Energy and the European Union

Energie a Evropská unie

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Abstract: There exists no energy policy in the European Union, but rather a whole series of long-term goals setting its strategic orientation. Until 2000, when the Green Book named "Towards the European Strategy of Energy Supplies Securing" was accepted, no real debate on the strategy of energy was held in the EU. The Green Book represents a key document of the European energy policy and it originated as a consequence of the fears of the European Committee regarding the growing energy dependence on the energy resources imports, from the politically not stable parts of the world. Among the three key points of the energy strategy, there belong stable supply of energy, acceptable energy prices and environment protection. With regard to the deepening European integration and interconnection of the individual member states economies, the decisions of one country also have an energy impact on the other states. Therefore, the cooperation among the individual members is necessary.

Key words: energy problem, energy policy, European Union, energy saving

Abstrakt: V Evropské unii neexistuje energetická politika ve smyslu skutečné politiky. Existuje spíše řada dlouhodobějších cílů, které určují její strategický směr. Do roku 2000, kdy byla přijata Zelená kniha pod názvem „Směrem k evropské strategii zabezpečení energetických dodávek", na půdě Evropské unie prakticky neproběhla skutečná diskuse o energetické strategii. Právě Zelená kniha, která se zabývá energetickou závislostí, se stala klíčovým dokumentem evropské energetické politiky. Vznikla jako důsledek obav Evropské komise ze stupňující se energetické závislosti na dovozech energetických zdrojů z politicky nestabilních částí světa. Mezi tři klíčové body energetické strategie patří stabilní energetické dodávky, přijatelné ceny energie a ochrana životního prostředí. Vzhledem k prohlubující se evropské integraci a propojenosti ekonomik jednotlivých členských států, rozhodnutí jedné země přijatá v oblasti energetiky mají dopad na státy ostatní. Spolupráce mezi jednotlivými členskými státy je tedy nezbytná k bezproblémovému fungování tohoto strategického odvětví a ke spolehlivému zabezpečení dodávek energií.

Klíčová slova: energetický problém, energetická politika, Evropská unie, šetření energie

IMPORTANCE OF ENERGY POLICY FOR THE EUROPEAN UNION

Energetic played a key role at the beginnings of the European continent integration. The birth of the European Community is connected to signing of the treaties regarding production of energy, the European Treaty on the European Community of Coal and Steel from 1951, and one of the Treaties of Rome, the Euratom Treaty from 1957. By signing them, the original six member states were bound to secure the regular and equal supply of coal and the secure and economical utilization of nuclear energy. All endeavors to form a common energy policy were, however, nullified by the decision of the states to retain the sole decision- making power in this strategic sphere. Also the following attempts to incorporate the chapter of energy into the Maastricht Treaty and the Amsterdam Treaty were unsuccessful.

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The problematic of energy is, however, reflected in many other sectors which are in the centre of the EU interest and in which the decision power was transferred to the European institutions. The energy policies are thus often solved in the frame of these policies. It regards e.g. the policy of the unified market, environment, trans-European nets, external trade or fiscal policy. With regard to some of them, energy represents a supplement, in other cases, it is rather a contradictory tendency (British Petroleurn 2005; Commission of the European Communities 2004).

Energy policy competencies

In the energy sector of the European Union, the main role is played by the member states represented in the government representatives negotiations. The basic energy problems and legislation are decided by the relevant ministers at the Committee of Ministers meetings. The Committee of Ministers for Transport, Telecommunications and Energy unifies the three sectors since 2002 and solves also the problematic of energy production and supply. It meets every two months including the relevant ministers of member states of the problematic on the agenda. The problematic is also discussed by the Committee of Ministers for Environment or the Committee of Ministers of Economy and Finances, the so-called ECOFIN. The European Committee founded in 2000 the General Directorate for Energy and Transport by merging two separate directorates. The agenda is now chaired by the secretary Francois Lamoureux, who is responsible to the head of the EC and the high commissary for energy. Also the activity of the European Parliament is growing, led by the Committee for Industry, Science and Energy. In 2001, the EC also formed a consulting board, the so-called European Energy and Transport Forum, which should increase the transparency, public interest and the dialogue between the EC and the interested parts (European Commission (1997, 2001).

In November 2001, the European Parliament elected a new European Committee chaired by José Manuel Barrosa. The chair of the energy resort was given to Andris Piebalgs from Latvia. When taking over the resort, he set six energy policy priorities for the following years and stressed the importance of the sector for fulfilling of the Lisbon Strategy and the Kyoto Protocol. The main goals of the energy policy should then be competitiveness, sustainable development and reliability of the energy supply. The main six areas to reach this are increasing energy saving, functioning internal energy market of electricity and gas, renewable energy resources development, strengthening of nuclear security and reliability and a more efficient interconnecting of energy policy with environmental policies and science (IENOECD 2004b, 2004d).

Energy balance of the European Union 25

In 2002, oil represented the second biggest share in the home energy consumption with 38%. Natural gas represented almost 23%, coal 18%, nuclear energy 15% and renewable energy resources only 6% of the EU-25 gross energy consumption. Among the renewable resources, the highest share of almost 4% was represented by biomass followed by water energy with the share of 1.5%.The geothermal and wind energy formed less than 1%, solar energy mere 0.003% (Awerbuch, Sauter 2005; Blanc 2004).

Table 1. Structure of the resources forming the EU-25 gross energy consumption

Source	Share in %
Oil	38.0
Natural gas	23.0
Solid fuels	18.0
Nuclear energy	15.0
Renewable energy resources	6.0
– biomass	3.7
– water energy	1.5
– geothermal energy	0.2
– wind energy	0.2
– solar energy	0.03

Source: European Union (2004), IENOECD (2004a)

Table 2. Structure of the resources forming the EU-25 gross electricity production

Source	Share in %
Oil	6.2
Natural gas	18.0
Solid fuels	29.7
Nuclear energy	31.9
Renewable energy resources	12.8
Other	1.4

Source: European Union (2004), IENOECD (2004a)

If we look at the share of the individual sources in the gross electricity production in the EU-25 in 2002, we fid that the most important was the share of nuclear energy forming almost 32%. Coal was a little less important with 30% and natural gas represented 18%. The share of oil was mere 6%. Renewable energy resources represented 12.8% of the gross electricity production in the EU-25 (Tables 1 and 2).

Table 3. Import of energy dependence of the EU member countries (in %)

	All fuels	Solid fuels	Oil	Natural gas
EU-25	48.0	33.2	76.8	51.3
EU-15	50.2	53.2	75.5	47.3
BE	76.4	86.2	98.8	102.1
CZ	26.6	–18.6	95.2	102.0
DK	–41.1	88.6	–94.9	–64.5
DE	60.5	29.6	95.0	79.5
EE	29.2	2.7	75.2	100.0
GR	70.7	6.9	102.5	97.4
ES	78.3	66.3	101.2	101.0
FR	50.3	92.7	99.2	98.3
IE	89.3	70.2	101.1	81.6
IT	86.7	95.6	94.7	84.1
CY	100.5	120.4	102.1	–
LV	54.6	76.1	98.5	88.6
LT	42.7	97.8	74.8	100.0
LU	99.0	100.0	100.6	100.0
HU	58.2	24.7	73.7	80.6
MT	100.0	–	100.0	–
NL	33.8	97.2	91.3	–51.5
AT	66.0	91.4	95.1	71.5
PL	11.3	–28.5	97.1	66.1
PT	84.2	99.9	96.7	99.9
SI	49.9	20.6	100.0	99.4
SK	65.3	77.3	97.2	100.1
FI	52.6	61.0	93.9	100.0
SE	37.5	80.3	95.2	100.0
UK	–12.8	48.9	–50.9	–8.1

Note: BE = Belgium, CZ = Czech Republic, DK = Denmark, DE = Germany, EE = Estonia, GR = Greece, ES = Spain, FR = France, IE = Ireland, IT = Italy, CY = Cyprus, LV = Latvia, LT = Lithuania, LU = Luxembourg, HU = Hungary, MT = Malta, NL = Netherlands, AT = Austria, PL = Poland, PT = Portugal, SI = Slovenia, SK = Slovakia, FI = Finland, SE = Sweden, UK = United Kingdom

Source: EUROSTAT (European Union 2004)

Energy dependence of the European Union

In 2002, the total energy dependence of the extended EU was 48%, while the biggest level of dependence was registered regarding the imports of oil (77%). The dependence on natural gas imports was 51% and on coal imports it was 33% in 2002. The main oil importers are the Near East countries (45%). The main countries importing oil into the EU were the former Soviet Union countries (26%), Norway (21%) and Saudi Arabia (11%). The imports of natural gas come mainly from Russia (33%), Norway (29%) and Algeria (25%). Coal is imported from the South African Republic U28%) and Australia (18%) (APP A 2005; EETF 2004) (Table 3).

From the above supplied data, it can be concluded that the dependence on energy resources imports differs according to the individual states. While many states are almost completely dependent on the energy resources imports, only few of them are independent on these imports (IENOECD 2004a).

The EU realized its dependence on the external energy imports fully for the first time (Commission of the EC 2003, 2004) during the first oil shock in the 70s. The European states then agreed on the necessity of a common approach and on forming obligatory energy stocks. The Commission solved its strategy regarding energy supplies security and dependence on imports namely in the year 2000 in the Green Book.

The Green Book states that the present dependence of the EU is 50% and its yearly costs are 240 bill. EURO, what is 1.2% of the GDP and 6% of the total imports. If the EU does not make considerable changes, the energy demand structure up to 2030 will be 38% of oil, 29% of natural gas, 19% of solid fuels and 8% of renewable energy y resources. The share of nuclear energy in the total energy demand will be 6%.

However, the situation in the world energy markets has changed. The demand for energy has grown considerably in the economically developing China, while China is the biggest coal exporter in the world and also the biggest consumer. During the last time, we have faced also the growing oil prices, which will probably reach the level of about 40 USD in the near future. If the price reached the level of 80 USD per barrel, we might find ourselves in the situation of the 1973, while every increase of the price by 10 USD would mean the GDP loss of 0.5% (EEFT 2004). The Commission therefore prepares a new Green Book to

be interested in the energy supplies security (EEFT 2004).

The Eastern EU enlargement did not improve the energy dependence. At present, it shows that the negative trend of the growing energy dependence (the EU might be dependent by 90% on oil and natural gas imports by 2020) mentioned in the Green Book 5 years ago is becoming a reality.

Oil is not an enough stable energy resource from the price and political situation viewpoint to secure the energy needs of the EU in future. The EU disposes of oil reserves only for the next 8 years, while the European oil production is very costly compared to the world level. The production costs are two- to seven times higher (European Commission 2001). On the other hand, coal is one of the most accessible energy resources in the EU which can play its role in securing the future energy supplies. The coal industry is still functioning in Germany, Great Britain, Spain, Poland and the CR. Nevertheless, the price of European coal has not been hitherto competitive to the world prices, as the European coal production is four- to five times more expensive (EC 2001). Mining was gradually dampened in the individual member states in past, therefore coal is at present used rather as a reserve resource. The EU relies on solid fuels in the electricity production from 27%, the new member states from 65%. The share used to be considerably higher but it decreased with regard to its ecological impacts and the transition to the resources like oil and natural gas. In 1992, coal mining was stopped in Belgium, two years after in Portugal. Also France planned to finish coal mining (Blanc 2004; IEA/OECD 2004a, 2004d).

The nuclear energy still forms a considerable part of the EU energy portfolio. The development of nuclear energy in the EU was in past just the reaction to the growing energy dependence on the Near east oil imports. The EU shares by 35 % in the world nuclear energy consumption (EC 2001). The same percentage is also seen regarding the electricity production from nuclear power of the EU. Already the Green Book has pointed out that the future development of nuclear energy will depend on the abilities of member states to solve the problem of the nuclear power plants security and dumping of the nuclear waste.

In the frame of the EURATOM, the European Committee bears the responsibility for the protection against radiation, nuclear security and reliability. From the original 15 states, 8 are still utilizing nuclear energy, however, 5 of them promised not to extend the nuclear energy utilization and not to build new nuclear power plants in future. Germany planned to stop its last nuclear reactor by the year 2021, Belgium by 2025, the Netherlands, Spain and Sweden at the end of their life-span. On the other hand, France, Finland and Great Britain do not consider similar steps, however, with the exception of Finland, they do not plan building new nuclear power plants. In the new member states, the attitude is differing. Among the states with the highest share of nuclear energy utilization, there belongs Lithuania with 77%, Slovakia with 44% and Hungary with 40%. Their nuclear plants are becoming rather obsolete and differ from the EU-15 regarding the technology, as they are mostly of the Soviet type.

The possible solutions of energy dependence

As a possible solution, there can be regarded relying on own energy resources. It can be said that the new EU member states still dispose of considerable stocks of coal, even if there is the problem of economic efficiency and the Kyoto Protocol. Owing to the growing world coal prices in the consequence of the increasing consumption of China, the EU might return to the coal production as it will become more efficient. However, the investment intentions in this field are complicated by the European Pollution Permits Trading System (EC 2004, EU 2005).

Another possibility is the development of renewable energy resources, energy saving and new technologies, like the technology of the combined cycle with the integrated coal gasification or the combined cycle with the natural gas gasification(IEA/OECD 2004 c, 2004e).

Another possibility is forming of strategic partnerships with the energy resources exporters.

ENERGY PARTNERSHIPS

The EU wants to orient in the next period at forming an efficient dialogue with its main energy suppliers. Of late, it has negotiated starting a dialogue with the OPEC on the level of ministers. It also continues the dialogue with Norway and the Caspian Sea countries (IEA 2005).

Russia is regarded as the key partner of the European energy supplies. It is at present the main importer of fossil fuels and uranium into the EU, as it imports the great part of natural gas and uranium there. In 2000, the EU formed the so-called Energy Dialogue with Russia. This should secure the energy supplies security, development of cooperation in the field of savings, energy infrastructure and investments. As Russia has ratified the Kyoto Protocol already, it supported functioning of this agreement. In the frame of the trans-European energy nets, new investment

projects are expected also in the Russian Federation infrastructure. However, the EU demands a higher transparency of the Russian investment environment, improvement of the nuclear security and the sea transport security standards regarding oil (Directive 2003/30/EC; Directive 2001/77/EC).

The EC will also strengthen the relationships with its neighbors in future. In the near future, an agreement on creating of the South East European Energy Community is suppose to occur. The dialogue between the EU and the South East Europe was initiated mainly by the EBRD. The South East Europe suffers namely from the lack of energy resources, insufficient infrastructure, non-existent market competition, faulty energy supplies and lacking environment protection. The EU expects from the cooperation a better approach to the Caspian region, North Africa and the Near East natural gas resources. A close cooperation is functioning also regarding the Maghreb region and the EC plans to deepen the relationships with the world biggest energy consumers (IEA/OECD 2004b).

ENERGY SAVING

The importance of energy saving for limiting of the energy import dependence was pointed out by the Green Book already. Together with fulfilling the Kyoto protocol and creating an internal energy market, they belong to the main priorities in the EU energy area (ČEZ 2003; CZ-AT EEG 2005).

The dynamics of energy saving slowed down during the last period. At present, the savings increase by the mere 10% per year compared to the 25% in the 80s. As the energy savings represent the demand side, the EU can influence it, in the difference to the supply side. To it, a whole series of regulations and directions were already passed. In 2000, it was the direction on energy demands efficiency of bulbs, in 2002, a directive on electricity tubes labeling was passed and in 2003 the directive on labeling climatisation equipment and refrigerators. By labeling, the producer is obliged to inform the customer of the energy demands of the product, which influences the customer decision making. Also the directive on energy demands of buildings was accepted, which aims at the improved energy demands of the public, commercial as well as private buildings. It sets the minimum standards for the energy demands of the new or reconstructed buildings. The direction will call, among other, for the building certification system, enabling the owners and users to get a better idea on the energy consumption of the building (OEA/OECD 200b).

In 2004, a new directive on co-generation energy units came into validity. Co-generation represents efficient energy resources utilization, as it produces simultaneously heat and electricity. Other important directives are just about to be passed. The first of them regards the demands on the eco-design increase of products utilizing energy, which will lead to improving of their economic demands through the whole product life-cycle.

The other is the directive on the final consumers energy saving and energy services from 2003, where the proposal is to increase economic efficiency by 1% per year, so that by the 2012 the total savings will amount to 6%. The proposal aims at removing of the barriers at the final consumer's level and at the energy suppliers and distributors offering energy services and audit to their customers.

In the EU, it is possible to save up to 20% of energy at present. According to the commissionaire for energy, the EU could decrease its yearly oil consumption by 70 million tons per year by the year 2010, if the existing saving potential is utilized. That would mean decreasing the yearly costs by 15 bill. EURO and decreasing the carbon dioxide emissions by 140 mill. tons. To it, some further measures will be necessary, like the extension of labeling to building materials, car parts and equipment. The building energy directive will be extended also to smaller buildings. The EU also wants to elaborate the Green Book proposal on energy savings.

RENEWABLE ENERGY RESOURCES UTILIZATION

Renewable energy resources do not form any important role in the energy production at present. Their share in the gross domestic consumption of

Table 4. The structure of renewable energy resources (RER) in the EU-25 gross electricity consumption

Source	Share in %
Renewable energy resources total	12.9
Biomass	1.6
Water energy	9.9
Geothermal energy	0.2
Wind energy	1.2
Solar energy	0.0

Source: European Union (2004), European Commission (2005)

energy resources was approximately 6% in 2002. Nevertheless, there exist endeavors to increase it (IEA 2004; Directive 2003/30/EC).

In the EU-25, the biggest share of renewable energy resources in electricity production was represented by water energy with almost 10% in 2002. Biomass was the second important source with 1.6%, the share of winter energy was over 1% and of the geothermal energy 0.2% (Table 4).

In 1997, the EU accepted the White Book called "Energy for the Future: Renewable Energy Resources", in which the support of the renewable energy resources was set for the first time in history. The goal was to increase the share of the renewable energy resources in the gross energy consumption from 6% up to 12% by 2010. To this goal, there was created an Action Plan including the individual activities to reach the goal. The renewable energy resources support was defined as one of the main energy priorities. The EU support of the renewable energy resources has three main reasons: security and diversification of energy supplies, environment protection and social and economic cohesion (EurObserv'ER 2005; IENOECD 2004c).

By the renewable energy resources utilization, the EU will partially prevent the high energy import dependence, but also support the new technologies development and job creation. In 2003, among the ten world top producers of technologies for producing electricity from wind, seven came from the EU. These were Danish, German and Spanish producers representing together 73.6% of these technologies market (EurObserv'ER 2005).

Among other, the renewable energy resources will contribute to the easier fulfilling of the Kyoto Protocol. By its accepting and final ratification, the EU has promised to decrease as a whole its carbon dioxide emissions by 8% in the period 2008–2012 compared to the reference year 1990.

In reality, the development of the electricity production from renewable energy resources started no sooner than in 2001, when the EU passed the Directive No. 2001/77/EC on the support of electricity production from the renewable energy resources in the internal market. This directive binds the member states to reach in common the share of 22% of electricity from the renewable energy resources in the total gross consumption of the EU-15 by 2010. This share was lowered to 21% with the new member countries accession. The directive among other grants the non-discrimination access of the renewable energy resources to the electricity net and sets the reference values of the renewable energy resources for the individual member countries (Figure 1).

According to the Directive 2001/77/EC, as the electricity produced from the renewable energy resources, there is regarded electricity produced in plants using solely the renewable energy resources (wind energy, water energy, solar energy, geothermal energy, energy from sea waves, tidal energy, biomass, dumps gas, biogas etc), or electricity produced in combined equipments burning the renewable energy resources together with fossil fuels (Directive 2001/77/EC) (Table 5).

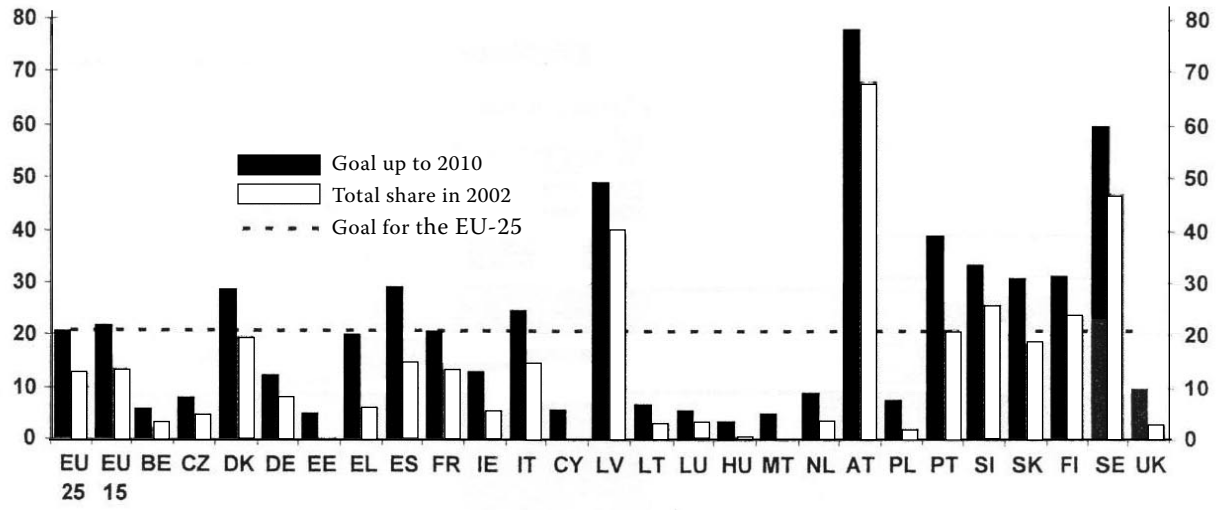

Figure 1. The shares of electricity produced from the renewable energy resources in the total gross electricity consumption in %

Source: European Commission (1997, 2005)

Table 5. Member states reference values for the gross electricity consumption from the renewable energy resources in the EU by 2010

Country	RER goal in % for the year 2010	Country	RER goal in % for the year 2010
Austria	78.1	Cyprus	6.0
Belgium	6.0	Czech Republic	8.0
Denmark	29.0	Estonia	5.1
Finland	31.5	Hungary	3.6
France	21.0	Latvia	49.3
Germany	12.5	Lithuania	7.0
Greece	20.1	Malta	5.0
Ireland	13.2	Poland	7.5
Italy	25.0	Slovakia	31.0
Luxembourg	5.7	Slovenia	33.6
Netherlands	9.0	EU-10 total	11.0
Portugal	39.0		
Spain	29.4		
Sweden	60.0		
Great Britain	10.0		
EU-15 total	22.0	EU-25 total	21.0

Source: Directive 2001/77/EC, Commission of the European Communities (2003)

However, it is necessary to consider the available potential of the individual renewable energy resources. Regarding the almost complete utilization of the EU water potential, the most important resources for the future are wind energy, solar energy and biomass. Denmark, Germany and Spain together form 84% or the total installed wind capacity in the EU-15 (EC 2004). In future, the EC wants to develop namely the biomass potential. This regards namely the new member countries: the CR, Baltic states, Hungary and Slovakia. The development of biomass utilization was hindered in the past by the lack of the political coordination and a low level of support. In its action plan for biomass, the EC

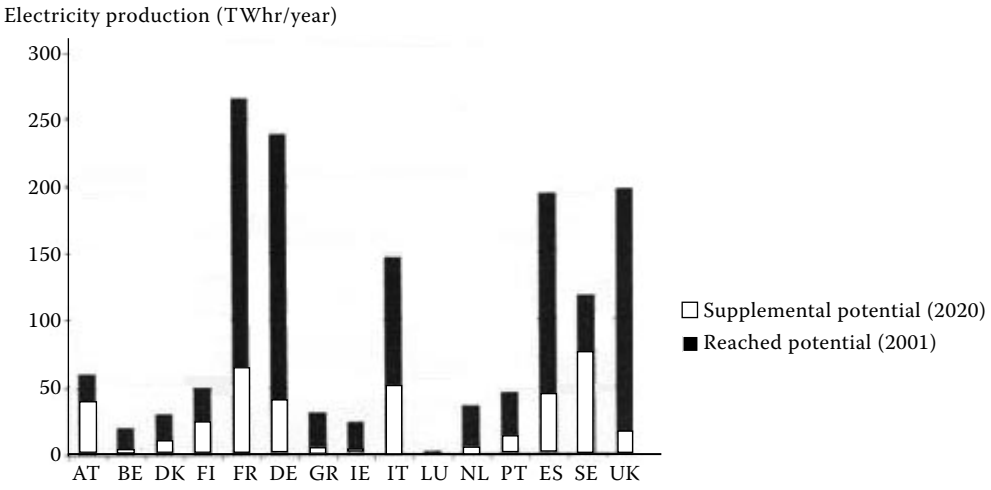

Figure 2. The reached potential (the year 2001) and the middle-term potential (the year 2010) for the EU-15 according to the individual states

Source: CEE (2004), EC (2004)

plans to set the necessary measures for further development.

The solar energy production is still negligible because of its high costs. The EU set in the directive from 2003 also the goals in the sphere of the biofulels, where namely the increase of the bio-oil and bio-ethanol up to 2% in 2005 and 5.75% in 2010 is expected. The biofuels utilization should prevent the growing dependence of the transport sector on oil products. It should also contribute to the development of renewable resources and to prevent the production of glasshouse gasses. The success of biofuels depends namely on the taxation policy. At present, 7 member states removed fully or at least partially the tax burden: Austria, France, Germany, Italy, Spain, Sweden and Great Britain. The further development is difficult to estimate, it will depend on the member states policies (EC 2004) (Figure 2).

It is necessary to mention that renewable resources have, besides the positives, also many problems. Besides being highly economically demanding, they are also not very reliable. The wind or solar energy production depends on the natural conditions, what weakens to a certain extent their position and utilization of these renewable resources. To satisfy the demand for energy from renewable resources, it is necessary to build the reserve resources as well as a costly infrastructure, as the potential is in many cases, e.g. wind energy, far from the consumption centers.

A big problem of renewable resources is the fact that they are not competitive in the European market with the traditional fossil fuels. The EU leaves the choice of the appropriate economic tools supporting their utilization on the decision of the individual countries. Each country then disposes of its own support system.

Table 6. Support systems in the EU-25 member states in 2005

Member state	Support system
Austria	Producer prices (now ended) together with regional investment subsidies
Belgium	Scheme of quotas with green certificates, granted minimum prices for electricity from RER
Denmark	Producer prices and public competitions for sea wind projects
Finland	Investment subsidies and tax alleviations
France	Producer prices
Germany	Producer prices
Greece	Producer prices and investment subsidies
Ireland	Public competitions, minimum producer prices
Italy	Scheme of quotas with green certificates, from August 2005 minimum prices for photovoltaic energy
Luxembourg	Producer prices
Netherlands	Producer prices
Portugal	Producer prices and investment subsidies
Spain	Producer prices
Sweden	Scheme of quotas with green certificates (from May 2003)
Great Britain	Scheme of quotas with green certificates
Cyprus	Contribution to RER from electricity consumption tax
Czech Republic	Producer prices and investment subsidies
Estonia	Producer prices and obligatory purchase
Hungary	Producer prices and obligatory purchase, public competition for subsidies
Latvia	Scheme of quotas with producer prices
Lithuania	Producer prices, obligatory purchases and investment programs
Malta	Lower VAT for solar systems
Poland	Obligatory purchases and tax alleviations
Slovakia	Producer prices and tax alleviations
Slovenia	Producer prices, long-term agreements, carbon tax and investment subsidies

Source: APPA (2005), CEC (2005)

The utilization potential of the renewable energy resources is differing in the individual member states. In total, the best equipped countries of the EU-15 regarding renewable energy resources are France, Germany, Great Britain, Spain and Italy. On the contrary, among the countries with a low potential, we can include Luxembourg, Ireland, Belgium or Greece.

In the majority of member states, the support tool of producer prices prevails. The quota scheme together with tradable green certificates works only in 5 EU countries: Great Britain, Belgium, Italy, and Sweden and partially also in Latvia. Other member states prefer the granted minimum producer prices with the exception of Malta, Cyprus, Ireland and Finland, where such primary support tools are not implemented (Table 6).

The support systems differ in the individual states namely because of (ČEZ 2003):

– Different natural conditions for the individual RERs
– Different economic conditions – different investment and production costs, different electricity prices, tax systems, different ways of financing investments and financial market functioning in the individual countries
– Different starting situation, when in some countries the support already existed before accepting the directive
– Different political conditions and interests in the development of different RER types, different strengths of the lobby groups

The EU considers harmonization of the electricity from the RER support in future.

Regarding the energy markets liberalization, the RER cannot be excluded from the market harmonization and the support systems will have to be unified as well (Jansen, Uyterlinde).If the EU comes to the conclusion that the harmonized system would help the higher utilization of the RER in future, a single support tool can be utilized on the EU level in the near future. The document issued by the EC in December 2005 stated, however, that the time is not suitable for implementing such a tool because of the insufficient experience and therefore impossibility to compare the already existing schemes.

CONCLUSION

Energy import dependence became one of the key topics of the still strengthening debate of the political representatives, expert public and public in general. The growing demand for energy resources and the energy-demanding needs of the modern society are certainly a reason for the possible reprehensions.

The future development in the sector of energy will be the breaking point. We will have to look for new energy resources and that not only because of the import dependency on the politically not stable states, but also because of the limited stocks of the fossil fuels. One of the possibilities is to look for reserves on the consumption side; the society should re-evaluate its energy demands. However, the habits and energy comfort of the present society will be difficult to change. Lowering of the risk of the energy imports dependence and the possible energy supply fluctuations have been successfully reached by forming of the strategic partnerships with the resource mining countries (EC 2004; IEA 2005).

Another variant is a higher utilization of the renewable energy resources. However, these will not be able in the near future – and we dare to state that not even in the longer term – to replace the fossil fuels. On one hand, they are still not economically competitive. These resources are still considerably more expensive than the traditional ones, and besides, the transition to the RER is not made possible by the technological conditions and character of these resources.

The problem of the energy dependency is, since the oil shock which shattered the world, also one of the topics of the EU. During the last years, the European institutions passed many directives and measures regarding this, and that notwithstanding the fact that the member states still have the supreme decisive power in the matter. The endeavors for the common solution of the problem led to a still higher integration in the field. Implementation of the unified internal market, reliability of supplies and the development of the RER have become the main priorities of the EU energy strategy.

The potential of renewable resources of the EU is considerable, nevertheless, the technological level is still not developed, compared to the fossil fuels. Therefore, their future development will depend to a great extent on the level of the supporting political mechanisms, but also on the level of scientific research and the resources put into it.

Thirty years after the oil shocks of the 70s, the conflict between Moscow and Kiev caught the EU rather not prepared, as if it did not derive the sufficient learning from the oil embargo imposed by the OPEC in 1973 on the "friends of Israel". In 2000, Brussels expressed being disturbed by the vulnerability of the old continent in the Green Book "On the Strategy of Secure Energy supplies".

Creation of the common strategic stocks of oil and gas was refused by the member states, as they

regard this as one of the factors of their independence. Therefore, the EU has no common strategy to support its weight in the negotiations with Russia, what makes it difficult to fully utilize the fact that Russia gets 60% of its foreign currency resources by the export of oil and gas. Furthermore, the Gazprom, which controls one fifth of the world gas resources and one third of the Russian oil, can hardly manage its investments without its foreign partners. The EU thus did not follow the example of the U.S. and China who regarded energy as the geo-strategic topic of the highest level.

The EU concentrated on liberalization of the electricity and gas markets, which, including the supply for physical bodies occurred in 2007. However, without an efficient common policy the liberalization only supports the attractiveness of natural gas. New electricity providers in the liberalized marked build their capacities on natural gas as the other resources are regarded as polluting (coal, heavy oil) or difficult to finance (nuclear energy) (IENOECD 2003).

According to the Energy Chart of the Brussels, at present the imported natural gas covers about 40% of the energy consumption in the EU, this share could increase up to 90% in the period 2020–2030. By 2020, the Russia share in the import should be approximately one half, by which the Russian Federation becomes the main energy import resource of the EU.

A new factor is the North European gas transport system, by which the Gazprom should supply its German partners E.O.N. and BASF by 55 bill. cubic meters of gas per year from the deposits in the Jamal Peninsula to the Greiswald port from 2010. The relevant investment should reach 5.7 bill. USD. According to experts, it is possible that this transport way will be finished sooner. Even if important, it will not be able to replace the gas transport through Ukraine.

For the first time in 40 years, some of the EU countries registered a short-term decrease of the gas supplies, what leads to the question about the reliability of Russia as a partner. Many countries and companies started talking of the need of supply diversification, the old continent should, according to them, depend more on Latin America, South and North Africa, Norway and the Near East.

After the decades of liberalization, the EU has to concentrate on securing of the supplies and energy resources diversification. However, Russia will remain the pillar of the Union supplies. Energy supplies are at present solved mainly on the national level, a more European approach would be needed.

The Russia-Ukraine conflict leads the EU governments to thinking also of building new nuclear power plants and prolongation of the life-span of the old ones, of a wider utilisation of solar and wind energy. The chancellor Angela Merkel decided on elaboration of the national energy strategy and called the German "energy summit" on the supply diversification and a wider use of renewable resources. Nuclear power plants should be stopped in Germany in 2021, but the minister of economy Michael Glos (CSU) started to recommend investments into coal and nuclear energy already.

The EU cannot in any case thing of getting along without Russia, which has a key position in the future of the European energy. The dependency is growing quickly as there are not many reserves in the West Europe. In the middle-term outlook, the possibilities of supplies are limited to Norway and the Netherlands. The total 70% of the natural gas reserves are concentrated in two world regions: 30% in the Near East and 40% in the area of the former USSR.

If the world does not realize in time that the time of cheap oil and gas has ended and does not react in the adequate way, it will just mean the beginning of new and worse conflicts than hitherto.

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