

DEVELOPMENT OF HEAT PUBLIC  
SERVICE SUPPLY - STRATEGIC  
OBJECTIVE OF LOCAL GOVERNMENT

**Abstract**

The overall objective of the development strategy of the municipalities heating activities, it consists in satisfying the needs of thermal energy (hot water and heating) both presently and in medium and long term, at a price as low is possible, suitable for a modern market economy and a civilized standard of living, in terms of quality, continuity and security of consumers respecting sustainable development principles.

Taking into account the importance of thermal energy for residents and for economic units, the development of heating activity is done under the supervision of local authority through the development and implementation of the strategy..

**Keywords:** public service, thermal energy, local public authority, strategy.

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**DEZVOLTAREA  
SERVICIULUI PUBLIC DE  
ALIMENTARE CU  
ENERGIE TERMICĂ –  
OBIECTIV STRATEGIC AL  
AUTORITĂȚILOR PUBLICE  
LOCALE**

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**Rezumat**

Obiectivul general al strategiei de dezvoltare a activitatii de termoficare la nivelul municipiilor, il constituie satisfacerea necesarului de energie termica (apa calda de consum si incalzire) atât în prezent, cât si pe termen mediu si lung, la un pret cât mai scazut, adecvat unei economii moderne de piata si la un standard de viata civilizat, în conditii de calitate, continuitate si siguranta în alimentarea consumatorilor, cu respectarea principiilor dezvoltarii durabile.

Având în vedere importanta energiei termice pentru locuitori precum si pentru unitatile economice, dezvoltarea activitatii de termoficare se realizeaza sub supravegherea autoritatii publice locale, prin elaborarea si transpunerea în practica a strategiei.

**Cuvinte cheie:** serviciu public, energie termica, autoritate publica locala, strategie



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## 1. INTRODUCTION

Considering the importance of thermal energy for citizens, as well as for economic units, development of district heating activities is performed under local authority supervision by developing strategies in the field and by putting them into practice.

Heating activity development strategy will track the achieving of main objectives of the new EU energy - environment policy, objectives assumed even for Romania.

The overall objective of heating activity development strategy of any municipality consists of satisfying the thermal energy needs (hot water and heating) both now and in the future, at a price as low as possible, to contribute ensure a decent standard of living according to the requirements of a modern market economy, in terms of quality, continuity and consumer supply safety, respecting the principles of sustainable development.

Considering the national context increasingly globalized, heating policy must be performed in the changes and developments at local, national and European level.

## 2. PUBLIC SERVICE

Community service by public utilities is regulated by Law no. 51/2006 (the law of economic services of general interest, services "that provide essential needs satisfaction of utility and general public interest of social character of local communities" (General Council of Bucharest, 2014) and Law no. 325/2006, that is a public service law.

Like any community service of public utilities, public service is based on principles such as: local autonomy, decentralization of public services, responsibility and legality. It is also governed by sustainable development and correlation requirements with resources, takes into account natural and man-made environmental protection and conservation, ensuring public health and efficient management of public or private property assets of the administrative-territorial units. It is also based on participation and consultation of the population on free access to information on public services.

Regarding the organization of public service, prevails the general interest of local communities. This service is organized and managed according to the degree of development and size of the localities.

Regarding the general policy of the state in the public utilities field, the government approves and updates the national strategy in the field and also supports the local public authorities in order to develop and improve public utilities services.

The public service is achieved through specific technical-urban infrastructure belonging to public or private domain of administrative-territorial units, which form together the centralized supply heat system of localities - SACET (General Council of Bucharest, 2014).

There are two ways of organizing the public service management, as follows:

- direct management, whereby the provision, administration, operation and exploitation of heat supply centralized system is the responsibility of local public authorities, through the public services of local and county interest, with or without legal personality;
- delegated management, whereby the provision, concession and operating right and obligation are assigned by the local public administration authorities to several operators. They are: commercial companies with full social capital of administrative-territorial units, commercial companies formed after the reorganization of autonomous administrations of local or county interest, whose social capital is owned entirely by the administrative-territorial units, and commercial companies with private or mixed capital.

Regardless of the organization, providing of public service is based on licenses issued by the National Authority for Energy Regulation (ANRE) and the National Regulatory Authority for Public Utilities Community Services (ANRSC).

- A.N.R.E. grants licenses and approve prices for the activity of thermal energy production in cogeneration;
- A.N.R.S.C. grants licenses and advise prices/rates for the activities of generation, transportation, distribution and supply of thermal energy (except the thermal energy produced in cogeneration).

Each administrative-territorial unit in which the public service is organized supports of its local budget the difference between thermal energy local price (consisting of production price and transport services, distribution and supply of thermal energy price which is approved by the local public administration authorities) and local price of population (which is the price for thermal energy supplied to the population through SACET).

### 3. URBAN COGENERATION

Cogeneration is the process of simultaneous production of thermal and electric energy and/or mechanical energy.

Through high efficiency cogeneration, primary energy savings are achieved which are superior than the values obtained separately for electric and thermal energy.

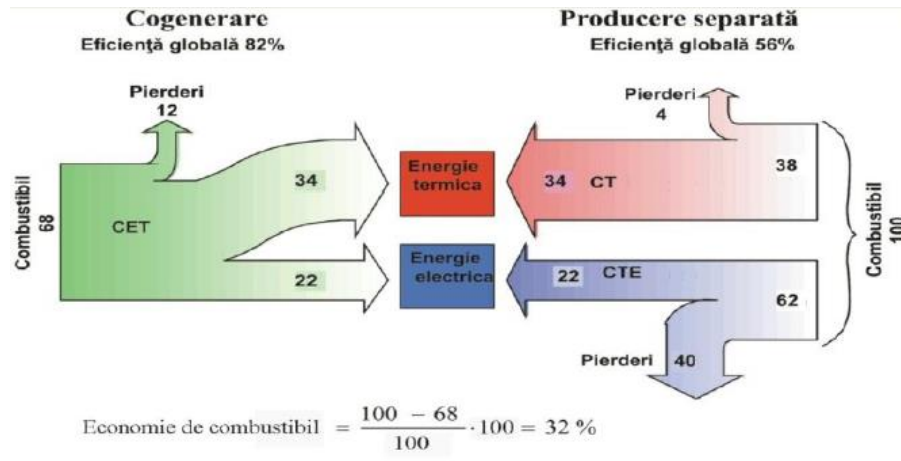


FIGURE 1 - SAVINGS OBTAINED BY COGENERATION COMPARED TO SEPARATE PRODUCTION  
Source: Vasile, 2014

In 2014, on 31 July, were registering 1.350.581 apartments connected to SACET, from which approximately 1.000.000 apartments on cogeneration. The number of localities in our country, with centralized heating systems and their annual evolution are presented in the next figure.

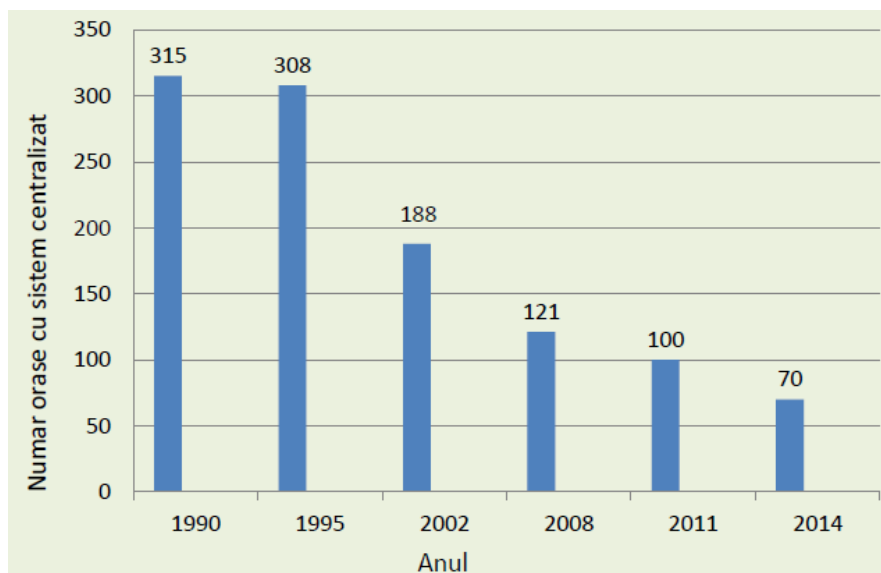


FIGURE 2 – ANNUAL EVOLUTION OF THE NUMBER OF ROMANIAN CITIES WITH CENTRAL HEATING SYSTEM  
Source: Vasile, 2014

Also in the below figure it can see the evolution of average of Gcal tariff paid by the population during 1997-2014. During this period it can be noted an increase more than 10 times of the tariff. The increase is different from the increase of the population incomes.

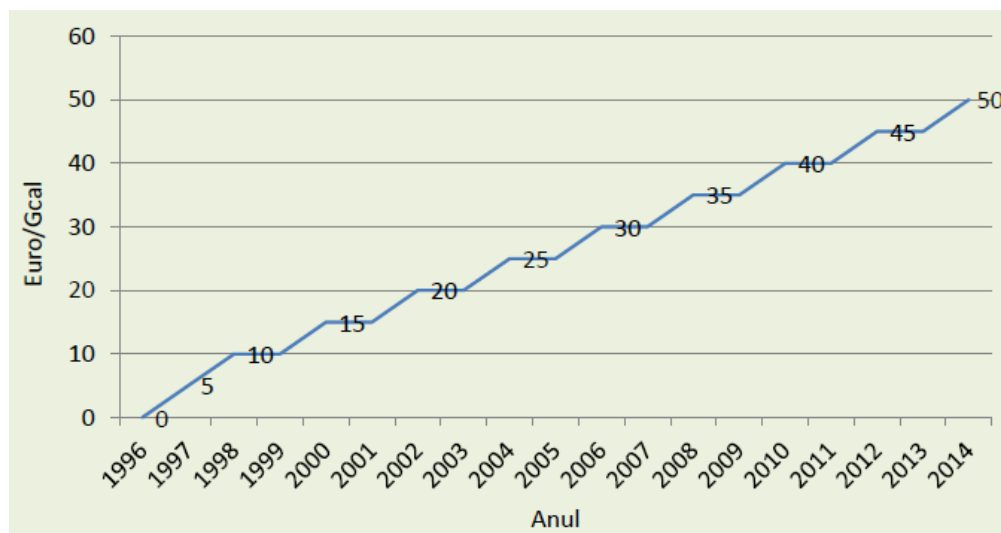


FIGURE 3 – THE EVOLUTION OF Gcal TARIFF PAID BY THE POPULATION  
 Source: Vasile, 2014

The economical solution of a cogeneration plant is that to be managed by local authorities, based on local energy planning. This implies that the cogeneration plants was able to establish their selling prices so that can keep heat consumers and also to be able to regain the disconnected consumers (Bacau City Hall, 2014).

The causes of inefficiency and abolition of centralized heating systems were:

- Thermal power plants and those of block, due to the closure of industrial sites and the reduction of urban consumption, have become oversize in relation to consumption;
- Technical performance of systems decreased in time due to technical wear, remaining at the technological level of the 60s and 70s;
- Thermal plants transfer from RENEL to local authorities, transfer which is carried out between 1997-2004, showed inefficient systems, considering that the economics analysis has not achieved more globally, but individually;
- After the 2006 pricing policy did not allow more full coverage of heat energy costs through grants. By destroying the national reference price, there were adopted local reference prices, unbearable for some localities.

For insufficiency of funds for refurbishment, replacement and repair are responsible the following causes:

- Cashings from the population were below the billed;
- Subsidies were insufficient;

- Only after 2004, when the systems were already collapsing, government intervened through investment programs for revamping, but they were poor;
- Centralized heating owners - local authorities - have not had resources for investments in the rehabilitation and modernization of these systems;
- The plants were transferred to local authorities with unhonored financial obligations;
- Due to lack of rehabilitation, plants efficiency reaches below 60%, compared to 75% according to the prior art, and losses rose to levels of 40% compared to 18% which is the recommended level. If we take into account heat loss through the walls of those still rehabilitated buildings, losses rose to levels of 50% compared to only 25% which is the recommended level, is obtained an image of arrearage and uncompetitive centralized heating systems in relation to the real needs of consumers;

On the other hand, insufficient funds leads to the cancellation of low efficiency systems and decapitalisation of acceptable efficiency systems. Also, widespread negative publicity of centralized heat supply systems determined customers to choose the disconnection solution. Another argument of massive disconnection in favor of the apartment plants, it was the lack of metering at branching and individual, and delays in carrying out due to lack of funds.

Of the 96 heating centralized systems that were in use in 2011, only 15 were shortlisted for access to European funds (POS environment, Priority Axis 3), and of these only 7 actually benefited from funds, namely: Timisoara, Iasi, Bacau, Oradea, Botosani, Focsani, Ramnicu-Valcea (Govora).

#### 4. DEVELOPMENT STRATEGY OF HEATING ACTIVITY IN VARIOUS MUNICIPALITIES

##### **Bucharest**

One of the major guidelines of the National Strategy for accelerating the development of community services of public utilities approved by HG no. 246/2006 is "the management of electric heating plants reorganization by passing wholly-owned administrative units" (CGBM, 2014).

Public service of thermal energy supply to the users in Bucharest, currently on responsibility of municipality, does not include the production of heat in cogeneration.

SACET Bucharest, although technically and functionally unified, does not belong entirely to Bucharest municipality, is therefore exploited, mainly, by:

- RADET Bucharest - transport and distribution networks operator and also of other public assets of Bucharest which offers public service
- ELCEN - operator of five thermal energy plants, that although have an important role in the production of electricity in the national energy system, provide over 90% of the production of thermal energy required of users of the public service under the responsibility of the Bucharest municipality.

These two entities is in the portfolio of two separate administrative authorities namely CBMB and the Ministry of Economy. Between this authorities, does not exist coherent decision-making, therefore exist malfunctions of the entire SACET, with negative consequences for the population.

This is one of the reasons that Bucharest municipality can not control the price of thermal energy production, which represents an essential component of the energy price billed by RADET to public service users and can not determine a strategy for increasing energetic efficiency of all chain technology.

At the end of 2013, RADET Bucharest registered a total debt against ELCEN over 3.000.000 thousand lei.

Thus, considering:

- current public service organization at Bucharest and the fact the assets that compose SACET Bucuresti belong to different entities (Bucharest municipality and ELCEN);
- the existence of financial problems between RADET Bucharest and ELCEN and the need to solve them;
- legal obligation to reorganization of the autonomous administrations;
- european directives that impose mandatory to increase energy efficiency, an objective that can only be reached by achieving integrated SACET in terms of their ownership and operation, the only way to solve these problems is to implement "retained solution", according to art. 4, letter b1 of the Memorandum "Bucharest Municipality through Bucharest Municipality General Council (CGMB) will proceed, through its decision, to the administrative reorganization of RADET in commercial society having Bucharest municipality as sole shareholder, according to O.U.G. no.30/1997 on the reorganization of autonomous administrations and will conclude with the resulted company, after the reorganization of RADET, a public service management contract".

RADET reorganization represents both a legal obligation and the first stage of the Bucharest Strategy on Public Service approved by Decision of CGBM no. 108/2013.



OUG no. 30/1997 provides that the obligation of the central or local public administration authorities under whose authority are organized and function autonomous administration that, within 90 days, of the going into effect the law of approving it (OUG no. 30/1997 it was approved by Law no. 2017/1997 which goes into effect on 18.12.1997) to finalize the reorganization of programs of the autonomous administrations.

Bucharest SACET requires substantial investments to improve the quality of public service and to respect environmental standards. Despite the many benefits of SACET, it lose competitiveness against its main competitor, namely individual gas heating.

In this case, Bucharest municipality will have to identify multiple sources of financing investment, including:

- accessing grants from the European Union;
- obtaining attractive loans from international financial institutions;
- private funds accessed in competition regim.

### **Bacău**

For Bacau municipality, the main centralized supply source for urban and industrial consumers is the electric power plant Bacau and it belongs to SC CET Bacau. It was designed in order to combined production of electric and thermal energy required by technological consumers of Bacau municipality and Bacau industrial platform, and to supply heat for the majority of urban and tertiary consumers of the city.

Demand of thermal energy in Bacau municipality in the period 2013-2033 consists of the urban consumers and the tertiary consumer fed directly from the hot water network.

New heating strategy of Bacau municipality, is based on the following objectives:

- Energy network expansion by attracting new consumers;
- Develop a heating regulation adapted to local needs;
- Increasing energy efficiency;
- Increasing security in providing the fuel necessary through the use of biomass (PM Bacau, 2014).

The aim of the strategy is to establish, locally, policies and general guidelines on organization, function and regulation of public service supply of thermal energy centralized produced and identifying ways, means and modalities of implementation of investment programs and their possible funding sources.



### **Pitești**

The current centralized thermal energy supply system of Pitesti municipality (SACET) is characterized by obsolete equipment with low yields and high losses in transportation and distribution networks. The generalized phenomenon of disconnection, currently reaching a total of 24.010 apartments connected to the centralized system of 56.600 apartments initially connected to SACET, influenced the less of SACET efficiency.

Conjectural analysis of the current situation of SACET highlights some weaknesses, opportunities and risks that lead to the conclusion that implementation of this strategy can provide SACET efficiency.

The overall objective of heating development strategy in Pitesti municipality is the satisfaction of thermal energy needs (hot water and heating) both in present and in medium and long term, at a price as low is possible, suitable of a modern market economy and a civilized standard of living in terms of quality, continuity and reliability in consumer supply, respecting the principles of sustainable development.

Taking into account the importance of thermal energy for residents of Pitesti municipality, as well as economic units, the development of heat activity is performed under local authority supervision, through the development and implementation of the strategy.

The present strategy will be updated depending on technological development, changes in strategies established in the European Union and developments in the local market of thermal energy and national energy market.

The strategy ensures maintenance of electrical and thermal energy prices linked to the consumers affordability of Pitesti municipality through the rational use of primary energy sources and by ensuring the functioning of the energy market.

Heating policy in Pitesti municipality is correlated with the European Community directives in the field. The strategy follows the main objectives of the new energy-environment policy of European Union, objectives undertaken also in Romania. They are: energy security, sustainable development and competitiveness (Local Council of Pitesti, 2015).

### **Oradea**

The target of Oradea municipality is the increasing of thermal energy supply service quality at supportable tariffs for the population, and increasing the energy efficiency and sustainable development of this system too.

Currently, in Oradea municipality, thermal energy production is achieved with a low overall efficiency (approx. 56%) and losses in transportation and distribution system are high. As a result, municipal objectives include increasing the efficiency of production, transportation and distribution of thermal energy through increasing the share of geothermal sources.

Heat supply strategy of Oradea municipality was realised in 2007 and had as objective the increase of energy efficiency, reducing the environmental pollution and achieving of a supporting price of thermal energy for the population (Local Council of Oradea, 2009).

The centralized thermal energy supply system for Oradea municipality has the largest share, fueling with thermal energy approx. 70% of Oradea municipality population. The system comprises a source of cogeneration with large combustion plants powered by lignite and natural gas and a transportation and distribution system. The centralized thermal energy supply system having geothermal resources and natural gas as thermal source, cover approx. 5% of total consumption of municipality, and the individual supply system having apartment centrals, covers the remaining 25%.

Local public authorities provide subsidies for the population with incomes lower than the national average income for supporting the costs of thermal energy supplied.

## CONCLUSIONS

The overall objective of the development strategy of any municipality heating activity consist of satisfying the thermal energy need (hot water and heating) both present and in medium and long term, at a price as low as possible, to contribute to a decent standard of living according to the requirements of a modern market economy, in terms of quality, continuity and reliability for consumers, respecting the principles of sustainable development.

The conclusion is that centralized thermal energy system (SACET) is far more advantageous compared to individual heating solution, especially in urban areas, in cities with large number of people. Giving up to this system (SACET) would void that at least 30% of the Romanian population in urban areas, not be able to warm up, advantageously.

SACET is an European model of ensuring the public service of heating, which is expanding at European Union level, while in Romania was reduced three times in the last 20 years. To become efficient in our country, this system requires urgent and substantial investment for refurbishment and modernization.

Other conclusions are:

- on producer-consumer relationship, there is a deficiency of Romanian thermal energy system of over 40% compared to the best available techniques. This deficit is given by:
  - oversizing heating plants in relation to the current heat consumption;
  - limited technological performance of existing power plants, according to the requirements of high efficiently cogeneration;
  - significant heat losses in the transportation and distribution system of heat and hot water heating, which can be reduced only through significant investments;
  - additional consumption in Romanian homes with over 25% compared to normal, due to high heat losses in homes;
- through preservation and development of SACET is possible to achieve the targets set by Romania as an EU member country regarding energy efficiency, to use of renewable resources and sustainable development too. Thus, the development of SACET is therefore a strategic option for Romania, achieved at the level of each municipality, taking into account that owners are centralized heating local authorities;
- to develop this energy system are needed effective strategies, which generate a stable regulatory framework to encourage public and private investments in the field;
- there is a malfunction in the regulatory framework because there are two regulators authorities in the field (ANRE and ANRSC), which dissipate responsibilities between ministries;
- it is necessary to create public-private partnerships and developing projects for different areas inhabited localities, considering the lack of experience of local authorities in this field;
- heating system operators are undercapitalized companies due to pricing policy practiced until now. They were from the beginning in financial difficulty because at the detachment of CONEL, the companies were encumbered by debts which have not recovered from incomes;
- public services (heating, electricity, water-sewerage, urban transportation, natural-gas distribution) are provided by independent operators. This fact generates malfunctions and extra costs for each type of public service;
- granting subsidies system was not designed for low-income consumers;
- the use of renewable resources is discouraged for urban cogeneration projects;

- future subsidizing of natural gas consumption in independent sources will tend to eliminate heat systems based on cogeneration with results to the use of local renewable energy resources;
- Romanian urban waste management strategy provides only the capitalizing of landfills, but not the construction of them.

Taking into account the importance of thermal energy for citizens and for economic units too, developing heating activity is performed under local authority supervision, through the development and implementation of the strategy.

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