ROMANIAN ENERGY REGULATORY AUTHORITY

REPORT

ON THE STATUS OF THE PUBLIC SERVICE OF THERMAL ENERGY SUPPLY IN CENTRALIZED SYSTEM FOR THE YEAR 2020

AUGUST 2021

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1. INTRODUCTION

This Report was prepared according to art. 14, paragraph (2) of ANRE's Order no. 193/2019 for the approval of the *Methodology for monitoring the public service of thermal energy supply in centralized system and of the urban heating and/or cooling systems,* hereinafter referred to as Methodology.

In accordance with the provisions of the *Law on community services of public utilities no. 51/2006, republished, with subsequent amendments and completions*, the activities of production, transport, distribution and supply of thermal energy are subject to licensing, regulation and control of ANRE from the date of entry into force of *Law no. 225/2016 for the amendment and completion of the Law on community services of public utilities no. 51/2006.*

The *methodology* establishes the parameters used for monitoring the public central heating system (SPAET) and the district heating and/or cooling systems, the obligations of economic operators from the thermal energy sector regarding the reporting of the monitoring data and the analyzes and reports elaborated by ANRE based on the monitoring data received from the economic operators.

Through the monitoring activity of SPAET, ANRE aims to achieve the following objectives:

- to analyze the evolution of SACET at local, regional and national level;
- to evaluate the results obtained by SACET operators and the way of fulfilling the specific obligations/attributions;
- to develop the specific SPAET database;
- to elaborate reports on the state of SPAET;
- to indentify the general problems existing at SPAET level, according to the data collected from the monitored SACET operators.

The current report is sent to the Government and the specialized commissions within the Romanian Parliament and is published on the website www.anre.ro .

2. LEGISLATION APPLICABLE IN THE THERMAL ENERGY SECTOR

2.1 – Primary legislation

- **Law no. 51/2006** on community services of public utilities, republished, with subsequent amendments and completions
- **Law no. 325/2006** on the public heat supply service, with subsequent amendments and completions
- **Law no. 196/2021** for amending and completing the Law on the public heat supply service no. 325/2006, for amending Law no. 121/2014 on energy efficiency, art. 10, para. (5) and to complete Law no. 227/2015 regarding the Fiscal Code, art. 291, para. (3)
- **Ordinance no. 36/2006** on certain measures for the operation of the centralized systems of thermal energy supply for the population, with subsequent amendments and completions
- **Law no. 196/2018** on the establishment, organization and operation of owners' associations and the administration of condominiums, with subsequent amendments and completions
- **Energy efficiency law no. 121/2014** with subsequent amendments and completions, transposing the provisions of Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing of Directives 2004/8/EC and 2006/32/EC
- **Law on electricity and natural gas no. 123/2012,** with subsequent amendments and completions
- **O.U.G. no. 33/2007** regarding the organization and functioning of the National Authority for Regulation in Energy, approved with modifications and completions by Law no. 160/2012, with subsequent amendments and completions
- **O.U.G. no. 53/2019** on the approval of the Multiannual Program for financing investments for the modernization, rehabilitation, refurbishment and extension or establishment of centralized systems of thermal energy supply for localities and for amending and supplementing the Law on community services of public utilities no. 51/2006
- **Law no. 215/2001** of the local public administration, with subsequent amendments and completions

2.2- Secondary legislation

- **ANRE Order no. 11/2021** for the approval of the Methodology for monitoring the public service of thermal energy supply in centralized system and of the urban heating and/or cooling systems

- **ANRE Order no. 13/2020** for the approval of the Regulation for issuing technical approvals on energy efficiency under the District Heating Program (date of entry into force 07.02.2020)
- **ANRSC Order no. 66/2007** on the approval of the Methodology for establishing, adjusting or modifying the local prices and tariffs for public services of thermal energy produced in centralized system, exclusively the thermal energy produced in cogeneration
- **ANRSC Order no. 91/2007** for the approval of the Framework Regulation of the public service for thermal energy supply, with subsequent amendments and completions
- **ANRE Order no. 28/2017** on the approval of the Regulation for granting licenses in the field of centralized service of thermal energy supply, with subsequent amendments and completions
- **ANRE Order no. 53/2017** on the approval of the Regulation for the authorization of legal entities carrying out activities of installation and operation of cost allocation systems for heating and hot water consumption in condominium buildings, with subsequent amendments and completions
- **ANRSC Order no. 343/2010** for the approval of the Technical Norm regarding the distribution of thermal energy consumption among consumers in condominium buildings, in case of using the distribution systems of costs for heating and hot water for consumption
- **ANRSC Order no. 483/2008** regarding the approval of the Framework Contract for thermal energy supply
- **ANRSC Order no. 92/2007** for the approval of the Framework Specifications of the public service for thermal energy supply service

3. THERMAL ENERGY SUPPLY IN CENTRALIZED SYSTEM

3.1 The public service of thermal energy supply in centralized system (SPAET)

According to the provisions **of art. 1 para. 4** of **the Law on community services of public utilities no. 51/2006, republished, with subsequent amendments and completions**, the heat supply service is defined as a public service in order to ensure a high level of safety and accessibility, equal treatment, promotion of universal access and user rights, having the following features:

- has an economic and social character;
- responds to requirements and needs of public interest and utility;
- has a technical-urban character;
- has a permanent character and a continuous operation regime;
- the operating regime may have monopoly-type characteristics;
- implies the existence of an adequate technical-municipal infrastructure;
- the coverage area has local dimensions: communal, urban, municipal or county;
- it is the responsibility of the local public administration authorities;
- it is organized on economic and efficiency principles in conditions that allow them to fulfill their specific public service missions and obligations;
- the management method is established by decisions of the deliberative authorities of the local public administration;
- it is provided based on the "beneficiary pays" principle;
- the recovery of operating and investment costs it is made through prices and tariffs or taxes and, as the case may be, from budgetary allocations. The measure may involve elements of *state aid* type, in which case the local public administration authorities request the approval of the Competition Council.

3.2 The centralized system of thermal energy supply (SACET)

The public service of thermal energy in centralized system (SPAET) includes all the activities regarding the production, transport, distribution and supply of thermal energy, carried out at the level of administrative-territorial units under the leadership, coordination and responsibility of local public administration authorities or associations for community development, as appropriate, in order to ensure the thermal energy necessary for heating and preparation of hot water for consumption for the population, public institutions, social - cultural objectives and economic operators.

According to the regulations in force, the public service of thermal energy supply in centralized system is performed through specific technical-municipal infrastructure, belonging to the public or to the private domain of the local public administration authority or the community development

association, which forms the **centralized system of thermal energy supply** of the locality or of the community development association.

The centralized system of thermal energy supply (SACET) represents a unitary technological and functional kit consisting of constructions, installations, equipment, specific endowments and measuring means for the production, transport, distribution and supply of thermal energy in the locality and is made of:

- Thermal power plant;
- District heating power plants;
- Transport networks;
- Distribution networks;
- Thermal points;
- Thermal stations/modules;
- Connecting pipes, up to the delimitation/separation points of the installations;
- Auxiliary constructions and installations;
- Measurement, control and automation systems.

3.3 Economic operators monitored in 2020

The SACET operators and the related independent thermal energy producers, which transmitted to ANRE the data regarding the activity carried out at the level of the year 2020, according to the provisions of the *Methodology* are presented by regions in *Table no. 1*.

Table no. 1 - SACET operators with related independent heat producers

Region	County	Localuty	SACET Operators	Independent thermal energy producers
North-East Region	Suceava	Suceava	Thermonet SRL	Bioenergy Suceava SA
		Rădăuți	Servicii Comunale SA	
		Vatra Dornei	Municipiul Vatra Dornei	
	Bacău	Bacău	Thermoenergy Group SA	
	Botoșani	Botoșani	Modern Calor SA	
	Iași	Iași	Veolia Energie Iași SA	
	Vaslui	Vaslui	Goscom Vaslui SA	
		Bârlad	Compania de Utilitati Publice SA	
North-West Region	Bihor	Oradea și Com. Sânmartin	Termoficare Oradea SA	Transgex SA
		Beiuș	Transgex SA	
	Cluj	Cluj-Napoca	Termoficare Napoca SA	Colonia Cluj-Napoca Energie S.R.L.
		Huedin	Paulownia Green International SRL	

South – West Region	Dolj	Craiova	Termo Craiova SRL	Societatea Complexul Energetic Oltenia SA
	Mehedinți	Drobeta Turnu Severin	SPAET Drobeta Turnu Severin	
	Gorj	Motru	UATAA Motru SA	
	Vâlcea	Râmnicu Vâlcea	CET Govora SA	
		Băile Olănești		
		Călimănești		
		Horezu	Reimar Construct SRL	
South – East Region	Buzău	Buzău	Regia Autonomă Municipală RAM Buzău	
		Nehoiu	Termo Prest Pon Nehoiu SRL	
	Constanța	Constanța	R.A.D.E.T. Constanţa	Societatea Electrocentrale Constanţa SA
		Mangalia	Goldterm Mangalia SA	
		Cernavodă	Utilităţi Publice Cernavodă SRL	Societatea Națională Nuclearelectrica SA
		Năvodari	Termica Distribuţie Năvodari SRL	Uzina Termolectrică MIDIA SA
	Galați Tulcea	Galați	Calorgal SA	
		Tulcea	Energoterm SA	
	Vrancea	Focșani	ENET SA	
		Panciu	D.U.S.P.I. SERV Panciu S.R.L.	
South Region	Prahova	Ploiești	Veolia Energie Prahova SRL	
	Giurgiu	Giurgiu	Uzina Termoelectrica Production Giurgiu SA	S.C. Electro Energy Sud SRL
	Călărași	Călărași	SPCTAFL	
		Lehliu Gară	D.G.C.L.	
	Argeș	Pitești	Termo Calor Confort SA	
		Mărăcineni		
West Region	Hunedoara	Brad	Termica Brad SA	
		Deva	Societatea Complexul Energetic Hunedoara SA – Sucursala Electrocentrale Deva	
	Arad	Arad	CET Hidrocarburi SA	S.C. CET ARAD SA
		Nădlac	Apoterm Nădlac SA	
	Timiș	Timișoara	Compania Locală de Termoficare Colterm SA	
Center Region	Brașov	Brașov	SPLT Brașov	Bepco SRL
		Făgăraș	Ecoterm SA+SPAET	
	Sibiu	Sibiu	Urbana SA	
	Covasna	Întorsura Buzăului	Serviciul public de alimentare cu energie termică	
		Sfântu-Gheorghe	Urban-Locato	
	Harghita	Odorheiu Secuiesc	Urbana SA	
		Miercurea Ciuc	Goscom SA	Poligen Power Energy SRL
		Gheorgheni	SPLT Gheorgheni	

Bucharest-Ilfov Region		București	Compania Muncipală Termoenergetica București SA	CET Grivița SRL
				Vest - Energo SA
				Electrocentrale București SA
	Ilfov	Otopeni	Veolia Energie România SA	

Source: ANRE

At the end of 2020, 47 operators of centralized heat supply systems were active, operating a number of 50 SACETs in 51 localities, located in 28 counties and the Municipality of Bucharest.

The evolution of the number of SACET operators in the period 2018-2020 is presented in Table no. 2.

Table no. 2 – The evolution of the number of SACET operators in the period 2018-2020

Region	2018	2019	2020
North-East	9	8	8
South-East	10	10	10
South	7	5	5
South-West	4	5	5
West	5	5	5
North-West	4	4	4
Center	8	7	8
Bucharest - Ilfov	2	2	2
Total	**49**	**46**	**47**

Source: ANRE – collected data from monitored operators

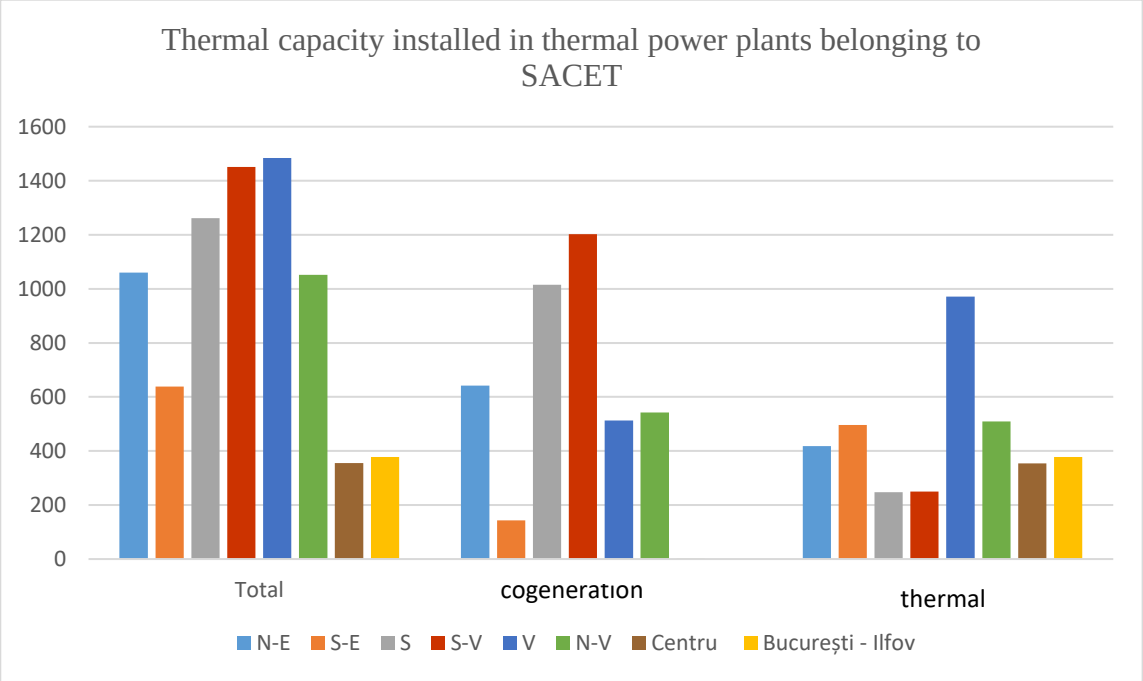
4. THE MAIN CHARACTERISTICS OF SACET

4.1. Thermal capacity installed in thermal power plants belonging to SACET

At the level of the year 2020, based on the data reported by the SACET operators resulted a total thermal capacity installed in thermal power plants belonging to SACET of 7,680.41 MW, from which 4,058.02 MW represent the cogeneration production capacity and 3,622.39 MW represents the thermal capacity of separate production of thermal energy. These data do not include the thermal energy production capacities of the independent producers from which the SACET operators have bought thermal energy in 2020, these being reported to ANRE, by the independent thermal energy producers, according to annexes no. 9-12 of the methodology. In accordance with Art. 24 para. (6) of Directive 2012/27 / EU on energy efficiency, ANRE centralizes and processes the data reported by economic operators, according to the models submitted by EUROSTAT, for transmission to the National Institute of Statistics.

In figure no. 1 it can be observed the fact that the highest installed thermal capacity in thermal power plants belonging to SACET is in the Western region - 1,484.72 MW, followed by the South-West region - 1,451.40 MW. At the opposite pole are the Central region with 355 MW and Bucharest - Ilfov with 377.20 MW.

Figure nr. 1 - Thermal capacity installed in thermal power plants belonging to SACET, by regions (MW)



Source: data collected from the SACET operators monitored according to the Methodology

4.2 The number of thermal power plants belonging to SACET

In 2020, the SACET system included 15 cogeneration plants (CET) and 614 thermal power plants (CT), of which 64 area thermal power plants, 288 neighbourhood thermal power plants and 262 block thermal power plants.

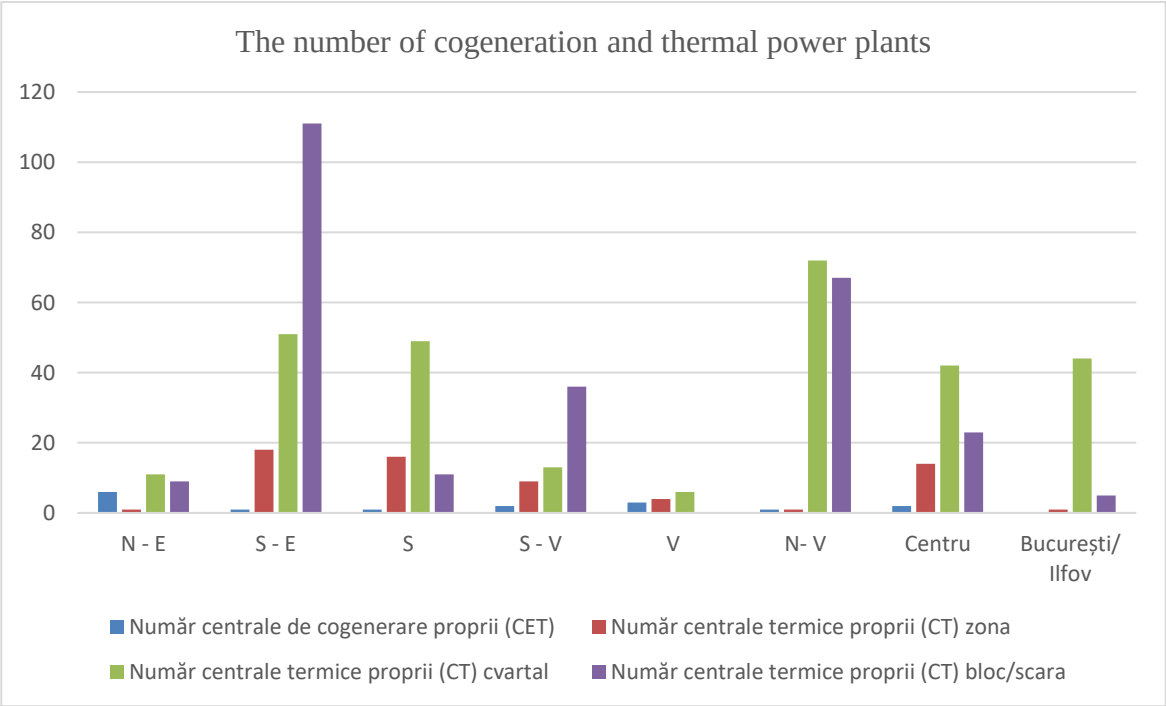
The distribution of these plants, by regions, is presented in Figure no. 2.

Table no. 3 - The evidence of the number of cogeneration plants (CET) and of the number of thermal power plants (CT) belonging to SACET, by regions

Region	Number of cogeneration power plants (CET)	Number of thermal power plants (CT)		
		area	neighbourhood	block
North – East	6	1	11	9
Soth – East	1	18	51	111
South	1	16	49	11
South – West	2	9	13	36
West	3	4	6	0
North - West	1	1	72	67
Centre	1	14	42	23
Bucharest -Ilfov	0	1	44	5
Total	**15**	**64**	**288**	**262**

Source: data collected from the SACET operators monitored according to the Methodology

Figure nr. 2 – The number of cogeneration and thermal power plants / Region



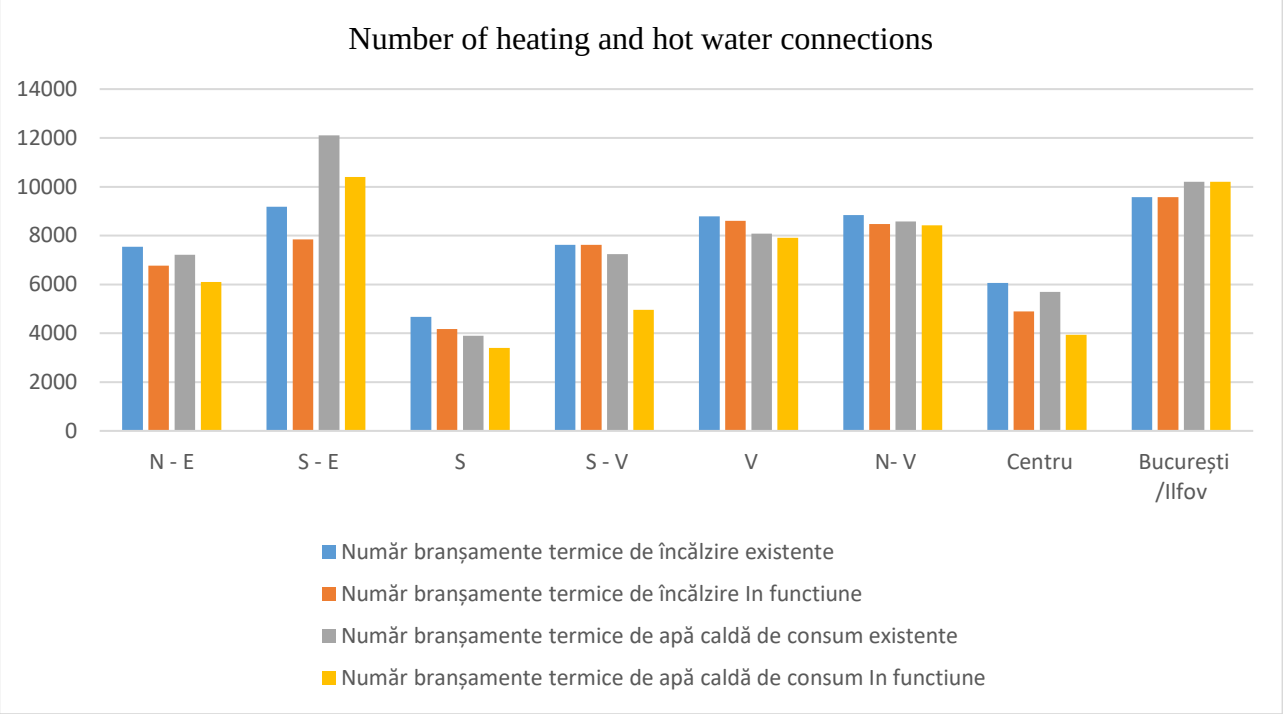
Source: data collected from the SACET operators monitored according to the Methodology

4.3 Thermal connections

At national level, from the data reported by the SACET operators resulted that at the end of 2020, the public service of thermal energy supply in centralized system amounted to a total of **128, 292** existing thermal connections (thermal connections of hot water from the transport system, thermal heating connections, hot water and steam) of which **116,232** in operation, according to Annex no. 2.

In figure no. 3 it is presented the situation of the number of thermal heating and hot water connections, both existing and in operation, for each of the 8 geographical regions.

Figure no. 3 - The situation of the number of thermal heating and hot water connections (existing/in operation)

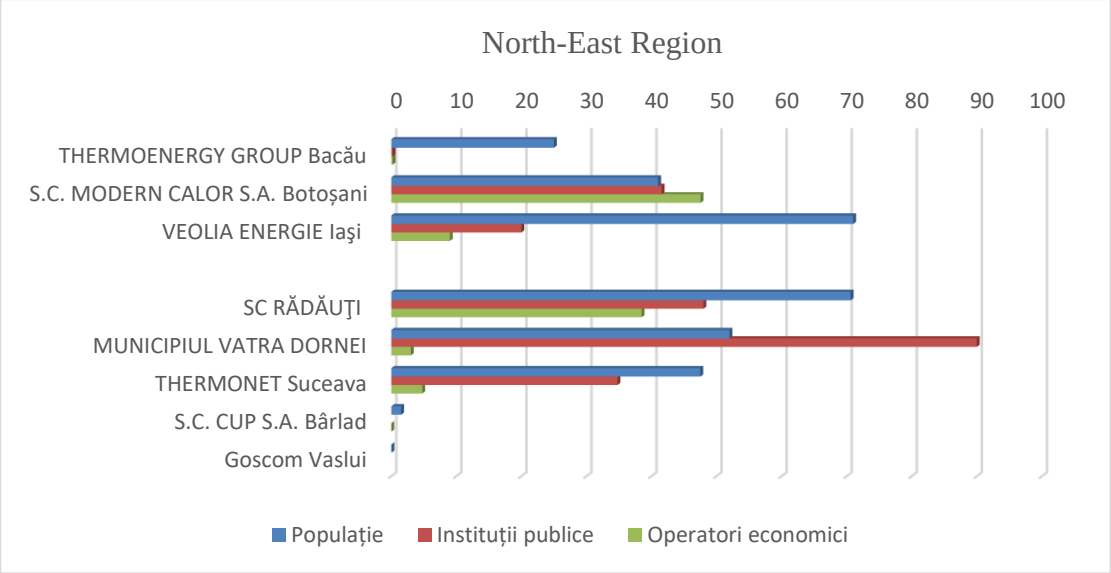


Source: data collected from the SACET operators monitored according to the Methodology

4.4 The SACET connection rate of thermal energy consumers

Figures no. 4 - 11 present the situation by regions and by categories of thermal energy consumers of the connection rate to SACET (percentage value of the total thermal energy consumers in the locality) of thermal energy consumers, according to the data reported by the SACET operators monitored for the year 2020.

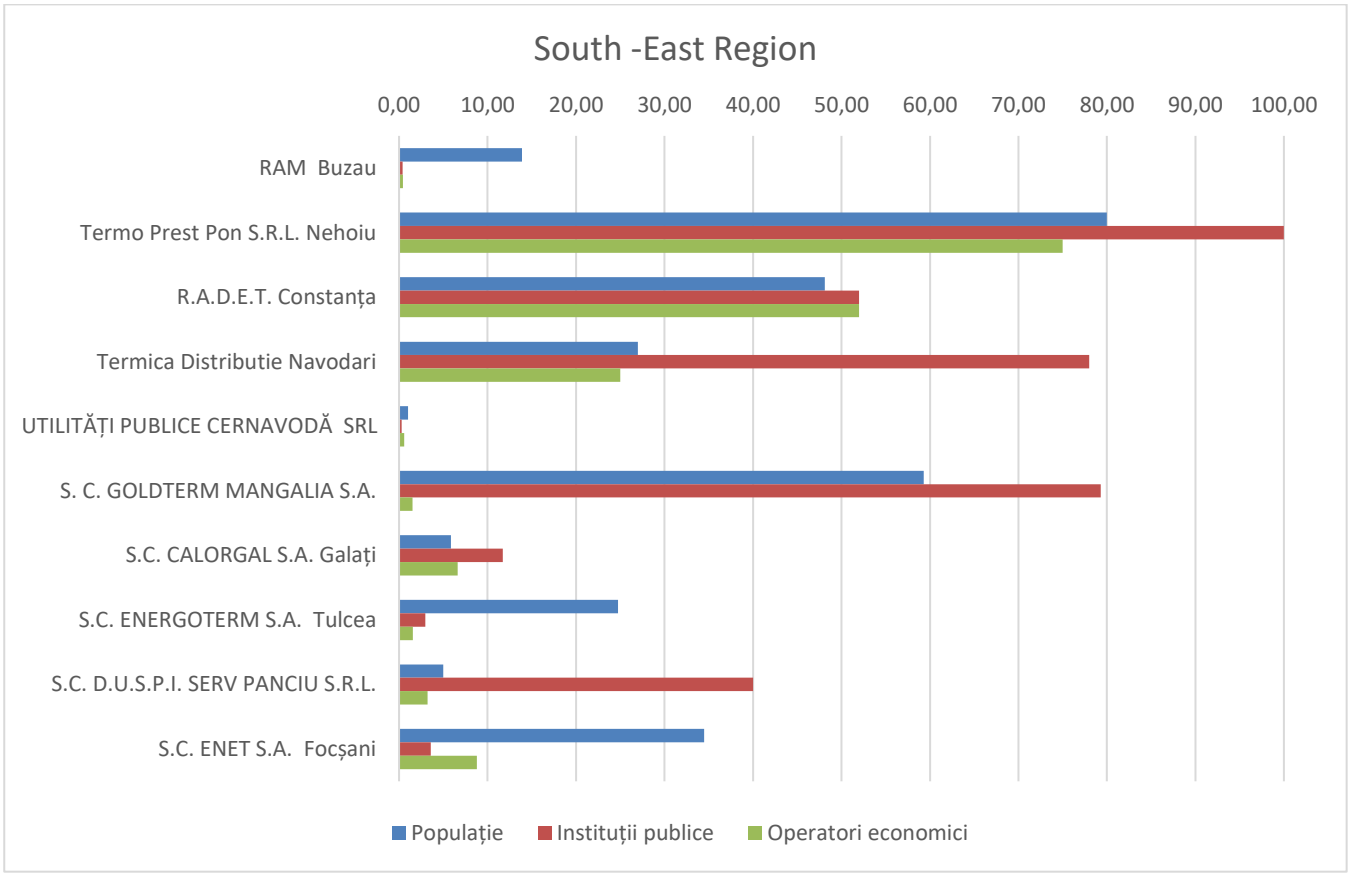
Figure nr. 4 - The SACET connection rate of thermal energy consumers from the North-East Region (%)



Source: data collected from the SACET operators monitored according to the Methodology

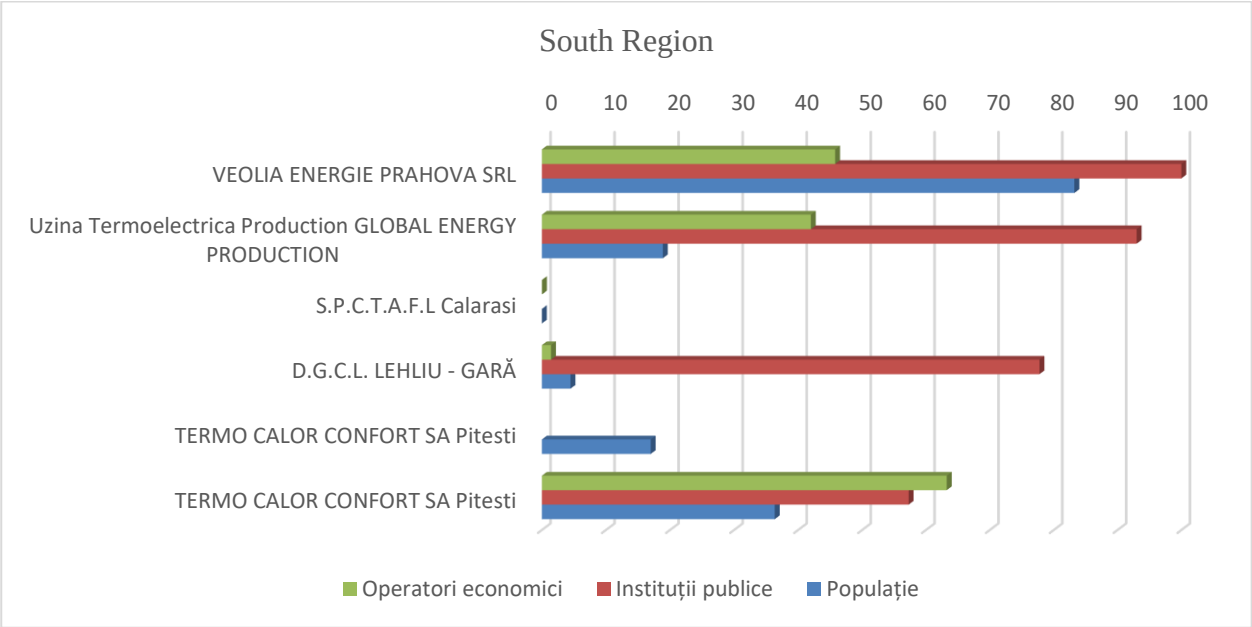
NOTE: The operator Thermoenergy Group Bacău did not report as a percentage the connection rate for public institutions and economic operators.

Figure no. 5 - The SACET connection rate of thermal energy consumers from the South-East Region (%)



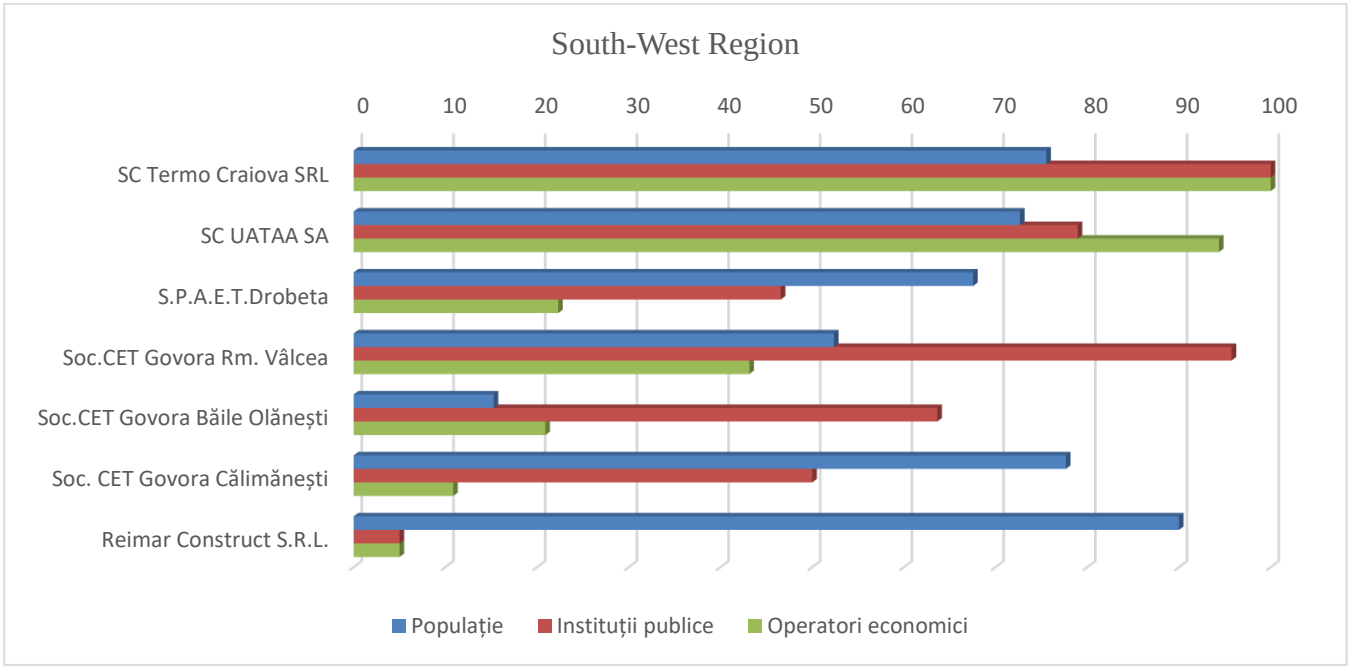
Source: data collected from the SACET operators monitored according to the Methodology

Figure no. 6 - The SACET connection rate of thermal energy consumers from the South Region (%)



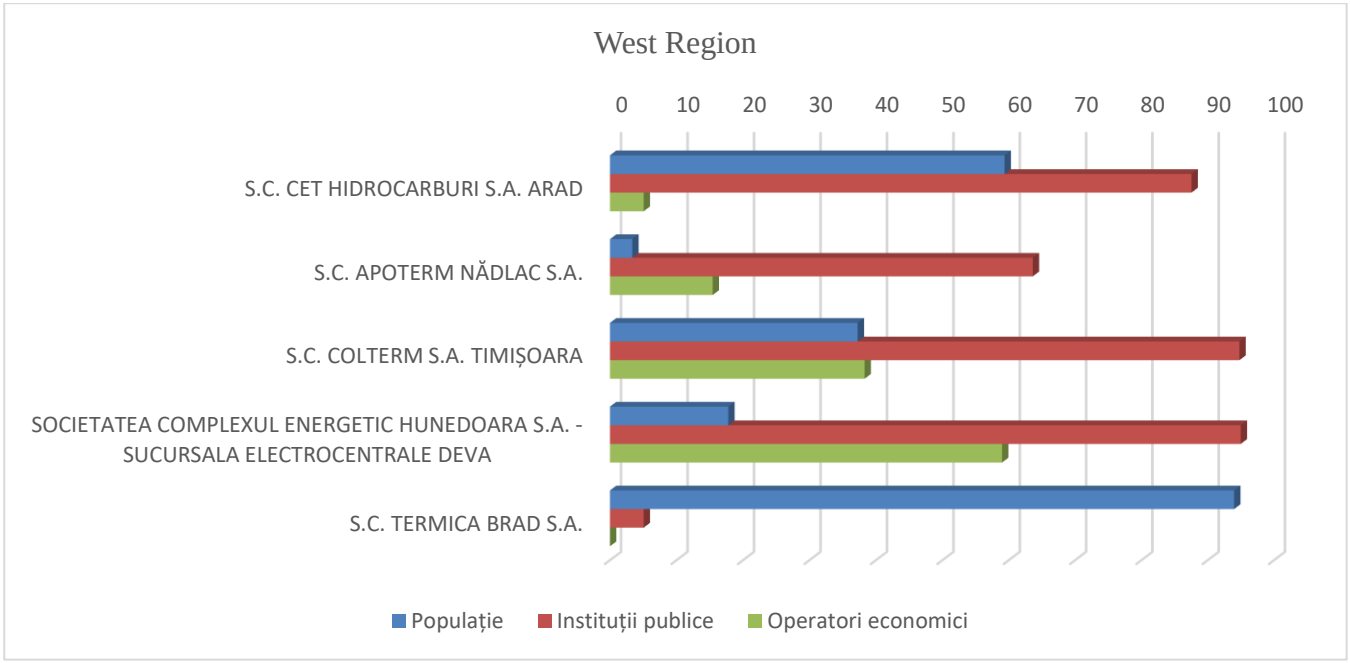
Source: data collected from the SACET operators monitored according to the Methodology

Figure no. 7 - The SACET connection rate of thermal energy consumers from the South –West Region (%)



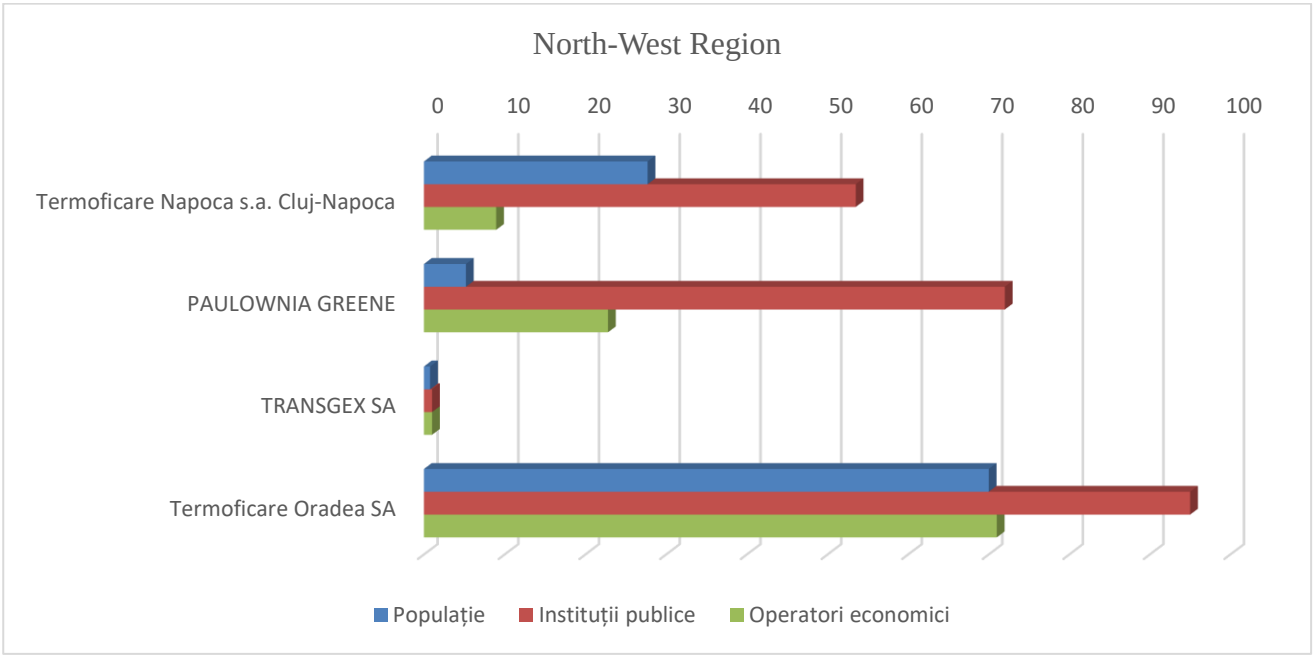
Source: data collected from the SACET operators monitored according to the Methodology

Figure no. 8 - The SACET connection rate of thermal energy consumers from the West Region (%)



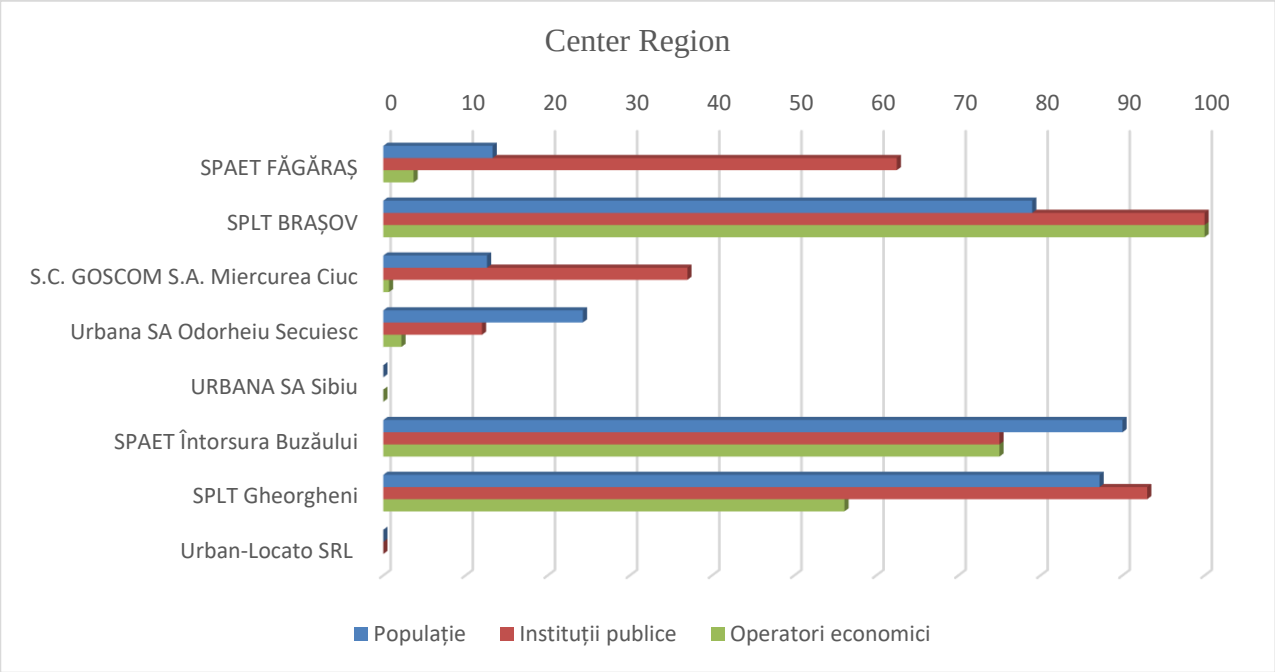
Source: data collected from the SACET operators monitored according to the Methodology

Figure no. 9 - The SACET connection rate of thermal energy consumers from the North –West Region (%)



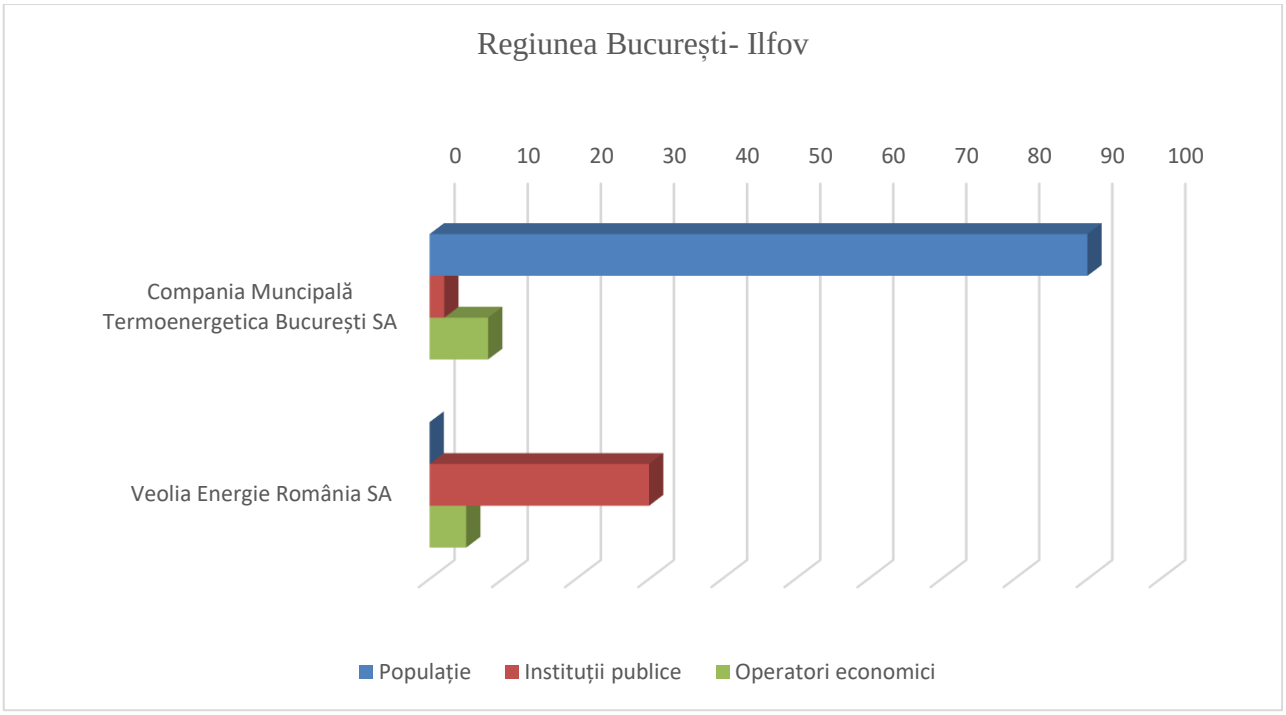
Source: data collected from the SACET operators monitored according to the Methodology

Figure no. 10 - The SACET connection rate of thermal energy consumers from the Center Region (%)



Source: data collected from the SACET operators monitored according to the Methodology

Figure no. 11 - The SACET connection rate of thermal energy consumers from the București/Ilfov Region (%)



Source: data collected from the SACET operators monitored according to the Methodology

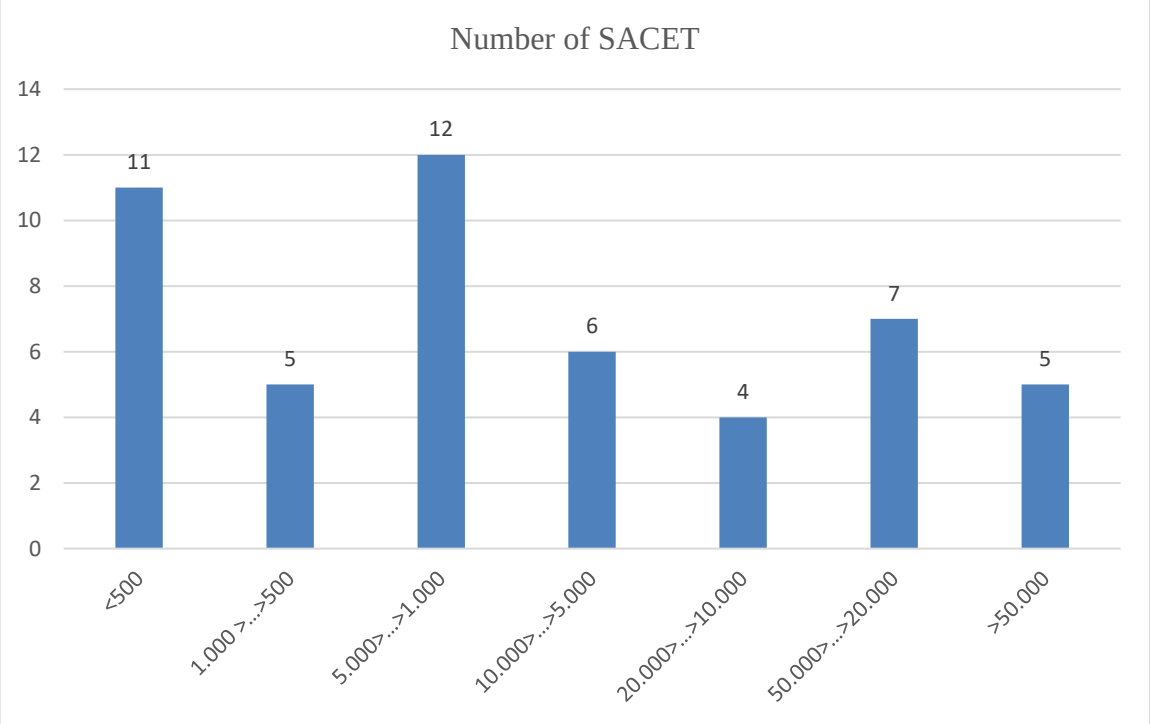
5. GENERAL SITUATION OF SPAET

5.1 The number of thermal energy consumers supplied from SACET

Following the process of data centralization collected from the reports submitted by operators, at national level there is a total number of **1,131,295** of consumers supplied from SACET, of which **12,411** are economic operators, **2,308** public institutions and **1,116,576** consumers representing the housing sector (apartments and/or houses).

Of the 50 centralized systems of thermal energy supply, 16 of them have a large dimension, with over 10,000 consumers, 18 of them are medium-sized, from 1,000 to 10,000 consumers, and 16 of them are small-sized, with up to 1,000 consumers. A more detailed situation is presented in the following graph:

Figure no. 12. The number of SACET depending on the thermal energy consumers supplied from SACET

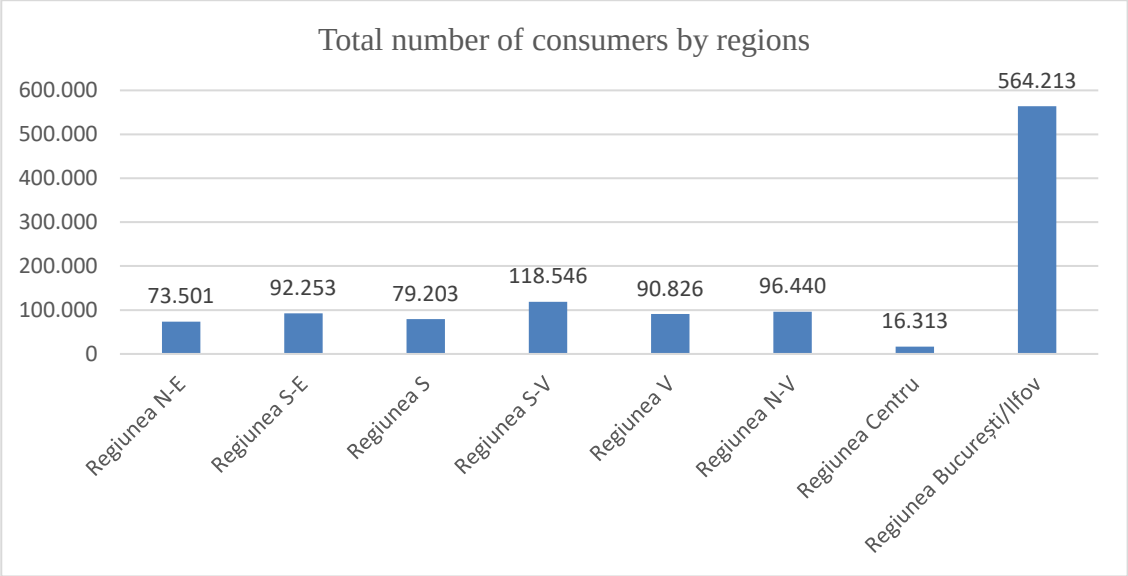


Source: data collected from the SACET operators monitored according to the Methodology

Most consumers supplied from SACET are in Bucharest (563,490), Oradea (70,536), Craiova (60,004), Timișoara (56,645), and Ploiesti (54,612).

Reported to regions, the highest number of consumers connected to SACET is in the Bucharest - Ilfov region (**564,213**), followed by the South-West region (**118,546**), the lowest number of consumers connected to SACET being registered in the Center region (**16,313**) as can be seen in the graph in figure no. 13.

Figure no. 13 - The total number of thermal energy consumers in SACET by regions



Source: data collected from the SACET operators monitored according to the Methodology

The situations of consumers by regions and by categories are presented in table no. 4.

Table no. 4 – The number of consumers supplied from SACET /regions

Region	The number of economic operators supplied from SACET, at the end of 2020	The number public institutions supplied from SACET, at the end of 2020	Number of housing (apartments and/or houses) supplied from SACET, at the end of 2020
North - East	996	259	72,246
South - East	1,929	219	90,105
South	857	161	78,185
South -West	1,253	303	116,990
West	1,209	532	89,085
North-West	2,051	217	94,172
Center	283	98	15,932
Bucharest - Ilfov	3,833	519	559,861
Total	**12,411**	**2,308**	**1,116,576**

Source: data collected from the SACET operators monitored according to the Methodology

The highest number of dwellings supplied from SACET is registered in the Bucharest-Ilfov region – **559,861**, and the lowest is registered in the Center region, with **15,932** dwellings supplied.

The same situation it is maintained in the case of the number of economic operators supplied from SACET, for which the Bucharest-Ilfov region has reported a total of 3,833 and the Center region a total of 283.

The highest number of public institutions supplied from SACET was reported in the West region, and the lowest number was registered in the Center region as well.

In 31 localities, the number of dwellings supplied from SACET decreased in 2020 compared to 2019, the largest decrease being registered in the city of Buzău (4,475), followed by Iași (2,840), Arad (2,492), Constanța (2,261), Bucharest (1,204), Tulcea (1,205), Drobeta Turnu Severin (1,056).

Table no. 5 presents the data on the evolution of the number of dwellings connected to SACET on each region, in the period 2019-2020. In most regions, from year to year, it can be observed a decrease in the number of households supplied from SACET.

Table no. 5 – The number of housing connected to SACET, in the period 2019-2020

Region	Indicator	2019	2020
North-East Region	Total number of houses and apartments connected to SACET	78,261	72,246
	Number of disconnected houses and apartments	2,484	4,280*
	Number of reconnected houses and apartments	195	85
South-East Region	Total number of houses and apartments connected to SACET	99,079	90,105
	Number of disconnected houses and apartments	18,086	9,172
	Number of reconnected houses and apartments	157	198
South Region	Total number of houses and apartments	79,220	78,185

	connected to SACET		
	Number of disconnected houses and apartments	892	966**
	Number of reconnected houses and apartments	79	54
South-West Region	Total number of houses and apartments connected to SACET	119,018	116,990
	Number of disconnected houses and apartments	1,464	2,075
	Number of reconnected houses and apartments	39	47
West Region	Total number of houses and apartments connected to SACET	94,087	89,085
	Number of disconnected houses and apartments	3,073	3,677
	Number of reconnected houses and apartments	96	114
North-West Region	Total number of houses and apartments connected to SACET	93,272	94,172
	Number of disconnected houses and apartments	1,515	891
	Number of reconnected houses and apartments	9	1,791

Center Region	Total number of houses and apartments connected to SACET	16,326	15,932
	Number of disconnected houses and apartments	544	279****
	Number of reconnected houses and apartments	12	26
Bucharest/Ilfov Region	Total number of houses and apartments connected to SACET	561,058	559,861
	Number of disconnected houses and apartments	960	1,245
	Number of reconnected houses and apartments	90	48

Source: data collected from the SACET operators monitored according to the Methodology

NOTE:

* In the North-East region, it will be substracted the value of 1820 dwellings disconnected by the cessation of the activity of the R.A.G.C.L. Pascani.

** In the South region, it will be substracted the value of 123 dwellings disconnected by the cessation of the activity of Termic Calor Serv Alexandria.

*** In the West region, it will be substracted the value of 1439 dwellings disconnected by the cessation of the activity of Termoficare SA Petroșani.

**** In the Center region SPAET Întorsura Buzăului took over only 577 dwellings out of 718 previously reported.

Upon termination of the delegation / provision of service contract, the delivery / retrieving by the local public authorities of the database on the service provided by the operators is not ensured, which leads to inconsistencies in the monitoring reports.

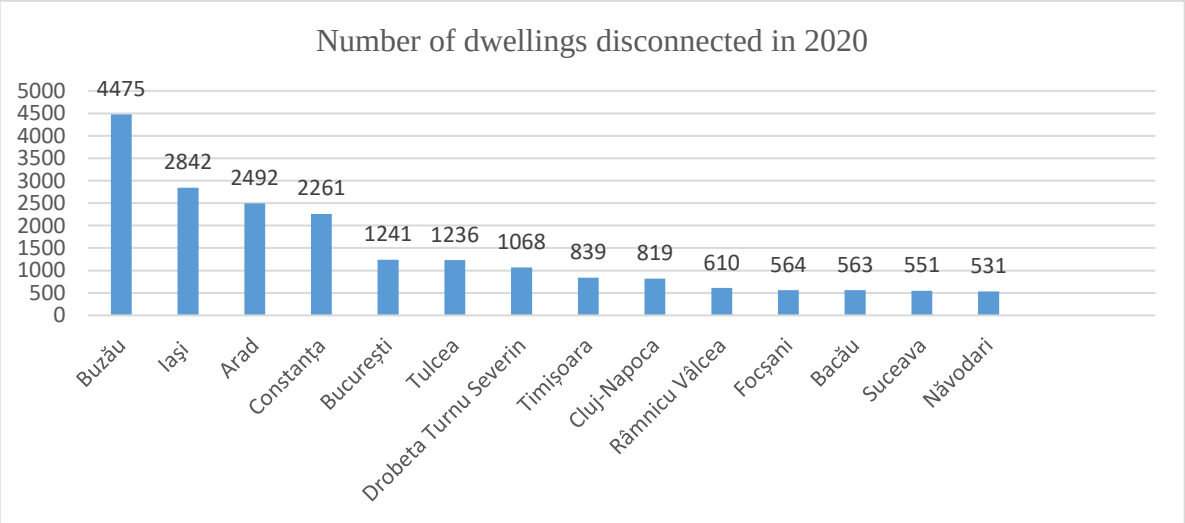
According to the data presented in table no. 5, the Bucharest-Ilfov Region registered the highest number of dwellings connected to SACET in 2020 (559,861), followed by the South-West Region with 116,990 dwellings and the North -West Region 94,172 dwellings.

According to the data provided to ANRE, by SACET operators, at the level of 2020, the largest number of dwellings (apartments and houses) supplied by SACET was provided by Compania Muncipală Termoenergetica București SA (with a number of 559,155 dwellings), followed by Termoficare Oradea (with a number of 68,475 homes), Termo Craiova (with a number of 59,548 dwellings), Colterm SA Timișoara (with a number of 55,795 dwellings), Veolia Energie Prahova (with a number of 54, 063 dwellings), Radet Constanța (with a number of 46,031 dwellings).

5.2. The number of disconnected and reconnected dwellings

In 2020, in 14 out of 51 localities there were significant disconnections of housing from SACET. The highest rate of disconnections was registered in Buzau (48%), followed by Iasi (10%), Arad (8%) and Constanta (5%).

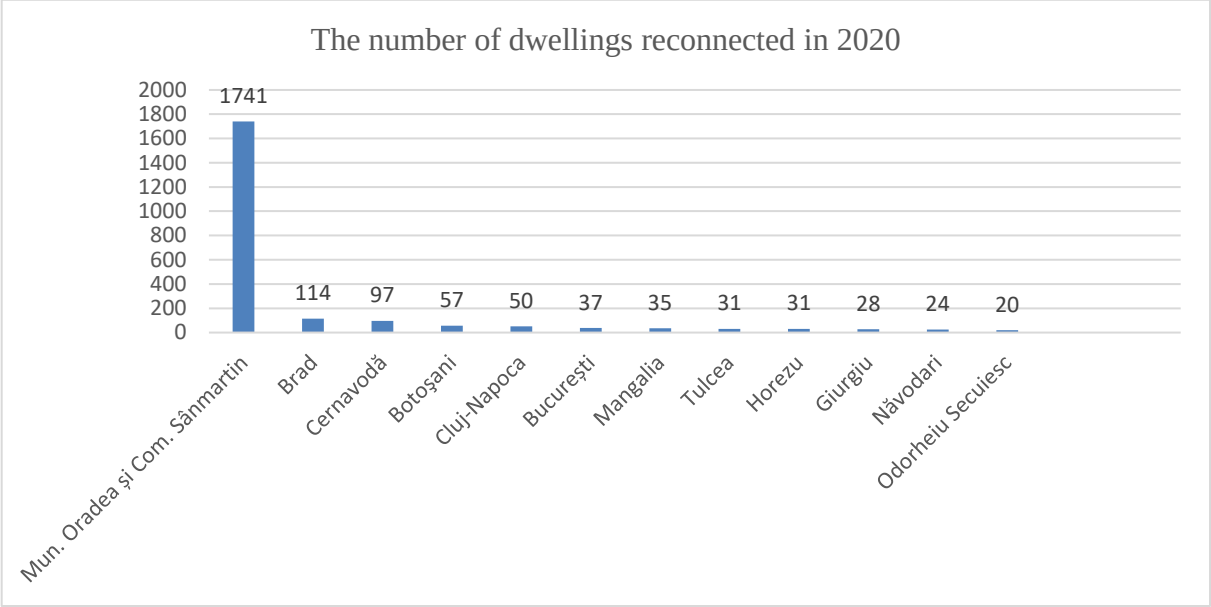
Figure no. 14 – The number dwellings disconnected from SACET in 2020



Source: data collected from the SACET operators monitored according to the Methodology

At the same time, in 27 out of 51 localities with SACET, there were reconnections of housing to the district heating system, mostly of low values, as it results from the following graph. However, a significat increase was registred in Oradea, the area keeping the ascending trend of the previous year.

Figure no. 15 – The number of dwellings reconnected to SACET in 2020

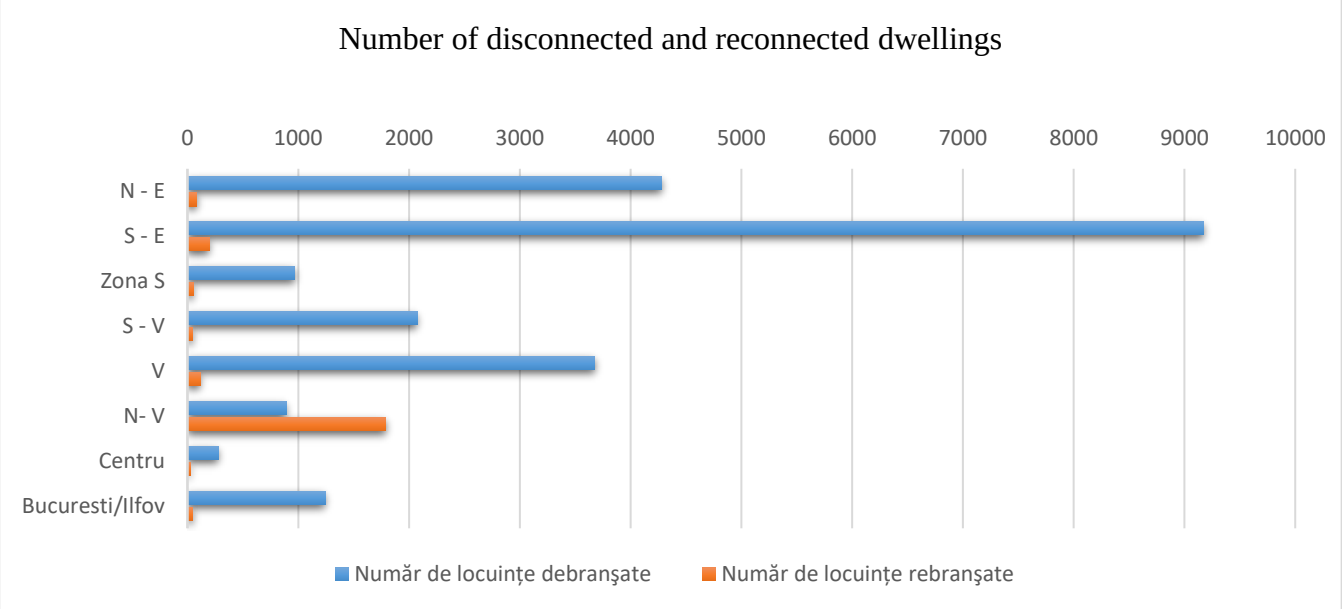


Source: data collected from the SACET operators monitored according to the Methodology

In terms of regions, it is observed that in 2020 the region with the highest rate of disconnections is represented by the South-East, the main reason being the large number of disconnections reported in in Buzău – 4,475, in Constanța – 2,261, as well as in Tulcea – 1,236 and Focșani – 564.

However, as previously mentioned, there are also regions where there have been reconnections to the centralized system, a significant number being reported in the North-West Region, more precisely in Oradea and Sânmartin commune - 1741 reconnected homes.

Figure no. 16 – The number of disconnected dwellings/number of reconnected dwellings/regions in 2020



Source: data collected from the SACET operators monitored according to the Methodology

5.3 The value of revisions and repairs planned and carried out in 2020

In 2020, according to the data reported by the SACET operators, revisions and reparations works were carried out in a total amount of **103,271.55** thousand lei, representing about 69% of the planned value, the aggregated data being presented by regions in table no. 6.

Table no. 6 - The value of revisions and repairs planned and carried out in 2020

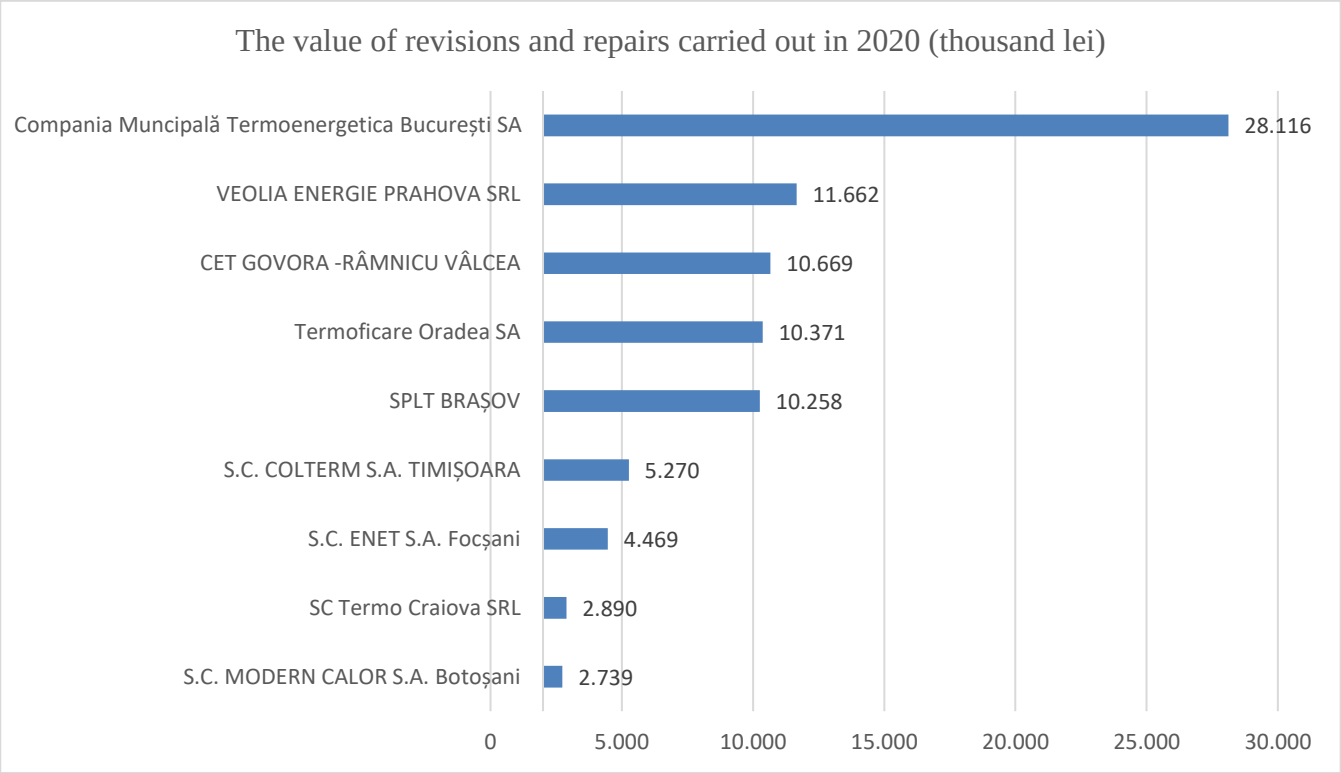
Region	The value of revisions and repairs planned in 2020 (thousand lei)	The value of revisions and repairs carried out at the end of 2020 (thousand lei)
North-East	11,001.98	6,766.06
South-East	7,593.17	8,394.80
South	12,302.00	12,648.35
South-West	19,056.50	14,978.68
West	10,574.23	7,535.83
North-West	17,236.30	11,881.18
Center	13,817.09	12,805.28
Bucharest-Ilfov	58,100.99	28,261.37

Source: data collected from the SACET operators monitored according to the Methodology

According to the data reported by SACET operators, the most important revision and repair works were carried out by Compania Municipală Termoenergetica București SA, in the amount of about 28,116 thousand lei, but this amount represents half of the planned value and the high value compared to other SACET operators it is due exclusively to the size of SACET Bucharest compared to the other SACETs. Five SACET operators (Vatra Dornei Municipality, S.C.DUSPI SERV Panciu SRL, D.G.C.L. Lehliu Gară, Uzina Termoelectrica Production Giurgiu SA, CET Govora - Băile Olănești) did not carry out revision and repair works in 2020.

The SACET operators with the highest values of revisions and repairs reported in 2020 can be found in the figure below.

Figure no. 17 – SACET operators with the highest values of revisions and repairs performed in 2020 (thousand lei)



Source: data collected from the SACET operators monitored according to the Methodology

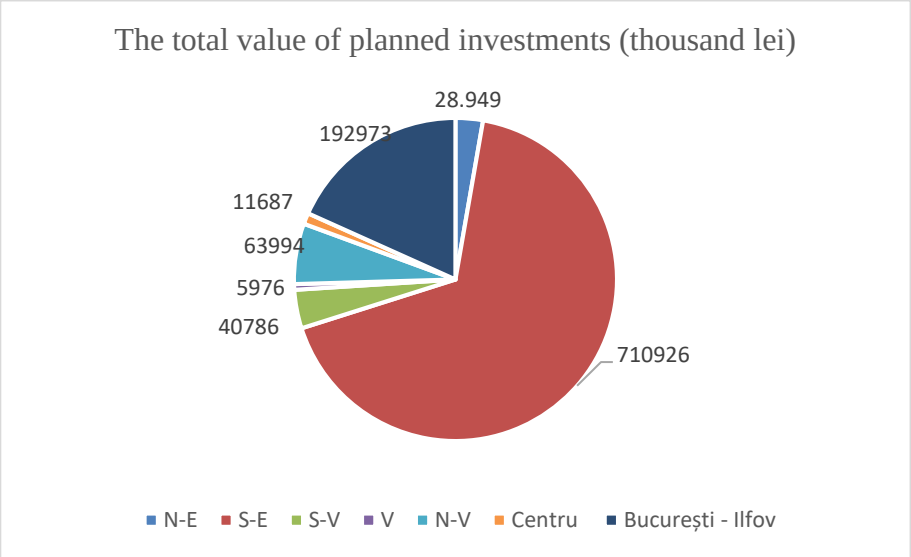
6. THE STATUS OF INVESTMENTS MADE IN SACET INFRASTRUCTURE IN 2020

At the level of 2020, part of the SACET operators reported both the value of the planned investments and the one related to the realized investments, the aggregated data by regions being presented in table no. 7.

6.1 The total value of the planned investments

The figure below shows the total value of investments planned by SACET operators, value which is distributed by regions as follows:

Figure no. 18 – The total value of planned investments (thousands lei)



Source: data collected from the SACET operators monitored according to the Methodology

It is observed that the South-East region registered the highest total value of planned investments, of which a percentage of 10% was achieved by the end of 2020. Among the SACET operators in this region, RADET Constanța has streamlined some thermal points and rehabilitated secondary thermal networks, Cernavoda Public Utilities has rehabilitated the thermal networks related to PT 2 and PT 13, and S. C. Goldterm Mangalia S.A. modernized buildings from the thermal power plants CT17 and PT3, CT10 and CT14 and modernized CT12 by replacing the 1700 kW hot water steel boiler, has performed connections and metering to retain and attract new customers and equipped thermal power plants with expansion vessels and pumps.

Although in the Center region, by the end of 2020, the highest percentage of realization was reported in the amount of 88% of the planned investment value, this value represents only 10,304 thousand lei.

Among the operators in this region, SPLT BRAȘOV rehabilitated the transport network in the Dacia market area, extended the thermal network in order to connect the Grigore Moisil National College, as well as the Mircea Cristea College, and SPLT Gheorgheni performed automation works to 3000 kW boiler and SGB 450 burner.

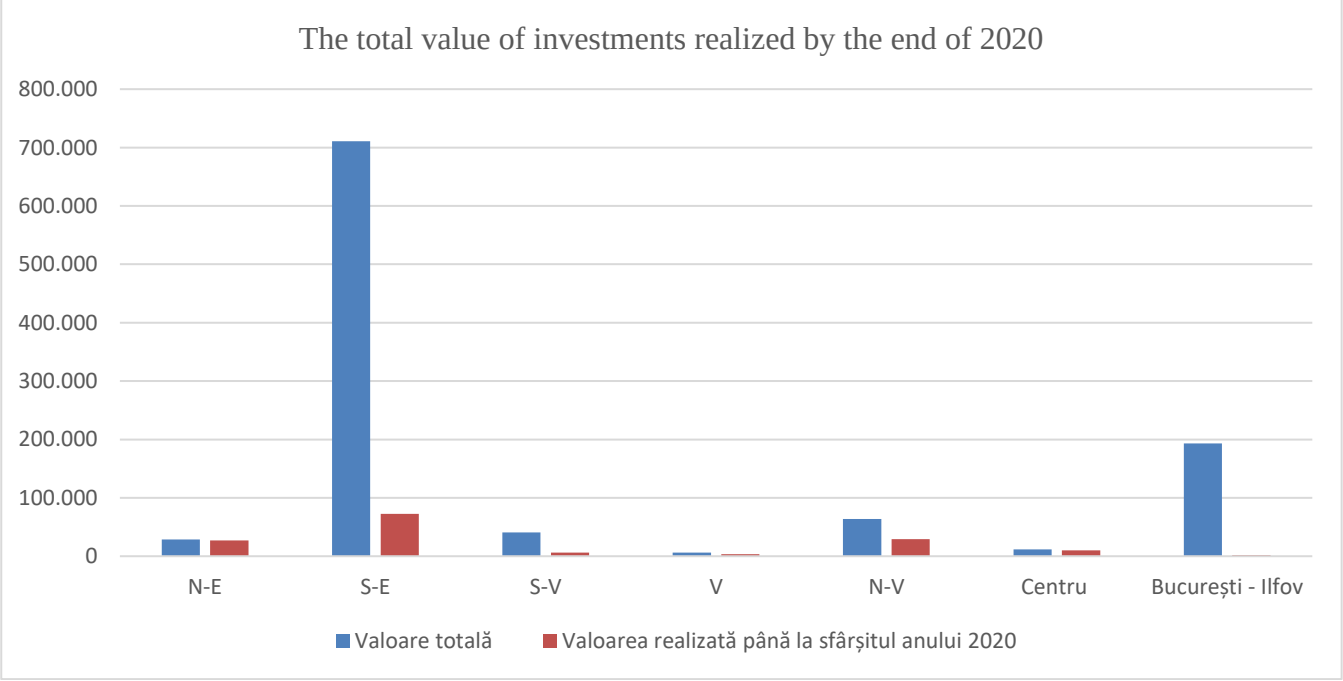
In the West region, by the end of 2020, a percentage of investments in the amount of 57% of the planned investment value was reported, but this value represents only 3,396 thousand lei.

Among the operators in this region S.C. COLTERM S.A. TIMIȘOARA carried out refurbishment works of the primary and secondary thermal networks.

In the North-East region, by the end of 2020, it was reported a percentage of investments in the amount of 93% of the planned investment value, this value being 27,090 thousand lei.

Comparatively, figure no. 19 shows, for each region, the total value of investments planned and investments made by the end of 2020.

Figure no. 19 – The total value of investments realized, by region, by the end of 2020



Source: data collected from the SACET operators monitored according to the Methodology

Table no. 7 – Investments planned and realized by the economic operators at the level of 2020

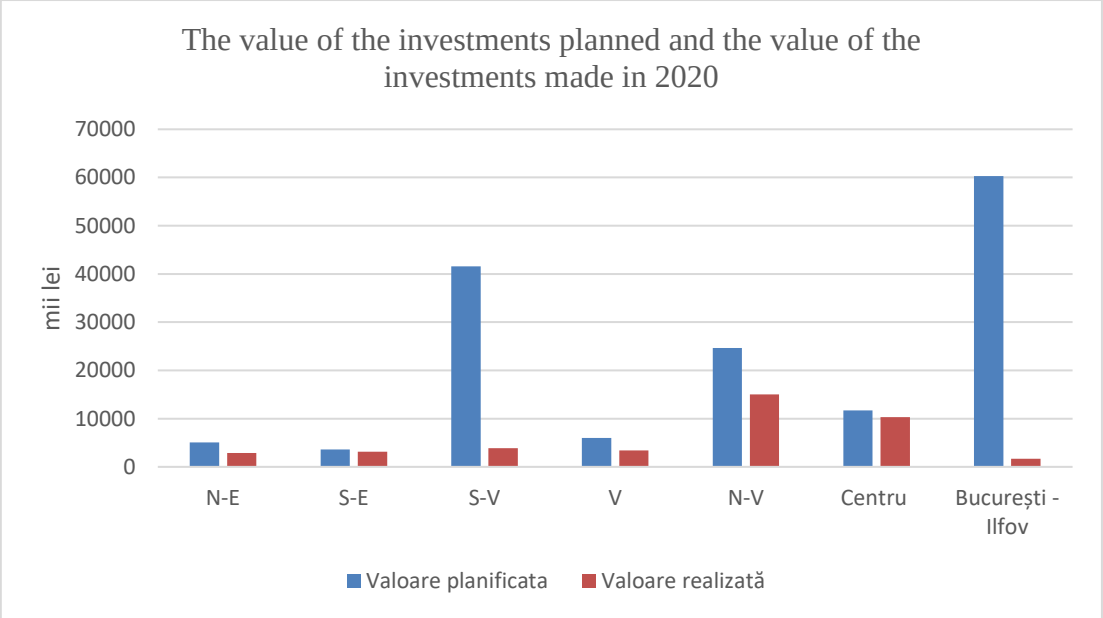
Region	The value of the investment (thousands lei)		The value of the investment in 2020 (thousands lei)									
	TOTAL	of which achieved by the end of 2020	TOTAL		of which by funding sources:							
			Planned	Realized	State budget		Local budget		Credits		Own sources (development quota/ modernization)	
					Planned	Realized	Planned	Realized	Planned	Realized	Planned	Realized
North-East	28,948.66	27,090.35	4,237.43	2,880.19	2,035.00	2,035.00	383.51	167.66	661.00	661.00	1,157.92 of which 744.72 own sources, 413.20 external sources	16.53 – own sources, 0- external sources
South-East	710,926.02	72,349.83	3,594.06	3,145.58	0.00	0.00	561.06	540.80	0.00	0.00	3,033.00	2,604.78
South-West	40,785.52	6,448.04	41,606.33	3,850.17	26,065.38	0.00	13,768.75	2,597.87	0.00	0.00	1,772.20	1,252.30
West	5,976.17	3,395.66	5,976.17	3,395.66	0.00	0.00	57.00	0.00	0.00	0.00	5,919.17	3,395.66
North-West	63,994.43	29,035.03	24,654.27	15,004.97	0.00	0.00	22,649.34	12,872.10	0.00	0.00	2,004.93	2,132.87
Center	11,686.87	10,303.73	11,100.41	9,719.18	0.00	0.00	9,810.80	8,624.44	0.00	0.00	1,289.61	1,094.74
Bucharest-Ilfov	192,973.49	1,698.56	60,265.48	1,698.56	0.00	0.00	0.00	0.00	0.00	0.00	60,265.48	1,698.56
Total	1,055,291.16	150,321.20	151,434.15	39,694.31	28,100.38	2,035.00	47,230.46	24,802.87	661.00	661.00	75,442.31	12,195.44

Source: data collected from the SACET operators monitored according to the Methodology

6.2 The value of the investments in 2020

Regarding the investments of the year 2020, it is observed that the Center region realized investments in a percentage of 88% of the planned investment value, and the North-West region in a percentage of 60%, according to the aggregated data by regions presented in figure no. 20.

Figure no. 20 – The value of the investments planned and the value of the investments made in 2020



Source: data collected from the SACET operators monitored according to the Methodology

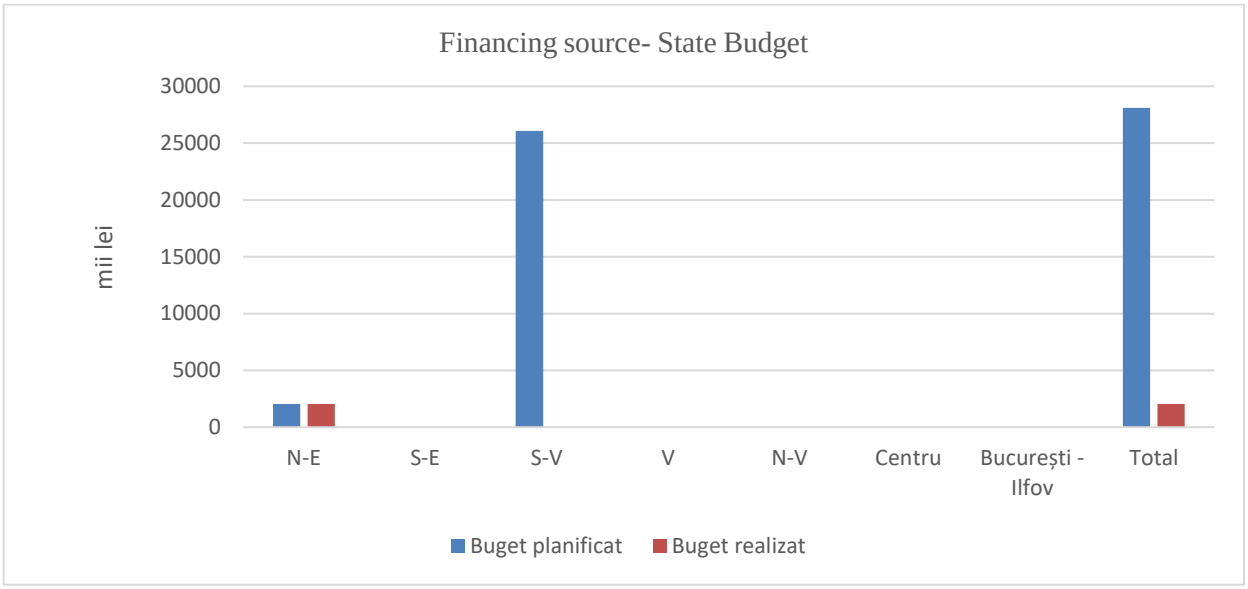
The funding source for these investments comes in most cases from the local budget and from own sources.

In order to ensure a public service of heat supply for the localities as efficient and viable as possible, the local public administration authorities must pursue the financing of investments for the development / modernization or establishment of SACET, especially because, besides of the social benefit regarding the accessibility to thermal energy for the low-income population, the health and safety of the people, international experience has highlighted the economic and environmental benefits of district heating systems (in terms of energy efficiency and pollution control) and the contribution of these systems to strengthening energy security and facilitating flexibility in the use of various categories of primary resources / technologies.

The amounts attracted for investments in SACET in the year 2020 come both from the state and local budget and from the operators' own sources (development / modernization quota) or external sources.

The planned and realized values of the investments in each region are presented in the graphs from figures 21-23, for each category of financing source separately:

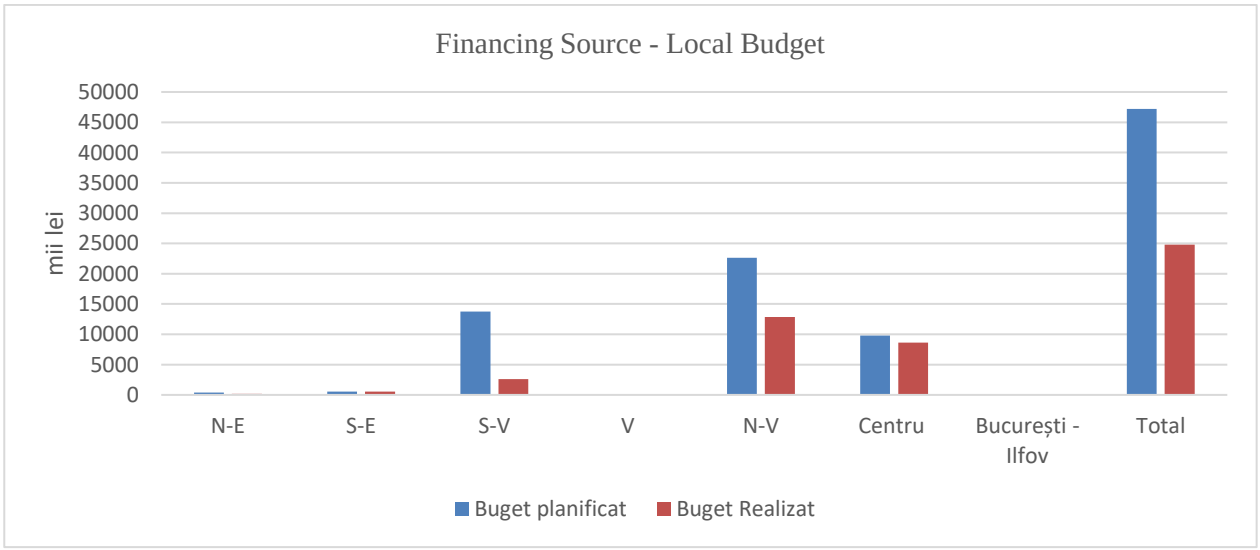
Figure no. 21 – The value of the planned and realized investments having the State budget as financing source, by regions (thousand lei)



Source: data collected from the SACET operators monitored according to the Methodology

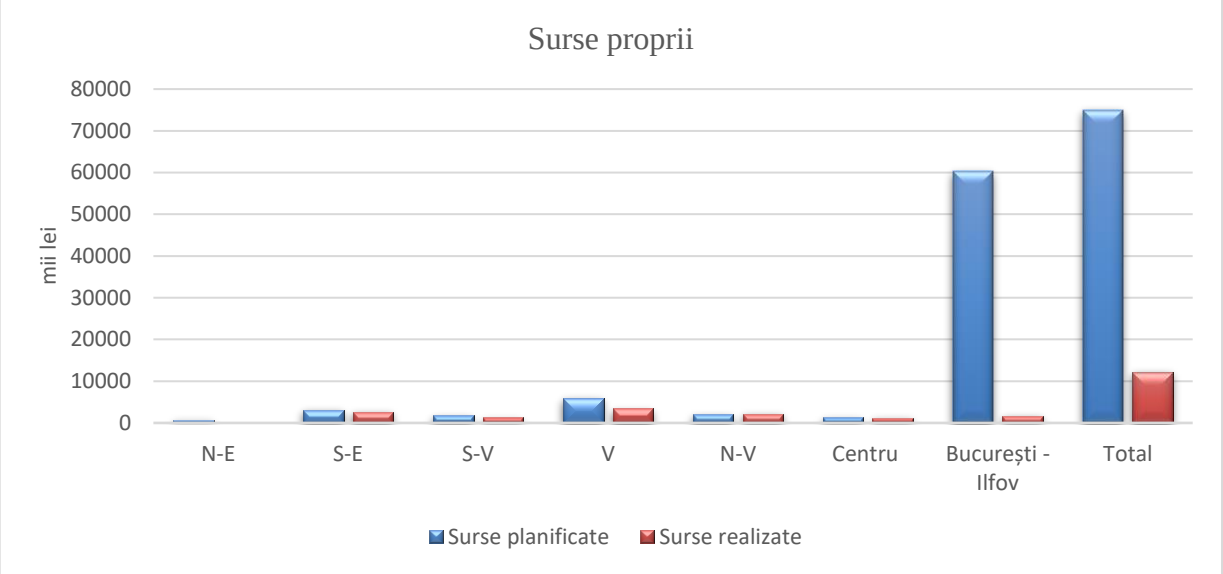
An example in attracting financing sources from the state budget is the Municipality of Vatra Dornei, an operator from the North-East region that managed to attract in 2020, for the rehabilitation of the centralized heat supply system, the amount of 2,035 thousand lei.

Figure no. 22 – The value of the planned and realized investments having the Local budget as financing source, by regions (thousand lei)



Source: data collected from the SACET operators monitored according to the Methodology

Figura nr. 23 - Value of investments planned and carried out from own sources, by regions (thousand lei)



Source: data collected from the SACET operators monitored according to the Methodology

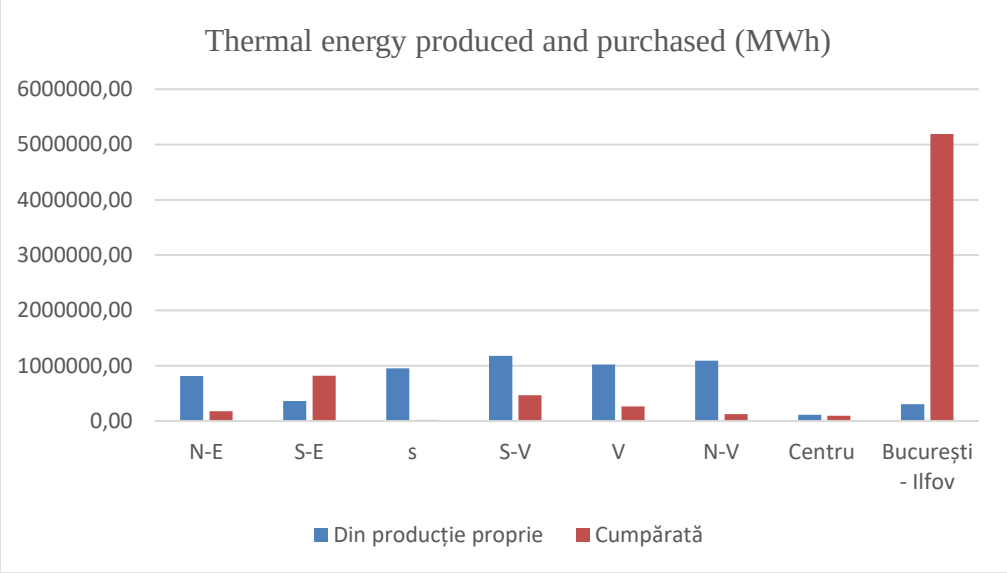
7. TECHNICAL-ECONOMIC RESULTS ACHIEVED BY SACET OPERATORS IN 2020

For 2020, SACET operators reported the amount of thermal energy delivered from their own production as well as that purchased from the independent heat producers and the amount of thermal energy sold to consumers, the aggregate data being presented, by regions, in table no. 8.

7.1 Amounts of thermal energy produced and purchased by regions

Figure no. 24 shows the distribution of the amount of thermal energy produced and purchased by regions, noting that the largest amount of thermal energy purchased was recorded in the Bucharest-Ilfov region.

Figure no. 24 – The distribution of the thermal energy amount produced and purchased, by regions



Source: data collected from the SACET operators monitored according to the Methodology

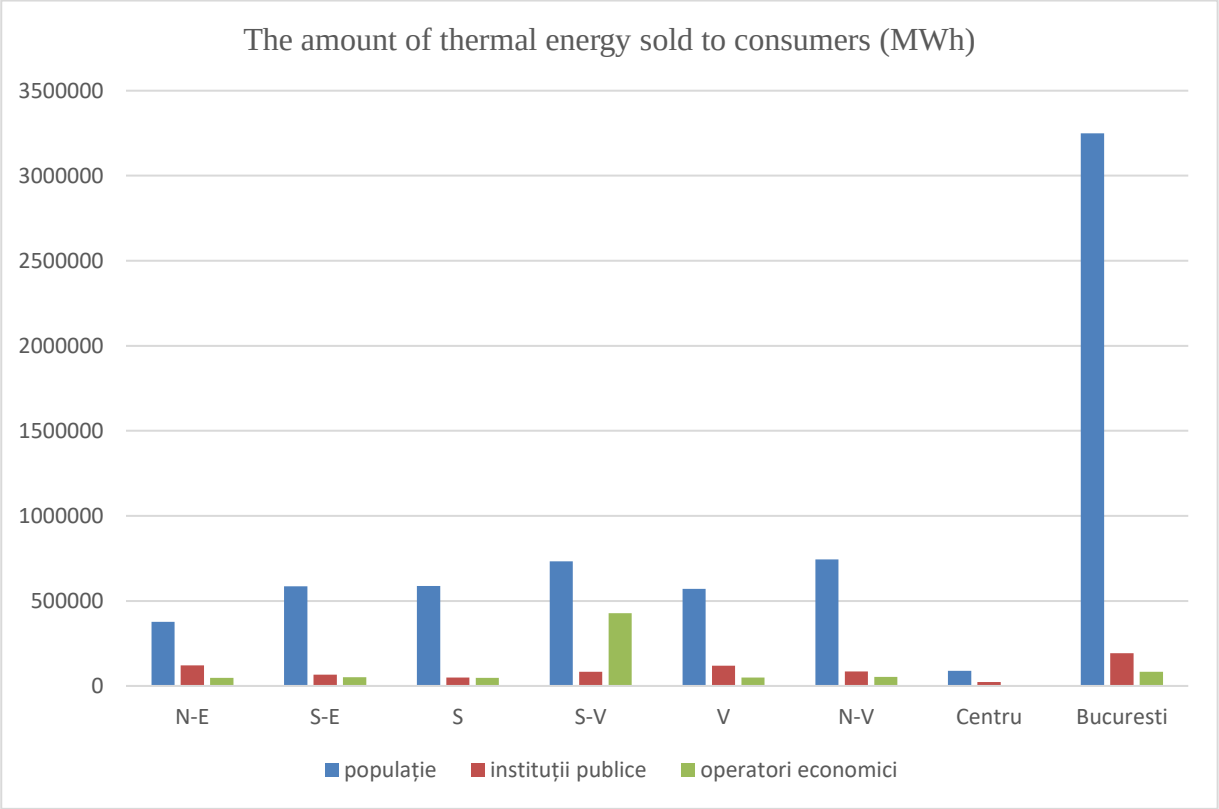
7.2 The total amount of sold thermal energy

From the data presented by regions in figure no. 25 it can be observed that the Bucharest-Ilfov region has also the highest registered amount of thermal energy sold to consumers.

Regarding the amount of thermal energy sold to consumers, distributed by regions, in 2020, it is remarked that in the Bucharest - Ilfov region is sold about 42% of the amount of thermal energy sold nationally, the next region being the South West, where there is a percentage of about 15% of the

amount of thermal energy traded nationally, in the Center region being observed the lowest percentage of only 1% of the amount of thermal energy traded nationally.

Figure no. 25 - The amount of thermal energy sold to consumers (MWh) broken down by categories of thermal energy consumers



Source: data collected from the SACET operators monitored according to the Methodology

From the data presented above it results that, in 2020, from the amount of thermal energy traded at national level, the quantity sold to the population represented approximately 82% of the total amount of thermal energy sold to consumers, and to public institutions and economic operators approximately 18%, the values registered for the two categories being very close.

Table no. 8 - Technical-economic results of SACET operators in 2020, by regions

Region	Thermal energy produced and/or purchased (MWh)			Thermal energy sold to consumers (MWh)				Number of employees by the end of the reporting period	SACET development/ modernization expenses (thousand lei)
	Total	from own production	purchased	Total	Population	Public institutions	Economic operators		
North - East	991,35.,99	812,354.68	179,004.31	543,647.41	376,313.09	120,391.33	46,942.99	786	5,648.72
South - East	1,177,793.54	360,068.69	817,724.85	701,993.67	585,076.60	66,449.07	50,468	1,281	2,179.67
South	974,681.46	951,114.46	23,567.00	686,660.98	588,594.40	49,907.19	48,159.39	674	415.38
South -West	1,647,496.94	1,179,591.47	467,905.47	1,243,457.13	732,657.90	83,899.23	426,900	1,164	7.97
West	1,286,223.04	1,020,699.13	265,523.91	739,063.66	570,846.85	119,166.49	49,050.32	1,254	3,139.79
North - West	1,220,639,36	1,093,229.14	127,410.22	881,809.40	743,667.98	84,290.42	53,851	737	14,765.80
Center	218,573.02	121,612.72	96,960.30	122,419.23	90,869.70	26,635.01	4,914.52	187	8,359.23
Bucharest - Ilfov	5,491,915.57	304,598.54	5,187,317.03	3,523,651.66	3,249,213.13	191,686.81	82,751.72	3,288	2,950.76
Total	**13,008,681.92**	**5,843,268.83**	**7,165,413.09**	**8,442,703.14**	**6,937,239.65**	**742,425.55**	**763,037.94**	**9,371**	**37,467.32**

Source: data collected from the SACET operators monitored according to the Methodology

7.3 Local prices for thermal energy supply

In accordance with the Law on community services of public utilities no. 51/2006, republished, with subsequent amendments and completions, the prices and local tariffs related to the public heating service in centralized system are approved by the local public administration authorities, under the special law and in compliance with the methodologies issued by the competent regulatory authority.

Following the processing of data and information reported by SACET operators, in figures 26-33 is presented, on each region, respectively SACET operator, the evolution of the local price for the population in the period 2019-2020, as follows:

Fig. 26 - Evolution of the local price for the population during 2019-2020 North-East Region (lei / MWh)

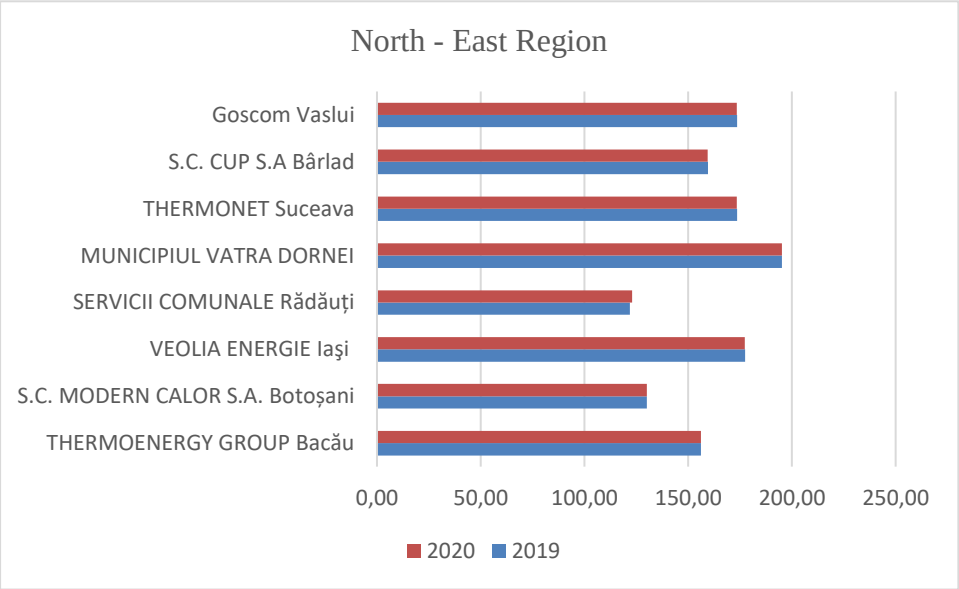


Fig. 27 - Evolution of the local price for the population during 2019-2020 North-West Region (lei / MWh)

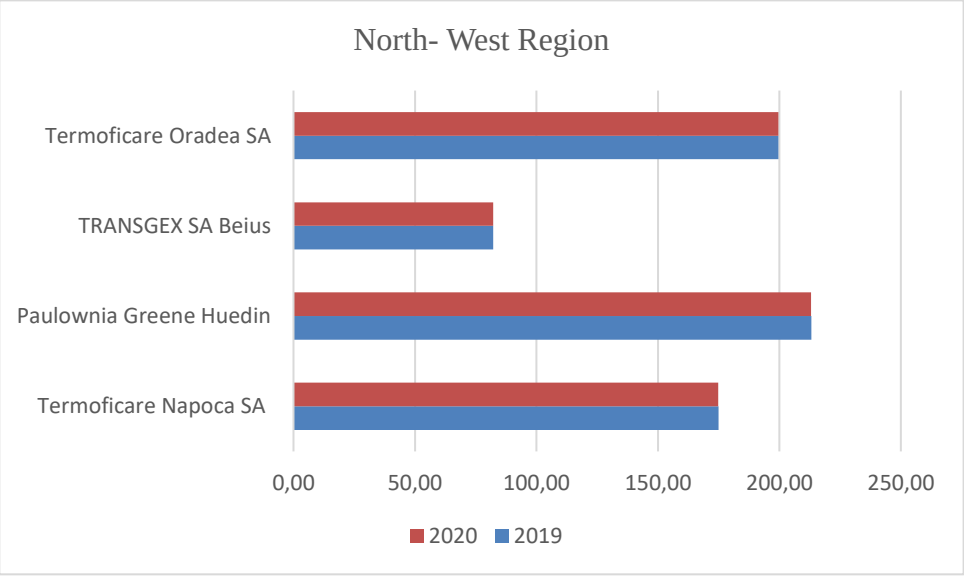


Fig. 28 - Evolution of the local price for the population during 2019-2020 West Region (lei / MWh)

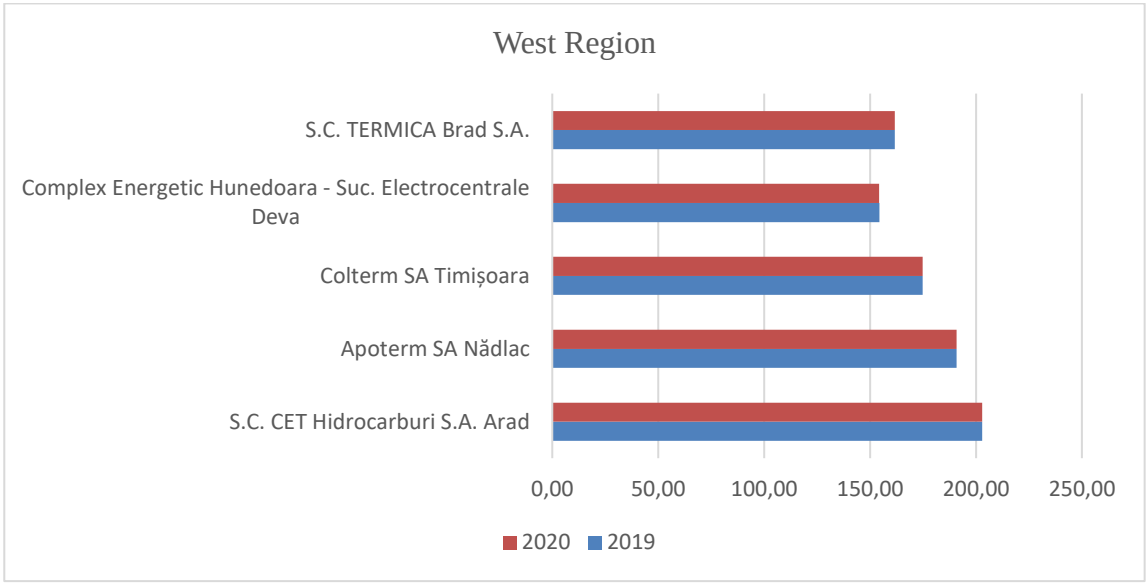


Fig. 29 - Evolution of the local price for the population during 2019-2020 Center Region (lei / MWh)

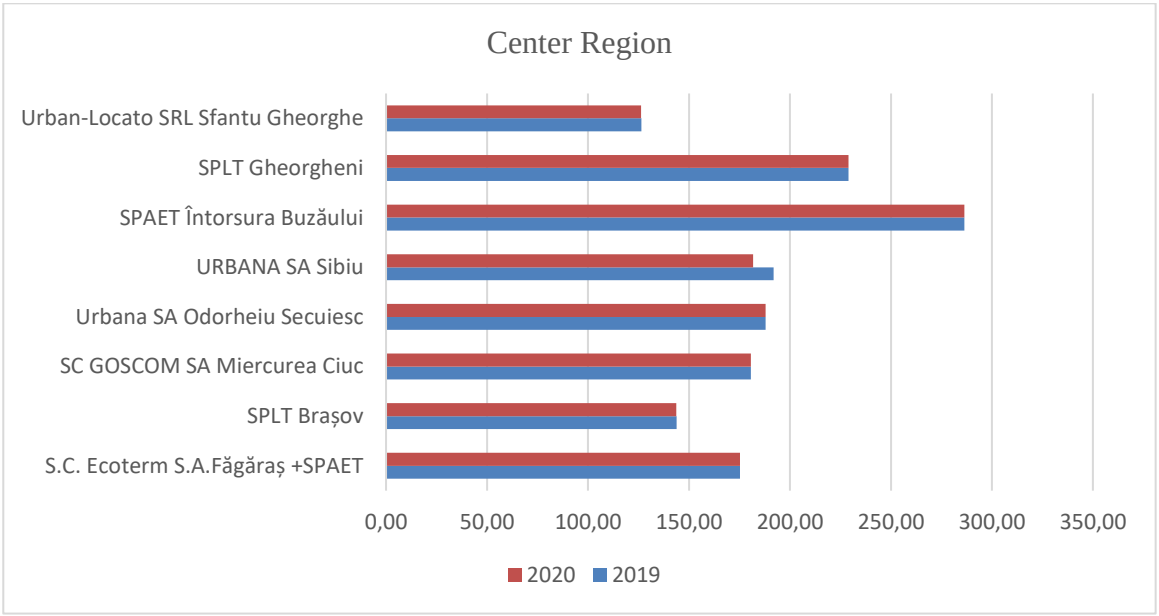


Fig. 30 - Evolution of the local price for the population during 2019-2020 South - East Region (lei / MWh)

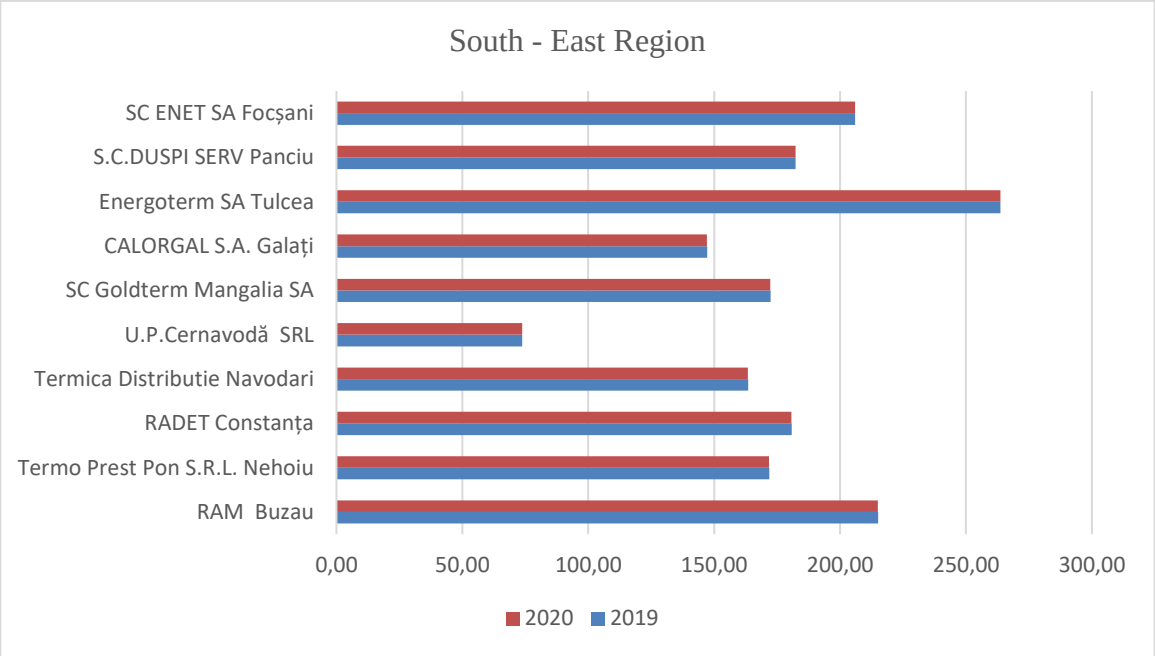


Fig. 31 - Evolution of the local price for the population during 2019-2020 Bucharest - Ilfov Region (lei / MWh)

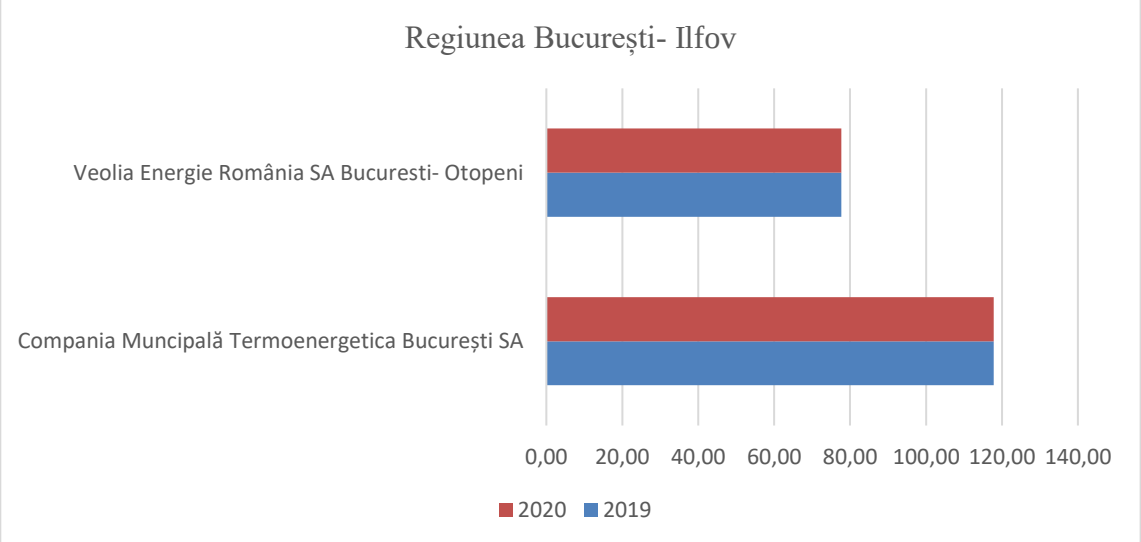


Fig. 32 - Evolution of the local price for the population during 2019-2020 South - West Region (lei / MWh)

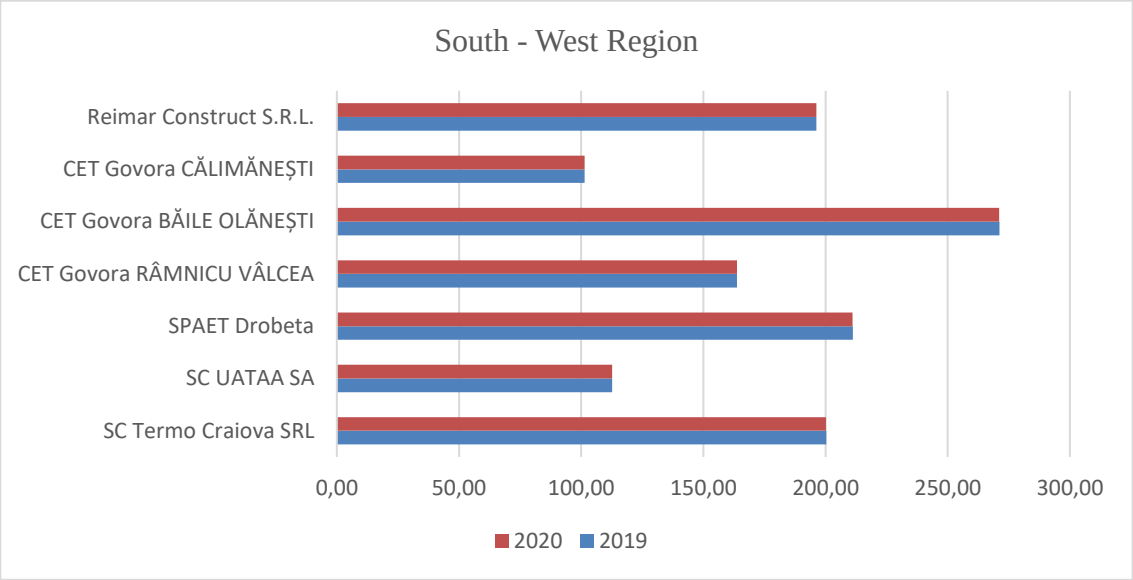
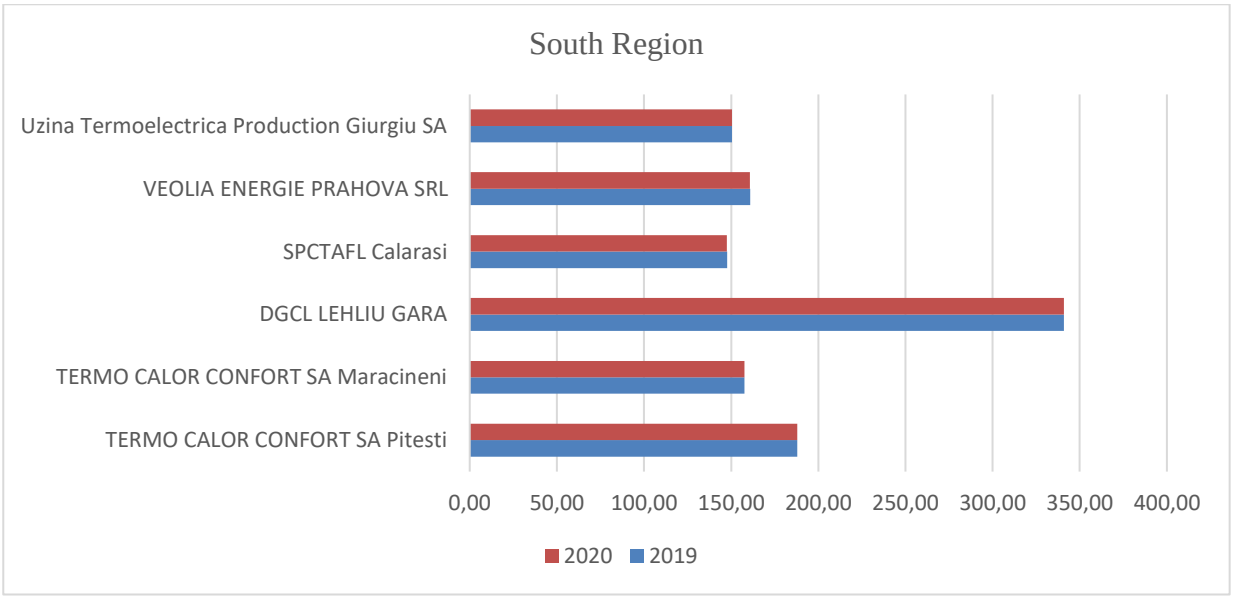


Fig. 33 - Evolution of the local price for the population during 2019-2020 South Region (lei / MWh)



8. FINAL CONSIDERATIONS

According to the 2020 Country Report on Romania SWD (2020) 522 final published by the European Commission on 26.02.2020, the restructuring of energy and home heating systems (by facilitating district heating and pollution control, switching to natural gas and integrating renewable energy sources), as well as traffic and other pollution control and prevention measures, could make a significant contribution to addressing air quality.

In this sense, according to the National Reform Program 2021, for further modernization and establishment of centralized heat supply systems, the District Heating Program was approved by GEO no. 53/2019. This is a program that is being implemented in the period 2019-2027 and to which 400 million lei have been allocated from the Environmental Fund, for the entire implementation period. Additionally, for the year 2020, according to the provisions of the State Budget Law no. 15/2021 were approved commitment credits amounting to 170 million lei and payment credits amounting to 40 million lei. This multi-annual program aims mainly to ensure the continuation of the modernization works of the centralized heat supply systems, on the following functional components: the thermal agent production unit (s); primary heat transfer network (hot water); thermal stations or thermal modules at building level, where economically justified; hot water distribution network and heating agent. It will also finance the establishment of central heating systems for localities. The beneficiaries of the program are the administrative-territorial units (UAT).

At the same time, by GD no. 1034/2020, was approved the *National Long-Term Renovation Strategy to support the renovation of the national stock of residential and non-residential buildings, both public and private, and to gradually transform it into a highly energy efficient and decarbonised building stock by 2050.* The national long-term renovation strategy aims to improve the energy performance of buildings in different sectors, by reducing energy consumption, carbon emissions and expanding the use of renewable energy sources in buildings, improving the quality of life for all users by improving thermal comfort, hygiene conditions, safety and air quality, in accordance with the principles set out in the EU Renovation Wave strategy.

Under the Integrated National Energy and Climate Change Plan for 2021-2030 (INECCP), the replacement of existing electricity and heat production capacities will also have the effect of reducing own technological consumptions, especially through investments for the modernization and development of production units in high efficiency cogeneration (including methane gas).

High-efficiency cogeneration represents a way of producing electricity and heat that reduces pollutant emissions. Another potential advantage of cogeneration production is that it requires a lower fuel requirement compared to other technologies, which can have a positive effect on reducing import dependence.

The efficiency of the existing production capacities and the development of new capacities in a high efficiency cogeneration regime represent a priority at the level of large urban agglomerations, as well as for the other local communities in Romania.

To this end, the Romanian authorities are considering the construction, by 2030, of new combined cycle power plants with gas turbines, with a capacity of 1,600 MWe, as well as the construction of high efficiency cogeneration plants with a capacity of 1,302 MWe / 1,214 MWt. Cogeneration units will contribute to the security of energy supply, especially at the local level, reducing the risk of power and heat disruptions.

The replacement of existing electricity production capacities from conventional sources with low-carbon ones will also have the effect of further promoting renewable resources in electricity generation (eg wind or solar resources), including for heating in SACET type district heating systems, through the transit of energy through the NES and the use with heat pumps at source level, also using the electricity market mechanisms.

On July the 13th, 2021, it was published in the Official Gazette no. 693/2021, Law no. 196/2021 for the amendment and completion of the Law on the public heat supply service no. 325/2006, for the amendment of par. (5) in art. 10 of Law no. 121/2014 on energy efficiency and to complete para. (3) in art. 291 of Law no. 227/2015 regarding the Fiscal Code.

The Romanian Energy Regulatory Authority - ANRE, as the competent regulatory authority, will elaborate the technical and commercial regulations in the field of thermal energy, within 12 months from the entry into force of the law, in conditions of efficiency, competition, transparency and consumer protection.

ANNEXES

Annex 1 – SACET Characteristics (Part I)

Annex 2 – SACET Characteristics (Part II)

Annex 3 – General situation of SPAET – Year 2020

Annex 4 – Situation of investments in SACET infrastructure

Annex 5 – SPAET specific technical-economic data – Year 2020