ACCOUNTANCY REFLECTION OF ENVIRONMENT INFORMATION REGARDING THE ENERGY SECTOR

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Natural resources, especially energetical ones, have continuously influenced the evolution of human society, including the economical developement, and so the problem of their deficiency and their limited character is a problem of major interest for the human kind in their quest to find the balance betwen the need of economical expansion and the environment protection. The purpose of this paper work is to show the importancy of energy eficiency by asuming two main action directions: to encrease the quantity of renewable energy and to emprove the energetical efficiency. After the researches we made, we brought in attention the main mechanisms used in the insurance of sustainability security and competitiveness of the energy sector. These practices the objectives of the sustainable development principle, exemplified from accountancy point of view through a new instrument in the economical theory: environmental accountancy which ensures the background regarding the recognition, evaluation and presentation of environment information.

Keywords: Energy resources, sustainable development, environmental financial accounting, environmental management accounting, environmental issues, international accounting standards

1. Introduction

The energy is essential for economic and social development and improving the quality of life.[68]

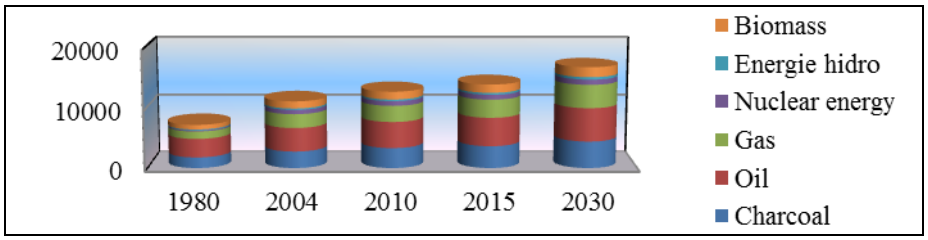
Since the 1950's, the energy gain more and more the attention, becoming an important strategic factor in the global politics, representing an essential component in the economical development process of every society, encouraging the progress and stimulating its competitiveness abroad, the internal production capacity and the political force of a country.

The main objective to reach by the energy sector is to satisfy the need for the energy at a lower price as possible, now and in medium and long term, according with a modern market economy and to ensure a civilized life standard respecting the durable development principle.

In the actual growing competitiveness conditions between national economies, inevitably it will reach a considerable growth of energy resources consume, being estimated a total request for energy in 2030 50% higher than 2003, situation showed in Picture 1.1.

Picture 1.1

The evolution of the world's oil demand



From : *WEO 2006, OECD/IEA 2006*

Based on the data we collected, it can be seen the fact the oil and charcoal are the most used and intense exploited resources, which growth is the result of a higher and higher consume as an effect of development and economical expansion process.

Knowing that UE is one of the most industrialized areas of the world, the energy is a main factor to maintain economical competitiveness, and for that, the European Commission published in 2000

[68] United Nations, Agenda 21, „Protection of the Atmosphere", Rio de Janeiro, 1992

„Green book – to a European strategy for a secured energy feed'' and after following debates, the Commission decided to publish a new document, in March 2006, called: „Green book – an European strategy for stable, competitive and safe energy ''. The title document itself reflects the main objectives which the European Union has established for the strategic policy[69], this being undertaken also by Romania.

Table 1.1

Europe Union - Strategic objectives

Objectives	Presentation
Energetical safety	➢ To limit the addiction for imported energy resources ➢ To diversify the import sources, the energy resources and transport routes ➢ To encrease proper level for national transport routes for electric energy, natural gases and oil
Stable developement	➢ High energy eficiency ➢ Promoting energy based on renewable resources production ➢ Promoting the production of electric and thermic energy in cogeneration centrales ➢ Rational and eficient use of primary energy resources ➢ Stimulation for research – developement activities
Competitivity	➢ To develope other electric energy, natural gasses and oil market, green certificates, greenhouse gases emission certificates and energy services ➢ A free transit for the energy

Source : Prepared by the author

The issue of developement and an efficient exploit energy sector exploation ensuring energy safety and respecting the long term developement principle was approached in various competence paper works by many authors.

Silviu Negut, in „Orientări privind securitatatea energetică a României'', Bucharest, 2008, shows the need and importance of ensuring the energy safety in economical background of every state.

Moisescu Florentina and Mihai Oana, in „Environmental financial accounting'' marks out the importance of environment information reflection in financial situations applying Accounting International Standards, based on a high interest shown by.

Ciprian Apostol, in „Environment policy reflection in financial situations''', Scientific Works-vol.51, Agronomics series, the need to report the impact for the mature in financial situations by the entities that pollutes it.

Leaving from the appreciations exposed by the authors mentioned and thinking about, we joined the main ideas for the reasoning that the importance of the energy sector efficiency, based on respecting the long term development principle is the only viable solution.

2. Nowadays situation for the energy sector in Romania

Romania is one the countries that benefits from a extensive palette of primary fossil and mineral energy resources, also has an important potential of renewable resources, dew to a diversified relief and favorable geographical position.

- **Exhaustible energy resources**

Analysing the actual situation of certain resources, correlated with the realistic estimation of potential resources and strongly bended with the previsions about the use of resources determined by the final energy request, we can make an reliable estimation of the possibilities to cover the necessary primary energy resources.

[69] Mușatescu, V., *„Impactul investi□iilor din domeniul energetic asupra creșterii economice''* , București, 2012, p. 46

Table 2.1

National oil reserves and natural gases in Romania – estimation 2015-2020

Year	Oil Milioane tone	Natural gases Miliarde
2011	60	134
2012	56	127
2013	52	120
2014	48	114
2015	45	107
2016	41	101
2017	38	95
2018	34	89
2019	31	83
2020	28	77

From: Romania energy strategy 2007-2020, according to ANRM data

Analysing the data submitted, we can conclude that the primary energy production in Romania based on using fossil reserves will not grow at all in the next decades and covering the request for primary energy will be possible through an increased use of renewable energy resources and through primary energy imports.

- **Renewable energy sources (R.E.S)**

Although renewable energy sources in Romania have, theoretically, a big potential, they are effectively used at a lower level due to technological limitations and environment restrictions. In the same time with the negotiations for joining European Union, it was created ''The way to go in Romania energy domain''[70] approved by the Government by Government Decision 890/2003. In this document it is mentioned that R.E.S will be encouraged, because they are an internal source that can help to decrease imports and to improve the safety of energy alimentation respecting environment protection conditions.

Based on the studies made by specialists and the available statistics data, we can make a top of renewable energy sources for each one's energy potential for a year. According to the table 2.2., biomass energy has the highest energy potential approximately 50%, followed at a big distances by wind energy with a potential four times smaller.

Table 2.2.

Renewable energy sources(RES) energy potential in Romania

Regenerable energy sources	Energetical potential for a year	Economic energy equivqlent (thousands tep)	Use
Sun energy			
-thermic	60 * GJ	1,433	Thermic energy
-photovoltaics	1,200 GWh	103.2	Electric energy
Wind energy	23,000 GWh	1,978	Electric energy
Hidro energy	40,000 GWh	3,440	Electric energy
- bellow 10 MW	6,000 GWh	516	Electric energy
Biomass	318 * GJ	7,597	Thermic energy
Geotermal energy	7 * GJ	167	Thermic energy

From: Planul Național de Acțiune în Domeniul Energiei din Surse Regenerabile (PNAER), Bucharest, 2010

General objectives of strategy to capitalize R.E.S

- ✓ To integrate R.E.S in national energetic system structure;
- ✓ To promote primary investment on RES market;
- ✓ To ensure the independency of the national economy energy consume;
- ✓ To ensure Romania's terms to participate on European market for ''Green certificates'' for R.E.S.

[70] http://www.cez.ro/edee/content/file-other/rumunsko/utile/legislatia-primara/hotarare-nr-890-din-2003.pdf , consultat la data de 27.02.2014

- **Nuclear energy**

In European Union program Until 2050 is stipulated that for realising an efficient continental economy with a minimum carbon emission, all the members, including Romania, can use safely nuclear energy in the same time with R.E.S. Based on every energy scenario presented in various studies made after 2011 Fukushima nuclear disaster, emerges the fact that nuclear energy continues to be a part of UE[71] energy mix, because community institutions agree to produce this kind of energy, considering every advantage and disadvantage of using it.

After analising Romanian's actual situations and good developement posibilities of energetical sector in Romania, based on respecting the sustainable developement principle, we can conclude saying that our country has an important energetical potential wich, propperly exploited, could represent a key element in supporting economical developement and external competitivity for the national economy.

3. Environement accountancy – the mechanism of sustainable development

When Romania joined UE it because very necesarly to make the same and align to the energetical sistem that the european demands and directives.

In post-joining period, the need to use green accountacy became more abivious than ever, altough in Romania, the actual law does not provide the obligativity to usse it in elaborating financial situations, presenting distinctly environment informations not being mandatory. Only multinational companies publish this kind of information.

Integrating environment in producing energy entities life suppose to take in considerance the environment at a technical, legislative, economical, accounting and financial level. Environment accountancy is a managerial instrument used in many purposes, as such: improving performancy in raport with the environment, management and costs control, better investiments in less polluting technologies, promoting now the production processes and less the polluing products.

Regarding environment accountancy appliances, the General Framework of International Accounting Standards/International Financial Reporting Standards (IAS/IFRS)[72] recommends to draw up an environmental raport or management report with the characteristics main performance and incertitudes that the entity confronts. And european legislation, in the recomandation of CE 2001/453, that provides a general background to present environmental informations, so that the financial situations of an entity, how to approach environemental problems and the performances in this domain.[73]

The environemetal report is a part of plans or programs documentation that identifies, describes and evaluates the main possible efects over the environment of appling them the mandits rational alternatives, considering the objectives and the geographie area.[74]

In the environmental reports are presented:[75]

- ✓ Financial informations (environmet protection expenditure);
- ✓ Unfinancial informations:
  - Quality informations (natural resources exploiting policies);
  - Quantity informations (natural resources consume, greenhouse effect gases in the air, watter and noise emissions).

4. Presentation of environmental informations in financial situations the producing energy entities

According to environmental accountancy aplicativity normes based on european directives, produscing energy entities, by the tipe of resources used in the production process, are obligated to insert in financial situations environmental informations about:

- ✓ Mandatory cote sistem for green certificates;
- ✓ Greenhouse effect gases emmision certificates acquisition;
- ✓ Environement Fund Tax.

- **Mandatory cote sistem for green certificates**

Mandatory cote sistem for green is the way to promote and stimulate production of electric energy from renewable sources and it is put across in a acquisition of green certificates according to

[71] Comisia Europeană, *„ Provocările şi politica în domeniul energiei''*, 2013
[72] Moisescu, F., „Convergenţe contabile internaţionale'', Editura EUROPLUS Galaţi, 2010, p. 11
[73] Apostol,C., „Reflectarea politicii de mediu în situaţiile financiare anuale", Lucrări ştiinţifice, Vol.51, Seria Agronomie, 2013
[74] Ghid de aplicare a procedurilor EIA/SEA/EA, 2010
[75] Alciatore, M., „Changes in environmental regulationand reporting: the case of the petroleum industry from 1989 to 1998'', în „Journal of Accountingand Public Policy", vol. 23, 2004, p. 54

mandatory cotes for electric energy produced from these sources by ANRE agreed suppliers, according to Law 202/2008.

According to accountancy regulations approved with OMFP 3055/2009, modified and completed with OMFP 1.118/2012, ES suppliers and producers have to consider in financial situations, the quarterly acquisition of a number of green certificates equivalent with the product between the quarterly quantity of electric energy delivered to final consumers and the value of mandatory cote system of green certificates acquisition (Table 4.1). the certificates bought to reach the mandatory cote are not marked on the market at the end of the financial exercise.

Table 4.1

Mandatory cote system of green certificates in 2009-2020 period

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Cote	6,28	8,30	8,30	8,30	9,00	10,00	10,80	12,00	13,20	14,40	15,60	16,80

Source: made by the author on the basis of the information collected on the site http://www.anre.ro/informatii.php?id=1

According to OMFP 1.118/2012, renewable energy sources producers that have emission green certificates given by the transport operator will registered in accountancy and to the certificates received, as a short term investment. These certificates are marked on the market at the end of every financial exercise by showing the gains or losses from it.

- **Greenhouse effect gases emission certificate**

The trading scheme to greenhouse effect gases certificates is an instrument used in European Union politics for climatic changes evolution effect gases, a certificate allowing to throw out a tone of , equivalent in a defined period, based on ''limit and trading'' principle.

Romania is a part of UE trading scheme to greenhouse effect gases emissions since it joined European Union. The initial form of ETS Directive prefigures that minimum 95% of all certificates has to be free, the allocation being realized by the Allocation National Plan for 2007 and 2008-2012. For third step of the scheme, 1.01.2013- 31.12.2020, green house effect gases emission certificates assigned for the electric energy production sector will be realized through the acquisition of every certificate at auctions.

According to OMFP 1.118/2012, greenhouse effect gases emissions certificates bought are considered financial investments as assets or short terms financial investments, if it are bought to be re-sold for short-term profit.

Order 3055/2009, point 2007 : ''In account 471 ''In advance expenses'' are also registered greenhouse effect gasses emission certificates acquisition, made during this period, but related to a previous period, being recognized as future expenses to use .''

The certificates with no established value can't be recognised in balances of accounts are followed with 806 Account ''Greenhouse effect gasses emissions certificate ''.

- **Environment Fund Tax**

Energy producing entities which eliminate in the atmosphere greenhouse effect gasses after the production process, are compelled, according to the law, to declare and pay monthly the counter- value for Environment Fund Tax calculated depending on the quantity of fuel used in production activities, using a special program to calculate, which can be found on the web page of Environment Fund Administration.

Environment Fund Administration manages programs financed from national funds and it is fully financed from self and answers for Environment Fund Administration .

The Environment Fund is a public fund, fiscally deductible, and its incomes are public incomes, part of the general consolidate budget, and a special law establish its destination.[76]

The tax for Environment Fund is an issue for financial information presented in environment reports and are found in Profit and Losses Account, effecting the result of the exercise.

5. Conclusions

Based on same major disorders in the economy-environment report, the relation betwen economical activity and the natural environment is in a huge reconfiguring process, giving a big importance for efficiency and sustainable functioning of energy sector, considered ''the engine'' of the whole economy.

In this context it is absolutely necessary to reform the entire sector, with a point of reference in respecting the long term development principle by applying the directives and norms imposed by European Union, considered environmental accountancy instruments.

[76] http://www.afm.ro/prezentare.php, consultat la data de 26.04.2014

To reach the frame-objectives regarding a rational exploiting of energy resources and to stimulate the use of renewable ones, to ensure a sustainable, safe and competitive energy productivity, it was call into consideration the appliance of Mandatory Cote System for green certificates, greenhouse effect gases emission certificates and the payment of Environment Fund Tax, reflected with the help of Environment Accountancy in entities financial situations.

Applying these measures and elaborating new strategies with the objective to solve the key-challenges in energy domain, ensures the consolidation of a long term energy sector, competitive and performance to ensure a viable satisfaction of the energy needs.

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