

## ENERGY MANAGEMENT IN CONDITIONS OF CRISIS. SUSTAINABLE ENERGY DEVELOPMENT

**Marina BĂDILEANU<sup>\*</sup>,**  
**Mihai-Sabin MUSCALU<sup>\*\*</sup>,**  
**Marius BULEARCĂ<sup>\*\*\*</sup>**

**Abstract:** *Provision of adequate energy services in terms of quality, at acceptable prices, in terms of environmental compliance and security of supply, and in accordance with the requirements of economic growth is a vital component of sustainable development.*

*Within the European Union the states are insisting on creating a single market in energy (in particular electricity and natural gas energy market, energies that are infrastructure network dependent). Hence, the emphasis must be focused on two different directions:*

- *development of transmission and distribution networks;*
- *institutional reorganization of the system, abolition of monopolistic structures, activities unbundling, establishment of regulatory authorities, etc.*

**Keywords:** energy efficiency, energy management, ESCO (Energy Services Companies), public utilities companies, sustainable development.

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\* Centre for Industrial Economics and Services, Romanian Academy, Bucharest, badmarina@yahoo.com.

\*\* Centre for Industrial Economics and Services, Romanian Academy, Bucharest, msmuscalu@yahoo.com.

\*\*\* Centre for Industrial Economics and Services, Romanian Academy, Bucharest, mariusbulearca@yahoo.com.

## ***1. Restructuring and reorganization energy sector***

### ***➤ Geopolitical and legislative context for operating the public utilities companies:***

- theoretically, countries that have switched to public utilities reform should benefit from a more dynamic and transparent industry, an accelerated technological development and an entrepreneurial approach to the exploration, production and distribution activities;
- public utilities supplier companies, which have long term investments in research and technological development are now under pressure for immediate results in the field. In the conditions where markets do not provide sufficient incentives for research and development, the State must reinforce its traditional role of supporter;
- as a consequence of enforcing gas and electricity Directives, and therefore promote competition, most public utilities suppliers in the European Union is in the process of restructuring to reduce costs and increase efficiency of their operations;
- main feature of public utility demand is its lack of elasticity, which increases the vulnerability to abuse of dominant power consumer in utilities pricing;
- European experience shows that energy market liberalization can be a risky episode if three conditions are not simultaneously met: adequate monitoring of market activity, sufficient competition and sufficient spare capacity;
- in EU countries, introducing competition had little effect on electricity sale prices. Although costs have decreased, benefits were mostly used by manufacturing companies in the form of higher profits, and not directed to consumers through lower prices;
- increased dependence on foreign sources of energy, extremely limited ability to influence energy supply conditions, inability to meet both the challenge of climate change, and the commitments under the Kyoto Protocol, led the public utilities supplier companies to look to new markets.

### ***➤ Reaction of the public utilities companies:***

- large companies in the European Union are preparing to face intense competitive environment;

- European companies have promoted a wider restructuring process aiming at:
  - internal restructuring (vertical and/or horizontal integration/disintegration, diversification of activities, reducing the number of persons employed, etc.);
  - outsourcing of certain activities;
  - formation of new joint-venture partnerships;
  - merging with other companies or taking over the majority package of shares of competing companies.
- some of the benefits produced by public utilities restructuring measures were:
  - creating new revenue streams;
  - improving staff training;
  - expanding geographically;
  - maximizing profit from existing activities;
  - growing operating efficiency;
  - reducing costs;
  - reconsidering strategic objectives based on the new geopolitical and legislative context.
- the most obvious line of European utilities landscape is given by the frantically mergers and acquisitions activities of large companies from EU. Expanding their activities show firms interest to enter new markets either through acquisition of new business areas nationally, either by extending operations to new territories;
- the result of mergers and takeovers fever will be a market dominated by few giants of public utilities;
- in the next decade is expected to witness the increasing in number of companies diversifying their range of facilities provided - from electricity to gas, telecommunications, water, and recycling;
- French energy market is dominated by two industrial giants, Electricité de France (EdF) and Gaz de France (GdF); in Germany we have the same picture: E. ON and RWE; Spain's electricity production is dominated by two large companies, Endesa and Iberdrola, and natural gas market by Natural Gas (NG); in Italy, Enel controls electricity markets and ENI controls the natural gas market;
- in Romania, Electrica had been fragmented into eight entities which are either privatized or being taken over. The situation is

- repeated on natural gas market where Distrigaz Nord and Distrigaz Sud help at increasing energy giants as E. ON and GdF;
- privatization of economic companies was characterized by the inability of Government to overcome political and social barriers (lack of clear and stable legal framework, insufficient transparency of the privatization process, the divergent interests of various pressure groups);
  - energy security concerns all types of resources, assuming the existence of functioning markets, undistorted prices, transparent relationships between energy suppliers and consumers, a robust and transparent investment framework, and integration of environmental issues.

## ***2. Energy efficiency***

A series of laws and policies address specific aspects of energy efficiency. Labelling schemes introduced by the Energy Labelling Directive, the Energy Star Regulation, Ecolabel Regulation and other schemes developed by Member States, retailers and other businesses provide consumers with information on energy and environmental performance of their products.

However, several barriers prevent these policies have a full impact. In general, existing voluntary and regulatory instruments are not sufficiently well connected to each other or drawn from one political perspective only, and the potential synergies between different policy instruments are not exploited. Moreover, fragmentation of national and regional approaches sends conflicting signals to producers and creates domestic distortion.

Therefore, appears the need of a new approach of the policy that combines the potential of different policy instruments in an integrated action plan to implement these tools in a dynamic way. This would include setting ambitious standards domestically, which would provide improved products and increased demand through a systemic approach to incentives and innovation. Such an approach will be achieved through integration of existing instruments and strengthening them where necessary. In this way it would be completed the current environmental policy; for example, in terms of energy use, should be completed the energy and climate package adopted by the Commission in January 2008.

New EU strategy integrates the potential of different policy instruments to implement them in a dynamic way. It comprises the following actions:

- scope of the Directive on the Ecodesign of energy products will be extended to all energy products. Will be set minimum requirements for products with significant environmental impact, which will focus on key environmental issues. To provide markets with information on the best products will also be identified advanced benchmarks of environmental performance. Minimum requirements and advanced benchmarks are subject to periodic review so that they can be adapted to technological progress and provide businesses with a long term perspective of the future regulatory framework;
- labelling products thru the Energy Labelling Directive and the Ecolabel Regulation will be further developed and, following a review of the Ecodesign Directive in 2012, will be duly completed by a directive on labelling in ecodesign, in order to inform consumers about energy and/or environmental efficiency of products;
- energy efficiency and environmental criteria under the above schemes will be used to establish a harmonized basis for public procurement and incentives provided by the EU and its Member States. This would overcome the current fragmentation of incentives and incentive measures for domestic market;
- a number of other actions aiming to smarter consumption will also be undertaken. In particular, measures will be implemented as with retailers and manufacturers to greening with their own operations and supply chains, and overall consumer awareness, thus enhancing their proactive role.

### ***3. Valorising the opportunities for energy services market***

In the last decade, Europe has seen a growing interest in providing energy services, resulting from recent restructurings of electricity and gas sectors, but also boosts the sustainable development of energy sector. Liberalization of energy sector, energy utilities initially, allowed the provision of gas and electricity to certain customers at relatively low prices.

This project could not be sustained on long term, as prices reached very low levels.

Most entrepreneurial utility companies have realized that for keeping current customers and acquiring new ones, they must provide additional services of gas and electricity supply. Also, companies producing equipment and control systems, and engineering, facilities and information and communication technology (ICT) firms have decided to enter the energy services market. Beginning with year 2000, the energy services market in Western Europe was estimated at merely 150 million euros annually, while, according to estimates, the potential of this market could reach 10.5 billion per year. Currently, the database contained hundreds of type ESCO (Energy Services Companies) European companies, and the number is steadily growing.

In addition to energy price stability, other factors that may contribute to the development of energy services market may be cited as follows:

1. *The size of the market* - a large market of commercial firms, institutional and industrial ones that can significantly improve energy use by adopting energy-efficient practices and technologies;
2. *Highly skilled workforce* - a rich offer of experts (in energy, engineering, finance, marketing and management), needed by energy service companies to implement technologies and processes for energy conservation for the benefit of consumers;
3. *Availability of energy efficient equipment* - the need for manufacturers to permanently add to their range of products such energy-efficient technologies;
4. *A stable political system and an involved Government* - a democratic political responsive system is needed, also involved in improving energy efficiency and environment protection issues. Furthermore necessary and stable financial and legal systems are required.

In Romania, the following barriers to ESCOs development draw our attention from the beginning:

- both energy services company, and performance contracts concepts are new to almost all interest groups that should be familiar with them: financiers, lawyers, contract managers, insurers, governmental agencies and consumers;

- Government policies on performance contracts are uncertain;
- legal and contractual issues specific to performance contracts are unclear;
- lack of capital for the setting up and operation of ESCOs.

#### **4. Conclusions**

ESCOs in less developed countries are confronted with most of the barriers facing the implementation of energy efficiency projects. Moreover, energy service companies have to pass over other difficulties related to unfamiliarity with the concept and their functioning by the other parties, such as customers or financial institutions. Furthermore, the barriers can differ from one country to another depending on their stage of development, the role of markets and competition in the economy (knowledge of market rules), institutional and legislative requirements, etc.

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