

**ANTIMONOPOLY OFFICE  
OF THE SLOVAK REPUBLIC**

**Functioning of heat energy sector in Slovakia  
focusing on DH systems from the AMO point of view**

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## Terms and Abbreviations

<b>DH/DHS</b>	district heating/district heating system
<b>EST</b>	exchange station
<b>CEST</b>	compact exchange station
<b>CU</b>	cogeneration unit
<b>CHP</b>	combined heat and power
<b>ME</b>	Ministry of Economy of the Slovak Republic
<b>AMO</b>	Antimonopoly Office of the Slovak Republic
<b>SIEA</b>	Slovak Innovation and Energy Agency
<b>RONI</b>	Regulatory Office for Network Industries
<b>SO</b>	Statistical Office of the Slovak Republic
<b>EU</b>	European Union

## Heat energy units

<b>TJ, GJ</b>	tera-joul ( $10^{12}$ joules), giga-joul ( $10^9$ joules)
<b>kW</b>	kilowatt
<b>kWh, GWh, MWh</b>	kilowatt-hour, gigawatt-hour, megawatt-hour

## Introduction

Apart from other activities of the Antimonopoly Office of the Slovak Republic (hereinafter only the „Office“ or the „AMO“), the Office monitors functioning of the industries that face up against certain competition problems. It may refer to sectors where the competition is not sufficiently developed and new players experience difficulties when entering the market or where the concerns of the market participants and market functioning inefficiencies arise from the long-term systematic problems.

**Heat energy sector** in Slovakia with its specific features does not belong to the energy industries where the liberalization processes took place. It is also characterized by local so called **district heating systems or centralised heat supply systems** (hereinafter as „DH systems“ or „DHS“), operated mainly by undertakings in monopoly or almost monopoly position within certain geographical territory. This kind of market structure predetermines possible existence of problems in relation to the final consumers. The Office decided on a closer investigation of the situation in this area as the heat constitutes one of the primary consumer needs and repeated complaints pointed out possible violation of competition rules and various structural deficiencies. Mentioned facts gradually brought up the need for a complex view and necessity to deal with problems in a co-operation with other competent state authorities.

This document had been compiled within the period of years 2011 – 2013 and contains brief description of the situation in the heat energy market in Slovakia based on general characteristics and principles of functioning of this sector focusing especially on DH systems. The document also summarizes problematic facts that lead to long-term dissatisfaction of heat consumers and often to non-systematic disconnections from the existing DH networks. This may eventually have negative impacts on heat consumers and even endanger the existence of potentially effective DH systems. Aim of this document is to inform related state authorities, local self-government authorities and other market participants about the AMO's experience in a given sector and about the way of evaluation of the respective facts from the competition point of view. In conclusion remarks the Office introduces some suggestions on how to improve the situation, but above all highlights the need for broad discussion on the topic.

Draft version of the document was finally commented on by the representatives of the Ministry of Economy of the Slovak Republic, the Regulatory Office for Network Industries, the Slovak Innovation and Energy Agency, the Association of the Slovak Towns and Municipalities, The Slovak Association of Heat Producers and the Association of Flat Owners in Slovakia.

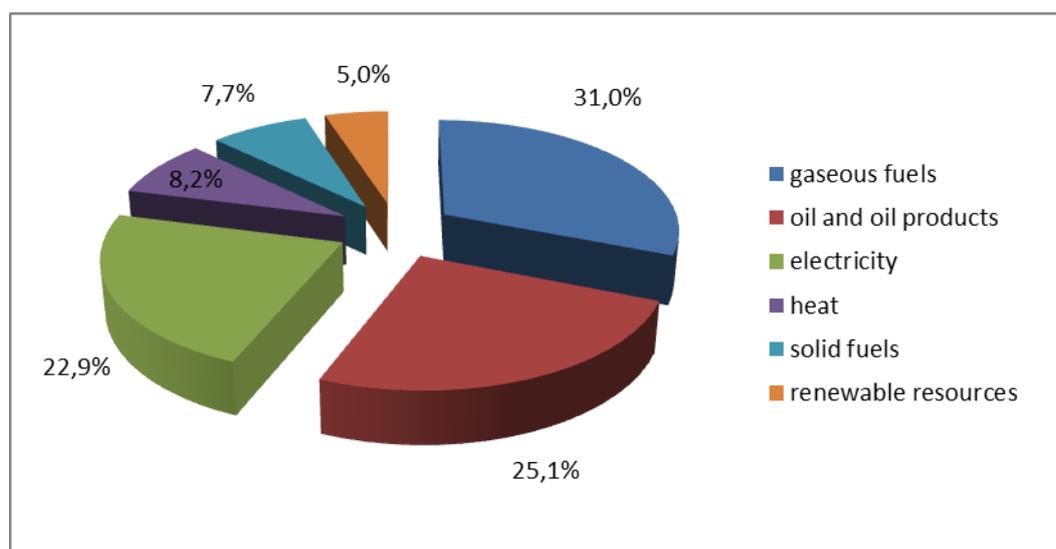
# 1. Heat energy sector

Heat industry in Slovakia was set up in the first half of 20<sup>th</sup> century as the collateral activity of electricity industry with the aim to increase its production profitability. After certain development it reached the position of independent sector and also the first heat legislation was adopted in 50s.<sup>1</sup>

Within the industry processes the heat is rather a component of other products production or it is a by-product in industrial production and energy production. Production and supply of heat as the final product has, however, important local meaning in supplying the population with heat and hot water.<sup>2</sup> Hence, the heat energy sector is the sector which is important mainly from the social point of view – it ensures the basic needs for everyday life. Increased attention is therefore generally paid to heat supply provision guarantee for the Slovak population.

Graph 1 shows the shares of particular energy sectors in end energy consumption<sup>3</sup> in Slovakia. According to the statistical data, despite its importance, the heat consumption represents only 8,2% compared to the consumption of other sources of energy.

**Graph 1: Share of energy resources in end energy consumption in SR in 2011 in TJ**



**Source:** Compiled by the AMO based on the SO data (Slovstat)

According to the valid Slovak legislation the heat production constitutes physical and chemical processes in heat production facilities that produce heat as a final product used for heating or preparation of domestic hot water or for other heat

<sup>1</sup> Hallon, Ľ.: Heat industry arouse as secondary activity of power plants, 2004 <http://hnonline.sk/ekonomika/c1-21682345-teplarenstvo-vzniklo-ako-vedlajsia-cinnost-elektrarni> (13.6.2013)

<sup>2</sup> According to the statistical data of the SO SR the heat supplied from heating plants to third subjects constitutes only 13 – 14% from the total annual heat production in Slovakia (around 300 000 TJ).

<sup>3</sup> **End energy consumption** is the difference between the end consumption and the end non-energy consumption. **End non-energy consumption** is represented by energy products used as raw materials in various industries, which means that they are not consumed as a fuel or are not transformed into other kinds of fuel.

or energy use. Considering the topic and focus of this document in the following sections the Office will deal only with that part of heat-power industry referring to the production, distribution and supply of heat and its end use as a means for heating and hot water.

## 2. System of the heat and hot water supply

Despite certain similarities with other energy sectors, the heat as a commodity cannot be in normal conditions traded between countries. Due to considerable heat losses within its transmission and distribution it could not be traded between the networks existing in smaller territories either.

Heat and hot water consumers, including households, public facilities (hospitals, schools, culture centres), commercial sphere, services and industrial undertakings/zones are generally supplied by heat in a form of:

- i) **decentralised heat production source** – heat produced and distributed from energy production facilities of undertakings or individual domestic boilers producing heat only for their own consumption
- ii) **centralised heat production source** – larger production facilities such as heating plants, local heating facilities and central boiler houses supplying heat to more than one object through the heating networks.

The overall nature, structure and system of the heat and hot water supply in a particular geographical area depends on various factors that include climate and territory, historical development, demographical conditions and administration, nature of housing, commercial and industrial building planning, economic activities or availability of fuel resources for heat production.

Based on aforementioned factors different structure of heat supply system can be found in each larger town or city. Each particular system is at the same time characterised by its own structure of heat production facilities. These constitute both buildings and technologies for heat production and for adjustment of heat properties as well as distribution networks and pipelines transporting heat and hot water to the transformation plants and consequently to final consumers.

One of the important factors determining the nature of local economy is the availability and utilization of energy sources for heat production. Generally, we divide these into fossil – non-renewable sources of energy (gas, coal, oil products) and renewable sources of energy (biomass, geothermal energy, solar energy, municipal waste) the importance and public support of which have significantly increased recently although in case of individual decentralised heating the fossil fuels still dominate. Renewable sources of energy are used mainly for heat production in large producing plants where they can be used more effectively either independently or as a part of general energy mix.

Currently there are 138 towns and 2890<sup>4</sup> municipalities in Slovakia. In villages where the family houses predominate the heat is supplied mainly by individual heating facilities which are not mutually interconnected and do not represent more

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<sup>4</sup> Source: Statistical Office of the Slovak Republic

complicated heating systems being subject to this document. On the other hand the functioning of centralised systems of heat production, distribution and supply, already labelled as DH systems, occurring in various size and structure in all towns and bigger municipalities is becoming increasingly problematic. As it was mentioned in introductory part of this document the Office focused its investigation work just on this part of heat industry.

### 3. Characteristics of DH systems

Within the EU member states the heat supply from DH systems represents approximately 10% of total demand serving around 64 million consumers per day. Concerning the Central and Eastern European countries DH systems supply around 40 million inhabitants which means an average of 37% of the total population.<sup>5</sup> In historical view also Slovakia belongs to the countries with extensive number of centralised heat supply systems.

Among the advantages of DH systems generally declared these are the most relevant:

- higher energy efficiency due to the higher efficiency of production facilities,
- creation of appropriate conditions for cogeneration (combined heat and power production),
- higher control and opportunities to decrease emissions,
- broader use of renewable sources of energy and secondary sources of energy (e.g. municipal waste).

The disadvantages of DH systems may be generally represented by:

- high investment intensity and running costs,
- heat losses in distribution networks,
- more complicated measurements, regulation and management,
- lower flexibility in case of changes in level of heat consumption.

As regards the processes the heat is produced in thermal plants or other production facilities by transformation to certain heat medium first (for example steam or hot water) and in this form it is further distributed through distribution networks to the particular consumer. In the case of DH system this procedure is quite more complicated. Heat medium crosses first the primary (main) transmission pipelines and goes to the heat exchangers. Here it is modified to achieve required qualities (chemical modification, cooling) and just afterwards it is transmitted through secondary distribution pipes to consumers in the form of heat used for central heating or in a form of domestic hot water.

In reality the DH systems constitute a complex system operating in a certain territory which is always characterised by production facility, technical devices and distribution pipelines leading to particular heated objects in a given locality. As regards the undertakings operating the local DH system these could be divided according to the level they are active on. Here we talk about production, distribution and heat supply level. Heat supplier may be either a producer simultaneously

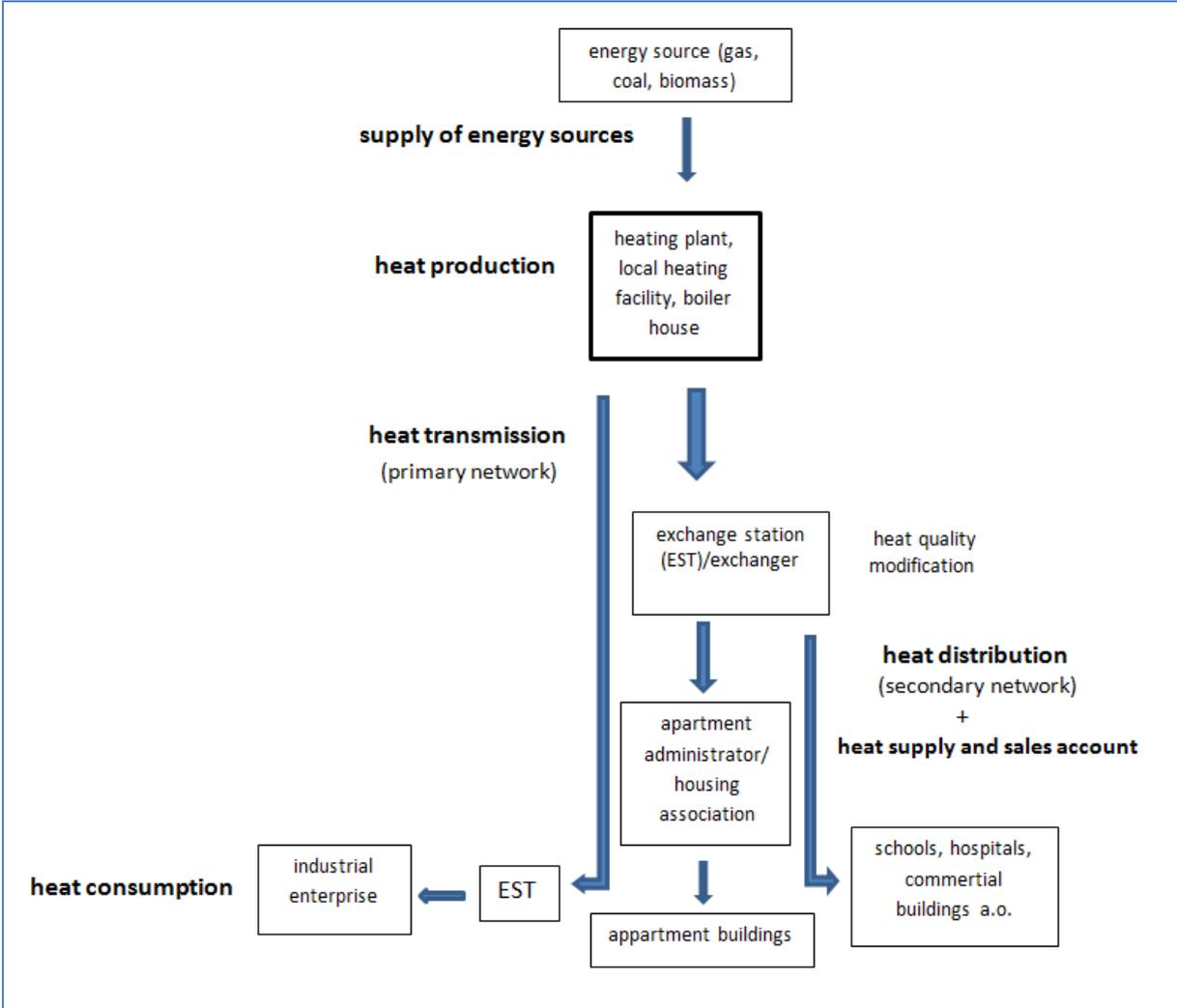
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<sup>5</sup> KPMG Report, Central and Eastern European District Heating Outlook, 2009, page 7

operating the primary and secondary heat distribution facilities or an undertaking solely distributing and billing the amount of heat purchased from the producer to the particular end users. In that case the undertaking mostly operates only the secondary distribution network and supplies the heat.

Structure of a concrete DH system will be given by specific local conditions and influenced by the factors characteristic for a concrete territory. Scheme 1 shows the example of a DH system functioning concerning the whole possible structure and processes.

**Scheme 1: Structure and processes within a DH system**



Source: the AMO

### 3.1 DH systems as natural monopolies

On one hand, the local DH systems have the features of a network industry which presumes the need for complex physical network interconnections between the consumers. On the other hand, a lot of DH systems operate usually on the principles of natural monopoly which presumes that one firm is able to produce the same amount of a product at lower unit costs compared to the situation where the product

would be produced by two or more companies. Network industries with natural monopolies are also characterised by high input costs. To achieve the economies of scale it is therefore not effective to build parallel networks and facilities close to the already existing ones. Electricity, gas or telecommunication industries are the examples of typical network industries where natural monopolies operate at certain levels.

As regards the heating sector natural monopoly position of DH systems is given mainly by existence of distribution networks. Compared to electricity or gas distribution the distribution of heat and hot water in DH systems is special due to the substantial heat losses. Distribution network may therefore serve only to the consumers located in restricted distance from the production source. It depends on conditions and size of a particular DH system whether the features of natural monopoly could be seen already at the level of heat production. However, if the producer is the owner of a distribution network, he is also the only one having the access to this network and he is at the same time the only end supplier in a given territory the whole DH system could be considered as natural monopoly.

At this point it is also necessary to mention, that a long-term and stable consumer base is very important in order to recover the financial resources invested in the construction of a DH systems. The more consumers are connected to a heating system and its facilities, the more efficiently it operates.

In spite of the presumptions for more effective production, the existence of natural monopolies lead to creation of monopoly structure and a strong market power of the subject in question. Thus there is also a space for charging prices which are higher than prices that would be charged in a fully competitive market operated by more companies.

To decrease the risk of possible inefficiencies the state regulation is usually introduced in these markets. For example, price regulation of products and services provided to end customers is introduced with the aim to prevent the charging of excessive prices. Adoption of rules for third parties access to the network and regulation of tariffs for entry can be also introduced if the structure of particular local market allows some degree of liberalization, for example at the level of production, and the natural monopoly remains at the level of distribution network. Discrimination by the network operator is thus prevented. Proper and effective regulation measures are, however, important in this respect.

### ***3.2 Option for competition within DH sector***

In theory some level of competition within the DH sector could be achieved in following examples:

#### **Competition at the level of fuel sources for heat production**

Heat producers or consumers may choose the energy source from which the heat will be produced. Regarding the used technology and production facilities, gas, coal and electricity are used in Slovakia the most. Recently renewable sources of energy are preferred and used more intensively. Once the producer decides on the

type of energy source, he may consequently choose from more suppliers. Replacement of the chosen production technology is, however, usually very costly. This constitutes a kind of barrier when there is a need for changing the original energy source (e.g. in case of the general price increase within concrete energy markets).

#### Competition at the level of heat production

Here we talk about competition between the heat producers that are technically capable of supplying the end consumers in given geographical area and among which the consumers may choose. Development of this kind of competition is also conditioned by vertical unbundling of economic activities at the level of production and heat distribution and by introduction of regulated third party access to the distribution networks to prevent possible discrimination.

#### Competition for the market

Competition for a market is a special category from the competition point of view. It constitutes the situation where an undertaking “wins” the market, or just part of it, through participation in a tender. In our case, it is the situation where the rivals compete for the right to provide services in a given area either through purchase or a lease of the relevant heating facilities. The winner of the tender provides contracted services in the given territory for certain period of time independently. Contracts usually occur in various forms (certificate, licence, lease contract) and at the expiration period of a contract new tender is announced and the competition for the same market is repeated. Problems may occur if the heating infrastructure is leased to private companies for excessively long periods. On one hand the long-term contracts guarantee the recoupment of investments, on the other hand third parties might be prevented from the access to the networks and thus positive development of competitive environment in a given area may be restricted. Appropriate length of the contracts needs to be therefore assessed individually case by case, adjusted to a particular DH system and it should reflect the real revitalisation costs. The conditions of the contracts should be set in such a manner that the lessor will be able to terminate the contract in reasonable time and under reasonable conditions if the services are not provided in a transparent and effective way.

Opening the originally regulated markets to competitors, should be, however, well reconsidered by the state institutions, mainly in such a sensitive sector as heating sector is. Inadequate political decisions may weaken the position of local heating systems or even jeopardise their existence. Hence complex evaluation of costs and possible risks is necessary. On the other hand also a long-term political protection of monopoly DH systems without asserting systematic measures may result in their lower competitiveness and flexibility as well as insufficient ability to react to possible market changes. In the end, it may lead to lower quality of services and higher prices for consumers.

### **3.3 Alternatives to original DH systems**

Functioning of DH systems is characterized not only by the high input costs of construction but also by significant switching costs related to changing the heat production source. If a customer is forced to purchase heat from the existing DH

system already from the beginning (for example by purchasing a flat in an apartment house connected to DH system), it would be too costly for this consumer to change the monopoly supplier and to disconnect from the system. Customer remains “locked - in” such a system. In spite of the above mentioned facts in praxis such changes occur whether they are effective or not (e.g. due to the wrong or inefficient evaluation of the switching costs and investments).

The most common and the most frequently used alternative is construction of small central boiler rooms or even individual heating facilities installed directly in the flats. Even if this kind of heat and hot water supplies alternative would not be from the competition point of view probably considered as a perfect substitute to DH supplies, construction of these small heat production facilities may affect the functioning and behaviour of large DH system operators, mainly in the view of costs of production and final price for heat.

Rate of disconnection from DH systems or the effort of consumers to build a new individual production source depends on various factors. Based on the Office’s experience these are the main ones:

- i) actual inefficiency of heat production and the level of unit price for heat,
- ii) low quality of provided services and a supplier’s bad attitude towards the consumers as its customers,
- iii) accessibility to new technologies and the level of possible switching costs to change the heat production source,
- iv) development in price levels for fuel /sources of energy for heat production,
- v) intensity of lobbying activities of certain interest groups (e.g. boiler producers and investors).

Also changes in the structure of existing heating systems may to some extent represent an alternative to the original ones. At the heat production level the change is possible through cogeneration plants construction or through the replacement of several old production facilities for one effective facility as well as the establishment of heat production from renewable sources of energy.

Currently, also construction of huge gas-steam power plants could be considered as an alternative. These are apart from the electricity production able to cover and substitute the heat supply from more outdated production facilities in a pertinent region. However, realisation of the connection and the access of such a new source of heat production to the existing networks may represent an important barrier or a cost item.

## **4. DH systems in Slovakia**

The extension of central heating systems into smaller towns within Slovakia was a part of heat industry development in the 60s-80s of the last century. Gradually the DH systems became the main sources of heat supply for municipal inhabitants and for public and commercial sector as well. To the present day district heating still covers approximately 80% of residential heat supply.

By the beginning of the 90s all of the heat production facilities were owned by the state. After this period most of them got under administration of municipalities. A lot of them in a poor physical condition, though. In many cases it was therefore necessary to ensure financial resources and provide extensive investments to reach satisfactory functioning of the systems and standard quality of heat supply. Due to the limited budgets of municipalities the realisation of long-term investments in some regions has been postponed without setting a date.

Factors and new trends which influenced the existence and functioning of heat industry in Slovakia during the 1990s were the following:

- privatisation and change to market economy from technological, economic and legislative point of view,
- cogeneration,
- fulfilment of obligations set up by the new national legislation and regulation measures for heat producers and suppliers
- transposition of European legislation particularly related to the area of environmental policy (mainly provisions to reduce the level of emissions),
- more intensive utilization of renewable sources of energy within the heat production,
- revitalisation processes on consumers' side (windows replacement, thermal insulation of buildings, hydraulic balancing of heating systems, production of more efficient electrical appliances, restoration of residential heat distribution network, etc.).

#### **4.1 Basic data on the Slovak DH systems functioning**

According to the official data DH systems in Slovakia cover around 50% of the total heat consumption<sup>6</sup> whereby the production in heating plants with combined heat and power production prevails. The rest of the supply is provided by local or district production facilities with their own heat distribution networks within the particular geographical area.

Graph 2 shows the shares of non-energetic sectors on the heat consumption in Slovakia. The highest long-term amount of total heat production from heating plants and heating devices is consumed by households (around 44% in 2011), it is followed by commercial sector and services (around 19%) and by industry, agriculture and traffic (16% together).<sup>7</sup> It could be also seen from the graph that the total heat consumption per year is decreasing significantly in a given period of time and that it is influenced mainly by reduction in heat consumption within households. According to the last analyses of the Slovak Innovation and Energy Agency and the Ministry of Economy of the Slovak Republic (hereinafter only as the „SIEA“ and the „ME“) the assumptions exist that this trend will continue.<sup>8</sup> Rate of consumption in other consumer categories remains more or less stable and differences are not that remarkable.

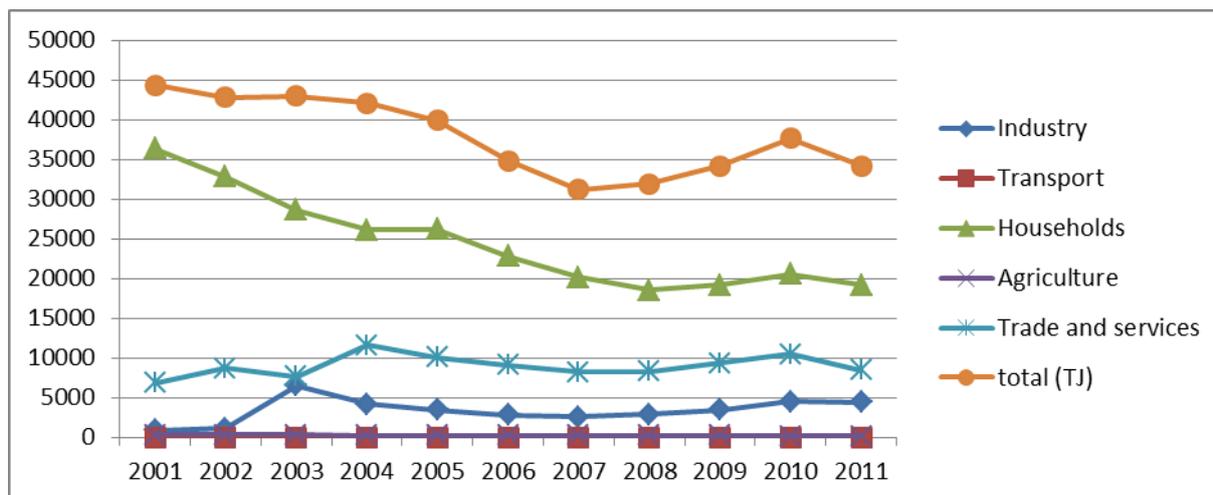
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<sup>6</sup> Presentation of ME SR within the 20<sup>th</sup> international conference 2012: Heating 2012: „Basic Aims of the Proposal of Energetic Policy in Heat Energy Industry' and Pertinent Legislation“

<sup>7</sup> Processed according to the data of the SO, publication „Energy industry 2011“, Scheme n. 4-5-3, p.143.

<sup>8</sup> [http://www.stavebne-forum.sk/events2011/prezentacie/11232011\\_keher\\_2.pdf](http://www.stavebne-forum.sk/events2011/prezentacie/11232011_keher_2.pdf) (21.6.2013)

**Graph 1: Heat consumption trends within the non-energetic sectors (in TJ)**



**Source:** Compiled by the AMO according to the data of the SO and the ME

Regarding the types of energy sources used for heat production the production from gas dominates and it is followed by production from coal and various kinds of heating oil. In the last years, however, the fossil fuels are being gradually replaced by renewable sources of energy, out of which biomass is the most important. The extent and possibility of renewable energy use within the heat production depends on the kind of particular production facility and technology. Concerning the largest heating plants, solid fossil fuels still prevail. Even in local central boiler houses the share of heat production from gas still represents more than 86%.<sup>9</sup>

Approximately 340 undertakings operate in Slovakia at the level of heat production and heat supply. In some cities with the huge heat production plants these two levels are vertically separated and operated individually by two or more independent undertakings (e.g. Košice, Prievidza, the city of Bratislava in some of its boroughs). However in majority of smaller towns and municipalities the whole DH systems are operated completely by one single undertaking.

We can find several forms of ownership within the DH sector in Slovakia. The systems are owned either by state, municipalities, private subjects or there is a kind of mixed ownership. Selling the towns' facilities or granting a long-term lease to a private company usually occurs if a municipality is no longer able to provide revitalization and operation of a local DH system by its own means. Change of the ownership or transfer of the rights is usually achieved through the announcement of public tenders and through competition for the market as stated in theoretical part 3.2 of this document.

Except for the heating companies in ownership of municipalities and 6 state-owned heating plants in Bratislava, Košice, Žilina, Trnava, Zvolen and Martin, the companies Dalkia, a.s., Stefe SK, a.s., GGE, a.s. and VNG Slovakia, spol. s r.o.

<sup>9</sup> Presentation of ME SR within the 20<sup>th</sup> international conference 2012: Heating 2012: „Basic Aims of the Proposal of Energetic Policy in Heat Energy Industry and Pertinent Legislation“

belong to the most important private players in Slovakia. French energy concern GdF Suez has become another strong player recently when acquiring several minor Slovak companies, one of which was the third biggest company in heating sector - Cofely, a.s.<sup>10</sup>. Sometimes even more of the above mentioned players operate in one city. This occurs mainly in regions with numerous boroughs and heating circuits.

## **4.2 State policy within the area of DH systems in Slovakia**

Energy Policy of the Slovak Republic approved by the ME is the basic document related to the development of the energy industry in Slovakia. From the long-term perspective this document should define presumptions for effective operation of individual energy sectors and set up the main goals and necessary measures for the planned results to be achieved. Functioning of heating sector is a part of this document.

As the heating sector is regulated in Slovakia, the rules concerning this area are further specified mainly in the Act No. 657/2004 Coll. on Thermal Energy Sector in recent wording (hereinafter only "Act on Thermal Energy"). Transparency and reasonability of the prices for the heat consumers is ensured by the Act. No. 250/2012 Coll. on Regulation in Network Industries (hereinafter only „Regulation Act“) and related secondary legislation acts (e.g. regulations and guidelines on the above stated laws). Regulatory Office for Network Industries (hereinafter as „RONI“) or State Energy Inspection are the national surveillance bodies.

At the local level, meaning at the level of municipalities, a document called Conception of development within the heating sector (hereinafter as „Conception“) is the most important and the most relevant. The obligation to compile and adopt such a Conception comes out from the provisions of the Act on Thermal Energy and applies to all of the respective municipalities. Conception shall be prepared in the context of Guidelines of the Ministry of Economy of the Slovak Republic No. 952 / 2005 – 200 (hereinafter only „Guidelines“) and shall be in accordance with the long-term conception of the national Energy Policy. According to the Guidelines every Conception should contain:

- analysis of recent state of the local heating sector
- proposals for development of the local heating system and future heat supply
- conclusions and recommendations for the chosen, most suitable alternative of heating system renovation within the related region together with the establishment of:
  - a) principles for using the selected fuel mix for heat production,
  - b) sequence of steps for realisation of the measures proposed,
  - c) proposals for financial coverage,
  - d) wording of the final recommendations that will become a part of the complex binding urban planning documentation.

Even if the basic obligations of municipalities within the heating sector emerge from the provisions of the Act on Thermal Energy, operation of local heating systems

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<sup>10</sup> <http://www.cofely.sk/sk/o-nas-uvod-cofely-na-slovensku/> (21.6.2013)

is also influenced by various procedures within the local urban planning documentation, construction management and other partial policy areas. Situation and conditions may differ in every single locality. The way of procedural steps and other activities taken by individual municipalities concerning the operation of the local heating systems are presented in next sections of this document.

#### 4.2.1 Regulation

We would not find so many price differences in any other energy sector when comparing it with heating sector. This is caused by local character of heating systems and various structures of heat production and supply networks in individual municipalities. Until the end of 2012 the prices of **i)** gas for heat production for household consumers and the prices of **ii)** heat production and distribution were regulated in Slovakia.

Regulation at the level of gas supply for heat production for households was by the market participants considered as a barrier to further development of competition within the liberalised energy markets. According to their opinion the regulation in this part of energy market had negative effects on the whole process of heat production and distribution, deterred the companies from effectiveness increase and prevented possible heat price reduction for the final consumers.<sup>11</sup> The regulation at this level was finally cancelled in 2012.<sup>12</sup>

Even if the price regulation within the heat energy sector covers the heat production and transfer (distribution) as well as its supply, for the relevant company it is being on yearly bases approved by regulatory body as one single tariff. The prices are, therefore, not being set up separately for each level as it is in case of gas and electricity sectors. The basic principles of the Slovak regulation procedures and calculation methods come out from the actual Slovak Regulatory Policy.<sup>13</sup>

Regulated price is according to the abovementioned rules approved as a maximum price. The principles of so called *cost method* are used when calculating this price which means that the limited extent and structure of legitimated costs and proportionate profits are preserved. Planned costs of a regulated subject which are covered within the relevant heat price have to be compared to the real costs after the end of a certain regulatory period and the possible differences are to be paid back to the final consumers if they occur.

Maximum heat price constitutes in general a so called two-part tariff which consists of its variable part (costs related to the actual fuel consumption together with consumption tax on mineral oils) and its fixed part together with adequate rate of profit set by the regulator. The price approved for the individual heat producer/distributor is apart from some exceptions common for all consumers within the relating municipality or certain parts of its area.

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<sup>11</sup> Information gained from the previous activities of the AMO.

<sup>12</sup> Currently valid as the Act No. 251/2012 Coll.

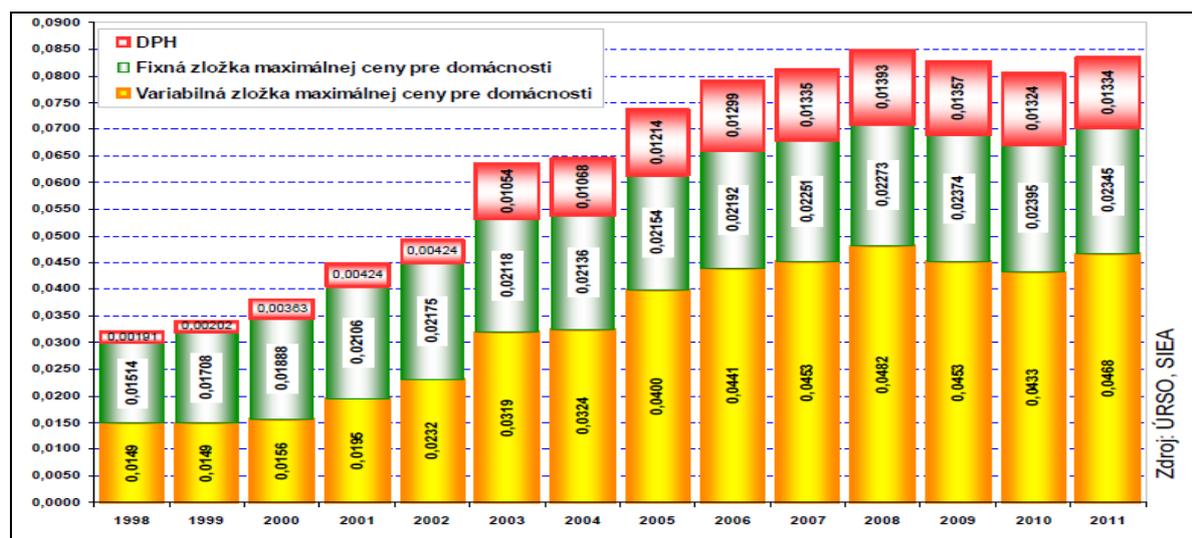
<sup>13</sup> <http://www.urso.gov.sk/?q=content/%C3%BArad-regula%C4%8Dn%C3%A1-rada-regula%C4%8Dn%C3%A1-politika&language=en>

Variable component of the heat price is calculated in €/kWh and covers the costs on fuel, energy and technological material. It represents approximately 60 – 70% of the total heat price depending on a kind of fuel for heat production. It is determined by planned heat consumption as well. Fixed component of the heat price is set in €/kW and corresponds to the whole regulatory input power which reflects the real heat consumption in the year t-2. It may cover only eligible costs on heat production and distribution (e.g. costs on amortization, repairs and maintenance, costs on various legal obligations connected to heat production, insurance, audit, services, personal costs and adequate rate of profit) and represents in average around 30% of the total heat price. From the economic efficiency point of view the heat price covers just certain, regulated rate of heat losses. Finally the VAT of 20% shall be added to variable and fixed part of the tariff.

Trends in prices within the most sensitive group of consumers – category of households was as follows during the last 10 years:

**Graph 3: Trends in heat prices for households in Slovakia (in €/KWh)**

Caption: ■ VAT  
■ Fixed component of maximum price for households  
■ Variable component of maximum price for households



**Source:** Based on the conference presentation of the SIEA „Heating Sector – How to Move Further“, 2012

As it may be seen from the Graph 3, among the three values the variable part of the heat average price increased almost three times within the monitored time period. Fixed part increased by 55% within the same time. Final heat price was influenced also by the level of the VAT in recent decade. While in 1998 it constituted in average 6% of the price, its share rose up to 16% in average in 2011. If we do not take the VAT into account, the average heat price per kWh increased in total by 140% during the period of 1998-2011. The change of proportion of the fixed and variable part within the total price is also evident from the graph. While in the 90s the proportion was almost balanced, high dependence on price development for energy inputs resulted in increased share of variable part on the total average price at the beginning of the year 2000.

The above mentioned trend is one of the primary factors influencing the situation and development within the area of heating sector in Slovakia. Next sections of this document focus on reasons and consequences of this development.

### **4.3 Problems and Challenges**

Despite the generally declared advantages of central heating systems for heat production and supply, in practice there are many problems that consequently influence also the activities and decision-making of the AMO within this sector. Unfavourable situation within the Slovak heating sector may be caused by following factors<sup>14</sup>:

#### Technical and economic inefficiencies of DH systems

In many regions the outdated technology and heating facilities on the edge of their economic life belongs to the most problematic facts. The original DH facilities became highly ineffective and their maintenance is hard to retain mainly because of high heat losses within distribution networks. According to the regulation rules these losses may be covered by the heat tariffs only up to certain level. However it happens very often that because of the rules of regulation the costs of heat production are not fully covered by the payments from final consumers. The operating costs of heat producers and suppliers are growing excessively and despite the increasing prices for offered services they do not ensure sufficient sale profits. Such a situation may become unbearable particularly if a municipality is the system operator and it lacks financial resources to cover the losses.

From technical point of view the DH systems in Slovakia are characterized by high overcapacities. At the same time there is the tendency of final consumers to reduce the amount of consumption through certain revitalisation activities or by total disconnection from the existing heat supply system which negatively influences the existence of the systems as well.

Construction or revitalisation of a DH system is financially very costly. However, the options of the incumbent operators to acquire needed amount of resources are limited. Even if a municipality decides to search for a private company that would invest into the renovation and DH system effectiveness increase, stable data and starting points are inevitable for the long-term planning. If there is no guarantee for stable consumer base, it is quite difficult to prepare the project precisely. Second, there is a risk that invested means may be devaluated to a large extent if non-systematic disconnections of consumers will continue. The mentioned facts finally raise the question whether it is worth investing the money. In practise therefore just necessary revisions of already existing, low-quality and overdimensioned systems are being performed leading again to an increase of operating costs without improvements of system efficiency.

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<sup>14</sup> Information known by AMO SR through previous activity and statements of professionals of ME SR and SIEA within area of heat energy

## Customer care and consumer's behaviour

In the past the prices of primary sources of energy in Slovakia were subsidised by the state and the heat was used inefficiently. In 1990s, however, heat suppliers were forced to adjust their pricing policy to the conditions in world energy markets. As the result production costs increased rapidly and heat prices for final consumers started to rise as well.

The above mentioned market deformations ensured stable consumer base for the traditional suppliers in the past. There was no motivation for a pro-market behaviour and communication with a customer, neither was there motivation for modernization and effectiveness of the local heating systems functioning.

Today the majority of central heating suppliers do not have any reputation developed among consumers. Without sufficient systematic measures and control mechanisms the Slovak DH operators got into the blind alley. On one hand they are forced to innovate, invest and make the heat production more environment friendly (using the renewable sources of energy and technology to lower the emission rates). On the other hand they are being criticised by their consumers mainly for increasing prices. In spite of some positive changes the situation in many municipalities becomes unbearable.

Sellers of gas boilers took use of this situation and started to introduce advantages of individual heating to the representatives of apartment blocks connected to the local DH facilities. Not always are these activities in favour of heat consumers, however. Discussions about individual heat production facility construction are often accompanied by unfair practices or by providing non-objective, incomplete information about the real advantages and disadvantages of individual heating (more on topic in the part 5.1 of this document). When already disconnected, consumers loose also the possibility to diversify the fuel base using other kinds of energy and so the possibility to lower the costs on heating and hot water if there is an unfavourable price development in energy world markets. In the case of individual boiler houses it is also not possible to use the advantages of cogeneration processes. Improper decision on disconnection may thus result (adversely from consumer's plan to get independent from the former DH system and to reduce the costs for heating) in rise of the total households' costs. In some cases consumers consider even re-connection of the apartment block to the DH system again.

## Insufficient state legislative and regulatory measures

In general the AMO meets with the opinion that for better functioning and positive development of the heating markets, local governments and municipal authorities as well as undertakings lack the long-term state energy conception. Consequently also primary regulation rules are considered to be insufficient. According to the market players the way of regulation is too complicated, bringing no progress or approach in the context of recent needs of heat producers, suppliers or consumers. Actual and concrete problems within this area are mentioned in the section 5.1 of this document.

All the above mentioned facts, increasing costs on heating and hot water for the final consumers and the efforts of unsatisfied customers to disconnect from the

existing systems have negative impacts on the situation and functioning of the whole heating sector in Slovakia today.

## **5. Competencies and approach of the AMO within the heating sector assessment**

From the competition point of view it is possible to summarise the situation within the area of heating sector in Slovakia as follows: DH systems are of local character, they are not interconnected among each other and there is no possibility for consumers connected to a local DH system to choose a supplier. In majority of cases there is thus no competition among the heat producers or suppliers who usually perform in naturally created monopoly markets.<sup>15</sup> In this situation a disconnection from the original heating systems and construction of individual heating facilities means the only competition.

To a certain extent the competition exists within the area of production sources of energy (fuels). Producers of heat may also choose among the suppliers active within the chosen fuel markets. Gas market liberalisation and termination of regulation at this level within the heating sector since January 2013 are the most important events in the last years, in this respect. At other levels in Slovakia there have been no official measures taken for liberalisation and opening the heating markets to competition yet.

Concerning the AMO activities and decision-making processes, so far there has been no prohibition decision issued within the assessment of mergers. As regards the area of antitrust the AMO has no experience in the area of cartel agreements assessment either. However, the Office has been already analysing several complaints related to abuse of dominant position or to possible infringement of the Article 39 of the Act No. 136/2001 on Protection of Competition as amended (hereinafter only “Act on Protection of Competition” or “the Act”). The provision relates to the possible non-competitive behaviour performed by the state authorities and local authorities which may within their activity favour certain undertaking a thus negatively influence competition and final consumers.

In some cases the Office also examined the decision-making processes of municipalities when announcing the public tenders. Such complaints included the objections of the respected parties against the procedure and conditions determined in these tenders which, according to their opinion, were tailor-made for one undertaking. All of these cases were closed by the Office without opening the official proceedings.

The complainants then also usually underline inefficiencies in functioning of local DH systems resulting in excessive annual price increase or mistakes in the process of invoicing and accounting within the heat and hot water payments. Assessment of these elements, however usually do not fall under the enforcement activities of the Office.

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<sup>15</sup> Act on HE in its Article 21 partially regulates obligation after fulfilment of determined conditions to allow the third party access to a distribution networks, but only in a case of heat produced from renewably sources of energy or combined heat and electricity production.

Most often, however the AMO investigates the situations and decision-making procedures within the area of applications for individual source of heat production construction and thus for disconnection of individual groups of consumers from the local DH systems.

### ***5.1 The process of disconnection from the existing DH systems and related problems from the AMO point of view***

The assessment of the Office regarding the disconnections from the existing DH systems is mainly related to the proceedings of municipalities under the Article 39 of the Act on Protection of Competition. In the past, the AMO issued some decisions in which it confirmed the infringement and imposed fines on several municipalities. In these cases the municipalities within their competences issued the statements according to which it was generally prohibited to build up small-sized heat production facilities in the apartment blocks originally connected to the local DH systems. Individual aspects of the applications for disconnection were usually not taken into consideration. Instead, the findings of these negative statements only generally referred to the wording and recommendations of the local heating Conceptions where there was general ban on any disconnection adopted. The complaints of similar nature are being solved by the AMO even today.

At the same time the assessment of the complaints concerned the behaviour of local DH operators where the suppliers usually refuse the termination of the heat supply and consumption contracts in favour of consumers. This way the suppliers restrain from individual disconnection from the existing DH systems. In many cases the municipality is a co-owner or even the only owner of the heating company. Therefore claimants also usually accuse the municipality of giving the preferential treatment to the company instead of protecting the objective right of individual heat consumers to choose the source of heat production and heat supply on their own.

The whole process of disconnection from an existing DH system includes many steps and actions at different levels. First, it is necessary to obtain the majority consent of the apartments' owners in an apartments block, then to search for an appropriate investor who would prepare the project and finally to acquire the statements and permissions from various state and local authorities that act on the ground of several overlapping acts and procedural rules.

According to the AMO's experience, the procedure concerning any planned disconnection of an object/ or a group of consumers originally connected to particular DH system can be summarised as follows:

1. voting process and decision of the owners of residential and non-residential premises in a certain apartment block to build up their own heating facility,
2. preparation of the project documentation related to the construction of a small-sized heating facility (may be accompanied by the project of revitalisation arrangements such as insulation, windows replacement, solar panels construction, etc.),
3. submission of the application for termination of the contract on heat supply and consumption to a former heat supplier,

4. submission of the application for building permission to the regional building office, which must include project documentation and the statements of the relevant administration authorities under the provisions of Act No. 50/1976 Coll. on Land-use Planning and Building Order (hereinafter only „the Building Act“); the statements include:
  - **municipality’s binding position** (evaluation of the application which has to be **under the provisions of the Act on Heat Energy** in accordance with the Conception of a municipality in the area of heating sector; if the Conception is not a part of municipality’s urban planning documentation the municipality is obliged to issue a binding position in accordance with the Conception based on individual assessment and reasonability of the construction),
  - position of a former heat supplier on disconnection.

**As it has emerged from the Office’s assessments so far, the above mentioned positions do have major impact on decision making of building offices in practice<sup>16</sup>. If the statements are negative and refer to non-compliance with a municipality’s Conception the respective building office would not issue the building permission or it would invite applicants to remove all deficiencies and the building proceedings would have been stopped by that time. If an applicant does not have building permission he cannot build up a new heating facility and therefore cannot officially disconnect from the existing DH network.**

Completing the process of the all above described formalities can take several months, sometimes even years. If customers who are involved in the process of disconnection do not reach consensus with a municipality, other respective administration bodies or with a local DH operator, they try to exercise their rights by addressing a complaint to the AMO. These kinds of complaints usually refer to potential breach of the Article 39 of the Act on Protection of Competition by a municipality or they refer to potential breach of the Article 8 of the Act by a DH operator as an undertaking in case of refusal to terminate the contract on heat supply and consumption. In this context it is also necessary to point out that the complaints are being submitted to the Office at different stages of disconnection processes.

In these particular cases the AMO meets with conflicting interests of these concerned parties:

- i) municipalities as the entities that are obliged to ensure safe, effective, stable and environmentally acceptable heat supply for all inhabitants; moreover, they shall act in the public interest,<sup>17</sup>
- ii) related heat supplier which is obliged to maintain existing centralised source of heat production in effective and safe manner and needs stable customer base for its effective functioning,
- iii) heat consumers and DH operators’ customers who in case of dissatisfaction with the services and high heating costs intent to exercise their right to choose source of production and heat supplier to achieve more convenient heat supply conditions.

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<sup>16</sup> Under the Article 140b of **the Building Act**, the content of **municipality’s binding position** is binding for the administrative body in the building proceedings.

<sup>17</sup> The decision making of municipalities should be in compliance with the main state’s priorities and specific targets according to the concept of official Energy Policy of the Slovak Republic.

In general the municipalities and heat suppliers declare following DH system strengths:

- **Economy**  
In a well-functioning liberalised gas market, as gas is the most important heat production source, the production of heat in DH systems is more economic and the prices are more favourable in comparison with the heat production in small block boiler houses. The gas tariffs are more favourable for wholesale customers than for the individual customers or small groups of customers. Generally, the larger heat production facilities work more efficiently compared to block boiler houses. The heat distribution losses can be minimized by modernization of distribution systems and measuring devices.
- **Energy Security**  
DH systems ensure the long-term and reliable heat supply even if there is a need for rapid change to an alternative energy source of production in case of increased prices of the original fuel or in case of its deficiency (particularly in the case of natural gas). The changes are not that possible when consumers have already a gas block boiler house installed.
- **Reliability**  
DH systems are secured for an occasional collapse within the process of heat production. Every system includes back-up power supply and the heat supply can therefore continue its operation immediately.
- **Comfort**  
Heat supply is delivered straight to the apartments and final consumers have the opportunity to regulate their heat consumption.
- **Ecology**  
DH production facilities produce significantly less emissions and pollutants than small block boiler houses. DH systems are furthermore not usually part of residential buildings. The emission limits (which are usually not officially monitored in case of individual block boiler houses), stability and reduction of emissions can be easier analysed, monitored and problems can be more effectively solved within DH systems.

The investors who are involved in planning and realisation of block boiler houses projects introduce usually the advantages of individual heating facilities as follows:

- **Lower costs on heating and hot water**  
In comparison with the heat supply from DH system, the consumers of heat produced in individual block boiler houses do not participate in covering the costs for system distribution losses. The total annual cost of heat consumption is being reduced directly from the start of the operation of a new boiler by tens of %. The investment recovery can be achieved soon.
- **Easier regulation of heat consumption and flexible heat supply**

Consumers of the heat produced in block boiler houses may regulate the initiation of heat production and set up convenient temperature at any time during the year. DH facilities start the heat production within the time period strictly set by legislation. It may therefore happen that during the warm weather the apartments are overheated and during the cold weather the heat is not distributed to consumers as necessary. DH systems may be outdated and meters and thermostats are not installed in all buildings; temperature in the apartments cannot be regulated to suit individual needs.

- **Ecology**

Nowadays new home boilers are of high quality and environmentally friendly compared to the large DH systems technologies. The heat production in local block boilers may be supplemented by solar energy production (construction of solar panels) which represents environmentally preferred source of energy.

It is possible to summarize according to the above mentioned arguments that there may be truth in each side of the story. It is, however not the main goal of this document, neither the role of the AMO to evaluate each and every statement in detail. “Disconnection cases” cannot be reviewed according to general rules which could be applicable for all locations and for all the systems as one. Within the heating sector it is necessary to investigate and analyse the situation in every municipality individually.

### **5.1.1 Competencies and decision-making processes at the level of municipalities**

In general the municipalities act as local self-governing bodies that enforce government performance and transferred state administration in the field of heating sector. Under the act No. 369/1990 Coll. on Municipal Establishment as amended, the municipalities approve land-use plans of communes and zones, procure and approve the land-use planning documentation and its binding parts by generally binding legal regulation. The approved land-use planning documentation is the binding material for land-use decision-making and evaluation of documentation within the building construction processes. In the field of transferred state administration a municipality is also an office that is responsible for issuing the building permissions. These competences are therefore closely related to the official proceedings within the heating sector as well.

In the beginning of the last decade, the state re-evaluated unstable situation in the area of heating sector and established an obligation for municipalities as the competent bodies to elaborate already mentioned Conception of development within the heat supply area that should be in accordance with the long-term conception of Energy Policy of the Slovak Republic. The aim of these Conceptions was to analyse the current heat supply situation in every respective town and city and to propose solutions and specific measures in order to provide safe, qualitative and reliable heat supply at reasonable price for all residents. This document, which was to become a part of the urban planning documentation, binding in its relevant parts, plays an important role in decision-making processes of municipality municipalities when issuing building permissions for the new small heating facilities construction.

It was assumed that the Conceptions would become significant strategic documents on which the existence and development of heat supply systems in various regions would be based. However, not all of the municipalities have sufficiently utilized this instrument efficiently. This resulted in a number of disconnections and uncoordinated constructions of new heat production facilities which are economically, technically and environmentally unjustified in the light of the existing DH systems. Another extreme conduct of some municipalities was a widespread prohibition of disconnection from a local DH system.

Legislative obligation to adopt a Conception by the end of 2006 was met by a number of municipalities only formally. In practice the Conceptions became just a piece of generalised documentation used by the representative bodies in decision-making processes without objective assessment of individual applications for construction of small heat production facilities. Furthermore, the information in majority of these Conceptions is outdated and does not reflect real needs and problems of municipalities and their residents within the area of heat supply. In the AMO opinion no effective instruments have been introduced so far to control the execution of binding recommendations resulting from these Conceptions. On one hand a Conception has an impact on decision-making processes of municipalities, but on the other hand the municipalities were not forced to act on behalf of the conclusions and binding provisions of this document in order to improve the heating sector conditions in a specific region.

Conceptions lack usually also the goals specification. In some cases, municipalities set a requirement of preservation or expansion of existing DH facilities without previous evaluation of their actual efficiency. This way the Conceptions do not comply with the concept of optimisation of a heat supply system as such. Their recommendations only adjust to the existence of a centralised production source which does not have to be the most effective solution for the local area and the residents.

The wording of Conceptions alone may be sometimes problematic in relation to a more effective operation of the local DH system in the future. While some Conceptions state only a general support for the existing DH systems others state a need for consumer base stabilisation as well as prevention against any disconnection from the system without taking specific circumstances of individual cases into account. This way the proceedings in the matter may prevent even disconnections, which could potentially have a positive effect not only on disconnected subjects but also on efficiency of all the whole local DH production and distribution facilities.

Regarding the Conceptions the AMO has also experienced a situation where a regional building office did not take the Conception recommendations into account in its decision-making process at all. The failure to implement and to comply with this document may result in an inability of a municipality to maintain a secure heat supply, increase of pollution and depreciation of a municipality property. Finally, it may be a reason for heat supply costs increase due to non-systematic disconnections of consumers.

All the above mentioned facts show a high level of inconsistency and variety in decision-making processes of municipalities within the area of heating management.

Apart from the assessment of municipalities on accordance of the new sources of heat production with the local Conceptions, statements of other authorities are required to be a part of the documentation when deciding on building permission. These are responsible e.g. for evaluation of technical aspects of the projects or environmental protection issues.

Regarding the environmental policy and building proceedings rules, the AMO considers the interface of the both processes to be insufficient. In decision-making processes of regional environmental administration bodies it is evident that even though the analyses of SIEA<sup>18</sup> representatives conclude that:

- a small heat production facility does not produce a small amount of emissions,
- the amount of emissions from small facilities is multiple times higher than the amount of emissions from larger heat production facilities and that
- there is no monitoring of the emissions from the small heat production facilities or at least it is not sufficient,

their final decision on the application for the construction of individual heating facility is usually in favour of the subjects which are to be disconnected from the local DH network. These authorizations are however often not in line with the assessments of respective municipalities regarding the consistency with the heat energy Conceptions. These opposite statements may lead to further inefficiencies within the whole process.

Based on the experience of a number of municipalities, if consumers are unable to acquire permission for the construction of an individual heat production facility and hence be able to disconnect from DH system, they may apply for the construction of an individual heat source directly in the apartment unit. The regulating rules for such a case do not exist. Without a systematic and complex assessment, especially from the environmental point of view, this type of conduct may also result in ineffective heat production in a specific region.

The entire process related to applications for construction of a domestic heating facility is according to the complainants very time consuming, complicated and non-transparent. Municipalities have strong decision-making competences in local matters but the regulation is not direct enough. Despite the importance of securing the primary needs of residents, unsystematic steps which are taken in the area of heat supply management may lead to serious problems.

### **5.1.2 Rights of former heat suppliers**

The main goal of local heat suppliers activities within disconnection processes which may lead to a potential infringement of Article 8 of the Act (abuse of dominant position) is the preservation of existing DH systems in a given town or city. This situation usually goes hand in hand with a supporting position of a municipality. It may be influenced also by the fact that municipality is the sole owner or the co-owner of the local heat production company. Within the process of building proceedings to

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[http://www.siea.sk/materials/files/poradenstvo/aktuality/2012/konferencia\\_teplo\\_februar\\_2012/ppt/11\\_Soltes\\_Teplarenstvo\\_2012.ppt.pdf](http://www.siea.sk/materials/files/poradenstvo/aktuality/2012/konferencia_teplo_februar_2012/ppt/11_Soltes_Teplarenstvo_2012.ppt.pdf) (21.6.2013)

third parties it may evoke that municipality acts on behalf of the local DH operator interests without stating any particular reasons or taking specific residents' demands into account.

The residents usually plan to disconnect from the system in a situation where they are not satisfied with the services of the supplier and have to pay too much for heat and hot water consumption. As regards the behaviour of an undertaking the AMO receives a complaint if the original heat supplier refuses to terminate the heat supply contract with the former consumers.

Disconnection from a DH system and termination of the contract with the primary supplier may not be possible even in the case if the related municipality officially permits building of a new boiler house. Original suppliers in general argue that mass disconnections from their DH systems may result in extra-normative losses<sup>19</sup> and extra investments to eliminate negative operating conditions caused by changes in a system. If new technologies have been already used or important renovation of pipeline networks has taken place, mass disconnections of consumers may lead to depreciation of the whole investment. From a long-term point of view systems lose the chance to function efficiently.

According to the related regulation measures a subject applying for termination of the heat supply contract and disconnection is required to defray a fee which should cover legitimate costs of the system operator caused by disconnection. This should ensure that the remaining part of the DH system and remaining consumers are not affected significantly by disconnection. According to the heat producers and their representatives, the compensation of losses in the case of an individual disconnection is however not sufficient and solves only short-term problems. Long-term impacts on the system are not taken into consideration and influence negatively the heat producers as well as consumers of remaining delivery points. The fee does not cover real expenses caused by disconnections, according to DH operators.

From the legislative point of view, the heat supply contract termination procedure is based directly on the provisions of the Act on Heat Energy. According to specific provisions of this act the heat supply is being realised on the basis of a written supply contract between the supplier and the consumer (hereinafter only the „Contract“). The provisions of the Act on Heat Energy determine concrete requirements and terms of the Contract including the conditions under which it may be terminated.

Consumers may terminate the Contract if the written termination notice is delivered to the supplier at least six months before the required termination of the heat supply plus at least one of the conditions stated in the provisions of the Article 20 of the Act on Heat Energy is met. The Act on Heat Energy enables the Contract to be terminated

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<sup>19</sup> Extra-normative losses are the losses caused by unplanned disconnections of residents/apartment blocks from a DS system. They represent a permanent annual rise in losses in external heat distribution, which are proportional to the dimension designed for the currently disconnected unit in order to cover the heat consumption. These losses become extra-normative after the threshold stated in the norm is exceeded. The heat supplier cannot add these losses to its legitimate costs and the losses are paid from the heat supplier's revenue. Extra-normative losses belong to the long-term results of individual disconnections from DH systems.

- a) on the ground of provisions of the Act on Heat Energy (if certain inefficiencies stated by the Act are determined; these are mostly related to economy and quality of the heat supply) or
- b) in a case of agreement of both parties to the contract

If it is not possible to terminate the Contract because of evident poor economic efficiency of the heat supply, consumers may apply for termination using the second option, which is an agreement. As stated in the Article 20 part 3 of the Act on Heat Energy

*„Termination of heat consumption may be carried out by the consumer via an agreement with the supplier if the consumer covers the economic costs caused by the disconnection of the consumer from the heating system of the supplier“.*

According to the above mentioned provision the termination must have therefore the form of an agreement between the two parties and it cannot be a one-side act of the supplier or the consumer.

Generally, the term „*agreement*“ constitutes demonstration of the mutual consent of two counterparties on specific condition. Termination of the Contract via an agreement has to be therefore seen as a two-sided act. In our case, if a supplier as one party to the Contract does not accept the termination request, the request itself cannot constitute the end of the heat supply and consumption via an agreement.

Based on the practice of the AMO the first problem in such cases is the inconsistency and possibly also incorrect interpretation of the provisions of the relevant legislation by market participants. In the AMO opinion the legal termination of the contract in accordance with the provisions of the Act on Heat Energy is only possible after a consensus of both parties to the contract, while subjects which want to be disconnected believe, that the termination of the contract and the consent of the supplier should occur automatically, after the economic legitimate costs were paid to the supplier.

Based on the above information it may be overall assumed that primary DH system operators are in a stronger legal position compared to the heat consumers who, without closing the agreement seem to stay locked-in the system.

The second problem arises from the fact that municipalities within the building proceedings address DH suppliers with a request to present their position on specific disconnection cases. Negative statement of a former heat supplier may become the sole reason for issuing a negative final decision of the municipality and hence losing the building permission for the construction of a domestic heating facility. The Office has also encountered a number of cases where delays within the building proceedings were caused by uncertainties regarding the position and rights of the former supplier. It is usually not clear whether the supplier is to be in a position of a party to the building proceedings or may act only as a concerned person.

Based on the provisions of current legal acts it is obvious that DH suppliers are being preferred not only via the problems with Contract termination or via certain

administration processes. Also certain provisions regarding the introduction of renewable sources of energy to the production mix of heat producers may cause a barrier to disconnections<sup>20</sup>.

Without evaluation of the steps taken by the suppliers such indirect support may result in preservation of inefficient systems that are not able to produce heat for reasonable prices. DH system operators achieve secured and stable number of customers and are not motivated to enhance the quality of the offered services. Dissatisfaction of consumers may grow in the future and the whole situation will become worse. Consumers feel betrayed and their dissatisfaction expresses in enforcement of further unsystematic steps. The higher the expenses of households on heating, the easier position for the investors to persuade consumers to invest into new solutions of heat production and supply (new domestic heating facilities, sun collectors, heat pumps) without considering real costs and possible long-term impacts of taking such steps. There are many cases of promised savings after disconnecting from the existing DH system. Reality has showed however that it does not have to be as economically and financially beneficial as it might have seemed at the beginning or it was not beneficial at all.

### 5.1.3 The AMO approach in evaluation of disconnection cases

When analysing the complaints in the field of heating sector in relation to disconnections the Office focuses first of all on the evaluation if the behaviour of a municipality or undertaking may be considered within the provisions of the Act on Protection of Competition (either the Article 39 or the Article 8). As it was already mentioned municipalities have gained certain competences and the structure of the local heating system in a specific region is organised according to their decision. Hence, in the field of heating sector a number of legislative measures intersect and a number of interests of various subjects are being enforced, as mentioned before. It is possible to observe the complexity of this topic also within the context of the complaints sent to the AMO. The facts of submitted complaints are usually described very broadly and do not cover only the competition issues.

It is necessary to state that the cases vary in the aspect of procedural and subject matters and they reach the AMO at different phases of municipalities' decision-making processes. However, the goal of a municipality or a DH system operator performance stays the same - prevention of disconnections. The AMO investigates and analyses the activities of both subjects - municipality and undertaking - in mutual relations.

Under the Article 39 of the Act:

*„State administration authorities in the exercise of state administration, municipalities and self-governing regions in the exercise of self-governance administration and transferred state administration, and special interest bodies in the exercise of transferred state administration must not provide evident support giving advantage to certain undertakings or otherwise restrict competition.“*

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<sup>20</sup> It is easier for a huge heat producer to meet the conditions and limits for environmentally friendly production. Disconnections from such transformed systems are in fact impossible.

In connection with the above mentioned provision the complaining subjects object that municipalities support the DH systems, where they are usually the owners or co-owners, by rejecting the applications for a building permission for small domestic heating boilers construction. Thus DH suppliers have the possibility to preserve their existing consumer base, they are not forced to operate the local heating systems efficiently nor are they forced to offer quality services for reasonable prices. According to the complainants the individual freedom of choice, when it comes to heat supply, is denied to them and competition within the local heat supply market is negatively influenced.

In the AMO's opinion a municipality should not prohibit individual disconnections from DH systems by means of a general ban or restrictions. Such a decision may result in inefficient and uneconomic behaviour of an undertaking active in a local heating sector. The undertaking should be able to acquire customers based on its business results and **the pressure on DH operators stemming from potential construction of alternative sources of production is necessary. On the other hand, it is also important to evaluate the conditions under which an existing DH system can function efficiently. The results of such analysis should be presented to all relevant subjects in such a way that there would be no unsystematic steps taken.**

Partially, according to the AMO's experience a misunderstanding occurs on the side of complainants when it comes to application of the Article 39 of the Act. The Office always aims to clarify to both counterparties what there may be evaluated and considered in terms of its competences. It is essential to understand that in the building proceedings related to construction of a new heating facility the Office may address only that kind of behaviour of the market participants or state institutions that potentially relate to competition issues. As it has been previously stated, heating sector, where DH subjects operate in the form of regulated natural monopolies in most regions, represents the area which is difficult to be reviewed only from the competition protection point of view.

It is sometimes problematic to analyse the cases also due to the fact, that municipalities in general do not act as undertakings - they do not have clear, long-term strategies. Their activities and decision making covers many partial economic and social policy areas where many regulations and interests intersect. Quite frequently there are many conflicting opinions and positions and it is up to the municipality and its administration bodies to finally decide despite the existence of such contradictions. Potential evaluation of such cases by the Office is also influenced by the municipalities' changing approaches during different election periods. On the other hand, it is also true that the applicants for disconnection are not sufficiently informed about the necessity of some steps taken by the municipality representatives within the given area even if these are set up in a systematic manner and their primary goal is to improve the situation for all heat consumers.

Concerned municipalities have the competence to evaluate what is the best option for a region and what are the most suitable policy instruments to enforce specific interests via the local legislation. It is not the task of the AMO to substitute the role of municipality controllers or inspectors concerning the quality and efficiency of town assets management. It is also not the task of the Office to analyse positive and negative aspects of the steps taken by municipality representatives in a specific policy area if it does not concern the infringement of competition rules. Despite the

above mentioned facts it is evident that each of the parties deems the decision of the AMO within the disconnection processes vital. Both, consumers and undertakings address the Office as a last resort when they want to defend their views and positions. Based on their reasoning they call for adoption of a decision in their favour and claim the decisions of the Office and its attitude towards problematic facts have a great impact on the future decision making processes of the municipalities. The Office is obliged despite the complexity of the complaints to proceed in a way that will cover the competition issues but will not worsen the existing situation.

Regarding the view of the public it is important to mention that decision making processes of the Office as a competition authority is aimed at protection of development of the markets by the conduct assessment of the subjects active in these markets. Recently the priority of all European competition authorities including the AMO has been to bring their decision making process to a more economic approach. One of the core principles of the more economic approach is the evaluation of the impacts of a specific behaviour of undertakings (or even municipalities in case of the Slovak competition legislation) on final consumers. Procedural steps taken by the Office and its conclusions within the previous decision making, where certain behaviour of undertakings was sanctioned on the grounds of a formal approach, may not be sufficient today.

The assessment of the cases on ground of economic principles resulted in the fact that currently the Office would not issue a formal decision in the field of local heating sector without a more profound investigation of all relevant economic aspects. The sole fact that the municipality applies general ban when it comes to issuing the building permissions without evaluating each and every individual case does not mean that this ban on disconnections has automatically real negative impact on a local heating system and its customers. On the other hand, it is also not possible to decide without a detailed analysis that such a decision of a certain municipality does not infringe competition rules and does not have a negative impact on consumers. As mentioned before, artificial support of DH systems and a general ban on disconnections may protect inefficient production source and it may be more beneficial to switch it off and redirect financial resources to individual heat facilities construction in benefit of all heat consumers.

To sum it up, according to actual approach of the Office rejection of every building permission application may not be considered as a breach of competition rules. The assessment of individual cases and an impact of such activities must be based on the evaluation of the whole situation in a specific local market from the long-term point of view.

In practice it seems that municipalities are searching for potential procedural possibilities of delaying or dismissing the construction of the small heating facilities instead of objective evaluation and detailed argumentation of their negative decision. It is not sufficient to refer to general and in many cases outdated conceptions.

The question is who should give the municipalities the clue on how to assess individual disconnections in relation to the functioning of the existing DH systems from technical, economic and ecological point of view. Officially there is no document which would be complex and uniform for all municipalities and which would provide them with a manual on how to deal with this issue. The statements of municipalities

and heat suppliers indicate that such a tool for a transparent, objective and non-discriminatory decision-making process is more than necessary.

Based on the above mentioned facts the goal of the Office was to quantify and evaluate possible impact of dismissive municipality decisions, or heat suppliers' position regarding the construction of domestic heating boilers/facilities. For the Office to declare that there was an infringement of competition legal provisions it is necessary to carry out a detailed investigation and evaluate all circumstances of a case. The Act on Competition Protection sanctions only such a conduct that has negative impact on consumers as the main role of the Office and the main objective of the Act is the protection of competition in favour of consumers.

Based on the AMO experience, consumers or a group of consumers that want to be disconnected from a local DH system and are willing to invest into their own domestic heating facility take it as their own right to decide on the form of heat supply. These consumers do not take into consideration possible consequences of their decision to disconnect from the system on consumers that remain connected to it. The reason behind this may be the fact that they are not sufficiently informed about the local heating sector situation. The steps of municipalities and the approach of the local DH system operator is not fully explained and presented to them.

It is, therefore, important to highlight the fact that every disconnection from the system always has an impact on two groups of consumers. The first group is the group of the residents that are to be disconnected. The second group is presented by those who remain connected to the central heating system. These consumers are influenced mainly by increase in costs for heating related to the changes in fixed part of the tariff.

Within the investigation of a specific case the Office focuses not only on possible positive aspects for the consumers stemming from the individual disconnection. The whole impact on all consumers in general is evaluated through possible individual gains of the evaluated disconnection compared to the losses of remaining DH system customers in the specific region. The previous information demonstrates that decision-making process of the Office within the evaluation of the conduct of a municipality or of an undertaking in the case of prevention of a specific disconnection currently stems from investigation of all possible impacts of this disconnection on the functioning of that local heating system and on all its consumers.

After a complex assessment of the situation the Office in recent cases analysed what would be the effect of disconnection of a specific apartment block or apartment blocks from the related DH system in the specific region and what change in the costs would an individual disconnection cause to the local heat consumers. So far after such evaluation every investigation has been closed without opening the proceedings and without sanctioning a municipality or an undertaking. For a better understanding of the method of the Office the next part of the document will describe sequence of the steps and interpretation of the results of such an analysis including specific quantitative measurements.

### 5.1.3.1 The method of the AMO in evaluation of disconnection cases based on the more economic approach principles

The analysis of the AMO in the area of disconnection cases was divided into two parts, while the method used to assess the case was based mainly on the publicly accessible information and the information provided by complainants who applied for building permission in a specific municipality, by existing heat supplier active in that region and by the SIEA that often deals with the disconnection processes in practice.

**In the first evaluation phase, the Office focused on comparison of the heat and hot water production costs of the relevant apartment block in case of domestic heating facility construction with the heat costs in case if the apartment block remained connected to the original heat supplier.** All potential investments of disconnecting subject were taken into consideration when calculating the costs for building a domestic boiler as these affect the level of variable and fixed part of the unit price for heat. The construction costs were redistributed and evaluated on a yearly basis according to estimated operational life of the new heating facility. The final figures therefore determine estimated annual production or supply costs of a domestic heating source. Example of the heat production costs in case of a domestic boiler house compared to the heat production and supply costs of an existing DH system as well as detailed calculation of these costs and detailed description of individual data items which the Office took into account within the calculations can be found in the Attachment 1 of this document.

When speaking about the items being the part of the calculations it is important to state that at the construction of a small heat production source a number of risks may arise. All of them influence the final price in the end when compared to the current heat unit price charged by the DH operator. Apart from the real investment costs on construction of the facility it is important to consider also the duties connected to the future operation, security and maintenance of the domestic boiler house as well as the payments for water and electricity as energy inputs. In the calculations of the future savings that are being presented to the Office by the complainants, e.g. no administration costs connected to the building permission, banking costs and interest rates or costs related to disconnection that have to be paid to original heat supplier are included in the total costs. The fact that it is inevitable to re-invest into the new equipment and request for another loan once the operational life of the heating facility is over, is usually excluded as well.

In most of the cases, the disconnection process is connected with the revitalization arrangements on the consumer side (apartment block insulation, self-regulation in the apartments, replacement of windows). Especially the savings stemming from the revitalization processes may influence the heat costs to a great extent. If these arrangements are the part of the decision to disconnect from the centralised heating source it is more difficult to evaluate the extent to which the sole construction of a domestic heating facility will contribute to the total savings. The general view of a heat consumer when looking at the advantages or disadvantages of the disconnection investment is then biased. Revitalization of the apartment block itself may result in significant savings without disconnecting from the local DH system.

Generally, we can summarize that based on incomplete and biased information the investors who offer the services of new domestic heating facilities construction declare the annual savings up to 40-50% regarding the costs on heating and a short period of return on investment. This may represent a quite unrealistic goal if all real relevant costs are taken into account. Deciding on disconnection from the existing system should not be therefore based on a general declaration of a cost savings by a potential investor. Every apartment block should have its decision based on a detailed analysis performed by an independent subject with a declaration of all relevant operation costs of the new heating facility construction for its entire operation life.

The Office tried to assess objectively the whole disconnection process taking all available facts and factors which actually influence the final heat price in the case of an individual heating compared to heat consumption from a DH system into account.

**In the second phase, the Office focused on evaluation of the overall impact of a specific disconnection on consumers, including the impact on those who remain connected to a DH system in a specific region.** An example of a detailed calculation method of the impacts including the description of specific items can be found in Attachment 2 of this document.

For better understanding of the final evaluation the interpretation of potential results based on the calculations from Attachment 1 and Attachment 2 is presented in the following section.

Table 1 contains an example of final values from the first phase of the analysis, which means the values for the comparison of average annual production and supply costs in an individual and central heating facility.

**Table 1: Comparison of average annual heat production costs**

Average annual costs of individual heating facility			Average annual costs on heat supplied from CHS		
Variable costs incl. VAT- total	14 222	€	Variable costs incl. VAT- total	9 830	€
Fixed costs incl. VAT- total	6 448	€	Fixed costs incl. VAT- total	10 455	€
<b>Total heat costs incl. VAT</b>	<b>20 670</b>	<b>€</b>	<b>Total heat costs incl. VAT</b>	<b>20 285</b>	<b>€</b>
<b>Total heat unit price incl. VAT</b>	<b>0.0961</b>	<b>€/kWh</b>	<b>Total heat unit price incl. VAT</b>	<b>0.0943</b>	<b>€/kWh</b>

<b>The difference in annual costs on heat supplied from DHS and individual heating facility</b>	<b>-385 €</b>
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The results of the first part show that for a specific disconnected apartment block displayed in the table above the average annual heating costs of a domestic heating facility are higher than the heat supply costs from the related DH operator by 385 euro. Disconnection of the apartment block would be therefore in this case disadvantageous for the heat consumers and at these specific circumstances it would be more beneficial for them in the future to remain connected to the original central heat supplier.

Despite the fact that the comparison of the costs of the above mentioned heat consumption possibilities leans toward the DH system, the Office tried also to evaluate the impact of the disconnection on the whole heating system in the given municipality as well as the impact on the remaining heat consumers in the second phase of the analysis. For an objective evaluation of these issues, the Office used the figures provided by the SIEA and the figures of the original heat supplier for its calculations. Both subjects estimated the changes in tariffs for heat supplied from the local DH operator after disconnection of the apartment block. Table 2 contains an example of resulting values.

**Table 2: Impact on DHS after disconnection of an apartment block**

Former regulated heat price set for the considered year					
Variable costs excl. VAT			0.0381 €/kWh		
Fixed costs excl. VAT			191.6865 €/kW		
Impact on CHS after disconnection					
SIEA estimation			Estimation of former heat supplier		
Variable costs excl. VAT	0.0381	€/kWh	Variable costs excl. VAT	0.0381	€/kWh
Fixed costs excl. VAT	192.0140	€/kW	Fixed costs excl. VAT	192.2841	€/kW
<b>Total increase in payments incl. VAT</b>	<b>9 313 €</b>		<b>Total increase in payments incl. VAT</b>	<b>16 994 €</b>	

Comparing the resulting values of both subjects in this case the disconnection of this particular apartment block would cause an increase in the fixed part of the regulated heat price for the consumers who remain involved in the local DH system consumption. Even if the increase is not significant (increase by 0,3275 €/kW according to SIEA, or by 0,5976 €/kW according to the former supplier), it is possible to interpret the mentioned final values as following: after considering the residual consumption of other DH consumers they would pay more by 9 313 €, or by 16 994 € after disconnection of the particular apartment block compared to the situation if that apartment block stayed connected to the central heating system.

The values in this particular case show that disconnection of the apartment block really results in heat production costs changes for both - the apartment block in question and the consumers still connected to respective DH system.

The last row of the Table 3 shows the final evaluation – the total impact of disconnection on all heat consumers in respective municipality. The Office calculated the total impact as the overall value or a sum of economies or increased costs for heat consumption of disconnecting subject and the economies or increased costs for heat consumption for consumers still connected to the local system. If the resulting value is negative disconnection would cause increase in annual costs of heat consumption for all DH consumers. Thus from the AMO point of view in general the overall negative impact on consumers would occur. On the other hand, if the final value is positive it means that disconnection leads to overall economies in annual payments for heat in a local area and it therefore presumes the overall positive impact on consumers.

**Table 3: Overall impact on consumers after disconnection of an apartment block**

Overall impact after disconnection			
Impact on apartment block	-385 €	Impact on apartment block	-385 €
Impact on consumers that remain connected to DHS (according to the SIEA estimation)	-9 313 €	Impact on consumers that remain connected to DHS (according to the estimation of the former supplier)	-16 994 €
<b>Overall impact on consumers</b>	<b>-9 698 €</b>	<b>Overall impact on consumers</b>	<b>-17 378 €</b>

The figures stated in the Table 3 represent the values of -9 698 € or -17 378 €, respectively. According to above mentioned assumptions negative value means that the overall impact on heat consumers in a given town is negative. It is also necessary to emphasize that the overall impact would be negative also if the resultant value for disconnecting subject was positive and this positive value would not exceed the increase in payments for remaining heat consumers.

As to the assessment of possible infringement of the Article 39 and the Article 8 of the Act on Protection of Competition, based on the above mentioned conclusions the Office should proceed as follows: if the results of the analysis show that the overall impact of certain disconnection from DH system on all of the heat consumers in town is negative the Office cannot conclude that the conduct of the municipality or the central heat supplier in the form of negative statement on construction of a small heating device would have negative impact on consumers. The Office cannot conclude either that the municipality by its negative statement on disconnection of a particular apartment block gives the former heat supplier a preferential treatment even if the disconnection resulted in positive impact and decrease of costs on heating for a small group of consumers, but the negative impact on consumers that remain connected to the relative DH network exceeds the benefits of individual group of heat consumers.

**Regarding these investigatory procedures it is necessary to note that the method used by the Office does not represent the one and only way on how to assess the overall impact of disconnection from the existing DH facilities.** The Office just tried to set the objective criteria for its decision-making based on acquired documents and information and draw the complainants' attention to the fact that the projects on individual small heating facilities construction do usually not consider all the costs connected with the change of production source.

In spite of the attempt to launch the more economic approach when evaluating the impact of a particular disconnection **it is also necessary to point out that the AMO analysed the case of an individual apartment block in connection to particular DH system in certain period of its existence. At the same time, all of the facts and issues were to be evaluated only from the competition point of view.** This means that a potential final decision the Office is capable of covering only the given individual case. Within the investigation the Office assesses in detail neither the technical condition of the network facilities nor the long-term perspectives of local heating management as such. The Office does not have sufficient personal capacities to assess these aspects. Furthermore, it is not the task of the Office to

determine the ideal way of providing effective heat supply services within the territory of particular municipalities.

The overall strategy regarding the local heating management development remains still in competence of municipalities and their competent administrative bodies. All of the above mentioned facts and strategies should be part of regional heat Conceptions of the particular towns and cities. These should, however, get along with general state conception and strategies with their proper instructions and systematic goals when being prepared and introduced. The praxis proves that the problems within the DH systems area still remain. It is necessary to re-evaluate the benefit of the Conceptions and to introduce new measures with the aim to achieve expected results.

#### **5.1.4 Summary**

The above mentioned behaviour of market participants and municipalities as well as the experiences of the AMO when investigating the cases regarding disconnection processes from the existing DH systems show discontent of heat consumers and problems in heating sector despite state regulation. Except for the problems outlined in section 4.3 the Office finally evaluates the situation from the competition point of view as follows:

- i) particular cases cannot be assessed using a general clue, situation described in individual complaints differs procedurally and factually (the Office receives the complaints in various stage of decision-making process at a local administration level, for various reasons), but the aim of conduct of towns and DH operators is the same – to prevent disconnections,
- ii) from the procedural point of view the overlapping competencies of a number of state administrative bodies and institutions occur, the Office may however proceed only in conformity with the competencies within the competition rules,
- iii) despite the sector regulation the prices of the heat supplied from DH systems are increasing in many regions and the consumers often search for solution also in a form of non-systematic steps,
- iv) improper decision-making and ineffective disconnection from existing DH systems may be caused by insufficient knowledge and awareness of the facts among the heat consumers, especially within the category of households,
- v) decision-making processes at the level of municipalities are too formal and general without individual approach and evaluation of particular applications for small heating facilities construction or without sufficiently detailed reasoning regarding the long-term goals in the area of local heating management (in some cases a disconnection could be effective for both - disconnecting subject as well as for the whole DH system),
- vi) decision-making processes of municipalities usually refer solely to conclusions of conception which are usually out-dated and their final

recommendations for improvement of the local heating sector situation are not applied in praxis properly,

- vii) problems arise when evaluating the complaints from competition point of view – on one hand the construction of new heat production facilities and the possibility to disconnect exert pressure on higher efficiency of existing DH systems, on the other hand if the particular system is to work optimally in the form of natural monopoly, non-systematic, mass disconnections may result in negative impacts on all heat consumers in a given territory – heat supply in towns becomes overall ineffective for all market participants,
- viii) heating sector problems do not come out primarily from the infringement of competition rules; problems are rather of a structural nature caused mainly by:
  - unclear common energy policy and insufficient goals setting at national level in the area of heating sector and DH systems,
  - non-consistent decision-making processes within the municipalities and local administrative bodies and
  - non-existing guidance on particular procedures for all market participants.

Finally, there is still a question whether the AMO is the right state institution to solve the system problems in the area of heating sector. Based on the aforementioned points it is unlikely that the assessment of particular cases by the Office itself can solve the complicated overall situation in heat supply markets within the towns and cities in Slovakia. Broader discussion of competent state administration bodies should contribute to establishment of a new framework that would ensure optimal existence of those DH systems which have a potential to supply its consumers with the heat efficiently for appropriate price. It is, therefore necessary to introduce the measures that would lead to higher satisfaction of heat consumers and reduction of their motivation to disconnect from the economically prospective central systems.

## **6. Proposals for improvement of the situation within the area of DH systems in Slovakia**

Representatives of various state institutions and undertakings repeatedly present their proposals for various solutions that could improve the conditions of heating systems functioning. Measures introduced in this part of the document come out from the AMO knowledge and experience in the given area. The Office considers the following measures as the most important:

- Establishment of clear and specific system measures that would reflect the fulfilment of short and long term perspectives in the area of heat supply management and updating the Energy Policy of the Slovak Republic effectively followed by other legislative standards and Regulation Policy of the Slovak Republic is necessary.
- Regarding the current situation in heating sector in Slovakia it is necessary to reconsider the options for structural changes (e.g. partial or even full divestment of

some economically non-effective systems and their facilities) that would prevent further problems, discontent of heat consumers with high prices and low-quality services as well as possible risk of heat supply system collapse. If decentralisation of heat production and supply is inevitable, the system of support for consumers originally connected to DH system needs to be prepared and realised. Independent experts should evaluate efficiency of individual CH systems in detail to decide right on their future functioning and existence.

- There is a need for more intense communication and cooperation between municipalities and competent state institutions as well as for communication at the level of Association of Towns and Municipalities of Slovakia to harmonize the procedures within the territorial and building proceedings in heating management.
- Professional preparation and regular updating of heating sector conceptions together with proper application and revision of the adopted conclusions and recommendations pursuant to the Methodical Instruction of Ministry of Economy SR should be the basic presumption for the local systems operation.
- Individual, detailed and complex assessment of each application for new heat production facility construction by municipalities is essential. Except for the accordance with the long-term goals within the local heating sector, decision-making processes should include detailed economic analysis, comparison of possible options and evaluation of total impact of adopted measures on heat consumers in a given geographical area. DH systems in question should, however, operate effectively and regular control mechanisms for evaluation of their functioning should be introduced. Prohibition of a new production source construction within the process of disconnection should not come out solely from the fact that the municipality adopted a heat energy conception.
- Preparation of a guidance document by the ME with a help of experts for setting a unified procedure for municipalities within the evaluation of applications for individual disconnection from the existed DH systems would benefit all market participants. Such a document should include mainly detailed description of steps for economic analysis of possible impacts of disconnections both on disconnecting subject and on consumers that remain connected to the central system.
- It is also necessary to increase the knowledge of local heat consumers on situation in local heating system and keep them informed on a regular basis through official news and publications.
- Municipalities together with competent authorities and experts should reconsider the adoption of a document that would inform heat consumers about the steps of a procedure in the matter of disconnection from a local DH system. It is also necessary to inform the consumers on all pros and cons or risks connected with construction of a new heating facility.
- It would be also essential to reconsider the amendment regarding the options to terminate a contract on heat supply and consumption within the provisions of the Act on Heat Energy. Current provisions are evidently in favour of original central heat suppliers; in certain cases the existing provisions de facto disable any

disconnection. Some of the provisions are unclear and may result in incorrect interpretation on the part of market participants.

- Finally, introduction of control mechanism or determination of competencies of existing state authorities on supervision over the preparation of heat conceptions and realisation of their approved conclusions and recommendations should be reconsidered.

Finally, it could be mentioned that this document had been discussed with the experts in heating issues before its official release. Almost all of the experts agreed on the above mentioned measures proposed by the AMO and most of them pointed out during the discussions that the need for particular solutions application is urgent. All the new measures should be specified as soon as possible and responsibilities of state institutions and other market participants should be determined as well.

## **Conclusion**

The aim of this document prepared by the AMO was not only to describe the current functioning of heat energy sector and existing DH systems in Slovakia. The aim was also to explain the position and show the problems of the competition authority within the decision-making processes in the given area. The Office had no ambition to evaluate the procedures within all policy sectors influencing the heating sector functioning as the Office is not professionally qualified for it (e.g. the issues of environmental policy and legislation). Aim of this material was to open the broad discussion on possible solutions for the current problems in close connection with the competencies of particular state authorities and local self-government bodies.

Adequate legislation and regulation rules respecting the external conditions in which the local heating systems operate may contribute to efficient utilisation of the advantages of DH concept and thus lead to satisfaction of municipalities, heating system operators and final consumers. In the future it would be necessary to clearly set the competencies of involved state administration bodies and local self-government authorities. It is also inevitable to set the new conditions for heat management operation with the aim to prevent the existence of non-systematic steps of the heat market participants and degradation of systems that have the potential to operate effectively also in future.