Third Party Financing
and
Energy Municipal Utility Restructuring

Final Report

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A Note From the Alliance to Save Energy and Main Findings

MUNEE Partner EGI completed its report on the ESCO market in Hungary, which was requested by the Alliance because we wanted to find out why Hungary appears to have the most mature market for ESCO work in municipalities -- even more developed than the Czech Republic or Poland. There are about 100 companies in Hungary that can be loosely defined as ESCOs, offering non-financial services. The number of ESCOs that offer financing is much smaller (no more than 20), and the market value for „pure” demand-side, performance-based contracting work in the municipal sector is estimated to be between $16 million and $28 million per year and growing. Many companies actually operate some of the facilities they upgrade, including: Sinergy (affiliate of ELMÚ and ÉMÁSZ, both companies owned by RWE); E-Partner (affiliate of DÉMÁSZ which is owned by EdF); Energoholdig (majority ownership by E.ON Hungary); Prometheus (owned by Dalkia); Magyar-Therm (owned by EFC from Austria); Kipszer and Kipcalor.

Among the reasons cited for the relative success of ESCOs in Hungary's municipal sector are the following:

1. The banking sector is more interested in cities and there is a longer history of municipal borrowing than in other countries, so ESCOs have an easier time getting capital for municipal projects. The biggest bank offering services for municipalities is OTP Bank, keeping the bank accounts of more than 80% of cities. OTP ran the German Coal Fund, which offered cities loans specifically for energy efficiency and is one of the relative success stories with revolving funds.

2. At the same time, there has been a lot of attention and capital from Western companies, because of Hungary’s general economic development.

3. Cities have much more budgetary and legal autonomy and can set policies that, for example, allow ESCOs to enter into performance contracts directly with hospitals without large numbers of approvals.

4. With a new law that requires cogenerated electricity to be purchased by the grid at a fixed price, a new market has developed for investments in CHP facilities, providing district heat and power. This law makes cogeneration a much more secure activity that can cover some of the higher risk on the heating side. The market for small co-gen, depending on the year, can reach $28 million per year in total project value.

5. Large and quick increases in the fuel oil prices (to avoid the illegal use of fuel oil for cars, since petrol prices were much higher), along with gas-sector privatization, led to the dramatic expansion of the country’s natural gas network. This made fuel switching in old district heating boilers more cost-effective for local governments.

6. In the 1990s, the "French-model"-type ESCOs flourished, much helped by the VAT rate difference between the procurement of goods and energy. With the stress on the municipal institutions to reduce staff and related expenses, more cities were willing to try outsourcing of energy supply infrastructure, which created a good market for ESCOs that revamped and operated the energy supply systems of hospitals, schools or district heating systems.

7. More recently, as energy markets become liberalized, utility-based ESCOs are emerging in Hungary, as electric companies want to expand beyond their service territory, which they
can legally do for energy services. The desire to keep existing customers and gain new ones encourages these ESCOs to look at a wider range of projects and take on added risks.

The other portion of this report describes the experience with restructuring municipal heating and water enterprises in Hungary and offers some suggestions for other countries that are in the early stages of this process. This paper discusses the legal background and actual experience of private sector participation in municipal enterprises, and the concrete recommendations can be boiled down into the following:

- Do not initiate privatization without a clear district heating strategy. The time span of privatization and operation contracts is much longer than the municipality’s mandate. If the contract is based on a wide political agreement, future conflicts and scandals can be avoided.

- Start privatization only if there is an agreement of all political groups about the necessity and practicality of it. Do not privatize if there are major doubts about it, or if a consensus cannot be reached about it within the local government, or if the municipality does not have the capabilities to firmly supervise the process.

- Be sure that the selection is absolutely fair. The enterprise should be chosen in an open tender procedure and attention is to be paid to ensure an objective and impartial decision on selection. An essential requirement of the privatization is a precise and adequate specification and a professional evaluation of applications. It is useful to publish the evaluation criteria and get the evaluation of the proposals approved by the bidders themselves.

- Be sure that corruption is not biasing the selection process. If there is an area where corruption should be avoided, it is certainly public utility privatization. Therefore, during district heating privatization efforts, a whole scale of anti-corruption measures must be taken.

- Even if the responsibility of operating the district heating system is conveyed to a private firm, maintain enough expertise within the municipality to be able to follow the compliance with the signed privatization contract.
ESCO Market Assessment

Analysts of the international energy community have observed that the Hungarian ESCO market is rather well developed when compared to the ESCO markets of other emerging economies. A growing number of projects, representing a growing volume of investments, are implemented by companies which call themselves „ESCOs“. The ESCO activity is particularly intensive in the municipal sector, where by today the majority of energy efficiency investments are implemented by private entrepreneurs.

Is all that true? If yes, what stands behind the Hungarian success story?

The author of this material is EGI Contracting Engineering Co. Ltd., the predecessor of which organization was established in 1948 to promote energy efficiency in the end-use sectors. EGI is one of the Hungarian ESCOs (if we define the ESCOs in the broad way). EGI is also a consultant and market analyst with a good overview on the activities of other ESCOs.

ESCOs are private ventures in a competitive environment. They typically do not disclose business-related information, such as business volumes, sources of financing, client contacts, etc. ESCOs are suspicious about market surveys, and publish only success stories.

Due to its position in the Hungarian energy market EGI has access to certain confidential information related to operating ESCOs. This kind of information will be used in this material for drawing conclusions, however without referring to the names of the individual ESCOs. Names will only be given when publicly available information is quoted.

In order to help understand the role of ESCOs in the Hungarian municipal sector, the municipal energy efficiency „arena“ will be introduced first. Then the Hungarian energy policy, a decisive element of the environment of ESCOs, will be presented in brief. Following that the past and present of private ventures in the energy field will be analyzed, with special emphasis on the definition and categories of the ESCOs. Finally, the Hungarian municipal ESCO market will be assessed resulting in conclusions. In general, the following conclusions are the most important for this report.

The municipal energy efficiency arena

Municipalities in Hungary are typically responsible for the following energy-related tasks:

- **District heating**: There a little more than 100 district heating systems in Hungary. The legislation on municipalities (Act LXV in 1990 and its amendment Act LXIII in 1994 and Act XXXIII in 1991) transferred the ownership of district heating assets to the municipalities and assigned the duty of “participating in local energy supply”
to them. Thus, after the privatization of power and gas distribution, district heating remained the only part of energy infrastructure whose owner is the municipality.

- **Streetlighting.** Here the ownership of the infrastructure is often belongs to the local power utility company, but providing streetlighting is the municipality's duty.

- **Operation of municipal facilities.** These include typically schools, kindergartens, welfare and healthcare facilities, some office buildings, museums etc.) The operation includes the energy supply, except for some hospitals, where, although the municipality is the owner, the running costs are paid for by the central social security fund.

- **Water and sewage services.** Although it is not typical, some of the municipalities are also responsible for the water works and sewage treatment. These services have high energy demand.

### ENERGY EFFICIENCY INTERVENTIONS

Energy efficiency interventions can be categorized into three distinctive groups:

a) interventions with no or low costs (behavior change)

b) retrofit type interventions

c) investment type interventions.

Category a) interventions result in energy savings, while category b) and c) ones in energy savings and upgrading of infrastructure. Switching off the lamps, when lighting is unnecessary, saves electricity costs and has nothing to do with the lighting infrastructure. It is a typical no-cost intervention. Installation of weather-compensated controllers into district heating substations is a good example of retrofit type interventions. Replacement of old obsolete boilers in a boilerhouse is an investment type intervention resulting in more energy efficient operation, as well as in upgrading of infrastructure (lifetime extension, reduced maintenance, etc.).

Municipal energy end-users expect that investments into energy efficiency produce savings, which justify the investments themselves. In other words, they expect that the energy efficiency interventions are self-financing. While retrofit type interventions often qualify for this expectation, investment type ones typically do not. Energy savings can hardly justify costly infrastructure replacement projects.

The reason why we call the attention to this point is that ESCOs are often invited by municipalities to upgrade abandoned infrastructure. ESCOs are expected to finance upgrading by energy savings only. It is impossible. Savings may not finance costly upgrading projects.

### TRADITIONAL METHOD OF IMPLEMENTING ENERGY EFFICIENCY INTERVENTIONS

The “traditional” way of implementing energy efficiency interventions in the municipal field is rather difficult an inefficient. First of all there must be someone, for example
an energy manager, who takes care of the energy matters, and has the capabilities and commitment to initiate energy efficiency projects. If there is no such person around, the chances that energy efficiency interventions are placed on the agenda at all are reduced.

Let us suppose that an energy manager is employed by the municipality or by the municipal institute. This person keeps track of the energy bills and is kept under pressure by the financial officers of the municipality to reduce spending on energy. The manager may have ideas himself what to do, or may call for experts to run energy audits. Sooner or later energy efficiency projects get developed and the energy manager may start lobbying for money.

In the traditional method money may only come from the budget of the municipality ("central budget"), or from the budget of the individual institutes ("institutional money"). Energy efficiency interventions fall under the category of “investments” and the competition for investment money is usually enormous. The energy manager has to be very smart to convince the decision-makers that allocating precious investment money for energy efficiency makes sense. The difficulties of financing energy efficiency developments at municipalities have largely contributed to the rise of ESCOs.

If the energy manager is smart enough and the decision-makers are wise enough, some energy efficiency projects get implemented. Experience proves that implementation does not always happen according to the expectations. The municipality may not be experienced enough to select the proper technology and equipment. The suppliers may perform poorly. At the end of the day the savings may not appear, and the municipality may come to the conclusion that they ought to have avoided spending on energy efficiency.

There are many success stories in Hungary about the application of the traditional implementation method, however there are many failure stories, as well.

**BARRIERS TO THE TRADITIONAL METHOD**

At the beginning of the ‘90s, in the early years of the transition it became clear that the “traditional” method of improving energy efficiency would not be able to do the job. Investment into energy efficiency was very low resulting in high expenditure on energy services and deterioration of energy infrastructure.

EGI happened to participate in a number of surveys to identify the barriers. The surveys were typically initiated and financed by international programs. The findings of the surveys can be summarized as follows:

1. The level of energy awareness is rather low. While the municipalities are suffering from high expenditure on energy bills, they do not always understand the relationship between energy efficiency measures and reduced expenditures.

2. Most of the municipalities have poor “in-house” energy management capacities. They are inexperienced in evaluation, development, implementation and monitoring of energy efficiency projects.
3. Most of the potential energy efficiency investments require some level of investment, while the majority of municipalities lack proper investment budgets. Energy efficiency projects compete for investment budgets against all other kinds of development projects. Energy efficiency projects are often difficult “to sell” when compared to more sightful projects such as road construction, canalization, or development of public parks. In this daily struggle for funds energy efficiency projects regularly loose.

The relevant aspects of the Hungarian energy policy

Both on the level of political statements and in the governmental energy policy papers energy efficiency is listed among the primary goals. The importance of municipal energy use is also recognized by all relevant governmental organizations. However, in practice rather limited resources are allocated to the improvement of municipal energy efficiency improvement.

The so called Széchenyi Plan designed to boost Hungarian economy and launched by the previous government included some components that aimed at reducing municipal energy use. Support could be obtained for conducting energy audits, formulating municipal energy policy and implementing renewable energy projects. Since the governmental elections this spring the Széchenyi Plan has been halted but statements have been made that some parts of it, including the energy efficiency subprogram will be continued.

At the moment the only source of financing energy efficiency measures is the “Energy Efficiency Credit Program” commonly called “The German Coal Fund”. This revolving fund provides soft loan for the implementation of energy efficiency projects in general. Both municipalities and ESCOs can apply for the fund if the project meets some technical and economic criteria and the applicants are considered creditworthy.

The government operates a special company to act as an energy efficiency agency. The Energy Centre (Energy Efficiency, Environment and Energy Information Agency Non-profit Company) is a national energy efficiency agency established by Government Decree 1031/2000 (IV.7.). The founders of the Company are the Ministry of Economic Affairs, Ministry of Environment and the Hungarian Energy Office. This company manages different energy efficiency programs and acts as a central source of energy efficiency information for all interested but municipalities are among their top targets. The Energy Centre also manages the UNDP municipal energy efficiency program, which, among others provides funds to cover energy audits and the project development costs of municipal energy projects. An important part of the program is to issue “best practice” booklets on project development that include ample information on ESCO projects.
Private ventures in the municipal energy efficiency business

Private ventures appeared in the municipal energy efficiency business right after the political changes in 1990. The area where they showed up first was the trade of energy efficiency equipment. After long decades of hard currency shortages suddenly all the precious engineering products of the West became available. Suppliers of valves, burners, controllers and lighting fixtures made great fortunes within a short time.

Installation companies followed the suppliers. After the age of giant state-owned construction and installation companies thousands of small flexible entrepreneurs appeared on the market eager to sell their services. While the municipalities had been faced earlier to the lack of proper installation services, all of a sudden they could enjoy an abundance of them. (Unfortunately the municipalities kept on being faced to shortages of funds.)

Due to a large extend to the positive influence of western energy efficiency assistance programs private energy auditing capacities started to emerge from 1992. The consultants and engineers, who got training in energy auditing, were eager to sell their services. Within a short time they had to realize that marketing energy audits alone did not make big money enough. They understood that it could be more profitable to sell their project development capabilities together with engineering and financial services. This is how the ESCO market was born in Hungary.

At the beginning most of the ESCOs fell into one of the following categories:

- suppliers of energy efficiency technologies/equipment, which extended their scope of services by project development and financing (examples: Honeywell, Johnson Controls, Landis & Staefa, HOLUX, etc.)
- engineers, who realized that the most efficient way of increasing their sales is to complete the scope of their services by financing services (examples: KIPSZER, KIPCALOR, ENSI)
- Hungarian subsidiaries of western ESCOs (examples: HESCO, ECONOLER).

Later, from the mid ‘90s two more important ESCO categories appeared, the utility-based ESCOs and the ESCOs of the financial institutes. More details come in later chapters.

ESCO categories

According to the "classic" ESCO concept as developed in the USA, the energy services company develops and implements energy efficiency projects by financing the investment and guaranteeing the performance of the interventions. The installed equipment is transferred to the clients as soon as the construction/installation is ready. Revenues of the ESCO are realized from the savings generated by the projects, which are shared with the client on a pre-agreed basis. In this construction the ESCO offers turnkey solutions, including project development, engineering, installation, financing and certain services including performance guarantees. The
benefit of the concept is that it creates almost immediate positive cashflow for the client, who gets the project with little or no up-front capital cost.

However, this concept works well only when the projects are sufficiently profitable and the clients are liable and creditworthy. There are a few typical representatives of this approach in Hungary, including Siemens (earlier Landis and Staefa), Honeywell, and ENSI. Although these companies are relatively successful, the scope of their projects is limited due to the limited scope of good, financially attractive projects. These companies typically started with fuel switching projects, where the big price difference between light fuel oil and natural gas generated huge savings. Today they focus on small-scale co-generation projects where the favorable price of co-generated electricity (set by the government) offers some good opportunities.

The traditional ESCO concept has been further developed, primarily in Europe. According to the often so-called "French model", the ESCO does not only develop and implement the projects, but takes over its operation and sells energy to the client. In this approach actually the operation is typically the primary goal. The ownership of the equipment remains with the ESCO until the long-term contract for energy supply and operation expires. The return of investment and profit is realized from the revenues of the energy sales. The advantage of the concept is that the clients can get rid of the daily problems of running their energy supply systems, while realizing some savings, or at least reducing the rate of energy cost increase. In Hungary the real boom of the ESCO business was experienced in this field.

Typical representatives of the concept are the large utilities that have set up their own ESCO companies and offer such services in order to retain their customers or increase their number. These utility-owned ESCO companies (e.g. E-Partner of DÉMÁSZ/EdF, Synergy of ÉMÁSZ/RWE) with their strong financial background can afford financing of less attractive projects, too, in order to serve the strategic goals of their owners. In Hungary a special boost for these type of projects was given by the special feature of the taxation system (different VAT levels for energy and equipment/services) as described in the chapter on legal setting.

If ESCO activities are defined in a broad sense, a third type of ESCO company or concept can be identified. In this case the ESCO company does not offer direct financing, but offers project development, engineering, implementation services and helps in “arranging” finance. Finance is secured by the client itself through loans, leasing or their own capital. This concept can be called “the end-user as the borrower”, as opposed to the concept of “the ESCO as the borrower”.

**Assessment of the Hungarian ESCO market**

**LEGAL SETTING**

The Hungarian legal system does not distinguish ESCOs from other companies. ESCOs are considered to be regular market players, which have to operate according to existing legislation.

It has to be noted that the Hungarian ESCOs several times initiated the legal distinction from other types of companies. Their requests have always been refused.
The distinction is, or would be, important in two areas.

**Distinction at public procurement** would be important to reduce risks of project development.

The legislation for public procurement prescribes that equipment suppliers and service providers of the public sector have to be selected by an open bidding process. The problem is that such a process can only be launched when the subject of the procurement is clearly defined. With ESCO projects the case is different. The development of the project (the subject of the procurement) is to be done by the ESCO itself.

In this situation the Hungarian municipalities have the following options:

1. They hire a consultant to develop the project. In this case the project developed by the consultant may differ from the project the ESCOs would find beneficial.
2. The municipalities define the task very broadly so that any ESCO concept may fit into the specification. In this case it may be very difficult to compare the different ESCO proposals, the selection may not be easy.
3. The municipalities do not run a public procurement process. They may do that based on opinions issued by the relevant authorities. These opinions claim that ESCO activities do not fall under the jurisdiction of the Public Procurement Law, as financing is arranged by the ESCO. In this case the municipality does not “procure” something using their own funds, however, they only select an entrepreneur.

There are several rulings of the Public Procurement Authority stating that if the project is financed entirely from the private company’s (ESCO’s) money, i.e. no public funds are involved, then the project is not subject to the Public Procurement Law. This way most ESCO projects can get around the public procurement procedure. Now it is an interesting question what happens when the price of the energy supplied by a French-type ESCO exceeds the limit of public procurement for services (currently HUF 9 million), e.g. in case of a big municipal hospital or district heating system. This question has not been asked and clarified yet, and the law is not specific about how the limit is to be understood.

**Distinction at taxing.** In Hungary the value added tax (VAT) is typically 25% for most of the products and services. Energy services such as supply of electricity or gas or heat fall under the exceptional category of 12% VAT. The municipalities may not recover VAT. For this reason it is essential to procure services at the low VAT level when possible.

When ESCO services are categorized as development services, the 25% VAT applies. When the ESCO operates the modernized energy equipment the whole intervention may be considered to be an “energy service” and enjoy low VAT. At the moment the authorities evaluate ESCO projects case by case. Big influential ESCOs may more easily arrange low VAT at the tax authorities than the smaller ones.
ESCOs in Hungary

ESCOs offer complex services including:

1. energy auditing
2. project identification
3. project development
4. licensing
5. engineering
6. procurement of equipment
7. construction
8. installation
9. commissioning
10. monitoring
11. arranging financing
12. financing
13. operation

The ESCOs working according to the concept of “the end-user as the borrower” offer services 1. to 11. ESCOs of the concept of “the ESCO as the borrower” (which finance and not operate) offer services 1. to 12., while certain ESCOs offer operation, too.

The number of ESCOs that are not included in the money flow can be estimated in Hungary between 50 and 100. They are either consultants/engineers or suppliers of energy efficiency equipment. A typical example is EMIKA, a medium sized company which manufactures efficient lighting fixtures. EMIKA offers energy audits, design, and implementation for schools, hospitals and other municipal buildings. They also assist their clients in cost calculations, and in compiling applications for state programs or to commercial banks.

The number of ESCOs working to the concept of “the ESCO as the borrower” can be estimated between 10 and 20. They compete with one another, and the less competitive ones disappear from the market. Most of these ESCOs have some kind of close relationship with financial institutions. Examples are Synesco, and Credilux.

Finally, the number of ESCOs which undertake operation is under 10. The most important ones can be listed:

- Sinergy (affiliate of ELMŰ and ÉMÁSZ, both companies owned by RWE)
- E-Partner (affiliate of DÉMÁSZ which is owned by EdF)
- Energoholdig (majority ownership by E.ON Hungary)
- Prometheus (owned by Dalkia)
- Magyar-Therm (owned by EFC from Austria)
- Kipszer
- Kipcalor

It can be observed that the utility based ESCOs are developing very intensively and while the ESCO market is growing, they increase their market share. In addition to
making business, the utility based ESCOs are driven by the wish to expand the market of the owner electric utilities.

To make the situation clear we have to remember that the electric utilities have territorial monopolies in Hungary (presently, up to the liberalization of the electric market). The country is divided into 6 service areas and the utilities may only operate within their own areas. This is true for electricity supply but not true for ESCO services. It means that for an electric utility the only way to make business in the service area of another utility is to implement ESCO projects.

We have to mention a very special ESCO called ELMIB (Első Magyar Infrastruktúra Befektetési Rt. = First Hungarian Infrastructure Investment Company). ELMIB is owned by MFB (Magyar Fejlesztési Bank = Hungarian Development Bank), a state owned development bank. ELMIB offers infrastructure upgrading for municipalities including the fields of indoor lighting, public lighting and space heating. They work according to the “ESCO as the borrower” concept. Their yearly business volume exceeds HUF 1 billion (USD 4 million).

**SCOPE OF ESCO CLIENTS**
The scope of ESCO clients in Hungary may include any types of energy end-users with significant annual energy costs. We can identify the following categories:

- Municipal institutions, such as schools, hospitals, etc. In these cases the ESCO contracts between the institutions and the ESCOs are countersigned by the municipality.
- Municipalities which wish to modernize their public lighting systems.
- Government institutions and companies, such as big universities, libraries, or the National Railways. ESCOs may require that the contracts are countersigned by the relevant ministries.
- Poorly capitalized industrial companies or business actors which enter ESCO arrangements in order to assure financing for their energy efficiency developments.
- Well capitalized industrial companies or business actors which wish to outsource the energy supplies.
- District heating companies seeking to buy cheap heat from cogeneration entrepreneurs.
- Residential communities which expect that the ESCOs arrange financing for their energy developments. A typical subcategory is the residential communities which wish to disconnect from the district heating network and introduce individual gas heating.

**MARKET VALUE**
The market value of ESCOs, which work according to the “end-user and the borrower” concept that is which do not finance, can be estimated between HUF 1 billion and HUF 2 billion (USD 4-8 million). This category is represented by a large number of small projects. Many of the projects are financed by the government’s soft
loan programs such as the so called German Coal Fund or the Széchenyi Plan (The Széchenyi Plan is being redesigned by the present government).

The market value of the classical ESCOs which finance but do not operate can be estimated between HUF 3 billion and 5 billion (USD 12-20 million). This category includes medium sized projects such as implementation of gas engine based cogeneration, upgrading of boiler houses or introduction of state of the art, technology in district heating.

The utility-based ESCOs and other ESCOs, which undertake operation as well typically implement larger projects. For example the investment cost of the cogeneration plant of BORSODCHEM Rt. implemented by SINERGY was around HUF 4 billion (USD 16 million). Smaller cogeneration projects had a value between HUF 1 billion and 3 billion (USD 4-12 million). The overall market value of this category ESCO projects changes year by year depending on the number and character of implemented projects. The value can be estimated between HUF 5 billion and 7 billion annually.

The state supported ESCO called ELMIB has a business volume of around HUF 1…1.5 billion per year.

**TYPES OF GUARANTEES OR COLLATERAL**

The ESCOs which are not involved in the money flow that is which help in arranging financing but do not finance, do not have to worry about guarantees. The guarantees have to be provided by the end-users within the scope of their direct relationship with the financial institutes.

The issue of guarantees is most critical for the “classical” ESCOs. They invest into the energy infrastructure of the municipalities and pass over the ownership of the installed goods as soon as they are commissioned. What they receive in exchange is a contract for repayment signed by the municipality or a municipal institute. The contract may prove to be a volatile guarantee when the municipality looses its ability to pay (what happens rather frequently in Hungary). It is a difficulty for ESCOs that they do not have adequate experience to judge the creditworthiness of the municipalities and do not have access to financial information. Simultaneously, the municipalities are rarely ready to provide as strong guarantees for the ESCOs as they would provide for the banks. In this situation the guarantees are negotiated case by case. In most of the cases the ESCOs receive the reduced form of the guarantees that are applied in the financial matters between the municipalities and the banks. In other cases the ESCOs have to settle for less such as a decision by the local assembly to prove the ESCO project.

ELMIB’s transactions are guaranteed by the state-owned development bank’ MFB. According to information from ELMIB it is a very low percentage of the projects which need intervention by MFB.
SOURCES OF FINANCING

As we have clarified it earlier, there are two basic categories of ESCOs:

(a) Financing arranged by an ESCO: The ESCO itself is not involved in the money flow between the financial institute (FI) and the project owner, however, it helps to arrange the financing (“the client as the borrower” model). For example the ESCO compiles the loan (or soft loan) applications on behalf of the owner and participates in the necessary negotiations.

(b) Financing provided by an ESCO: This is the real ESCO approach (“the ESCO as the borrower” model). The ESCO finances the project from its own funds or from loans taken by itself.

In category a) the ESCOs work with all the Hungarian commercial banks which have banking products for municipalities.

The biggest bank offering services for municipalities is OTP Bank, keeping the bank account of more than 80% of the municipalities. OTP is ready and prepared to finance municipal development projects, including energy efficiency ones.

Raiffeisen Bank has a growing municipal portfolio. In additional to traditional loan products Raiffeisen has developed special products for the energy developments of the municipalities, too. More or less the same is true for K&H Bank and Budapest Bank. Some of the commercial banks use energy efficiency financing as a means of „getting closer” to the municipalities, what may end in the future by seizing the position of account keeper.

In category b) most of the Hungarian ESCOs get money from commercial banks which operate in Hungary. This is true for ESCOs with 100% foreign ownership, too.

The initiative, launched by the International Finance Corporation (the affiliate of World Bank), called „Hungary Energy Efficiency Cofinancing Program” has to be mentioned here. HEECP provides guarantees for banks which finance private ESCOs.

BARRIERS TO FURTHER DEVELOPMENT OF THE ESCO MARKET

Although the Hungarian ESCO market is quite well developed, further development is possible, if the following barriers are properly addressed:

(a) A better understanding of the ESCO approach by the end-users. There is no good understanding of what an “ESCO” or an “ESCO project” is on the market. News is spreading about extra high entrepreneurial profits, poor performances, and difficult-to-follow business models. Some end-users mix the ESCO services with the liberalization of the electricity and gas markets. The end-users have more distrust and suspicion than the ESCOs would deserve. They should learn what ESCOs could help, if the procurement of the ESCO services happens properly.
(b) **High up-front project development costs.** The development of ESCO projects, preparing them for investment, getting end-users ready to make decisions, developing and providing appropriate enhancements to create creditworthy finance structures, and arranging financing, is rather expensive and risky. The development costs are high as compared to the value of the project. An ESCO cannot be sure that the costs can be recovered later, as the end-user may select a different implementation model or a different entrepreneur. High up-front costs and risks hinder the development of projects in general, and keep ESCOs away from smaller projects.

(c) **Not enough good news stories about ESCO projects.** Although the ESCO approach is widely known in Hungary, most of the end-users believe that it is applicable mainly for large space/district heating and street lighting projects only. Not many indoor lighting projects are implemented by ESCOs, and news are not properly spread about the successful ones.

**Analysis, conclusions**

From all that was said above, it may appear that Hungary has a rather advanced market for ESCO services to the municipal sector: several ESCO companies are doing numerous projects on a performance-contracting basis. In our assessment the reasons for this relative success are not general and have varied throughout the past 12 years.

At the beginning the ESCO concept was not successful at all. This was partly due to uncertainty of the local decision-makers: independence from central control and responsibility was relatively new and few were bold enough to try to utilize a new concept. The other reasons were the unstable financial conditions and incomplete regulation plus the bad image that some venture-capital companies who tried to act as ESCOs created.

Later with the stabilization of the legislative background and the financial institutions, the idea of performance contracting reappeared as there was a serious need for energy efficiency projects: for many reasons (the shutting down of many large industries, the omission of municipalities from the privatization of the energy industry etc.) the financial situation of the municipalities got worse that dictated using every opportunity for savings. This demand helped implement the first few ESCO projects, many of which proved to be highly successful. The reason for success was simple: at that time there were many good project opportunities, especially in streetlighting and light fuel oil to natural gas conversion projects\(^1\).

Following the "era of cream-skimming" the success of its ESCO projects paved the way for further performance contracts. By that time the ESCO companies could clarify, test and refine the financial, legal and contractual details of such projects. In

\(^1\) In order to prevent frauds of selling light fuel oil for car fuel (which was three-times as expensive due to the high tax content), the government increased the price of fuel oil to the level of car fuel overnight. This immensely increased the operating cost of the (earlier financially encouraged) fuel oil heating systems, very common in municipal facilities in places with no access to the natural gas grid. Simultaneously, following the privatization of gas utilities, the expansion of the natural gas distribution systems accelerated. All this made the conversion projects technically possible and very profitable.
that period especially the "French-model"-type ESCOs flourished, much helped by the VAT rate difference between the procurement of goods and energy. This, coupled with the stress on the municipal institutions to reduce staff and related expenses, lead to outsourcing of energy supply infrastructure, which created a good market for the ESCOs that both revamped and operated the energy supply systems of hospitals, schools or district heating systems.

The next boom in the ESCO business started on 1 January, 2001, when, recognizing the benefits of small-scale cogeneration, the government set a very favorable buy-back price for cogenerated electricity and made it compulsory for the power utilities to buy any independently generated power which comes from a plant smaller than 20 MW_e. This made the installation of gas-engines financially very attractive and also increased the value of district heating systems as potential heat sinks. Around a hundred such medium and large projects were implemented by ESCOs.

Nowadays the success of the ESCOs is due to the advent of energy market liberalization: almost all big utilities set up their own ESCOs in order to offer energy services for their big clients, or in order to keep or increase their markets. Not uncommonly the utility-based ESCOs implement projects by sacrificing a part of their profit to ensure a new market share for their owner utilities. This strategy, coupled with the safe financial background of these companies, helps implement energy efficiency projects which would often be unattractive for the classical ESCOs.

In summary it can be stated that the relative success of Hungary is not a general success of the performance contracting idea, but a series of successes explained by different reasons, specific for the given situation.

**International outlook - ESCOs in some MUNEE countries**

In order to outline the background and barriers ESCOs face in the different MUNEE countries a questionnaire survey was carried out. The contents of the questionnaire was based on the recommendation of the Alliance to Save Energy and supplemented by some questions from EGI. Four of the MUNEE countries returned the questionnaire. Their replies together with Hungary’s are summarized in the following table.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Answers</th>
<th>Romania</th>
<th>Czech Republic</th>
<th>Ukraine</th>
<th>Bulgaria</th>
<th>Hungary</th>
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</thead>
<tbody>
<tr>
<td>Does the legal regulation in your country recognise in any form the</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- concept of ESCO companies?</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>- concept of ESCO activity?</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>If any of the above answers is yes, are there any preferences, are any</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>advantages granted?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State support for ESCOs, or ESCO activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Any state programmes that include any form of support for ESCOs?</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>Questions</td>
<td>Answers</td>
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<td>---------</td>
<td>----------</td>
<td>---------</td>
</tr>
<tr>
<td>- Any tax reduction to support ESCO activity?</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>- Any preferences for ESCOs in the privatisation of state assets?</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>- Any other form of state support?</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>What type of energy related tasks/duties do municipalities have?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- District heating</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>Sofia</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>- Energy supply of municipal facilities/institutions</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>- Residential energy supply (such as for municipality-owned housing)</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>- Power generation/distribution/supply</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>- Gas distribution/supply</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>- Public (street) lighting</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>- Other(s)</td>
<td>Water utilites</td>
<td></td>
<td></td>
<td></td>
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</thead>
<tbody>
<tr>
<td>What type of energy infrastructure do municipalities own?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(A-100%; B-Majority; C-Minority; D-Managing; E-Nothing)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- District heating heat sources (heating and/or power plants, boiler houses)</td>
<td>A, B, C, D, E</td>
<td>C</td>
<td>B</td>
<td>A (Sofia)</td>
<td>A,E</td>
<td></td>
</tr>
<tr>
<td>- District heating distribution system</td>
<td>A, B, C</td>
<td>B, C</td>
<td>B</td>
<td>A (Sofia)</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>- Public (street) lighting</td>
<td>E</td>
<td>A, B</td>
<td>A</td>
<td>A, B, C, E</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>- Power generation system</td>
<td>E</td>
<td>C, E</td>
<td>E</td>
<td>A (Sofia)</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>- Power distribution system</td>
<td>E</td>
<td>C, E</td>
<td>B</td>
<td>B, C, E</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>- Gas distribution system</td>
<td>E</td>
<td>C, E</td>
<td>C</td>
<td>B, C, E</td>
<td>A,E</td>
<td></td>
</tr>
<tr>
<td>- Energy supply system of municipal facilities</td>
<td>A, B</td>
<td>A</td>
<td>B, C, E</td>
<td>A</td>
<td></td>
<td></td>
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</thead>
<tbody>
<tr>
<td>Who is financing the necessary investments to the energy infrastructure components?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(A-Municipality; B-Utility companies; C-State; D-End-users)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- District heating heat sources (heating and/or power plants, boiler houses)</td>
<td>A, B, C, D, E</td>
<td>C</td>
<td>B</td>
<td>A (Sofia)</td>
<td>A,B</td>
<td></td>
</tr>
<tr>
<td>- District heating distribution system</td>
<td>A, B, C</td>
<td>B, C</td>
<td>B</td>
<td>A (Sofia)</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>- Public (street) lighting</td>
<td>E</td>
<td>A, B</td>
<td>A</td>
<td>A, B, C, E</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>- Power generation system</td>
<td>E</td>
<td>C, E</td>
<td>E</td>
<td>A (Sofia)</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>- Power distribution system</td>
<td>E</td>
<td>C, E</td>
<td>B</td>
<td>B, C, E</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>- Gas distribution system</td>
<td>E</td>
<td>C, E</td>
<td>C</td>
<td>B, C, E</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>- Energy supply system of municipal facilities</td>
<td>A, B</td>
<td>A</td>
<td>B, C, E</td>
<td>A</td>
<td></td>
<td></td>
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<th>Hungary</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the sources of the municipality’s budget?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State budget</td>
<td>YES</td>
<td>30%</td>
<td>25%</td>
<td>YES</td>
<td>30-50%</td>
<td></td>
</tr>
<tr>
<td>Local taxes</td>
<td>YES</td>
<td>50%</td>
<td>65%</td>
<td>YES</td>
<td>10-20%</td>
<td></td>
</tr>
<tr>
<td>Revenues from the municipal enterprises</td>
<td>NO</td>
<td>20%</td>
<td>1%</td>
<td>YES</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Other – donations, sponsorships etc.</td>
<td>NO</td>
<td>NO</td>
<td>9%</td>
<td>YES</td>
<td>10-20%</td>
<td></td>
</tr>
<tr>
<td>Questions</td>
<td>Answers</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>-------------------------------------------------------------------------</td>
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</tr>
<tr>
<td><strong>Romania</strong></td>
<td><strong>Czech Republic</strong></td>
<td><strong>Ukraine</strong></td>
<td><strong>Bulgaria</strong></td>
<td><strong>Hungary</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low level of awareness among city officials about energy efficiency</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Suspicions on the part of city officials about working with private companies</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>ESCO financing counts against debt limits set by the government</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Interest rates are too high and ESCOs need to get money from local banks</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Cities are not creditworthy (because tariffs do not cover the cost of energy services provided by cities); and cities cannot provide adequate guarantees or collateral for private companies to be interested.</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>The overall economic and business climate is simply too difficult for an ESCO-type of business</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Cities and/or individual entities – schools, hospitals, heating utilities – cannot keep the energy savings they generate, so there is no incentive for them to work with ESCOs</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Municipal infrastructure is not owned by the cities but by the electric utilities (streetlights) or by Ministries (schools and hospitals) or by regional/national government (heating and water utilities)</td>
<td>2</td>
<td>0 (1)</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Public procurement laws make it difficult to procure ESCO services</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>It is impossible to determine baselines (in part because lack of metering) and develop monitoring and verification schemes.</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Bad experience with less reliable, venture type ESCOs earlier.</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Some general conclusions can be drawn from the answers:

- Even if the concept of ESCO companies or ESCO activity is recognized in the legislation of the majority of the countries no any preferences are granted except for the Czech Republic. However, if Hungary’s situation is considered successful from the ESCO aspect it can be concluded that although the appearance of ESCOs in the legislation can be important it is not indispensable for successful ESCO activity.
- It is almost generally true that no financial or any other form of ESCO support is present in the countries examined. The only exceptions are the Czech Republic, where there is some form of state program to support the ESCOs and Ukraine where some undefined form of support is present. This means that the ESCOs need to work in an almost pure market environment (i.e. they can only be successful if financially attractive projects are available).
- The energy related duties of municipalities also show a relatively uniform picture: the municipalities are typically responsible for district heating, streetlighting, city
buildings and residential energy supply, at least in case of city-owned or managed residential housing. A marked exception is Bulgaria where the municipalities hardly have any energy related duties except for the district heating in Sofia and street lighting. This fact suggests little chance for the ESCOs in the municipal field, although, if Hungary's example at least a little relevant, streetlighting can still present good opportunities.

- The ownership of energy infrastructure shows a more varied picture. However a certain trend can still be identified: the municipalities have no or only minority ownership in the large energy generation and distribution systems such as power generation facilities, power and gas distribution networks. At the same time the district heating infrastructure, often the streetlighting and almost always the municipal facilities (including municipality-owned residential houses), belong fully, or partially to the municipalities.

- The municipalities seem to have most responsibilities in financing projects in the infrastructure they own, i.e. district heating, streetlighting and municipal facilities. (Sofia is exception, here power generation and distribution is also an interesting field from the ESCO aspect.)

- Still a considerable, although mostly not major, part of the municipalities' budget comes from the state. Romania indicates that no revenues are generated from the municipalities' own enterprises. This percentage is rather low in other countries, as well. This may suggest that lack of experience with business-like activity can prevent the municipalities from properly running their energy infrastructure, especially district heating, fully utilizing its business potential. This opens opportunities for professional ESCOs. On the other hand inexperienced municipalities may not be able to handle an ESCO contract in a proper way, either.

- The fact that dependence from the central financing accounts for 20-50% in the municipalities' budgets allows the conclusion that municipalities are rather independent in their financial decisions, which means one barrier less for ESCO activity.

- When looking at the possible barriers to the success of ESCO projects, by far the most important impediment is the poor creditworthiness of the municipalities and/or the lack of guarantees/collateral.

- The general difficulties with the business climate for ESCO projects is identified as the second most important barrier. However this statement is too general to draw concrete conclusions from.

- Two other, more concrete factors were marked as important barriers: the difficulties of determining baselines (mostly in lack of metering) and the financing system of cities/facilities which prevents them from retaining the earned savings.

The above results of the questionnaire survey allow the following conclusions:

1. Little support is available for ESCO companies, i.e. they need to work almost purely on business basis.
2. ESCOs in the surveyed countries can expect most municipal projects in district heating, streetlighting and building services of municipality-owned and run facilities, including residential buildings.
3. If any assistance is planned to foster ESCO projects in these countries, it should address the guarantee/collateral problem in the first place, by, for example, establishing a guarantee fund.
4. Assistance would also be important in developing methodologies of establishing baselines under the special conditions of the individual countries, especially for district heating (supply and demand side) projects, streetlighting and building services projects.

**Municipal Utility Restructuring and Privatization Assessment**

**Introduction**

Before 1990 the Hungarian district heating sector was fully state-owned. Large district heating companies operated with service territories covering 1 to 3 counties.

When the political and economic transition started in 1989 the responsibility of district heating was transferred to the municipalities. Simultaneously, they received the ownership of local district heating infrastructures.

Since the early 1990’s a new phenomenon appeared: privatization. It takes various forms from concession contracts to operational agreements and from outsourcing of selected activities to heat purchase contracts and third party investments into cogeneration projects. The process is accompanied by heated debates, and the views of supporters and opponents of privatization have no tendency to converge.

Hungary is ahead of other former COMECON countries in the privatization process. The lessons learned in Hungary may be relevant and interesting for the municipalities of the region. The present material analyses the privatization process in the district heating sector of Hungary, identifies the lessons, and gives recommendations for MUNEE partners. The analysis starts with a brief overview of the Hungarian district heating sector.

The author of this material is EGI Contracting Engineering Co. Ltd., a consultant and engineer present in the Hungarian energy field since 1948. Before 1990 EGI was the No. 1 developer and designer of district heating schemes in this country. Although after 1990 several other consultants appeared on the market, EGI could still retain many of its former clients. EGI is in a continuous contact with the key players of the district heating sector. When MUNEE requested EGI to collect information on privatization, EGI visited a number of district heating companies, municipalities, ESCOs, and the associations working with district heating. Most of the players were ready to discuss issues of privatization, however, anonymity was requested in most of the cases. Business actors referred to their business interests, and municipalities reminded us of the heated debates privatization was accompanied with. Several cases gave rise to the suspicion of corruption and a number of affairs happened actually on the verge of illegality. We had to accept the wish of the information sources to treat information confidentially. This is why we refer to concrete cities and players only when the information was obtained from public sources.

**District heating in Hungary – the drivers for privatization**
In the forthcoming sections we give a brief overview of the Hungarian district heating sector and identify the main drivers for privatization.

**THE IMPORTANCE OF DISTRICT HEATING IN HUNGARY**

District heating is rather widespread in Hungary. More than 300 systems operate in about 100 cities. About 20 % of the population lives in district heated homes.

All the existing systems were established before the transition. The district heating schemes were originally designed to supply residential, industrial, and institutional customers. In most of the cities many industrial and institutional end-users have disconnected from the district heating infrastructure, while residential customers typically remained connected. Today district heating is considered to be primarily a residential service.

Criticisms about district heating lead in many cities to questioning the sense of maintaining district heating at all. There were attempts to eliminate district heating for example in the cities of Sajószentpéter, Budaörs, and Jászberény. Due to the very high costs of switching to other heat supply methods, the elimination process stopped in all cases. The only exception is Jászberény. In this city the heat source was operated by a local factory, which was privatized in the early 1990’s by Electrolux. In order to get rid of the responsibility of a communal service, Electrolux financed the introduction of individual gas heating.

The majority of studies in Hungary show – except for a few cases – that district heating has no real alternative. Housing estates were designed to use district heating, switching to another kind of heat supply would be costly and the end result would be further from the optimum than the present system. Reasons for this include:

- There is no sufficient gas supply capacity installed at the housing estates
- Flue gases cannot be properly exhausted from the buildings (if individual heat supply for each flat is pursued)
- Home owners do not have sufficient capital resources or credibility
- It is difficult to have a complete agreement of the interested parties
- If central heating is implemented (e.g. by the help of roof-mounted boilers), common heat supply remains, only the community would be smaller (the residents of the building, instead of the total scope of district heating customers)
- It is not reasonable to implement the heat supply control for each homes, as due to the lack of insulation, the heat consumptions would be equalised.

It is important to emphasize that the winding-up of district heating can only be reasonable if the **entire** system will be decommissioned and there will be no more district heating customers. Partial break-aways will only make the situation worse, since a smaller circle of customers have to pay for the same fixed costs. It is generally accepted that in cities where district heating is operated, the most reasonable way is the proper operation of that system.
Compliance with the responsibilities of district heating is a major challenge for the hundred municipalities that have district heating. Their role is controversial. On the one hand as owners of the district heating companies they are interested in smooth and profitable operation, supported by adequately high district heating fees. On the other hand as representatives of the local people they have to keep fees low. It is not easy for the municipalities to balance between these controversial interests. Getting rid of this strange responsibility may be a driver for certain municipalities to go for privatization.

**LEGAL SETTING**

In cities with district heating, the provision and supervision of this community heat supply mode is one of the most important tasks of the relevant municipalities.

In Hungary the XVIII/1998 Act of District heating states directly that the municipality, through authorized organizations, „is obliged to provide the heat supply of residential buildings connected to the district heating network”. It means that the provision of district heating is the responsibility of the municipalities and this responsibility persist, irrespective of what tasks do the municipalities assign to any players.

The Act on district heating has ordinances for reliability of supply and against capital concentrations, which endanger the principle of least cost. It states that a 25% share of a heat supply company can only be sold to a single person or enterprise if the regulating authority gives permission.

According to Act LXV/1990 on Municipalities the ownership of district heating infrastructure was given to the municipalities (local governments). The Act provides that the district heating infrastructure is in the scope of “key municipal property” what means that the ownership of it can only be changed under very strict conditions.

The Act considers public utilities/services as "limited market potential core properties". The Act expects a responsible ownership and management from the municipality side, because they perform a “mandatory public service obligation” by operating these utilities. The legal objective was to prevent the municipalities from using up their core properties.

The municipalities do not only provide district heating, they are also setting the prices. For district heating, as a local service, the municipalities are the price setting authorities.

With respect to privatization the concession regulations are of great importance. The Act XVI/1991 on concession describes that in the operation of local utilities, the municipalities should:

- hold a majority ownership in the business enterprise which is responsible for the operation, or
- the temporary legal right of operation should be transferred to a company based on a concession contract.
This concession transfer has strict requirements and regulations.

The main elements of a concession process regarding district heating are the following:

- the municipality should issue an open call for tenders regarding district heating concession
- the applications are to be assessed by the Board of Representatives
- the maximum length of concession contract with the winning applicant is 35 years
- the party signing the concession contract must establish a concession company
- the obligation of this company would be district heat supply and its legal right is the collection of fees
- the concession company is authorised to use the municipality district heating property but there should be no change in the ownership of core property
- heat supply facilities, which are not considered core property will remain the property of the concession, facilities considered core property would be owned by the municipality.

These elements show that concession has very strict requirements. This may explain the fact that investors try to avoid concession contracts. In Hungary, mainly the enterprises take initiatives toward district heating operation.

**THE BIGGEST PROBLEM: LACK OF INVESTMENT FUNDS**

District heating in most towns is a source of problems. Customers consider it expensive and unable to meet individual needs. On the other hand, the district heating companies think that the fees are too low, and blame the non-paying customers (there is a large amount of unpaid bills) for the problems.

While district heating fees are really high, they look even higher when compared to the price of residential natural gas. District heating is competing with individual gas heating and at the time being the latter seems to be cheaper. It is partly explained by the effort of the governments to keep the price of residential gas (a fundamental commodity) low for political reasons.

The perception of district heating customers that individual gas heating is more cost effective creates a pressure on the district heating market. The customers would like to disconnect and introduce some more individual method of heating. While in most of the cities disconnection is negligible, big cities such as the city of Miskolc are seriously affected by high rates of disconnections. It has to be reminded here that disconnection may initiate the collapse of district heating systems, as the loss of market results in higher service costs, and the higher service costs lead to further shrinkage of the market. Disconnections must be kept within strict limits to avoid collapse.

It is better services at lower prices that can save the district heating systems and their owner municipalities. However, it needs developments, materialized by investments.
As the local governments tend to keep district heating fees low for obvious political reasons, the margins for investments are usually left out. It leads to deterioration of infrastructure and postponement of modernization. Hopes that the state will help the municipalities in addressing the critical problems of district heating are unrealistic. The state is neither able nor ready to allocate funds for this purpose. This way the lack of investment funds is another main driver for privatization in the sector.

ACCESS TO EXPERTISE IN THE DISTRICT HEATING SECTOR

The district heating sector has always been characterized in Hungary by the presence of good expertise. It was not the fault of the Hungarian district heating experts that technically poor systems were constructed. Typically not the expertise but the proper funds were missing.

After the transition many of the municipality-owned district heating companies were unable to retain their good experts. The private sector offered more attractive career chances and many of the experts left. Access to highest level expertise can be one more driver in the district heating sector for privatization.

How is privatization initiated in Hungary?

Privatization of district heating is initiated

a) by the municipalities or
b) by business players.

Municipality-initiated privatization ought to happen according the following steps:

1) The municipality formulates its energy policy in line with its environmental, economic, and social policies.

2) Within the scope of energy policy a district heating policy is developed. It addresses the following fundamental questions:

   • role of district heating in the energy supply of the city
   • comparison with competing heat supply techniques
   • environmental impacts and costs of possible heat supply strategies
   • maintain district heating or eliminate it
   • if maintain, how to improve customer satisfaction
   • how to develop technology / infrastructure
   • what price setting policy to follow.

3) The municipality evaluates the options for the ownership of the district heating infrastructure such as

   • keep 100 % of ownership
• sell minority share
• sell majority share.

4) The municipality evaluates the options for operating the district heating infrastructure such as
   • keep all operational responsibilities within a municipality-owned organisation
   • introduce some form of privatization.

5) If decision is made for privatization, the optimum form is selected.

6) A consultant is hired to assist in the privatization process.

7) A tender document is compiled.

8) An open bidding procedure is organized.

9) The municipality signs a long-term contract with the winner of the tender.

In the early stages privatization affairs were definitely not developed according to the above scheme in Hungary. They were initiated by business players. Private entrepreneurs, Hungarian or foreign owned companies wanted to get their share of the district heating business. The municipalities did not know what privatization was at all. It was the business players who offered arguments for the municipalities supporting privatization. The scope of arguments included the following ones:

• private companies are well capitalized, they are able to implement development projects
• private companies may have better expertise
• with conveying the responsibility of district heating to a private firm, the municipality can “get rid of” this sensitive obligation
• due to better management practices private operators may save costs what may result in lower district heating fees.

Business players typically did not approach the municipalities with open offers. Instead of that they identified persons within the given municipality who than represented the interests of the private player from inside the municipality.

It is always the managements of the municipality-owned district heating companies who are strongly against privatization. They have their arguments, too, such as:

• with a long-term contract the municipality looses the possibility for a long time to affect this important area
• any improvement achieved by the private operator will only increase its profits and produce no benefits for the community
• privatization affairs are always accompanied by corruption
• poor performance of the private operator may adversely affect the level of district heating service.
Ways of privatization

OVERVIEW OF POSSIBILITIES

Several forms of privatization can be observed in the Hungarian district heating sector. We can devide them into the two groups of

a) fundamental privatization and
b) minor privatization.

With fundamental privatization the responsibility of providing heat supply and the right of collecting fees is conveyed to the private operator.

At the same time with minor privatization both the responsibility of heat supply and the right of collecting fees is retained by some municipality-owned organization and the private partner offers less comprehensive services.

Concession and long-term operational contract

According to the Hungarian legal regulations fundamental privatization should take the form of concession. The Concession Law has strict regulations for the concession process (see summary above), including the scope of rights that may be transferred, the eligibility criteria of the concessionaire, the selection process, and the rules the concession companies are obliged to comply with. The whole process has to be organized publicly, and all the bidders have to have equal chances. Legal remedies are available in case of unfair treatment. The Concession Law provides unambiguously that the ownership of key infrastructure, such as the distribution network, may not be transferred to the concessionaire. If, during the concession period, the concessor invests into such infrastructure, the ownership must be immediately given to the municipality.

Because of these strict rules, the private players did their best to avoid concessions, at least in the early period of privatization. They introduced the idea of “long-term operational contracts”. Eight to ten such contracts were signed in the mid-nineties. These contracts included more or less the same rights and obligations a concession contract would have contained. However, the owners of such operational contracts were not selected in an open procedure, and these contracts typically did not contain effective provisions for protecting the ownership of the municipality over the key infrastructure.

The critical issue: what is going to happen to the district heating property? From the legal regulations it is evident that the municipality may not transfer the property rights to any private company. In transferring the operation rights only the use of property is handed over. The basic interest of the municipality is that the company would manage and maintain the adequate technical conditions of the district heating hardware. When the contract term is over, the district heating property should be handed back to the municipality in conditions that are not worse that it was at the time of handover.
The provisions of the concession law should be applied regarding new property items acquired during the validity of the operation contract. If the new item is essentially needed for the operation of heat supply system, then it should be considered part of the core property. For example, in the eighth operation year of a 20-year contract, part of the main pipeline is to be replaced, then this new section of the pipeline is to be handed over to the municipality. The municipality must possess all items of property at all times, which are necessary for fulfilling its public service obligation.

The situation is different when the company installs equipment, which can be considered additional to the core property. In this case the ownership would remain at the company. For example, if the company installs a gas engine beside the existing boilers to improve efficiency of heat supply, this would rightly be called profit-making investment, outside the scope of basic service, since district heating can be operated without a gas engine, too.

By signing the operation contract, the function of the original heat supply company is changed. Its operation responsibility is over but its property management function remains. During the negotiation of the operation contract, it has to be decided what would happen to the depreciation value accountable on the property. One of the solutions would be to use the depreciation for supplementary procurements. Another way of agreement is when the depreciation and the property usage fee are combined and used for procurements by the property manager.

Another solution would be when the owner disclaims depreciation, but expects the operator to make the necessary supplementary investments. This would be a dangerous situation for the municipality: some basic components needed for heat supply would be activated at the company, and at the end of a long-term operation contract, core property rights may be lost.

Considering the fact that the revenues of the operating company come from district heating fees and charges, it is imperative to make the prices and their changes fixed. For this purpose, escalation formulas need to be established. These would specify the changing of fixed and variable fee items during the contractual period, depending on inflation and regulatory price modifications.

In the operation contract it must be clarified whether the municipality intends to get money from district heating (as property usage fee). Another question whether the municipality would expect „mandatory” investment from the operating company. If yes, then the scope or the minimum amount of investments need to be specified. The unpaid assets and debits are also to be negotiated.

The private entrepreneurs developed tricky business structures to take control over smaller or larger district heating schemes. A typical business structure they applied was the establishment of low capital joint ventures with the municipalities. The private investor had minority share in the joint venture, such as 49%, while the municipality had 51%. The private player invested some cash money (not much because the joint venture was a low capital one), and the municipality put in certain rights or infrastructure assets. The managerial rights were given to the private player. The joint venture leased the main infrastructure from the municipality, operated the district heating system, and collected the fees. With having the managerial rights the private
player got control over a wide play-field. The private player had the right to decide about investments, procurements, staff changes, and honorarium of board members. While management rights were taken over by the private player, simultaneously, the district heating related expertise disappeared from the municipality. There was no sense and no possibility to employ expensive district heating experts. The lack of expertise on the side of the municipality made it hopeless to supervise the privatized company.

Such “tricky” privatization techniques could not have been applied without the active help of key persons within the municipalities. The private players found their collaborators who could be vice mayors, heads of department in the local government, or technical directors in the municipality-owned district heating organisation. No reliable information has been published on how these collaborators were convinced by the private players.

Experience suggests that the private players did not have to have a large number of collaborators. One or two properly positioned collaborators could do the job. The private players with the assistance of their in-municipality collaborators intentionally overcomplicated the documents of the privatization affair. It was done so to make impossible for the members of the decision making bodies to overview the affairs and come to right conclusions. In the privatization affair of a big city in Hungary the privatization proposal prepared for the local government took the form of a 300 page document including a set of interrelated contracts and agreement. Only very well educated lawyers or district heating experts could have understood it.

In another privatization affair the idea of long-term operational contract was introduced by an “independent” study about the financial performance of the municipality-owned district heating organisation (see case study below). The study analysed the financial situation in a detailed manner (200 pages), identified serious problems, than suddenly named long-term operational contract as the perfect remedy. Two weeks later a private player, without being requested to do so, submitted an operational offer for the municipality. It is obvious that the private player cooperated with the author of the independent financial expert. Later it turned out, too, that the poor financial performance of the municipality-owned district heating organisation was caused by the delayed action of the local government to raise district heating fees according to the change of natural gas price. It means that the in-municipality assistants of the private player intentionally deteriorated the financial position of the district heating organization in order to make privatization desirable.

Forms of minor privatization

Within the limitations described in the legislation section, the municipality can sell a certain part of its own heat supply company. It may be reasoned by the intention of acquiring a cash income. Another reason may be getting rid of the unpleasant tasks of district heating operation. Collecting the seemingly high fees, dealing with non-paying customers, concerns about infrastructure motivates more and more municipalities to transfer these responsibilities to others, mainly external enterprises.

It must be emphasized again that the privatization of heat supply companies does not release the municipality from its supply obligations stated in the law.
The investors' point of view should also be considered. They anticipate revenues after their capital investments (except for rare cases when the investors have special strategic interests). Normally, these revenues come from the profit of the heat supply company, in which they have ownership (revenues are proportional to the ownership). The profitability of Hungarian district heating companies are rarely attractive to investors. Profits would hardly exceed 2-3%, contrary to the 10-15% what the investors normally expect. In this situation, the municipalities initiating the privatization are offering special benefits, which are supposed to make the investment attractive, even with low or no profitability. These special benefits may include:

- the entire profit (not only the proportional profit) would go to the investor
- transferring the management and supervisory rights
- ensuring a steady profit
- priority in development affecting heat supply (e.g. cogeneration)
- marketability of properties, which will becomes available as a result of modernisation (e.g. by the reconstruction of large substations, valuable downtown properties can be sold).

There have been only a couple of cases in Hungary so far in which investors purchased minority ownership of district heating companies. The biggest case is the city of Pécs, where an American-Hungarian company called Pannonpower acquired the minority ownership of the local district heating company PÉTÁV Rt. In the city of Kiskunhalas a company which used to have the operational rights of the local district heating system appeared as minority owner.

The principle of minor privatization includes the involvement of private companies in

- generation of heat
- maintenance
- accounting
- reading cost allocators, etc.

There are dozens of cases in Hungary in which private companies invested into cogeneration facilities, which supply heat for district heating schemes. The typical arrangement is characterized by the following points:

- the district heating company selects the heat supplier through an open tender procedure
- a long-term contract is signed with the selected investor
- the price of supplied heat is lower than the cost of own heat generation by the district heating company
- the district heating company commits itself to buy at least a fixed amount of heat annually
- the price is indexed according to the change of gas price.

As for the price the risk of changes in electricity buy-back prices can be born either by the investor or by the district heating company. Of course, the price of heat is different according to the selected arrangement.
Selected privatization cases

1. In a large Hungarian city 41% of the homes are district heated. The big municipality owned district heating company had a heat sales of 1500 TJ in average per year. Heat generation is purely based on natural gas. There are more than 20 independent district heating systems with heat only boilers in the city.

For several years the municipality had been reluctant to follow the price increase of natural gas due to social considerations. Even when they decided on increasing the price of district heat, because of the slowness of the municipal bureaucracy it became effective only 3-4 months later than the usual 1 January gas price increase. This meant that during the coldest months of the heating season the district heating company had to sell heat at lower prices, while buying natural gas more expensively.

Years of operation under such conditions put the district heating company in very difficult financial situation. The owner, the municipality invited a financial consultant to prepare a study and make recommendations. The expensive, more than 100 page report of the consultant revealed the (already well-known) fact that the district heating company is making a loss. In the final pages of the report the consultant recommended that the company should be privatized or its operational rights should be transferred to some private enterprise.

Surprisingly only two weeks after the submission of the consultant’s report the municipality received a detailed offer from an entrepreneur for the operation of the district heating system. It was discussed by the Assembly of Representatives and almost accepted when the opposition in the Assembly initiated a local scandal on the grounds that it is against the city’s interest not to tender such a large project but to choose the first private company.

Following the scandal an invitation type tender was issued by the city, which was won by the company, who originally submitted the first offer although it could not be proven that their bid offered the most advantages for the city. Further to the tendering procedure a contract was signed between the private company and the city, in which the company promised large-scale investments in the district heating system.

Since the contract the private company has been running the city’s district heating systems. Although several technical improvements has been made. (small scale cogeneration was implemented in many boiler houses) it was not done by the originally promised investments of the company but by inviting ESCO companies to implement the projects. This leads to gradual decreasing of importance of city assets in district heating.

2. In a city of around 40,000 inhabitants the district heating company is responsible for supplying heat to 40% of the homes with an annual heat sales of 450 TJ. The municipality issued a tender for the operation of the district heating company.
Because of some points of the tendering procedure that they found obscure, one of the bidders who lost the tender sued the municipality.

The first forum of arbitration, the county court ruled that the contract for the operation of the district heating company and the transfer of operational rights in the city and also in a general sense is against the law because it is actually a concession agreement without meeting the criteria of the legislation on concession. The law on concession includes several tools for the protection of interests of the municipalities, which were omitted from the contract. Following the decision of the court the negotiations on similar contracts stopped in Hungary altogether.

3. In a city of 28,000 inhabitants only 7% of the homes are district heated. Heat supply is partially based on the utilization of geothermal energy. The district heating infrastructure (pipes, substations, boilers) were in a rather bad technical condition because maintenance had been neglected for several years. The municipality, lacking the funds for the necessary reconstruction decided to involve private capital by issuing a tender for the concession of district heating. Learning from the example of the city in the previous case study the municipality invited a professional consultant to assist in the tendering procedure.

The tendering procedure strictly followed the requirements of the concession law. It was open for any bidders and the evaluation criteria were clear and set already in the tender document. The evaluation followed the set criteria and all bidders approved their own evaluation document in writing. Due to the correct procedure none of the 4 bidders went to court or expressed their dissatisfaction in any way. The winner has implemented several reconstruction measures since and has been running the system successfully.

Lessons learned

The experience (conflicts and scandals) gained in the privatization of Hungarian public utilities can offer some good lessons to be learned. Some lessons that are relevant for district heating are listed below.

1. First and foremost, privatization is to have sufficient publicity and a consensus of political groups within the municipality. The time span of privatization and operation contracts is much longer than the municipality’s mandate. If the contract is based on a wide political agreement, future conflicts and scandals can be avoided.

2. In a proper procedure, the municipality itself (rather than external advisor) should elaborate the concept for privatization.

3. If there is an area where corruption should be avoided, it is certainly public utility privatization. These utilities have big financial value and large annual revenues. For the potential companies, making some municipal officials „interested” is a negligible expense. Therefore, during district heating privatization efforts, a whole scale of anti-corruption measures must be taken to avoid a contract, which would then be disadvantageous for the community.
4. The enterprise is to be chosen in an open tender procedure and attention is to be paid to ensure an objective and impartial decision on selection. An essential requirement of the privatization is a precise and adequate specification and a professional evaluation of applications. It is useful to publish the evaluation criteria and get the evaluation of the proposals approved by the bidders themselves.

5. If the municipality does not consider itself competent to handle the process of privatization, it should not start it at all. The issue can be reconsidered later, but a wrong contract can only be changed after 15 to 20 years.

6. It is imperative that a wide circle of decision-makers can understand and comprehend the issue at stake. It should be required from the applicants to submit a clear and comprehensive offer and contract. It is unacceptable that only a few people would understand the documents that were intentionally made difficult.

7. After the privatization is over, there should be enough commitment and expertise within the municipality to follow-up the enforcement of the privatization contract.

**Recommendations for the municipalities of the region**

Based on the above considerations the following recommendations can be made for the municipalities of the region:

A. Do not initiate privatization without a clear district heating strategy.

B. Start privatization only if there is an agreement of the political forces about the necessity and practicality of it.

C. Do not privatize if there are major doubts about it, or if a consensus cannot be reached about it within the local government, or if the municipality does not have the capabilities to firmly supervise the process.

D. Privatization shall be managed by a public process.

E. Be sure that the selection is absolutely fair.

F. Be sure that corruption is not biasing the selection process.

G. Even if the responsibility of operating the district heating system is conveyed to a private firm, maintain enough expertise within the municipality to be able to follow the compliance with the signed privatization contract.