

Cross-Border Co-operations, Schengen Challenges

Edited by István Süli-Zakar

ENERGY POLICY IN THE EUROPEAN UNION WITH SPECIAL REGARD TO THE ENERGY POLICY
IN DENMARK, FRANCE, FINLAND AND HUNGARY

Csákberényi-Nagy Gergely

Kossuth Egyetemi Kiadó
Debrecen, 2004

Csákberényi-Nagy Gergely

Energy Policy in the European Union with special regard to the energy policy in Denmark, France, Finland and Hungary

In this publication I will underline three important chapter from boundlessly oversized the European energy policy. These are the determination of the developmental center of the European Union, the differences between the knowledge of people in countries with diverse maturity, according to the four selected countries, and the structure of the energy policy in the the four chosen countries.

1.) If we would like to understand the processes in the European Union, we have to analyze the developmental differences among the member states. The two main reasons are the following: the energy sector is one of the most important segment in postmodern society, and from another aspect the mankind uses the innovations of the most developed countries, and these countries use the most developed energy sources in the highest ratio of their energy consumption (Guilmot J. F., 1987; Handler P., 1979; Mounfield P. R., 1991; W. Stanley J. 1965).

I used international associations (EUROSTAT, ITU, OECD, UN) data bases and sectioning, while I was analyzing the developmental differences of the member states in the EU.

We can make four main cluster of the indexes. The first part includes **Technology and Human skills** (16 variables), which is including several indexes of the Telecommunication, the knowledge skill and the high technology. According to these factors the most developed countries are Germany, Denmark, Sweden and Finland. The western European countries are in the second category. The mediterranean countries are in the third, while the ex-socialist countries in the worst category.

The second part includes the **Economy and Innovativeness** (9 variables), which is containing several indexes of GDP, R&D and Labour force. Relying upon these findings Ireland, Great-Britain, the Netherlands, Denmark, Sweden and Finland are the most developed countries. The second class contains the western European countries, while the mediterranean and ex-socialist countries are among the less developed countries.

The third part includes **Welfare** (6 variables), which is containing various indexes of Education, Health and Welfare. According to these Germany and the North-European countries represents the most developed countries. The western European countries forms the second groups, while the others are less developed.

The fourth cluster includes **Openness** (6 variables), which is the most complex index scilicet for the elements of this group are the different indexes of politics, freedom, globality and environmental protection. According to this Germany, the Netherlands, Sweden and Finland represents the most developed countries, while the western European EU members forms the second, and the other EU states are in lower categories.

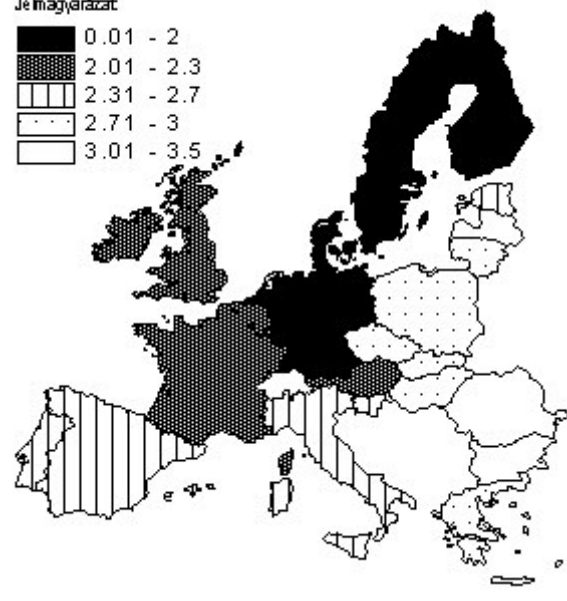
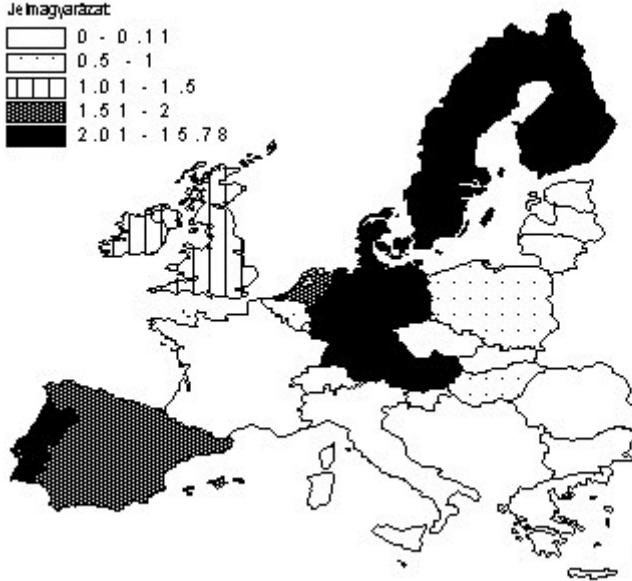
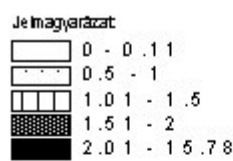
As a result of this cluster analization we can say that the growing centre of Europe is the Baltic area and not the "blue banana" as it was during the '80s and '90s. If we compare the map of the maturity in the EU with the map of the the renewable energy consumption ratio changes in the total energy consumption (between 1992 and 2002), the result we be similar. The highest renewable energy use growing can be observed in the Baltic area (except the ex-socialist countries in this area). There are only two exception: the negative exception is France which preferred the nuclear energy till 2004. From this year France would like to initiate a new renewable energy supporting system as a part of the reform of the energy sector. On the other hand we have a positive exception the Iberien peninsula. Portugal and Spain push the advantages of their unique possibilities. Aside from the exceptions I conclude that there are

essential correlation between the growing centre and the ratio of the newest energy users (www.eurostat.com).

As we can read in Nakicenovic N. (1999) publication, based on Kondratyev's economic circle model (1989), the result of every economic depression is the appearance of new innovation-families (Fleischer T., 1990), which are based on a new type of energy. During my research I have observed that the economic depression changes the energy structure and helps growing up of new centers and generates the decay of others. Altogether in every age it has been an important issue to know which countries use the latest type of resource of energy in its highest ratio in their energy consumption, which fact has always had its impact on the near future.

1. figure: Changing of the ratio of renewable energy sources of the total energy consumption between 1992 and 2002

2. figure: Maturity according to the indexes 2002



2.) In my survey I wanted to know in what environmental manners the differences between the knowledge of people in countries with diverse maturity. I marked out typical examples, with different maturity. Finland is the typical example for the bio energy, Denmark is of the wind energy, while France is the characteristic country of the Nuclear energy using.

I tried to perform my environmental consciousness investigation as objective by as possible, therefore I marked out areas which are far away from the capital with good renewable energy possibilities. All the settlements, where I conducted my research, are commuter towns next to a regional center. In Eastern-Finland it is Nolja next to Joensuu, in Denmark the name of the settlement is Jelling next to Århus, in Bretagne the commuter town is Pledran next to St.Brieuc the capital of Cote d'Armor, while in Eastern-Hungary my searched town is Bocskai next to Debrecen.

In this publication I just underline some differences among the settlements, which are indispensable in the research of the diversity of the environmental consciousness.

First the notoriety and the acceptance of the renewable energy sources. The high correlation is provable with data between the notoriety and the acceptance, which means the more people know about the renewable energy sources the more they accept them. The solar energy has the highest notoriety (above 90 %) and acceptance (above 80 %) in every investigated settlement.

The wind energy has a 10 % lower notoriety ratio, but the acceptance ratio is just between 60 and 70 % in every settlements except in Denmark. The reason must be the fear of the new

sources, because there are no wind power plant in Eastern-Finland, in Cotre d'Armour or in Eastern-Hungary, while in Denmark where the sight of the wind power plants is very common the acceptance ratio is much higher.

In the case of the heat-pump and the bio diesel the main problem is the obscurity. The notoriety is between 20 % and 40 %, and the acceptance is about 10 % less in every place, although I have to mention that in Noljakka and in Jelling the ratio is higher.

I will proceed to the case of the geothermal energy, the ratios of the notoriety and acceptance are represent higher values (above 40 %). However the usability is remarkable. From among the samplpes only Bocskaikert has good usability in this field.

The last two renewable energy sources are the bio energy and the bio gas. The notoriety and the acceptance of these applications are quite high (above 40 %), though the dispersion is high. In the French sample the inhabitants notoriety and acceptance are 20 % less than in the other samples, while on the other hand Finish sample has 20 % higher ratio.

Altogether we can say a higher ratio of notoriety produces higher acceptance, and although the common knowledge is simmilar, in the more developed countries the ratios are higher especialy in the field in which the country has good possibilities. In this case to know the inhabitants sources of knowledge, and purchasing preferences are exceedingly important questions, because we can analyse how we can make the energy policy more effective.

In the analysis of the purchasing preferences we can find similarities and differencies among the samples. The two most important prefernces in every sample are the price and quality the represent 70 %. On the other hand, there are significant differencies among the other factors. In the Danish sample the third factor is the environment with an 11 % ratio. In the Finish sample the environmental protection (12 %) the indication of origin (16 %) is also important, while in the French sample these factors have less importance, scilicet for the aesthetic quality (12 %) is more important. In the Hungarian sample the indication of origin and the requirements are important, however, unfortunately in this sample environmental protection does not appear at all. Besides these factors there are other elements like the brand, the customs and the quality of service with a less importance (under 5 %).

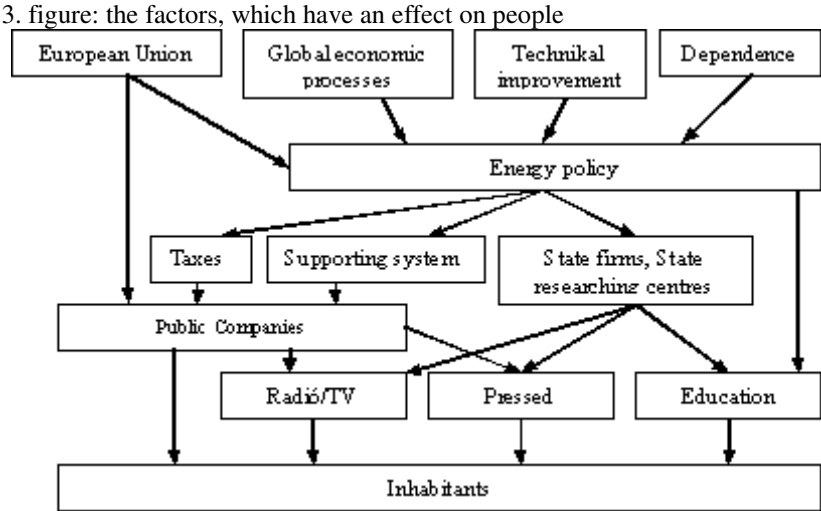
In the next step I analysed the probable reasons of the different environmental approaches. I analysed the origin of the acquiring of knowledge about renewable energy. The most important factor is the media in every sample, but there are significant differencies. In the Danish sample the Radio/TV is the most important (33 %), the newspapers are the second with a 30 % ratio and education is the third with a 21 % ratio. The Finish example is similar with a bit less importance of the media (29 %, 25 %) and the same high ratio (21 %) of the education. In this case the internet is also an important factor with a 10 % ratio. In the French sample the Radio/TV has the highest ratio (47 %), while the newspapers have an average ratio (26 %), unfortunately the education has a smaller role of 12 %. The hungarian sample is the most one-sided. In this case the media has a much higher importance (Radio/TV 46 %, press 33 %). Unfortunately education has the least function in the environmental protection in the Hungarian sample.

From the results of the questionnaire we can accomplish a framework of impressions, concerning which factors have an effect on people.

3.) The main acting factor of the inhabitants, way of thinking is media with 60-70 % ratio. The other important factor is education and seeing that the formation of the environmental protection is a long process, education has a stressed role.

The media mainly transmit different players interests, which are the media owners, different Corporations and the Government. Nowadays the corporation owners form corporations as well, whose interest is the highest profit. Consequently the government's mission is the formation of environment-friendly surroundings. The government can pressurize the processes through two different ways, which complement each other. The first cluster of

determinant factors is the system of taxes and supportings, hereby the government is able to put a pressure on the corporations in order to the environment-friendly applications. As I am going to demonstrate it with an example of the most developed European countries, this cluster is not effective enough. For that reason to make the system more effective, we need a second cluster. In this group the state firms and state researching centers can be found. These associations have two main missions. On the one hand the energy sector is one of the most important strategic sectors, and the economic processes can impressionable only in this way. On the other hand these associations can help in the rapid spreading of the environment-friendly technologies.



To determine the optimal scale of state action intervention is important, scilicet for the state management is not effective. For instance, in France the government said that the energy sector is a strategic sector, consequently everything was focused in the hand of the Electricité de France state concern till 2004. From this year because of the pressure of the EU and to help the energy efficiency the French government worked out a package of reform measure, with four main points: liberalization, increasing the ratio of natural gas, new nuclear programme and increasing of the renewable energy systems. The french government is going to do this reform package through the introduction of a new tax and supporting system. The main problem of the government is the degree of the liberalization of the EDF (www.EDF.htm, www.Sénat.fr).

In the more developed Finland, the system is more refined. On one hand, we can find the system of the taxation and supporting, but on the other hand the Finish government says that the realization of governmental energy policy is the most effective in regional level. In this level the concern should co-operate with the local university, the town council, and with the Regional Environmental Centre and Regional Employment Centre. These associations help the investors in the increasing of the efficiency. The results of the Finish energy sector give reasons for the governmental policies. In the last ten years the ratio of the renewable energy systems increased by 2.59 % in the whole energy sector (without water power). In North Carelia, where I accomplished my research, between 1998 and 2003 different associations installed six nex power plants, which use bio energy (Humphreys. P., 1990; Taisto Y. T., 2002; www.vn.fi).

Energy policy is the most complex in Denmark. The danish government’s target is the highest ratio of the competition, and liberalization under government control, and this governmental control is the pledge of the world leading environmental-friendly economy. Between 1992 and 2004 the incresing of the renewable energy ratio is 15.66 %. The service

companies are small ones, there are small CHP power plants in every city, with an 80 % energy efficiency. The huge power plants and the current network owners are the ELSAM (Yütland), and the ELCRAFT (islands) under partial governmental control. The government helps companies with two things: on one hand there is the Risø, which is a governmental researching center, which mission is the helping of the energy efficiency, and on the other hand we can find governmental windfarms in Denmark, scilicet for if the increasing is not high enough the government helps companies, and the energy efficiency as well (www.ens.dk, IEA, 1998).

Summary: As we can see the most modern countries have the most modern energy structure, their inhabitants have the most environmental-friendly intuition, and these countries have the most modern energy policy. I would like Hungary to become one of the most developed European for this I would like make an action plan for Hungary with the help of these foreign examples to help increase the ratio of the renewable energy use in Hungary.

Bibliography

Fleischer T. 1990. Energiagondok magyar szemmel – In: Tudomány 1990 November 70-73.p.

Guilmot J. F., McGlue D., Valette P., Waeterloos C. 1987, Energy 2000 - Cambridge University Press, Cambridge, 78-96.p.

Handler P. 1979. Energy in Transition 1985-2010, Final Report of the Committee on Nuclear and Alternative energy systems National Academy of Sciences, Washington, D. C. 105-200.p.

Humphreys. P. 1990. The Yearbook of the Finnish Economy 1989-1990 – Donald Fields, Business Books, Helsinki

International Energy Agency 1998, Energy Policies of IEA Countries – Denmark, IEA press, Paris, 24-68.p.

Kondratyev, N. D. – Oparin, D. I. 1989. A konjunktúra nagy ciklusai – MKKE Politikai gazdaságtan füzetek információs központja, Budapest 49-60.p.

Nakicenovic, N. 1999. Dynamics of energy technologies and global change energy policy – Elsevier Sci., Oxford 247-280.p

Mounfield P. R. 1991, World Nuclear Power – Routledge Kiadó, London-New York, 17-117.p.

Taiso Y. T., 2002, Energiakatsaus 1/2002 – Prima Oy, Helsinki, 3 – 11 p.

W. Stanley J. 1965. The Coal Question, Augustus M. Kelley published, New York 150-206.p.

www.ens.dk

www.EDF.htm

www.Sénat.fr

www.vn.fi

www.Eurostat.com