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Romania: CEZ Cogevalac-Fântânele wind farm case study

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About

Case study name:

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

Country:

Romania

Organisation Size:

500+

Sectors:

Energy

In 2008 the CEZ Group began development of a land-based wind farm, with an installed capacity of 600 MW. The case study analysis reveals that the employment impact of this green practice is significant, especially in terms of attracting a specialised labour force in the research and development in the field of green technologies, for the building, installation and operation of the wind farm equipment and for functioning and maintenance of the wind turbines. On the other hand, the operation of the CEZ wind farm can replace a large number of workers in the mining and coal-based power industry.

Introduction

In 2010, the electric and thermal power, gas and water sector contributed 2.0% of the gross domestic product of Romania. Wind energy accounted for 2.0% of the overall amount of energy produced and transferred to energy transport lines in June 2011. This figure rose to 2.7% in October 2011.

Considering the climatic changes and the need to reduce greenhouse emissions, and in compliance with Romania's objectives to align to the Europe 2020 Strategy, and to conform with its own energy plans ('Elements of Energy Strategy for 2011–2035'), the energy production sector aims to produce some 43% of overall energy production from renewable sources by 2020. Of this, 26.6% should be from hydro, and 16.4% from other, renewable sources: wind, solar, etc.

CEZ, a business group from the Czech Republic, entered the Romanian electricity market in 2005. CEZ has now established eight companies in Romania, three of which are specialised in the production of wind energy.

At the end of 2011, [CEZ Romania](#) had 1,992 employees, 10 of whom were working in the three entities producing wind energy. The three wind farm companies have received support from a large number of experts in the Management of the Group, who provide the logistic and administrative assistance for the farms' operation.

In 2010, CEZ Romania won the 'Need 4 Green' Prize awarded by *Piața Financiară* (Financial Market) magazine for the Cogevalac-Fântânele wind farm, as well as a prize for the development of clean technologies, from *Info Mediu Europa* magazine, and a special award for 'Companies that Helped Romania Out of the Crisis', from *Ziarul Financiar* (Financial Daily).

Drivers and motivations

The Cogevalac-Fântânele wind farm, with a capacity of 600 MW, will contribute significantly to the fulfilment of the targets of the Europe 2020 Strategy, thereby saving the burning of an equivalent quantity of fossil fuels, and becoming a valuable instrument in reducing greenhouse gas emissions.

There were a number of drivers and motivations for CEZ Romania to implement green business practices.

- The Group's shareholders' capacity to anticipate the implementation in Romania of international and European regulations regarding climate change.

- The development and incentives objectives proposed for the producers of wind energy in the various relevant strategies: 'Europe 2020' and 'Outline of Romania's National Energy Strategy for 2011–2035', both of which set targets to be reached in respect of the structure of energy production, and the promotion and development of green energy education. The CEZ Group is a beneficiary of the green certificates support scheme approved under Act 220/2008, which started producing effects in November 2011.
- The need to meet the market's demand for diversified services; prior to embarking on the production of energy from renewable sources, the CEZ Group in Romania dealt only in the distribution and marketing of electric power for other producers of energy.
- The association with the concept of 'green' will improve the image of the Group and of its constituents; until now the Group has been active in the field of distribution and marketing of energy and through coal-fuelled power plants; its expansion enables the Group to 'renew its portfolio of power plants' by making better use of the green resources that permit the introduction of new technologies, in accordance with environmental legislation.

Green business practices

The Group's expansion strategy to southern and eastern Europe had as its objective the development of green energy, based on new technologies (in accordance with the latest environmental regulations), all of which required investment in research and development for the protection /conservation of the environment, and for smart distribution grids.

In August 2008, CEZ started an investment project of approximately €1.1 billion for the wind farm at Cogealac-Fântânele (Romania's South-East region) with an installed capacity of 600 MW, the first major project of this type in Romania. The CEZ Group developed the wind farm exclusively from its own funds. Before the project started, the installed capacity of wind energy generators in Romania was 14 MW. Therefore, there was no previous experience of this kind in Romania. The CEZ Group therefore hired the services of foreign specialists who passed their knowledge on to the Romanian experts. To this day, part of the service is provided to the Group by foreign companies outside the Group.

The first results were obtained in 2010, when, in January, the company commissioned the Monitoring and Maintenance Centre of the wind farm, and, later, in May, when the main transformer plant became operational. Turbine operation began in June, and by the end of 2010 120 turbines were functional.

The development of the Cogealac-Fântânele wind farm was achieved with the participation of 450 specialists in wind energy, mostly from other countries (Germany, USA, Brazil, China, etc.). They brought along their knowledge and experience, thus contributing to the transfer of knowledge about green technologies to the Romanian staff of the wind farm.

The wind farm is managed by three companies of the Group: Tomis Team SRL, MW Team Invest and Ovidiu Development, whose line of business is the production of wind energy.

The problems encountered by the Group in developing this project related to land acquisition and obtaining licences for construction, operation, and connection to the national energy grid.

One other problem encountered by the investor arose from the risk posed by this facility to the local biodiversity. With the wind farm located in the neighbourhood of the Danube Delta Biosphere Reserve, they had to monitor the effects of the windmills and other installations on the flora and fauna of the place, in respect of the migration, feeding, breeding and behaviour of birds.

In 2010, the Group produced 255,970 MW/h of wind energy. As result, the company obtained 35.5% of all green certificates issued in Romania.

From the Group's point of view, the success factors for the anticipation /management of green practices in the production of wind energy have been: the development and full application of relevant legislation (the green certificates support scheme), and the evaluation of the wind potential, in respect of speed and persistence.

The only difficulties the Group encountered were related to the construction licenses, and the addition of a tax to all electric power bills issued to final consumers (including household consumers), to sustain the development of green energy.

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

Impact on quantity of jobs

The CEZ Group secured the cooperation of 450 experts in the construction of wind energy equipment, in the erection and subsequent operation of such equipment at Cogealac-Fântânele wind farm. These experts do not belong to the Group, but are independent providers (construction, supply and erection of machinery, consultancy), whose services have been retained by contract for the duration of the construction phase of the wind farm. The largest majority of them come from abroad, but some are Romanians. The operation and maintenance of the wind farm will then be entirely in the hands of the Romanian employees.

In the long run, the operation of the wind farm will require some 20 employees, as well as maintenance teams and the technical assistance personnel provided by the suppliers of equipment (some other 20 employees).

Viewed from the perspective of its total effect on employment, the facility will substitute for some of the workforce in coal mining (a sector where working conditions are extremely difficult), and in fossil-fuel energy plants, the production of which, once substituted for by green energy, would no longer be necessary.

According to the Group's estimates, the CEZ wind farm production will be equivalent to the energy produced by some 1,000 employees, in the mining and fossil fuel energy production sectors.

Impact on quality of jobs

Skills development

The Group introduced green practices in a top-down process, based on allocation by the management of the Group's own funds, on the involvement of its audit and environmental departments, and the appointment of internal and external public relations officers.

From its own resources, the Group has invested in green education, through regular internal training as well as training sessions given by external providers of training, audit, and certification of qualifications, maintaining a permanent exchange of information with counterpart companies.

This has generated new professions, such as wind farm operator and wind forecast expert. The CEZ employees have accumulated valuable experience during the construction phase of the wind farm, as well as during the testing and commissioning of the equipment, with all the specific technical knowledge (about wind turbines, generators, equalisers, etc.). Part of the knowledge has come from the temporarily commissioned experts.

Similarly, the Group's experts in electric power distribution, including the hub operators, have made an important contribution not only to the building of the 400/110 kV plant, the connection of the wind farm to the Transelectrica grid, and the construction of the intermediate 110/33 kV plants, but also to the mounting of the necessary hub (with the aid of the CEZ distribution hub in Pitesti).

The environmental experts of the Group have been the interface with the environmental training providers on the market, drawing the latest specialised knowledge from them and from government agencies, such as the National Energy Regulatory Authority (Autoritatea Națională de Reglementare în Domeniul Energiei, [ANRE](#)), and also with local environmental protection agencies.

The interviewed representatives of the Group suggested that the development of this sector would be closely linked to the incorporation of green knowledge in the curricula of secondary and tertiary education, as well as by the recognition of green energy specific occupations in the national classification of occupations, and in the national system for certification of knowledge.

In this context, the experts suggested that the objectives of the [Europe 2020 Strategy](#) may include not only targets regarding the structure of energy production, but also targets regarding measures to promote green knowledge. For this purpose, in addition to the funding allocated from national funds, and to the efforts made by the national authorities in education and adult vocational training, the European Commission could open a funding line of support (from the European Social Fund, or from the funds earmarked for regional development and environmental protection) for investment in 'green human capital'.

Impact on other working conditions

According to the opinion of the Group's experts, the jobs generated by green energy production have certain specific features. In the case of wind energy, workers may find themselves isolated from other human settlements, may have to cover long distances from home to work, are exposed to open field conditions, with high temperatures in summer and low temperatures in winter, etc. But these working conditions are superior to those specific to workplaces replaced in mining and the fossil fuel energy production sector.

As a rule, the individual employment contracts provide salary compensation for harsh working conditions, as a fixed part of the earnings, plus various extras that vary with the nature and difficulty of the work done.

Conclusions and recommendations

The CEZ Group is a pioneer in Romania. The change anticipation and management strategy promoted by the Group has contributed to gaining the experience and competence required for the future development of 'green jobs' in Romania.

Employment-wise, even if this new facility does not create an impressive number of jobs, its merit is that of substituting them for jobs in the fossil-fuel energy sector where working conditions are much harsher, thereby diminishing the need for fossil-fuel energy.

In this respect, it is worth noting that the internal application of green practices in the Group followed the top-down pattern, and the policy chosen by the management of the Group was to involve its specialised audit and environmental departments, and to retain the services of internal and external public relations officers.

The environmental experts of the Group acted as the interface with the providers of training on the market and with the government authorities, such as ANRE, and the local environmental protection agencies, collecting from them the latest knowledge and developments in the field and transferring it to the company's human capital. The Group cooperated continuously with external providers of training, audit and certification of qualifications, and maintained a constant exchange of information with similar companies.

The representatives of the Group interviewed believe that the development of this sector will be greatly helped by the incorporation of green knowledge in the curricula of secondary and tertiary education, as well as by the recognition of green energy-specific occupations in the national classification of occupations, and in the national system for certification of knowledge.

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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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