Therefore, cuts in jobs were mainly related to organisational changes concerning reduction in performance of fossil-fuel power plants and improvement of their effectiveness. According to interviewed representatives of the SE, those cuts were, however, not caused by implementation of the GBP.

Impact on quality of jobs

Training and skills development

SE holds quality certificates in accordance with the ISO 14000 standard and employees in the company have a high awareness of environment-related matters. Integrated prevention and control of environmental pollution and chemical substances, and the certified environment management system used at SE also support implementation of the GBP measures described. Professional skill and knowledge related to individual positions/jobs are specified by the Company Job Catalogue. Employees at SE participate in training and skill development appropriate to their job. According to the interviewed representatives of SE, there were no changes in the quality of existing jobs as a result of the implementation of renewables in Nováky and Vojany and in relation to the installation of photovoltaic power plants. Anticipation of future needs and changes in skills development is included in the existing development and training plan, which is approved by SE top management. In this process, SE management cooperates actively with the local trade union organisation, which represents employees there. In relation to the implementation of the GBP measures described above, there has been no need to design specific training programmes or adjust existing programmes.

In relation to the implementation of GBP, about 50 employees were trained in new skills related to handling fluorocarbon greenhouse gases in 2010. Within the fossil-fuel power plants in Nováky and Vojany, training of operational personnel continued and the training of maintenance personnel started with the aim of extending employees' skills. The training of maintenance personnel also concerns maintenance of technical equipment related to use of renewables there (the training programme is designed to run from 2009–2012).

Implementation of the GBP measures described was also linked to changes in technology. It required the installation of additional equipment for the transportation of wood chips into existing FK 16 fluidised bed boilers, and for the storage of wood chips. Nevertheless, according to interviewed representatives of SE, the implementation of renewables at SE did not require additional specific training and skill development of the employees concerned (operators). The relevant employees at the Nováky and Vojany power plants required only some induction on working methods related to combusting biomass as well as coal.

The installation of photovoltaic power plants at Mochovce and Vojany introduced new technology to SE. According to representatives of SE, the photovoltaic power plants were installed by an external company contracted to SE. The installation and operation of photovoltaic panels did not create new jobs in SE, and no specific training and skill development of employees was needed there. No new jobs are envisaged in relation to the servicing/maintenance of the photovoltaic power plants. Service and maintenance of photovoltaic panels is guaranteed by the external supplier company for five to ten years. Afterwards, the necessary service will be provided by internal organisational units of SE, which provide standard maintenance of technical equipment in the company.

According to trade union representatives, the management consults them regarding the implementation of GBP that allow smoother implementation of related new technologies and working methods. Implementation of renewables at the power plants in Vojany and Nováky can be mentioned as relevant examples. SE management also cooperates with trade unions regarding training and skill development activities through formal as well as informal dialogue. Demands concerning training and skill development are usually agreed in the company collective agreement.

Other dimensions of job quality

Employment and working conditions and health and well-being issues in SE are not differentiated according to the implementation of GBP. Implementation of the GBP measures described had no impact on equal opportunities, non-discrimination among employees and working conditions of women employees in particular. GBP measures also had no impact on the career development and employment security of employees. GBP did not result in changes in continuous shift work in SE and implementation of renewables and installation of photovoltaic power plants in SE had no impact on existing conditions for reconciliation of work and family life of employees concerned.

In 2010, 2,832 out of almost 5,000 employees were performing jobs that involved risks, of which 2,738 were men and 94 women. Implementation of renewables in the Nováky and Vojany fossil-fuel plants had no impact on the number of risk-involving jobs, stress at work and work intensity of the employees concerned. Regarding GBP and the described implementation of renewables in particular, there were no specific remuneration- and compensation-related provisions agreed in company collective agreement.

The economic crisis led to a drop of about 9% in power consumption in Slovakia in 2009, and in 2010 power consumption still lagged behind pre-crisis levels by 3.6%. Implementation of combined combustion of biomass in fossil-fuel power plants in 2010–2011 and the installation of two photovoltaic power plants in 2010 was, however, not jeopardised by the economic crisis.

Involvement of public authorities

The implementation of renewables in fossil-fuel power plants in Nováky and Vojany and the installation of two photovoltaic power plants in Mochovce and Vojany did not require particular involvement by the public authorities.

Conclusions and recommendations

SE is a company with a well developed green business strategy and its GBP is important for environment protection in Slovakia. Besides implementation of EU Directive 2003/87/ES on creation of an EU Emission Trading System (ETS), SE also responded to the international duties of the Slovak Republic to increase the share of renewables to 20% by 2020. The case study documents its activities aimed at implementation of combined combustion of coal and wood chips in conventional power plants in Vojany and Nováky and the installation of photovoltaic power plants in Mochovce and Vojany. These measures contributed to the reduction of greenhouse gas CO₂ production and increased the use of renewables in electricity production in the country.

The case study illustrates that the implementation of GBP does not necessarily cause significant changes in the quantity and quality of jobs in the company. Implementation of the GBP measures described above did not lead to changes in the number and structure of the workforce. The use of renewables in fossil-fuel power plants and the installation of photovoltaic power plants neither created new jobs nor resulted in cuts in existing jobs. Recent cuts in SE staff were attributed to organisational changes in fossil-fuel power plants, and were mainly caused by decreased demand for electricity during the economic crisis in 2009–10.

Training and skill development is an important part of SE's human resource management policy and employees are regularly trained there according to their professions and jobs. Nevertheless, implementation of the GBP measures described did not result in new demands for training and skill development of employees concerned. Simple instruction of the relevant operators in Nováky and Vojany fossil-fuel power plants was sufficient. The GBP measures described had no impact on career development and employment security in SE. These GBP measures form a significant part of SE's long-term 'green energy' policy.

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Contact us

Eurofound, Wyattville Road, Loughlinstown, Co. Dublin, D18 KP65, Ireland

Phone: (00) 353 1 2043100

E-Mail: information@eurofound.europa.eu

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