

Liberalization in the Energy Sector: Transition and Growth

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Abstract:

Despite the gradual progress in the transition countries of Central and Eastern Europe (CEE), a number of obstacles must still be overcome before transition economies can embark fully on the path towards sustainable long-run growth. One of these hurdles is the liberalization of the energy sector. The liberalization of the energy sector will help create a more competitive environment in this industry and facilitate the development of more efficient technologies. Liberalization of the energy sector requires, in addition to the reform of the current obsolete and inefficient legislature, a break-up of state monopoly giants into smaller, less dependent, and more efficient units, even when the state is a major stakeholder, as was the case in many Western European countries. This paper reviews the liberalization experience of Western Europe and elaborates on this topic in selected CEE countries, with a particular focus on the Czech Republic.

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“For most of this century it has been assumed that the production of electricity—these days, a trillion-dollar global industry—faces nearly limitless economies of scale, and is therefore a natural monopoly. Only huge plants, it was supposed, could be efficient. From the Indus to the Urals, the Mississippi to the Amazon, governments either built and ran these vast plants and grids themselves, or granted exclusive rights to private utilities within specified territories. These public or quasi-public providers generated power more or less as they saw fit. Regulators set prices to cover costs and provide a margin of return. Consumers paid what they were told to pay”.

From the article “Power to the people: Deregulation and new technology are working hand in hand to transform the global electricity-supply industry.” *The Economist*, March 28, 1998.

1. Introduction

The transition process in the Central and Eastern European (CEE) countries has shown a gradual successful progress. Most of these economies are now growing and the growth in output suggests that they are recovering from the initial conditions following the collapse of central planning. Despite this, a number of obstacles still have to be overcome before the transition economies embark on the path of sustainable long-run growth. One of the tasks that lies ahead is the liberalization of the energy sector and efficient investment allocation within it. This paper elaborates on this topic in selected CEE countries, focusing on the Czech republic, in particular.

The essential determinant of the long-run growth of per-capita output is the rate of technical progress. In growth theory the fundamental relationship $Y = F(K)$ shows how much output Y can be produced with an aggregate capital stock K . The function F manifests a given state of knowledge, a given extent of possible technologies, and a given set of other non-capital inputs. The basic model introduced by Solow (1956)¹ assumes that people save a constant fraction s of their income Y , so that gross capital accumulates at the rate sY . Naturally, if a constant fraction δ of the capital stock vanishes due to depreciation, then the increase in net capital is $\Delta K = sF(K) - \delta K$. When population growth and/or technological progress are absent, the economy cannot grow. Due to diminishing returns to capital, output $F(K)$ does not grow as fast as the capital stock and savings $sF(K)$ cannot grow as fast as depreciation. Eventually depreciation catches up with savings, the capital stock no longer rises and the economy stops growing.

The energy sector is closely connected to economic growth because it generates and supplies energy to manufacturers and households. Thus energy enters the above model as input as well as technology. The level of this technology and its efficiency in a competitive environment also mirrors the stage of technological progress. The liberalization of the energy sector helps create a more competitive environment in the

¹ Solow, R. M. 1956. “A Contribution to the Theory of Economic Growth.” *Quarterly Journal of Economics*, 70(1): 65-94.

industry and also facilitates the development of more efficient technologies. An extensive overview of theoretical approaches for and towards the liberalization in the energy sector is provided by Dušek (1998)².

The liberalization of the energy sector poses a difficult task in a developed market economy, not to mention a transition one. For this reason it would be advantageous for transition countries to draw on some of the viable ideas from the western countries that have already experienced energy sector liberalization to a greater or lesser extent. This process is also important in light of the eventual accession of some of the CEE countries to the European Union (EU). This paper, therefore, provides an initial overview of several attempts at energy sector liberalization within Western Europe. A descriptive analysis of the state of liberalization in Hungary, Poland, and the Czech Republic follows. Some remedies for the problems in Czech energy sector are subsequently suggested, followed by a brief conclusion.

2. Liberalization in Western Europe

2.1 The United Kingdom

The United Kingdom (or more precisely, England and Wales) was a pioneer of the competitive energy industry. Although at the beginning of the 90s its radical reform of the energy sector was widely perceived as a daring experiment with dubious consequences, the results surpassed even the most optimistic prognoses.³ Not only did the number of electricity outages drop, but, eventually, productivity in the British energy sector increased, the quality of services improved, and real prices of electricity declined.

In March 1990, the British state energy monopoly, The Central Electricity Generating Board (responsible for production and transfer of electricity), was broken into three separate production companies (National Power, PowerGen, and Nuclear Electric) and one transfer company (National Grid). All these companies have since been gradually privatized. Simultaneously, distribution state monopolies were transformed into regional electricity companies (RECs) and privatized as well. The changes in industry structure were accompanied by the alteration of legislation: the obligation to supply energy along with the centrally planned investments were abolished.

Massive privatization gave rise to an open electricity exchange—the so-called Pool. The Pool sets daily prices for electricity, matching the intended energy supply claimed by producers (each producer announces how much energy he can supply each half hour the next day) with the

² Dušek, L. 1998 “Economic Theory of Regulation and Competition in Energy Networks,” (in Czech). *Politická ekonomie*, 46(3): 400-411.

³ “When Stephen Littlechild [a ‘spiritus agens’ of the British liberalization process] said (in 1990) we would have domestic competition,” says Clive Myers, an ex-RECEr now working as a consultant, “everybody laughed like drains. Nobody is joking now.”

expected energy demand. Ruff (1995)⁴ discusses this issue in detail. The process of matching makes the spot price inevitably fluctuate. To safeguard against the price volatility, the trading agents can sign so-called “contracts for differences”(i.e. they state the fixed reference price and exchange only the deviations from the price on the Pool).

According to their annual consumption, British consumers were gradually allowed to freely choose their energy supplier.⁵ A large part of consumers have thereupon abandoned their local RECs and the whole sector of energy transmission has become highly competitive.

Transmission rates (both for National Grid and RECs) have remained state-regulated by the Office of Electricity Regulation (OFFER), but a new regulation procedure—price caps—has been introduced that does not reflect true costs and commensurate profit any more. Instead of the direct prescription of the connect-to-net fee, OFFER now sets the upper bound on the growth rate of the fee. This upper bound—“RPI-X”—consists of the inflation rate (RPI) net of the expected growth rate of production effectiveness (X).⁶

Having no previous models to draw from, British deregulation was not flawless. The biggest mistake was probably the too “gentle” demonopolization. For the dominant producers in the non-nuclear sector (National Power and PowerGen) it was not difficult to manipulate energy prices on the Pool. Besides, the transparency of trading on Pool was adversely affected by the existence of the so-called uplift—a supplementing charge to the price.

Despite these mistakes, the British electricity market finally started to function properly. New entries into the field strengthened competition and made the incumbents increase productivity. Some ineffective investment plans were abandoned, and, after an initial increase, energy prices started to exhibit a well-pronounced decreasing trend. Other detailed policy aspects of the UK energy sector liberalization are documented in Green and Price (1995)⁷.

2.2 Scandinavia

A similar deregulation of the energy market was carried out in Norway and Sweden, in this case having been initiated by left-wing parties (!). In contrast to the situation in Britain, in Scandinavia (and

⁴ Ruff, L. E. 1995. “Competitive Electricity Markets: The Theory and Its Application”, in Michael A. Einhorn (ed): *From Regulation to Competition: New Frontiers in Electricity Markets*, Kluwer Academic Publishers.

⁵ Since April 1998 this privilege should have included even households, but the not-ready computer system caused the delay. For recent comments on this issue, see Economist March 98.

⁶ Even though price caps have gained Europe-wide popularity at the expense of traditional regulating methods and are considered “the least evil” regulation method, they still suffer from minor drawbacks. If, for instance, X is stated too harshly, the company who is subject to regulation loses money until the new setting (i.e., usually for five years).

⁷ Green, R. and Price, C. W. 1995. “Liberalisation and Divestiture in the UK Energy Sector.” *Fiscal Studies*, 16(1): 75-89.

especially in Norway) both the production and distribution of electricity has been traditionally scattered among tens of locally operating companies; hence, there was little need for de-monopolization.

In both countries the market was liberalized “overnight”—all consumers, irrespective of the size of their consumption, were immediately given the right to freely choose their supplier. Households that could have been discouraged from taking this advantage because of the relatively high costs of electricity measuring were allowed different forms of subsidies.

An analogue of the British Pool, the so-called Nordpool, was established, for setting the prices of electricity,. In contrast to Britain, trading at the Nordpool is not compulsory—most transactions are based on bilateral contracts between producers, distributors and consumers. Also, the price-setting process on the Nordpool is more transparent than on the British Pool (and, therefore, more robust to speculation attacks).

Scandinavian deregulation was not accompanied by privatization—the main transfer companies are still state-owned. The situation is similar in production and distribution. Recently, however, spontaneous privatization, initiated by mergers of small city enterprises, has begun. Although not planned, privatization was an inevitable consequence of the competitive environment. Much as they are in Britain, transmission rates, quality standards, etc., are regulated by the state regulatory board (NUTEK in Sweden and NVE in Norway) in Scandinavia. However, high taxes levied on electricity (38% in Sweden), unfortunately deprive Scandinavian consumers of taking full advantage of the competitive market environment.

2.3 *European Union*

The liberalization trends in the energy sector have reached even the European Union. In December 1996 the European Council ratified Directive No: 96/92/ES “On general rules for the internal electricity market.” Being a political compromise, this directive lagged in radicalism far behind British or Scandinavian reforms. Not only did some countries (like Belgium, Ireland and Greece) negotiate a delay in implementing the directive, but there is also a legislative “loophole” which makes it possible to nearly eliminate the directive.⁸

Rather than enforcing the liberalization of energy markets, the directive permits member countries to do so. Nevertheless, the biggest consumers in all member countries (in 1999 those with consumption above 40 GWh, with gradual decrease it the lower bound) are eligible for the free choice of the supplier.

Further, the directive specifies the common set of governance rules for electricity markets in member states. It prescribes either of two procedures for building new power plants (*the tendering procedure* or *the authorization procedure*). The tendering procedure roughly

⁸ The governments of member countries can, if it is in “general economic interest” impose upon energy producers the obligation of “public service,” and through this arm control the production and discriminate between consumers.

corresponds to central planning—it is the state who decides whether to build, organizes the tender, and specifies the parameters of the desired plant. The tender must be open to applicants from all EU states. In the authorization procedure decisions on new investments are left to the producers, with the state having only the monitoring role.

In addition transmission networks must be managed in one of two non-discriminatory ways. The first entails the appointment of a *single buyer*, who has exclusive rights to the purchase of electricity from all primary producers and transfer to the distributors. The single buyer must openly declare the non-discriminatory tariff for use of the transmission network. The alternative to the single buyer option, *third party access* (TPA), allows all parties involved to sign bilateral contracts among themselves. In negotiated TPA the exact rates for transmission are subject to negotiation and only the indicative price range must be published, while in open TPA all users of the network must pay the same fixed rates. Regardless of how the transmission network is managed, the eligible consumers are allowed to build direct lines to producers thereby “circumventing” the existing distribution network.

The directive contains some additional points obviously attributable to certain lobbies in European Parliament (local source priority, renewable resource priority, etc.). The principle of *negative reciprocity* is also arguable, according to which more open countries can ban producers from less open countries from their markets.

3. Liberalization in Eastern Europe: Poland and Hungary⁹

An examination of the reform process in the energy sector in both Poland and Hungary casts a shameful light upon the Czech Republic. With almost identical initial conditions as the Czech Republic, these two countries have already overcome the problem of low electricity prices for households: the price for households in Hungary in 1997 averaged 11% above the price for industry; in Poland this difference was 46%.

In Poland the state energy monopoly gave rise to 34 production companies, one transfer company (PES), and 33 distribution companies. Despite initial fears that many small producers would not dispose of enough basic capital to afford innovative investment, increased competition paved the way for opening of a wholesale market in 1995. PES currently functions as the single buyer. In 1997 the Energy regulatory board was established as a part of Ministry of Industry to conduct the tendering procedure, regulate transmission tariffs, and solve disputes among producers.

⁹ For a broader description of the energy-related problems (including gas) in the transition economies of the Central and Eastern Europe, especially at the beginning of the reform process, refer to Gray, D. 1995. “Reforming the Energy Sector in Transition Economies: Selected Experience and Lessons.” World Bank Discussion Paper No. 296.

In line with the “classical” liberalization model, big Polish consumers were allowed to purchase energy directly from producers as of 1997. No privatization has yet taken place, however. The various outcomes and policy aspects of price reforms in Polish energy sector are analyzed by Freund and Wallich (1997)¹⁰.

Hungary, unlike Poland, started reform with the massive privatization of the former state-owned vertically integrated monopoly (MVM) which in 1992 was decomposed into eight production and six distribution companies. At present MVM constitutes virtually only a transfer company, and plays the role of a single buyer. Three years after the initial privatization the state sold the majority of its shares in the main power plants and distribution companies to foreign investors, namely to Western European firms. However, foreign investors suffered to some extent, as promised institutional reforms lagged behind the privatization.¹¹ In contrast to consumers in Poland, Hungarian consumers have not yet seen the benefits of competition among producers.

New investment in Hungary is managed through a combined tendering and authorization procedure. Small projects are open to tender, but large ones have to be approved by the government or even by parliament.

4. The Situation in the Czech Republic

The current situation on the electricity market in the Czech Republic is similar to that of other CEE countries, but differs at the same time. The Czech economy has always been characterized by the presence of energy-demanding sectors, such as the chemical and iron industries. Energy consumption was even more pronounced during the period of “socialistic industrialization” when energy was not considered a precious commodity; just the opposite—high energy consumption served as an “indication” of high standard of living.¹² The cheap energy policy of the former communist regime together with the generally undisciplined attitude of consumers made the energy demands of the Czech Republic nearly twice as high as that of comparable countries in Western Europe.

Another part of the heritage of communist times was the ultimate concentration of the energy sector which has remained during the eight

¹⁰ Freund, C. and Wallich, C. 1997. “Public-sector Price Reforms in Transition Economies: Who Gains? Who Loses?, The Case of Household Energy Prices in Poland.” *Economics Development and Cultural Change*, 46(1): 35-59.

¹¹ A new tariff structure guaranteeing an 8% asset return, whose introduction had been promised by October 1996, was actually delayed till January 1997, and was somewhat modified.

¹² For the energy-related consequences of central planning refer to, for instance, Foders, F. 1993. “Energy Policy in Transitional Economies: The Case of Bulgaria,” Kiel Institute Discussion Paper No. 223: “...the countries in Central and Eastern Europe pursued an energy-intensive strategy of economic development based on distorted relative prices of energy. This feature of central planning created the illusion of a virtually unlimited supply of energy.”

years of transition virtually intact: both production and transfer has till now remained monopolized. In addition, the intervention of the Czech government in the field is driven by lobby pressures, rather than by a consistent, clearly defined, long-term policy. Consequently, privatization is not yet complete, and clear rules for entrepreneurs are still lacking.

In 1992 the former state energy monopoly was divided into ČEZ (the production and transfer company) and eight regional distribution companies (REAS). Although ČEZ's assets are among the most liquid on the Czech Stock Exchange, 67% of the company is still owned by the state via the so-called Fund of National Property (FNP), with the rest being held by its employees, municipalities, etc. Also in REASs the state share amounts to about 46%. Although since 1997 the shares of the distribution companies have become the subject of vivid trade (especially on the part of municipalities), no regulated process of privatization has yet been agreed upon.¹³ This "spontaneous" privatization of course brings sizeable financial losses to the state.

The large shares held by the state in both ČEZ and REASs are one key to the state's inability to perform its regulatory role efficiently. The aims of the regulator, i.e., the restriction of the monopolist's profit and cheap energy for the public, naturally conflicts with the role of the owner and possible future seller of the energy companies. Apart from this "schizophrenia," the regulation itself is managed in a very complicated way with two institutions—the Ministry of Finance and the Ministry of Industry and Trade—sharing the responsibilities. This issue is discussed in greater depth further on.

Table 1: Prices of electricity for industry and households (US cents/kWh) in 1996

Country	Price in industry	Price for households	Ratio of price for households to that for industry
Czech Republic	5.9	3.9	0.6
Hungary	4.9	5.6	1.1
Poland	4.4	7.2	1.6
Slovakia	5.0	3.2	0.6
Estonia	3.9	6.0	1.5
Latvia	4.5	5.1	1.1
Lithuania	7.0	4.0	0.6
Average in EU	7.0	15.0	2.1
North America	4.0	7.0	1.8

Source: International Energy Agency, Paris.

The current prices of electricity do not reflect real production costs. Household prices, especially, are well below cost and industry foots the bill. Table 1 shows that the average ratio of household electricity price

¹³ The main argument used to oppose privatisation was that it is impossible to privatise monopolies that were not fully regulated. While the last proposal of Ministry of Industry and Trade from spring 1998 already encompasses "regulated" privatisation of REAS's (the whole state share to be sold to one private investor), the privatisation of ČEZ is under of preliminary consideration.

to price for industry in developed economies amounts to two, while the same ratio in the Czech republic is about three times lower. Besides contravening economic logic (low-voltage electricity for households is more expensive than high-voltage one because of the losses in transformation) such cross-subsidizing violates the laws of the EU.

The current price level makes it impossible to expose the sector to open competition (since the entrants would naturally focus on the wholesalers, ČEZ would be left with the loss-incurring households). Unfortunately, as price liberalization has become a political issue, it is parliament that currently decides how and which prices will be deregulated.¹⁴ The rigid tariff structure that does not allow for price self-regulation (discounts for off-peak take-off, higher prices in winter, etc.) makes the situation even worse.

The obsolete legislature poses yet another problem. For instance, the entry into the field is legally bound to reflect “the public interest,” a term that is not defined and can be easily misinterpreted. Any investment proposal can be rejected if the Ministry of Industry and Trade suspects the proponent of financial incompetence. Today’s unfortunate situation, when the main producer of electricity also controls the whole grid (and thus complicates the connection of new entrants), could be resolved by the application of the third party model. Regretably, this model is also outside the jurisdiction of the current legislature. Further, the distribution companies are obliged to supply, which is totally against free market principles.

The Ministry of Industry and Trade, the main regulator, in fact only proposes price alterations to the Ministry of Finance.¹⁵ The process of setting the price, as was already stated, is left upon political process. Except for end-user price setting, the both bodies are also responsible for setting the primary-importance price, the wholesale price, for which ČEZ sells energy to REASs. Until now, The wholesale price has been set ex post, at the end of the year, in such a way that both parties have covered their production costs and ended up with identical returns to their assets. Not only does this procedure induce both companies to increase their volume of assets, it also substantially mitigates their incentive to invest and increase production effectiveness. This is because the possible gain would dissipate among both parties. In addition, unfinished projects are included in the asset volume and, therefore, there is little incentive to finish them.

Table 2 provides the data on the ČEZ investment program since 1992 when the company was founded. The most striking feature is the steady amount of funds allocated to finish the controversial nuclear power plant, Temelín. Without advocating of shelving this project, it has to be noted that it is a political issue and the magnitude of investment inflows has nothing to do with economics. The second largest fraction of

¹⁴ According to Law No. 526/1990 the regulation of electricity prices should be subject solely to the pricing department of the Ministry of Finance.

¹⁵ The Ministry of Finance is the only body entitled to issue price edicts. Inevitably, its decisions on prices of energy are intermingled with price liberalisation in other sectors, such as rent deregulation, etc.

investment is allocated to environmental safeguards; however, the funds for on desulfuration equipment are necessary to make up for the absence of this equipment in the past. The transmission network can be probably thought of as a positive investment destination.

Table 2: ČEZ investment program

investment	1992	1993	1994	1995	1996	1997
Nuclear sector	7781	9533	8909	6598	8609	6955
N.P.P. Temelín	6161	8409	8097	5479	7532	6084
N.P.P. Dukovany	1497	1062	497	805	475	621
Nuclear Waste Depositories	123	62	245	271	480	211
Other			70	43	122	39
Environmental	1505	4247	6181	9742	6877	6414
Emission De-sulfuration	1243	3331	4816	6697	4232	3892
Fluid Boilers	3	383	830	2267	2155	1809
Electroseparators			297	0	72	118
Emission De-nitrification			161	0	224	253
Other	259	533	77	579	189	343
Steam and Gas Investment	608	920	2009	3491	2334	1693
New capacities					0	11
Reconstruction			1054	2330	1655	1328
Other			955	1161	679	354
Heat Supply	480	370	109	96	51	25
Water Power Plants	1081	1681	1036	859	254	149
Transmission Network	1062	1054	1370	1495	1160	1077

Source: ČEZ Planning Section. N.P.P. stands for Nuclear Power Plant.

The egalitarian division of revenues lessens the incentive to invest and to increase effectiveness because the possible gain from investments would be dissolved among all parties. In the end, the final impact of egalitarian arrangements on the infrastructure is highly aggravating. As the necessary information about market needs can only be carried by flexibly regulated pricing, under the current regime none of the parties in question can effectively develop its infrastructure so that these needs are taken into account.

5. Some Solutions

The energy sector in the Czech Republic is struggling with many interconnected problems that can only be solved by extensive reform. Partial changes will lead nowhere. Being the legacy of the former command system, these problems are, to a certain extent, common for all transition economies in Eastern Europe. While some of the transition countries (i.e., Poland and Hungary) have already started to face these challenges, the Czech Republic is still “waiting at the starting line.”¹⁶ In view of its ambitions to join the EU within the next few

¹⁶ As of December 1998 the Czech government approved further privatization framework without outlining details concerning privatization of different strategic companies. Effectively, the privatization in energy sector was put on hold. Proposed privatization schedule assumes that the sales of energetic distribution networks will take place from 2000 to 2002. However, decision regarding further direction of privatization of the monopoly electricity producer (ČEZ) will wait till 2002.

years, the Czech Republic should act now. Upon its accession to EU the Czech energy market will become exposed to foreign competition and only a timely reform can cushion this shock.

The reform of the energy sector in the Czech Republic should mainly encompass the following issues. Although they are listed separately, they should ideally be implemented concurrently.

5.1 Reform of the current legislature

The business activities in the whole energy sector are governed by Law 222/1994 that is, as is documented above, obsolete and cannot accommodate demands imposed on it by the world-wide liberalization trend. Portions of it, for instance the obligation to supply, are clearly but the vestige of the past regime.

Furthermore, the process of regulation itself is described in very vague terms in the law.¹⁷ The interpretation of the law to which the Ministry of Industry and Trade has recently clung, i.e. primarily the regulation of the end-user price, as well as the governance over the new investment decisions, is not justifiable in the competitive environment. Also, the subservient role of the Ministry of Industry and Trade that cannot do more than to make proposals to the Ministry of Finance, together with the unnecessary existence of other bodies engaged in the regulatory process (the Central Energy Board, etc.) considerably complicates matters.

In light of this, it is imperative that the new legislative frame be created. The obligation to supply should be abolished (clearly, however, this must go hand-in-hand with privatization). The Ministry of Industry and Trade should be given enough power to conduct the regulation process itself. Its mandate, however, should not include regulating end-user prices, but rather should be limited to a kind of a British price cap formula. The entry into the sector should no longer be controlled, provided that the entrant disposes of sufficient financial resources and experience to fulfil the security, technical and environmental requirements. Finally, third-party access should become legitimate.

Hopefully, the reform of the current legislature can re-attract foreign investors, thereby creating the basis for dead-locked privatization.

5.2 The break up of ČEZ monopoly and the resumption of its privatization

We believe than only open competition accompanied by a healthy legislature can pave the way for the lowest possible energy prices for Czech households that would, nevertheless, reflect real production costs. Provided households are free to chose their supplier, competition might eventually be to their benefit, as they will no longer face the dictatorial monopolist and unpredictable Ministry of Finance, but a group of suppliers competing with one another. The competition will be

¹⁷ “It is understood under the regulation, for the aims specified in this law, to influence the performance of the activities authorized, with respect to new investment into energy sources and transmission network according to this law, with an aim to substitute for the competitive environment.”

especially advantageous for the industrial sector, which will no longer be obliged to subsidize households. The reduction of its energy costs will inevitably reinforce its position in the European context. Hence, de-monopolization of energy sector could actually help improve the Czech trade balance.

Besides dividing ČEZ into independent energy suppliers, the transmission network must be separated from production. To quote Dušek (1998, op. cit. p. 3): “Competition [would] not make any sense without open transmission access. The transmission network must be open in a non-discriminatory manner to everybody who wants to buy or sell electricity.”

We think that only competition can facilitate correct investment decisions for both producers and consumers. As the long experience of various environmental movements shows, it is hardly possible to educate consumers not to waste or even to invest in conservation measures and better insulation, unless they are forced to do so by meeting the price that reflects real production costs. On the producer side, only competitive pressures can stimulate the construction of new plants and the replacement of obsolete equipment. Although the world is apparently moves toward the usage of gas for electricity generation, ČEZ’s investment program has not yet reflected this trend (see again Table 2).

*5.3 Retail wheeling for everybody*¹⁸

To mitigate in adverse impact of de-monopolization on households, even these should be provided with the right to choose their supplier freely. To prevent the chaotic situation, when everybody “shops around at least for a while,” the Scandinavian, rather than the British model should be used.¹⁹

6. Conclusions

The transition process in Central and Eastern Europe has shown gradual progress. Despite this, a number of obstacles still must be overcome before transition economies can embark fully on the path towards sustainable long-run growth. One of the tasks which lies ahead is the liberalization of the energy sector. This paper reviews the liberalization experience of Western Europe and elaborates on this topic in selected CEE countries, with a special focus on the Czech Republic.

The energy sector is closely connected to economic growth because it generates and supplies energy to manufacturers and households. Thus energy enters the classical growth model as input as well as technology. The level of this technology and its efficiency in a competitive environment also mirror the stage of technological progress. The

¹⁸ “Retail wheeling” is a frequently used U.S. term that means “the right of a free choice of supplier for retailers.” In this case such a free choice goes down to small consumers (households) unlike in the case of the “wholesale wheeling” when the choice reaches only large consumers (companies).

¹⁹ See *The Economist*, March 28, 1998, for a comment on “spontaneous” retail wheeling in Britain, and its comparison to moderate ways of Scandinavia.

liberalization of energy sector helps create a more competitive environment in this industry and also facilitates the development of more efficient technologies and their application in the form of investment.

The liberalization of the energy sector poses a difficult task in a developed market economy, not to mention one in transition. For this reason it would be beneficial for the transition countries to take heed of some of the more feasible ideas from western countries which have already experienced at least some degree of energy sector liberalization. This is also important in light of the eventual accession of CEE countries to the European Union (EU).

The liberalization of the energy sector requires, besides the reform of the current obsolete and inefficient legislature, a break-up of state monopoly giants into smaller and less dependent units throughout the whole line of production, transfer, and distribution. The newly established companies are not likely to be fully private entities, at least not in the first stage of such a process. They may well remain in large part under state ownership. However, they are likely to act and operate in a more efficient way than is possible under the original state-monopoly structure. Such behavior can be observed in the experiences of Western European countries.