



FINAL REPORT BY THE EXPERT

Advice case title:

Title: **District heating without borders.**

Full official name of the advised entity: **GECT Euregio Senza Confini - Ohne Grenzen**

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I) Executive Summary

The context

The cross-border district heating project involved in our analysis is collocated at NUTS II level for what concerns the Region Friuli Venezia Giulia (FVG) and the Land of Carinthia. It continues, on the Italian territory, with a deeper focus at NUTS III level for the sub-areas of the old Province of Udine (IT H42) corresponding to the mountain community of Valcanale Canal Del Ferro. On the Austrian side of our area, mainly the district areas AT 211 Villach/Klagenfurt and AT 212 Oberkaernten are studied at NUTS III level. Our case study is located on the cross-border territory of two local authorities: the municipality of Hermagor in Austria and the Municipality of Pontebba in Italy.

Description of obstacles

The obstacle consists of a lack of possibility of cooperation between economic operators located near the Italian-Austrian border due to regulatory opacity concerning taxation rules and commercial exchange of thermal energy (heat). This obliges key local actors to choose fossil sources instead of renewable sources. In sum, in order of importance, we have isolated three consequent sub-obstacles that are connected with our main obstacle:

- The lack of knowledge of the already facilitative existing frameworks;
- The existence of different administrative approaches;
- The absence of joint administrative mechanisms.

Legal provisions

Key European legal provisions

- EU Directive 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources, PE/48/2018/REV/1. Official Journal L 328, 82–209;
- EU Directive 2012/27 of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (Text with EEA relevance);
- EU DIRECTIVE 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity (ETD Energy taxation Directive).

Austrian legal provisions

- *Bundesgesetz: Erneuerbaren-Ausbau-Gesetzespaket – EAG-Paket - Erneuerbare-Energien-Gesetz, EEG 2021 Bundesgesetzblatt Nr. BGBl. I Nr. 150/2021 Datum der Kundmachung 27.07.2021;*
- Grundsatzgesetz über die Förderung der Stromerzeugung aus Biomasse (Biomasseförderung-Grundsatzgesetz) StF: BGBl. I Nr. 43/2019 Datum der Kundmachung 28.05.2019;
- Gesamte Rechtsvorschrift für Konsumentenschutzgesetz, KschG, Kundmachung 30.3.1979. Konsumentenschutzgesetz – KschG) StF: BGBl. Nr. 140/1979 (Letzte Fassung vom 31.10.2023);
- Bundesgesetz über die sparsamere Nutzung von Energie durch verbrauchsabhängige Abrechnung der Heiz-, Warmwasser- und Kältekosten (Heiz- und Kältekostenabrechnungsgesetz – HeizKG) StF: BGBl. Nr. 827/1992 date of announcement 12.11.2023;
- ÖNORM M 5930 Heizkostenabrechnung Komitee 218 Ausgabedatum: 2002 07 01.

Italian legal and administrative provisions concerning workers' cross-border mobility

- DECRETO LEGISLATIVO, data di pubblicazione 8 novembre 2021 n. 199, di recepimento della direttiva 2018/2001/UE sulla promozione dell'uso dell'energia da fonti rinnovabili (cd. RED II);

- DECRETO MINISTERIALE, data di pubblicazione 10 settembre 2010 "Linee guida per l'autorizzazione degli impianti alimentati da fonti rinnovabili" attuativo dell'art. 12 del citato decreto n. 387;

- DECRETO LEGISLATIVO, data di pubblicazione 3 marzo 2011, n. 28 ("Attuazione della direttiva 2009/28/UE sulla promozione dell'uso dell'energia da fonti rinnovabili, recante modifica e successiva abrogazione delle direttive 2001/77/UE e 2003/30/UE (cd. RED I).

Outline of possible solutions

A first work package should address the lack of knowledge concerning already existing facilitative European frameworks. For example, a series of legal-administrative and technical-operational specific workshops could be organised in Spring 2024, directly on the border between FVG Carinthia, in the municipalities of Hermagor and/or Pontebba. We are specifically interested in local viability, pricing, taxation and crossborder invoicing in order to see if we need specific binational agreement starting from other European similar case-studies.

A second, fundamental work package to address is the lack of cross-border structured cooperation in this specific field. This could be facilitated through the creation of a specific joint municipal coordination structure between Pontebba and Hermagor for the observation of data and key crossborder policy measures, dedicated specifically to the renewable energy market and the management of related administrative procedures.

A third workpackage aims at launching a specific project design process for the creation of a cross-border renewable energy community. This process could involve the EGTC Euregio Senza Confini/Ohne Grenzen, LAG Hermagor, GAL Openleader and GAL Euroleader. These local action groups that are managing the local INTERREG CLLD programme between Austria and Italy could have the first opportunity to fund a Renewable energy community project at cross-border level for the implementation of a biomass district heating network.

WHAT'S NEXT

Italian GAL Openleader (supported by the Gect Ohne Grenzen/ Senza confini) will discuss the results of the research with their Austrian counterpart LAG Hermagor and GAL Euroleader in order to analyse the possibility to start a crossborder INTERREG CLLD project for the creation of a crossborder district heating community.

II) Description of the obstacle with indication of the legal/administrative provisions causing the obstacle

Understanding the obstacle: analysis of the general context.

The cross-border system involved in our analysis starts at NUTS II level for what concerns the Region Friuli Venezia Giulia (FVG) and the Land of Carinthia. It continues, on the Italian territory, with a deeper focus at NUTS III level for the sub-areas of the old Province of Udine (IT H42) corresponding to the mountain community of Valcanale Canal Del Ferro. On the Austrian side of our area, mainly the district areas AT 211 Villach/Klagenfurt and AT 212 Oberkaernten are studied at NUTS III level.

Map 1 the crossborder area between Friuli Venezia Giulia and Carinthia, NUTS II and NUTS III subareas relevant for the European programming period 2021-2027 (circled in red: the cross-border mountain area of main interest for our research)



Our case study is located on the cross-border territory of two local authorities: the municipality of Hermagor in Austria, and the Municipality of Pontebba in Italy. If we look to their socio-economic structuring and infrastructural endowment, these are two realities that differ on many points.

On the Austrian side, Hermagor has almost 7,000 inhabitants and owns the status of capital city (Bezirkshauptstadt) of the local district. The municipality also houses the LAG Hermagor which deals with the INTERREG ITALIA AUSTRIA CLLD¹. programme. The main economic activity is tourism. In summer it develops along the shores of Lake Pressegger, while in winter it is concentrated in the ski area of the Pramollo pass (in German "Nassfeld"), the largest in Carinthia, with its 110 km of slopes and its ski lifts that remain in operation even in Summer as a connection to the surrounding peaks. In addition to the road to the pass, the area on the plateau can also be reached directly with the Millennium-Express cable car, one of the longest in the Alps.

The Pramollo pass is therefore the Alpine pass that connects Hermagor to the territory of the nearby twinned municipality of Pontebba, in the province of Udine. It's a small Italian municipality with just over 1,300 inhabitants. There we find the headquarters of the Mountain Community, of the Openleader LAG which deals with the INTERREG ITALIA AUSTRIA CLLD program on the Italian side. Agriculture, essentially based on the cultivation of vegetables, is integrated by the breeding of poultry, pigs, sheep, goats and cattle. The industry is made up of companies that operate in the food, construction, wood and gas production sectors. There is also a power plant.

Much of local tourism incoming focuses on the Alpe Adria cycle route which crosses the center of the municipality. There have been many cross-border initiatives promoted over the years by the twinning between Hermagor and Pontebba. The need was particularly felt on the Italian side. In order to support the municipal economy of Pontebba following the serious economic crisis that hit it after

¹) <https://heuropen.eu/>

the definitive closure of its railway yard and its military structures which until the new millennium had given many job opportunities to the local communities, now heavily affected by depopulation.

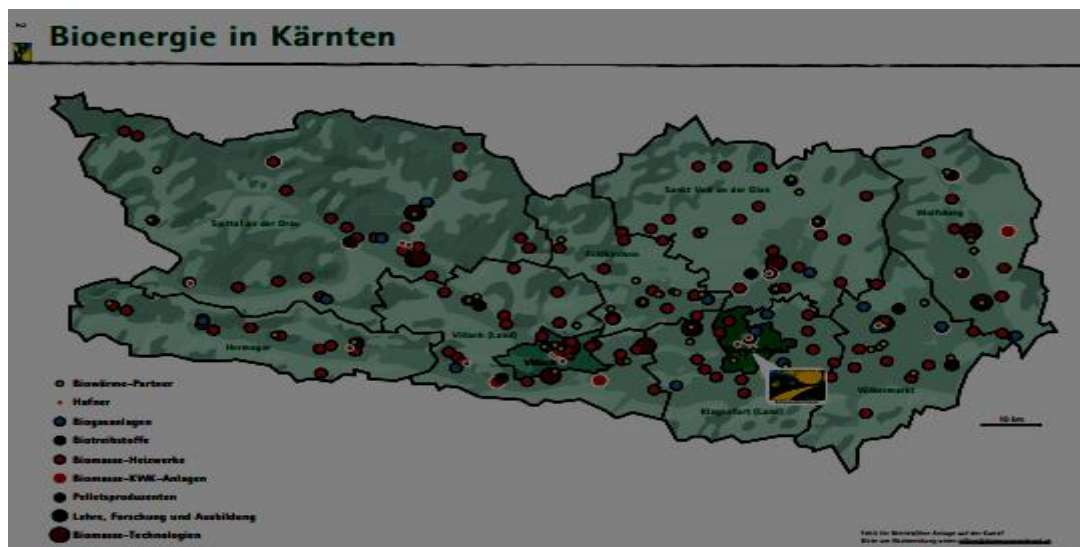
Currently, between the two twinned municipalities, the strongest interests for cross-border cooperation focuses on the development of the tourist area in Nassfeld/Pramollo. The desire to jointly promote the entire cross-border area at tourism marketing level constitutes an asset of great value for promoting local economic development. For years there has been a debate about the opportunity to build a cableway system that connects Pontebba to the upstream ski area of Pramollo-Nassfeld area. The project was definitively shelved only recently. Other INTERREG projects have instead strengthened new tourist routes and cross-border infrastructures.

Even the idea evaluated here of creating a cross-border district heating network that could connect the biomass power plant located just below the Austrian border with some hotel facilities located in Italy is part of their local cross-border policy.

Since this is an energy network based on the production of hot water with biomass, we are part of a specific supply chain of crucial importance for the European Green Deal. Various Austrian Laender have been moving for years with interventions aimed at guaranteeing strong energy autonomy to communities with the use of renewable biomass resources directly extractable from mountain territories.

Even the Italian regions, much later than Austrian Laender, have started to support the sector with numerous public support measures. If we now compare the biomass district heating supply chain in the two regions, we can immediately say that Carinthia is a cutting-edge region. Just look carefully at the following two maps to realize this:

Map 2 Bioenergy plants in Carinthia (red dots biomass sector)²



There are currently over 250 district heating (DH) systems in Carinthia³. In 2018, through a distribution network of 700 km, district heating production equal to approximately 2,500 thermal GWh was distributed to at least 12,000 buildings. In addition to biomass district heating, the Land of Carinthia also supports solar thermal systems, pellet boilers, wood chip boilers and electricity storage systems for photovoltaic systems and photovoltaic self-consumption systems. We find nothing comparable on the other side of the border. If we look only at the district heating sector powered by biomass power units, I think the following map is quite eloquent. In Friuli Venezia Giulia, FIPER, the Italian Federation of producers from renewable sources, mapped only 8 biomass plants in 2020. We are dealing with two radically different regional DH systems.

²) Biomasse Verband, Bioenergie Atlas 2023, www.biomasseverband.at 3. Auflage 2023

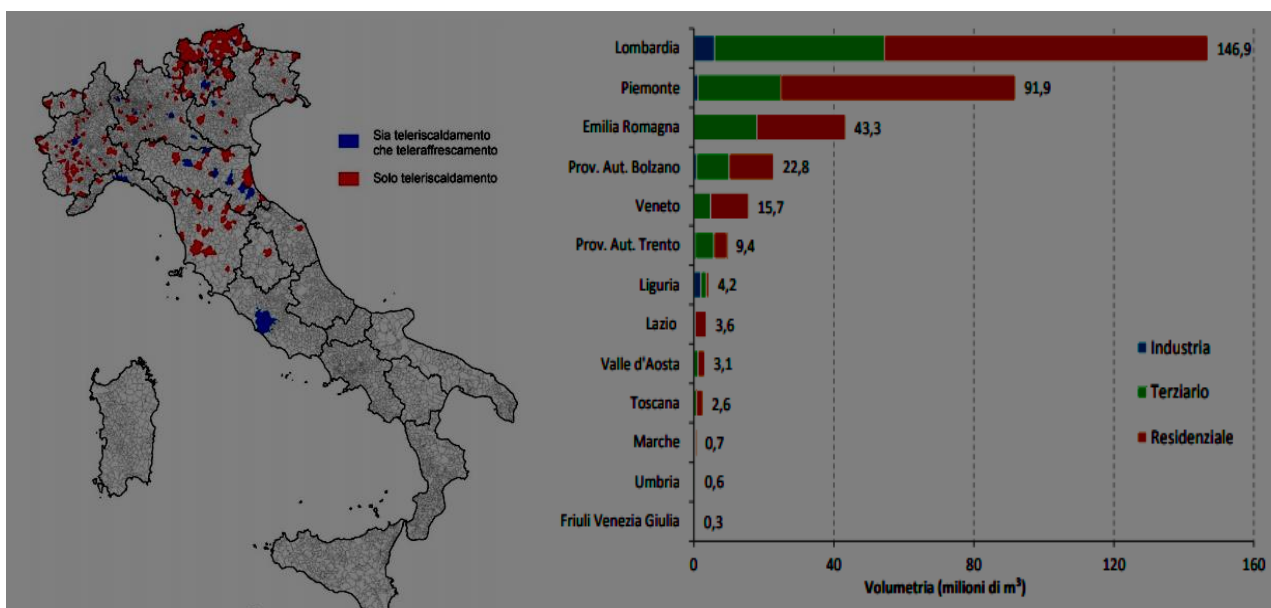
³) <https://gaital-journal.at/politik/erneuerbare-fernwaerme-nun-in-allen-kaerntner-bezirksstaedten/>

Map 3 Biomass district heating systems in FVG⁴



Comparative gaps between Austria and Italy appear even more evident if we analyse the two national systems. Excluding the Province of Bolzano, where we find widespread DH networks in mountain areas and some large cities of Lombardy, Piedmont and Emilia Romagna, there are few areas in Italy where we can find very large district heating systems. FVG, with a volume of 0.3 million cubic meters, appears in last position in the list of regions depicted below in map 5.

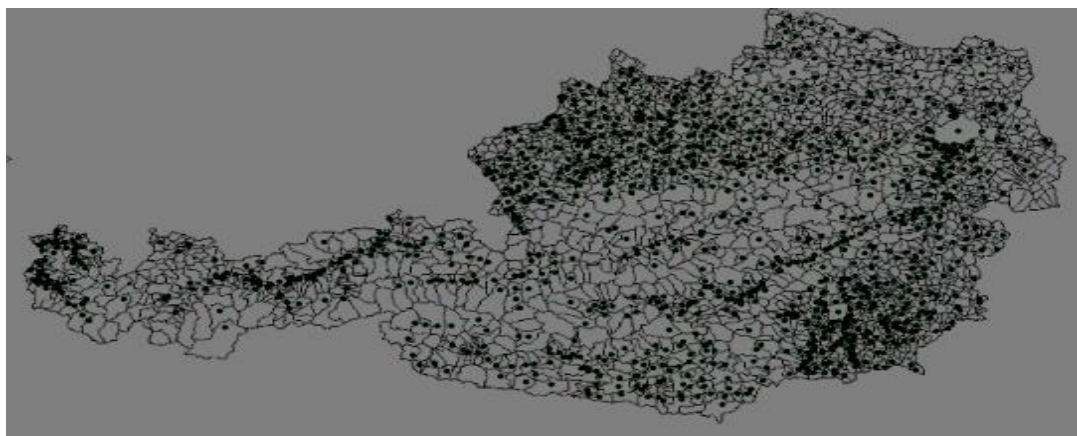
Maps 4/5: Distribution of district heating networks and heated volumes in Italy in 2017⁵



At Austrian level, however, the sector immediately appears to be much more developed. DH is certainly well present in big cities but also in small local and rural communities.

⁴) FIPER Report Impianti teleriscaldamento a biomasse 2020, p. 18.

⁵) GSE 2017, p. 9 e p.12



For many areas in Austria (including Carinthia) we can therefore talk about a real economic supply chain linked to district heating (powered by geothermal sources or various fuels, including biomass) which essentially operates following the logic of free market economy. Of course, there are many large private plants owned by municipalities (think only of Wien Energie or Kelag in Carinthia) and/or other public bodies. But in our opinion it is still a relatively poorly regulated economic sector from the point of view of public law. In fact, E-Control Austria, the independent regulatory authority that monitors and acts as guarantor of energy policies regarding electricity and gas, does not directly deal with the district heating supply chain.

In the case of FVG and Italy in general, the debate is instead still very open. The intervention of public authorities in our opinion appears much more widespread. In Italy, a vision of biomass district heating system defines as a Local Public Service (LPS), that should in some way be regulated by an independent authority, ARERA, is increasingly becoming more relevant. There are many public and local authorities that become part of the companies that produce and distribute thermal energy.

Considering the regulatory framework, in Italy we oscillate between considering DH:

1) as a LPS that should be subject to the regulations on local public services which provides for an award tender in favor of operators who will have the power to carry out the service on an exclusive basis;

2) as a free economic activity where operators provide the service without any legitimizing title from the public administration (which will eventually only be subject to municipal construction authorization regime).

There is thus a significant non-overlapping between Carinthia and FVG. We immediately notice, on one hand, that the district heating sector is a highly sought-after energy field, both, in Italy and in Austria. On the other hand, we cannot hide the fact that on both sides of the border there are different systems of energy pricing, taxation systems and public benefits.

An unreliable system to monitor and map the district heating systems on both sides of the border: How does it hamper cross-border cooperation?

The obstacle isolated in our case study consists of a lack of possibility of cooperation between economic operators in the DH sector located near the Italian-Austrian border (between Friuli Venezia Giulia and Carinthia, in Nassfeld-Pramollo) due to regulatory opacity in the treatment of taxation rules and commercial exchange of thermal energy (heat). This obliges directly interested stakeholders to choose fossil sources instead of renewable sources. Current national energy market require that

⁶) Cf. Technische Universität Wien, Potenzial für eine effiziente Wärme- und Kälteversorgung, 2022 p.44.https://austrian-heatmap.gv.at/fileadmin/user_upload/FW_KWK_Endbericht.pdf Cf Also Bioenergie Atlas 2023, cit. Per approfondimenti si veda anche <https://austrian-heatmap.gv.at/karte/#>; <https://austrian-heatmap.gv.at/ergebnisse/>

“traditional” fuels be purchased within State borders and such purchases are therefore subject to special taxation (excise).

To date, however, there is no clear framework on how crossborder heat transfer should be treated: is it the supply of goods or energy? For the moment, our local thermal energy suppliers do not want to run the risk of misunderstanding the type of exchange.

In order to tackle this main obstacle and moving in line with considerando 52 of the Renewable Energy Directive (RED II) 2018/2001, we believe that for our case study “information gaps, especially in the heating sector, should be removed in order to encourage the deployment of energy from renewable sources”.

The first step that we should take in this direction is clearly indicated by considerando 49 of the RED II directive that mentions explicitly the district heating sector: “To ensure that national measures for developing renewable heating and cooling are based on comprehensive mapping and analysis of the national renewable and waste energy potential and that such measures provide for increased integration of renewable energy [...] it is appropriate to require that Member States carry out an assessment of their potential of energy from renewable sources and the use of waste heat and cold in the heating and cooling sector, in particular to promote energy from renewable sources in heating and cooling installations and promote competitive and efficient district heating and cooling.”

We have thus to start with a comprehensive mapping of renewable energy potential. We have done this partially *supra*. Now, if we want to stimulate the creation of a more "vibrant" crossborder local energy market between our two municipalities, an important obstacle seems thus primarily related to energy taxation rules that are not clear. But there are also other related obstacles.

For example, at present it's not possible to carry out a comparative and reliable discussion between Carinthia and FVG also: on price lists and final prices applied to thermal KW for various uses; on state contributions reserved for home users and commercial companies; on state incentives and concessions guaranteed to companies that build new DH plants; on the prices and rates applied upstream to the raw materials used in DH plants to produce heat; on the rules governing the issuing of DH energy bills/invoices; on the existing legislation for the stipulation of supply contracts; on the procedures to be followed by local authorities in order to install the necessary infrastructure for the DH networks; on the national legislation regarding consumer rights' protection to apply in crossborder contexts. As we can see, there are many issues on the table. Not only the DH taxation system.

For this reason, we must not forget that mutual information exchange services would at least allow us to improve communication between administrations, DH companies and final end users of our two countries.

A comparative chart on final prices applied on both sides of the border to thermal KW would right at the start give us some useful hints in evaluating the initial convenience of cross-border connection projects. This comparative chart should also allow us to compare it with the prices linked to the use of other fuels used for heating/district heating. But the problem is further complicated by the absence of clear national regulations on consumer right's protection in the DH sector.

In Austria, including Carinthia, I would like to underline here the need for the DH sector to become more transparent⁷. While for electricity and gas E-Control Austria has launched a price comparison portal (<https://www.e-control.at/tarifkalkulator#/>), this does not happen for the DH sector. Defenders of the specificity of DH reply that the general conditions for district heating are completely different from gas and electricity. And therefore a comparison of DH with gas and electricity seems to make much sense. But one fact remains: in Austria there is no regulatory authority (Regulierungsbehörde) directly responsible for district heating.

In Italy, FVG included, the situation appears somewhat different. South of the Alps we seem to find greater transparency: first of all contracts adopted by DH suppliers are easily available on company websites; second, ARERA started to collect and gather specific data on DH units, also on thermal KW prices, and many operators now believe that ARERA in the near future will start to operate as a real regulatory authority.

⁷) Cf. online Interview Simon Eder, November 14th, 2023

With resolution 206/2017/R/TLR, ARERA initiated already in 2017 a procedure aimed at monitoring the prices of DH services. Its analysis delves further into the issue, specifying which criteria must then be considered to have a clear picture of the DH energy market:

"The impact on production costs is [...] strongly influenced by the specific characteristics of each district heating system. In the case of prevalent use of gas-fired systems, the impact on margins depends on the overall efficiency of the system. In systems powered by high-efficiency cogeneration plants and characterized by a limited incidence of network thermal losses, the increase in revenues has generally more than compensated the growth in variable costs. In networks characterized by lower system efficiency, on the contrary, the trend in margins was constant or decreasing. In networks mainly powered by waste energy or geothermal plants, [...] the increase in revenues was not accompanied by a corresponding growth in variable production costs, with a consequent increase in margins for the return on invested capital." As ARERA then underlines: "In the networks powered by biomass plants, there have been no significant impacts from the increase in natural gas prices either on costs or on revenues since in these cases the price, with very rare exceptions, is defined on the basis of costs incurred for managing the service."⁸

ARERA's resolution (24/2018/R/TLR) of January 2018, i.e. established clearly⁹:

- the possibility for DH operators to freely determine connection fees in compliance with a constraint of consistency between costs and revenues, in order to guarantee adequate commercial flexibility;
- the obligation for DH operators to provide, at the same time as the connection estimate, the binding economic conditions for the provision of the service, in order to allow the user evaluation of the overall cost-effectiveness of the service;

- the introduction of specific information obligations towards users, in order to ensure maximum transparency on the contents and costs associated with connection to the district heating network;
- the introduction of information obligations towards the Authority, regarding the costs associated with connections, the related determinants and the contribution applied to users, in order to monitor connection activity and have the information necessary to carry out a possible revision of the criteria for determining connection tariffs at the end of the regulation period.

Furthermore ARERA, in its latest reports of 2022, pays considerable attention to the existing differentiated tariffs and tries to look for the causes of the phenomenon: "The presence of high differences in price levels is, in part, justified by the peculiarities of the sector. It should first of all be considered that in the district heating sector, unlike what happens in the electricity and natural gas sectors, there is no single integrated market as the networks are not physically interconnected with each other. Each network has different costs, depending on the energy source used for the production of thermal energy and the overall efficiency of the district heating system [...] and therefore, at least in the case in which the price is defined on the basis of the costs incurred, it is natural that there are differences, even very significant ones, in the economic conditions of the service"¹⁰.

As we note, therefore, the biomass DH seems the most suitable sector for times like ours, characterized by marked inflation which has strongly affected the prices of non-EU imported fuels. Hence the interest in biomass and networks powered local extracted biomass.

However, difficulty for the user to compare prices of DH service with prices of alternative services remains confirmed in both regions and countries¹¹. In fact, DH prices refer to the final use of thermal energy (hot water) withdrawn by the user, while in alternative services the customer purchases a given quantity of fuel (or electricity) which is subsequently transformed into thermal energy.

As we can see, the first set of difficulties arises from poor cooperation between the main public and local players involved. In Italy (ARERA) and Austria (the consumer protection service, the

⁸) ARERA Esiti indagine conoscitiva sull'evoluzione dei prezzi e dei costi del servizio di teleriscaldamento, p.7 2022

⁹) ARERA, Delibera 18 gennaio 2018 24/2018/R/tlr, Disposizioni in materia di contributi di allacciamento e modalità per l'esercizio del diritto di recesso; - ARERA, Regolazione della Qualità commerciale del servizio di teleriscaldamento e teleriscaldamento, data di pubblicazione 1 Luglio 2019- 31 Dicembre 2021(RQCT);

¹⁰) ARERA, Esiti indagine conoscitiva sull'evoluzione dei prezzi e dei costi del servizio di teleriscaldamento 2022 p.7

¹¹) ARERA Esiti indagine conoscitiva sull'evoluzione dei prezzi e dei costi del servizio di teleriscaldamento , pp.7-9 2022.

Verbraucherschlichtung) a possible solution to the critical issues identified is indicated in a cost reflective regulation of the prices of the DH service. The definition of cost-reflective regulated tariffs would simultaneously make it possible to overcome the critical issues encountered in the functioning of the market and to ensure the fairness of the prices of the service.

In both countries, the entire contemporary debate on renewable energy communities also hinges on those district heating systems characterized by lower thermal energy production costs which allow part of the benefits obtained to be transferred to users, communities and territories, with positive economic and social impacts.

And this is very much in line with the current policies of the European Green Deal and in key priorities isolated in the development strategies of different Interreg 2021-2027 programs which provide financing for the so-called cross-border renewable energy communities.

Furthermore, it should be noted that the current methods of determining the price of the service do not allow environmental externalities to be adequately valorised, with potential disincentives to technological innovation in the sector. The definition of cost reflective tariffs, on the other hand, could allow the correct internalization of environmental benefits and the consequent realization of investments that are not currently sustainable from a private perspective, despite being efficient from a social point of view.

Right now, the absence of this basic cost and price information database is preventing us from giving real-time, concrete and targeted responses to the needs of many stakeholders, especially on crucial issues related to local benefits for final DH users. Before starting our analysis on energy taxation more in detail, the availability of this type of crossborder database for the FVG and Carinthia border area is very important for two main reasons:

- 1) it enables a first comparative analysis of potential benefits that could derive from renewable energy communities also across the Italian-Austrian border;
- 2) it highlights the fact, that at the local level relationships of soft power, cooperation and trust between administrators, politicians and citizens can often help to overcome legal bottlenecks and administrative barriers that for other parts of Europe may seem insurmountable.

The nature and the areas of law that the obstacle touches on.

For what concerns legal aspects, it is useful to produce some reflections by adopting a multilevel governance approach, starting especially from regulatory gaps/dysfunctions that we can preliminarily frame at International¹²/European level, to then address the national and subnational ones.

Is it a legal obstacle that originates in part in conflicting/missing laws?

The European level

Regarding European legislation, we use the definition of District Heating (DH) and Cooling based on Article 2 of the Energy Performance of Building Directive 2010/31/EU (EPBD): 'district heating' or 'district cooling' means the distribution of thermal energy in the form of steam, hot water or chilled liquids, from a central source of production through a network to multiple buildings or sites, for the use of space or process heating or cooling. In this case we consider mainly thermal energy:

- a. which is produced in another building than the one where it is consumed; and
- b. which is sold to
- c. multiple buildings owned/occupied by at least two different customers or
- d. multiple sites owned by at least two different customers.

At European level, if we consider the HS codes, hydrothermal energy is "officially" - as it seems - **not** included in the lists of "energy products" or "energy goods": cf. list of energy goods by HS code solid fuel (HS code 27.01, 27.02 and 27.04), crude oil (HS code 27.09), oil products (HS code 27.10 and 27.13 – 27.15), natural gas, including liquefied natural gas and liquefied petroleum gas (HS code 27.11), and electrical energy (HS code 27.16).

¹²) <https://www.iea.org/energy-system/buildings/district-heating>

Furthermore in EU DIRECTIVE 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity (ETD Energy Taxation Directive), art.

2.4 explicitly states that heat is excluded from output taxations:

“4. This Directive shall not apply to: (a) output taxation of heat and the taxation of products falling within CN-codes 4401 and 4402.”

So at European level, the point seems rather clear¹³. Legal sub-obstacles should therefore be identified mainly at national or sub-national level.

After 20 years, the ETD seems to be clearly outdated and does not reflect the new EU's climate and energy policy frameworks or the EU's legal commitment for the reduction in greenhouse gas emissions by 2030. For instance, there is no link in the ETD between the minimum tax rates of fuels and their energy content or environmental impact. The rules have also failed to keep pace with the development of alternative fuels (biomass, biofuels and hydrogen). The ETD in fact does not promote energy efficiency, cleaner and sustainable alternative fuels, or investment and innovation in clean technologies and sustainable energy. Finally, the minimum rates set out in the Directive have eroded over time and “*a complex patchwork of exemptions and reductions has proliferated across Member States since its introduction, so that there is currently not a level playing field across the Single Market*”¹⁴.

At this stage, considering the outdated nature of ETD, we can consider that there is an important law missing first of all at European level, specifically in the field of renewable energy taxation and district heating. Many European and National public and private interest groups are lobbying obviously in different directions, transforming the reform of the ETD in a very complex initiative that will not be analysed further in this report.

¹³) This “non output taxation of heat” explains why in DH invoicing between Italy and Austria come DH providers interested in crossborder exchanges have firstly thought to apply VAT/IVA/Umsatzsteuer and not the excise regime.

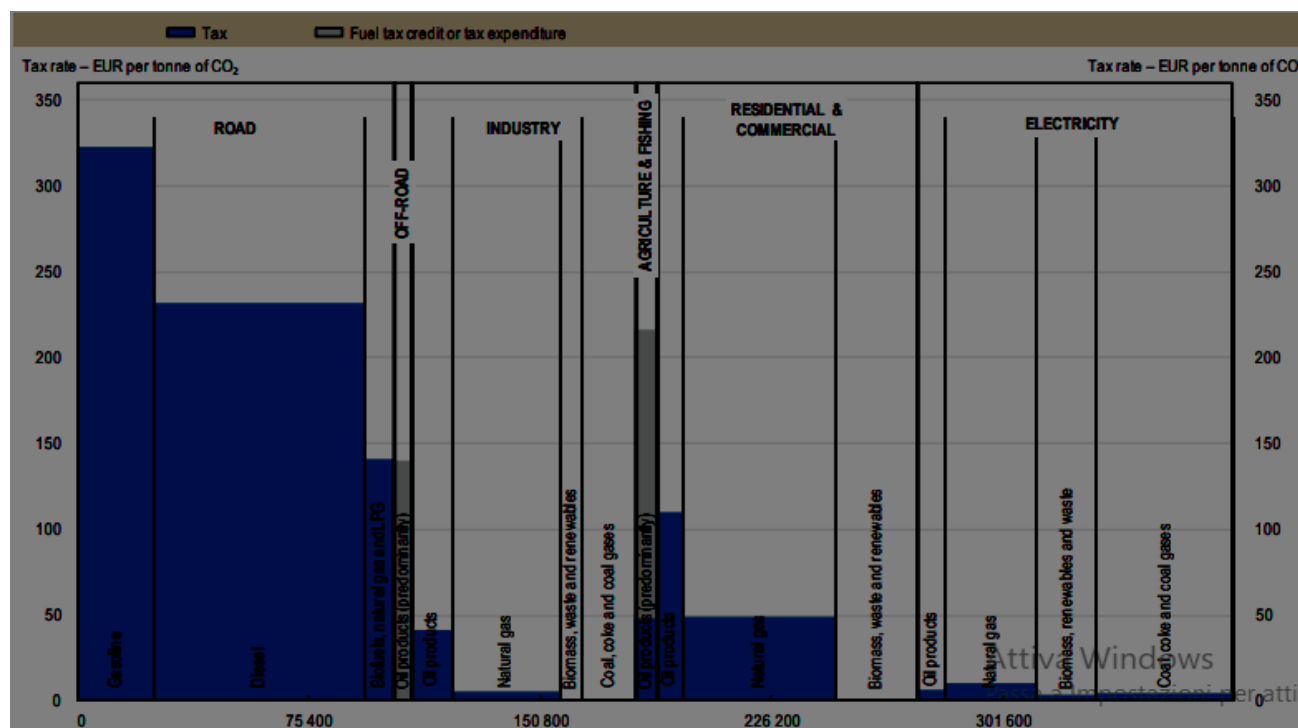
¹⁴) Revision of the Energy Taxation Directive (ETD): Questions and Answers Brussels, 14 July 2021

Legal obstacles at national and regional level: Italy and FVG

In terms of energy taxation, Italian national legislation in the energy and renewable energy sector presents characteristics that have been well studied by RAP and the OECD.

Energy taxes and levies in Italy consist of two different types, i.e., excise duties on electricity, gas and other fossil fuels, and system levies on electricity and gas only. Both types of taxes favour the use of natural gas over gas oil and electricity. VAT is applied to district heating.

Fig. 1 Italy: Effective tax rates on energy use in EUR/t CO₂ 2015, including electricity output taxes and carbon emissions from biomass¹⁵



As we can see, the energy tax sector in Italy is regulated down to the smallest detail. In itself we know that for DH domestic use a VAT of 10% is applied, for other users VAT will be fixed at 22%. The most difficult internal obstacle to overcome, as FIPER highlighted, is the fact that in Italy there is no framework law that defines the legal nature of the DH service. "This was also stated by the Antitrust Authority in the fact-finding investigation on district heating which shows the existence of a heterogeneous sector, operated in conditions of substantial and effective inter-source competition, nevertheless increasingly subject to disputes between plant managers and municipalities for the definition of tariffs, which are related by their definition to the legal nature of the service, or to the qualification between local public service or private economic activity."¹⁶

FIPER in this case, as we have already seen in Austria, highlights the specificity of district heating compared to other main energy services included among local public services, i.e. the distribution of electricity and gas. We are not facing natural monopolies both in terms of territorial dimensions and the possibility for the final consumer to choose another form of heating. In order to guarantee competition and above all the protection of the final consumer, many still today pretend that it is inappropriate to replicate the forms of regulation currently applied in the gas and electricity sector also to DH. Above all because in no Municipalities connected to biomass district heating users are obliged to connect themselves to the DH infrastructure. In many cases, we are not

¹⁵) <https://www.oecd.org/ctp/tax-policy/taxing-energy-use-2018-italy.pdf> p.2

¹⁶) FIPER inquadramento e principi generali della regolazione del teleriscaldamento, teleraffrescamento e acqua calda per uso domestico, Milano, dicembre 2014, p.2.

dealing with great-sized monopolies. On the contrary: very often we are in front of small-scale network rooted territorially, where distribution takes place on a local scale. These biomass-fired district heating communities represent small and medium-sized mountain and rural communities which can be divided mainly into two size ranges:

- Range 1: municipalities under 5,000 inhabitants, with power plants up to 10 Mwt;
- Range 2: municipalities with between 5,000-10,000 inhabitants, with power plants between 10.1-20 MWt

In this type of context, a replication of the regulation envisaged for gas and electricity networks is not imaginable, both in terms of costs and effectiveness of the results. It is therefore proposed that the competent authorities define such a regime only starting from DH plants with a size threshold greater than 25 Mwt, equivalent to district heating networks that are typically urban and/or in population centres exceeding 15,000 inhabitants.¹⁷

Legal obstacles at national and regional level: Austria and Carinthia

In terms of energy taxation, the Austrian national legislation, in the energy and renewable energy sector, presents characteristics that have been well studied by the OECD.

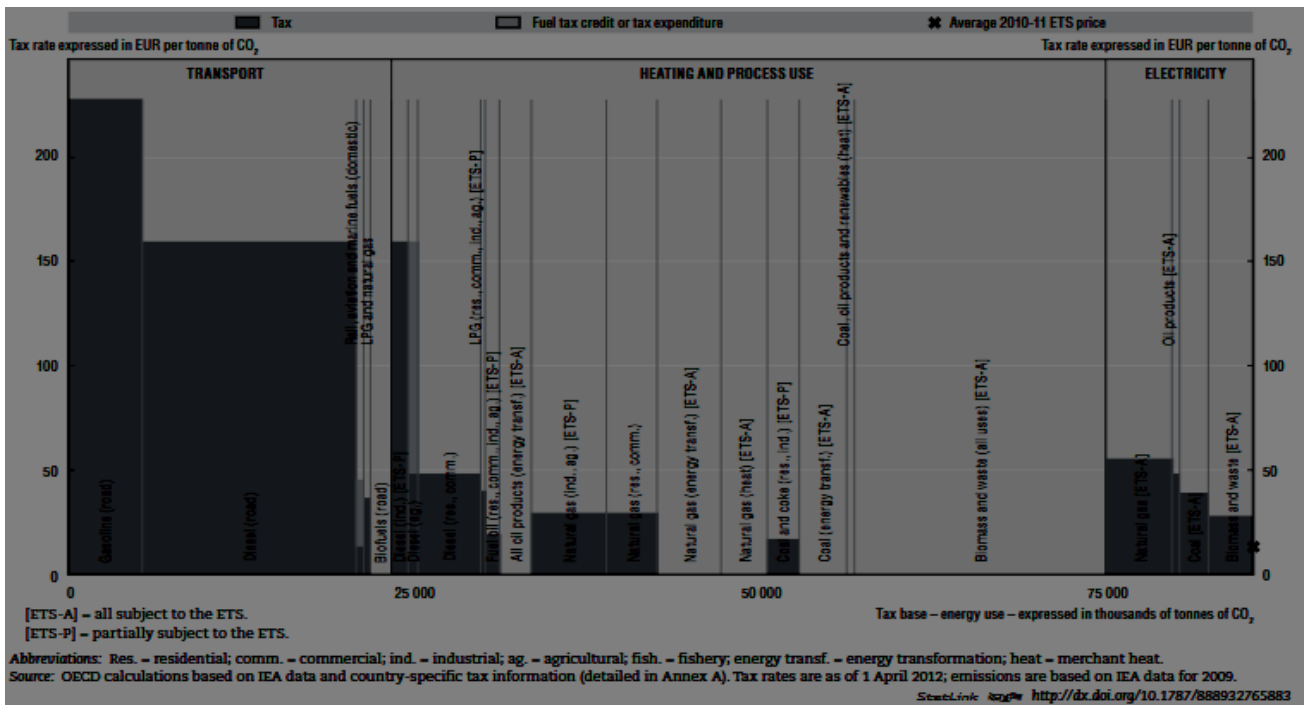
Energy taxes and levies in Austria consist of two different types, i.e., excise duties on electricity, gas and other fossil fuels, and system levies on electricity and gas only. Both types of taxes favour the use of natural gas over gas oil and electricity. VAT is applied to district heating. The VAT rate (Umsatzsteuer) on district heating is 20%¹⁸.

*Fig.2 Austria Taxation of energy in Austria on a carbon emission basis.*¹⁹

¹⁷) FIPER inquadramento e principi generali della regolazione del teleriscaldamento, teleraffrescamento e acqua calda per uso domestico, Milano, dicembre 2014

¹⁸) https://www.ots.at/presseaussendung/OTS_20170912_OTS0108/steuergerechtigkeit-beim-heizen-gefordert-anhang#:~:text=Aktuell%20betr%C3%A4gt%20der%20Steueranteil%20auf,Fernw%C3%A4rme%20betr%C3%A4gt%20der%20Steueranteil%2020%25.

¹⁹) https://read.oecd-ilibrary.org/taxation/taxing-energy-use/austria_9789264183933-6-en#page3



In Austria, including Carinthia, I would like to underline again the fact that the Austrian district heating sector should become more transparent. Here too, as in Italy, there are numerous grey areas. But one fact remains: in Austria there is no regulatory authority for district heating.

As we have seen, in terms of district heating network coverage, Austria is a cutting-edge country in Europe. The Austrian reality is very varied from region to region. We find the old state energy monopolies converted into private companies owned by large municipalities that set price lists (the "Preisbescheide") only for some types of domestic users (largely for public/social housing). Then we find in mountain areas small widespread networks of local energy communities which are directly owned by local businesses and citizens, sometimes in the form of energy cooperatives. In many cases in Austria the direct relationship between biomass district heating operators and the customer is preferred; everything immediately appears to be very liberalised, there is no antitrust agency similar to ARERA.

In any case, only the Verbraucherschlichtung Austria (<https://www.verbraucherschlichtung.at/>), the national consumer association, intervenes to protect consumers, which often finds itself to combat against unjustified pricing applied to consumers that live the same condominium or in the same residential district.

We therefore believe that price regulation in the DH sector in Austria is very weak. Only some cities publish general price lists (cf. Klagenfurt Fernwaerme). In Austria, supporters of the free market highlight that the DH does not require the procedures envisaged for local public services (electricity, water and/or gas), because we find often small and medium-sized DH plants managed personally by local entrepreneurs who are in direct contact with the final users.

Assessing the obstacle more in detail from a legal and administrative point of view: the local level.

We will now address some issues more in detail, adopting the perspective of the local actors directly involved in the territory of our 2 municipalities: Hermagor and Pontebba. As already highlighted in the initial description of the our case study, only a small pilot intervention is being hypothesized, within a limited range of action where few key players, private and public, intervene: for the moment a maximum of 3.

Obviously, once clarified the most delicate taxation related issues on a small scale, we will also be able to evaluate it on a much larger scale contemplating greater infrastructure connections for a higher number of economic actors and home users, also in other border areas between Italy and Austria.

Let's start now with our small place-based pilot project. From the point of view of its technical feasibility we have not encountered great significant obstacles. As regards municipal building and intervention concessions, the works can be carried out in a short period of time, through standard administrative procedures of municipal authorization which should allow the execution of the pipeline construction and the heat exchanger works on both sides of the border. This could take place on both sides in compliance with national regulations and the ownership criteria would in any case be treated according to the respective national legislation. The risks related to the infrastructural construction of the DH network appear minimal.

Instead, the biggest obstacles arise when hot water has to cross the border. After having tried to demonstrate that the DH sector is part of the general energy policy sector, we can move our first steps by analogy, using hints that derive from existing practices and agreements at the management level of cross-border electricity networks. The authorization regime also for expropriation in the case of DH seems largely regulated by the same electricity sector regulations.

It is now a question of clarifying whether heat and hot water transferred through cross-border DH networks are subject to monopoly and excise duty regime or not. As already highlighted above, starting from some specific prescriptions contained in the ETD Regulation we do not believe it's the case. But, being there no bilateral convention that regulates crossborder DH networks between Austria and Italy, the doubt will have to be clarified through a consultation procedure involving public entities that operate on multiple levels.

This said, our key questions for the moment are the following: should DH be classified as subject to energy monopoly and/or excise duty regime or not? Can Austria export hot water to Italy through a district heating network? The first direct involved stakeholders on the field and in other crossborder DH pilot projects, that we contacted in Tyrol-SouthTyrol, France and Austria²⁰, have not been able to give us a precise answer on the matter.

As I have tried to demonstrate before (cf. p.12 of this report) I consider that the production of heat is not subject to excise duty. At European level, if we consider the HS codes, hydrothermal energy is "officially" - as it seems - not included in the lists of "energy products" or "energy goods":

Furthermore in EU DIRECTIVE 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity (ETD Energy Taxation Directive), art. 2.4 explicitly states that heat is excluded from output taxations.

Within these modes, multiple categories may be defined: "bilateral trades may be unidirectional, may involve intermediaries or may be bidirectional in nature. Multilateral models are generally supported by regional institutions, but individual jurisdictions may still organize their own local markets and retain full control over system operations. This model may involve differentiated (i.e. mixed) market structures, or might only include jurisdictions with harmonized market structures. Finally, unified models centralize market organisation, and possibly system operations as well, across jurisdictions in a regional institution."²¹

Taking inspiration from IEA's indications, and using the bilateral model, we hypothesized 3 different invoicing scenarios for our Italian and Austrian local actors²²:

- a) a hypothesis of direct invoicing between private actors: a DH company and a final end user;
- b) an invoicing option between two private companies on both sides of the border;

²⁰) Cf. <https://www.cleanenergywire.org/news/unique-french-german-district-heating-project-connect-grids-across-rhine-river> and the Eneregio SOBOS project financed by the EU CEF Energy programme cf. <https://www.researchstudio.at/projekt/eneregio-sobos/?lang=en>

²¹) IEA Integrating Power Systems across Borders, 2019, p.2

²²) There was also an attempt to launch a crossborder DH between the Austrian Tyrol and South Tyrol in Italy a few years ago on the Brenner. But it didn't succeed: final prices of the whole operation seemed at the end not convenient for the investors and final users.

c) and finally a private company in Austria and a public company (with the role of energy distributor/intermediary) in Italy which in turn resells heat to the private end user.

The obstacles identified on these three options rotate around the following questions: Will the invoice issued by the Austrian company be VAT exempt on the Austrian side? Will the intrastat billing system (with reverse charge) be applied? Are the 10% or 22% VAT rates normally paid by the Italian customer confirmed? Will the Italian user also be entitled to the tax credit (*Steuergutschrift*) provided for thermal kWh in Italy, even though the energy is produced in another country? Do we have to add also an excise rate?

We have not able to obtain clear answers to these questions first of all because we did not find other similar cases on the Italian and Austrian border or in other parts of Europe that had already solved this problem²³. We afterwards identified probably the competent authorities on both sides of the border, but being our subject cutting-edge, the first financial experts that we contacted informed us about the necessity to present a specific request (an “Interpello”) to Austrian and Italian revenue agencies (Finanzamt and Agenzie Entrate), asking for official clarifications. Legal norms, administrative rules and practices are very different on the two sides of the border and need to be integrated in a common crossborder procedure. Economic stakeholders involved on the field have agreed for the future to directly contact the Finanzamt in Austria and the Agenzia delle Entrate in order to clarify the point through the intervention of financial advisers. At this stage finding further answers to these questions exceeds the scope of this b-solutions project. Our suggestion, for the moment, is to design a future crossborder project, financed may be by EU Interreg Funds, in which the first workpackage will be at the start dedicated to DH crossborder energy taxation.

At this point as a provisional conclusion, we only have hypothesized an open provisional private contract with the following formula: “All prices stated in the contract are net prices and do not include the respective VAT taxation. If other local, regional, national and/or European taxes or duties are introduced for district heating, these must also be taken into account.”

In conclusion, the obstacles just mentioned must be faced right at the outset before starting any infrastructure construction in order to avoid the risk of an unprofitable investment, being for example unable to sell heat/hot water for purely non compliance with national taxations rules. This step seems fundamental to allow an optimal risk management of the entire operation.

An obstacle caused mainly by administrative factors, by lack of cooperation and by lack of knowledge

At this stage we consider that an intervention at European level is not directly needed. A reform of the ETD directive of 2003 is still very complex and will not be solved – in our opinion - by an optimal political compromise among all 27 member-states in these next months. On the other hand, the RED Directive 2018/2001 on the promotion of the use of energy from renewable sources has been directly transposed in the legal systems of our 2 countries. Moreover, at EU level a new programme - the Connecting Europe Facility (CEF) programme - has recently been launched and could also be very useful. For the 2021-2027 funding period, a new category of eligible projects has been introduced: cross-border projects in the field of renewable energy. The new CEF Energy programme complements other EU energy funding opportunities, focusing specifically on cross-border cooperation to optimise national efforts for deployment of renewable energy. There are already 2 European projects that we have to consider:

1) the Eneregio SOBOS²⁴ project - an acronym for Southeast Bavaria (“Südostbayern”), Upper Austria (“Oberösterreich”) and Salzburg - that is funded by the European project CEF Energy 2021

²³) This interpretation is also confirmed by: AE Fisco Oggi Negli impianti di cogenerazione non c'è condivisione di benefici, Aprile 2015, p.2 “the production of heat is not in turn subject to excise duty and the fuel used for this purpose is not exempted either at national or community level”.

²⁴) The project is funded by the European project CEF Energy 2021, which aims to increase cross-border cooperation in the field of renewable energies. SOBOS should help local stakeholders to diversify the heat supply and reduce regional dependencies on fossil fuels, ultimately expanding independence from energy imports. Currently the SOBOS research group is working on the consolidation of the data,

and that has just started to analyze the feasibility and the possible potential of a cross-border geothermal heating system;

2) the new district heating project between the city of Strasbourg and the German town of Kehl, 2 cities that are planning a cross-border district heating that will pass under the Rhine river. This project is managed by the joint operating company "Calorie"²⁵.

These two projects seem mainly concerned with technical viability and data collection on heat distribution and connection. They have thus been useful in confirming us that in the case of Hermagor and Pontebba, there are no great technical or infrastructural obstacles. Regarding the lack of knowledge of existing legal taxation frameworks, unfortunately we have not been able for the moment to receive specific answers. DH heat taxation seems not to be a priority for them at this moment.

All this said, it appears thus evident that at EU level there are widespread initiatives that offer us more helpful opportunities than blocking obstacles.

The main contacts in Brussels that could help us on specific EU regulated topics are the following: *DG ENER Directorate-General for Energy, ENER C Green transition and Energy System Integration Office: ENER C.1 Renewables and Energy Systems Integration Policy Office and ENER C.3 Internal Energy market Office; CINEA B.4 CEF energy and renewable Energy financing Mechanism*

At subeuropean level, the main obstacles are to be found among those administrative institutions that handle district heating's contracting and price monitoring, data mapping and energy taxation rules. In these specific topics, cross-border barriers and bottlenecks are largely caused by a mix of factors including: administrative issues, poor binational cooperation and lack of mutual knowledge of existing practices.

At national level the main obstacle lies in the fact that there is a power imbalance for what concerns pricing and taxation monitoring. Considering this last topic, we find two different national tax facilitation systems that support final consumers, companies and public bodies.

In Austria, on one hand, there seems to be no National Antitrust Agency and no National Revenue Service with strong regulatory powers in the district heating sector.

In Italy, on the other hand, we have ARERA and the *Agenzia delle Entrate* that has started to monitor pricing and tax matters also in the district heating sector.

This enables in the Italian case, in our opinion, a more efficient study of the pricing of thermal kilowatts, of taxation and of contracting procedures. In order to overcome these crossborder hurdles, useful contacts could be established between the Italian Agency ARERA and the Austrian National Verbraucherschlichtung's Service (the only national service in Austria that has a vested interest in defending final consumers' rights). For what concerns energy taxation, contacts could be established also with the Austrian Ministerial delegated offices of the Carinthian Finanzamt in Klagenfurt/Villach and the Italian Ministerial delegated regional offices of the *Agenzia della Entrate, Unit: "Fiscalità e Compliance"; Subsection: "Consulenza"* in Trieste.

For ministerial contacts in Italy that could help us to clarify some parts of the Italian legislation on district heating, we propose to contact: *Ministero dell'Ambiente e della Sicurezza Energetica: Direzione generale per l'approvvigionamento, l'efficienza e la competitività; Divisione III - Energie rinnovabili; Ministero delle imprese e del Made in Italy; Divisione III - Economia circolare e politiche per lo sviluppo ecosostenibile; Direzione generale per la politica industriale, l'innovazione e le PMI*²⁶.

For ministerial contacts in Austria that could help us to clarify some parts of the Austrian legislation on district heating: *Bundesministerium fuer Klima, Umwelt, Energie*²⁷: *Abteilung VI/3 - Grüne Finanzen und nachhaltige Wirtschaft; Abteilung VI/5 - Erneuerbare Energie Erzeugung; Abteilung VI/11 - Europäische Energieangelegenheiten.*

the spatial GIS-based representation of heat demand and supply in the neighboring regions both on the current status and forecasting for possible future scenarios. Cf. <https://www.researchstudio.at/projekt/eneregio-sobos/?lang=en>

²⁵) <https://www.cleanenergywire.org/news/unique-french-german-district-heating-project-connect-grids-across-rhine-river>

²⁶) Ministerial specific functions: rules and regulatory acts for the transposition and implementation of European regulations regarding renewable energy sources, in coordination with the competent Division of the General Directorate for infrastructure and safety of energy and geo-mining systems; rules, standards and regulations for the production, import, export, transport and use of renewable energy sources and carriers. <https://www.mase.gov.it/pagina/direzione-generale-l-appeditore-l-economia-e-la-competitivita-energetica-aece>.

²⁷) <https://www.bmk.gv.at/ldap.html#/suche>

Finally, at regional and local level, to support the exchange of key information for Italian and Austrian²⁸ district heating companies, there is currently no strong and continuous presence of administrative coordination between actors and bodies operating on both sides of the border. Weak interregional management in our context is closely linked to the absence of joint administrative mechanisms. Exchange occurs only very occasionally for example among the municipal offices of Pontebba and Hermagor on these specific topics.

For what concerns data analysis on the Northern side of our crossborder area, we find a relatively effective, streamlined energy mapping process²⁹. The Integrated National Energy and Climate Plan for Austria 2021-2030 (pursuant to Regulation (EU) 2018/1999 of the European Parliament and of the Council on the Governance of the Energy Union and Climate Action) has been adopted. The Carinthian Energy Masterplan has been updated for the year 2021 and has a specific section dedicated to district heating.

Unfortunately, we do not find this also in the FVG Region. The Italian National Energy and Climate Plan 2021-2030 has been adopted but the regional report's updating is still missing from 2014³⁰. The process for the approval of the new Energy Plan for FVG has just started recently, in September 2023³¹.

In this case, for optimal crossborder data monitoring, a new crossborder coordination service for data exchange and data monitoring could involve, on the Carinthian side, the *Amt der Kärntner Landesregierung Abteilung 8: Umwelt, Energie und Naturschutz; Abteilung 15: Standort, Raumordnung und Energie* and, on the FVG region's side, the *Assessorato Regionale alla Difesa dell'Ambiente, Energia e Sviluppo sostenibile, Servizio Transizione ecologica*.

As a result there is a weak crossborder monitoring and planning convergence because our 2 regional energy monitoring systems diverge. Currently the absence of a stable joint-coordination and cooperation mechanisms between Carinthia and FVG means that local entrepreneurs, policy makers, civil servants and potential district heating final users, do not receive adequate support and are unable to evaluate the convenience of a potential investment in crossborder district heating.

In sum, at subeuropean level, we have identified 3 factors that are responsible for some key obstacles. In order of importance:

- The lack of knowledge of the already facilitative existing frameworks;
- The existence of different administrative approaches;
- The absence of joint administrative mechanisms.

²⁸) FGW – WKO Zahlenspiegel Gas und Fernwärme in Österreich 2021

²⁹) Biomasse Verband, Bioenergie Österreich Atlas 2023.cf. Sito web www.biomasseverband.at

³⁰) https://www.regione.fvg.it/rafv/export/sites/default/RAFVG/GEN/statistica/FOGLIA63/allegati/Energia_FVG_dicembre_2015.pdf

³¹) <https://www.efficienzaenergetica.enea.it/component/jdownloads/?task=download.send&id=589&Itemid=101>

III Description of possible solutions

Based on the information gathered above, it is now possible to assess which solutions would be the most helpful given our specific context. The 3 areas of intervention that we have identified at the end of part II of this report, offer us various solutions. Obviously the implementation activities required to achieve short-term outputs and medium-term outcomes vary according to the degree of presumed difficulty for each level of governance involved.

In presenting our final proposals, therefore, we begin with those that seem more likely to be implemented in the short and medium term. These recommendations are targeted to the territory of our local cross-border area (between FVG and Carinthia, mainly on the territory of the municipalities of Hermagor and Pontebba) and could then, gradually, be applied to address the greater complexity that arises at the regional and national level between FVG Region and Carinthia.

In sequence, we will present possible solutions in the form of work packages designed on a schedule that begins upon the official approval of this report and lasts for a maximum of two years, i.e. approximately November 2025.

Solution Workpackage proposal 1: Awareness raising actions on crossborder district heating

A first and fundamental work package should address ***the lack of knowledge*** that we have highlighted above. Its specific objective is to introduce a series of actions that could raise awareness among our key stakeholders in the short term. For example, a series of legal-administrative and technical-operational specific workshops, could be organised in Spring 2024, directly on the border between FVG Carinthia, in the municipalities of Hermagor and/or Pontebba. We are specifically interested in financial consultants' indications on local viability, pricing, taxation and crossborder invoicing.

Considering that there currently is no bilateral convention that regulates this specific sector between Austria and Italy, the doubt will have to be clarified through a consultation procedure involving entities that operate on more than one level, starting from the European one, involving afterwards national, regional and local key players.

So our initial key questions that will be addressed to them are the following: are heat and hot water transferred through cross-border DH networks subject to monopoly and/or excise duty regime or not? Can Austria export hot water to Italy through a district heating network using a specific taxation system? Furthermore, once that we have clarified these points, which of the 3 different invoicing scenarios that we have hypothesized for our Italian and Austrian local actors is best suited for our small initial pilot project:

- a) a hypothesis of direct invoicing between private actors: a DH company and a final domestic user;
- b) an invoicing option between two private companies on both sides of the border;
- c) and finally a private company in Austria and a public company (with the role of energy distributor/intermediary) in Italy which in turn resells heat to the private end user.

As we have seen before, the obstacles identified on these three options rotate around the following strategic questions: Will the invoice issued by the Austrian company be VAT exempt on the Austrian side? Will the intrastat billing system (with reverse charge) be applied? Are the 10% or 22% VAT rates normally paid by the Italian customer confirmed? Will the Italian user also be entitled to the tax credit (*Steuergutschrift*) provided for Kw/thermal in Italy, even though the energy is produced in another country?

For what concerns energy taxation, it would be of great interest *in primis* to invite also some experts from the Austrian Ministerial delegated offices of the Carinthian Finanzamt in Klagenfurt/Villach and from the Italian Ministerial delegated regional offices of the Agenzia della Entrate, Fiscalità e Compliance, Consulenza in Trieste.

In order to clarify other aspects of these key topics, in line with considerando 52 of the RED II EU Directive that states: “*Information and training gaps, especially in the heating and cooling sector, should be removed in order to encourage the deployment of energy from renewable sources*”, it would be useful to invite experts from the Italian Agency ARERA and the Austrian National Verbraucherschlichtung’s Service (the only national service in Austria that has a vested interest in defending final consumers’ rights).

For ministerial contacts in Italy that could help us to clarify some other parts of the Italian legislation on district heating, invitations should also be extended to key speakers from the Ministero della ambiente e della sicurezza energetica: Direzione generale per l’approvvigionamento, l’efficienza e la competitività; Divisione III - Energie rinnovabili; Ministero delle imprese e del Made in Italy; Divisione III - Economia circolare e politiche per lo sviluppo ecosostenibile; Direzione generale per la politica industriale, l’innovazione e le PMI and to other Austrian key speakers from the Bundesministerium fuer Klima, Umwelt, Energie2: Abteilung VI/3: Grüne Finanzen und nachhaltige Wirtschaft; Abteilung VI/5: Erneuerbare Energie Erzeugung; Abteilung VI/11: Europäische Energieangelegenheiten.

Subsequently, we should consider also contacts in Brussels that could help us on specific EU regulated topics: DG ENER Directorate-General for Energy, ENER C Green transition and Energy System Integration Office: ENER C.1 Renewables and Energy Systems Integration Policy Office and ENER C.3 Internal Energy market Office; CINEA B.4 CEF energy and renewable Energy financing Mechanism

Local stakeholders as FIPER, ESCO, Biomasse Verein, APE etc. could also be invited.

Finally, part of the initial sessions could also be dedicated to the presentations of experiences made in other European border areas that are trying to implement crossborder district heating projects. As we have seen before, the new CEF Energy programme has financed some piloting projects that could be of great interest. In the district heating sector, there are already 2 European initiatives that we have considered:

- 1) the Eneregio SOBOS project that is funded by the European project CEF Energy 2021 and that has just started to analyse the feasibility and the possible potential of a cross-border heating system;
- 2) the new district heating project between the city of Strasbourg and the German town of Kehl, who are planning to connect 7000 households through a cross-border district heating system. This project managed by the joint operating company dubbed ‘Calorie’ (owned by French and German partners).

A more in deep analysis of these 2 case studies and a comparison with other CEF financed projects could be very useful.

The following questions will have to be addressed as key topics:

- Do comparable solutions already exist in other European cross-border areas?
- Do we really need for small cross-border DH systems a bilateral national cooperation agreement between Italy and Austria as indicated by considerando (24) of the RED II Directive for the electricity sector? ³²
- Or can those solutions be applied directly in our crossborder context between FVG and Carinthia considering the small scale of the initiative and its private market nature?
- Could it be possible to create also a **Crossborder Renewable Energy Community**, if possible without a binational agreement?

As a final mid-term output, these technical-operational workshops could provide a feasibility study on possible actions to undertake on both sides of the border.

³²) RED II directive 2018/ 2001 considerando (24): “In order to ensure that the opening of support schemes is reciprocal and brings mutual benefits, **cooperation agreements should be signed between participating Member States**. Member States should retain control over the pace of deployment of renewable electricity capacity on their territory in order, in particular, to take account of associated integration costs and required grid investments. Member States should thus be allowed to limit the participation of installations located on their territory to tenders opened to them by other Member States. Those cooperation agreements should address all relevant aspects, such as accounting for costs relating to a project built by one Member State on the territory of another, including the expenditure relating to strengthening networks, energy transfer, storage and back-up capacity, as well as possible congestions in the network. In those agreements Member States should also take into account measures that may allow for the cost-effective integration of such additional renewable electricity capacity, whether they are of a regulatory nature (for instance related to market design) or provide for additional investments in various sources of flexibility (for instance interconnections, storage, demand response or flexible generation).

All this should be in line with Considerando (49) of the RED II directive: “To ensure that national measures for developing renewable heating and cooling are based on comprehensive mapping and analysis of the national renewable and waste energy potential and that such measures provide for increased integration of renewable energy, by supporting, *inter alia*, innovative technologies such as heat pumps, geothermal and solar thermal technologies, and waste heat and cold, it is appropriate to require that Member States carry out an assessment of their potential of energy from renewable sources and the use of waste heat and cold in the heating and cooling sector, in particular to promote energy from renewable sources in heating and cooling installations and promote competitive and efficient district heating and cooling.”

Solution Workpackage proposal 2: Creation of a crossborder coordination structure/office.

A second, fundamental work package to address ***the lack of cooperation*** that we have mentioned, should facilitate the creation of a specific joint municipal coordination structure between Pontebba and Hermagor for the observation of key crossborder policy measures, including the energy market and the management of related administrative procedures.

In line with Directive 2018/2001 considerando (50), we consider that: “The lack of transparent rules and coordination between the different authorisation bodies has been shown to hinder the deployment of energy from renewable sources. Providing guidance to applicants throughout their administrative permit application and granting processes by means of an administrative contact point is intended to reduce complexity for project developers and increase efficiency and transparency, including for renewables self-consumers and renewable energy communities. Such guidance is to be provided at an appropriate level of governance, taking into account the specificities of Member States. The single contact points should guide the applicant and facilitate through the entire administrative process so that the applicant is not obliged to contact other administrative bodies in order to complete the permit-granting process, unless the applicant prefers to do so.”

This municipal crossborder coordination office should simplify those lengthy administrative procedures that constitute a major administrative barrier for crossborder cooperation. For the technical part of our district heating project, we agree with the RED considerations at cons. 50: “the simplification of administrative permit granting processes, and clear time-limits for decisions to be taken by the authorities competent for issuing the authorisation [...] should stimulate a more efficient handling of procedures, thereby reducing administrative costs. A manual of procedures should be made available to facilitate the understanding of procedures for project developers and citizens wishing to invest in renewable energy. In order to foster the uptake of renewable energy by microenterprises and small and medium-sized enterprises (SMEs) and individual citizens [...] a simple-notification procedure for grid connections to the competent body should be established for small renewable energy projects, including those that are decentralised [...]”

For technical and operational purposes, as already highlighted before, there is no crossborder office or infopoint that gives concrete answers to the needs and concerns expressed by cross-border stakeholders and key players. Questions include: the management of tax documents; property rights on infrastructures built on both sides of the border; national pricing processes; the management of tax credits; the protection of consumer rights; the translation of key contracting documents; etc.

Regional actors from FVG and Carinthia will be able thus through this service to solve some existing daily bottlenecks associated with current administrative practices.

Starting with a joint micro-sectorial local policy structure and then broadening its working approach to the entire complexity of cross border relationships seems to us a useful and constructive approach, above all for consolidating relationships of trust through a place-based approach.

Hermagor and Pontebba could in this way take advantage of the Interreg Italy Austria CLLD programme. A crucial initial role could be also played by the EGTC Euregio Senza Confini as

confirmed by the INTERREG Heuopen strategy 2021-2017³³. In this document the EGTC Euregio Senza Confini is seen as an essential tool for the integration of three regions: Carinthia, Friuli Venezia Giulia and Veneto. Through its active role and its bi- and trilateral cooperation and cooperation networks, the EGTC could help local actors to find new solutions involving key actors of the whole alpine-adriatic area. This could also facilitate cooperation related to the construction of a crossborder observatory on renewable energy projects on the Italian-Austrian border.

Solution Workpackage Proposal 3: Crossborder Energy communities: working on a specific INTERREG CLLD project proposal

Once that we have solved the main questions related to DH taxation, trying to create a small district heating partnership between the municipalities of Hermagor and Pontebba, means that we are interested in creating an European local renewable energy community. Renewable energy communities are mentioned by considerando 79 of the RED 2001/2018 directive in this way:

“The specific characteristics of local renewable energy communities in terms of size, ownership structure and the number of projects can hamper competition on an equal footing with large-scale players, namely competitors with larger projects or portfolios. Therefore, it should be possible for Member States to choose any form of entity for renewable energy communities, provided that such an entity may, acting in its own name, exercise rights and be subject to obligations. To avoid abuse and to ensure broad participation, renewable energy communities should be capable of remaining autonomous from individual members and other traditional market actors that participate in the community as members or shareholders, or who cooperate through other means such as investment. Participation in renewable energy projects should be open to all potential local members based on objective, transparent and non-discriminatory criteria. Measures to offset the disadvantages relating to the specific characteristics of local renewable energy communities in terms of size, ownership structure and the number of projects include enabling renewable energy communities to operate in the energy system and easing their market integration. *Renewable energy communities should be able to share between themselves energy that is produced by their community-owned installations*”.

Renewable energy communities are also present in the national Italian and Austrian laws that have transposed the RED directive. As we can see, the Italian and Austrian laws are in this case very similar: this is a **great opportunity** for local place-based local stakeholders. Both insist on the fact that they should have a **non-commercial status**.

On the Italian side, the regulation provides that members of a renewable energy communities can be "natural persons, condominiums, small and medium-sized enterprises, territorial bodies or local authorities, including municipal administrations, on the sole condition that - for private companies - participation in the renewable energy community does not constitutes the main commercial and industrial activity." In this perspective renewable energy communities should be established in the form of **non-commercial entities**³⁴

On the Austrian side, we find a very similar definition of renewable energy communities: “Members or shareholders of a renewable energy community may be natural persons, municipalities, legal entities of authorities in relation to local departments and other legal entities under public law or small and medium-sized companies. A renewable energy community must consist of two or more members or partners and must be organized as an association, cooperative, partnership or corporation or similar association with legal personality. Its primary purpose must not be financial gain; This must be recorded in the statutes, unless it already arises from the corporate form. The renewable energy community must primarily provide environmental, economic or social community benefits to its members or the areas in which it operates. Participation in a renewable energy community is voluntary

³³) Heuopen Strategia 2021-2027, p.32.

³⁴) <https://www.fiscooggi.it/rubrica/analisi-e-commenti/articolo/comunita-energetiche-rinnovabili-punto-normativa-e-prassi>

and open; in the case of private companies, participation may not be their main commercial or professional activity.”³⁵

In this perspective, at the level of joint management mechanisms, if we want to prepare a common European project in this field, a key role in my opinion should be played in our opinion by: EGTC Euregio Senza Confini/Ohne Grenzen, LAG Hermagor, GAL Openleader and GAL Euroleader. The 3 local action groups that are managing the local INTERREG CLLD programme between Austria and Italy could have the first opportunity to design a Renewable energy community project at European level for the implementation of a District heating biomass cross-border network.

As already mentioned before, these four players could be able to design this new project only if we have found an answer to the following questions mentioned above:

- *Do we need before a bilateral national cooperation agreement between Italy and Austria as indicated by considerando (24) of the RED II Directive for the electricity sector?*

- *Or can those solutions be applied directly in our cross-border context between FVG and Carinthia considering the small scale of the initiative and its private market nature?*

- *Could it also be possible to create a cross-border non-commercial Renewable Energy Community/Company?*

Through the organisation of specific focus groups with local stakeholders that could be interested in becoming members of a real crossborder Renewable Energy Community a design process for a small pilot project could be launched.

With the presentation of a specific Interreg CLLD project, in this case, funds could be procured to finance a small cross-border district-heating infrastructure.

This said, Directive 2018/2001 in considerando 26 gives us a clear final message:

“Member States should ensure that renewable energy communities can participate in available support schemes on an equal footing with large participants. To that end, Member States should be allowed to take measures, such as providing information, providing technical and financial support, reducing administrative requirements, including community-focused bidding criteria, creating tailored bidding windows for renewable energy communities, or allowing renewable energy communities to be remunerated through direct support where they comply with requirements of small installations”.

V A full list of all legal provisions relevant to the case with the correct citation both in original language and in English

European legal provisions

- EU Directive 2019/943 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU, PE/10/2019/REV. Official Journal L 158, 125 – 199.

- EU Directive 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources, PE/48/2018/REV/1. Official Journal L 328, 82–209.

- EU Proposal for a Directive of the European Parliament and of the Council on the promotion of the use of energy from renewable sources (recast), COM/2016/0767 final/2 – 2016/0382 (COD).

³⁵) Bundesgesetz: Erneuerbaren-Ausbau-Gesetzespaket – EAG-Paket - Erneuerbare-Energien-Gesetz, EEG 2021 Bundesgesetzblatt Nr. BGBl. I Nr. 150/2021 Datum der Kundmachung 27.07.2021, teil 6, par.79-80 “Mitglieder oder Gesellschafter einer Erneuerbare-Energie-Gemeinschaft dürfen natürliche Personen, Gemeinden, Rechtsträger von Behörden in Bezug auf lokale Dienststellen und sonstige juristische Personen des öffentlichen Rechts oder kleine und mittlere Unternehmen sein. Eine Erneuerbare-Energie-Gemeinschaft hat aus zwei oder mehreren Mitgliedern oder Gesellschaftern zu bestehen und ist als Verein, Genossenschaft, Personen- oder Kapitalgesellschaft oder ähnliche Vereinigung mit Rechtspersönlichkeit zu organisieren. Ihr Hauptzweck darf nicht im finanziellen Gewinn liegen; dies ist, soweit es sich nicht schon aus der Gesellschaftsform ergibt, in der Satzung festzuhalten. Die Erneuerbare-Energie-Gemeinschaft hat ihren Mitgliedern oder den Gebieten, in denen sie tätig ist, vorrangig ökologische, wirtschaftliche oder sozialgemeinschaftliche Vorteile zu bringen. Die Teilnahme an einer Erneuerbare-Energie-Gemeinschaft ist freiwillig und offen, im Fall von Privatunternehmen darf die Teilnahme nicht deren gewerbliche oder berufliche Haupttätigkeit sein.”

- EU DIRECTIVE 2012/27 EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (Text with EEA relevance)
- EU Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (Text with EEA relevance) (no more in force)
- EU DIRECTIVE 2003/54/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 June 2003 concerning common rules for the internal market in electricity and repealing Directive 96/92/EC
- EU DIRECTIVE 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity (ETD Energy taxation Directive)
- EU Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy. Official Journal L 327, 1–73.
- EU Proposal for a Regulation of the European Parliament and of the Council on a mechanism to resolve legal and administrative obstacles in a cross-border context –COM(2018) 373 final.

Austrian legal provisions

- *Bundesgesetz: Erneuerbaren-Ausbau-Gesetzespaket – EAG-Paket - Erneuerbare-Energien-Gesetz, EEG 2021 Bundesgesetzblatt Nr. BGBl. I Nr. 150/2021 Datum der Kundmachung 27.07.2021; Federal Law: Renewable Energy Expansion Legislative Package - EAG Package - Renewable Energy Act, EEG 2021 Federal Law Gazette No. BGBl. I No. 150/2021 Date of announcement July 27, 2021.*
- Elektrizitätswirtschafts- und -organisationsgesetz 2010 Abkürzung EIWOG2010 Kundmachungsorgan, BGBl. I Nr. 110/2010 zuletzt geändert durch BGBl.Inr.150/2021 Inkrafttretensdatum 28.07.2021; Electricity Industry and Organization Act 2010 Abbreviation EIWOG2010 Announcement Organ, Federal Law Gazette I No. 110/2010 last amended by Federal Law Gazette Inr.150/2021 Date of announcement July 28, 2021.
- Grundsatzgesetz über die Förderung der Stromerzeugung aus Biomasse (Biomasseförderung-Grundsatzgesetz) StF: BGBl. I Nr. 43/2019 Datum der Kundmachung 28.05.2019; Basic Act on the Promotion of Electricity Generation from Biomass (Biomass Promotion Basic Act) StF: Federal Law Gazette I No. 43/2019 Date of announcement May 28, 2019.
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V Other relevant aspects to this case

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VII Contacts

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<https://www.sportelloperilconsumatore.it/servizi-idrici/segnalazioni-idrico>

MINISTERO DELL'AMBIENTE DELLA SICUREZZA ENERGETICA

Direzione generale per l'approvvigionamento, l'efficienza e la competitività

<https://www.mase.gov.it/pagina/direzione-generale-l-approvvigionamento-l-efficienza-e-la-competitivita-energetica-aece>

<https://www.mimit.gov.it/index.php/it/component/organigram/?view=structure&id=7>

REGIONE FVG SERVIZIO TRANSIZIONE ENERGETICA

<https://energia.regione.fvg.it/energia-e-sostenibilita/piano-energetico-regionale/lavori-nuovo-piano.html>

GECT EUREGIO SENZA CONFINI-OHNE GRENZEN <https://euregio-senzaconfini.eu>

IN AUSTRIA

BUNDESMINISTERIUM FUER KLIMASCHUTZ, MOBILITAET, ENERGIE <https://www.bmk.gv.at/>

LAND KAERNTEN

Energie, Klima und Nachhaltigkeit Amt der Kärntner Landesregierung

Abteilung 8 - Umwelt, Naturschutz und Klimaschutzkoordination Energie

Abteilung 15 – Standort, Raumordnung und Energie

<https://www.ktn.gv.at/Verwaltung/Amt-der-Kaerntner-Landesregierung/Abteilung-8>

ENERGIE CONTROL AUSTRIA

<https://www.e-control.at/>

VERBRAUCHERSCHLICHTING AUSTRIA

<https://www.verbraucherschlichtung.at/verfahren/>

IN EUROPE

ENERGY REGULATORS REGIONAL ASSOCIATION - ERRA

<https://erranet.org>

EU DG ENERGY

https://energy.ec.europa.eu/index_en

CROSSBORDER RENEWABLE ENERGY PROJECTS (CEF Energy)

https://cinea.ec.europa.eu/programmes/connecting-europe-facility/energy-infrastructure-connecting-europe-facility-0/cross-border-renewable-energy-projects-cef-energy-new_en