

Fiscal and Accounting Aspects in the Field of Renewable Energy in Romania

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Abstract For the time being, the society is facing serious problems related to the environmental protection. These problems are closely linked with the needs of the human community, needs which are permanently growing as compared to the resources which are more and more limited. After the accession to the European Union, among the business entities appears the concept of corporate social responsibility. The large multinational company successfully enrol themselves in the development of this concept. The field of renewable energy is only a part of the whole. The need to study the field of renewable energy is given by the novelty and importance of this field at national and international level. The alignment to the European standards is the prerequisite for the start of this research. I followed the fiscal and accounting approach of green certificates. Green certificates are one of the instruments through which investors, business entities, corporations demonstrate their commitment to the protection of the environment. Starting from the general to the particular, I noticed the accounting and fiscal approach of green certificates in one of the biggest corporations on the Romanian market, which produces and sells green certificates.

Key words Renewable energy, green certificates, corporate social responsibility

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1. Introduction

Green investments are an area that is growing increasingly, at national level and gradually within the business entities. First of all, the state participates in the meetings at European level and it agreed to the adoption of the European schemes in connection with environmental protection.

The European Union defines the CSR¹ as those programs by which the "companies voluntarily decide to contribute to a better society and a cleaner environment" (2000).

A representative of academic, Geoffrey Heal, defines CSR as follows: "CSR involves taking measures to reduce outsourcing costs and reduce distributional conflicts" (Geoffrey M. Heal, 2004).

Michael Hopkins in the work of the ILO (International Labour Organization) states that "CSR is concerned with treating the stakeholders of a company in an ethical and responsible manner" (Michael Hopkins, 2004).

Renewable energy is a vast field that is based on energy sources that are recovered in a short time without considerable effort from the people, and also those sources which do not know a source endpoint, i.e. they are inexhaustible. We are talking about energy sources such as sunlight, wind, rivers, geothermal heat and other biological processes.

Over time, man has learned to use fully these natural energy sources through various methods. Typically, the sources of energy that can regenerate can be divided into several categories, as follows (Renewable Energy World Network, 2013):

- wind energy (energy of the wind);
- solar energy;

¹ CSR – Corporate Social Responsibility

- water energy: hydropower-rivers, tides energy, flood/ebb energy of the seas and oceans, osmotic potential energy;
- geothermal energy;
- biomass energy: biodiesel, bio ethanol and biogas.

The exploitation of such energy sources results in the production of electricity, heat etc. Currently, the uneven dispersion of these sources leads to an uneven exploitation. However, green investments have a growing trend.

Their advantage is represented by their unlimited availability unlike conventional energy sources: oil, coal, natural gas.

Depending on the type of resources and the energy potential of the renewable sources listed above, the state of facts at country level is as follows:

Table 1.

| Renewable energy sources | Yearly energy potential | Economic equivalent of energy (thousand toe) | Use |
|---------------------------|-------------------------|--|-------------------|
| Solar energy | | | |
| - thermal | 60x10 ⁶ GJ | 1,433.0 | thermal energy |
| -photovoltaic | 1,200 GWh | 103.2 | electrical energy |
| Wind energy | 23,000 GWh | 1,978.0 | electrical energy |
| Hydropower, out of which: | 40,000 GWh | 3,440.0 | electrical energy |
| Under 10MW | 6,000 GWh | 516.0 | electrical energy |
| Biomass | 318x10 ⁶ GJ | 7,597.0 | thermal energy |
| Geothermal energy | 7x10 ⁶ GJ | 167.0 | thermal energy |

Source: The National Action Plan in the Field of Energy from Renewable Sources (PNAER);

http://www.minind.ro/pnaer/pnaer_29%20iunie_2010_final_alx.pdf

The use of renewable sources is experiencing difficulties, among these difficulties are the environmental restrictions, technological limitations, the economic efficiency which has not meet the expectations.

As far as the forecast on the production of electricity from renewable sources concerns, the experts have taken into consideration the following data:

Table 2.

| Renewable energy sources | 2010 (GWh) | 2015 (GWh) |
|--|------------|------------|
| Solar energy | 1,860 | 11,600 |
| Wind energy | 314 | 1,001 |
| Hydropower - total | 18,200 | 18,700 |
| Our of which small water power plants | 1,100 | 1,600 |
| Biomass | 1,134 | 3,654 |
| Geothermal energy | - | - |
| Total | 19,650 | 23,364 |
| Weight of the renewable energy in the energy consumption | 30.00% | 30.40% |

Source: The National Action Plan in the Field of Energy from Renewable Sources (PNAER);

http://www.minind.ro/pnaer/pnaer_29%20iunie_2010_final_alx.pdf

2. The renewable energy - A usable field

The investments in the generation of energy from renewable sources increased significantly. However, the forecasts show that these investments will improve. The specialists do recommend the involvement of the state through grants and the improvement of the infrastructure.

The European Union promotes the field of renewable energy and also supports it by: the adoption of fiscal policies on reimbursement of fees and the allocation of economic incentives, the offset of the cost of

the renewable energy production and an increase of the profits by putting the suppliers under some obligations, the purchase of renewable energy and green certificates (Covaci, 2011).

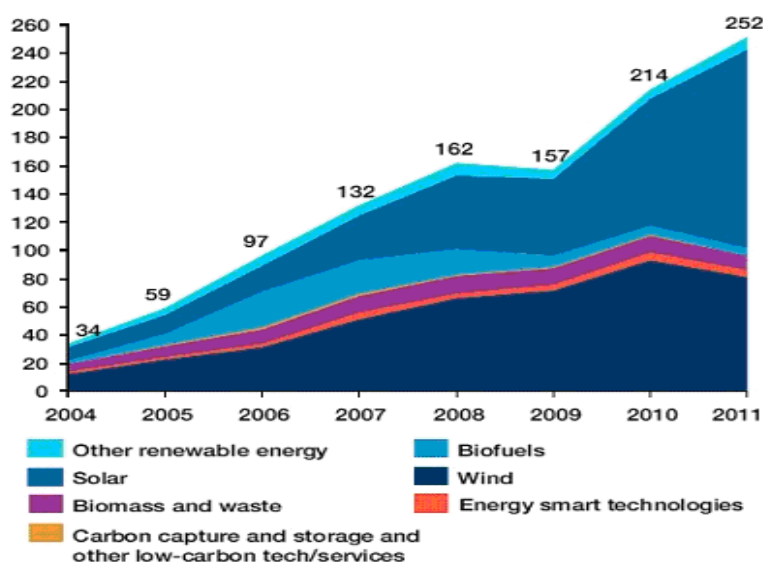
The law governing all aspects of the use of the renewable energy sources and the investments in this field is contained in the Directive 2009/28/EC on the promotion of renewable energy, which sets "that the authorization, approval, certification and licensing procedures for renewable energy projects must be proportionate and necessary".

At national level, the in force law is the Law 220/2008 on the promotion of the renewable energy sources, which regulates the support scheme in this field, which is aligned to the schemes existing in the neighboring countries and at European level. The whole activity has been focused on the implementation of this support scheme. Due to some uncertain aspects, the volume of green investments decreased.

In 2011, the Romanian government adopted the Emergency Ordinance no. 88/2011 that brings new supplementations to Law 220/2008, which aims to increase the investments in the generation of electricity from renewable sources (GEO no. 88/2011).

The state aid scheme for renewable energy is implemented through the system of green certificates. All green energy producers will receive for free green certificates in proportion to the energy they generate. These certificates are free of charge. The energy suppliers have to purchase, pursuant to the provision of the law, green energy together with the green certificates from the energy producers. The purpose of this acquisition is to obtain an annual quota of energy from alternative sources that is to be sold to customers. In their turn, the suppliers will recover the costs incurred in the purchase of green certificates through invoices they issue to their consumers. That means that the consumers are the ones who bear the cost of the green certificates.

From the standpoint of its evolution in the European Union, this field has increased significantly. Thus, the significant figure of 257 billion dollars has been reached in 2011. In the same year, the renewable energy capacity exceeded the capacity of nuclear power throughout the world (The Green Investment Report, 2013).



Source: Bloomberg New Energy Finance, <http://about.bnef.com/>

Figure 1.

In the near future, it is expected a stagnation of the solar and wind sectors, because of the lack of demand as opposed to the too high growth of the supply. On long-term bases the shale gas threatens fossil fuels. The energy producers from fossil fuels will have to lower the price.

Another possible direction in the production of renewable energy is the private investments. An important role in achieving this plays the state that should encourage these investments through instruments like providing insurance to minimize risk, providing low interest loans in local currency, funding mechanisms

such as grants or subsidies, the stimulation of the market of green certificates and others (The Green Investment Report, 2013).

From the point of view of the evolution in Romania, 2012 was the year in which significant amounts were drawn mainly in the wind sector, while Romania was the most active country in Eastern Europe if we refer to newly installed capacity (Crăciun, 2013).

As future directions, the Romanian state is considering getting 38% of its total energy from renewable sources in 2020. In this respect were adopted the support scheme and also certain provisions with respect to the obligation to achieve certain annual quota of green certificates.

This rate is set by ANRE (National Regulatory Authority for Energy). The producers of green energy receive each month free certificates for the production obtained. Their number varies depending on a number of factors: the type of renewable sources, the power plant used for power production.

The green certificate is a document attesting 1MWh amount of electricity produced from renewable sources, i.e. non-fossil sources like wind, solar, aero thermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas and wastewater treatment plants gas and biogas (Crăciun M., 2013).

In the current practice, for 1 MWh produced in a wind turbine the producer receives 1 green certificate, while for 1 MWh produced in a solar power plant the producer receives six green certificates.

These green certificates can be traded on the free and centralized market organized by a specialized body.

3. Green certificates - fiscal and accounting approach

As far as the accounting and fiscal approach applied to the green certificates concerns, it has certain features according to participants in their production or distribution.

The producers of green certificates are the main link. From an accounting perspective, the producers of electricity use a number of accounts, as follows:

- Upon receipt of the green certificates these are booked in the accounting system in the distinct analytic account 508 "*Other short-term investments and receivables*", based on the deferred incomes (distinct analytically account 472 "*Deferred income*") with the price set forth by the operator of the electrical energy market.

- Only after their sale, the deferred income will be booked in the profit and loss account.

- At the end of the financial year, it will be used the value of the green certificates those published by the operator for the last transaction. Like securities, if applicable, the differences are booked in the accounting system as advantageous differences - as an income in account 768 "*Other financial income*" or as an expense in the account 668 "*Other financial expenses*".

From a fiscal perspective, according to the opinion of KPMG's specialists, the revenues are taxable revenues and the expenses will be deductible in the calculation of the profit. When we refer to the resulted revenues, we include not only income arising from trading of green certificates but also those differences resulted at the end of the financial year. The same approach is valid also for the expenses arising from the differences, i.e. they are deductible in the calculation of the taxable.

Allow me to point out that we agree with the opinions expressed above.

The electricity suppliers book the purchase of green certificates in the account 652 "*Environment protection costs*". If these certificates are purchased in advance they will be booked in the account 471 "*Prepayments*".

If the certificates are purchased for trading, then for their booking is used the distinct analytical account 508 "*Other short-term investments and receivables*".

There are also cases in which the suppliers do not purchase these green certificates. The consequence is the obligation to pay the value of not acquired certificates in the amount of 110 euro to the Environment Fund Administration.

The green certificates are valid for 16 months from the date of their issue. Upon maturity date, if they are unused they are cancelled and booked in the account 668 "*Other financial expenses*".

The fiscal approach applied to the green certificates purchased by the electricity suppliers is the same as that applied to the producers of green energy.

Our research takes also into account, among other things, a case study which aims at presenting the main accounting formulas by which the green certificates booked in the accounting system of one of the leaders of the Romanian market, which is involved in the production and sale of green certificates. The analyzed period of time is November 2012.

I. Identification of the balance component of account 418 towards the green certificates received from Transelectrica:

| | | | | |
|--|---|--|------------|-------------------|
| 418001 | = | 708002 | 843,660.33 | month July 2012 |
| <i>"Customers-invoiced to be issued. Transelectrica"</i> | | <i>"Revenues from sundry activities. GC"</i> | | |
| 418001 | = | 708002 | 848,997.04 | month August 2012 |
| <i>"Customers-invoiced to be issued. Transelectrica"</i> | | <i>"Revenues from sundry activities. GC"</i> | | |

II. Cancellation of the entries for green certificates on stock (30 September 2012):

| | | | | |
|--|---|--|--------------|--|
| 418001 | = | 708002 | 1,692,657.37 | |
| <i>"Customers-invoiced to be issued. Transelectrica"</i> | | <i>"Revenues from sundry activities. GC"</i> | | |

III. Booking of the green certificates according to Decree 1118/2012 as subsequently amended by GEO 3055/2009 at the moment of their receipt from Transelectrica:

| | | | | |
|---|---|--------------------------|----------|--|
| 508 | = | 472 | 1,000.00 | |
| <i>"Other short-term investments and receivables"</i> | | <i>"Deferred income"</i> | Ron | No. pcs. x Price transaction at the published by OPCOM |

IV. Sale of green certificates (October 2012):

| | | | | |
|--------------------|---|---|----------|--|
| 4111 | = | % | 1,128.40 | |
| <i>"Customers"</i> | | 508002 | 900.00 | |
| | | <i>"Other short-term investments and receivables. GC"</i> | | |
| | | 442701 | 218.40 | |
| | | <i>"Output VAT. GC"</i> | | |
| | | 708002 * | 10.00 | |
| | | <i>"Revenues from sundry activities. GC"</i> | | |

If the sale price is higher or less than the trade price, the value of 708002 may be positive or negative.

V. Transfer to incomes of the certificates sold:

| | | | | |
|--------------------------|---|--|--------|--|
| 472 | = | 708002 | 900.00 | |
| <i>"Deferred income"</i> | | <i>"Revenues from sundry activities. GC"</i> | | |

VI. Assessment of the green certificate stock (of account 508) at the end of the fiscal year:

| | | | |
|---|---|---|--------|
| 508 | = | 768 | 100.00 |
| "Other short-term investments and receivables" | | "Other financial income" | |
| or | | | |
| 668 | = | 508 | 100.00 |
| "Other financial expenses" | | "Other short-term investments and receivables" | |

4. Conclusions

The renewable energy holds a more and more extended territory, especially energy from hydropower. However, in the last 20 years, wind energy has developed rapidly. In the long term, these fields of work will go into decline. Future prospects revolve in reduction of production cost of electricity from renewable sources, particularly by improving the technology of the power production plants.

The state still plays an important role in the stimulation of this type of energy through its fiscal policies and subsidies granted in this field.

The green certificates proved to be an efficient tool for fundraising environmental protection.

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