

LESSONS FROM THE RESTRUCTURING OF THE HUNGARIAN ELECTRICITY INDUSTRY

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Abstract

Restructuring the monopolistic, state-owned, obsolete, and polluting utility industries of post-socialist economies poses a challenging ground for the utility deregulation wave travelling around the world. Utility restructuring in the region of Central and Eastern Europe (CEE) is unique from several perspectives, including the domination of foreign capital vs. national resources as the only feasible vehicle towards a drastic change in the industry; and the ambitious goals of harmonization with EU liberalization schedule to accelerate accession. It is also widely expected that deregulation will help bringing down world-record high energy intensities in these economies.

Hungary has been the pioneer among economies in transition to unbundle, deregulate and privatize the utility industries and to make the first steps towards EU conform market liberalization within less than half a decade. The first stages of privatization and restructuring have been declared a success story in Western media. However, what is a success story from the perspective of foreign may be viewed differently from other viewpoints. The paper describes the process of the utility restructuring in Hungary, and examines its impacts from the economic, environmental and policy perspectives. The paper also gives an outlook to the CEE region, comparing the pathway of the pioneer Hungarian deregulation to that of the following countries in the region to restructure their energy sectors. However, the lessons to be learned from the Hungarian electricity industry restructuring are not only vital for other economies in transition in the line for utility deregulation, but are often universally applicable.

Introduction

Although the economic and political restructuring of formerly centrally planned economies of Central and Eastern Europe (CEE) has been in full swing for a decade, reforms in one of the strategic industries, the energy industry, have been carried out with a certain level of hesitation. While in 1995 60% of GDP was produced by private economy in Hungary and 70% in the Czech Republic (World Bank 1996), the energy sector was still dominantly left in state-owned monopoly arrangements. The hesitation is, however, well grounded: not only does the restructuring of these energy sectors need to address the burdening legacies left in this industry by the planned economy, but there does not exist a universally applauded utility structure model which could serve as the prototype for the reforms.

The legacies left behind by the centrally planned economy in the energy sector pose major challenges for any restructuring or deregulation. Firstly, energy intensities, are among the highest in the world, and are several times, often an order of magnitude higher, than those

in OECD countries¹. In 1996, Hungary has required four, while Poland and the Czech Republic eight times as much primary energy to produce a dollar of GDP as Germany or Denmark (IEA 1999). Although the authors are aware of the shortcomings of energy intensity comparisons, this magnitude of contrast clearly demonstrates a significant amount of energy waste in the economy. A significant share of this energy waste can be attributed to the utility industry itself: the lack of economic incentives for efficiency, unrealistically valued fuels and high subsidies have all resulted in wasting, obsolete and polluting electricity industries. Inefficiency can be illustrated by uniformly high transmission and distribution losses, which are as high as 20% in Albania (13% in Hungary in 1998) (HEO 1999). Secondly, Marxist economics has dictated cheap, heavily subsidized electricity tariffs for consumers, which obviously cannot be sustained in a market-based energy sector. However, lifting subsidies requires drastic hikes in electricity prices, which are not only politically highly unpopular, but as long as salaries remain constant or often even decrease significantly due to high inflation rates, can force consumers to bankruptcy. Thus, lifting energy subsidies in the region has been associated with increasing social unrest and increasing unpaid utility bills, which can be as high as 50% in some countries (IEA 1997). Electricity theft has also become a problem with utilities switching off non-paying consumers. Further challenges arising during the transition to market-based electricity sectors include the bargaining power of the large, state owned electricity monopolies who are often counter-interested in restructuring; the large, well-trained engineering elite employed by these industries which may become unemployed; the high debts accumulated during recent years by these industries; and the often drastically decreased electricity demand.

So, while the traditional market economies themselves are finding their ways to the new, deregulated energy sector models of the 21st century, utility restructuring in CEE is further challenged by economic, political and social legacies from the centrally planned economy. However, the agenda is clear for all countries: lifting of subsidies, liberalization of energy prices (where feasible), unbundling of monopolies, privatization of state owned properties, deregulation, and, finally, liberalization. At the same time, the methods to achieve these goals are less trivial. Factors complicating, for instance, the privatization process, compared with the Western model, include the lack of sufficient local capital which can be mobilized either for the purchasing of one of the largest national properties, or for the investment needs for the necessary reconstruction. In addition, the sell-off of national properties to foreign corporations in general has been accepted with a certain level of reluctance by the public, so governments have been hesitating to touch the strategically key and value-wise most significant energy industry.

In this restructuring climate and challenging environment, Hungary was the pioneer in the region to implement drastic changes in its energy sector, including the utility industry. By the end of 1997, 55% of Hungarian utilities were in private ownership (HEO 1999). The Western media has unanimously called the Hungarian energy sector privatization a success (WSJ 1995a; WSJ 1995b; USA Today 1996). The goal of this paper is to describe the process of the Hungarian privatization, the main dilemmas and routes chosen, and assess some of the short-term implications. Because the unique region-specific circumstances,

¹ Although Hungary, the Czech Republic and Poland have recently been admitted to the OECD, in this paper, as in most of the energy statistics and often in the literature, we summarize the "rich industrialized" economies by referring to OECD countries.

other countries in the region planning to step on the way of utility restructuring may learn important lessons from the fore-runner Hungarian case.

Rationale for the Reconstruction and Privatization of the Hungarian Electricity Industry

The reform process of the electricity supply industry (ESI) is considered to be one of the major contemporary global industrial changes (Joskow 1998). During the past two decades the ESI has experienced deep and profound shifts in ownership and function structure. Functioning of vertically integrated monopolies, either private or public, has been a subject of reevaluations and reforms in many countries. Several countries have undergone complete reforms, in structure (introducing vertical separation and horizontal competition) and in ownership. A central argument for privatization programs is that private ownership would tend to be more efficient than public ownership and that private sector competition would reduce costs more than public monopoly would do, even if it was regulated (Bacon 1995). In a very comprehensive empirical study (Pollitt 1995), there is evidence that reduced costs can be expected, in the long run, as an outcome of the privatization process in electricity generation. In the short run, owing to the given level of the existing technology, lower costs are not expected. However, intrinsic changes can only be accomplished under private property regimes, because of a natural complementarity between liberalization, competition and privatization (Newbery 1997).

In the transitional economies of Central and Eastern Europe and former USSR two dominant goals of ESI reforms are expected to be achieved. The first is an improvement of efficiency (allocative, technical and x-efficiency) and the second is an improvement of public finances, either by the receipts from privatization, or by revoking of direct financial subsidies in electricity production and transmission. Some other rationales for restructuring and privatization should also be mentioned:

1. abandonment of centrally planned and government owned economy;
2. substantial overproduction of electric energy in some countries (but not in Hungary);
3. the existence of obsolete capacities in production and transmission which led to high transmission losses and environmental damage;
4. overconsumption and high electricity intensity;
5. low energy efficiency in production and consumption;
6. government budget constraints, as a part of macroeconomic stabilization programs.

In the course of the transition, one of the most important issues is the restructuring of the fiscal system and the introduction of hard budget constraints. In that sense, the limitation of subsidies and abolition of loss coverage are inevitable. The accumulated losses of electricity industries, created in previous times owing to a political desire to keep consumer prices low, were among the main reasons for energy sector reforms. Pricing below costs created not only enormous financial losses, but also contributed to overconsumption of electricity, primarily in the heavy industry sector and transportation. The international competitiveness achieved in the former communist economies was mostly based upon two factors: cheap natural resources and cheap energy. The consequences of such an industrial policy were economically and environmentally damaging.

The above mentioned were not the only reasons for reconstruction of the ESI in Hungary. There are additional, country specific, reasons.

1. The Hungarian economy inherited a substantial foreign debt, probably the largest among the CEE countries in per capita terms (Paizs 1999) accumulated before 1989, during the period of socialist administration. During the first stage of transition, the Hungarian government was confronted with the need to improve its international financial position. The urge for fast revenues, from selling some of the attractive domestic assets, led to the privatization of the ESI. The Hungarian electricity utility was one of the safest and most reliable in the region (OECD 1994, 93-110).
2. The accumulated losses of the Hungarian Power Company (MVM) in the mid nineties, caused by unregulated fuel prices that had grown faster than the consumer price of electricity did, presented another reason. The public companies in the MVM holding ended 1994 with a HUF 10.8 billion deficit, and in 1995 the deficit jumped to HUF 56 billion (Vince 1997, 8).

In summary, it can be said that there are two broad groups of rationales for change. The first is inside the industry (higher efficiency, new investments, modernization, interconnecting with the international electricity grid etc.). The second group lies outside the industry (need for fiscal stability, harmonization with EU legislation etc.). It is important to note that the early privatization of the Hungarian ESI was primarily (Paizs 1999, 33), but not solely, motivated by the rationales outside the industry.

Description of the Hungarian Restructuring and Privatization Process

At the beginning of 1992, after nearly thirty years of functioning as a single trust, the Hungarian Electricity Board, (Magyar Villamos Művek Tröszt - MVMT) was transformed into a concern-type public limited company, the Hungarian Power Company Ltd., (Magyar Villamos Művek Rt. MVM). The ownership structure was re-arranged, but the MVM remained state owned, operating as a regulated monopoly. The former subsidiaries of the MVMT became limited companies in a holding of the MVM (Vince 1997, 7). One half of the entire property of Hungarian ESI was assigned directly to the state property and assets management organizations, first the State Property Agency, then the State Holding Company and finally the Hungarian Privatization and State Holding Company (ÁPV Rt.). The rest of the assets were transformed into the property of the MVM (Mihályi 2000). At the same time, the MVM was a sole manager of the system, establishing contractual relations between each power generator and distributor, specifying the economic and technical terms of cooperation. In 1993/94 five power generating companies merged with coal mines, with the aim of covering the coal-mining industry's losses. However, the losses soared, presenting one of the strongest rationales for deeper reforms.

Act XLVIII of 1994 on the Production, Transmission and Supply of Electric Energy, the so-called Electricity act, prepared the ground for reforms. It defined the new structure of the ESI, with a new organizational system and managerial responsibilities, irrespective of the ownership structure. The role of the state became more regulatory and strategically oriented, dealing with issues such as maintenance of supply security, investment conceptions, licensing, environmental protection etc. The Act also defined a transparent and predictable system of normative pricing, in order to establish necessary conditions for privatization of ESI. The privatization was initiated in 1995. After a long political process the Privatization Law was accepted, giving the political authorization for changes. However, at point of initiation,

many uncertainties about the privatization of the ESI were present, which can be formulated as follows:

1. Should the entire system be privatized or should separated companies be privatized after the previous unbundling?
2. Should financial or trade investors be involved?
3. How many shares should be offered to foreign investors?
4. How should tenders be organized: in an opened or in a closed form, in one or several rounds?

In the first stage of privatization, it was expected that a single foreign strategic investor would be involved, but soon the idea was abandoned, letting competition emerge (Mihályi 2000). During 1995, the first tenders for three power plants were unsuccessful. There was no interest to invest in minority shares of the companies with high losses and mixed property structure (government, municipalities, employees etc.). Soon after that, the Hungarian government decided to offer the majority rights to the foreign owners. A special feature of the 1995 ESI privatization was the fact that the government relinquished managerial rights, giving to the minority foreign investors the same authorities as if they had been the majority owners (Mihályi 2000; Vince 1997). Such an unusual practice created success. In the second attempt, minority shares (with the right to gain majority ownership within 2 years) of the six distribution companies and three power plants were sold. In order to create competition specific tender rules were imposed:

1. An applicant can acquire two distribution companies or power plants (a consortium may have three).
2. A bid for power plants cannot exceed 30% of Hungary's generation capacity.
3. Consortia must include at least 50% trade investors.
4. A trade investor can only participate in one consortium.

The auctions were organized in the form of a closed bid. The rationale for this policy lay in the previous cases of Hungarian privatization and in the lack of experience in auctioning (Mihályi 2000). During 1996, privatization continued successfully, by selling the shares of two more power plants (Budapest Power Plant Ltd. and Tisza Power Plant Ltd.). The bids for two other plants (Bakony Power Plant Ltd. and Pécs Power Plant Ltd.) were rejected as low (MVM 1997, 9). By purchasing of the shares from municipalities, foreign investors increased their ownership in the privatized companies. After three years, six power plants and all of the six distribution companies were sold to foreign investors, who became majority owners, creating a substantial level of revenues to the government (Figure 1).

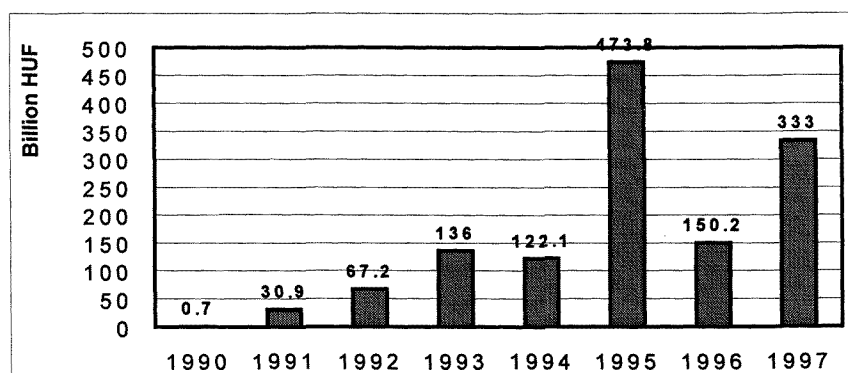


Figure 1. Revenue of the Hungarian State from Privatization (Mihályi 1998)

The new price system, inaugurated on January 1 1997, gave momentum to the reforms. Formerly loss-making companies became profitable. This was not just an outcome of the higher prices, but primarily was the result of improved x-efficiency in electricity production and distribution. Although the majority of foreign investors have been publicly and municipality owned companies, better management and profit-maximizing behavior inherent to the developed economies based on private property has been introduced (Voszka 2000).

Results: the Current Electricity Industry Landscape

The current structure of the Hungarian ESI consists of eight independent power plants and six distribution companies. Six of the power producers and all of the distributors are owned and managed by foreign investors, mostly utility companies from Western Europe. One nuclear (Paks) and one coal-fired plant (Vértes) are owned and managed by the MVM. The MVM also possesses about 25% of Dunamneti and Mátra power plants. Nevertheless, among the experts, some debates are still present about the future of Paks.

During the privatization discussions in the mid nineties, the Hungarian government decided to introduce the institution of voting priority, the so-called "golden share", with an intention to maintain a certain amount of state influence in the new created property structure. The "golden shares" were expected to be a compromise between the investors and the government. However, such shares would seriously limit the amount of foreign investor managerial rights. A solution has been found in the "golden share" retained by the government. The "golden share" does not allow state interference in the investment and dividend policies of the privatized companies, but it allows the right to interfere in decisions that can affect the activity profile and organizational structure of the companies (Vince 1997). The Hungarian government retained a "golden share" in each of the privatized production and distribution companies, as well as the rest of the common shares - up to 100% - in the unprivatized plants. The minority residual of shares has been spread amongst local municipalities, small investors and others (MVM 1999).

The transmission process is still entirely under the control of the MVM. In the process of restructuring the role and the size of the MVM have been profoundly modified, and it can now be described as having five elements:

1. operative management of the electricity system;
2. wholesale distribution (transmission) of electrical energy;
3. export-import of electrical energy;
4. elaboration of the contractual framework of co-operation with the companies;
5. formulation of development policy and investment strategy of the sector (Vince 1997).

Relations between the MVM and the other components in the ESI have been organized according to a purchasing agency model. Being a single provider of transmission the MVM retains monopoly power over electricity wholesale. To be precise, it is a monopsony buyer of electricity from the power plants, and a monopoly seller of electricity to the distributors. Third party access to the grid has not been ensured; neither domestic nor foreign generators are allowed to sell power to the distributors. At the same time there is no open access to distribution. Distribution companies are vested with a statutory monopoly to sell electricity in their franchise areas (Paizs 1999, 40). In the long-term contracts (with duration of 10-20

years) an obligation of each generator to sell all its electricity to the MVM at a specified price has been established.

The MVM buys electricity from the different generators at different prices, allowing each of them, operating on a different cost base, to realize an 8% equity-based profit. For the precise setting of electricity price P , a normative formula has been used. The initial price P_0 , set in 1994, was calculated specifically for each generator in order to cover "justified" costs² plus 8% return on an equity base. In the period between 1997 and 2000, initial prices were adjusted by the retail price index (RPI), in order to follow the inflation rate, but reduced by a predetermined efficiency factor X , ranging between 0.85 and 0.95. In addition, unexpected jumps of fuel costs were allowed to be passed, through the generators and the distributors, to the end users, by factor Y . The formula can be explained in the following way:

$$P = P_0 * RPI * (X+Y) \quad \text{or} \quad P = (\text{justified costs} + 8\%) * RPI * (X+Y).$$

The MVM transmits electricity to the distributors at a uniform wholesale price including the price margin, ensuring a profit (sometimes lower than 8%). The distributors sell electricity, at the uniform average price (Vince 1997, 13) to the end users in franchise areas. The contracts between the MVM and the distribution companies have been made for a 15 year period, and can be extended annually, in a regulated form (MVM 1999, 11). Owing to the differences between distributors' cost structures, and the different spatial allocation, there is no guarantee that all of them will be able to realize the expected profit, asserted as an average for the distribution sector as a whole.

One more institution deserves to be mentioned. The Hungarian Energy Office (MEH), established by Act XLI of 1994 on Gas Supply, has the role of administering the regulation of the gas and electricity industries. The basic idea behind the creation of the MEH was to introduce a "US style" independent regulatory agency, responsible for licensing, normative preparations and rule settings in price formation and consumer protection issues. However, full independence of the MEH has not been assured yet. It still operates under government influence, especially in the price setting issues.

Managerial independence from the state in investment policy issues is among the greatest in the transitional economies. The new owners make most of the managerial decisions exclusively. However, for the new power plants, with capacities above 200MW, the approval of the Ministry has been required. For capacities above 600MW, also for nuclear capacities, the approval of Parliament has been mandatory (Vince 1997, 12).

Impacts and Evaluation of the Privatization Process

Considerable x-efficiency improvements have emerged in the operation of power generators. The annual availability of private power plants has been raised by 10%, which means that the total capacity has been increased by an additional 400-500 MW (Paizs 1999, 38).

² Significant uncertainties are connected with the determination of "justified costs". The interpretation of such costs gives too much discretion to the government drawing up the calculation procedure (Vince 1997). The cost components are not determined to cover some significant expenses like insurance, environmental protection, recultivation and nuclear waste disposal. It is expected that from 2001 some environmental protection costs will be incorporated in the price system (Ministry of Economic Affairs 1999).

Electricity prices have increased, from an average industrial level of 6.24 HUF/kWh and average residential level of 6.57 HUF/kWh in 1995, to 13.75 HUF/kWh + VAT for non-residential and to 15.92 HUF/kWh + VAT for residential consumers in 2000 (Pál 2000)³. Higher electricity prices may be considered as one of the reasons for the reduced electricity intensity of the Hungarian economy. Electricity intensity has been diminishing slowly since 1991, when it reached a maximum of 6.2 kWh/1000HUF GDP. By 1998 it decreased by 8% to a level of 5.6 kWh/1000HUF GDP as an outcome of improved energy efficiency, owing to the use of modern industrial technology (MVM 1999, 42).

Privatization has not had a significant effect on employment. Owing to the 1994 mergers with the coal mines, the number of employees increased to 44,125. After the privatization, several loss-making mines were closed, some of them have been privatized by the employees and others still have become a part of the ESI (Voszka 2000). In 1998 there were 39,770 employees, close to the pre-privatization 1993 level (MVM 1999, 52).

The environmental impact of the restructured ESI has not changed significantly. In recent years, in spite of the increased electricity production, the level of air pollutant emissions has remained constant. An improvement is expected by the end of 2000, when the flue gas desulphurizer will be put into operation in Mátra Power Plant Ltd. (MVM 1999). A radical restructuring of the Hungarian ESI has not yet been accompanied by trading structure liberalization. In a recent institutional analysis of the Hungarian ESI (Paizs 1999) it is unambiguously proven that the current organizational model neither preserves the efficiency properties associated with an integrated network operation, nor facilitates market competition in the industry. Long term contracts between power producers and the MVM are impediments for cost minimizing behavior on both sides. There is no price competition in electricity production and wholesale activities. The MVM remains a monopoly, but with mixed functions, as a single transmitter and as one of the producers. In such an institutional environment, incentives for risk minimization have been limited. Instead, there is a tendency to pass the risks on to the final consumers through the price mechanism.

In the early stage of privatization, investment commitments were included in the tender criteria. Knowing that privatization would constrain future policy options, the government tried to make future investments predictable. However, the investment commitments made the position of the government even more complicated. At the times of privatization tenders, the investment needs of the ESI were largely oversized. There was a fallacy based on too high a projection of electricity demand in Hungary (Mihályi 2000). The over-ambitious programs for new investments were incorporated in the tenders. Having in mind the very high level of capital asset specificity, the new owners responded to the commitments by imposing long run contracts with the MVM. The initially oversized programs were abandoned later, but the long run contracts remained in force. Owing to the vagueness of the Electricity Act, many issues about price formation (Vince 1997, 13-7) and about new entry into generation (Paizs 1999, 42-4) have remained unsettled. Unfortunately, the privatization of the Hungarian ESI was achieved before the secondary legislation was concluded.

³ After the new tariff system came into force on July 1, 1999 there has been no more cross-subsidizing.

Outlook for the Central European Region: State of the ESI and Recommendations for Restructuring

In most of the Central and Eastern European countries (CEEC) the ESI reforms started with a decentralization process in the early nineties. During 1990 Romania and Poland were among the first, transforming the previously government-owned highly integrated conglomerates into public joint-stock companies. Hungary and the Czech Republic decentralized their energy sectors in 1991, while Russia, Ukraine and Latvia did the same in 1992. Price and tariff deregulation prepared the ground for further reforms. Excessively low energy prices resulting from the historical politicization of the ESI created problems for most of the CEEC. All of the transitional economies changed their electricity price structure, but only Poland, Estonia and Hungary achieved a ratio comparable to OECD economies. In the mentioned countries, residential prices surpassed industrial levels, reflecting different costs (Stern and Davis 1997).

The industrial structure of the ESIs is quite heterogeneous. It varies from the vertically integrated (Lithuania, Bulgaria) to the highly separated, unbundled, systems (Hungary, Poland). Romania, even if it had been one of the pioneers, later abandoned changes, and now is closer to Bulgaria and Lithuania. In contrast to the decentralized industrial structure, the trading structure in the region remains integrated. The governments of Poland and Hungary are now planing to terminate all the long-run contracts in order to enhance market competition⁴. In both of these countries, the size and the structure of the ESI is regarded as sufficient for wholesale market competition⁵.

Restructuring of the Ukrainian ESI deserves special attention (Ryding 1998). Electricity industry deregulation started in Ukraine shortly after the independence, in 1992. After more than two years of analyses and debates, the new structure was imposed by Presidential Decree, in May 1994. The basic idea was to introduce a British type trading competition in the electricity market. Specific operational institutions (National and Regional Dispatch Centers), followed by a regulatory institution (National Regulatory Commission) were created. In spite of the significant international financial support (the Word Bank, EBRD) numerous problems appeared in 1995 and 1996. Owing to high arrears and poor revenue collection, in an atmosphere of macroeconomic instability and a disordered market, the imposed reforms were unsuccessful. Many additional reasons for the deadlock of the Ukrainian ESI reforms can be found (lack of technical and managerial knowledge, unfavorable social and political environment, etc.), but one question remains crucial: can there be any substantial reforms of the ESI without privatization? The answer, based on a comparison between the Hungarian and the Ukrainian case, is unambiguously no. In the Hungarian case, the ESI reforms occurred in the broad context of an overall transition process, followed by privatization. On the other hand, in Ukraine, all the entities involved have remained state-owned.

The future of the electricity industry in countries waiting EU accession is also going to be strongly influenced by regulatory harmonization. For instance, the adoption of the Directive 96/92 EC will imply the introduction of competition in the utility sector. Hungary is

⁴ In Hungarian case it seems better to say that the government is going to try to renegotiate the terms of the contracts (Ministry of Economic Affairs 1999).

⁵ According to some studies (Newbery 1997) the minimum requirement for the competition on the electricity market amounts five independent companies.

taking the first step towards electricity market liberalization in January 2001, when eligible consumers will be allowed to choose their supplier.

Conclusion

The evaluation of the Hungarian ESI reforms is a complex task, and must be judged from many aspects. It was an obvious success from the perspective of foreign investors. However, from the Hungarian standpoint, some controversial issues remain.

1. Problems have been caused by the lack of an unbiased pre-privatization sectoral analysis, including the long-run electricity demand projections.
2. Practical problems of protecting the state influence in the new property structure raised a question about the effectiveness of the "golden share" scheme.
3. The environmental interests of the entire Hungarian society are still waiting to be broadly included in the electricity industry development programs, on a more compulsory base.
4. The emergence of private ownership has not brought the expected improvements in electricity efficiency with it. Although the foreign companies owning large shares in electric utilities have a broad experience in DSM, they have not engaged in significant DSM activities in Hungary. The only key "hope" for utility-driven demand side efficiency improvements is the envisaged market liberalization in 2001, in which utilities see DSM as a new "market" to compensate for stagnating electricity demand and potential market losses to future competition.

Nevertheless, the Hungarian case offers some valuable lessons to be learned. The strategic lessons are:

1. In the transitional economies there is no intrinsic reform without privatization, or without at least alteration of ownership structure.
2. A certain level of previously accomplished macroeconomic stability is essential. Liberalization and unbundling of the ESI is highly unwise in a context of a disorderly economic and legal system (Stern and Davis 1997, 63).
3. Price reform has to precede liberalization and privatization. The Ukrainian case suggests strongly that an early attempt to introduce a competitive electricity market will not force governments to induce price increases and abolish cross-subsidies (Ryding 1998).
4. Unclear normative regulation may seriously limit the benefits of the reforms. A clear regulatory framework needs to be elaborated prior to the privatization process, including regulations on social and environmental goals, such as the inclusion of DSM incentives in the price formula.

Alongside the strategic issues, some other lessons connected with privatization techniques emerge from the Hungarian case.

1. A mixed property structure of the ESI assets in the pre-privatization period should be avoided, because it diminishes government revenues (Mihályi 2000).
2. Tender rules should be carefully prepared and implemented, in order to achieve a transparent and lucrative bidding process. More than one round of tenders is strongly encouraged to maximize revenues and to optimize selling conditions from a national perspective (Mihályi 1998).
3. Tender regulations, imposed to maintain competitiveness in the electricity market, have a limited effect. After the privatization, governments cannot hinder mergers between foreign

companies, which means that the desired level of competition should be ensured by some other policy instrument (Voszka 2000).

4. In order to ensure many of the suggested points above, it is vital that the process is not rushed but carefully planned, and that the procedure is carefully managed and independently monitored. Although political interests, especially the 4-year election cycle, usually dictate opposing interests, as in the Hungarian case, a rushed process can result in major compromises in national, social, environmental, but even economic interests.

Regardless whether the Hungarian experience can be considered successful or not, it has a broad significance, presenting a precedent for all the transitional economies in the CEE.

References

- Bacon, R.W. 1995. "Privatization and Reform in the Global Electricity Industry" *Annual Review of Energy and the Environment* 20 : 119-43.
- Clinton, J. , and K. Kozloff 1998. "Promoting Energy Efficiency in Reforming Electricity Market" In *Proceedings of the ACEEE 1998 Summer Study on Energy Efficiency in Buildings*, 6 :17-28. Washington, D.C. : American Council for Energy-Efficient Economy.
- Davis, J. 1996. *Privatization and Regulation of Public Utilities in Latvia*. CERT Dept.of Econs. Heriot-Watt Univ. , Edinburgh.
- HEO (Hungarian Energy Office) 1999. *Report on the activities of the Hungarian Energy Office in 1998*. Budapest.
- Joskow, P.L. 1998. "Electricity sectors in transition." *Energy Journal* 19 (2) : 25-53.
- Lewington, I. 1997. *Framework Options for Electricity Utilities in Transition Economies: Attempting a Systematic Approach*. CERT Dept. of Econs. Heriot-Watt Univ., Edinburgh.
- Mihályi, P. 1998. *A Magyar Privatizáció Krónikája 1989-1997 (The Chronicle of the Hungarian Privatization 1989-1997)*. Budapest: Közgazdasági és Jogi Könyvkiadó.
- Mihályi, P. (East - West Management Institute, Budapest) 2000. Personal communication to authors. February 22.
- Ministry of Economic Affairs 1999. *Hungarian Energy Policy Principles and the Business Model of the Energy Sectors*. Budapest.
- Miller, P. 1998. "Restructuring DSM: Moving Beyond the Utility Monopoly on DSM Resource Acquisition." In *Proceedings of the ACEEE 1998 Summer Study on Energy Efficiency in Buildings*, 6 :129-40. Washington, D.C. : American Council for Energy-Efficient Economy.

- [MVM] Magyar Villamos Művek Rt. 1997. *Közleményei – Statistical data 1996*. 34 (3)
- [MVM] Magyar Villamos Művek Rt. 1999a. *Business Report 1998*.
- [MVM] Magyar Villamos Művek Rt. 1999. *Közleményei – Statistical data 1998*. 36 (3)
- Newbery, D. M. 1997. "Privatization and liberalization of network utilities." *European Economic Review* 41 : 357-383.
- OECD/IEA 1994. *Electricity in European Economies in Transition*. Paris, OECD and IEA.
- OECD/IEA 1997. *Energy Efficiency Initiative*. Paris. OECD/IEA.
- OECD/IEA 1999. *Selected Energy Statistics for 1996*.
http://www.iea.org/stats/files/keystats/stats_98.htm. Cited April, 1999.
- Paizs, L. 1999. *Economic Organization and Liberalization of the Electricity Supply Industry: A Comparative Institutional Analysis*. /MA Thesis/ CEU , Budapest.
- Pál, G. (Hungarian Energy Office) 2000. Data obtained in personal communication to authors. March 1.
- Pollitt, M.G. 1995. *Ownership and Performance in Electric Utilities: The International Evidence on Privatization and Efficiency*. Oxford: Oxford University Press.
- Ryding, H. 1998. *Electricity Restructuring in Ukraine: Illusions of power in the power industry?* CERT, Dept. of Econs. Heriot-Watt Univ. , Edinburgh.
- Stern, J. , and J. R. Davis. 1997. *Economic Reform of the Electricity Industries of Central and Eastern Europe* CERT, Dept. of Econs. Heriot-Watt Univ. , Edinburgh.
- USA Today 1996. *Energy reacts in private hands*. USA Today, 5/2/96. 14 (162): 7.
- Vince, P. 1997 *Privatization and Regulation: Restructuring and Conflicts in the Hungarian Electricity Supply Industry*. Kopint-Datorg Discussion paper 46. Budapest
- Voszka, E. (Financial Research Ltd. Budapest) 2000. Personal communication to authors. February 23.
- World Bank 1996. *World Development Report 1996*. New York: Oxford University Press.
- WSJ (Wall Street Journal) 1995a. *New privatization law should speed sale of state assets* Wall Street Journal – Eastern Edition, 6/6/95. 225 (109): A12.
- WSJ (Wall Street Journal) 1995b. *Hungary seeks privatization of utility to modernize the Communist-era relic*. Wall Street Journal – Eastern Edition, 6/12/95. 225 (113): B7B.