

Challenges and Perspectives in the Regional and Euroregional Issues in the New Europe

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THE ENERGY STRUCTURE OF THE EUROPEAN ANCILLARY ZONE

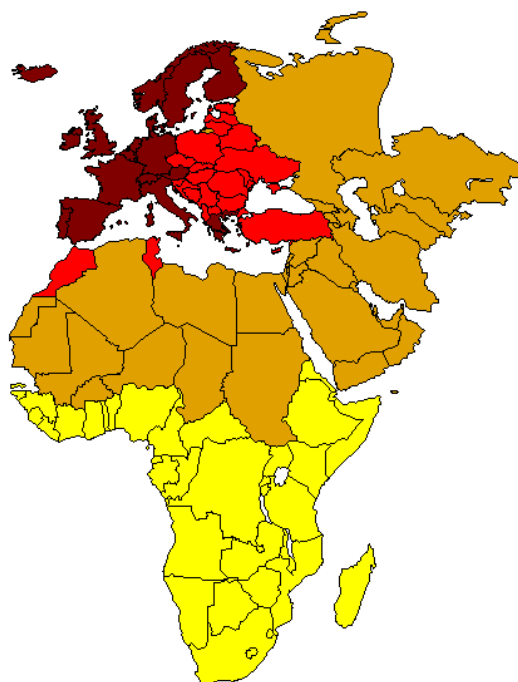
Csákberényi-Magy Gergely

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The Energy Structure of the European Ancillary Zone

The base of the research is to know in which area the European Union sovereign territory. In our case we can examine the export relations, due to this we can say that the EU is the dominant export partner in Europe, in the Middle East and in Africa. Dominant partner means the leader partner from all relations, with 25 % minimum ratio.



We can divide the European ancillary zone into 4 pieces, regions, areas. The first one is the “Inner core”, which is the territory of the European Union before the enlargement in 2004. The main characteristics of this group are the high ratio of the manufacturer product export (77,9 %), and high GDP 28.775 USD in 2004. This area is the most developed, and have the highest influence of the other countries in the European ancillary zone.

The second zone is the “Outer core”, or post Socialist Block and Tunisia and Morocco. The main difference between the previous zone is ratio of the GDP. In this area this value is around 5000 USD. This area is less developed with outdated industries as I will show in this essay in the following chapter.

The third zone is the “Fuel exporter” area. This region has a totally different export structure than the previous zones have. North Africa (excluded: Morocco and Tunisia), the

Middle East and the European part of Russia contains this area. The main difference is the dominance of the fuels and other mining products, while the value of the GDP/capita is between 1000 and 3000 USD.

The 4th group is the Agricultural product exporter area. This ex colonial region is the most colourful, or we can say “Black Africa” is less consistent than the other three areas. We can find different reason for unresistant shape, but motive power of the influences is the under development. The average GPD/capita is under 1000 USD. The main export products are the agricultural products, though we can find exceptions, for instance Nigeria, Angola or South Africa. The reason is the goodness of local resources.

The shape of the import structure is the same in the four region. The manufacturer product import have the highest ratio, around 70 %, but a trend can be explored: the less developed a country is, the lower the ratio of the manufacturer products of it. For instance in the European Union the ratio is around 73 %, while in Africa this value is less than 63 %. The reason is quite simple the population needs the same fundamental agricultural and mining products to survive, while the manufacturer products form the base of the development.

average	Western Europe	Post Communist Block	Fuel Exporters	Agricultural Exporters
Agricultural	11,9 %	10,1 %	7,6 %	50,3 %
Fuel	7,6 %	9,3 %	75,5 %	20,9 %
Manufactures	77,5 %	79,9 %	9,9 %	16,0 %
GDP	28.775 USD	5.014 USD	1.425 USD	722 USD

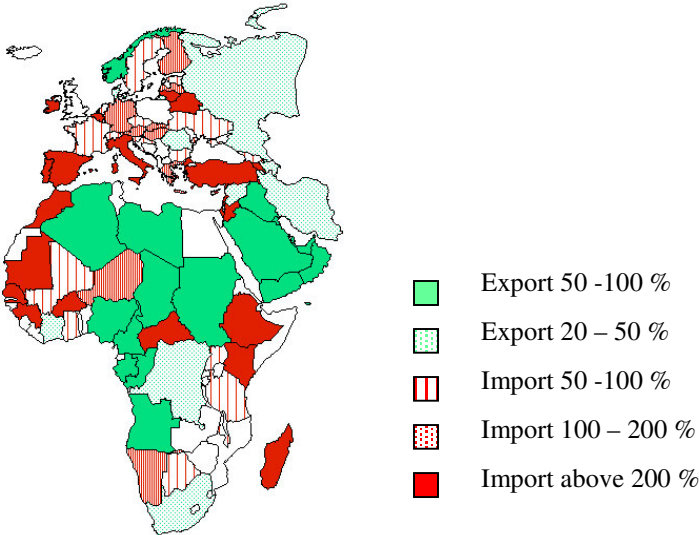
During my essay I analyzed only the influences of the “Fuel Exporter” zone. In the next chapters I show the reasons of the usage of the different energy sources in the European Ancillary zone, the influences of the energy trading systems, and proposals for the reduction of the energy dependence.

Energy dependence

The World Trading System has higher and higher influences of countries economies. During this chapter I analyze only the effect of the different fuels. The figure shows that only a few country can avoid the energy dependence, the others are fuel exporters or importers.

We can divide the fuel mining zones into five greater areas. The most important zone in the Worlds energy economy is the territory of the Persian Gulf. The second is Russia, which has high importance in the case of the ex communist block. North Africa has a high

importance in the case of the Mediterranean area in Europe and the Sahel area in Africa. North-West Europe has a small fuel mining zone under the North Sea, the potential reserves of this territory is very limited. The fifth zone is in the Guinean Gulf (Nigeria, Angola etc.). During the last decade this zone has higher and higher effect of the world energy economy. Russia and the Guinean Gulf can be the counterpoint for the Arab oil monopoly.



The Fuel importer countries can be also divided into four part. The first one is Western Europe, which has high fuel import ratio, due to this these countries can have an effect on the fuel prices. These countries have their main fuel import from the Persian Gulf. The Mediterranean countries have their fuel import from North Africa beside the Persian Gulf. Algeria have good connections with Spain and France, Libya have good connection with Italy, while Greece has a high ratio of its fuel Import from Libya, Egypt and Syria. The Anglo-Saxon North Europe have its own energy mining producer area.

Russia is the dominant fuel exporter in the ex communist block. In the Balkan Peninsula and in Turkey the Arab fuel exporter countries have strong interests. From these sentences we can see that most important factors in the European fuel trading system are the geographical proximity and the historical, political dealings.

In Africa geographical proximity is the most important principle. The North African fuel exporter zone has the highest effect on the Sahel area. The Guinean Gulf fuel exporter zone has the highest effect on the Golden Coast, Central Africa and South West Africa, while the Persian Gulf fuel exporter area has the highest effect on Eastern Africa.

The reasons of the usage of the different energy sources

At the beginning of the 19th century the great industrial revolution started in England. The consequence of these industrial, political and economical changes is the changes of the different energy resources. Products like the railway or the steamship in the early 19th century needed high energy density, while the wood has only 7500-15.900 kj/kg. The solution was the coal with a 24.000-30.000 kj/kg energy density (Nemerkenyi A. 1997). The higher possibilities because of the coal usage supported the spreading of the innovations (Kondratyev N. D., 1989). Coal can hardly transported, which means coal mining areas became innovative centers in a few decades, while the others with the lack of coal and iron became semispherical territories (Pounds J. G., 2003).

After the coal usage peak in 1910, newer innovations, oil user products appeared. The reasons of the changes are the higher energy density (150 %), and the better possibilities of transportation (Vajda Gy., 2001). The USA was the innovative center after the first world war, due to this the main oil user country (Koopmans A., 2003), while later during the preparation to the second world war Germany became the leader in Europe of the oil usage (Peach, W. N., 1972, Chrisholm, M., 1966).

After the Second World War only two European political power remained: Great Britain and the Soviet Union. From the beginning of the Cold War a new resource appeared in the focus of the military technology and the energetic, the Nuclear Energy. The potential energy density is 10^{12} higher than the fossil fuels (Hafele, W., 1990). From the 1960's many European country started to build its own reactors, while after the oil crisis in 1973 the energy dependence became the main problem for the European countries. Till 1986 the answer was quite simple from the countries: France 78,2 %, Belgium 60,1 %, Ukraine 46,6 %, Sweden 46,2 %, Hungary 39,9 %, Germany 31,5 %, Great Britain 27,5 % the ratio of the nuclear power from the total (Hodgson, P. E. 1999, Openshaw S., 1986). After the disaster in Chernobyl in 1986 the number of the closed reactors is higher than the built ones (Kerényi A. 1999).

Wood and water energy consumption and trade

- Traditional source of energy

- Poorest countries

- High relief

- No dependence

Coal consumption and trade

Traditional industrial territories Western Europe 13 % Eastern Europe 21 %

Symbol of outdated industries

Coal exporter Eastern Europe, Coal importer Western Europe

Ex colonial coal market, Eastern European coal market

Oil consumption and trade

Most common resource

The greatest influence

Average usage is between 25 and 60 %, Sahel above 60 %

5 oil producer area, ide már amit leírtam jöhet kicsit átírva.