Cyprus: Electricity Authority of Cyprus

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About

Case study name:
The greening of industries in the EU

Country:
Cyprus

Organisation Size:
500+

Sectors:
Energy

Although the Electricity Authority of Cyprus does not have the profile of an environmentally friendly organisation, its current and planned green practices are of major importance. Compared with other industries, the process of greening in the electricity sector presents peculiarities and constraints due to the nature of its activities. Overall, there seems to be an urgent need to develop a human resources strategy to raise the issue of managing the impact green change on employment. This action could support the necessary larger involvement of employees in this crucial issue.

Introduction

The Electricity Authority of Cyprus (EAC) is a public corporate body set up in 1952. The company is one of the largest employers in Cyprus, employing a total of 2,465 workers in 2010. Its main activities are the generation, transmission, distribution and sale of electricity. The company provides power to 535,050 customers. The EAC was chosen as a case study for two main reasons.

- The EAC assumes a large share of responsibility for achieving the objectives of the EU's energy and climate package due to its leading position in the domestic energy system.
- Although apparently this enterprise does not have the profile of an environmentally friendly company, it does actually implement significant green practices through its various individual business units. Examples include reduction of carbon dioxide (CO_2) emissions through energy savings in production and network activities, energy-saving measures among its customers, environmental impact assessment and investment in renewable energy.

Since Cyprus joined the EU, two fundamental changes have occurred in the organisation and objectives of the electricity sector. First, the electricity market is gradually being liberalised through the implementation of the European Commission's sectoral directives. Second, the EU has ambitious policies to mitigate climate change, such as the climate and energy package and the EU Emissions Trading Scheme (EU ETS).

The electricity sector in Cyprus and the rest of Europe is at the heart of fundamental changes and challenges.

- Energy, a service of general economic interest, is both a social and an economic good. The green transition of the economy must therefore be achieved by integrating the social and economic dimension of energy provision.
- The use of conventional energy has an extremely negative impact on the environment due to increased greenhouse gas emissions. In the energy sector, the transition to a greener industry is hindered, however, by financial and technological constraints such as increased production costs and managing the volatility of the electrical system.
- Energy is also of strategic importance in terms of energy supply, security and independence. This dimension is even more critical for Cyprus because of its small and isolated electricity system.

Drivers and motivations

Overall, four basic categories of incentives for developing green business practices have been identified. These are listed below in order of

importance.

The first driver for change is contractual obligations arising from EU policies. For example, the share of renewable energy in the Cypriot electricity industry must be increased to 16% by 2020 according to the energy and climate package. Furthermore, EU ETS quotas will be established in Cyprus from 2013. These developments present a set of key challenges for the EAC as the company needs to reduce its levels of greenhouse gas emissions and to contribute actively to increasing renewable energy.

The second driver is the availability of new green technologies able to combine two essential criteria, that is, (a) economic feasibility and (b) the safety and stability of the electrical system of the small and isolated Cypriot power system.

A third driver of change lies in the adoption of environmental and other standards (ISO 14000 and EMAS), which comply with both social needs (transparency and accountability) and the improvement of competitive performances in terms of coherent management of quality, environment and health and safety issues.

Finally, responding to stakeholders' environmental expectations is considered to be an important motivation for EAC.

Green business practices

Overall, five major fields of green business practices can be distinguished.

Energy efficiency and reduction of greenhouse gas emissions

Green businesses practices in this specific field are:

- the construction of a concentrated solar power station of 50 megawatts in the region of Akrotiri/Limassol, which will be completed in 2015–2016;
- the modernisation of all units to minimise CO_2 emissions through energy savings;
- the introduction of software for optimal load distribution in order to allow higher efficiency units to cover the basic load to the maximum possible extent;
- the gradual introduction of natural gas as a primary source of energy.

All these practices present substantial benefits for the environment. However, their implementation is constrained by various factors. First, the transition to a sustainable energy model is a demanding process that requires a long-term strategic plan combining affordability, security, stability and upgrading of human resources.EAC managers appear to deplore the absence of a national long-term energy map facilitating this transition. Secondly, the rhythm of energy transition is subordinated to the availability of technologies that ensure the affordability of energy products. Finally, legislation on photovoltaic systems in Cyprus is rather restrictive.

Integrated management system

The implementation of an integrated management system (IMS) incorporating the standards ISO 9001 (quality), ISO 14001 (environment) and ISO 18001 (health and safety) has been completed (with the exception of the power stations). An assessment of the EAC's environmental impact (with 12 indicators) will be achieved in conjunction with the other two fields (that is, quality and health and safety). The EAC's quality and environmental policies have been communicated to all employees and are available on the company's intranet. Adoption of the European Commission's Eco-Management and Audit Scheme (EMAS) is planned for 2014.

This specific green business practice offers two main benefits.

- It is now easier to identify gaps between departments and to improve economies of scale (economic effectiveness).
- The IMS provides the image of a 'modern business'. The results of the evaluation will be communicated to stakeholders, providing transparency and social accountability (competitive advantage).

Green businesses practices in the electricity network

The electricity network is an important field of green business practices (current or future).

Current green business practices

Three business practices are currently being implemented in the EAC's networks business unit:

- construction of the network in an environmentally friendly way (for example, construction of underground networks and protection of landscapes);
- minimising energy losses during the transmission process (optimisation between the cost of constructing transformers and energy losses);
- optimisation of the relationship between voltage and consumption (applied with positive results in July 2011).

The last practice also contributes to sustainability as it extends the life of electronic devices.

Medium-term projects

The networks business unit is working on the installation of smart meters. Following ratification of Directive 2009/72/EC, Member States are obliged to install smart meters on 80% of electricity customer premises by 2020. To prepare for the implementation of this medium-term goal, the EAC is implementing an automatic meter management (AMM) system (pilot project of 3,600 smart meters). Smart meters are perceived to offer various advantages in terms of increased productivity and a drastic reduction in operating costs.

Future business opportunities arising from technological change and environmentally friendly technologies

The networks business unit is also considering long-term green business opportunities. Anticipated technological developments outline a new business model for the EAC. The power company could evolve into a 'virtual power plant'. Based on the emergence of advanced communication and information technology, the EAC's core business may move from power generation (centralised system) to the coordination of decentralised generation units. This means that the company will evolve from a capital-intensive to a knowledge-intensive business. Smart grids provide business opportunities for the EAC as a provider of energy to eco-cities and eco-houses.

Energy saving among consumers

The EAC is implementing various actions aimed at reducing energy consumption including:

- a campaign to promote energy saving among its customers;
- campaigns at schools for energy saving;
- financing of various school activities concerning energy and the environment;
- sponsorship of events for energy saving;
- organisation of a Save Energy exhibition in cooperation with the Cyprus Employers and Industrialists Federation (OEB).

Green public procurement

Green public procurement refers to the inclusion of environmental considerations in public contracts drawn up for supplies, services and works by the contracting authorities. In particular, products accepted in the green public procurement process must be more energy-efficient and less polluting than other competitive products serving the same purpose.

In each of the EAC's activities, a range of measures aimed at protecting the environment is in place. They include among others:

- energy saving (for example, through the bioclimatic design of buildings and the use of energy-saving systems);
- ways of reducing emissions, especially in power stations;
- purchase of vehicles with low carbon dioxide emissions.
- use of recycled and recyclable materials;
- use of environmentally friendly cleaning materials.

Table 1: Summary of EAC's main green business practices

Field of application	Green business practices	Advantages (benefits) and disadvantages (costs)
Energy efficiency and reduction of greenhouse gas emissions	Construction of a concentrated solar 50 megawatt power station	a. Transition to sustainable energy model is a demanding process that requires a long-term strategic plan combining affordability, security, stability and human resources issues b. Need to achieve a balance between economic feasibility and environmental benefits c. Restrictive legislation on photovoltaic systems in Cyprus
	Minimisation of CO_2 emissions through energy saving	
	Introduction of software for optimal load distribution	
	Introduction of natural gas as a primary source of energy	
Integrated management system	IMS incorporating ISO 9001 (quality), ISO 14001 (environment) and ISO 18001 (health and safety) standards	a. Identification of gaps between departments and improvement of economies of scale (economic effectiveness) b. Competitive advantage linked with the image of a modern business
Green businesses practices in the electricity network	**Current practices for improving energy efficiency:** a. Construction of the network taking an environmentally friendly approach b. Minimisation of energy losses during the transmission process c. Optimisation of the relationship between voltage and consumption	Smart meters offer increased productivity and a drastic reduction in operating costs
	Medium-term developments: Smart meters	
	Future (long-term) business opportunities: EAC evolving into a virtual power plant	
Energy saving among consumers	Information campaigns for energy saving and sponsorship of activities for the mitigation of climate change	Conflict between energy-saving activities and the competitive environment and financial performance

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

Impact on quantity of jobs

Energy efficiency and reduction of greenhouse gas emissions

- jobs in renewable energy are generally expected to be less labour-intensive and will focus mainly on the maintenance of infrastructure. The use of natural gas, which is one of the main aspects of the EAC's greening strategy, is not expected to bring any substantial impact on employment. This process is mainly associated with the material infrastructure (that is, turbines) and does not require any major upgrade of skills for workers.
- to EAC managers, the concentrated solar power unit will create 50 jobs.

Integrated management system

Managers noted that recruitment is not required for the implementation of the system.

Green business practices in electricity networks

On the horizon for 2018–2020 is the universal implementation of smart meters, which is expected to lead to the redundancy of approximately 100 employees. As mentioned above, the EAC is likely to evolve due to major technological developments (that is, distributed generation) from a capital-intensive enterprise to a knowledge-intensive business. As a result, a drastic change in the composition of the workforce is expected, with fewer blue-collar workers (in generation plants) and more white-collar workers (for the management of the decentralised power system). Furthermore, EAC managers estimate that staff training on scientific and environmental issues should take up at least 10% of total working time. This necessity is not sufficiently recognised today by the management. New working time arrangements are thus needed to facilitate lifelong learning.

Energy saving among consumers

No substantial changes to numbers employed in this area have been mentioned. Tasks are being achieved mainly through externalisation (for example, an advertising company is in charge of designing and implementing the information campaign).

Impact on quality of jobs

Energy efficiency and reduction of greenhouse gas emissions

Green change is considered to require the drastic intensification of R&D activities. Compared with similar foreign businesses, the R&D department at the EAC is particularly weak (with only three employees). Recruitment of researchers with temporary work contracts is not consistent with the importance attributed to this specific area. The current moratorium on recruitment in the public sector also creates additional constraints.

Integrated management system

New requirements in this area are qualitative in nature and involve the continuous training required for certification (all employees in all units are trained in order to contribute to the achievement of the goals of the management system). ISO 14000 implies that executives in charge of the system will have enough time and support to monitor the environmental legislation.

Green business practices in electricity networks

The new obligations imposed by EU legislation in relation to energy efficiency require a shift in the organisation towards R&D, lifelong learning and information on eco-standards.

Green public procurement

Training and information is needed on product specifications in the framework of the EAC's green public procurement plan.

Anticipating and managing green change

Cooperation with stakeholders

The EAC has concluded various collaborative actions relating to the anticipation and management of green change. Examples are given below.

Cooperation with employers' associations: The Save Energy exhibition is organised jointly with OEB, with the aim of promoting products that contribute to energy saving as well as to raising public awareness of environmental protection issues. Moreover, the EAC sponsors the biannual scientific conference on renewable energy sources organised by the Cyprus Chamber of Commerce and Industry.

Cooperation with academic institutions and regulators: The EAC has developed a partnership with the University of Cyprus and the Cyprus Energy Regulation Authority (CERA) for the implementation of automatic meter management in 3,600 households.

Cooperation with ministries: The EAC works closely with the Ministry of Environment and Agriculture under its contractual obligations (that is, reporting greenhouse gas emissions).

Cooperation with educational institutions: The EAC has developed close cooperation with schools all over Cyprus, organising events for energy saving involving EAC staff and by funding various activities on green development and environmental protection. More generally, the EAC takes a leading role in the public debate on green change in Cyprus, hosting a large number of scientific and information events aimed at the general public, businesses, scientific community and policy actors.

Cooperation with trade unions: Trade unions at the EAC organise training seminars on environmental issues. However, these seminars focus on general environmental awareness and not on the employment impact of policies for the mitigation of climate change. The quality of

social dialogue in Cyprus could be of major importance in fostering and facilitating green change. However, the trade unions are not sufficiently involved and aware of the implications of green change on skills and employment.

Conclusions and recommendations

The green business practices and initiatives of the EAC are fragmented through its various business units. The management of the company could seek to compile such practices in a single comprehensive report, which would provide various benefits. First, it would potentially contribute to a more concise and comprehensive perception by employees and management of green practices implemented throughout the organisation. This may help to connect the various initiatives and eventually highlight common requirements, synergies or even contradictory impacts. Second, communication of green practices to external stakeholders would be significantly improved.

A structured human resources policy on the qualitative and quantitative needs arising from green change in the short, medium and long term is lacking. Information on the impact of green change on labour issues has been collected through interviews with staff from the various business units.

Against this background, the following recommendations can be formulated.

- Adaptation to meet the opportunities and challenges of green change requires the strengthening of R&D activities. There is a need to adjust the working schedule and status of employees in order to enable acquisition of new knowledge and information on green issues.
- It is necessary to better inform workers about the size of the challenges (including labour issues) arising from policies for the mitigation of climate change and greening of their industry. More generally, social partners should be much more involved in issues such as the anticipation and management of the impact of green change on labour.
- The certification of power stations under ISO 14000 is necessary to increase the reliability of the integrated management system. ISO 18001 should also be linked with the other IMS standards, thus enabling health and safety and environmental issues to be examined jointly.
- Investigation of more pro-active energy-saving measures could be considered, such as energy advisors for domestic or business consumers. This perspective could help to substitute jobs that will be abolished with the introduction of smart meters.
- Collaborative practices for managing green change have been concluded, mostly with external stakeholders. However, employees of the company do not appear to have been involved sufficiently in this field. Training seminars provided by trade unions to their members on environmental issues are generally concerned with 'general' environmental awareness. There is thus an urgent need to examine more precisely the impact on employment resulting from green change at the company level and its implications both in quantitative and qualitative terms.

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