



**DISCUSSION PAPER**

*by the Energy Community Secretariat*

**on Tariff Setting in District Heating**

DP 03/2021 / 29 April 2021

## Table of contents

I	Introduction.....	3
II	Principles of tariff setting in regulated industries.....	5
III	Bosnia and Herzegovina .....	8
IV	Kosovo* <sup>1</sup> .....	10
V	Moldova .....	12
VI	North Macedonia.....	14
VII	Serbia .....	16
VIII	Ukraine .....	18
IX	Setting DH tariffs in selected EU Member States.....	20
IX.1	Croatia .....	20
IX.1	Denmark.....	22
IX.2	Lithuania .....	24
IX.3	Romania .....	26
IX.4	Slovenia.....	27
X	Conclusions.....	29
XI	Recommendations.....	31

---

<sup>1</sup> This designation is without prejudice to positions on status, and is in line with UNSC 1244 and the ICJ Opinion on the Kosovo Declaration of Independence

## I Introduction

District heating stands to become a key component of the transition to a smart and integrated energy system and a decarbonised economy by 2050. District heating based on renewable energy or residual heat is the most economic, clean and efficient solution for supplying heating services to high population density urban areas. At present, this means of increasing energy efficiency and mitigating climate change remains largely untapped in the Energy Community Contracting Parties.

Whether or not district heating companies are able to properly maintain and modernize their infrastructure and invest in sustainable energy sources depends on the rules of tariff setting and the way they are applied. Tariff setting regimes directly impact the financial viability of district heating companies and must allow for the full and timely recovery of justified and reasonably incurred costs to enable the efficient use and development of district heating systems.

District heating companies can operate under regulated or non-regulated terms. In many countries, the supply of heat is regarded as a service of public interest/communal service and the provision of this service is subject to the rules defined by national and local authorities. On the other hand, district heating tariffs may be set by district heating companies following market signals and prices of alternative heating sources. This report will focus on the regulated district heating sector which, at present, is the predominant regime in place in the Contracting Parties of the Energy Community.

Since district heating companies are natural monopolies, they must be properly monitored by national authorities as abusive behaviour may occur resulting in higher tariffs. Directives of the European Union governing the internal market for electricity and natural gas that also apply in the Energy Community stipulate that national regulatory authorities should be able to set or approve tariffs, or the methodologies underlying the calculation of the tariffs, and in carrying out those tasks, national regulatory authorities should ensure that the tariffs are non-discriminatory and cost-reflective. Nevertheless, such provisions do not apply to district heating tariffs. In fact, there is no EU legislation regulating district heating and each EU Member State/Contracting Party is free to decide on the regulatory regime. To which institution these responsibilities are entrusted in the Contracting Parties varies based on the national institutional setup and the size of the national district heating sector.

This discussion paper aims to provide a starting point for exchanging best practices on tariff setting in district heating and illustrate approaches taken by Contracting Parties and certain EU Member States with different district heating characteristics and regulatory regimes with a view to making the sector fit to advance the clean energy transition. The report begins by summarizing the principles of tariff setting in regulated industries. It then provides an overview of the tariff setting processes and the methodologies for tariff setting in the Contracting Parties with district heating systems, namely Bosnia and Herzegovina, Kosovo\*, Moldova, North Macedonia, Serbia and Ukraine. The overview is based on data provided by national regulatory authorities and national ministries, as well as additional analysis of primary and secondary legislation undertaken by the Energy Community Secretariat. Moreover, the paper presents the district heating tariff setting process of five EU Member States: Croatia, Denmark, Lithuania, Romania and Slovenia. These Member States were selected for reasons of presenting different types of regulatory regimes, including those which require ex-ante tariff approval by national regulatory authorities or local authorities or ex-post control of heat tariffs, as well as different development models, such as Denmark's practice of thorough initial planning or Lithuania's competitive wholesale

district heating market. The discussion paper concludes with a comparative analysis of the district heating regimes presented and recommendations for the governance of the district heating sector in the Energy Community.

The Discussion Paper was developed with the support of the Energy Community Regulatory Board and builds on the report on distribution tariff methodologies for electricity and gas in the Energy Community adopted by the Board in 2019 and Policy Guidelines on distribution network tariffs published by the Energy Community Secretariat in April 2018. These documents were developed primarily for the electricity and gas sector. However, the principles of tariff setting can apply to other regulated industries, taking due account of the characteristics of such sector.

## II Principles of tariff setting in regulated industries<sup>2</sup>

There are several important principles when setting tariffs in regulated industries. **Predictability** establishes that principles, procedures and criteria for tariff setting need to be clearly designed. The aim is to ensure that a tariff methodology is consistently applied by all undertakings concerned. The principle of **transparency** has several dimensions. Firstly, it requires that the drafting of the procedure and methodology for tariff setting is open for public participation, and it is made public sufficiently in advance of their implementation to give the opportunity to relevant stakeholders to become familiar with it. Secondly, data, facts and documents used for the assessment and approval of the costs must be available and accessible to the competent authorities and companies. The competent authorities mostly use one of the following **methods of tariff regulation**:

- Rate of return/Cost plus
- Revenue cap
- Price cap
- Benchmarking
- Hybrid method

In the Rate of return/Cost plus methodology, justified costs of operation and the return on the capital invested are included. This method follows an incentive-based approach, since it allows investment costs to be covered by the tariffs. In the Price and Revenue Cap methods, the maximum amount of revenues/prices is set in advance for a fixed period of one or several years ("regulatory period"). The Benchmarking method of tariff setting does not reflect the true cost of heat production, as it sets the tariff in relation to alternative sources of heat, such as gas or electricity, or sets the tariff in relation to the average costs in the respective industry in other countries. The downside of adopting the Benchmarking methodology is that the payment for heat by consumers may not cover the cost of the primary fuel delivered to consumers. All these methods may be combined and hybrid approaches might be developed. It is not rare to have the Cost plus method or the Revenue/Price cap method used as the main method for tariff calculation, and the Benchmarking method used to additionally assess whether the tariffs are set at a reasonable level.

All types of tariff regulation, except the Benchmarking method, require the calculation of the "allowed revenue". The "allowed revenue" sets the base price of district heating, which will be subsequently adjusted due to price changes of inputs. The methodology should clarify justified and non-justified costs in order to avoid unnecessary costs being included in the tariffs. Costs that are supposed to be covered by the tariffs need to be reasonable and prudently incurred, taking into account the need for modernization and development of infrastructure and service provisions. Eligible costs are **capital costs** (Capex), which can be depreciation and return on assets, as well as **operation costs** (Opex), which can be fixed and variable.

---

<sup>2</sup> The Energy Community Policy guidelines on distribution network tariffs PG/02/2018/ 3 April 2018 available at: [https://energy-community.org/dam/jcr:a6882c6d-923f-4d6a-83d3-395773804984/PG\\_02\\_2018\\_ECS\\_tariffs\\_DS.pdf](https://energy-community.org/dam/jcr:a6882c6d-923f-4d6a-83d3-395773804984/PG_02_2018_ECS_tariffs_DS.pdf); Energy Community Regulatory Board Distribution tariff methodologies for the electricity and gas in the Energy Community of April 2019 available at: [https://energy-community.org/dam/jcr:133949ca-deab-4d63-8f46-756fd4cf9aad/ECRB042019\\_DS\\_tariffs.pdf](https://energy-community.org/dam/jcr:133949ca-deab-4d63-8f46-756fd4cf9aad/ECRB042019_DS_tariffs.pdf)

**Capital costs** are related to the acquisition, use and maintenance of assets needed for the provision of regulated services. These assets are included in the so-called Regulatory Assets Base (RAB). **RAB** consist of fixed assets, intangible assets (without goodwill), sometimes current assets (“working capital”) and assets under construction, usually excluding assets financed by grants or third parties (capital contributions). After determining the assets that RAB encompasses, the second step is to estimate the value of RAB. There are different approaches to estimating the value of the assets: by checking historic costs, referring to a respective market price, or acquiring the assets in a public procurement procedure. Competent authorities might have their own methodology for the re-valuation of RAB. **The rate of return** is applied to the value of RAB. Weighted Average Cost of Capital (WACC) is a commonly used method for calculation of the rate of return in regulated energy businesses. **Depreciation** is an accounting tool for the recovery of invested capital. There are different approaches of calculating depreciation: straight-line, accelerated and functional. A specific lifetime and depreciation rates for different asset types can be determined. Depreciation might be applied to capital contributions to ensure replacement of the assets at the end of the life cycle.

**Operating costs** are divided into costs related to heat production linked to the volume of heat production (**variable costs**), and costs of activities not directly related to heat production, but to salaries, administrative costs, other energy costs, costs of research, etc. (**fixed costs**). Allowed revenues can also include the monetary compensation of **network losses**, as part of operating costs or as separate allowed revenue. The losses can be technical, resulting from an inefficient network, and non-technical (commercial), resulting from the lack of or incorrect consumption metering and billing.

Revenues from non-regulated services that are provided by usage of the assets included in RAB need to be deducted from allowed revenues to avoid double earnings. The methodology can include specific incentives: for investments, for quality of service, etc. Finally, a **correction factor** addressing the difference between the forecasted and actual revenues generated can be applied in the next regulatory period.

After determining the allowed revenue, **the tariff design** determines elements of the tariff. Tariffs can be one-tier or two-tier structures. One-tier tariffs are based on one element, usually the heated area when consumption metering is not in place. Two-tier tariffs consist of two elements: fixed, related to the installed capacity of the heated area, and variable, related to consumed heat. Tariff design may recognize different **categories of consumers**. The allocation of costs among different customer categories needs to be efficient and fair, aiming to avoid cross-subsidization.

The chosen method of regulation should reflect the **characteristics of each country** with respect to the network structure, number and size of distribution companies, etc. In any case, a **strong institutional setup** is needed to perform ex-ante or ex-post control of tariffs. The competent authority has to be independent and equipped with relevant expertise. In most of the Contracting Parties, this task is given to national energy regulators. While this is a rule for the electricity and gas sector, there are different approaches in the district heating sector. In some Contracting Parties competition authorities supervise district heating companies with regard to general competition aspects; in others, local authorities are in charge to control the setup of heat tariffs.

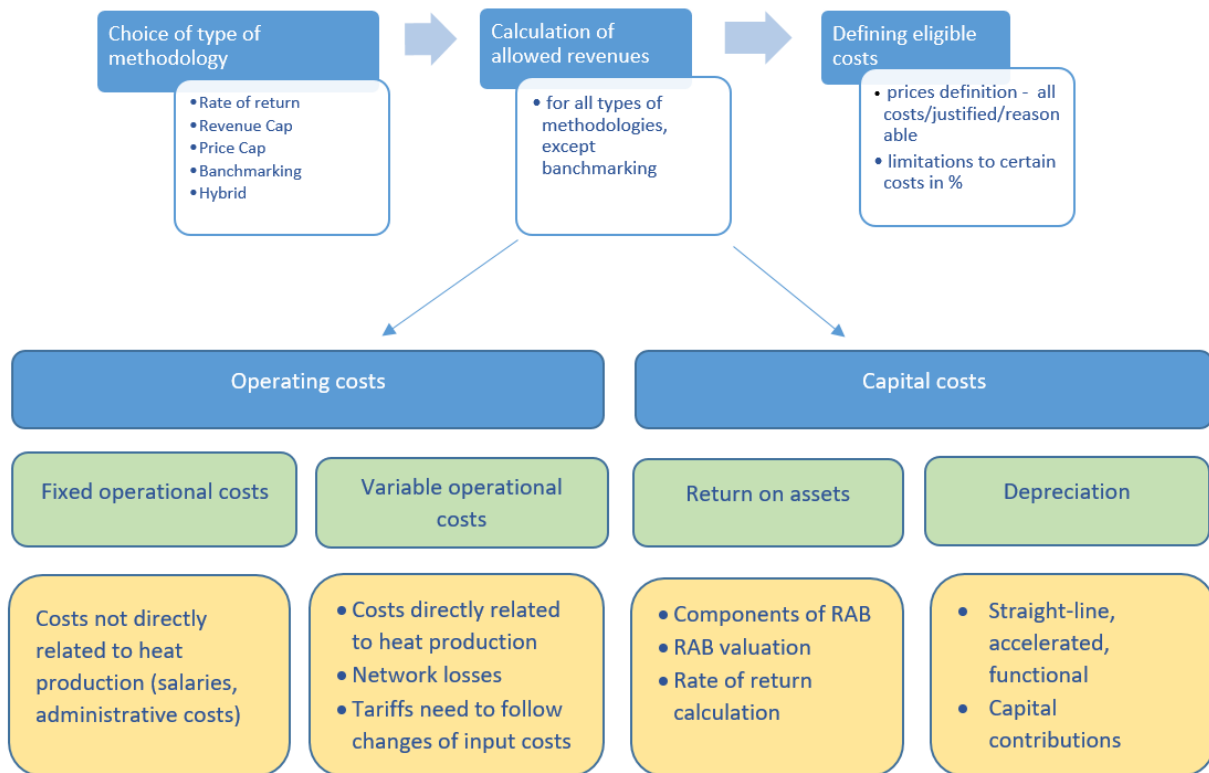


Figure 1: Process of calculation of allowed revenue

The next chapters analyse tariff setting practices in each Contracting Party with a district heating system.

### III Bosnia and Herzegovina



Bosnia and Herzegovina has 32 operational district heating systems, primarily owned by local governments. In the last few years, new biomass plants were developed in six municipalities with the support of private capital through public-private partnerships. District heating companies are established under different legal forms: limited liability companies, joint-stock companies or public undertakings.

Due to the constitutional division of competencies, the two entities of Bosnia and Herzegovina (BiH), namely the Federation of Bosnia and Herzegovina and Republika Srpska, are responsible for governing the communal activities in each entity. According to the respective laws of the entities, heat supply is a communal activity of public interest fully governed by local governments. Therefore, there is no legislation at the state level that regulates district heating; rather, each canton, city or municipality with a developed district heating network has its own set of rules applicable on the territory of its jurisdiction. The report hereby presents the local-level legislation on tariff setting of the two largest cities in Bosnia and Herzegovina, Sarajevo and Banja Luka. Brčko District does not have a district heating network, and thus is not subject to this assessment. The tariff methodologies are in both entities, Federation of Bosnia and Herzegovina and Republika Srpska, adopted at the local level, by the canton or city/municipality respectively. Tariffs



are calculated by district heating companies and approved by local authorities in charge of communal matters. The review of tariffs is regulated at the local level and differs in each local unit. The Competition Council of BiH may oversee the tariffs or provision of services in both entities according to applicable competition law. In practice, the Competition Council issued several opinions on the proposals of tariff systems of district heating companies, in some of them finding abuse of dominant position.<sup>3</sup>

In Sarajevo, the local government decides on the tariff system which includes the methodology, while in Banja Luka the local assembly adopts the rules for tariff setting and the tariff system. In both Sarajevo and Banja Luka, adopted methodologies are based on heat production costs, as well as planned maintenance and reconstruction of the heating system. The methodologies of both cities do not contain a detailed definition of costs that can be covered, nor do they define the structure of the RAB or how depreciation is to be treated, etc. In Sarajevo, the validity of the calculation and the final tariff proposal is determined by an independent expert body of the local administration, and the proposal is adopted by the local government. Sarajevo has three categories of consumers: households, business consumers and special consumers. In Banja Luka, there are two categories of consumers: households and business consumers.

In both Sarajevo and Banja Luka, district heating companies are obliged to submit requests yearly and extraordinarily in case of a change of fuel prices. However, if a company incurred uncovered financial losses, a request to decrease the tariff should not be submitted, even in the case of a fuel price decrease. In both cities, district heating companies are obliged to publish new prices electronically before they enter into force. If the price of the service is set at a lower level than the actual costs, the difference will be compensated by the local government.

The profit allocation differs between public undertakings and limited liability companies/joint-stock undertakings. However, the profit is primarily allocated for covering the losses from previous years, legal reserves, statutory reserves and dividends.

The Law on Communal Activities of Republika Srpska enables a local government to separate heat production and distribution activities and to entrust these tasks to one or more companies. In both entities, district heating companies are obliged to develop and monitor the implementation of a three-year business plan, which is revised annually.

Legislation governing the district heating sector is as follows:

1. Law on communal activities of Canton Sarajevo (Official Gazette of Canton Sarajevo No. 14/16)
2. Decree on general conditions of generation, distribution and supply of thermal Energy (Official Gazette of Canton Sarajevo No. 22/16)
3. Decision on tariff system with methodology of Government of Canton Sarajevo (Official Gazette of Canton Sarajevo No. 34/16)
4. Law on communal activities (Official Gazette of Republika Srpska No. 14/16)
5. Decision on general conditions for generation, supply and usage of thermal energy (Official Gazette of City of Banja Luka No. 2/18, 40/18, 12/19)
6. Decision on tariff system with methodology (Official Gazette of City of Banja Luka No. 2/18)

<sup>3</sup> Decision of Competition Council No. UP-01-26-2-025-43/17 of 7 June 2018  
<http://sluzbenilist.ba/page/akt/romyzhjtMI=>

## IV Kosovo\*



Kosovo\* has four district heating systems, owned by local governments. District heating is regarded as a service of public interest, and the companies are established as public undertakings.

Kosovo's\* district heating sector is monitored by Kosovo's\* national regulatory authority – Energy Regulatory Office (ERO). Under the Law on Thermal Energy for district heating, ERO is responsible for adopting a rulebook on setting the heat tariff and the tariff itself. It calculates the tariffs based on data provided by district heating companies.

The adopted methodology is "Cost plus". For determining the allowed revenues and consequently the tariffs, all operating (fixed and variable) costs and capital costs are covered. Costs of network losses are calculated as a separate component. Each year, ERO determines the level of allowed losses that can be covered by the tariffs. Capital costs include depreciation costs and the return on investments. The straight-line method of depreciation is applied to all fixed assets, new investments and assets that are obtained by capital contributions. The rate of return is calculated by applying the Weighted Average Cost of Capital. At the end of the regulatory period, ERO conducts an adjustment mechanism to control over or under compensation.

The allowed revenues and district heating tariffs are reviewed on a yearly basis – i.e. the regulatory period is one year. However, under certain circumstances specified in the legislation,

tariffs can be reviewed in extraordinary cases, such as an increase of fuel costs. The maximum allowed revenue is allocated to fixed and variable elements of the tariff. The Rulebook on heat pricing specifies that the fixed component includes fixed operational costs, depreciation and return on assets costs, and the variable component includes variable operational costs and network losses.

The Rulebook defines two types of tariffs: 1) for customers who have a functional metering device, in which case the tariff is based on consumption and 2) for customers who do not have a functional heat meter and for cases when metered consumption-based billing cannot be implemented, tariffs are based on the heated area. Both types are structured in two components: fixed and variable. In the former type, the variable component is based on actual consumption, while in the latter one, it is based on estimated consumption. Tariffs differ between two categories of customers: 1) household customers and 2) commercial and institutional customers.

Unbundling of accounts is one of the licensing requirements. Cross-subsidisation is forbidden by the legislation. Third party access to the network is allowed, but currently there is no methodology in place for setting a tariff for access to the distribution network. The district heating operator is obliged to draft a development-investment plan and to submit it to ERO for review and approval.

Despite the fact that district heating is regarded as a service of public interest, district heating companies are supposed to be fully responsible for their operating and financial performance. In this respect, the municipal owner may decide to cover eventual financial losses if needed for protecting public interest. However, no pre-specified compensation is envisaged for district heating companies that incur financial losses. In practice, there was a case when the central government had to intervene with subsidies allocated for the purchase of fuel (mazut) for heat production, since the fuel price increased significantly and the company could not finance the fuel by itself through tariffs.

Legislation governing the district heating sector is as follows:

1. Law No. 05/L -052 on thermal energy (Official Gazette Republic of Kosovo No. 40/15)
2. Rulebook for determining heat prices of July 2016

## V Moldova



Moldova's district heating sector comprises two district heating systems, one in the capital city, Chisinau, and the other in Balti. Both district heating systems use cogeneration technology based on natural gas. The production, distribution and supply of heat are regarded as public services of general interest. The Law on heating and promotion of cogeneration prescribes that the heat sector is governed and monitored by the National Agency for Energy Regulation – ANRE.

ANRE has the competence to elaborate the methodology for determining the tariffs for regulated district heating activities. The methodology establishes the basis for individual tariffs for production, distribution and supply of heat or only one tariff for heat supply when these activities are vertically integrated.

The procedure for submitting and examining applications for regulated prices and tariffs is regulated by ANRE Regulation No. 286/2018 of 17 October 2018. ANRE has the competence to approve tariffs calculated by district heating companies, but it can also amend or reject the calculated tariffs. The request for approval and calculations are published on the website of ANRE for public consultation. District heating companies submit calculations for review on a yearly basis, with a possibility to request an additional review in case of modification of the natural gas tariffs.

The methodology applied is "Revenue cap" based. It means that the methodology provides a formula for calculating the maximum expenditures that can be included in the tariffs. The tariff comprises operative and depreciation costs, costs for investments in the regulated activity and

the rate of return. Depreciation is calculated on fixed and intangible assets used for regulated activities. Costs for network losses are covered by the tariff, but cannot be higher than the actual level recorded in the previous year. The rate of return is determined each year by applying the method of Weighted Average Cost of Capital. Since Moldova relies heavily on electricity imports, the costs for purchasing electricity also influence the tariff. The same applies for the exchange rate of the national currency against the US dollar. The Methodology expressly specifies which costs cannot be included in the tariffs: ongoing construction works (included in the amortisation after commissioning), donations, research activities, fines and penalties, court fees, awards, voluntary insurance, payments to members of the board, etc. At the end of the regulatory period, deviations between planned and generated revenues are adjusted. The tariff is the same for all types of consumers.

District heating operators have to have separate accounts if they operate all heat activities – production, distribution and supply. Cross-subsidization is not allowed. Access to the distribution network is allowed for all heat producers, without discrimination. However, priority access is given to high efficiency cogeneration and plants that use renewable sources, provided that such access does not increase the tariffs. Distributors are also obliged to create an investment plan for the following year and submit it to ANRE for approval. District heating companies are not subsidised by public authorities, nor entitled to receive compensation for the public service.

Legislation governing the district heating sector is as follows:

1. Law on heating and promotion of cogeneration No.92 of 29 May 2014, as amended by the Law No. 185/2017 and Law No. 74/2020
2. ANRE Regulation on procedure for submitting and examining applications for regulated prices and tariffs No. 286/2018 of 17 October 2018
3. ANRE Decision and Methodology for calculating, approving and applying regulated prices and tariffs for the production of electricity and heat, for the services of distribution and supply of heat No. 396/2019 of 1 November 2019

## VI North Macedonia



In North Macedonia, there is only one active district heating system in the city of Skopje. Three companies produce heat under regulated terms as a service of public interest and one heat producer operates under non-regulated terms by selling surplus heat, which is obtained by cogeneration, to the district heating distributor. All heat production companies use natural gas as fuel. They are established as joint-stock companies, either in public or private ownership.

North Macedonia is one of the four Contracting Parties in which the district heating sector is regulated by the national regulator authority – Energy Regulatory Commission (ERC). ERC adopted a set of by-laws on provision of heating services: Heat Supply Rules, Rulebook on determining the price of heat and ancillary services and the Tariff System.

According to the Rulebook on determining heat prices, district heating companies submit to ERC a request for approval of calculated allowed revenues and tariffs together with the needed documentation and financial reports. The request for approval is published on the website of ERC. Upon the assessment of the request, ERC adopts a decision on the maximum allowed revenue and tariffs. The heat tariffs are reviewed once a year. An exceptional review is allowed in case of a significant change in the elements based on which the tariffs were approved. This can be

initiated either by the company or ERC.

The type of methodology adopted is "Revenue cap" based. The tariff methodology defines maximum revenues that heat producers, distributors and suppliers can separately generate, or if these activities are conducted by one undertaking, an integrated tariff is set. Costs covered by the tariffs are: justified operating costs, depreciation and reasonable rate of return which enable investments and development. The Rulebook recognizes distribution losses at the level of 12% of the total amount of heat in the distribution system. Tariffs differ for households, education institutions and other consumers, up to a ratio of 1:1.4.

According to the Energy Law, activities of production, distribution and supply of heat should be separated and cannot be performed by a single legal entity if the consumer's system has installed power of over 80 MW. Consequently, district heating operators have separate accounts for different activities, which cannot be cross-subsidised. The profit of district heating operators is not allocated for some specific purposes. The Energy Law provides that district heating companies that perform under regulated terms might be subject to compensation for their public service obligation. The Energy Law explicitly allows third party access to the distribution network.

Legislation governing the district heating sector is as follows:

1. Law on energy (Official Gazette of the Republic of North Macedonia No. 96/2018, 96/2019)
2. Rulebook on determining the prices for heat energy and ancillary services (Official Gazette of the Republic of North Macedonia No. 28/2013, 32/2015, 126/15)
3. Tariff system (Official Gazette of the Republic of North Macedonia No. 65/2019, 219/2019)

## VII Serbia



Serbia has 58 municipality-owned operational district heating companies, all established in the form of public undertakings. 13% of heat is produced in cogeneration units, while the predominant fuel of district heating systems is natural gas with cc 70%, followed by coal 10%. According to the Law on communal activities, district heating activities are regarded as services of general interests, regulated by municipalities or cities.

Local government units have an obligation to enact legislation on the rights and responsibilities of producers, distributors and suppliers of heat. These activities are at the same time partially regulated by the Energy Law. The Energy Law makes a distinction between producers, distributors and suppliers. However, the production, distribution and heat supply is performed in practice by one public undertaking. District heating companies are licensed by local authorities. The rules for tariff setting are provided by the Government's Methodology for determining the heat price.

In Serbia, district heating companies calculate the tariffs, which are subject to the approval of local authorities. The local authority may not approve the calculated tariff, in which case it has to calculate a new tariff and determine the compensation to be paid to the district heating company as the difference of the proposed and the approved tariff. The tariffs are reviewed yearly. However, in case of a decrease of the total fuel costs by more than 5%, district heating companies



are obliged to re-calculate and submit a request for approval of the decreased tariff. In case that the total fuel costs increase by more than 3%, the tariff might be reviewed. The Law on communal service specifies that the request for tariff setting needs to be published at least 15 days before the adoption of a decision on the website of the competent authority.

The methodology is "Cost plus", which determines the maximum profit that a district heating company can generate in a regulatory period. The tariff covers reasonable operational variable and fixed costs, depreciation costs and the rate of return on RAB. Operational variable costs are related to the heat production and include costs of fuels, electricity and water used, etc. Fixed costs are not dependent on production volume and cover costs of employee salaries and other bonuses, lease costs, transportation costs, etc. Depreciation costs cover the costs of assets acquired with or without compensation that serve district heating activities. The rate of return cannot be higher than 10% until a district heating market is established. Companies can apply a correction factor for deviations between the planned maximum profit and the actual profit generated. Maximum allowed revenues are determined on the basis of the costs reported in the last financial report.

Tariff elements are: "energy" expressed in kWh and serves for calculating variable costs, "heating area" or "installed capacity", expressed in m<sup>2</sup> and kW respectively, serves for calculating fixed costs and "reading" reflects the costs for reading of heat meters. Tariffs based on consumption should apply as a principle, while a normative tariff based on heated area can apply if consumption-based billing is not technically possible. Only 15 of 59 district heating companies implemented consumption-based billing.

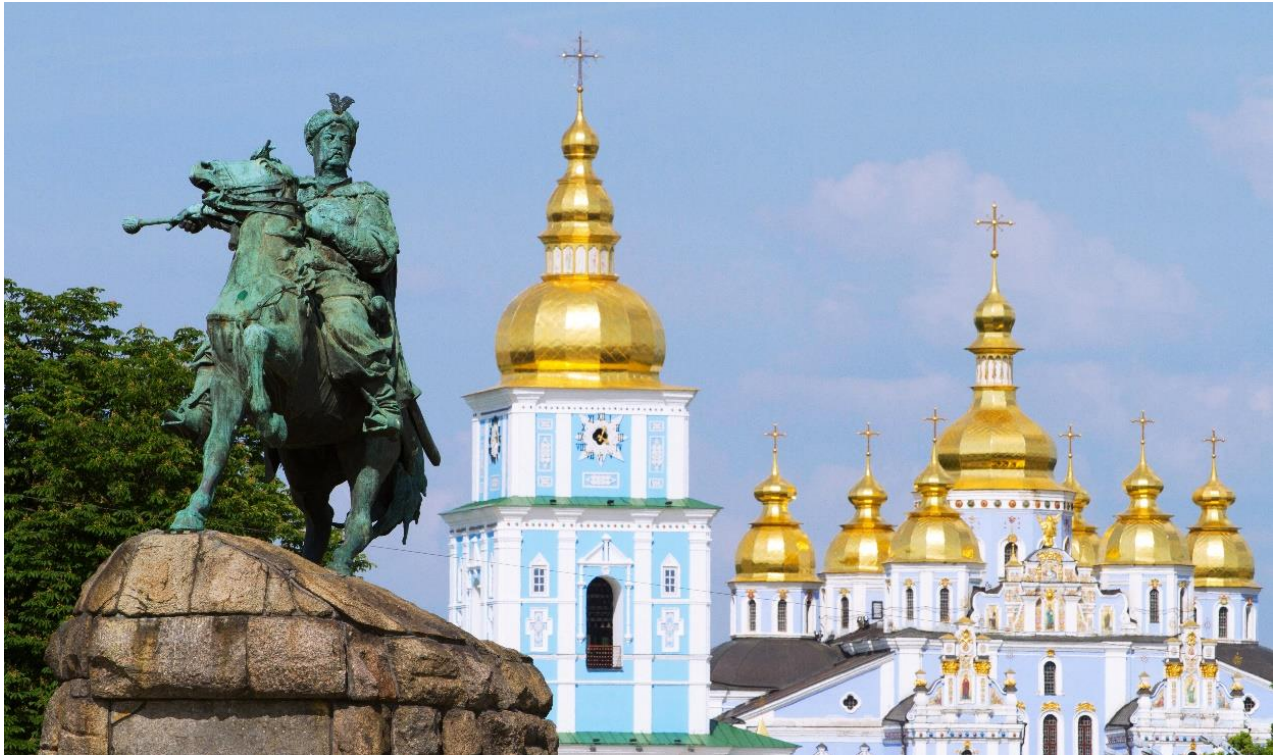
The Energy Law obliges all energy entities to have a separate account for each district heating activity. Cross-subsidisation is not allowed. However, the Methodology envisages that a distinction between tariffs for households and business consumers might be made, by applying a coefficient in the range of 1.00 – 1.25.

The legislation does not envisage explicitly that district heating operators are entitled to receive compensation, in the form of a subsidy, for their public service obligation. According to the Law on public enterprises, district heating companies, as public enterprises, are obliged to allocate 50% of the profit to the owner, namely a city or a municipality. According to the same law, district heating companies have to develop long-term investment plans. The Energy Law also obliges a heat distributor to determine in its development plan the manner and schedule for construction of a new, or reconstruction of the existing, distribution system, or development of other distribution capacities for a period of 5 years. An annual report on realisation of the development plan should be submitted to the local self-government unit. Third party access to the heat network is allowed by the Energy Law, and the Methodology envisages that the charge for access to the network is calculated by the district heating company and approved by the local authority. However, the methodology does not provide formulas for calculating the charge for access to the network.

Legislation governing the district heating sector is as follows:

1. Energy Law (Official Gazette Republic of Serbia No. 145/14, 95/18)
2. Law on Communal Activities (Official Gazette Republic of Serbia No. 88/11, 104/16, 95/18)
3. Decree on Establishing the Methodology for Determining the End-consumers Price of Heat Supply (Official Gazette Republic of Serbia No. 63/15)

## VIII Ukraine



Ukraine's district heating sector is the most complex one among the Energy Community Contracting Parties, and includes around 1400 district heating companies. As of 2015, Ukraine has undertaken comprehensive reform of the district heating sector, underpinned by a national programme and a set of laws. The companies are primarily owned by municipalities and established in the form of public undertakings, but there are also cases of limited liability companies in private ownership. District heating services are regarded as services of general economic interest.

Due to the great number of district heating companies, the competence for their licencing is divided between the national regulatory authority – NEURC and local authorities. Therefore, district heating companies that are licensed by NEURC shall apply legal acts adopted by NEURC, while district heating companies that are licensed by local authorities shall apply legal acts enacted by the Government and the Ministry of Regional Development, Construction and Housing and Utilities Service.

District heating companies calculate the tariffs, which are submitted to the relevant competent authority – NEURC or local authorities, for approval. The application for approval is accompanied by a set of documents which prove the indicated calculations. The competent authority may amend or reject the calculated tariff. The tariffs are reviewed yearly, but can also be reviewed irregularly in several instances: in case of an increase or decrease of taxes and fees, the minimum wage, rent and depreciation charges, prices of fuel and energy and other material resources. The

period of tariff adjustment due to fuel prices lasts for one to two months. According to the Procedure for carrying out open discussion of the draft decisions of NEURC, service providers and local authorities carry out public consultations on tariff decisions, the results of which are recorded and published on the website of the service provider.

The adopted methodology is "Cost plus", which covers all economically justified operating costs and financial costs associated with the licensed activity, the cost of network losses, depreciation and cost adjustments at the end of a regulatory period, if needed. Financial costs include loan interest. Some costs are explicitly excluded from the tariffs: the amounts paid to trade unions for cultural activities, the amount of written-off bad debts, donations, etc.

The structure of the tariff can be single-tier, which consists only of the variable part and is expressed in Gcal; or two-tier, containing the variable part, expressed in Gcal, and the fixed part that does not change, in Gcal per hour. Network losses are calculated in accordance with the requirements of a separate act – the Procedure for taking into account heat losses in thermal networks in tariffs. This procedure envisages the adoption of a programme as a set of measures for reducing the actual heat loss in heat networks, which should be approved by NEURC.

The tariff system differs between consumer categories: households, budgetary institutions, other consumers and religious organizations. District heating companies that use natural gas as fuel are subsidised by paying a lower price than the gas market price. This public service obligation is supposed to be terminated in the course of 2021. Moreover, the companies have the right to receive compensation from the state or municipality budget in the amount of the difference between actual supply costs and tariffs.

District heating companies have to keep separate accounts for each licensed activity in the district heating sector. Cross-subsidization is not allowed. District heating companies are obliged to develop an investment plan, and profit can be allocated according to the approved investment programme. Independent heat generators have the right to access the distribution network.

Legislation governing the district heating sector is as follows:

1. Law on Heat Supply № 2633-IV of 2 June 2005
2. NEURC Decree № 528 of 31 March 2016 on approval of the Procedure for setting tariffs for thermal energy, its production, transportation, supply
3. NEURC Decree № 1174 of 25 June 2019 on the statement of the Order of formation of tariffs for thermal energy, its production, transportation and supply
4. Government Resolution № 869 of 1 June 2011 on ensuring a unified approach to the formation of tariffs for housing and utilities services
5. Ministry of Regional Development, Construction and Housing and Utilities Services Order № 239 of 12 September 2018 on the statement of the Procedure for consideration by local authorities of calculations of tariffs for heat energy production, transportation and supply, and also calculations of tariffs for utility services

## IX Setting DH tariffs in selected EU Member States

### IX.1 Croatia



In Croatia, there are 46 energy entities with licenses issued by the Croatian Energy Regulatory Agency (HERA) engaged in thermal energy production, distribution and supply. The entities are owned by local/national government, while a smaller portion of energy entities are partially privately owned. Many of these entities also perform gas distribution, building management and other public services.

The manner and conditions of performing activities related to district heating (production, distribution and supply of thermal energy) depend on the type of district heating system that supplies end-consumers with thermal energy. District heating systems are divided into central, closed and independent heating systems. Central heating systems are large heating systems encompassing multiple buildings/structures, consisting of production facilities (large boilers and cogeneration facilities) and a hot water and/or steam distribution network longer than 2,000 meters, with more than 500 connected end-customers. For constructing or managing a central heating system, a concession must be obtained from the local government, with the regulator required to give its opinion. A closed heating system comprises a network shorter than 2,000 meters and having less than 500 connected end-customers. In terms of vertically separated energy activities, the activity “distribution of thermal energy” is not performed in closed heating systems and a sole supplier of thermal energy is in charge of operating the closed heating system. Independent heating systems are systems encompassing one building/structure with its own boiler, where co-owners of individual units within a building are end-customers of thermal energy.

In addition, the Thermal Energy Market Act defines a so-called “thermal energy buyer”, which does not fall under the regulatory framework for energy activities. Thermal energy buyers are legal or natural persons who undertake the activity of purchasing thermal energy in an independent, closed or central heating system on behalf of the owner and/or co-owners of a given building/structure. The activity of purchasing thermal energy encompasses professional management, handling, maintenance of internal installations, delivery of thermal energy, billing and issuing invoices to end-consumers in the building/structure in an independent, closed or central heating system on the basis of a consumption agreement signed with an authorized representative of the co-owners. Thermal energy buyers purchase energy for the production of thermal energy in an independent heating system, or they purchase thermal energy from a thermal energy supplier in a closed or central heating system.

Licenses are required for production, distribution and supply of thermal energy, with the exemption that a thermal energy production license is not required if generated using production facilities with installed thermal power less than or equal to 2 MW. There is no license requirement for performing the activity of a “thermal energy buyer”, although a simple registration exists in HERA’s register of thermal energy buyers.

Energy entities that perform energy activities in the thermal energy sector are required to keep separate accounting records of their activities. HERA issued a Decision on the manner and procedure for keeping separate accounting records for energy entities specifying rules for keeping separate business records, content of financial statements and financial documents, manner of submitting documentation to HERA, etc. Energy undertakings or activities are vertically separated activities requiring separate licenses, but there are no requirements related to legal separation.

The Energy Act and the Thermal Energy Market Act stipulate HERA's responsibility to define tariff methodologies and decide on tariff items proposed by energy entities. Currently, the “Cost plus” method is used in the Methodologies for setting tariffs for thermal energy production and thermal energy distribution. HERA defines tariff amounts for thermal energy production and distribution only for central heating systems, whereas prices in closed and individual heating systems are not regulated. The Methodology for setting tariff items for thermal energy production includes a simplified procedure for changing the energy tariff item in relation to changes in fuel prices. The final price of thermal energy in centralized heating systems, in addition to the regulated portion (thermal production and thermal distribution), consists of charges for thermal energy supply and for performing thermal energy buyer activities. Prices for thermal energy supply and for thermal energy buyer activities are not regulated, so the final price for thermal energy in centralized heating systems is partially regulated.

Legislation governing the district heating sector is as follows:

Energy Act (Official Gazette no. 120/12, 14/14, 102/15 and 68/18)

Act on the Regulation of Energy Activities (Official Gazette no. 120/12 and 68/18)

Thermal Energy Market Act (Official Gazette no. 80/13 and 14/14)

General Conditions for Thermal Energy Supply (Official Gazette no. 35/14)

General Conditions for Thermal Energy Delivery (Official Gazette no. 35/14 and 129/15)

Network Codes for Thermal Energy Distribution (Official Gazette no. 35/14)

Ordinance on the Method of Allocating and Calculating the Costs of Supplied Thermal Energy (Official Gazette no. 99/14, 27/15 and 124/15)

Methodology for setting tariffs for thermal energy production (Official Gazette no. 56/14)

Methodology for setting tariffs for thermal energy distribution (Official Gazette no. 56/14)

Decision on the manner and procedure for keeping separate accounting records for energy entities (Official Gazette, no. 111/18)

## IX.1 Denmark



The district heating sector takes an important share of collective heating in Denmark. Over 400 district heating companies supply heat to 64% of Danish households. Approximately 50 of them are owned by municipalities, and the remaining by consumer cooperatives. Denmark is one of the few EU Member States that has a significant percentage of non-profit consumer-owned enterprises that run small size district heating systems and produce heat mostly from renewable sources. There were cases of privately-owned companies; however, due to a significant increase in heat prices of more than 50%, some companies were bought back by municipalities. In 2016, cc 58% of district heating was produced from renewable sources, cc 24% from natural gas and cc 15% from coal.

The sector is monitored by the energy regulatory authority - Danish Utility Regulator (*Forsyningstilsynet*), which was established in July 2018 with the aim of overseeing the utility sectors – electricity, natural gas and district heating. The main tasks of the Utility Regulator are to supervise the setting of district heating prices, ensure transparency of district heating operation and compile district heating and heat price statistics. The Energy Appeals Board (*Energiklagenævnet*) is an independent body in charge to address appeals of decisions of the Utility Regulator and municipalities, as well as to interpret laws and regulations concerning energy, including heat.

Denmark has adopted the approach of non-profit tariffs for district heating. Therefore, only necessary costs are included in the tariff. The Heat Supply Act stipulates which costs may be covered by tariffs: fuel expenses, salaries and other operating expenses, research activity,

administration, expenses as a result of imposed public obligations, including expenses for energy saving activities, expenses for financing debts and deficits from previous periods arising in connection with the establishment and significant expansion of the supply systems. The ministry in charge of energy may approve, along with the Utility Regulator, additional costs: depreciation costs and rate of return. The Heat Supply Act specifically allows calculation of a profit by district heating systems that use renewable sources for heat production: geothermal, solar heating and biogas or biomass-based heat or cogeneration plants. Likewise, companies that use electric heat pumps and industries that supply surplus heat can include a profit in the tariff calculation. The costs included in the tariffs must not be higher than market prices of the same materials, services, etc.

The Utility Regulator specifically controls whether district heating companies have included in the tariff only the necessary costs and approves the rate of return in cases that are enlisted in the Law. District heating companies have to inform the Utility Regulator about the tariffs, but not to seek prior approval. They are obliged to report on a number of indicators to the Utility Regulator through an electronic notification system. The Utility Regulator can perform ex-post control of district heating prices upon a complaint.

It should be emphasized that heat planning is a very important development in the Danish heating system. Municipalities are responsible for heat planning and expanding the grids. A pre-condition for construction or renovation of a district heating system is a pre-feasibility study showing that the system is the least cost option compared to alternative sources. Therefore, special attention is paid to the quality of materials, energy efficient plants and well-insulated buildings, which will bring savings to companies and consumers in the long-term. One of the instruments for the development of local infrastructure is a credit system that provides low-interest rate loans, which can be obtained by a district heating company based on their true costs.

Sources:

1. Heat Supply Act No. 1215 of 14 August 2020
2. Websites of Danish Utility Regulator <https://forsyningstilsynet.dk/> and Energy Appeals Board <https://naevneneshus.dk/start-din-klage/energiklagenaevnet/>
3. Ole Odgaard and Søren Djørup (2020) *Review of price regulation regimes for district heating*, International Journal of Sustainable Energy Planning and Management Vol. 29

## IX.2 Lithuania



Currently, heat supply services in Lithuania are provided by 52 companies as a regulated activity. There are also 44 independent heat producers, of which 22 are non-regulated. One market participant acts as a market operator. The tariff for end-users is regulated in 60 municipalities. The energy mix of Lithuania's district heating sector is around 40% natural gas and 60% biofuels. The Lithuanian district heating sector has gone through significant reforms since 2010. Namely, the wholesale market became competitive, enabling third parties to inject heat produced from renewable sources. As of 2012, the average heat price in Lithuania decreased by 35%.

The sector is monitored by the national regulatory authority - VERT. There are 51 legal acts and instructions adopted by different national authorities that are applicable to the heating sector in Lithuania.

The base heat prices are set in accordance with the procedure provided by the Law on Heat Sector, which is further regulated in the Methodology for determining the heat price adopted by VERT. The base heat price is adopted for a period of not less than 3 years and not more than 5 years. A heat supplier that sells at least 10 GWh of heat per year prepares and submits to a municipal institution and VERT the draft of the base heat price. VERT determines the base heat price within 15 days at the latest, upon taking into account the comments of the municipal institution. Consumer organizations are invited to participate in this process. VERT publishes the base heat prices on its website.



The base heat price is determined as the sum of fixed and variable costs. Variable costs cover: costs of purchased heat, fuel for energy production, electricity and water and the cost of acquiring allowances. The fixed costs include: depreciation costs; current repair and maintenance costs; staff costs; tax costs; financial costs; administrative costs; marketing and sales costs; rental or concession costs of heating assets, etc. The Methodology provides instructions on the meaning and the scope of all types of costs.

In determining the base heat price, the true costs are taken into account, quantities of services actually provided in the last three years, benchmarking indicators of efficiency of a district heating company, planned investment activities, etc. VERT checks the reasonableness and necessity of the costs included in the tariff. The Methodology defines in detail how specific costs are to be calculated. For example, the purchase price of natural gas is equal to the actual purchase price of natural gas in the last month preceding the calculation of heat prices. The recovery of biofuel price is subject to restriction of 105% average market prices of the relevant fuel (raw material) in the country in the last month before the calculation of heat prices.

The heat price must be checked and changed every month, following the change of prices of fuel and/or purchased heat. The heat and hot water prices are calculated by the 25th day of the current month and are applicable from the 1st day of the following month.

Heat pricing is grounded in the principles of accounting separation and cost allocation. Accounting unbundling rules apply for: heat production; heat distribution; heat supply; hot water supply; heat network maintenance and reconstruction; implementation of environmental protection rules – ETS and related activities and all unregulated activities. In case of cogeneration technology – accounting for heat and electricity production are separated. The rules on separation of accounting are not mandatory for systems managed by a heat supplier that sells less than 10 GWh of heat per year. However, it will always apply when independent heat producers are present on the market. Non-regulated independent producers determine the heat price by themselves according to market signals.

According to the Rules for the provision of information, district heating companies and independent heat producers have a number of reporting obligations related to the setting of heat prices and purchase of heat at the market, such as provision of information on the actual quantities and prices of purchased fuel and heat from independent producers, as well as signed purchase contracts, information on the market share of independent heat producers in the previous month, and the free-form description of the regulatory accounting system that contain the principles, methods and procedures used in the accounting (accounting separation and cost allocation).

Sources:

1. VERT website <https://www.vert.it/en/Pages/Activities/district-heating-sector.aspx>
2. Law on Heat Sector No. IX-1565 of 20 May 2003

### IX.3 Romania



At the end of 2019, 46 operators of centralized systems of heat supply (so-called SACET) from 51 localities were active in Romania. The SACET system includes 15 cogeneration plants (CET) and 633 thermal power plants (CT).

According to the Law No. 325/2006 on the public service of heat supply, the establishment, organization and control of heat supply constitute obligations of the local public administration authorities. Within the local public authority, an energy department needs to be established.

Responsibilities for approving tariffs are divided between local authorities and the national energy regulator – ANRE. In accordance with the Law on community services of public utilities No. 51/2006, the district heating tariffs are approved by local authorities in compliance with the Methodology for monitoring the public service of heat supply in a centralized system and on urban heating and/or cooling systems approved by ANRE. On the other side, ANRE is in charge to approve the tariffs for heat produced via cogeneration technology.

In Romania, the tariff system for district heating distinguishes two prices: heat price and heat price for households. In the calculation of local prices, the justified costs of the activities of production, transport, distribution and heat supply will be taken into account, including the expenses related to the development and modernization of SACET, technical losses, expenses for environmental protection, as well as a profit share, which will not exceed 5%. At the level of the same administrative-territorial unit (UAT), the local price for households is the same in all district heating systems, regardless of the technologies of heat production, transport and distribution system or of the type of fuels used.

The difference between heat prices and prices for households is covered from the budgets of local public administration authorities or associations for community development, as appropriate.

Sources:

1. ANRE Report 2019
2. Law No. 325 on public service of heat supply of July 14, 2006

## IX.4 Slovenia



In 2019, heat supply was provided by 100 distribution systems (62 as a service of general economic interest, 12 commercial distributions, and 26 private distribution systems) in 66 Slovenian municipalities. Almost half of the heat supplied was produced from coal and less than 18% from renewable sources.

District heating supply in Slovenia might be conducted as a service of general interest or as a market service. Where a distributor supplies or intends to supply more than one hundred household customers, district heating is provided as a service of general economic interest (SGEI).

The district heating price is regulated if:

- a heat distributor carries out the activity as a SGEI
- a heat distributor has an installed capacity of connected consumers that exceeds 500 kW
- a heat producer supplies more than 30% of the intended distributed heat to a heat distributor performing SGEI

Local authorities are in charge to define conditions for district heating activities in accordance with the provisions on SGEI and public-private partnership. The Energy Agency needs to be informed about the conditions adopted. The Act on the Methodology for setting heat tariffs adopted by the Energy Agency defines elements of the base price of district heating, criteria for adjusting the base price to changes in eligible costs, and the mechanism for setting heat prices. The Energy Agency assesses and approves the base price of district heating. Regulated distributors and heat producers need to submit to the Agency information on: the number of connected customers, the quantities of heat produced and distributed, the level of quality achieved, customer complaints

and individual tariffs for each customer category.

The heat price consists of a variable and a fixed component. The variable component covers variable costs of heat production and is charged to customers as the price for supplied heat in EUR/MWh. The fixed component covers fixed costs and is charged to customers as the price for connection or installed capacity in EUR/ MW/year.

Variable costs include the following eligible costs: energy costs; costs of purchased heat, if own production is not sufficient for supply to customers; energy costs for the operation of appliances in heat production and in the distribution system; electricity costs for pump operation in the primary distribution system; costs of heat transfer medium (water and its chemical preparation) and the cost of allowances that are not obtained free of charge.

Fixed costs include costs of materials without the costs of energy and purchased heat; costs of services; labour costs; depreciation costs; other write-offs; other operating costs and expenses and reserves costs prescribed by law.

The Act also stipulates which costs shall not be deemed as eligible costs, such as sponsorship costs, donation costs, costs of supplementary retirement insurance and costs relating to salaries and other types of payments to employees on the basis of performance, including related benefits if they are not paid under a valid collective agreement or concluded individual agreements, etc.

The company (distributor, producer) is obliged to notify the Agency within three days before the entry into force of a price change, and publish the changed price on its website. The notification should be accompanied, along with other data, with an explanation for changing the variable or fixed part of the price and documentation justifying the changes. In 2019, the Energy Agency received 128 notifications on the adjustment of the variable part of base heat prices and ten notifications on the adjustment of the fixed part. The changes in base heat prices were mainly related to fluctuations in the price of energy for heat production.

Every year, the Energy Agency monitors which heat distribution systems meet the criteria and publishes a list of energy-efficient heat distribution systems on its website. As many as 67 of the 100 heat distribution systems are classed as efficient district heating systems.

Sources:

1. Energy act (Official Gazette of the Republic of Slovenia, No. 60/19 - official consolidated text, 65/20 and 158/20 - ZURE)
2. Energy Agency Report 2019
3. Act on methodology for setting heating prices No. 23-1 / 2015-69 / 435 of Energy Agency
4. Website of Energy Agency <https://www.agen-rs.si/izvajalci/toplota>

## X Conclusions

In all six Energy Community Contracting Parties with district heating, heat supply is regarded as a service of public interest/a communal service. In many Contracting Parties, heat is defined in laws that regulate both energy and communal matters.

District heating is mainly provided by vertically integrated undertakings. Only in North Macedonia, district heating systems with installed power of consumers of over 80 MW are obliged to separate production, distribution and supply activities to different undertakings. The separation of accounts is required for each activity in all Contracting Parties, and cross-subsidization is not allowed. However, in some Contracting Parties, business consumers are subject to higher costs than households.

In all Contracting Parties, except in Bosnia and Herzegovina, rules/methodologies for tariff setting are adopted by national authorities: either the national regulatory authority (Kosovo\*, North Macedonia, Moldova and Ukraine) or the national government (Serbia). In Bosnia and Herzegovina, the rules/methodologies for tariff setting are adopted at the local level.

Only in Kosovo\*, the national regulatory authority undertakes the first step in the process of tariff setting – the calculation of the base heat price. In other Contracting Parties, this task is undertaken by district heating companies. The approval of such calculated tariff is either entrusted to national regulatory authorities or local authorities such as in Bosnia and Herzegovina, Serbia and partially Ukraine

The transparency principle is well implemented in Kosovo\*, North Macedonia, Moldova and Ukraine, where documents related to the process of tariff setting are published on the websites of national regulatory authorities for public consultation. In Ukraine, there is a special legal act that regulates transparency and public consultations on tariff decisions of the national energy regulator. In Serbia, the obligation of transparency is prescribed as an obligation of the local unit to publish the request for approval of the tariffs on the website, while the legislation in Sarajevo and Banja Luka only envisages publication of tariff changes after they come into effect.

In all Contracting Parties, the methodology envisages the possibility or the obligation of adjusting the tariffs to the costs of fuels used for heat production. If, for example, the gas price is changed above a certain percentage level set by each country, the heat tariff should be adjusted. However, this rarely happens in practice and tariffs do not reflect the true operational costs. Only in Ukraine, a public service obligation (PSO) of gas suppliers to apply lower sale prices to district heating companies is in place. This PSO should be ceased in May 2021. In Moldova, subsidies to district heating companies are not allowed, while in other Contracting Parties – Bosnia and Herzegovina, Kosovo\* and North Macedonia, local authorities may fill the cost – tariff gap from the budget if district heating generates losses. In Serbia, the legislation does not envisage explicitly that district heating operators are entitled to receive compensation, but those district heating companies who generate profit are obliged to allocate 50% of the profit to the owner, namely a municipality, based on the Law on public enterprises.

The method of regulating tariffs adopted by the Contracting Parties varies: Kosovo\*, Serbia and Ukraine adopted the Cost plus method; while Moldova and North Macedonia adopted the Revenue cap methodology. Both are recognized as methods of good practice since they allow district heating companies to cover actual costs, plus provide additional funds to companies for needed investments. Although national legislation recognizes international good practice, many district heating companies are not covering all justified costs and hence facing financial losses.

Methodologies or rules for tariff setting in each Contracting Party, except in Bosna and Herzegovina, namely local legislation of Banja Luka and Sarajevo, are well defined. They contain provisions and/or tables of eligible costs, formulas for calculation of allowed revenue and instructions on the calculation of the rate of return and valuation of RAB. Some methodologies set limits for certain costs or some costs are excluded from the tariff. For example, in North Macedonia, network losses can be included up to the level of 12% of the total amount of heat in the distribution system; in Ukraine, costs of amounts paid to trade unions for cultural activities, the amount of written-off bad debts and donations cannot be recovered by the tariffs.

The main difference between the methodologies of the Contracting Parties and the EU Member States is the (non) inclusion of costs of carbon dioxide (CO<sub>2</sub>) emissions in the tariff. The reason for this is the lack of a carbon pricing system in the Contracting Parties. However, it is expected that the Contracting Parties will apply a form of carbon pricing in the upcoming years. This means that district heating companies will have the obligation to pay a price for the CO<sub>2</sub> emissions they emit and these costs will increase the district heating tariff. The current price of CO<sub>2</sub> at the European market is around EUR 45 per ton of CO<sub>2</sub>.

Another notable difference is that in some EU Member States (Denmark), the methodology allows for costs incurred by district heating companies to be passed through the tariffs as part of energy efficiency obligations under the Energy Efficiency Directive.

In none of the Contracting Parties are the district heating companies owned by consumer communities. Only in Bosnia and Herzegovina, North Macedonia and Ukraine, private capital has entered the district heating sector.

Whilst all Contracting Parties allow third party access, competition on the wholesale market in the district heating sector is practically non-existent as the large majority of district heating companies are vertically integrated and control production, distribution and supply.

In the Energy Community, residential consumers are usually cross-subsidized by commercial and industrial ones, or district heating companies are compensated for the financial gap between the real cost of supply and the regulated tariff. This indicates that the tariffs do not reflect the actual costs, although the methodology may allow it. Given their impact on the heat poverty level, many tariffs are still set at a low level, protecting all households and not just those in need. Inefficiency of the network is covered through the amount of losses allowed to be passed through the tariffs.

## XI Recommendations

### Recommendation No. 1 – **Supervision of application of methodologies for setting the district heating tariffs need to be ensured**

To ensure that legislation on tariff setting is applied uniformly and that consumers in each municipality pay for district heating services based on true costs some type of ex-ante and/or ex-post supervision of district heating companies need to exist. National regulatory authorities, who are in charge to set or approve tariffs for electricity and gas supply and should be by default independent and impartial institutions, equipped with the necessary knowledge and expertise t could ensure that the sector operates properly and transparently through ex-ante and/or ex-post control of tariffs. If local authorities are in charge to monitor the district heating sector, it is recommendable to ensure checks and balances by providing to a third party task to resolve disputes arising from application of methodology for tariff setting.

### Recommendation No. 2 – **Methodology should be clearly defined and understandable to ensure consistent interpretation and application by all national district heating companies**

Methodologies for setting district heating tariffs should clearly specify which costs are eligible to be recovered. These costs need to be defined in order for all undertakings who apply the methodology to understand it properly and apply it uniformly. To prevent different interpretations of methodologies, these should contain clear instructions on which costs can be included, definitions of such costs, limitations imposed on certain costs, such as the maximum network losses level passed through tariffs, valuation calculation of RAB, etc. A more uniform application of the methodology, especially in case of larger countries with many operational systems (Ukraine, Serbia), can be achieved by assigning the control of district heating operation to one independent authority. This is especially important for consumer protection and fair treatment.

### Recommendation No. 3 – **Tariffs should cover justified and reasonable costs**

District heating companies need to be entitled to recover all justified operational and capital costs. This means that the methodology should ensure that overcompensation and under-compensation do not occur. In practice, it is not a rare occurrence that costs of materials and services claimed by district heating companies are “inflated” above the average market price. Therefore, the tariff monitoring institutions should check whether the costs used in the calculations are reasonable. On the other side, operational costs related to heat production might not be completely covered by the tariff. This can occur for various reasons: non-existent heat delivery/consumption metering, non-adjustment of heat prices to fuel costs, etc. Therefore, to ensure that tariffs indeed cover true costs, certain technical pre-conditions need to be fulfilled, such as installation of heat meters.

**Recommendation No. 4 – Process of adjusting the tariffs for heat production should be timely, easy and fast**

Adjusting tariffs to the real costs of district heating services is a crucial step in maintaining the financial sustainability of district heating companies. This process should timely reflect the changes in costs. In some cases, this tariff adjustment might take many months, during which the company is incurring non-recoverable losses. District heating sectors in the Contracting Parties rely mainly on natural gas for heat generation. Due to the ongoing process of natural gas market liberalization, district heating tariffs should reflect the market prices of natural gas.

**Recommendation No.5 - District heating tariffs should facilitate investments directed towards clean energy transition**

Due to the ongoing process of decarbonisation in the EU and the Energy Community, competent authorities who define the methodologies/rules for district heating tariffs should design the tariffs in a such way as to enable investments in clean technologies. This is important, especially with the foreseeable introduction of carbon pricing in the Energy Community in mind. Namely, in this case all energy entities that emit CO<sub>2</sub> will be obliged to pay the costs of such emissions, either through a carbon tax or an emissions trading system that already exists in the EU. Therefore, those district heating companies that continue to produce heat using fossil fuels will have additional costs of CO<sub>2</sub> emissions. In this regard, it is also recommendable to introduce internal carbon pricing already now for reporting purposes, preferably with the same CO<sub>2</sub> price as in the EU.