

European Internal Market of Electricity and Energy Transition in Czech Republic

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Abstrak

Bergabungnya Negara-negara Eropa Tengah dan Timur ke dalam Uni Eropa merupakan titik tolak untuk melihat evolusi kebijakan energi antarkawasan. "Copenhagen Criteria" kemudian disusun oleh Uni Eropa sebagai instrumen politik dan ekonomi untuk membantu calon negara anggota menyelaraskan urusan domestiknya dan mempersiapkan mereka menuju Pasar Bebas Energi yang terbuka melalui mekanisme Kompetisi Pasar Energi Listrik internal Uni Eropa. Energi merupakan salah satu sektor penting yang diatur dalam Pasar Internal Uni Eropa, terutama konsumsi listrik dan gas dari energi terbarukan. Kebijakan ini diatur dalam suatu kerangka hukum (the Directives) yang mengikat Negara Nasional. Setiap Negara secara sukarela menyerahkan kedaulatan ekonomi politiknya kepada entitas supranasional yang berdampak pada dinamika politik domestik dan penyusunan kebijakan energi antarkawasan.

Bergabungnya Republik Ceko ke dalam Uni Eropa pada tahun 2004 secara tidak langsung memengaruhi kebijakan energi pada tingkat lokal. Setiap Negara Nasional merupakan obyek hukum dan dikenai kewajiban untuk mengimplementasikan legislasi yang telah disusun. Akan tetapi, legislasi tersebut acapkali berlawanan dengan preferensi kebijakan energi Negara Nasional, terkait kemampuan sumber daya alam serta sistem politik Negara tersebut yang telah berakar sejak lama. Hubungan antara Negara Nasional terhadap supranasional atas penetapan legislasi energi dapat dilihat sebagai bagian dari proses integrasi regional energi antarkawasan, keamanan energi regional, dan ketergantungan energi dari luar. Ceko merupakan negara yang berhasil mengembangkan energi terbarukan. Sisi lain, rencananya untuk melakukan diversifikasi kebutuhan energi listriknya ke tenaga nuklir dan menghentikan subsidi energi terbarukan pada tahun 2013 merupakan beberapa tantangan pengembangan energi masa depan.

Why Energy Matters: European Union and CEECs Countries

The political situation in the post-Velvet Revolution in 1990s and following accession of CEECs countries to European Community in 1990s are conceived as a turning point to take further study of the energy policy transition and its political contestation within the region. In the political context of early

1990s, the engagement of CEECs countries to European Community (EC) had significantly benefited both entities, either in political or economics contexts, such as external security and a spill-over of economic effects that boosted prosperity across the region, for instance in trade and capital movements among European countries (Tusca: 2004). CEECs countries were in a quest for prosperity and external security; whilst EC gained energy security across the region enriched with natural sources and gained influence with former Soviet satellites. However, due to their political backgrounds, certain requirements were requested by European Community for member candidates. These conditions were known as the “Copenhagen Criteria”, political and economic frameworks. A further example of CEECs countries accession and dynamic interchange of political and economic context is the Czech Republic, as a former Soviet satellite and its highly polluted environment (Andanova: 2004). The Czech Republic finally joined as a full member of the European Union in 2004 and thereby subject to privileges and obligations of EU membership.

As a member of the European Union, the Czech Republic is subject to obligations, including the legislation imposed by European Union. This includes energy issues. Energy is one pivotal matter for the European Union. Integration of European Energy policy emphasises that member states have to follow rules and pursue common objectives enforced by European Union based on *acquis communautaire*.¹ Member states were forced to integrate their national energy policy into common platforms and frameworks. However, European integration on environmental matters has been regarded as merely national interest. As stated by Mc Cormick (2001), the needs of environmental management, in this context energy policy, are defined nationally. When there is international pressure related to matters, negotiations will be carried out among concerned parties, in terms of competition rather than cooperation. Member states have their own policy styles according to their particular environments, political, economic and social traditions. Furthermore, as described by Putnam (1988), diplomacy and politics are correlated, in terms of decision-making. At the national level, both domestic groups and national

1 *Acquis communautaire* is a French term referring to the cumulative body of European Community laws, comprising the EC's objectives, substantive rules, policies and, in particular, the primary and secondary legislation and case law – all of which form part of the legal order of the European Union (EU). This includes all the treaties, regulations and directives passed by the European institutions, as well as judgements laid down by the European Court of Justice. The *acquis* is dynamic, constantly developing as the Community evolves, and fundamental. All Member States are bound to comply with the *acquis communautaire*.

The term is most often used in connection with preparations by candidate countries to join the Union. They must adopt, implement and enforce all the *acquis* to be allowed to join the EU. As well as changing national laws, this often means setting up or changing the necessary administrative or judicial bodies which oversee the legislation.

<http://www.eurofound.europa.eu/areas/industrialrelations/dictionary/definitions/acquiscommunautaire.htm>

governments are seeking their interests. Domestic groups are pursuing favorable decision-making, while national governments are in attempts to use their influences in satisfying both domestic and foreign partners. The game can be conceived, according to Putnam, as a Two-Level Game. The dynamics of political interchange between actors in decision-making are subjected to what extent decision is made and how the actors sphere their influences based on certain interests.

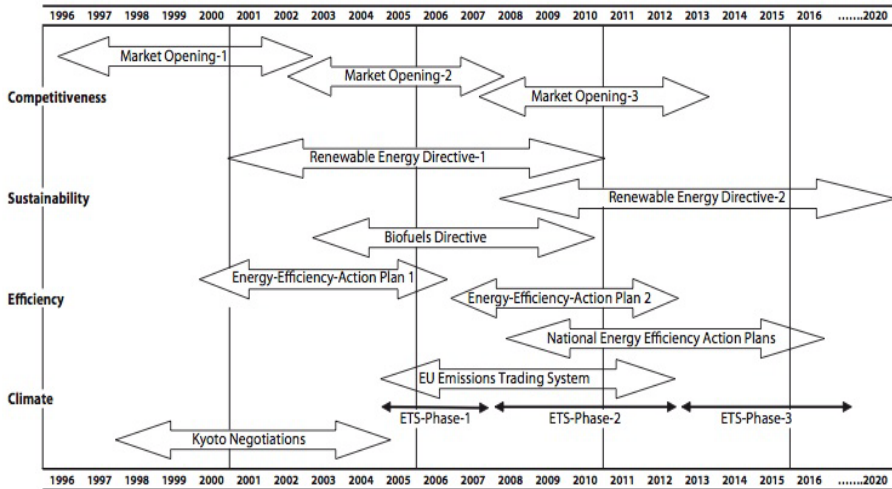


Figure 1: Development of EU Energy Policies Over Time

Source: Panorama Energy: Energy Statistics to Support EU Policies and Solutions (2009 Edition) http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-GH-09-001/EN/KS-GH-09-001-EN.PDF

Moreover, energy issue had been widely discussed by scholars since the 1990s (Turnock, 1997; Andanova, 2004, Fagan, 2004; Brennan, 2006), when the major development of industries in CEECs countries had significantly polluted the environment of Europe, particularly carbon emission from electricity power plants. In order to keep the environment and air quality clean within the region, European Union took steps forward to initiate environmental agreements on air pollution. The European Community targeted CEECs countries to impose legislation on air pollution. It also offered a next step to Market Economy in energy, spreading the benefits of previously protected electricity markets in most West European countries (Andanova: 2004). The Act of Clean Air in 1991 furthermore introduced to Czechoslovakia, (predecessor of the Czech Republic), as a package of environmental agreement on clean air legislation and preparations for an electricity market with the European Community. However, at the national level, the idea to adopt the Act and reformation of

electricity infrastructures was strictly opposed by the Parliament, domestic groups and environmentalists. Meanwhile, international communities (EC) strongly pushed the government to adopt the Act due to environmental risks in the future. In the post-accession, the Czech Republic finally adopted Market Economy of electricity in 2006. It was a few years afterwards, Czech was accused of violating the rules of internal electricity and gas markets in 2009, including the transparency over electricity prices and limiting consumers access to renewable-based electricity.

By examining the energy issue in Czech Republic, particularly during a transition period and the post-accession, some arguments are constructed, based around the relation of European Union and its Member States. Particularly with regard to the Czech Republic, on The Act of Clean Air (1991) in the transition period, the Directives of Renewable Energy Policy (2009) in post-accession and the period of transition, related to the shift of energy policy, from renewable energy to nuclear power. First, the Czech Republic has a particular point of view to European legislation, particularly on adopting European standards of compliance on air pollution (1991) and maintaining energy supply at domestic level based on a socialist system of self-sufficiency. Meanwhile the European Community strongly imposed the electricity market in Czech Republic to a liberal market economy. In accordance with European standards on carbon emission, the government favours nuclear-based energy to meet both European clean air pollution standards. Second, the Directives of REP (2009) were mainly designed to respond to the energy crisis that had a profound impact within Europe. Member States are urged to seek alternative energy as it has a wide impact on internal and external security within the region. Energy is categorised as “high politics”. Member States are strongly urged to reduce dependency over energy supply from abroad by increasing the use of renewable energy sources. On the other hand, the Czech Republic has shifted the energy policy by developing nuclear-based plants to meet the energy availability, while the use of coal as a main fossil fuel for electricity generators will be reduced in 2040. Instead of further developing renewable energy platforms, the decisions are based on certain options. First, nuclear power plants are more efficient in generating power and produce less carbon emission. Second, the use of nuclear based-power can be perceived as a political instrument to dominate Electricity Markets within European countries in order to generate more profit based on national interest.

This paper emphasises the relation of European Union and its Member States, particularly the Czech Republic with regard to energy policy and its legal framework (the Directives)². These had a huge impact on national

2 Directives are binding on member states in terms of their goals and objectives, but member states are free to decide of how best to achieve those goals. Most focus on outlining general policy objectives, while some are aimed at harmonization (bringing different national laws

legislation at domestic level and created dynamic interchange between actors in decision-making. The research question in this case is as follows: to what extent does the European Renewable Energy Policy change national energy policy and how does the Czech Republic address their favorable policies and reply to European energy objectives?

The paper is divided into six sections. The first section begins with energy policy in the early years of the Czech Republic and its engagement with the European Union. The second section considers the European internal energy market and its opposition to national energy frameworks and interest. The third section begins with a European Energy crises and the use of renewable energy. The penultimate chapter handles the prospect of nuclear energy in terms of energy mix. The last section is conclusion.

Environment and Energy in Czech Republic: Prospects and Engagement with European Union

In the 1980s, Czech was an industrialised part of Czechoslovakia and it was one of the most polluted areas in Europe. The environmental problems in CEECs, air pollution in particular, had been documented by scholars (Turnock, 1997; Hendersen, 1999; Andonova, 2004; Fagan, 2004; Brennan, 2006). The source of air pollution of industrialisation was basically from electricity power stations generated by a low-grade brown coal with high content of sulphur and its emissions of sulfur dioxide reached 3 million tons a year in 1980s. In addition, many heavy industries and power plants had not enough facilities to desulphurise gases. In the long run, air pollution would indirectly have effects on human health, such as respiratory diseases, infant mortality, etc. Heavy industries were commonly blamed for environmental problems and air pollution.

Whereas Western European countries had shifted their heavy industries to information-based technology, most Eastern European countries were unable to largely shift their common heavy industries due to the centrally planned economies (Fagan: 2004). Heavy industries were pivotal assets due to their importance in providing military-industrial equipment as well engineering equipment. (Turnock: 1997). Heavy industries produced air pollution as well chemical waste and it had been rated hazardous for the environment. In the 1980s, these environmental problems existed in many parts of Eastern European countries, Czechoslovakia, Poland, and East Germany as they used coal as a main fuel to operate machines and heavy equipment (Brennan: 2006). In addition, during the Soviet regime, nuclear plants had been operating to

into line with one another). Implementation requires changes in national laws which must be made by a specified date, normally within two to three years of adoption. The governments of the member states must tell the European Commission what they plan to do to achieve the goals of a directive.

supply electrical power within the region. These industrial facilities had been the main concern for the European Community. After the collapse of the Soviet Union, although some nuclear plants had reportedly stopped operating, others still operated with some precautions and limitation.

Furthermore, the democratic transition in Eastern and Central European countries in the 1990s had not only brought a new emerging power across the region but it also created a new hope for Central and Eastern European Countries (CEECs) to join with European Community. As noted by scholars (Pusca, 2004;) the enlargement helped CEECs countries to boost economic growth by taking a step forward to the market economy and to gain political security across the region.

In relation to the political context of the early 1990s, the democratic election of the President of Czechoslovakia was a turning point to further study dynamics and interchange both political and economic in CEECs countries, especially in Czech Republic. The elected president, Vaclav Havel gained significant political power at home with his civic forum-public against violence (Andanova: 2004 and Paczynska: 2009). They established a so called democratic pluralism and market economy. During these periods, it was obvious that the new Republic had further prepared to turn their political direction into an emerging power in the region. A slogan that they repeatedly proclaimed was "The Return to Europe". The slogan was commonly associated with social and political changes and economic transition after the collapse of Berlin wall in 1989. It untied Soviet-satellite states in 1990s (Grabbe: 2006). The Czech Republic, to mention one, turned its political attention and direction into becoming an emerging power and political entity in the region. The European Community, granted external security, economic prosperity, consolidation, and democratic institutions. However, the Czech's accession plan to Europe had been put into long consideration by European Community because of its political background and environmental problems. On the other hand, the European Community had the Czech Republic in their sights due to EC geopolitical strategy to enlarge their influence in neighboring regions by allowing those countries to join the European Union. The aim was to construct energy security and gain political stability by underpinning vital industries and infrastructures in post-communist countries, such as nuclear plants, heavy industries, etc.

The European Community (EC) in the 1990s furthermore made a long preparation of the accession of these countries to Europe. The EC had prepared official requirements for candidate states, formulated in "Copenhagen Criteria"³ in 1993 that included certain requirements fulfilled by member candidates based on two pivotal areas. The first concern was economic

3 See European Enlargement and Copenhagen Criteria http://ec.europa.eu/enlargement/policy/glossary/terms/accession-criteria_en.htm

integration and second political integration. Economic integration emphasised liberalisation of energy markets at regional level, while political integration referred to the political stability at domestic level. The EC furthermore evaluated every step carried out by member candidates. These requirements had to be implemented before candidate members joined the EC. These criteria had challenged member candidates to take further preparations, including enhancing capacities to meet targets in economy (agriculture, industry, etc) and political administration based on "The Criteria".

As noted by Pusca (2004), there were many series of further considerations for member candidates before joining the European Union. Member candidates must have a democratic political system, commitment to human rights, a functioning and competitive market economy, a legal and institutional framework, acceptance of *acquis communautaire* and willingness to participate in common foreign security policy and also defense policy. There are basically three points according to Copenhagen Criteria (1993). First, Member States have to create the stability of institutions guaranteeing democracy, the rule of law, human rights and respect for and protection of minorities. Second, Member States have to build the existence of a functioning market economy, as well as the capacity to cope with competitive pressure and market forces within the European Union. Third, Member States must have the ability to take on the obligations of membership, including adherence to the aims of political, economic and monetary union.

In the 1990s, international communities started to extensively impose the legislation of air pollution at the national level. During the pre-accession of the Czech Republic to European Union, there were political dynamics at national level in 1991 particularly on the adoption process of a strict Energy Policy of the Act Clean Air 309/1991 and its provisions imposed by European Community (Andanova: 2004). Due to strong domestic and international pressures, the federal Czechoslovak government adopted a Strict Act on Clean Air and followed international standards on air pollution imposed by European Community. Soon after the split of Czechoslovakia in 1992, the Act remained adopted by Czech Republic. The Act of Clean Air actually gained less support in national parliaments for its high cost of equipment to meet emission standards. Andanova (2004) described that the electricity industry in the Czech Republic involved a complex negotiation strategy. Under full control of government, electricity is vital to public and national assets. During early transition, the government faced strong pressure from international agencies to de-monopolise the Czech and Slovak electricity infrastructures. However, during the privatisation of the electrics sector, electricity ultimately remains under full control of CEZ and the government.

Related to the Act of Clean Air 309/1991 in Czech Republic, the decision to reform air pollution legislation was not fully supported by the Parliament,

particularly by the representatives of highly populated areas. According to Andanova (2004), the political dead-end on the clean air legislation however was facilitated by the government due to the significance of energy power and national interest. The high cost of air pollution legislation was also a bargaining tool to get favorable policy outcomes and financial investments from abroad. In order to meet European emission standards, Czech government had to close the oldest coal-fired plants. On the other hand, reactivating nuclear power plants was the main solution to supply electricity demand. Despite critics from environmental groups for its safety risk and ecological point of view, the decision was made by CEZ to substitute fossil fuel for nuclear energy as a strategy to minimise air pollution based on the Act of Clean Air.

Czech officially joined European Union in 1 May 2004, along with other new members from Central and East European countries (Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Estonia), plus two Mediterranean countries (Malta and Cyprus). Czech finally joined European Union and subject to obligations. This included the legislation imposed by European Union, including an internal energy market that had been adopted in 2006.

European Internal Energy Market of Electricity and National Interest

It is argued that in a specific area of policy imposed by the European Union, member states do not have democratic accountability in decision-making, which includes common economy platforms based on *acquis communautaire*. For instance, internal energy market as a part of Market Liberalisation is commonly perceived as an inducement for the enlargement process for Member Candidates of European Union. Every Member Candidate is obliged to pass every step of common economic platform, such as European monetary union, fiscal union, market and regulatory integration (McCormick: 2001). Member states are therefore subject to integrate gradually national policies to accord with integration strategy and common objectives targeted by the European Union. It refers to *the deepening process*, to create enhanced economic integration. This includes the expansion of a legal framework, roles of institutions and procedures for political cooperation.

European electricity market



Figure 2: European Electricity Market

Source: CEZ Group Investment
http://www.cez.cz/edee/content/file/investors/investment-stories/equity-investors_may_2013.pdf

European Internal Energy Market moreover is a strategic instrument to give European consumers a choice between companies supplying electricity and gas at reasonable prices, and making the market accessible for all suppliers especially for those investing renewable energy.⁴ Provisions for the liberalisation of the electricity market were finally enforced in the 2000 Energy Act, which entered into force in 2001 and accords to the EU Electricity Directive of 1996 (EC/96/92). The directive includes gradual liberalisation of access to the electricity networks two years in advance, creating the independent regulator and licensing system affecting the electricity market.

The European electricity market is highly promising due to the development of industries and high demand of electrical supply within European countries. The Czech Electricity market was fully liberalised in January 2006, while the gas market started one year later. Among the promising European electric companies is CEZ, a Czech firm with operational coverage in Central and Southeastern Europe including Turkey. Currently, CEZ is among ten of the largest energy companies in Europe, both in terms of installed capacity and the number of consumers.⁵ Since mid 1990s, CEZ participated in the European internal energy market. As the demand of electrical power was increasing, CEZ started to increase its power capacity.

4 See Internal Energy Market Summaries http://europa.eu/legislation_summaries/energy/internal_energy_market/

5 <http://www.cez.cz/en/cez-group/cez-group.html>

Balance of cross border trades of the Czech Republic in 1Q 2013

(Net exports in TWh, y-o-y changes in %)

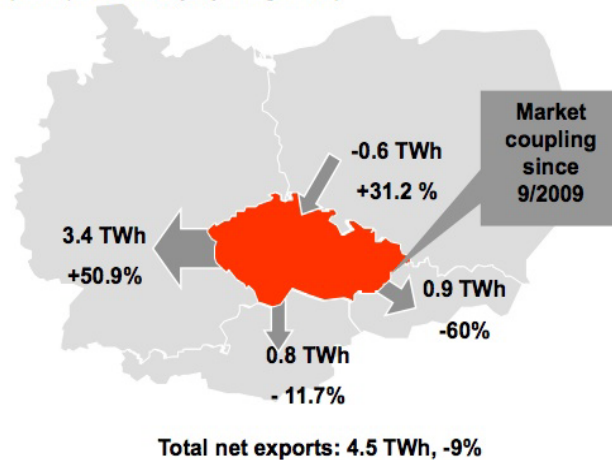


Figure 3: Balance of Electricity in Czech Republic

Source: CEZ Group Investment

http://www.cez.cz/edee/content/file/investors/investment-stories/equity-investors_may_2013.pdf

The Czech Electricity Company (CEZ) provides production, transmission and distribution of electricity. Most power plants are mainly generated from coal, nuclear plants and hydropower. As noted by Andanova (2004), shortly after privatisation in April 1992, CEZ had transformed into a joint-stock company in which the government had a significant proportion of shares (67,6%) while other proportions were owned by public as well as foreign investors. During the socialist system, only a small amount of electricity was exported to abroad due to Czech strategy to maintain self-sufficiency energy supply and to avoid energy dependence from abroad. However, the political changes in 1990s had untied Soviet influence by taking the energy sector to a liberalised market economy since the pre-accession period in 1990s.

In the post-accession period of CEECs countries, the Directive of Renewable Energy 2009/28/EC has been introduced to Member States to increase the share of renewable energy to 20% in 2020. This main objective has formally been requested to all Member States to implement the legislation. This legislation came into force in 5 December 2010.⁶ Shortly after the Directive was implemented in 2009, CEZ was accused of violating the rules of the internal electricity and gas market. Czech legislation was not in line with the Directive, especially on the transparency of information regarding the transmission system operator either in electricity or gas. Not to

⁶ http://europa.eu/rapid/press-release_IP-11-1446_en.htm?locale=en

mention consumer protection, related to lack of transparency for simple and inexpensive procedures dealing with consumer complaints. One year after the implementation, in 2011 Czech had not yet transposed the directive to national legislation. According to the directive, Member States should allow access of renewable energy to the electricity grid and facilitate production from energy resources.⁷

According to recent investigation in 2011, European Commission of anti-competition had finally cleared the serious accusation of price manipulation and alleged cartel practices of CEZ. Several evidences had been discovered that CEZ did not conduct any manipulation of electricity price and limit the trade of brown coal.⁸ The accusation started when CEZ had committed to provide transmission capacities for grid connection in Pocardy, North Bohemia, but CEZ failed to apply a time schedule of transmission capacity. The European Commission however continued its investigation in the area of interest due to a suspicion that CEZ was also preventing other market players to enter Czech power plant constructions. On the other hand, CEZ claimed that other market players and numerous operators had entered the Czech power generation market, long before the first inspection conducted by the Commission.

This strict regulation of European competition protection mechanisms in energy moreover has pushed Member States to remove technical barriers of trade based on national interest and to grant access for other market players to raw materials. It emphasises how supranational power has driven away all national interests particularly on certain energy issues to common objectives. Meanwhile, energy matter is also national interest and how Member States deal with vital issues according to their capabilities, policy styles, particular environments and political traditions. Coal is a pivotal raw material as it provides energy to most power plants in the region. Czech soil is enriched with coal, specifically lignite and brown coal.

On the other hand, competition policy is basically the core of European internal market in which Member States are binding to a common platform in economy and *acquis communautaire*. In Article 81 The Treaty of Rome suggests that Member States are the objects of prevention, restriction or distortion of the competition within the common market. The details are laid on the Treaty and it basically includes three targets: concerted prices (where firms make a secret deal to avoid price competition), abuse of a dominant position in the market for a particular good or service, use of state aids to support firms or industries to gain “unfair” advantage over rivals in another Member State (McGiffen: 2001). The rules are watched by the Commission, which has the authority to investigate the case, bring to Court of Justice, and levy fines. The removal of technical barriers to trade is also the core problem for most Member

7 Ibid

8 <http://www.cez.cz/en/cez-group/media/press-releases/3383.html>

States. In spite of defining it as a simple free-market system or capitalism as proposed by the left critique, the rules and the highest standards proposed by the Commission tend to be generalised in how best practices Member States should adopt. A lobbying practice on a particular issue is usually a reply of political and business actors to this situation.

In reply to the situation, the Czech Presidency of the Council of the European Union in 2009 was one important period when political actors took a role in certain policy areas, such as energy. This was one priority proposed by Vaclav Havel during his six-months rotating presidency. The main objective of his presidency was to advocate market liberalisation in some key-areas, trade policy, including agriculture products. Soon after he started, crisis of gas supply began. In his short period of presidency, Havel had made a major breakthrough of energy perspectives. In the previous presidency, energy was only stressed as important matter in the following presidency. However, during Havels presidency, energy was perceived as pivotal matter related to external dimensions due to security within the region and risks of dependency. He proposed furthermore to end the gas crisis by advocating adverse parties to the table of agreement. He finally succeeded to achieve an agreement on the Nabucco Project, gas pipelines from Iran and Azerbaijan through Turkey that secured the European energy supply for the coming years.

It illustrates how political actors engaged with certain issues took a step forward to bring the common objective to a higher level. At national level, the Czech government had indirectly benefited this position to request national interest. As described by Putnam (1988), national government is a player of a Two-Level Game. At national level, domestic groups are seeking the same interest with national government to pursue favorable decision. At the same time, national governments use their influences to satisfy domestic groups and foreign partners.

Towards European Energy Security: Energy Consumption in Czech Republic

The high level of reliance upon energy was commonly the main problem among Member States during the series of energy crisis. Eurostat (2008)⁹ states that European Union (EU) is the third largest energy consumer and imports more than 80% of oil and 60% of gas. If this pattern will continue, by 2030 EU's imports will reach 70% of the EU energy needs. Situated in supply routes of oil and gas, EU's energy imports are mainly from Russia, Norway and Algeria that provide 70% of the gas and 50% of crude oil supply. These factors led the European Union to take initiatives and to seek alternative energy to cover their energy demand.

⁹ See Eurostat 2008 http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-GH-09-001/EN/KS-GH-09-001-EN.PDF

A suspension of gas supply from Ukraine, for an example, in 2006 and a three-day interruption of oil supply from Russia to Hungary, Czech Republic, Slovakia and Germany in January 2007, had largely caused significant loss in many domestic sectors. A few years later, a dispute between Russia and Ukraine over gas price and its transport in January 2009 had addressed a major issue within Europe and had a wide impact in Member States.¹⁰ The gas supply was stopped for eleven days and this continued largely in other seventeen Member States. Slovakia and Bulgaria greatly suffered from the crisis, as they were unprepared to develop alternative energy, while Czech had not suffered a serious impact from the crisis as the Czech government had initially developed alternative energy in terms of energy mix. According to the facts Czech is self-sufficient in energy raw materials, specifically brown coal and partially black coal. Uranium reserves are also available within the territory of Czech Republic.¹¹ Situated in Rožná mining (Vysočina Region), the annual output is 300 tonnes of uranium. Both coal and uranium raw materials are commonly used for generating power plants within the region.

On the other hand, Czech lacks of oil and natural gas and the supply is mainly imported from abroad. Approximately, three-quarters of natural gas is imported from Russia and the rest from Norway. Oil is currently transported by two pipelines of Družba from Russia and IKL. In 2008, the account of oil imports was 59,3% from Družba and 40,7% from IKL. Czech has been relying on gas supply mainly from Russia. In 2009, gas supply from Russia was 58,8%, from Norway 34,6% and from Germany 6,6% in total national gas demand. The strong reliance on fossil fuel particularly oil and natural gas has significantly changed the energy policy at domestic level.

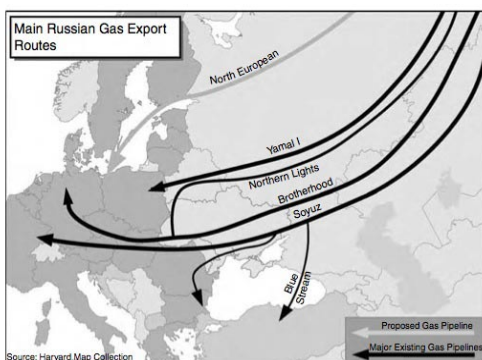


Figure 4: Russian Gas Export Routes

Source: Margarita Balmaceda. 2008. Energy Dependencies, Politics, and Corruption in the Former Soviet Union: Russia’s Power, Oligarch’s Profits, and Ukraina Missing Energy Policy 1995-2006

10 <http://www.dailymail.co.uk/news/article-1106382/Europe-plunged-energy-crisis-Russia-cuts-gas-supply-Ukraine.html>

11 See Energy Industry in Czech Republic p. 09-10 (2009)

Scholars have documented the vulnerability issue of energy supply related to energy security across the region (Balmaceda, 2008; Haghghi, 2007). Balmaceda emphasized how Russia's dominance of the energy market had pushed European communities to quest energy diversification, while Haghghi (2007) stressed the legislation process to resolve the energy problem. Several examples of energy dependency illustrate the change of domestic politics.

However, in terms of energy security and a quest for alternative energy, the European Union imposed a Renewable Energy Directive to push the Member States to increase the use of renewable energy and advance its development to loosen the dependency over energy resources from abroad. Moreover a legal framework had been proposed by the Commission, namely Renewable Energy Policy 2009/28/EC or the renewable energy directives, to regulate renewable energy markets and consumption within Europe.¹² The aims are basically to control energy consumption and to increase the use of renewable energy sources based on Kyoto Protocol and the United Nations Frameworks on Climate Change. The policy also aims at the integration of the internal energy market. This is particularly with electricity and natural gas at regional level. Not to mention providing infrastructure investments, introduce energy savings, clean technology innovations and deployment.

According to the Directive proposed by the European Union, member states indicative target is 20% use for renewable energy sources (RES) and a 10% share of RES use in transport by 2020.¹³ Moreover, in Article 4, member states are requested to provide a national renewable energy action plan (NREAP) by 30 June 2010 in order to achieve national targets in three sectors (electricity, heating and cooling, transport). In January 2011, all 27 Member States had submitted their NREAPs. The system also includes market actors to get feed-in tariff/or green bonus depending on their supply, to a distributor, trader or supplier and provides tax exemptions for five years for the operation of renewable-based power plants.

The capabilities of Member States to make use of renewable energy from natural sources had significantly reduced the reliance of energy supply from abroad. Nations may cover energy demand at domestic level by making use of natural resources such as wind, solar, and biofuel. However, the consumption of energy is still increasing from year to year and finding the best solution, in terms of energy mix, is still an issue for the Czech government. Energy consumption at domestic level is also connected to public services. Gas fuel for instance is connected to public services and is also widely used by heavy

12 <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0016:0062:EN:PDF>

13 See Panorama Energy: Energy Statistics to Support EU Policies and Solutions (2009 Edition) http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-GH-09-001/EN/KS-GH-09-001-EN.PDF

industries. Gas consumption is commonly used by households and other services infrastructures (see figure 5)

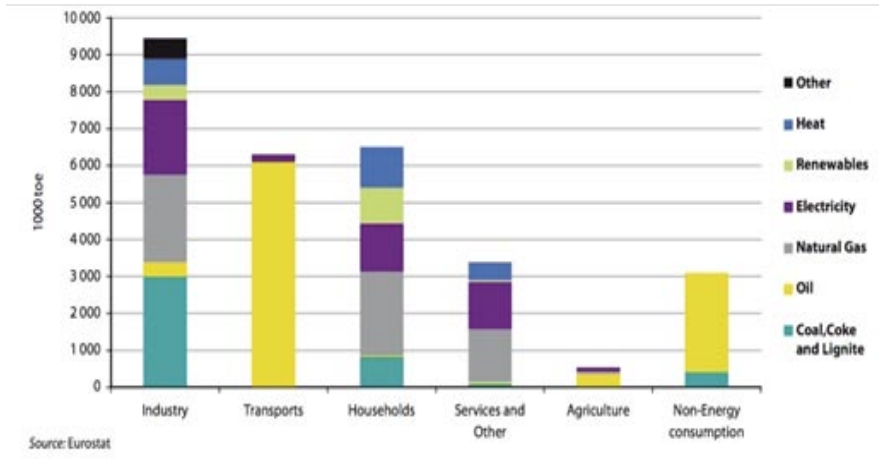


Figure 5: Energy Consumption by Sector and Type of Fuel in Czech Republic (2006)

Source: Panorama Energy: Energy Statistics to Support EU Policies and Solutions (2009 Edition) http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-GH-09-001/EN/KS-GH-09-001-EN.PDF

According to figure five, energy consumption in the Czech Republic is basically provided from oil and natural gas. Oil has been widely used in transport, while natural gas is used in industry, service sectors and households. Both fossil fuels are considered vulnerable to energy dependency from abroad. Renewable energy has a small portion in use, particularly in industry and households. Moreover, electrical power has been largely used by industry, service sectors and households. Electrical power plants in the Czech Republic are commonly generated by brown coal or lignite. However, increasing demand for electrical power supply has pushed government to increase production. Renewable energy development in Czech indeed has successfully reached its target whilst the demand of energy is still high.

In contrast, nuclear-based power has been widely recognised to meet the energy demand for the future. Although the nuclear-based power plant has been allowed by the European Union despite safety risks, it has been rated by non governmental organizations and environmentalists as hazardous matter for the future environment.

Energy Sources in Transition: From Coal to Nuclear Power

The use of nuclear plants to generate electricity has been widely recognised by European Union for its significant share of electricity production. However, as suggested by Devine-Wright (2011), the use of nuclear power does not

represent a new form of energy, but it presents the energy transition in many member states of European Union, particularly in Czech Republic. Previously, coal was the primary fossil fuel to generate electrical power. As coal produces more carbon emissions than nuclear power, coal-fired plants are generally less favorable. In contrast, nuclear energy is more preferable to generate electricity because of its higher efficiency. According to the facts, 30% of electricity in Europe is generated from nuclear power plants.¹⁴ Located in 14 Member States, there are 143 operating nuclear reactors in Europe, 4 reactors are under construction and 14 are in future plans. Each Member State has the right to decide to take benefit of nuclear energy in terms of energy mix. It also conforms to the nature of the energy Directives that allow Member States to decide of how best to achieve the energy policy objectives. Nevertheless, according to the Euratom Treaty, the European Union must ensure its safety and its sustainability across Europe.

The Czech Republic has successfully implemented energy diversification in terms of energy mix and turned to renewable energy since 1990s as the need for renewable energy increases. However, the small portion of renewable energy cannot yet meet the demand for electricity in the Czech Republic. Coal-fired power plants moreover are still favorable. In 2011, approximately 49,7 million KWh the supply were obtained from coal, while 28,3 million KWh were generated from nuclear plants.¹⁵ However, the lack of electricity supply recently in EECs countries and the limitation of coal as a fossil fuel in electricity generation have driven Czech government to reactivate nuclear plants to produce electrical power. With this strategy, there is less carbon emission, and a large production of electricity supply.¹⁶

Czech Republic has six nuclear plants to supply one-third of its total energy demand. Two nuclear plants are in Temelin and Dukovany that provide 30% energy supply in Czech.¹⁷ According to the government, they attempted to reactivate two more nuclear-based plants, by in 2011 the energy plan had been initiated until 2060. They estimated that the energy demand would increase, 13,9 Gwe to 18,9 Gwe. Most electrical supply in the Czech Republic is provided by CEZ. The figure illustrates the share of installed capacity of electricity generators based on black coal, brown coal, uranium (nuclear power) and hydro power. Nuclear power has been largely used to generate electrical power, while lignite or brown coal is still used as fossil fuel as its availability is large. On the other hand, black coal is used in small portion as it produces more carbon emission than lignite or brown coal.

14 See European Nuclear Provisions http://ec.europa.eu/energy/nuclear/index_en.htm

15 <http://www.world-nuclear.org/info/inf90.html>

16 http://www.nuclearpowerdaily.com/reports/Czechs_Slovaks_join_forces_in_defence_of_EU_nuclear_power_999.html

17 Ibid

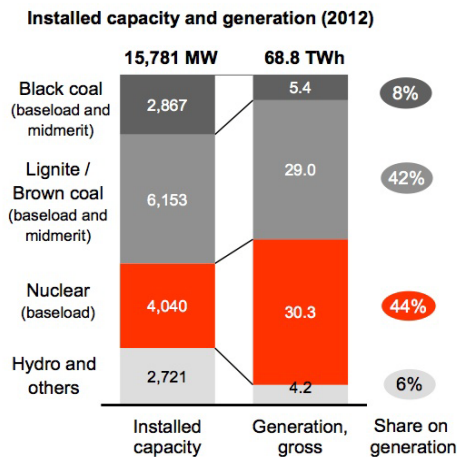


Figure 6: Installed Capacity and Generators in Czech Republic (2012)

Source: CEZ Group Investment http://www.cez.cz/edee/content/file/investors/investment-stories/equity-investors_may_2013.pdf

According to a report in November 2012, Czech’s government estimated 50% energy supply would be provided by nuclear plants in Temelin and Dukovany. Coal as fossil fuel will be reduced into one-third by 2040 and the consumption of gas will increase significantly. Renewable energy support will be stopped in 2014.¹⁸ *Energy Regulatory Office (ERÚ)* is planning to stop renewable energy subsidy. According to Alena Vitásková in a Press Conference, Czech has reached its target required by the European Union in renewable energy consumption 13,5% in 2013 (until 2020 according to the Renewable Energy Directive).

Czech electric company, CEZ, moreover supplies domestic electrical sources and a large share is exported to European neighbors. The company provides electricity in many sectors, such as industry, households and services. However, the dominant power of this state-owned company has been widely criticised by scholars as a full political interest over energy issue. For instance, soon after the launching of two reactors at Temelin between 2000 and 2002, CEZ succeeded in gaining a large profit from electricity production from coal-fired plants (Polanecy: 2011). Instead of continuing to construct another coal-fired plant, CEZ decided to develop nuclear-based plants and received financial aid from Czech government. Due to their carbon emission, coal-fired plants are technically inefficient in a long term-operation and it would comply with European electricity market to pay fee allowances on their carbon emissions. On the other hand, the European Union had strongly requested Member States

¹⁸ <http://www.ceskapozice.cz/en/news/politics-policy/czech-environmentalists-decry-call-end-subsidies-renewables>

and electricity producers to shift their previous energy platforms to renewable energy sources. Compared to renewable energy platforms, the construction of nuclear-based facilities requires a large proportion of European budget. For instance, the cost of nuclear plant construction of a single reactor in Finland and France costs approximately 5 billion Euros each.

Meanwhile, other Member States have the same objective to reopen their nuclear plants to generate more power supply by using financial aid obtained from the European Union, such as the United Kingdom, France, and Poland. Paradoxically, the financial aid that aims at development of renewable energy, solar and wind power is allocated to construct more nuclear plants in their countries,¹⁹ while Germany is planning to close their nuclear plants gradually by 2022, as well as Switzerland.²⁰

Indeed, reactivating nuclear plants to generate electrical power is still the strategic priority to ensure the availability of energy in the future due to its low carbon emission. On the other hand, at the national level, the use nuclear power has frequently met with local opposition, such non-governmental organizations due to its safety risks, its political concern over climate change and energy security.

Conclusion

Given its political and historical background of socialist legacy, the Czech Republic has a particular point of view with regards to European legislation on certain areas of interest, specifically energy. In the post-Velvet Revolution, Czech intended to maintain its energy platform based on a socialist system of self-sufficiency and centralised government. However, an economic boost in 1990s and the emergence of supranational power across the region had strongly attracted many CEECs countries to gain prosperity, political stability and democratic institutions within Market Liberalisation.

Due to its environmental problems on air pollution, the European Community had initially made an agreement on air pollution and gradually prepared the Czech Republic to reach a common economic platform, Liberal Market Economy. The first engagement of the European Community in 1990s and Czech Republic refers to the old Soviet political influences and the access to important raw materials, coal and uranium in Czech's soil. This was viewed in terms of energy security. During the socialist era, Czechoslovakia was the most polluted area in Europe, because of its massive development of heavy industries, manufacturers, nuclear-based and fired-coal power plants within the region had a devastating impact. This socialist legacy is considered an energy-based asset to maintain energy security at regional level.

19 <http://www.globalpost.com/dispatch/news/regions/europe/czech-republic/120808/czech-nuclear-power-plant-europe-energy-debate>

20 <http://www.eubusiness.com/news-eu/france-britain.g13>

In the post-accession, Czech had fully adopted a liberal market economy and European clean air pollution standards by developing nuclear-based power plants to meet low carbon emission targets proposed by European Union. The shift of energy platform from coal-fired to nuclear-based power plant was based on two reasons. First, is the high demand of electricity and second is the efficiency and grants from the European budget to support energy availability and reduce dependency from abroad. However, the promotion of the use of electricity from renewable energy sources has been imposed by the European Union.

Compared with fossil fuel, generating electrical power from renewable energy based-sources means high material costs, technology, and operation. However, as a small portion, renewable energy sources can provide electrical power for households, services and average industries. On the other hand, in a large scale, nuclear-based power is still favorable for many European countries, including the Czech Republic. For some reason, nuclear facilities is also a political instrument to dominate electricity markets within Europe and to gain a large profit based on national interest. The use of nuclear-based power in Czech Republic is an important point to examine the transition period, related to energy crisis and how member states respond to energy issues imposed by European Union by shifting their energy policy. ●

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