

THE APPRAISAL OF A NEW EUROPEAN SYSTEM OF ENERGY RESOURCES PLANNING

Daniela Cristina MOMETE¹

¹University POLITEHNICA of Bucharest, Faculty of Entrepreneurship, Business Engineering and Management, Economic Engineering Department, daniela.momete@upb.ro

Abstract—The objectives of this paper are to critically analyze the actual European context in terms of energy resources and to suggest the creation of a European System of Energy Planning where the energy resources are to be commonly planned. The diverse energy endowment and energy dependence of the 28 member states of the European Union (EU) show a dramatic instability of the region, if the actual policies are to be maintained. Starting with the early principles that laid behind the European integration that had as result the creation of the “European Coal and Steel Community”, the paper suggests that instead of national and European strategies on energy, clear mechanisms of distribution – acquisition – consumption – storage – support should be developed under the umbrella of a new, politically independent, European system of energy resources planning. This new system will safeguard the security of supply of the EU and reduce its undesired energy dependence.

Keywords—European System of Energy Planning (ESEP)

I. INTRODUCTION

The early principles of European integration thought after the second World War had in view the avoidance of new armed conflicts and the assurance of peace and prosperity for the member states. From 6 member states in 1952, the European Union (EU) evolved to 28 states in 2013, progressing in terms of population, economic outcomes, social benefits and welfare. Unfortunately, 2014 brought again the war climate, with Russia, Ukraine and Moldavia disputing several territories. Considering the massive inputs of Russian energy resources into the European energy market, the strong “bargaining abilities” of Russia seems to be larger than the EU reactions to a flagrant violation of the international law. Moreover, the European reaction cannot be coordinated, as some countries heavily depend on the Russian fossil fuels reserves, while others are less constrained. The force of EU is weakened by the absence of a common energy policy and authority and some import dependent countries, in terms of large imported quantities as Germany or Italy, may become strained by their energy ties and easy targets at the negotiations table.

Energy is the main foundation for economic growth, development and competitiveness. This is the reason why, in a quest for energy resources, many armed conflicts were initiated in the past, and this might be also true for the future.

It is surprising today that EU has not a common energy policy that would ensure security of supply and affordable prices, diversification of supply and climate protection, as energy was considered a vital issue at the beginning of the European integration process. The first two Treaties, Treaty of Paris on the establishment of the “European Coal and Steel Community” of 1951 and the Treaty of Rome on the establishment “European Atomic Energy Community” on nuclear energy of 1957, provided specific energy policy tools needed for a common policy based exclusively on supranational authority [1]. The apolitical functional approach of David Mitrany [2] and of the functional federalism of Jean Monnet [3] had in view the creation of an authentic EU, where rational planned procedures are to be commonly adopted by member states, the coal and steel being only the starting point. In such a way, the “European Coal and Steel Community” (ECSC) was created and its premises were considered to be further applied in all areas of the European industry in a chain reaction. Unfortunately, the ECSC did not react as a “ferment of change” as thought by Monnet, and the Treaty establishing the ECSC, signed in Paris in 1951 expired 50 years later, in 2002, with no followers. The two treaties remain distinctive in regards to energy aspects, as all subsequent treaties did not give the legal basis needed for solving the complex energy problems.

The actual conflict involving Russia and neighboring countries and its effect on the European energy market were the arguments of the proposal of the present paper that was inspired by the early principles of the European integration, and has in view the proposal of creation of a new European System of Energy Planning (ESEP).

II. BRIEF ANALYSIS OF THE ENERGY CONTEXT OF THE EU

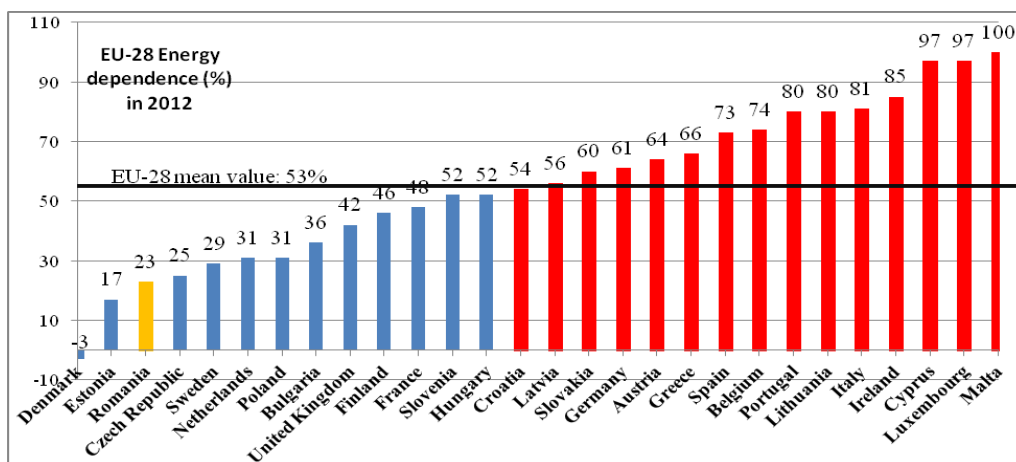
The EU is eager for energy products, as the primary energy consumption for its 28 members reached 1683 million tons of oil equivalent (Mtoe) in 2012 [4],

whereas its primary energy production recorded 794 Mtoe [5], covering only 47% of the needs. The needing aspect is more pronounced today than at the beginning of 2000s, when the inland energy production covered 53% of the needs. The primary energy consumption is about 80% based on fossil fuels, and the energy mix shows a thirst for oil, with 37% of the consumption, gas with 24%, coal with 17% and the rest belongs to nuclear energy (12%) and renewables (10%) [6].

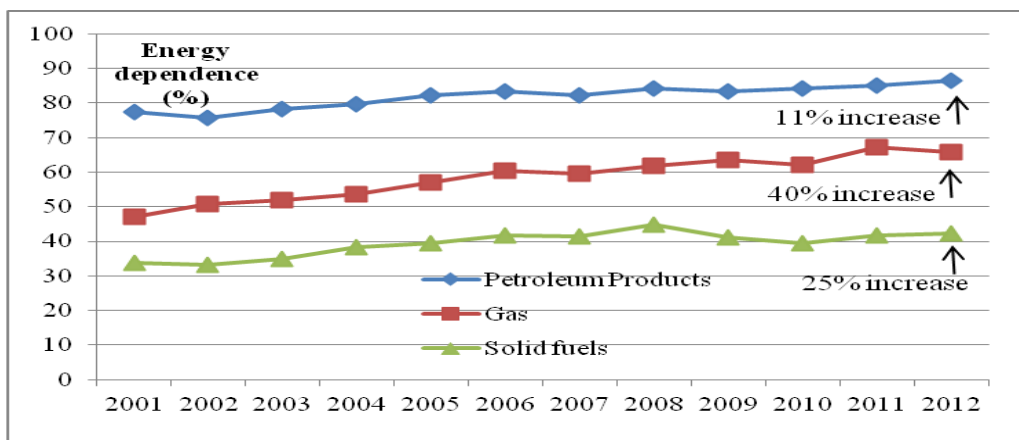
The EU energy dependence registered a value of 53% in 2012 [7] (computed as the ratio of net imports and gross inland energy consumption + bunkers), the situation across EU members being very diverse, varying from total independence (as Denmark, which is a net exporter) and a moderate dependence (as Estonia and Romania), to a total dependence as Malta, where the economy relies 100% on imported sources (see fig. 1. a.). The dependence is registered for all fossil fuels, oil being the scarcest of all, followed by gas and coal. In a quest to address climate change and environmental pollution, the EU shifted to gas, but this unfortunately came majorly from imported sources. In such a way the increase in

energy dependence of the region came mainly for gas, with 40% increase, followed by coal with 25%, and petroleum products with 11% since 2001 (see fig.1.b) [7]. It is worth mentioning the position of Romania that is the third in a classification of independent countries from energetic point of view, after Denmark and Estonia.

The source of imports EU was mainly based on Russia as a country of origin, the country being the largest partner in terms of all fossil fuels. EU imported from Russia 35% of its imported petroleum products, 30% of its imported natural gas and 26% on its imported solid fuels [8] (see fig. 2). This creates a large vulnerability of the region, with some countries more vulnerable than others, depending on their domestic endowment, reliability exclusively on Russia, and consumption mixes. In a quest to alternative suppliers for gas, the EU has tried over the past years to reach fossil fuels from Caspian Region and Central Asia, but the lengthy pipelines that overpass several countries are difficult to build and manage and convey important economic and political risks.



a. Energy dependence for individual countries of EU-28.



b. Evolution of solid fuels dependence of EU.

Fig. 1. Energy dependence of EU in 2012.

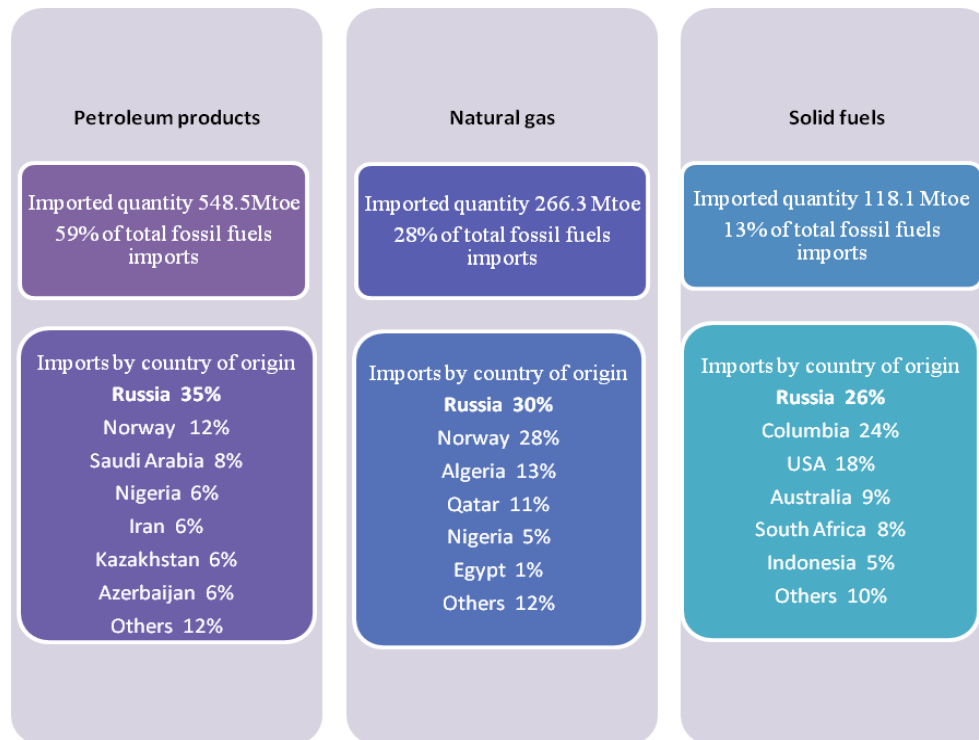


Fig.2. Imports in the EU by country of origin in 2011.

The natural liquefied gas (LNG) is seen a key possibility to diversify the gas suppliers, the EU presently importing 25% of its natural gas in the form of LNG. The LNG import terminals in operation are spread over 9 member countries (Spain, United Kingdom, France, Italy, Belgium, Netherlands, Greece, Portugal and Sweden) with Spain, United Kingdom, France and Italy possessing more than 1 facility [9]. The possibilities of LNG to cover the increasing needs are still not enough, even though 7 new facilities are under construction (in Spain, France, Italy, Lithuania and Poland) and the United States (US) are preparing to become an important player in this area [10].

EU being poor in fossil fuels resources, the diversification of sources is pursued by some European countries and the potential of the region in terms of renewable energy sources (RES) and unconventional hydrocarbons is considered to be tremendous [11]. RES and unconventional energy sources are seen as solutions to the present and especially further increasing demand of the region, but the present generated energy volume is not significant enough [12]. Moreover, despite the benefits of RES, their use raises sustainability concerns, in respect with RES generation and infrastructure that are directly or indirectly affecting the biodiversity and all eco-systems, as biomass and hydro energy facilities [13]. At the same time shale gas exploitation is controversial, the hydraulic fracking implying also negative effects on the environment and local communities.

The phasing out of nuclear power by 2020, announced by some European countries post Fukushima [14], is another important challenge for EU, as its dependence on imported resource will grow even faster.

III. CREATION OF THE EUROPEAN SYSTEM OF ENERGY PLANNING

The main problem which menaces the energy security within the EU is its fragmented internal energy market. This aspect, taken together with the large and rising energy demand of the region, an increasing competition for resources from the other parts of the world, like China and India, and inconsistency from the energy producers like Russia and instable Middle East and North Africa, will create large challenges in the years to come unless a centralized system of planning of energy resources is put in action.

The present decision-making process in terms of energy policy is difficult, as member states desire to conserve the sovereignty on resources, very complex, as many players are involved, and, as all policies, a slow process. The players that influence the European energy policies are represented by countries or group of countries, large energy companies, bodies specialized in energy - like associations, agencies, unions, forums, councils, boards-, consumer organizations, environmental groups, think-tanks, all of them with specific, many times conflicting, interests.

The solution to this multifaceted problem is the creation of the ESEP which will imply new institutions, 28 national and 1 supranational, which have in view mainly the safeguarding of security of energy supply throughout the EU. These will be created on the existent model of Central European Bank, with dedicated experts, specialists and technicians and politically independent. When looking at the EU-28 energy dependency of 53% it becomes obvious that the member states should not negotiate individually their energy trade arrangements,

but in a harmonized manner and this will be the right and obligation of the new ESEP. New bilateral agreements between individual countries in terms of energy will no longer exist, and instead a commonly adopted European decision through ESEP will be the factor of dealing the supply contracts.

The national bodies will communicate domestic data on the national endowment, in terms of quantities, stocks, RES development opportunities, consumption, partners and will financially contribute to the ESEP. The supranational body will seek to overcome challenges and distribute the energy fluxes of energy inside EU and exploit opportunities. At the same time ESEP will be the main vector of investment in research and development for fossil fuels, RES and unconventional forms of energy, and in building/modernizing/expanding infrastructure. The most important aspect of the ESEP will be that this will constitute the only negotiation authority of the energy trade of the EU as a whole, dealing the same price and discounts for energy products for each member state. All the energy programs and public-private investments involving energy efficiency, energy savings will be designed by the ESEP. At the same time, ESEP will provide the mechanisms for the existence of aggregated storage inventories, of emergency funds and contingency plans at European levels for assuring security of energy supply.

IV. CONCLUSION

The EU faces a future with difficult challenges in the energy sector. Given the European large consumption and dependence, the EU has to consider new sources in the quest of maintaining its security of supply. The possibilities of diversification are varied, ranging from finding realistic alternative suppliers to replace some of the fuels delivered by Russia, RES, LNG and other unconventional sources development. However, all these possibilities would be very unreasonable even unpractical for EU, if a real common energy policy is not developed more coherently. The creation of a new, authentic and politically independent ESEP, with specific national and supranational organisms that include dedicated experts and specialists is seen as a solution to address security of supply and cope with possible crisis situations, like the current Russian problem.

In a global system of world that sets up numerous economic ties, the EU energy problems are to be dealt under the mechanisms designed by a new ESEP.

The personal opinions expressed in this paper come from a citizen of a country that comes third in energy independence inside EU, possessing significant energy resources and potential for future development. Romania, as an individual country, would possibly be better off ESEP, but speaking from a European perspective, ESEP is the best long-term solution for all member states. A common index of energy needs and solutions are to be thought for the EU and these will be further explored.

REFERENCES

- [1] S. Andoura, L. Hancher, M. van der Woude, *Towards a European Energy Community A Policy Proposal*, Policy Proposal by Jaques Delors, Notre Europe, March 2010.
- [2] D. Mitrany, *A working peace system*, Royal Institute of International Affairs, London, 1943.
- [3] J. Monnet, "A ferment of change", *Journal of Common Market Studies*, vol.1, pp. 203-211, Wiley-Blackwell, 1962.
- [4] Eurostat online database (Eurobase), *Gross inland consumption of energy*, 2014. Available at: <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plogin=1&language=en&pcode=ten00086>.
- [5] Eurostat online database (Eurobase), *Total production of primary energy*, 2014. Available at: <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plogin=1&language=en&pcode=tsdccc310>.
- [6] British Petroleum, *BP Statistical Review of World Energy*, 2013.
- [7] Eurostat online database (Eurobase), *Energy dependence – all products*, 2014. Available at: <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plogin=1&language=en&pcode=tsdccc310>.
- [8] European Commission, *EU energy in figures – Statistical pocketbook 2013*, Luxembourg, 2013.
- [9] Gas Infrastructure Europe (GIE), *LNG inventory*, Brussels, 2014. Available at: <http://lngdataplatfom.gie.eu>.
- [10] M. Ratner (Coord), *Europe's Energy Security: Options and Challenges to Natural Gas Supply Diversification*, CRS Report for Congress, USA, August 2013.
- [11] D. Keating, "US pushes for EU energy diversification", *European Voice*, April 2014. Available at: <http://www.europeanvoice.com/article/imported/us-pushes-for-eu-energy-diversification/80353.aspx>.
- [12] D.C. Momete, T. Prisecaru, "Sustainable energy: the key towards a post-crisis world", *Proceedings of the 2nd Review of Management and Economic Engineering Management Conference*, ISSN 2247-8639, pp. 497-501, 2011.
- [13] D.C. Momete, "Reinforcing sustainable development by maximizing the energy safe exploitation", *The 6th International Conference of Management and Industrial Engineering – Management - Facing new technologies challenges*, ISSN 2344-0937, pp. 481-487, 2013.
- [14] B. Knopf, H. Kondziella, M. Pahle, M. Gotz, T. Bruckner, O. Edenhofer, *Scenarios for Phasing Out Nuclear Energy in Germany*, A Study for the Economic and Social Policy Department of the Friedrich-Ebert-Stiftung (FES), Expert Opinions and Studies on Economic and Social Policy, ISBN 978-3-86872-889-7, October 2011.