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EXPOSÉ

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"District Heating Regulation – Burden or Enabler?"

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Grbić Biljana, LL.M.

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Univ.-Prof. Mag. Dr. Thomas Jaegere, LL.M.

Contents

I	Introduction	3
II	State of the Research	4
III	Research Aim, Questions, Relevance and Scope	8
IV	Research Methodology.....	10
V	Preliminary Table of Content	14
VI	Outline of Work Plan	17
VII	Preliminary Bibliography	19

I Introduction

The European Union (EU) adopted an ambitious set of energy and climate goals and initiated many initiatives aiming to contribute to the limitation of temperature rise to below 1.5 C in line with the Paris Agreement. In European Green Deal, EU pledged that it will become the first climate neutral continent by 2050 and that it will reduce at least 55% greenhouse gas emissions by 2030, compared to 1990 levels. Energy transition assumes replacement of fossil fuels with the renewable energy sources and is one of the means to contribute to climate neutrality.

Moreover, the recent developments on the global political scene raised concerns over the security of supply issues and affordability of energy. By adopting REPowerEU in May 2022, EU committed itself to accelerate the clean energy transition and increase energy independence of Europe.

Since 1990s, EU employed regulation and competition law to liberalise the energy sector, namely to ensure consumer protection in the electricity and gas markets and a level playing field, a concept that assumes open and fair competition where all participants play under the same set of rules. Proper and stable regulatory frameworks were needed to secure investments in clean technologies. Regulatory reforms tackled the structure of vertically integrated undertakings by implementing unbundling of transmission and distribution activities from production and supply and allowing non-discriminatory access of interested parties to the networks. National regulatory authorities (NRAs) were established to independently monitor the opening of the market, price setting, and consumer rights, and their powers were strengthened with every legislative package. Moreover, the enforcement of competition law by the European Commission, as well as decisions of the European Court of Justice further reinforced the opening of the markets and enabled investments in clean technologies.

On contrary, EU has not adopted and implemented such regulatory reforms for the district heating market. The rationale for this is local dimension of district heating that has not cross-border character; and as such Member States have competence to regulate, rather than EU (EU Parliament, 2008). However, the EU recently changed its approach, by regulating to a certain extent third-party access and consumer rights in the Renewable Energy Directive (EU) 2018/2001 (Directive

2018/2001). Yet, price regulation, unbundling and competencies for regulating price and monitoring district heating remained undefined.

Not regulated or monitored in an effective way on the basis of good governance principles, district heating network operators being natural monopolies could abuse their dominant position, by rejecting access to the network, or applying discriminatory prices, and that way could distort a level playing field and hamper the development of the market.

This thesis argues that for the proper development of the district market, both regulation and competition law are needed to create and preserve a level playing field, while the level playing field is needed for investments in renewable energy sources, and achieving decarbonisation goals.

Moreover, it is not enough to have in place the regulatory and competition rules, their application need to be based on good governance principles. Good governance assumes that rules and decisions are adopted and implemented via open, transparent, non-discriminatory and effective procedures by parties that are independent and accountable.

The research will analyse the selected district heating markets of Austria, Poland and Serbia against a set of benchmark criteria encompassing principles from theories on the regulation, rights and obligations of relevant stakeholders and competencies of competent authorities arising from the EU directives and regulations and case law. The aim is to better understand the regulation of district heating, by assessing and explaining to which extent the regulatory framework of district heating markets differs from the electricity market regulation, and how good governance principles are applied in the institutional and regulatory framework. Finally, the thesis aims to conclude on the potential improvements of the regulation that could facilitate investments in technologies that can integrate renewable energy sources.

II State of the Research

The regulation is understood as a set of specific rules for a certain sector applied by a designated agency aiming to prevent the occurrence of undesirable behaviour but also to facilitate the

development of the sector (Baldwin, 2015). When it comes to the regulation of network industries, it is explained as the *'intervention on the part of the public authorities, aimed at establishing competition in a sector where it did not previously exist or existed only to a very limited extent, and reconciling the fair exercise of such competition with the duties in the public interest that are incumbent upon network utilities'* (Henry et al., 2001). This understanding of the regulation is enshrined in the Article 106 Treaty on Functioning of European Union (TFEU) that says *Undertakings entrusted with the operation of services of general economic interest or having the character of a revenue-producing monopoly shall be subject to the rules contained in the Treaties, in particular to the rules on competition, in so far as the application of such rules does not obstruct the performance, in law or in fact, of the particular tasks assigned to them.*^b

Traditionally, production, transmission/distribution and supply of electricity and gas were considered public services that need to be secured by the state-governing vertically integrated monopolies (Bergman, 2002). Since creating the Internal Energy Market and adopting the first energy package in 1996, the EU aimed to liberalise the energy sector, by disintegrating these national incumbents. Even though the term liberalisation is frequently used, the legislative actions of the EU were there to re-regulate the electricity and gas markets (Newbery, 1999, Talus, 2016). Namely, along with setting the rules for unbundling and third-party access, the aim of the regulation was to enable that wholesale and retail prices are determined by market principles, while the price for access to networks is controlled and regulated (Newbery, 1999).

Within the regulation theories, the institutional theory's supporters agree that institutional settings and arrangements profoundly shape the regulation (Baldwin, 2015). To determine if the regulation is good, is not enough to assess it against costs and benefits and economic efficiency, but against the multiple quality criteria, such as 1) legislative mandate 2) accountability scheme 3) due process 4) expertise and 5) efficiency (Baldwin, 2015). With that regard, to monitor the liberalisation of the electricity market, NRAs for electricity were introduced in 2003 in the second Electricity Directive and their role was reinforced with every revision of the Electricity Directive. Since then the standard of independence, accountability and effectiveness are cornerstones of the framework of NRAs for electricity and gas (CEER, 2021).

When it comes to district heating, the distribution of district heat could be regarded as a natural monopoly, but the production of heat and the supply are competitive activities (Grohnheit and Mortensen, 2003). The debate about the efficiency of having competition in the wholesale and supply market and benefits of the regulation for this sector is still present. Namely, the local scale of district heating limits the number of potential participants, making it not competitive as the electricity and gas markets are (Holzleitner et al., 2020; Pöyry, 2018; Szendrei and Spijker, 2015, Bundeskartellamt, 2012). Some authors argue that it should not be assumed that the competition in district heating will lead automatically to lower prices for consumers (Oxera and Korhonen, 2014, Söderholm and Warell, 2011). However, the agreement exists among scholars that the competition via third-party access at the production level is cost-effective in large district heating systems (Burger et al., 2019; Korsakaite et al., 2018; Pöyry, 2018; Söderholm & Warell, 2011). To support this, there are practical examples of district heat markets organised on market principles. For example, in the greater Copenhagen area many local distribution companies and independent producers are present, (Grohnheit and Mortensen, 2003, Wissner, 2014) and in Stockholm (Open District Heating, 2019) heat is traded daily on basis, while in Lithuanian district heating systems mandatory auctions for the purchase of renewable heat are held every month (Korsakaite et al., 2018). Finally, a significant number of articles present district heating technology developments, evolving from so-called 3rd and 4th to 5th generation heat networks, the potential for coupling of electricity and district heating markets and the potential for replication of models of distributed energy that exist in the electricity market (Buffa et al. 2019, Faria et al. 2021). These technological developments will enable the creation of district heating markets with many sources of heat energy, where not only the incumbent is present at the market, but also other heat producers, creating that way to a certain extent competitive district heating production market. While some authors find that, due to these developments the district heating market is supposed to be completely deregulated (Faria et al., 2021), others find that the developments require adequate flexible regulatory regimes (Vitez and Lavrijssen, 2020).

Concerning the competition on supply market, some authors explain that district heating does genuinely compete with alternative sources, such as electric or gas boiler heating only at the moment prior consumers decide on a heating source (Burger et al., 2019). Burger et al. further elaborate that this applies especially to multi-apartment buildings, where the substitution for

different heating sources is difficult due to high switching costs, housing rules, or an obligation of connection to the district heating network.

The Directive 2018/2001 defined certain aspects of the competition on the production and supply market, particularly the third-party access and rights of consumers to disconnect. Concerning the development of production side, countries could choose to grant access to district heating networks to independent producers, but it is not mandatory. It is not likely that such non-mandatory framework will achieve its goal: the increase of renewable energy sources in district heating (Holzleitner et. al, 2020). Concerning the right of consumers to disconnect from the district heating network, this is possible only if district heating system is not efficient in terms of definition of efficient district heating from Energy Efficiency Directive 2012/27/EU (Directive 2012/27/EU). Proposal for the revision of The Directive 2018/2001 and Directive 2012/27/EU under the Fit for 55 package suggests even stricter rules for district heating in terms of demand for higher penetration of renewable energy sources.

Regulatory regimes on district heating in European countries could be distinguished in two groups: countries where district heating is totally or partially based on market principles, supervised by competition authorities with no or little regulation (Scandinavian and Western Europe countries) and countries where district heating is totally or partially regulated and monitored either by the NRAs or local authorities (Baltic, Central and South East European countries) (European Commission, 2022; USAID, 2016, ERRA 2011). Even though the EU has not regulated many aspects concerning district heating, nor defined an institutional setting for the regulation and monitoring of district heating markets, the competencies of NRAs in many Member States are extended to district heating (CEER, 2021). In some countries in which district heating systems are just emerging examined the possibility of regulating district heating, such as Ireland (Government of Ireland, 2019), Scotland (Donnellan et al., 2018), and United Kingdom (Competition Market Authorities, 2018), by empowering existing regulatory authorities to regulate and monitor the market. There are studies that strongly recommend that all heat network customers get the same level of protection as customers in the gas and electricity sectors by providing competencies to NRAs (BEUC, 2021; Competition Market Authorities, 2018).

What is important to address also is the quality of the regulation, namely if the chosen institutional settings embody principles of transparency, non-discrimination, accountability, etc. The national legislation of the heat markets in the Netherlands and Denmark was analysed against the implementation of good governance principles, within the concepts of energy democracy and energy poverty (Vitez and Lavrijssen, 2020), and another addresses the good governance principles with respect to regulators in the telecommunications and electricity sectors (Hancher, et. al, 2003).

Having in mind the shared competencies of the EU Commission and Member States in the energy sector according to Article 194 TFEU, one of the means to have a proper framework for the regulation and supervision of district heating is the harmonisation of rules at the EU level. While there is literature that discusses the impact of the locality principle on the competencies of the EU Commission to harmonise certain areas (Vanhove, 2020; Bauby, 2012), there is no work that addresses this aspect particularly concerning district heating. Grohnheit and Mortensen propose that in case that cross-border district heating networks are developed, the principle of subsidiarity should not be a barrier to establishing rules on the internal market. Just recently, one research project is assessing the development of the *Supra-Regional District Heating Network* and the first research results concluded that the development of such networks brings many complexities (Moser and Puschnigg, 2021). Nevertheless, if such project are developed, it could bring up a question of regulation of district heating at the EU level.

III Research Aim, Questions, Relevance and Scope

This study takes as a starting point that the competition at the wholesale level of district heating market is economically justified in the large district heating systems. It further assumes that both regulation and competition law are needed to create and preserve a level playing field in the district heating markets: namely, a fair and open competition where all participants play under the same set of rules. The research hypothesis is that the regulation of district heating, similar to the one in the electricity market, could contribute to the development of a level playing field in district heating and increase of renewable energy sources.

In the absence of rules at the level of EU that define the regulatory framework and institutional design for district heating, the aim is to investigate the embodiment of the principles of good regulation in the regulatory frameworks of district heating markets of selected countries of Austria, Poland and Serbia. The analysis is to determine if current regulatory and institutional settings are appropriate in ensuring an effective and timely response to both development opportunities and threats to district heating markets. This investigation will aim to determine and explain the linkage between on one side the regulation and respectfulness of good governance principles and on the other side, the level of competition and share of renewable energy sources. Moreover, based on the findings from the comparative legal research, the study will tend to assess is there a possibility to have harmonised rules for regulation of district heating.

Thus, this thesis aims to answer the main research questions:

- How can the regulation contribute to the energy transition of district heating market?
- How can the regulation improve the development of a level playing field of district heating markets?
- How are good governance principles embodied in the regulatory frameworks in district heating markets of selected countries?

Therefore, in the light of these research questions, the thesis will examine the following themes:

- 1) district heating in the context of energy transition
- 2) regulation of network industries, including district heating (unbundling, third-party access, price regulation, consumer rights and institutional setting)
- 2) good governance principles
- 3) a level playing field

The relevance of this research is linked to the agenda of EU to decarbonise the energy sector, where district heating is recognised as a key technology. The requirements for the integration of renewable energy sources and waste heat in district heating will become more and more demanding, especially in the context of reducing the dependence on fossil fuels imported from Russian Federation.

The value of the thesis will be in the domain of the regulation of district heating markets providing recommendations for creating regulatory frameworks and institutional setups that support the creation of a market ready to support investments in sustainable solutions. Conclusions will be of practical importance for policymakers, legal scholars, and practitioners who specialize in the given field, especially in countries where the regulation of district heating is not developed. Moreover, this research will also investigate view of district heating undertakings of whole process of the energy transition, and will reveal and address their concerns. The study will fill also the gap that exists in legal scholarship regarding the possibility of further extension of the EU regulatory powers on district heating, investigating the regulation of similar sectors of local character.

The limitation of this thesis is the following: it will look into the regulatory tools that are used in the electricity market, to enable the competition and thus investments in sustainable technologies. In concrete, the focus will be on the investigation of unbundling, third-party access, price regulation, supply switch and institutional setting. While the application of competition law played a great role in opening the electricity market, the thesis will not investigate the embodiment of good governance principles in the legal framework for competition authorities, nor will investigate in depth the role of competition law in district heating market. The role of competition law in energy markets will be only touched upon, since it assists in providing the background story of the liberalisation of electricity market.

IV Research Methodology

Given that the research question has socio-legal, but also normative character, the thesis will employ not only legal research methods but also social science methods. This interdisciplinary approach understands that the investigation should not be limited to legislation and case law, but also to policy, institutional and economic considerations. (Banakar & Travers, 2005).

Namely, the research will adopt the classical doctrinal research that will analyse the regulation of district heating in the legal and regulatory frameworks of selected countries, but also will engage the law-in-context approach (Hoecke, 2015) and look into the broader policy context, as well as institutional settings. Moreover, empirical legal research will be employed, aiming to check the

effects of regulatory frameworks on the development of district heating markets under investigation.

The research will adopt a mixed methods approach, integrating both qualitative and quantitative methods, while the qualitative methods will dominate. The focus will be on the analysis of legislation, case law, reports, decisions of regulatory authorities, etc. The research will use additional qualitative methods, semi-structured interviews, aiming to complement the findings from the review of documents with the insights and expertise of stakeholders engaged in the district heating sector. This type of interview is chosen because the interviews will not be the main source of data, so a structure that is not strictly fixed is preferred (Barbour, 2008). Finally, the quantitative methods will be used to address specific aspects, for example the development of the competition in district heating market will be analysed by collecting and analysing statistical data.

The research process follows the preliminary table of content. The study will firstly overview the regulation theories, to understand when and why the regulation is needed, what is the purpose and to what extent one industry is supposed to be regulated, and the relationship between regulation and competition in the network industries. Furthermore, the study will focus on the institutional dimension of the regulation aiming to understand which factors are decisive when choosing the institutional setup for the regulation of one sector, as well as the division of competencies between regulatory and competition authorities (so-called regulatory competition). Finally, the study will elaborate on the principles of good governance or regulation.

Afterward, the study will overview the historical development of regulation of the electricity market in the EU. The focus will be on provisions concerning the competition at the production level, namely, third-party access, unbundling and price regulation, as well as consumers rights to change supplier and the institutional design and competencies of national regulatory authorities. Moreover, the research will briefly overview the application of competition law in the electricity market, and specifically the abuse of dominant position and services of general economic interests, along with the relevant case law. The aim of this chapter is to conclude on the regulatory framework that enabled a level playing field and integration of renewable energy sources in the electricity market.

In the following step, findings from the regulation theories and the electricity market regulation will be used to create an ideal model of district heating regulation based on good governance principles. This model will encompass a set of benchmark criteria, against which selected district heating markets will be assessed. Namely, the benchmark criteria will encompass principles, rights and obligations from theories on the regulation, provisions of the EU directives and regulations and case law. The aim is to assess if good governance principles are applied in the regulation of unbundling, third-party access, price regulation and consumer rights as well as institutional setting in district heating in selected countries, and examine the hypothesis that the proper regulatory setting for development of district heating market is needed.

The next chapter will provide general information on district heating, describing the technical characteristics of district heating and technological developments. Furthermore, the overview of the EU legal framework affecting district heating will be outlined, including EU primary and secondary law and case law.

Following chapter will analyse the national legislation on district heating in Austria, Poland and Serbia against the set of benchmark criteria described above. In the process of selecting countries, several requirements were taken into account. The "*comperability*" requirement of comparative legal research was involved, which sets out that legal concepts that are under investigation should be naturally or functionally comparable, having common characteristics (Zweigert and Kötz, 1998). In all selected countries the common element is well-developed district heating systems: Austria cc 30% and Poland cc 40% (European Commission, 2022) and Serbia cc 20%, and they are subject to EU legal rules: Austria and Poland being Member States, and Serbia being a candidate country and a Contracting Party of the Energy Community. Therefore, a shared problem in all countries is a making the district heating more sustainable under the forces of EU policies.

Aiming to understand how the quality regulation of district heating can be improved, the criteria for the choice was also substantial differences in the regulatory frameworks and institutional settings of these countries (Orücü, 2006). In the absence of the harmonised rules at the EU level, the regulation of district heating, as a one of the means for developing district heating markets, is used by these countries in a different, but still comparable manner.

In Austria, district heating is not regulated, in terms that E-Control does not have competencies in regulating prices and monitoring the market and TPA is allowed on a negotiated basis (European Commission, 2022). Polish NRA, ERO has broad competencies in regulating and monitoring the market, prices are subject to prior approval and there are detailed rules on TPA (European Commission, 2022). In Serbia, district heating is partially regulated, prices require pre-approval of local authorities, while NRA, AERS does not have competencies, and TPA is allowed on a negotiated basis.

Building on the potential conclusion on the necessity of having the regulation in district heating , the research will tend to understand the possibility of harmonisation of the regulation of district heating at the EU level. It will encompass the interpretation of the EU primary law on shared competencies (Article 2(2) TFEU, Article 4 TFEU, Article 5(3) TEU), analysing relevant case law and the reasoning of the EU Commission and the Court on supporting the harmonisation in specific fields. The aim of this part of the research is to understand if the regulation of district heating by national regulatory authorities could be made mandatory at the EU level.

This research design should deliver conclusions on the better regulation of district heating, and recommendations for potential improvements of the regulation that could facilitate investments in technologies that can integrate renewable energy sources.

V Preliminary Table of Content

1. Background

1.1 Introduction

1.2 Objectives and research questions

2. Conceptual framework

2.1 Regulation

2.1.1 The regulation of network industries

2.1.2 Regulation and governance principles

2.3 Conclusion

3. EU policy and legal framework for levelling playing field in the electricity market

3.1 EU primary law on services of general economic interest and competition law

3.2 Institutional setting – national regulatory authorities

3.3 EU sector-specific regulation for the electricity market

3.4 Conclusion

4. Methodology

4.1 Comparative legal research

4.2 Ideal model of regulation of district heating - A set of benchmark criteria

4.3 Semi-structured interviews

4.4 The research process

5. District heating

5.1 Technical characteristics and technological developments

5.2 Competition and regulation in district heating

5.3 EU and Energy Community legal framework – academic literature

5.4 Conclusions

6. District heating Austria

6.1 General information on the district heating market

6.2 General information on the legal framework, institutional setting and competencies

6.3 Rules for the competition at the production level, and practice

6.4 Regulation of price

6.5 Rules for the competition at the supply level, and practice

6.6 Assessment against benchmark criteria

6.7 Conclusion

7. District heating in Poland

7.1 General information on the district heating market

7.2 General information on the legal framework, institutional setting and competencies

7.3 Rules for the competition at the production level, and practice

7.4 Regulation of price

7.5 Rules for the competition at the supply level, and practice

7.6 Assessment against benchmark criteria

7.7 Conclusion

8. District heating in Serbia

8.1 General information on the district heating market

8.2 General information on the legal framework, institutional setting and competencies

8.3 Rules for the competition at the production level, and practice

8.4 Regulation of price

8.5 Rules for the competition at the supply level, and practice

8.6 Assessment against benchmark criteria

8.7 Conclusion on the application of good governance in the district heating regulation

9. Rules for the internal heat market

9.1 Shared competencies

9.2 Principles of subsidiarity and proportionality

9.3 Conclusions

10. Conclusions and recommendations

VI Outline of Work Plan

From the enrolment to the doctoral program until the public presentation of the Exposé, activities were focused on gathering relevant literature, connecting with relevant stakeholders and exchanging thoughts and discussing the topic, reviewing and finalizing the Exposé, and drafting the first lines of chapters. After signing the doctoral agreement, the research activities will be performed as outlined in the box below. For each chapter, approximately two to three months will be dedicated.

October 2021 - December 2022

October – January 2021	- VO Methods for doctoral students in International Law
January – March 2022	- Literature research and reading
May 2022	- Attending conference Decarb Cities – City of Vienna and Wien Energie developments in district heating
November 2022	- Seminar Independence of Judiciary
December 2022	- Drafting the chapter on conceptual framework

Year 2023

January 2023 – March 2023	- Drafting the chapter on EU legal framework for DH - Drafting the chapter on methodology
March 2023 – June 2023	- Finalising Exposé, public presentation and doctoral agreement - Presenting at the Conference of the District heating Association Serbia, May 2023 - Attending the Congress Euroheat & Power, May 2023
June 2023 – September 2023	- Completing the chapters on conceptual framework, methodology and EU legal framework for DH - Drafting chapter on the Serbian DH market, with the study trip in Serbia and interviews
September 2023 – December 2023	- Taking a seminar on public law and governance, regulation of network industries/utilities - Drafting chapter on Polish DH, with the study trip in Poland and interviews

Year 2024

January 2024 – March 2024	<ul style="list-style-type: none">- Drafting chapter on Austrian DH, with the study trip in Austria and interviews- Taking a seminar
March 2024 – June 2024	<ul style="list-style-type: none">- Drafting conclusions and recommendations
June 2024 – September 2024	<ul style="list-style-type: none">- Final writing and Submission for the review
October – December 2024	<ul style="list-style-type: none">- Public defence of Thesis

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