

THE STRATEGY OF THE ROMANIAN MINING AND ENERGY SECTORS IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

Nicolae Ilias¹, Iosif Andras², Daniel Surulescu³, George Teşeleanu⁴

^{1,2} University of Petrosani, Romania

^{3,4} National Hard Coal Company, Romania

ABSTRACT. The paper deals with the outlining of the strategies for the future development of mining and energy sector in Romania, taking into account the relational balance between supply security and environment protection. The issues regarding the harmonization with EU legislation and the requirements of the concurrence driven market economy and globalization – are discussed, as well.

СТРАТЕГИЯ ЗА РАЗВИТИЕ НА РУМЪНСКИЯ МИННО-ЕНЕРГИЕН СЕКТОР В КОНТЕКСТА НА НЕПРЕКЪСНАТО УСЪВЪРШЕНСТВАНЕ

Николае Илиас¹, Йосиф Андрас², Даниел Сурулеску³, Джорд Тежелеану⁴

^{1,2} Петрошански университет, Румъния

^{3,4} Национална въглищна компания, Румъния

РЕЗЮМЕ. В доклада са очертани стратегиите за бъдещото развитие на Румънския минно-енергийния сектор, вземайки предвид баланса между осигуряване безопасността и опазване на околната среда. Дискутирани са също така и въпросите за съчетаването на Европейското законодателство с изискванията на конкурентния пазар.

I. General aspects

In June 1998 the EU Council meeting held in Cardiff officially stated the requirement of embedding the concept of sustainable development in sector policies, situation in which the economic sectors of different countries, in the field of mineral resources and energy became subject of an integrated approach.

In order to transpose in practice this requirement in Romania are performed analyses and syntheses in view to identify the strategic parameters necessary for the formalization of the sustainable development in the horizon of years 2025 - 2030:

- systematization of direction of strategies in EU policies regarding sustainable development;
- identification of main action lines in the field of primary energy including nuclear one in the context of EU enlargement and Romania's adhesion;
- obtaining true images regarding the primary in connection with the evolution of nuclear energy trends in EU and worldwide;
- formalization of feasible models of exploitation and valorisation of mineral resources from proper geologic reserves;
- integration of environmental issues in energy policy of EU community;
- transforming the concern for sustainable development in the operational policy engagements.

After the energy crisis in 1973 (the oil shock), some technocratic approach was observed in order to solve effectiveness problems.

The early XXI century find in Romania a commitment situation in this field. It is about the "energy-environment" systemic approach in the situation in which the sustainable energy policy is defined as the action towards the contribution to wealth maximization on long term, by maintaining a dynamic balance between secure supply, competitiveness of services and environment protection as a response to the challenge of global energetic system.

II. Key aspects in the sustainable development of Romania for the mineral and energy resources sector

It is recognized that energy, irrespectively the mineral resources in Romania are components of the strategy of sustainable development which assume operational responsibilities. (fig. 1).

National policies, the traditional and centralist ones cannot resist any more to the globalization and cannot avoid concurrence pressure.

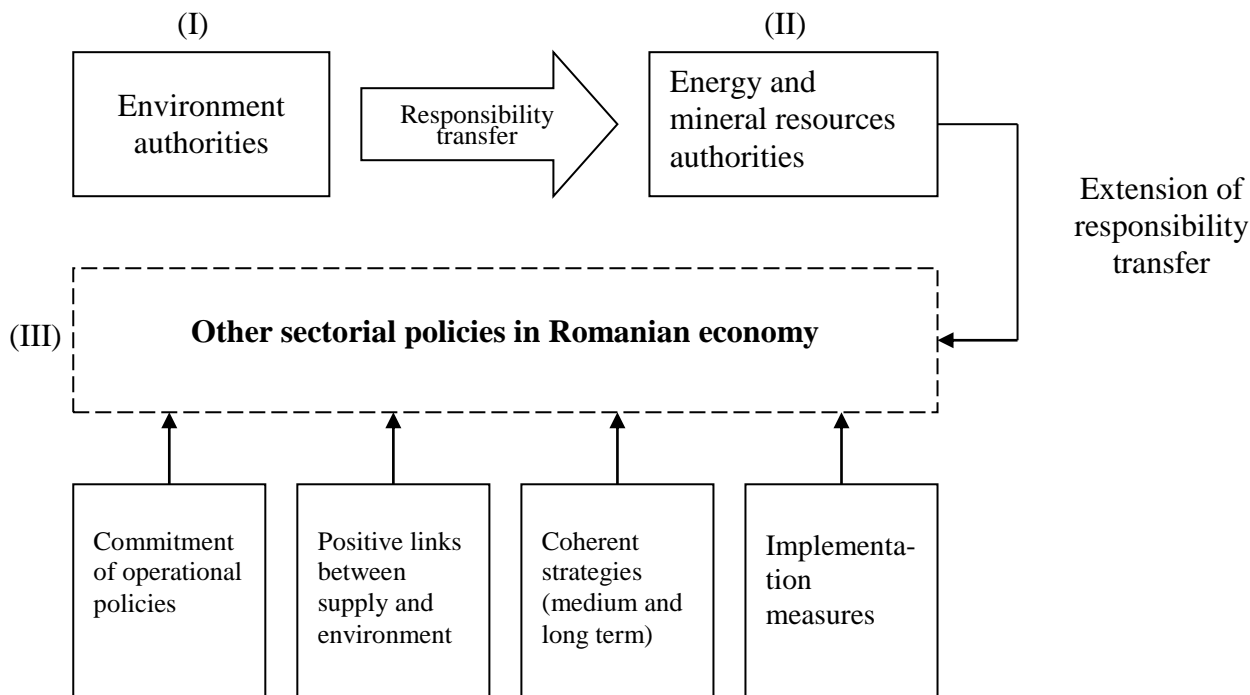


Fig. 1. Concern for extension of responsibility transfer in the process of sustainable development

Liberalization – possible as conceptual application in Romanian energy and mining system implies reforms, in the amount in which it becomes central instrument of common European policy in the energy field (fig. 2).

It is possible to give up the sovereignty in energy issues in favor of a common, supranational regulation of EU, aspect which could not represent a process characterized by dysfunctions between common policy elements on the one hand and the national, diversified apparently non convergent policies on the other hand.

The European convergence and interdependence to which Romania is to be aligned in the field of energy and mining problems is based on a platform based on 3 essential elements, i.e.:

- The E U Program of formalization of the market in the European space;
- The general common obligation, to act for the environmental protection;
- Promoting the cooperation, on long term based on EU treatises.

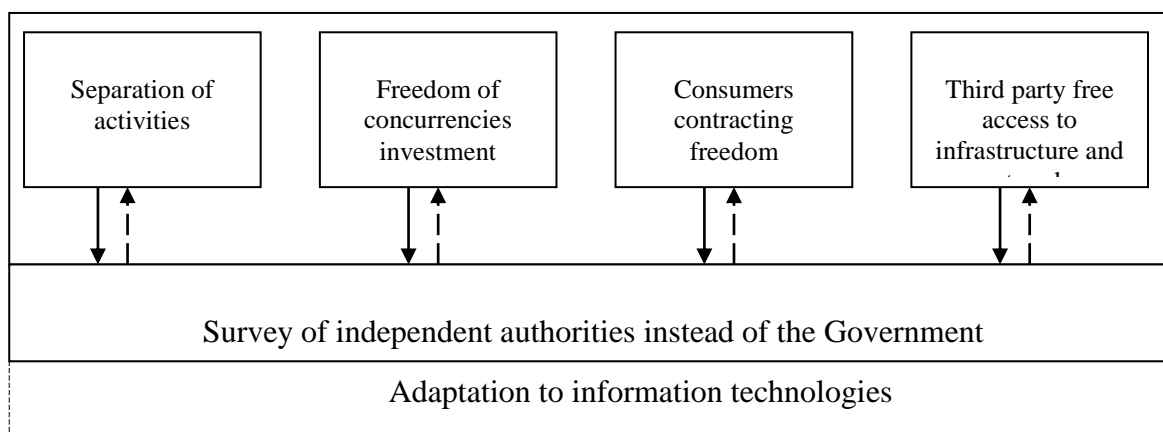


Fig. 2. Algorithm of the liberalization of mining and energy sector in Romania

It is also taken into account operational framing of optimized activities for:

- Regulation of the dependence of EU countries and Romania also of the resources of primary energy in the horizon of 2030;
- Investments representing major influence factors of consumption;
- Solutions for a long term strategy in energy field;
- Control of the increase of demand on long term;
- Making flexible and diversifying the energy and mineral resources offer.

The EU enlargement and energy supply security shows that are necessary significant changes in Romania as a result of the impact of adapting the EU energy policy adaptation. From the European acquis point of view, Romania traversed many phases of institutional and legislative formalization and restructuring. The mining sector and the energetic one also

were exposed to the restructuring process, according to the European and world trends toward non-centralized and market oriented systems. The unbalances from the billing were reduced and the cross-subsidies eliminated. Independent regulating authorities in the concerned fields are set-up. The electricity and gas markets were opened in an amount of 33% respectively 25 - 30%.

The main strategic objective of the energy policy of Romania is the set-up of a concurrence based market of energy and mineral resources in the conditions of an efficient use of resources and environment preservation.

The dependence of Romania on imports remain actual (see Table 1).

The legislative harmonization in the field is closed, which facilitates the integration in any of strategic alternatives.

Table 1. *Dependence on imports for candidate and new member countries*

1999 [%]	Average EU (27 country)	EU	Candidate and new member states	Romania
TOTAL fuel	45,7	47,6	36,9	21,9
Solid fuel	27,6	47	- 3,7	25,5
Oil	73,7	72	85,2	36,2
Natural Gas	69,2	44,7	79,2	18,5

III. Projects for the capacity development for import and transit of natural gas

a) Short term (2004 – 2007)

1. – interconnecting natural gas transportation system of Romania with similar ones in Hungary (Arad – Szeged pipeline);

- diversifying the supply resource from abroad;
- improvement of natural gas supply of western zone

of Romania;

- reallocation of domestic natural gas resources;
- development of new distribution nodes .

2. – interconnecting Romanian gas transportation system with Ukraine's one (Cernăuți - Siret);

3. – Development of the distribution station Negru Vodă (Southern Dobrogea).

b) Midterm (2008-2015)

1. – realizing the pipeline from Caspian Sea and Middle East region towards Central and Western Europe – project NABUCCO (involving cooperation with Companies BOTAS – Turkey; BULGARGAZ – Bulgaria, TRANS – GAZ Romania, MOL – Hungary and OMV - Austria).

The forecast of the gas consumption in Romania for short, mid and long term is given in Table 2.

Forecast of the gas consumption in Romania - Billion cubic meters -
Table. 2

YEAR	2007	2015	2025
Consum	19,5	21,5	24,0

The gas import resources for Romania are the followings:

- a) *Short term (2004-2007)*: Russian Federation, Western Europe;
- b) *Mid and long term (2008-2025)*: Russian Federation, Western Europe, Iran, Egypt, Caspian Sea region.

Central and Eastern Europe and CIS realized in 2001 11 % of world nuclear electricity compared with 12,2 % in 1992. It is appreciated that the share of the nuclear electricity in the total of electricity production will decrease from 19 % in 2001 to 12 % in 2025.

IV. Prognosis of the development of nuclear energy worldwide and in Romania until 2025

Governmental policies in the field Worldwide in 2003, were in function 441 reactors. Other 33 de nuclear power stations are under construction.

These forecasts are based on the premise that the actual trends to close the nuclear power stations which reached their maturity in developed countries will continue, and an increase of the nuclear electricity share in developing countries will exist.

It is noticed that USA is the leader in nuclear electricity production covering 20 % of its internal energy need.

USA has 104 functioning reactors, Russia 30, Ukraine 13, Czech Republic 6, Slovakia 6, Bulgaria 4, Hungary 4, Latvia 2, Armenia, Romania and Slovenia one reactor each.

V. Conclusion

In the field of mineral and energy resources and from the perspective of the sustainable development the following actions can be identified:

- a) Short term:
 - Economic arrangements:
 - priority to legislation (new laws and EU harmonization);
 - clarifying the ownership regime;
 - functional market economy.
- b) Mid term:
 - Economic growth:
 - modernization of the mining and energy infrastructure;
 - optimal geopolitical actions;
 - motivation of the mining and energy production;
 - implementation of IT.
- c) Long term:
 - Economic development:
 - development model adoption;
 - reducing unbalances;
 - integration in the global economy;
 - using cooperative advantages.
- d) Very long term:
 - evolutionary behaviour for the management systems in mining and energy sectors;
 - increase the share of knowledge based wealth;

- reducing the differences between Romanian and European mining;
- emergency in global economic space.

Sector strategies must be articulated with the national strategic objectives. The short, mid and long term deployment of any strategy marks the objectives, scenarios, policies and concrete programs.

The national sustainable development strategy must have legislative, logistic and institutional support during the whole period of the strategy.

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