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Maastricht University

Faculteit Rechten

master in de rechten

Masterthesis

Energy Communities in the European Union

Gerben Swinnen

Scriptie ingediend tot het behalen van de graad van master in de rechten, afstudeerrichting overheid en recht

PROMOTOR :

Prof. dr. Matteo FERMEGLIA

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Summary

English summary

The withholding of energy sources by the Russian Federation in 2022 revealed a lack of energy security within the EU, due to heightened levels of import dependency. This thesis aims to assess the potential impact of Renewable Energy Communities on EU energy security, as implemented in national legislation.

Energy security is defined according to a framework surrounding Availability, Accessibility, Affordability and Acceptability of energy sources. As the competence on deciding a national energy mix remains with the Member States, EU energy security has to be assessed by looking at these four pillars on a national level, and assessing potential threats thereto. Doing so reveals a potential threat to the accessibility of energy sources as the import relies on bilateral agreements with the supplier, who can unilaterally decide to no longer supply energy sources.

A Renewable Energy Community is a legal entity whose members own the renewable energy projects around which the Renewable Energy Community is constructed. It is allowed to produce, store and sell the generated energy amongst its members, but it is also allowed to access the broader energy market and act as a market supplier, thereby granting the members active participation in the domestic energy provision. Doing so has the potential to vastly improve access to already available renewable energy sources.

Questions remain regarding the affordability however, as the active participation of citizens relies on financial support schemes which are to be provided on a domestic level. National implementation has remained limited however, with varying levels of financial support. Where such subsidisation is well-funded and easily accessible, it appears that citizens are indeed willing to create Renewable Energy Communities.

As such, Renewable Energy Communities have the potential to improve EU energy security by increasing accessibility to available renewable energy sources, yet this will require better implementation at the national level and well-funded subsidisation.

Nederlandstalige samenvatting

Het inhouden van energiebronnen door de Russische Federatie in 2022 legde een gebrek aan energieveiligheid binnen de EU bloot, als een gevolg van verhoogde import-afhankelijkheid. Deze thesis poogt de mogelijke impact van hernieuwbare energiegemeenschappen op de energieveiligheid te beoordelen, zoals geïmplementeerd in nationale wetgeving.

Energieveiligheid wordt gedefinieerd aan de hand van een kader dat draait rond beschikbaarheid, toegankelijkheid, betaalbaarheid en aanvaardbaarheid van energiebronnen. Gezien de beslissingsbevoegdheid over de nationale energiesamenstelling bij de lidstaten ligt, moet de energieveiligheid van de EU beoordeeld worden door deze vier pijlers te benaderen op het nationale niveau en daar mogelijke risico's te beoordelen. Deze beoordeling onthult een mogelijk risico voor

de toegankelijkheid van energiebronnen aangezien de import steunt op bilaterale overeenkomsten met leveranciers, die eenzijdig kunnen beslissen deze niet uit te voeren.

Een hernieuwbare energiegemeenschap is een rechtspersoon van wie de leden eigenaar zijn van de hernieuwbare energieprojecten rond dewelke de hernieuwbare energiegemeenschap is opgebouwd. Het is de gemeenschap toegestaan energie op te wekken, op te slaan of onderling te verkopen, maar ook om toegang te krijgen tot de bredere energiemarkt en daar als leverancier op te treden en de leden zodoende actief te laten participeren in de nationale energievoorziening. Dit heeft het potentieel om de toegang tot reeds beschikbare hernieuwbare energiebronnen drastisch te verbeteren.

Vragen rijzen echter over de betaalbaarheid, aangezien deze actieve participatie door burgers afhankelijk is van financiële ondersteuningsregelingen die op nationaal niveau moeten voorzien worden. De nationale implementatie is echter nog beperkt gebleven, met variërende niveaus aan financiële ondersteuning. Waar dergelijke subsidiëring echter voldoende gefinancierd en eenvoudig toegankelijk is, blijkt dat burgers inderdaad de wil hebben om hernieuwbare energiegemeenschappen op te richten.

Zodoende bieden hernieuwbare energiegemeenschappen de mogelijkheid om de energieveiligheid van de EU te verbeteren door de toegankelijkheid van beschikbare hernieuwbare energie te verbeteren, doch dit is afhankelijk van betere implementatie op nationaal vlak en sterk gefinancierde subsidiëring.

Acknowledgement

I would like to take the opportunity to acknowledge Prof. Dr. Matteo Fermeglia for initially informing me about the existence of Renewable Energy Communities in the context of one of his classes on European Climate and Energy Law, yet more so for the invaluable influence, knowledge and support he granted me throughout the writing of this thesis. It inspired and motivated me to work towards the completion of this thesis, even at times when I did not see a way forward.

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Furthermore, I thank my parents for granting me the opportunity to engage in the studies of Law and having the confidence in me that I would successfully complete them, even when I did not share that confidence. I thank them for their endless patience when I once again whimpered and moaned about the seemingly impossible task ahead of me, and for always believing in me.

Finally, I would like to thank my sister and her husband, as well as all my friends and fellow students, for continuously motivating me to push through while at the same time accepting my absence from certain social gatherings.

Thank you.

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Introduction

"*A nation that can't control its energy sources, can't control its future*"
-Barack Obama, 44th President of the United States of America-

On February 24th 2022, the Russian Federation disregarded Ukraine's territorial sovereignty and launched an aggression on Ukrainian soil. The main response by the EU consisted of an expansion of existing sanctions, which had been in place since March 2014 after the Russian Federation annexed the Ukrainian peninsula Crimea. These expanded sanctions came in different packages, targeting both the Russian Federation's ability to finance its military operations, as well as specific individuals who had played a role in threatening the territorial integrity and independence of Ukraine.

In responding to these sanctions by withholding access to Russian energy sources, the Russian Federation laid bare the dependence of the European Union on external energy sources, thereby exposing the European Union and its Member States to significant geopolitical pressure. As a result of these retaliatory actions, the importance of achieving full energy security and independence in the EU was demonstrated.

As such, the European Commission announced the REPowerEU plan, aimed at greatly reducing the dependence on Russian energy sources by gradually shifting towards renewable energy sources, thereby also implementing the Fit for 55 criteria. Part of this shift towards renewable energy relates to a decentralisation of energy production by means of private renewable energy production, as well as collective citizens' initiatives. A particular form of citizen energy initiative is found in the recast Renewable Energy Directive 2018/2001, in the form of Renewable Energy Communities.

Given the particular interest of this concept, the main research question to be answered is therefore:

"*What is the potential role of Renewable Energy Communities in contributing to the EU's energy security, as implemented in national legislation?*"

Methodology

Answering the main research question relies on a multi-disciplinary approach, whereby the main question is divided into three sub-questions to be answered separately. First, when assessing the impact of the national implementation of legislation regarding Renewable Energy Communities on EU energy security, it is necessary to clearly define the concept of energy security within the confines of the EU Energy supply.

The next element to be addressed concerns the concept of Renewable Energy Communities as understood in the EU Directive 2018/2001, as well as its potential impact on energy security within the confines of the EU energy supply. Analysing the contents of the Directive provides the necessary context and framework which is then applicable to the concept of energy security as defined under the first research question.

Finally, the third step in answering the main research question looks at the national transposition of the Directive 2018/2001, thereby giving substance to the requirements of the Directive. It is within the confines of these national implementations that the actual impact can be assessed, as therein lie the keys to the effectiveness of Renewable Energy Communities in the EU.

In combining these three research questions, a full overview of the legal framework on EU Renewable Energy Communities and their potential impact on EU energy security can be provided.

Question 1: How is energy security defined in the context of the EU energy supply?

Within the first research question, the concept of energy security is explored in the context of the EU energy supply. Naturally, this exploration can only occur under the condition that a preliminary assessment is made of the current EU energy supply. As such, this defining sub-question will seek to determine the current EU energy supply on the basis of objective data, gathered by Eurostat in combination with doctrine providing further information and interpretation.

Once the EU energy supply has been determined, the thesis seeks to determine a clear, concise framework within which the concept of energy security is defined. As the concept of energy security has been in use for decades with a varying range of interpretations, this multidisciplinary defining research relies on a vast array of sources from legal doctrine to social and physics-related sources.

This defining framework for energy security is then applied to the EU energy supply by assessing the individual elements of energy security in the context of the EU energy supply, thereby defining the current level of energy security of the EU energy supply and where it can potentially be improved.

Question 2: What do Renewable Energy Communities entail?

Under the second research question, this thesis provides defining research of the concept 'Renewable Energy Communities', on the basis of the EU Renewable Energy Directive. To this end, a preliminary overview of relevant international and European legislation on renewable energy is required, as this

provides the necessary framing and context within which to place the existence of the Renewable Energy Directive and its content.

Having given an overview of the relevant international and European legislation on renewable energy, the thesis focuses on a part of the Renewable Energy Directive relating to Renewable Energy Communities. This defining research sets out the definition and characteristics of Renewable Energy Communities as envisioned by the Directive on the basis of existing European legislation and interpretative doctrine thereof.

Having set out the definition of Renewable Energy Communities on the basis of the Directive and interpretative doctrine, the thesis looks at the potential competences and activities of these Communities, whereby this defining research is based on similar European legislation and interpretative doctrine.

Finally, based on the aforementioned defining framework and potential competences and activities the Renewable Energy Communities can perform, their impact on the individual elements of the energy security framework as set out under the first research question is examined. To this end, the conclusion of the first research question will be interpreted and combined with the findings of the second research question.

Question 3: Assessing the implementation in Belgium, the Netherlands and France.

Within the confines of the third research question, an evaluation is made of the national implementation of the aforementioned provisions on Renewable Energy Communities, or the lack thereof. This evaluation allows for a preview on what can be expected regarding the development of Renewable Energy Communities in the chosen EU Member States, thereby providing insight into how the Directive is to be transposed, which risks are to be avoided when doing so and what the impact will be under the current transposition. To this extent, the thesis focuses on the transposition by three EU Member States, those being Belgium, the Netherlands and France.

Within Belgium, the competence regarding renewable energy lies with the regional authorities. In light of the Belgian nationality of the author and Flemish being his mother tongue, it is deemed optimal to evaluate the implementation in Flemish legislation and the potential impact on Energy Security, keeping in mind the regional competence to act in this matter.

An interesting comparison is then made with the implementation in the Netherlands, where exactly the opposite occurs in that the regions are forbidden from enacting legislation on renewable energy. As such, an interesting comparison is made between their implementations and the influence of the competent authority on the impact of Renewable Energy Communities on EU Energy Security.

Finally, the same assessment is carried out for the French transposition, where the existence of citizen energy initiatives outside of an experimental sphere has not been permitted for too long. Given that the transposing and amending law has only been adopted very recently, it is interesting to compare this transposition with the Flemish and Dutch transposition, assessing if potential progress has been made.

Chapter 1. Energy security in relation to the EU energy supply.

1. As is par for the course with any legal or academic research, an introductory, defining chapter is a necessary requirement for a complete understanding of the material. As this work is no exception to the rule, this first chapter will serve as an introduction to the concept of energy security. At first, this chapter will focus on the current energy supply of the European Union as it stands today. In doing so, the writer attempts to establish the framework and relevance of this work, both from an energy security point of view as well as from an, albeit more global, environmental and climate point of view.

2. Once said framework has been established, the attention will shift towards defining energy security and the different dimensions that have been ascribed to it over the years. Finally, having defined the concept of energy security, this chapter will look at the events and elements that pose a threat to this energy security, whereby they will be divided in categories based on their defining characteristics.

1.1. The EU energy supply.

3. Ever since the founding of the EU, in the form of the European Coal and Steel Community (ECSC), in 1952, energy has been one of the focal points of the EU or its predecessors in one way or another.[1] This is all the more evident with the creation of the European Atomic Energy Community (EURATOM) in 1957, in which the founding Member States recognized the importance of nuclear energy as an essential developmental resource, but also as a tool to advance the shared objective of peace.[2] It is therefore all the more surprising that, despite the recognized importance of the energy sector for the EU and its main objectives, it wasn't until 2008 that Eurostat was tasked with compiling comprehensive data for the production, transmission, evaluation and dissemination of energy statistics in the Community.[3]

4. As a result of the 2008 Regulation, EU Member States are required to compile data on energy products and their aggregates.[4] These national statistics are then sent to Eurostat on either a short-term, monthly or annual basis depending on the specific statistics.[5] After having compiled the different national statistics from the EU Member States, Eurostat is then required to disseminate yearly energy statistics for the entirety of the EU as well as its Member States by 31 January, two years after having received the national data.[6] These are the statistics that give insight into the EU energy supply as it stands today.

5. When consulting the latest available Eurostat energy statistics, a differentiation must be made between supply on the one hand, and demand on the other. While the supply of energy concerns itself with the amount of available energy for the EU, its sources and the ways in which it is produced, the demand-side of energy concerns itself more with how the available energy is consumed. Amongst

[1] Treaty establishing the European Coal and Steel Community, Document 11951K/TXT, 19 April 1951.
[2] Treaty establishing the European Atomic Energy Community, Document 11957A/TXT, 17 April 1957.
[3] Art. 1(1), Regulation (EC) No. 1099/2008 of the European Parliament and the Council of 22 October 2008 on energy statistics, *Pb.L.* 14 November 2008, Vol. 51, 1 (hereinafter: Energy Statistics Regulation).
[4] Art. 3(1), Energy Statistics Regulation.
[5] Art. 4(1), Energy Statistics Regulation.
[6] Art. 5(5), Energy Statistics Regulation.

others, the latest Eurostat data provide insights into the final energy consumption in the EU, referring to all the energy that was supplied to industry, transport, households, services and agriculture, excluding the energy transformation sector and energy industries themselves.[7] As this does not relate to the supply of energy, but rather to the efficient use of energy, this aspect of the Eurostat energy statistics will not be further examined.

6. For the purpose of this thesis, the supply of energy will be based on the gross available energy to the EU, minus the exported energy. As such, the supply of energy mainly consists of two pillars, those being primary production and imported energy. While recovered and recycled products as well as changes in stock are taken into account by Eurostat, their impact is negligible when compared to both primary production and imported energy and as such, will not be taken further into account.

1.1.1. Energy supply through primary production

7. Eurostat defines primary production of energy as *"any extraction of energy products in a useable form from natural sources, either by exploiting natural sources of in the fabrication of biofuels"*.[8] The Eurostat statistics on primary production of energy differentiate between Solid fossil fuels, Oil and petroleum products, Natural gas, Renewables and biofuels, Nuclear heat and finally Non-renewable waste.[9] Across the board, 68.4% of all energy in the EU in 2020 was produced or derived from coal, crude oil or natural gas, as opposed to 17.4% from renewable energies, with nuclear heat coming in at 12.7%.[10]

8. More importantly however, Eurostat notes a general 7.1% decrease in energy production in the EU in 2020 as compared to 2019.[11] Within this annual decrease, Eurostat notes a significant decrease of -16.5% for solid fuels and -21.5% for natural gas. The increase in renewable energy at +3.0% is more interesting however, especially when taking into account that 40.8% of all energy produced within the EU stemmed from renewable energy.[12] Given the significant decreases of energy production related to solid fuels and natural gasses, a larger expected increase in renewable energy sources to compensate for this major decrease doesn't seem to have materialized.

1.1.2. Energy supply through imports

9. As mentioned before (see *supra,* nr. 6), besides the primary production of energy in the EU, the supply of energy in the EU also relies heavily on the import of energy and energy products. Given the decreased energy production inside the EU (see *supra*, nr. 8), an increased reliance on imported primary energy and energy products is to be expected. Categorized as the overall import dependency, Eurostat statistics indeed show an EU-wide percentual import dependency of 58.2% for 2018.[13]

[7] Art. 2(3), Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, *Pb.L.,* 14 November 2012, Vol. 55, 1 (hereinafter: Energy efficiency Directive).
[8]https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Primary_production_of_energy
[9] Eurostat, "Energy data: 2020 edition", Luxemburg, Publications Office of the European Union, 26.
[10] *Ibid.*
[11] *Ibid.*
[12] Eurostat, "Energy data: 2020 edition", Luxemburg, Publications Office of the European Union, 26.
[13] Eurostat, "Energy data: 2020 edition", Luxemburg, Publications Office of the European Union, 24.

10. More important than the volume of energy that was imported itself, are the geographical locations from which the energy was sourced. This was made all the more clear in the immediate aftermath of the military aggression by the Russian Federation on Ukrainian soil. As a result of this, the EU launched its REPowerEU-plan, aimed at rapidly reducing dependence on Russian fossil fuels.[14] In relation to this plan, it was made clear by the European Commission that the EU imports up to 90% of its gas consumption, with over 45% being provided by Russia alone in 2021.[15] In that same vein, the EU also relied on Russia for 27% of all its imported oil, as well as 46% of the imported coal.[16] As will be shown in the rest of this chapter, such a concentration of external energy suppliers provides a threat to the security of EU energy supply.[17]

1.1.3. The environmental and climatologic relevance of the EU energy supply.

11. In line with its agreement to undertake steps to aid in limiting the maximum global average temperature increase to 1.5°C under the 2015 Paris Agreement, the EU set targets for 2020 and 2030 on greenhouse gas emissions (GHG) reductions, renewable energy and energy efficiency in its 2018 Clean Energy Package.[18] These targets were however deemed insufficient, as a result of which they were increased in 2019 under the European Green Deal.[19] The main target increase revolved around a reduction of GHG to -55% by 2030, and complete GHG-neutrality by 2050.

12. In spite of these targets, the sixth and most recent IPCC report by its third working group, announced on 4 April 2022, showed that the current levels of CO_2 will already unavoidably result in a global average temperature increase of at least 1°C with an increase towards 1.5°C seemingly unavoidable.[20] At the same time, the report made it clear that immediate action is required to keep the increase in average global temperature below 2°C.

13. As the production and use of energy in economic sectors make up over 75% of all EU GHG-emissions, the relevancy of the energy sector to these targets cannot be overstated.[21] With this in mind, it is all the more problematic that 2021 saw the largest ever annual rise in energy-related CO_2 emissions.[22] Based on these emissions, the IEA explored three different scenarios in the World Energy Outlook. First of all, the Stated Policies Scenario (STEPS) evaluated the outcome of the policies as they stand today. Next to that, the Announced Pledges Scenario (APS) looked at the expected results of governments reaching their aspired targets. Finally, the Net Zero Emissions by 2050 Scenario (NZE) looked at ways to achieve the aforementioned GHG-neutrality by 2050, resulting in a limited global average temperature increase to 1.5°C.[23]

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[14] COM(2022) 230 final, Brussels, 18 May 2022, 1. (hereinafter: the REPowerEU Plan)
[15] COM(2022) 108 final, Strasbourg, 8 March 2022, 1.
[16] *Ibid.*
[17] M. PAPATULICA and P. PRISECARU, "Trends of Primary Energy Consumption in EU- Its Dependence on Import" in M. Papatulica and P. Prisecaru, *Global Economic Observer*, Bucharest, 2016, Vol. 4, Iss. 2, 29.
[18] Paris Agreement, Paris, 12 December 2015, *Pb.L* 19 October 2016, Vol. 282/4..; COM(2016) 860 final, Clean Energy for All Europeans, Brussels, 30 November 2016.
[19] COM(2019) 640 final, Brussels, 11 December 2019. (hereinafter: The European Green Deal)
[20] IPCC, Sixth Assessment Report, Working Group III Contribution, *Climate Change 2022: Mitigation of Climate Change*, 4 April 2022; UNEP Emissions Gap Report 2022.
[21] The European Green Deal, 6.
[22] International Energy Agency, World Energy Outlook 2022, 30.
[23] *Ibid.*

14. The IEA made it clear that the energy-related emissions reductions under the STEPS-scenario would only limit the global average temperature increase to 2.5°C by 2100. Next to that, even under a perfect implementation and execution of governmental targets in the APS-scenario, the IEA concluded that the global average temperature increase would only be limited to 1.7°C, thus still falling short of the aforementioned 1.5°C limit under the Paris Agreement (see *supra* nr. 11).

1.1.4. Conclusion on the current EU energy supply.

15. Energy has been at the forefront of EU's policy since the very beginning of its existence. Despite this, the energy production within the EU has not been sufficient to provide the EU with enough energy, as a result of which the EU has become reliant on imported energy from external States. While a multitude of states export energy to the EU, a majority of the imported energy stems from a small number of suppliers, potentially leaving the EU exposed. At the same time, the EU energy supply has been heavily reliant on fossil fuels and reluctant to change throughout the years. With the overarching goals of the FitFor55- and Net Zero Emissions in mind, it is clear that a reassessment of the EU energy supply is in order, from the point of view of energy security.

1.2. Conceptualizing energy security

16. Ever since its inception under the Treaty of Lisbon in 2009, the European energy policy has been enshrined in article 194 TFEU.[24] There, within the confines of the EU internal market as well as the overarching objective of improving the environment, the main goals of the EU energy policy are set out. They consist of ensuring the functioning of the energy market, ensuring security of energy supply, energy efficiency and energy saving, as well as the development of new and renewable forms of energy and interconnection of energy networks.[25]

17. As other authors have done, these objectives can be grouped together and ascribed to the three different pillars of the EU's energy policy, those being efficiency, sustainability and security of energy supplies.[26] As such, a parallel can be drawn between the concept of 'energy security' and 'security of energy supply, with both being synonymous for each other.[27]

18. Despite the importance of the concept 'energy security' as one of the pillars of the energy policy, a clear definition is not available. While the topic has been discussed ever since the 1970s oil crisis, the discussion has consistently changed course to include different criteria, sectors and issues without coming to a generally accepted consensus.[28] In that vein, the Commission defined it in 2001 as "*the immediate and longer term availability of a diverse range of energy products at a price which is affordable to all consumers (domestic and industrial) while respecting environmental*

[24] Art. 194 TFEU.; P. THIEFFRY, *Manuel de droit Européen de l'environnement et du climat,* 2021, Bruylant, Bruxelles, 23.
[25] Art. 194(1) TFEU.
[26] See eg. C. WINZER, "Conceptualizing energy security", *Energy Policy* 2012, Elsevier, Amsterdam, vol. 46, 36.
[27] See also B. KRUYT, D.P. VAN VUUREN ea., "Indicators for energy security", *Energy Policy* 2009*,* Elsevier, Vol. 37, 2166-2181.; C. WINZER, "Conceptualizing energy security", *Energy Policy* 2012, Elsevier, Amsterdam, vol. 46, 36-48.
[28] See eg. B. KRUYT, D.P. VAN VUUREN, H.J.M. DE VRIES and H. GROENENBERG, "Indicators for energy security", *Energy Policy* 2009*,* Elsevier, Vol. 37, 2166.; A. CHECCHI, A. BEHRENS and C. EGENHOFER, "Long-Term Energy Security Risks for Europe: A Sector-Specific Approach", *CEPS* 2009, No. 309, 1.

requirements."[29] A different study, executed on behalf of the European Parliament's Committee on Foreign Affairs, instead approached the topic of energy security by assessing the negative impacts of "*energy insecurity"* on private actors, rather than looking at it from a positive approach.[30]

19. Discussion even remained regarding the importance of the topic, as a 2009 study by CHECCHI et al. showed by differentiating between entirely contrasting views of economists and policy analysts, whereby economists considered the topic of energy security a non-topic altogether under the guise of the free market, while policy analysts such as YERGIN considered it a matter of national security, akin to the 1980's oil crisis situation.[31]

20. The long devised, and reasonably accepted, theory of the 4 A's, those being Availability, Accessibility, Affordability and Acceptability will serve as the baseline with regards to defining energy security for the purpose of this work. While these criteria can serve as possible elements of what constitutes energy security, a subsequent chapter will demonstrate why they should not be applied without question by outlining their shortcomings and hiatus, after which a new structure of what constitutes energy security will be proposed.

1.2.1. The energy security framework according to the 4A-framework

1.2.1.1. The origins of the 4A-framework

21. Delineating the concept of energy security along the lines of the 4A-framework has long been standard practice.[32] Their most likely origin stems from a so-called 5A-framework in a 1984 article describing access to healthcare, after which they were likely copied and reused in the energy field.[33] This should not be seen as surprising, given that a minor overlap was already in order with other studies in the energy field. A 2007 report by the *'Asia Pacific Energy Research Centre'* (APERC) saw it build its report on energy security in Asia around the 4A-framework.[34]

22. Notwithstanding this elongated and perhaps somewhat dubious history of the 4A-framework, it still finds widespread support among scholars and institutions. The IEA for example, defined energy security in 2010 as *"the uninterrupted physical availability at a price which is affordable, while respecting environment concerns".*[35] In this definition, three of the four indicators of the 4A-framework can be determined, those being Availability, Affordability and Acceptability.[36] It did the same in 2014, in that case defining it as "*the uninterrupted availability of energy sources at an*

[29] EC COM(2000) 769 final, "Green Paper: Towards a European strategy for the security of energy supply", EC, Brussels, 2000, Annex 1, 2.
[30] J. H. KEPPLER, "International Relations and Security of Energy Supply: Risks to Continuity and Geopolitical Risks", Brussels, European Parliament 2007, 39.
[31] A. CHECCHI, A. BEHRENS ea., "Long-Term Energy Security Risks for Europe: A Sector-Specific Approach", CEPS 2009, No. 309, 1.
[32] See also A. CHERP and J. JEWELL, "The concept of energy security: Beyond the four A's" in *Energy Policy*, Elsevier 2014, Vol. 75, 415-421.; L. PROSKURYAKOVA, "Updating energy security and environmental policy: Energy security theories revisited" in *Journal of Environmental Management*, Elsevier 2018, Vol. 223, 203-214.
[33] R. PENCHANSKY and J.W. THOMAS, "The concept of access: Definition and relationships to consumer satisfaction" in *Medical Care*, Vol. 19, 127-140.; A. CHERP and J. JEWELL, "The concept of energy security: Beyond the four A's" in *Energy Policy*, Elsevier 2014, Vol. 75, 415-421.
[34] APERC, "A quest for energy security in the 21st century", Institute of Energy Economics, Japan, 2007.
[35] IEA, 2010.
[36] L. HUGHES, "Generic Framework for the description and analysis of energy security in an energy system" in *Energy Policy*, Elsevier 2012, 221-231.

affordable price".[37] These three A's, together with Accessibility, form the 4 A's of the 4A-framework which the IEA considered to be, at least in part, a good way of delineating energy security.

1.2.1.2. Availability

23. The first of the 4 A's discussed in the APERC report concerns the Availability of energy sources.[38] Regrettably, yet unsurprisingly given the timeframe, here the report only focuses on oil, natural gas, coal and nuclear energy without mentioning renewable energy. The general idea concerning the availability of energy resources revolved around a comparison between the public demand of certain energy sources and the adequacy of the existing supply to meet this demand. This notion of availability was later confirmed, albeit in the form of *"absolute availability or physical existence",* thereby accepting that fossil fuels are limited.*[39]*

24. While the 2007 APERC report didn't mention the availability of renewable energy sources, it did acknowledge the importance of reducing carbon emissions by referring to economies changing their electricity generation from fuel oils to natural gas for that very reason. Given this acknowledgement, it stands to reason that the Availability-criteria of the 4A-framework also applies to renewable energy and refers to the question: "Do the resources, required to create renewable energy, physically exist and are they available?"

1.2.1.3. Accessibility

25. Next to Availability, the APERC-report noted Accessibility as its second pillar of energy security, which it understood to be the ability to access the available energy resources, in light of possible political, geographical, economic, workforce as well as technological barriers.[40] Concerning the potential political and geopolitical barriers, the APERC report once again refers mainly to the uneven distribution of global oil reserves across the globe and the inability to access certain oil reserves in areas with a lack of expertise on how to do so. Naturally, this lack of expertise can also present itself in the absence of necessary technology, be that as a result of the technology not being accessible, or not being advanced enough to access the available energy altogether.

26. While the APERC report mainly focused on oil and other fossil fuel-related energy sources, it acknowledged the application of these accessibility barriers to renewable energy sources.[41] With regards to potential financial or economic barriers limiting access to renewable energy, the APERC noted that a major barrier exists in elevated initial capital costs, essentially referring to the higher purchase price of renewable energy as compared to conventional energy sources. The APERC report therefore suggested financial subsidisation for both Research and Development as well as installation.

27. Next to the financial barriers regarding renewable energy, the report also noted the problematic technological advancements on renewable energy. In doing so however, the report mainly noted a necessary transfer of information from developed countries to developing countries, where renewable

[37] IEA, 2014.
[38] APERC, "A quest for energy security in the 21st century", Institute of Energy Economics, Japan, 2007, 7.
[39] B. KRUYT, D.P. VAN VUUREN ea., "Indicators for energy security", *Energy Policy* 2009*,* Elsevier, Vol. 37, 2166-2181.
[40] APERC, "A quest for energy security in the 21st century", Institute of Energy Economics, Japan, 2007, 19-25.
[41] APERC, "A quest for energy security in the 21st century", Institute of Energy Economics, Japan, 2007, 24-25.

energy was only used on a small, rural scale.[42] It should be noted that this technological barrier can also be seen in a broader sense, in that even developed countries with an established uptake of renewable energy can encounter such barriers insofar as the lack of technological advancements halts a continued uptake of renewable energy.

1.2.1.4. Affordability

28. While the economic barriers regarding renewable energy affect the accessibility of energy sources in a financial way(see *supra* nr. 26), the affordability of energy sources in general is seen as an independent element under the 4A-framework. Applied to energy sources outside renewable energy, such as oil and natural gas, the main issue regarding affordability concerns the price-volatility. As put forward in the APERC report, multiple factors affect the energy- and energy source prices. Geopolitical tensions, supply-and-demand imbalances as well as lingering volatility-effects creating a vicious cycle of uncertainty were given as possible examples in the APERC report.[43] As such, the Affordability-criterium of the 4A-framework either relates to the general purchase price of energy or energy sources, or the volatility in fluctuations of these prices.

1.2.1.5. Acceptability

29. Finally, the element of acceptability in the 4A-framework is mainly tied to the environmental concerns surrounding the generation and usage of energy. Even in 2007, the energy demand was expected to increase dramatically by 2030, as a result of which energy-related pollution was expected to react accordingly.[44] Policy-reactions in the form of environmental regulations, as well as environmental awareness, could therefore make certain energy sources less acceptable than others, or no longer acceptable altogether.

30. Interestingly however, based on the interpretation of acceptability as being mainly tied to environmental concerns, the inclusion of the acceptability-pillar in EU energy security requires a deviation from the pre-existing notion that energy security is synonymous for security of supply. This synonymity was discussed earlier (see *supra* nr. 17), whereby the second pillar of the EU energy policy revolved around 'sustainability', whereas the 'security of energy supply' was seen as a separate pillar. This distinction can no longer be made under the 4A-framework, as the second pillar of EU policy related to sustainability is now explicitly included within the so called 'third pillar' of the EU energy policy.

1.2.2. Energy security as "Low vulnerability of vital energy systems"

31. A more recent, novel approach considers energy security as the "low vulnerability of vital energy systems."[45] This approach clearly hinges on a two-part definition, relying on both a sufficiently distinct delineation of what is considered a "*vital energy system"* as well as a clear understanding of when these systems are considered to have "*low vulnerability"*.

[42] APERC, "A quest for energy security in the 21st century", Institute of Energy Economics, Japan, 2007, 25.
[43] APERC, "A quest for energy security in the 21st century", Institute of Energy Economics, Japan, 2007, 35.
[44] APERC, "A quest for energy security in the 21st century", Institute of Energy Economics, Japan, 2007, 27.
[45] J. JEWELL, A. CHERP and K. RIAHI, "Energy security under de-carbonization scenarios: An assessment framework and evaluation under different technology and policy choices", *Energy Policy* 2014, Elsevier, Vol. 65, 743-760.

1.2.2.1. Vital energy systems

32. As the description at hand seeks to define energy security, the term "vital energy systems" should also be interpreted inside the scope of security. To that extent, the pioneering description defined it as "*those energy systems that support critical social functions*."[46] In a broader sense, these same pioneering authors also described them as *"energy systems whose failure may disrupt the functioning and stability of a society."*[47] By applying an open-ended description without limiting it to specific sectors, the authors allowed for the description to not only be applied to existing but also future vital energy system, under the condition that they are deemed 'vital'.[48]

33. Which energy systems are considered to be vital is then dependent on both a *sectoral* and a *geographical* scope.[49] The sectoral scope can refer to either primary energy sources, energy carriers, end-users or compatibility across different sectors.[50] Within these sectors then, a designation as a vital energy system requires a closer inspection. On the other hand, the geographical scope could then be anything ranging from a global, national or even regional scope, although historically the main focus was a national scope.[51]

34. While these different scopes are certainly helpful with regards to which energy systems should be considered as being vital, the omission of clear criteria on when such an energy system is indeed 'vital' leaves the definition with a big hiatus. In this regard, the addition of *'supporting critical social functions'* is of little added value, as what is considered '*critical'* as well as which '*social functions*' it refers to, are both not clearly defined. Thus, the concept of '*vital energy systems'* is still left bereft of a clear subject.

1.2.2.2. Low vulnerability

35. Regarding vulnerability in relation to the definition at hand, the pioneering authors referred to a combination of apparent risks and the ability to withstand these risks.[52] These risks were categorized according to the longevity of the disruption (short term *shocks* and long term *stresses*), as well as the source of the risk (*physical* and *economic* risks.)[53] The possible sources of risk have however been broadened in recent years to include *natural, technical* and *political* risks.[54] As this assessment of low vulnerability will be included within the revision of the 4A-framework, further elaboration on these risks can be found there (see *infra* nr. 56).

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[46] A. CHERP and J. JEWELL, "The concept of energy security: Beyond the four A's" in *Energy Policy*, Elsevier 2014, Vol. 75, 415-421.
[47] J. JEWELL, A. CHERP ea., "Energy security under de-carbonization scenarios: An assessment framework and evaluation under different technology and policy choices", *Energy Policy* 2014, Elsevier, Vol. 65, 743-760.
[48] A. CHERP and J. JEWELL, "The concept of energy security: Beyond the four A's" in *Energy Policy*, Elsevier 2014, Vol. 75, 415-421.
[49] J. JEWELL, A. CHERP ea., "Energy security under de-carbonization scenarios: An assessment framework and evaluation under different technology and policy choices", *Energy Policy* 2014, Elsevier, Vol. 65, 743-760.
[50] R. LAL and S. KUMAR, "Energy security assessment of small Pacific Island Countries – Sustaining the call for renewable energy proliferation", *Energy Strategy Reviews,* Elsevier 2022, Amsterdam, Vol. 41, 100866.
[51] J. JEWELL, A. CHERP ea., "Energy security under de-carbonization scenarios: An assessment framework and evaluation under different technology and policy choices", *Energy Policy* 2014, Elsevier, Vol. 65, 743-760.
[52] A. CHERP and J. JEWELL, "The concept of energy security: Beyond the four A's" in *Energy Policy*, Elsevier 2014, Vol. 75, 415-421.
[53] *Ibid.*
[54] M. LALDJEBAEV, S. J. MORREALE, B. K. SOVACOOL and K.-A. S. KASSAM, "Rethinking energy security and services in practice: National vulnerability and three energy pathways in Tajikistan", *Energy Policy*, Elsevier 2018, Vol. 114, 39-50.

1.2.2.3. Limitations of the scope of "low vulnerability of vital energy systems"

36. The pioneering authors of this interpretation of energy security considered their definition to be sufficiently flexible to make it easily applicable as well as future-proof.[55] In light of the current EU energy policy (see *supra* nr. 16) as well as the Commission's interpretation of security of supply however (see *supra* nr. 18), this does not hold true. While the use of both geographic and sectoral boundaries in relation to the energy systems leads to a sufficiently delineated scope of application, the limitation of only looking at possible threats and vulnerabilities does not take the Commission's application of affordability and environmental sustainability into account.

37. Given that the interpretation of energy security as "low vulnerability of vital energy systems" does not take all the elements of the 4A-framework into account, it cannot suffice to address energy security from this point of view. As such, a return to the 4A-framework is merited, albeit that a preliminary interpretation of the question "*which vital energy systems*" is to be integrated, as this allows for a well-delineated scope of application upon which the 4A-framework can be applied.

38. Next to this preliminary question, an application of a risk-side approach of "*low vulnerability*" is to be integrated into the 4A-framework, as it provides solid touchstones for answering the relevant questions under the 4A-framework.

1.2.3. Revisiting the 4A-framework

39. The concept of "energy security" has been fluctuating throughout the years, with no final definition set in stone (see *supra* nr. 18). While the 4A-framework has long been in use as a solid reference-baseline and certainly has its merits, it is also not without question. Even early on, it was recognized that the notion of energy security is "highly context dependent."[56] While most sources accept availability and acceptability as applicable themes, albeit sometimes under the notion "physical accessibility or necessary infrastructure', the notions affordability and acceptability are far less widespread in their use. In that sense, the interpretation of energy security as meaning *"Low vulnerability of vital energy systems"* (see *supra* nr. 31), leans heavily on a protective vision of existing and potential future available and accessible vital energy systems, without taking acceptable economic and environmental current future alternatives into account.[57]

40. A difference even arises between the IEA and the European Commission, with both agreeing that there is a "need to provide sufficient energy supply for economic activity" (availability), "a need to supply this energy continuously, without interruptions" (accessibility) and "a need for affordable pricing" (affordability). Only the European Commission then adds environmental sustainability (acceptability) as a fourth pillar of energy security.[58]

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[55] J. JEWELL, A. CHERP ea., "Energy security under de-carbonization scenarios: An assessment framework and evaluation under different technology and policy choices", *Energy Policy* 2014, Elsevier, Vol. 65, 743-760.
[56] B. KRUYT, D.P. VAN VUUREN ea., "Indicators for energy security", *Energy Policy* 2009, Elsevier, Vol. 37, 2166-2181.
[57] J. JEWELL, A. CHERP ea., "Energy security under de-carbonization scenarios: An assessment framework and evaluation under different technology and policy choices", *Energy Policy* 2014, Elsevier, Vol. 65, 743-760.
[58] G. ESCRIBANO FRANCÉS, J.M. MARÍN-QUEMADA and E. S. M. GONZÁLEZ, "RES and risk: Renewable energy's contribution to energy security. A portfolio based approach", *Renewable and Sustainable Energy Reviews* 2013, Elsevier, Vol. 26, 549-559.

41. The fact that different institutions and studies explicitly or implicitly apply the 4A-framework in a different manner, thus defining energy security differently as well, shouldn't come as a surprise however. By their very nature, these institutions exist for different reasons, have different interests at heart and thus answer different questions when defining energy security. A 2011 study on behalf of the Nautilus Institute in the context of its "Pacific Asia Regional Energy Security (PARES) project sought to define energy security in a more encompassing manner as it based its definition on the broader term 'security' in both a military and non-military meaning.[59] Accordingly, it defined energy security along 6 dimensions. These either explicitly or implicitly included the 4A-framework, while also adding the dimension 'military security'.[60]

42. A different study, again aimed at the Asia-Pacific region, established an even broader definition of energy security by more explicitly incorporating both human and military security, as well as 'demand-side management' (not dissimilar to the European concept of energy efficiency) and 'domestic socio-cultural and political factors'.[61] This all lead to a definition of energy security consisting of 11 dimensions, divided into 44 attributes.[62] A final example in this regard is another 2011 study which considered energy security as a "*complex goal involving questions about how to equitably provide available, affordable, reliable, efficient, environmentally benign, properly governed and socially acceptable energy services.*"[63] Answering these questions resulted in a concept, consisting of 5 dimensions which were made up of 20 components, with no less than 320 (three hundred and twenty) simple indicators and 52 complex indicators.[64]

43. While these examples provide ample definitions, dimensions and components of energy security, a mere combining or merging of such studies could potentially lead to an ever-growing infinite list of dimensions, with no discernible clarity, improvement or ending. Indeed, a more profound and thorough reading of the provided studies as well as other comparable ones shows that this *modus operandi* is not the way forward. On the contrary, a more pragmatic approach presents itself based on these thorough readings, as these studies implicitly adhere to the 4A-framework, share the same overarching principles and seek to answer the same two main questions, albeit with varying levels of depth and specificity.[65]

44. The first recurring question regarding energy security looks at whose energy needs to be secured. As this can be interpreted to reflect either the energy security of an individual, institution, sovereign state or even supranational organisation, this question relates to either the personal scope or geographical scope of the 4A-framework. The second recurring question then concerns the flip side

[59] D. VON HIPPEL, T. SUZUKI, J.H. WILLIAMS, T. SAVAGE and P. HAYES, "Energy security and sustainability in Northeast Asia", *Energy Policy*, Elsevier 2011, Vol. 39, 6719-6730.
[60] D. VON HIPPEL, T. SUZUKI ea., "Energy security and sustainability in Northeast Asia", *Energy Policy*, Elsevier 2011, Vol. 39, 6719-6730.
[61] V. VIVODA, "Evaluating energy security in the Asia-Pacific region: A novel methodological approach", *Energy Policy*, Elsevier 2010, Vol. 38, 5258-5263.
[62] V. VIVODA, "Evaluating energy security in the Asia-Pacific region: A novel methodological approach", *Energy Policy*, Elsevier 2010, Vol. 38, 5258-5263.
[63] B.K. SOVACOOL and I. MUKHERJEE, "Conceptualizing and measuring energy security: A synthesized approach", *Energy*, Elsevier 2011, Vol. 36, 5343-5355.
[64] B.K. SOVACOOL and I. MUKHERJEE, "Conceptualizing and measuring energy security: A synthesized approach", *Energy*, Elsevier 2011, Vol. 36, 5343-5355.
[65] See also D. VON HIPPEL, T. SUZUKI ea., "Energy security and sustainability in Northeast Asia", *Energy Policy*, Elsevier 2011, Vol. 39, 6719-6730.; A. CHERP and J. JEWELL, "The concept of energy security: Beyond the four A's" in *Energy Policy*, Elsevier 2014, Vol. 75, 415-421.

of the pendant, in that the question is posed from what the energy supply needs to be protected, which threats exist that could endanger the security of supply, depending on the personal or geographical scope.

1.2.3.1. Security for whom?

1.2.3.1.1. Personal scope

45. One of the main reasons a ubiquitous definition of energy security is absent, lies in the fact that many, if not most studies ignore the question to whom it applies, which a 1998 study already defined as the '*referent object'.*[66] Indeed, this sentiment was already echoed by CHESTER in 2009 by stating that the energy security concept cannot be universally defined as it hinges on a variation of this exact referent object.[67] While earlier studies could perhaps justify the implicit assumption that their referent objects only concerned oil-importing industrial nations, given the 1970's and 1980's oil crisis, this assumption no longer holds true today.[68]

46. Indeed, the range of possibilities regarding the referent object of energy security has drastically increased in recent years. Whereas earlier studies only examined oil-importing industrial nations, nowadays also less developed nations or governments, as well as those importing and exporting different kinds of energy sources, are included.[69] As such, different kinds of energy need to be taken into account when looking at these different nations, leading to a different application of the 4A-framework.

47. In case the personal scope of the energy security-question relates to nations or governments, a further inquiry should be held into the geographical scope of this question. (see *infra* chapter 1.2.3.2.) Indeed, it is easy to imagine how interests differ between international or supranational institutions, independent nations, regional governments or even local governments, thus leading to a different interpretation of the concept of energy security.

48. Even more diverging from the personal scope of the initial studies on energy security concerns the inclusion of the interest of non-state actors, such as production networks, individual regions, utilities, enterprises as well as private entities and even consumers. Especially with regards to affordability and acceptability, the relevance of this distinction is clear. [70] What is affordable for a government, will likely not be affordable for a private entity or consumer. The inverse might also be true, as what is affordable for a consumer by virtue of government subsidies, might no longer be affordable for the government due to those very same subsidies.[71]

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[66] B. BUZAN, O. WÆVER and J. DE WILDE, *Security: A New Framework For Analysis*, Lynne Rienner Publishers, Boulder, USA, 1998, 36.
[67] L. CHESTER, "Conceptualizing energy security and making explicit its polysemic nature", *Energy Policy*, Elsevier 2010, 884-895.
[68] A. CHERP and J. JEWELL, "The concept of energy security: Beyond the four A's" in *Energy Policy*, Elsevier 2014, Vol. 75, 415-421.
[69] A. CHERP and J. JEWELL, "The concept of energy security: Beyond the four A's" in *Energy Policy*, Elsevier 2014, Vol. 75, 415-421.
[70] A. CHERP and J. JEWELL, "The concept of energy security: Beyond the four A's" in *Energy Policy*, Elsevier 2014, Vol. 75, 415-421.
[71] S., SHARIFUDDIN, "Methodology for quantitatively assessing the energy security of Malaysia and other southeast Asian countries", *Energy Policy*, Elsevier 2014, 574-582.

1.2.3.1.2. Geographical scope

49. As mentioned before, in case the personal scope of application regarding energy security relates to nations or governments, a secondary scope of application should open itself in the form of the geographical scope. (see *supra* nr. 47) This scope concerns the physical size of the government, nation, supranational or international governmental organisation in question, as they will all have different interests at heart which affect its definition of energy security differently.

50. The North Atlantic Treaty Organization (NATO) for instance, is an intergovernmental military alliance consisting of 30 Member States. It was created for the purpose of safeguarding peace on the territory of its Member States, with a reciprocal obligation for the Member States to defend each other as a collective should one of them be the victim of an armed attack.[72] While it is thus mainly a protective military organisation, NATO formally recognized energy security as one of its objectives in its 2008 Bucharest summit declaration and identified guiding principles along which it sought to address energy security issues.[73] As such, NATO recognizes energy security as part of its mandate, yet ascribes it a more military definition based on its intergovernmental structure and overarching military objectives.[74]

51. On a supranational level, the EU is especially of note as its interests are less related to military aspects but more to the establishment and safeguarding of its internal market.[75] This concept concerns the area within the EU without internal frontiers, wherein the freedom of goods, persons, services and capital is ensured.[76] At the same time, the competences of the European Union are limited in that it is bound by the principle of conferral.[77] As such, it can only act legislatively in matters where the Member States have conferred the competence to the Union.[78] Specifically with regards to its energy policy, it wasn't until the 2009 Lisbon Treaty for such competence to be conferred to the Union, after which its energy policy is based on article 194 TFEU.[79]

52. While the Member States found the inclusion of the energy policy into the internal market to be acceptable, they were not keen on relinquishing control over their energy sources, their choice between different energy sources and their general energy supply structure.[80] Such measures being taken by the EU was only allowed under the condition of the application of the special legislative procedure, requiring unanimity in the Council, thus safeguarding the Member States' own interest.[81]

53. Given this caveat, it is not surprising that the EU GHG emissions reduction targets set out in the European Green Deal (see *supra* nr. 11) in reality rely on obligatory national targets.[82] The realization

[72] Art. 5, North Atlantic Treaty, 4 April 1949.
[73] NATO, Bucharest Summit Declaration, 3 April 2008, nr.48.
[74] A.-M., BOCSE, "NATO, energy security and institutional change", *European Security*, Routledge 2020, Vol. 29, no. 4, 436-455.
[75] Art. 26(1) TFEU.
[76] Art. 26(2) TFEU.
[77] Art. 5(1) TEU.
[78] J. H. JANS and H.H.B. VEDDER, *European Environmental Law After Lisbon*, Europea Law Publishing, Groningen 2012, ed. 4, 13.
[79] P.,THIEFFRY, *"Handbook of European Environmental and Climate Law"*, 2021, Bruylant, Brussel, 23.
[80] Art. 194(2) TFEU.
[81] Art. 192(2)c TFEU.
[82] Art. 4(1), Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2023 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) 525/2013, *Pb.L.* 19 June 2018, Vol. 61, 26. (hereinafter: The Effort Sharing Regulation)

of these targets by the Member States is left to their discretion however, although compliance with their obligations can be monitored thanks to the obligation to install "national energy and climate plans".[83]

54. As such, here again the impact of the geographical scope on the interpretation of the 4A-framework, in light of the energy security-concept, is clear. While the environmental pillar of the EU energy policy is clearly present in the definition by the Commission (see *supra* nr. 18), this does not necessarily hold true for its Member States as they have retained control over their energy supply and must take other factors into account.

1.2.3.2. Security from which threats?

55. Once the personal or geographical scope has been defined, the following question relates to which potential threats apply to this scope and which threats are relevant to take into account. Indeed, many authors agree that the concept of security implies the existence of risks thereto.[84] As these risks and threats can take any shape, form or origin, an exhaustive summary is beyond the realm of possibility. Notwithstanding this impossibility, all threats share varying degrees of characteristics and can be categorized as such, providing a necessary framework for identifying threats to energy security.[85]

1.2.3.2.1. Categorizing the threats

56. The first differentiation between threats can be made according to the source of the risk. Here, a distinction can be made between *technical risk sources*, *human risk sources* and *natural risk sources*.[86] The first, perhaps most evident category refers to the physical or mechanical failure of energy infrastructure. A source of energy that yields a great amount of energy might seem favourable for energy security, yet if the required infrastructure is prone to technical failure, this technical risk could have an adverse effect on energy security.[87] The second source of risk stems from human behaviour or human choices. This ranges from increased demand to political choices, or even a war taking place.[88] A final source of risk concerns natural sources, by definition risks that arise without human interference. This could be a catastrophic event such as flooding, but also the absence of sunlight in relation to renewable energy or the intermittency of wind in relation to wind-energy.[89]

57. The second differentiating factor is that of the *scope* of the impact, which relates to how far-reaching the impact of the threat would be.[90] As pointed out by WINZER, many studies focus solely on the security and continuity of supply in relation to possible threats while in fact, the scope of

[83] Art. 4, Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, *Pb.L.* 21 December 2018, Vol. 61, 1. (hereinafter: The Governance Regulation)
[84] C. WINZER, "Conceptualizing energy security", *Energy Policy* 2012, Elsevier, Amsterdam, vol. 46, 36-48.; J.P. RUTHERFORD, E. W. SCHARPF and C. G. CARRINGTON, "Linking consumer energy efficiency with security of supply", *Energy Policy*, Elsevier 2007, Vol. 35, 3025-3035.
[85] See A. CHERP and J. JEWELL, "The concept of energy security: Beyond the four A's", *Energy Policy*, Elsevier 2014, Vol. 75, 415-421.
[86] C. WINZER, "Conceptualizing energy security", *Energy Policy* 2012, Elsevier, Amsterdam, vol. 46, 36-48.
[87] N.K. SVENDSEN and S.D. WOLTHUSEN, "Connectivity models of interdependency in mixed-type critical infrastructure networks", *Information security technical report 12*, Elsevier 2007, 44-55.
[88] C. WINZER, "Conceptualizing energy security", *Energy Policy* 2012, Elsevier, Amsterdam, vol. 46, 36-48.
[89] G. C. VAN KOOTEN, "Wind power: the economic impact of intermittency", *Letters in Spatial and Resource Sciences*, 2010, Vol. 3, 1-17.
[90] C. WINZER, "Conceptualizing energy security", *Energy Policy* 2012, Elsevier, Amsterdam, vol. 46, 36-48.

impact of the threat may be broadened to include effects on human safety or environmental protection, rather than focus entirely on the supply chain.[91]

58. Finally, the third main differentiating factor between threats affecting energy security relates to their severity. This severity is defined by a number of different factors as defined by WINZER. The first factor, defined as the speed of the threat impact, relates to how fast the threat materializes. The main difference lies between quickly occurring threats, i.e. *fast shocks*, and threats that build up over time, the *slow stresses.* The former can be exemplified by referring to sudden technical failures, whereas the latter is best demonstrated in light of this thesis by referring to the slow increase of greenhouse gas emissions.[92]

59. Next, the size of the impact was defined by WINZER as the magnitude of the changes. Here again, the main difference is made between *small threats* and *systemic threats*, whereby the small changes only have a minor effect, while systemic changes carry a far broader effect, possibly bringing with it changes to the energy supply system as a whole.

60. Another important factor in determining the actual threat relates to the duration of its effect. An apt distinction was made by WINZER in differentiating between *"transitory impacts, sustained impacts and permanent impacts."*[93] Transitory threats can be seen as small, passing interruptions, while sustained impacts have a more prolonged effect. Under the condition of a given amount of certainty, or due to the passing of a considerable amount of time, this impact could even be considered permanent.

61. A final deciding factor in determining the severity of the threat concerns the possible repetition of the threat occurring. A singular, non-repeating event which only takes place once, might be considered a less severe threat in that regard than a threat which has a high likelihood of recurring more frequently. Such a threat to the energy supply could therefore be considered more severe than a singular event.

1.2.3.3. Resilience to threats

62. The existence of threats to energy security automatically assumes the necessity for resilience to these threats, i.e. how well an energy supply is able to cope with the disruptions these threats cause, or prevent their existence altogether.[94] Achieving such resilience can be achieved in a variety of ways, whereby the main differentiating factor relates to who is best placed to counter or prevent the threat.

63. For example, a top-down approach mainly relates to the possibility of international and supranational law, as well as its relevant institutions to react by changing legislation, according to these disruptive changes. While a certain level of flexibility and adaptive capacity is enshrined within a legal framework in the form of open-ended wording and the use of evolutive interpretation, the

[91] *Ibid.*
[92] *Ibid.*
[93] *Ibid.*
[94] B. BARTON, "Building Resilience from the Ground Up", *Resilience in Energy, Infrastructure and Natural Resources Law*, Oxford University Press 2022, 327-341.

top-down approach is hampered in that it is heavily reliant on political will.[95] This holds especially true in supranational institutions that apply both binding regulations and non-binding regulatory works that require further national implementation, such as EU directives. In that regard, even disruptions to data systems were considered to potentially have an impact on energy systems and in turn distort energy supply. As these disruptions were considered to have a "*cascading effect"*, a single binding legal framework was deemed necessary to increase resilience to these disruptions.[96] As such, the adoption of a new legal framework as a top-down approach was required to heighten resilience to these kinds of threats.[97]

64. On the other hand, examples of a bottom-up approach seek to increase energy supply resilience from within the energy supply by changing its characteristics. To this extent, the question was posed whether the security of supply could even be improved by adopting changes to the demand side. Such increases in resilience were envisioned through increased local production of energy and use of local resources, thereby decreasing import dependency.[98]

1.3. Indicators of energy security

65. Assessing the resilience to different threats requires an in depth analysis of the specific energy supply and its characteristics, which is often not feasible as it requires specific knowledge and insights into vast amounts of data. While such data can be summarized in *complex or aggregated indicators*, such indicators often still rely on similar complex formulas and data, leading to reduced clarity.[99] A more usable form of energy security assessment relies on the use of *simple indicators*, able to provide a useful tool for energy security assessment. As these indicators are simplified representations of complex data, it should be noted that such an assessment does not go beyond a *prima facie* energy security assessment. In what follows, a number of different energy security indicators will be discussed that carry significant importance in relation to this thesis.

1.3.1. Simple indicators

66. Having assessed the definition of energy security under a revised 4A-framework, including an introductory exploration of ways the supply of energy can be made resilient to possible threats, it is clear that the concept of energy security remains very context dependent. Regardless of this difficulty, certain aspects of the supply of energy can indeed serve as *prima facie* indicators of a secure supply of energy, depending on the context, personal and geographical scope.[100] Naturally, none of these indicators serve as definitive proof of energy security and a careful balancing act is still required.

[95] C. REDGWELL, "Building Resilience from the Top Down? The Role of International Law and Institutions", *Resilience in Energy, Infrastructure, and Natural Resources Law,* Oxford University Press 2022, 32-44.
[96] M. M. ROGGENKAMP, "Resilient Energy Systems in the European Union", *Resilience in Energy, Infrastructure, and Natural Resources Law,* Oxford University Press 2022, 67-83.
[97] *Ibid.*
[98] B. BARTON, "Building Resilience from the Ground Up", *Resilience in Energy, Infrastructure and Natural Resources Law*, Oxford University Press 2022, 327-341.
[99] B. KRUYT, D.P. VAN VUUREN ea., "Indicators for energy security", *Energy Policy* 2009*,* Elsevier, Vol. 37, 2166-2181.
[100] B. KRUYT, D.P. VAN VUUREN ea., "Indicators for energy security", *Energy Policy* 2009*,* Elsevier, Vol. 37, 2166-2181.

1.3.1.1. Resource reserves

67. A first possible indicator of energy security refers to the existence of ample reserves of an in-use resource. It stands to reason that a resource in high demand for the production of energy, requires vast amounts of reserves to be able to guarantee the future production and provision of energy. In that regard, KRUYT et al. also refer to the "*reserves to production ratios"*, as the rate of production also affects the amount of required reserves.[101] For the purposes of this work, this element will not be further explored as this requires a more economic exploration.

1.3.1.2. Diversity of resources

68. A more evident indicator of a secure energy supply relates to the diversification of the provided energy sources and resources, both on a material and geographic scale. The need for diverse fuel sources was already recognized by the Commission in 2000.[102] However, also on a geographic scale the lack of diversity in sources could lead to additional political threats to energy security. With regard to this indicator, the importance of the personal scope of the security of supply becomes more relevant however. It stands to reason that while a diversified portfolio of energy resources from a multitude of geographical locations provides a secure supply of energy from a governmental point of view, a diversified portfolio of energy sources on a personal level requires more infrastructure, thus decreasing affordability and reducing the personal energy security. To this extent, the combination of regular energy infrastructure, the purchase of photovoltaic solar panels as well as perhaps a personal windmill serve as an example of decreased affordability but increased diversity.

1.3.1.3. Import dependence

69. Related to the previous indicator, not only the geographical diversity of imported energy resources matters in relation to energy security, but also the proportional amount of imported energy when compared to internally produced energy can serve as an indicator for energy security. A high level of import dependency could relate to a decreased energy security due to a minimal energy self-sufficiency.[103]

1.3.1.4. Political stability

70. Another noteworthy indicator of energy security relates to the political stability of a *'supplier country.'*[104] This indicator is less straightforward and can even be misleading in relation to the security of supply, as the existing political stability does not guarantee future stability and reliability.[105] The impact of political stability was one of the main concerns regarding the ineptitude of a top-down resilience approach, as examples show that many treaty amendments failed to realise as a result of a lack of political agreement and political will.[106] As such, political stability is mainly of

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[101] *Ibid.*
[102] Comm. (EC) COM(2000)769 final, "Green paper: 'Towards a European strategy for the security of energy supply', EC Commission, Brussels, 29 November 2000, Annex 1, 2.
[103] B. KRUYT, D.P. VAN VUUREN ea., "Indicators for energy security", *Energy Policy* 2009*,* Elsevier, Vol. 37, 2166-2181.
[104] *Ibid.*
[105] J. LILLIESTAM and S. ELLENBECK, "Energy security and renewable electricity trade – Will Desertec make Europe vulnerable to the "energy weapon"?", *Energy Policy*, Elsevier 2011, Vol. 39, 3380-3391.
[106] C. REDGWELL, "Building Resilience from the Top Down? The Role of International Law and Institutions", *Resilience in Energy, Infrastructure, and Natural Resources Law,* Oxford University Press 2022, 32-44.

concern regarding top-down energy resilience, and should carry less weight regarding energy security on a practical level.

1.3.1.5. Energy pricing

71. Under the 4A-framework, affordability is one of the main pillars and relates to either the general purchase price or the possible fluctuations in price. (see *supra* nr. 28) Here again, the personal scope of application is of great importance however. In the hypothesis that a natural person wishes to purchase renewable energy sources, the energy price for that person would be relatively high given the purchase price of the installation while at the same time being low for the government. That same situation under the provision of government subsidies reverses the financial situation, with the relative energy price for the individual being very low, while suddenly becoming far more expensive for the government due to the applied subsidies.[107]

1.3.1.6. Emissions reduction measures

72. A final, more recent indicator of energy security is tied to the rise in interest regarding environmental standards and the mandatory reduction of GHG-emissions (see *supra* nr. 11). A source of energy or production of energy with reduced emissions will naturally reduce the environmental impact of the energy supply, thus making it more sustainable.[108] At the same time, it will also remain up to date with mandatory reductions for a prolonged period of time, thereby once again making it more futureproof, which also increases energy security.

1.4. Applying the revised 4A-framework to the EU energy supply

73. Having examined the energy supply within the EU as well as having set out a revised approach regarding energy security, an application of this approach to the EU energy supply presents itself. As such, this application will first pose the preliminary question regarding whose energy needs to be secured by assessing the construction of the EU energy supply. Based on this scope, the 4 A's will be applied separately, taking into account possible vulnerabilities from a threat-oriented approach. In this context, reference will be made to the presence of existing security indicators limiting such vulnerabilities, as well as the eventual absence or limitations of said security indicators, highlighting where the EU energy supply is potentially vulnerable.

1.4.1. Setting the scope of the EU energy supply

1.4.1.1. Security for whom?

74. Under the revised 4A-framework, the first part of the first preliminary question relates to the referent object of the energy security. (see *supra* nr. 45) While this term has evolved over the years to also include non-state actors (see *supra* nr. 48), it relates to energy security on a governmental level within the framework of the EU energy supply and energy policy. As such, the second part of the first preliminary question on the geographical scope also needs answering.

[107] S., SHARIFUDDIN, "Methodology for quantitatively assessing the energy security of Malaysia and other southeast Asian countries", *Energy Policy*, Elsevier 2014, 574-582.
[108] D. VON HIPPEL, T. SUZUKI ea., "Energy security and sustainability in Northeast Asia", *Energy Policy*, Elsevier 2011, Vol. 39, 6719-6730.; M. RADOVANOVIC, S. FILIPOVIC and D. PAVLOVIC, "Energy security measurement – A sustainable approach", *Renewable and Sustainable Energy Reviews*, Elsevier 2017, Vol. 68, 1020-1032.

75. To this extent, the relevance of the principle of conferral under which the EU operates (see *supra* nr. 51) must be reiterated. While the general EU energy policy has been conferred to the EU under article 194 TFEU, the actual decisions regarding Member State energy supply and energy mix have been left to the Member States. As such, the actual implementation of the EU energy policy happens at the member state level, as a result of which the geographical scope of the EU energy security actually lies with the Member States. The EU energy security and the Member State energy security are therefore closely intertwined. While not feasible within the confines of this thesis, a solid assessment of EU energy security within the revised 4A-framework would require an assessment of the energy supply structure of all 27 EU Member States separately.

76. The principle of conferral could however also prove to be a potential hurdle in reaching the EU's climate and energy objectives, which both the Parliament and the Council recognize. As an example, the Parliament and the Council considered the possibility of imposing mandatory national RES-share targets in the context of a proposed amendment to the RED II Directive, yet understood that doing so would create subsidiarity issues.[109] With this in mind, it is clear that the principle of conferral proved a significant hurdle, showing that the scope of article 194 TFEU should potentially be broadened in the future in case the current national targets and non-mandatory trajectories prove insufficient in hitting their mark.

1.4.2. Applying the 4 A's to the EU energy supply

1.4.2.1. Availability of the EU energy supply

77. As was seen earlier, the current EU energy supply consists mainly of internally produced energy as well as imported energy (see *supra* nr. 6). The internally produced energy consists of almost 70% coal, oil or natural gas-derived, as opposed to around 17% renewables-sourced and almost 13% nuclear heat-sourced. A similar statistic relates to the imported energy, showing a reliance of up to 90% of the EU gas consumption being imported gas. According to 2018 Eurostat data, the combined gross available energy showed a 72.4% share of fossil fuels for the EU.[110] Such energy sources are finite by their very nature. At the time of this writing however, there are still plenty of natural reserves of coal, oil and natural gas present on a global scale. As such, the availability aspect of energy security on a global scale would not be at risk.

78. When applied domestically to the EU however, the availability of energy resources has the potential to pose a threat to EU energy security as the traditional, fossil fuel energy resources are scarcely allocated within the territory of the EU. As such, should the EU be forced to rely solely on its internal production of energy and its internal traditional energy sources, it becomes clear that the availability of energy sources within the EU would be insufficient. Under the categorized threats (see *supra* nr. 56), this would be identified as a natural risk source possibly affecting the entirety of the supply chain as well as human safety. Given that the insufficient availability of domestic energy sources would be ever-present, the severity of this threat can be further categorized as being a *slow stress, systemic, sustained or permanent threat.*

[109] COM(2021)557 final, Proposal for a Directive of the European Parliament and of the Council, Brussels, 14 July 2021, 29.
[110] Eurostat, "Energy data: 2020 edition", Luxemburg, Publications Office of the European Union, 17.

79. Regardless of the domestic availability of energy resources, maintaining the current EU energy supply structure could potentially lead to reduced energy security in the future, at least with regards to the availability of energy resources. While this thesis will not go into further detail on this topic, it stands to reason that fossil fuels are finite by nature. As such, at some point in the future those energy sources will start to run out. Should the overreliance on fossil fuels still exist within the EU energy supply at that point, it is clear that the availability-pillar would no longer be fulfilled.

1.4.2.2. Accessibility of the EU energy supply

80. Whereas the availability of the EU energy supply was mostly concerned with the existence of domestic energy resources, the accessibility of energy sources is especially relevant in the context of energy imports, as it provides the flip side of domestically available energy sources within the EU. As was stated earlier, the scarcity of traditional energy sources within the EU was defined as a *slow stress, systemic, sustained or permanent threat* to EU energy security. As a consequence of this threat, the EU is currently still heavily reliant on access to foreign energy sources through imports.

81. Such access is often granted through bilateral or multilateral political agreements, as is the case between the European Community and the Russian Federation.[111] While such agreements do grant the EU access to the necessary traditional energy sources, they also come with additional threats in the form of political choices to disband these multilateral agreements or unilaterally withhold the resources by revoking access to them.

82. Categorizing these threats is far less straightforward, as the severity of the threat is heavily dependent on the specific contents of the agreement itself. While the political choice itself is easily categorized as a *fast shock*, the *size* of the impact depends on the proportional relevance of the imported energy sources to the gross available energy. At the same time, the *duration* of the effect depends on the time that expires between the choice to withhold access and the potential reversal of this choice, as well as the internal response of the EU to this decision. Finally, the potential *repetition* of such a choice is very hard to take into consideration, given the multilateral political and diplomatic elements involved.

83. Indeed, the existence of such a threat proved itself in early 2022, when the Russian Federation unilaterally decided to severely limit the export of gas to the EU, at times even entirely halting all exports to certain EU Member States. The resulting energy crisis within the EU lead to the adoption of the REPower EU plan, in an attempt to detach the EU from Russian gas and prevent any repetition of such a crisis occurring.

1.4.2.3. Affordability of the EU energy supply

84. When assessing the affordability-pillar of EU energy security, it is paramount to keep the personal scope of the assessment in mind as it ties into the *scope* of the threat itself. In case said scope is limited to non-state organizations or even private individuals, it may seem reasonable to also limit the affordability assessment to the interests of the individual. However, in case this assessment reveals threats to the energy affordability of the individual, the scope of the assessment should be

[111] Council and Commission Decision of 30 October 1997 on the Agreement on partnership and cooperation establishing a partnership between the European Communities and their Member States, of one part, and the Russian Federation, of the other part., *Pb.L.* 28 November 1997, Vol. 40, 1.

broadened to also include possible applications of Member State subsidies or state aid. In such instances, the affordability would indeed increase for the individual while at the same time decreasing affordability and in turn energy security for the Member State as a result of the incurred costs.

85. Even here though, the affordability for Member States is tied into the accessibility pillar through the multilateral agreements. Indeed, depending on the national energy supply structure, such agreements could grant the supplying party excessive market power. It can even lead to a *de facto* monopoly within that national market, leading to artificial pricing, inflated mark-ups and general anti-competitive behaviour by the supplier.[112] Such behaviour is of course detrimental to the affordability of the energy sources and in turn, energy security as a whole.

86. The interconnectedness between affordability and accessibility goes both ways under the EU energy security assessment however. An unwillingness to pay artificially inflated prices by setting price caps at the demand-side would have immediate benefits on the affordability of energy sources, yet at the same time such actions would result in reduced access to the energy sources, thereby once again reducing energy security.[113]

1.4.2.4. Acceptability of the EU energy supply

87. Similar to the affordability assessment within the EU energy supply, the personal and geographical scope are of special interest with regards to the acceptability-pillar of the EU energy supply. As the acceptability of the energy supply mainly relates to environmental aspects, it was agreed earlier that it is an integral part of the EU energy security-concept (see *supra* nr. 30). Therefore, the interchangeability between energy security and security of supply can no longer be maintained with regards to the EU energy policy, as the acceptability-pillar has now become an integral part of EU energy security.

88. The same cannot be said for the EU Member States however, as they are free to choose their energy mix themselves, without binding GHG-emissions reduction targets. Due to the dichotomy of environmental and GHG-emissions reduction targets being binding for the EU as an institution, while simultaneously being *de facto* not binding for the EU Member States, the scope of assessment must be clearly defined.

89. As such, the acceptability-assessment can yield conflicting results between the EU and its Member States. Energy sources with negative environmental side-effects could still be deemed legally acceptable for Member States due to the non-binding nature of their obligations, while simultaneously being wholly unacceptable for the EU as an institution as a result of its binding targets. As such, applying the acceptability assessment results in differing impacts on energy security, depending on the referent object.

90. It is only when the environmental obligations and targets are made mandatory for the Member States, or the Member States consider environmentally sustainable energy sources as being vital for

[112] C. KONG CHYONG, D. M. REINER and D. AGGARWAL, "Market Power and Long-term Gas Contracts: The Case of Gazprom in Central and Eastern European Gas Markets", *The energy Journal,* IAEE 2023, Vol. 41, 55-73.
[113] Commission (EU) Speech, President von der Leyen, European Parliament Plenary on Russia's escalation of its war of aggression against Ukraine, Strasbourg, 5 October 2022.

futureproofing their energy supply, that both acceptability assessments will yield similar results and increase the EU energy security.

91. Even in relation to the personal scope, meaning on a citizen level, the impact of the acceptability-pillar is limited. Tied to the affordability aspect, the importance of environmental aspects was ranked far below the importance of pricing. As such, environmentally friendly energy sources are only acceptable so long as the energy pricing or purchase price is acceptable. Should the costs, incurred on a personal level, become too great, the environmental acceptability loses out to the affordability.

1.5. Conclusion regarding energy security of the EU energy supply

92. To summarise, the EU energy supply currently still relies heavily on both solid fossil fuels and natural gasses, with only a minority share of energy produced within the EU stemming from renewable energy sources. Such a limited share of energy sources with reduced emissions provides indicators for limited energy security within the EU in a number of ways. First, it leads to the conclusion that the diversity of energy sources stands to be improved, as a limited diversity of energy sources provides a solid indicator for reduced energy security. Second, a limited share of renewable energy sources means a limited amount of futureproof, environmentally sustainable energy production, a second indicator of limited energy security within the EU, within the confines of the acceptability-pillar under the 4A-framework.

93. Next to the limited uptake of renewable energy sources as an indicator of limited energy security, the elevated level of dependency on imported energy sources provides a third argument to support the conclusion that the current EU energy supply is limited in its energy security. This is only further enhanced by the fact that 45% of natural gas and 46% of all imported coal stems from Russia alone. Such a limited diversity of suppliers leaves the EU exposed to risks related to political instability and unfavourable geopolitical decisions, further decreasing energy security. As such, both the availability and accessibility of energy supplies under de 4A-framework stand to be affected.

Chapter 2. Renewable Energy Communities

94. The second chapter of the thesis first looks at the relevant existing EU legislative framework regarding renewable energy, as well as overarching international sources related to renewable energy and climate aspects.

95. Within this legislative framework, the focus shifts to an analysis of Renewable Energy Communities as a form of citizen energy initiative. While other citizen energy initiatives such as Citizen Energy Communities and Energy Clusters are also available for analysis, the choice is made to focus on Renewable Energy Communities as this form of citizen energy initiative requires the mandatory use of renewable energy sources. Within the overarching environmental and climate goals, as well as the 2050 EU climate neutrality goal, it is clear that the role of renewable energy is paramount. As such, the thesis focuses on an analysis of Renewable Energy Communities.

96. Once this analysis is made, the impact of Renewable Energy Communities on EU energy security is made in accordance with the revised 4A-framework.

2.1. EU Regulatory framework on Renewable Energy

2.1.1. Overarching international energy policy

2.1.1.1. The UNFCCC and Kyoto Protocol

97. On an international scale, the 1992 United Nations Framework Convention on Climate Change (UNFCCC) is widely considered the founding moment of international climate policy, with 165 nations as members. After ratification, the Convention foresaw a regular review of its implementation and interpretation within the Conference Of the Parties (COP).[114] In the context of the third COP in 1997, the members at the time agreed on the Kyoto Protocol which, together with the UNFCCC, formed the baseline for international climate policy. However, these documents were framed in such a way to tackle climate change by looking at it from the "*output side*", resulting in a focus on the reduction of emissions without exploring how exactly this would be achieved.[115]

98. As such, the use of renewable energy was rarely mentioned, relying on sectoral and governmental action to choose renewable energy as a form of reducing GHG emissions. Compounding onto this issue was the required quota of 55 partaking nations for the Kyoto Protocol to take effect, a condition that wasn't met until 2004, 7 years after its creation.[116]

2.1.1.2. The Paris Agreement

99. Building on the UNFCCC, the 2015 Paris Agreement recognizes the need to further reduce emissions and strengthen the response to climate change on a global level, as previous targets were not being met or deemed insufficient.[117] Indeed, the aim of the Paris Agreement is to keep the

[114] Art. 7 UNFCCC.
[115] B. HIRSCHL, "International renewable energy policy – between marginalization and initial approaches", *Energy Policy*, Elsevier 2009, Vol. 37, 4407-4416.
[116] W. STERK, H. OTT, B. WITTNEBEN and B. BROUNS, "It Takes Two to Tango – Climate Policy at COP 10 in Buenos Aires and Beyond", *Journal for European environmental & planning law,* 2005, Vol. 2, 84.
[117] Art. 2(1), Paris Agreement.

increase in global average temperature well below 2°C above 'pre-industrial levels', while simultaneously pursuing efforts to limit this increase to 1,5°C.[118]

100. Sadly however, the Paris Agreement again does not explicitly mention renewable energy or renewable energy sources, although this was the focal point of the COP21, in the context of which the Paris Agreement was adopted.[119] This should not come as a surprise however, as this is a mere continuation of the focus on the intended results and goals, without looking at how these would need to be achieved. (see *supra* nr. 97) To this extent, some authors consider it a missed opportunity to force the inclusion of renewable energy goals in the '*nationally determined contributions'*.[120] Nevertheless, the Paris Agreement does require both developed and developing nations to increase their low greenhouse gas emissions and climate-resilient development, relative to their different capabilities under the '*common but differentiated responsibilities*.[121] As such, the use of renewable energy is implicitly mentioned in the Paris Agreement, by relying on the partaking nations to include it in their measures to curb GHG-emissions.

2.1.1.3. Glasgow Climate Pact

101. In the context of the 2020 COP 26, the partaking nations once again came to an agreement on multiple topics, the decision of which was bundled in the "*Glasgow Pact".*[122] For example, the importance of healthy oceans was greatly emphasized during the talks.[123] Indeed, as a result of this emphasis, the Glasgow Pact invites the work programmes and relevant bodies to consider how the ocean-based actions can be integrated into the existing mandates and hold annual talks to strengthen these actions.[124]

102. Regrettably, the same can once again not be said for measures regarding renewable energy. Only a single implicit mention of renewable energy is found within the Glasgow Pact, in that it *"Calls upon Parties to accelerate (…) to transition towards low-emission energy systems, including (…) clean power generation (…).*[125] As such, the prevailing reliance on partaking nations to make the switch to renewable energy on their own persists once again, falling in line with the general consensus that the Glasgow Pact is to be considered a missed opportunity.[126] Remarkably though, the COP26 does seem to have inspired both individuals and businesses to reform their own energy sources and push

[118] Art. 2(1) a, Paris Agreement.
[119] S. CASSOTTA and M. M. SOKOLOWSKI, "Regulatory Models on Community Energy (CE) in a Multi-Regulatory Approach: Juxtaposing the Global, the EU, the Japanese and Swedish Cases", *European Energy and Environmental Law Review*, Elsevier 2022, 189-199.
[120] See also S. CASSOTTA and M. M. SOKOLOWSKI, "Regulatory Models on Community Energy (CE) in a Multi-Regulatory Approach: Juxtaposing the Global, the EU, the Japanese and Swedish Cases", *European Energy and Environmental Law Review*, Elsevier 2022, 189-199.
[121] Art. 2(2), Paris Agreement., Art. 4 Paris Agreement.
[122] UN, Decision -/CP.26. (hereafter: Glasgow Pact)
[123] D. LAFFOLEY, J. M. BAXTER, D. J. AMON, J. CLAUDET, C. A. DOWNS, S. A. EARLE, K. M. GJERDE, J. M. HALL-SPENCER, H. J. KOLDEWEY, L. A. LEVIN, C. P. REID, C. M. ROBERTS, R. U. SUMAILA, M. L. TAYLOR, T. THIELE and L. C. WOODALL, "The forgotten ocean: why COP26 must call for vastly greater ambition and urgency to address ocean change", *Aquatic conversation* 2022, Vol. 32(1) 217-228.
[124] Glasgow Pact, nr. 60-61.
[125] Glasgow Pact, nr. 20.
[126] W. OVERGASSEL, C. ARENS, C. BEUERMANN, V. BRANDEMANN, L. HERMWILLE, N. KREIBICH, H. E. OTT and M. SPITZNER, "TurningPoint Glasgow? An Assessment of the Climate Conference COP26", *Carbon & climate law review*, 2021, Vol. 15(4), 279-280.

for more renewable energy, in doing so increasing the "bottom-up" shift in reaction to climate change which has been sought after and relied upon for decades.[127]

2.1.1.4. Sharm El-Sheikh COP 27

103. A final potential source of international energy policy could be found in the context of the 2022 COP 27, which took place in November 2022. As many of the measures that were meant to be taken at COP 26 were postponed to COP 27, it proved a renewed opportunity to tackle climate change and curb the increase in global average temperature.[128] As such, the International Renewable Energy Agency (IRENA) considered it another possibility to share new insights on Renewable Energy Target-setting.[129] However, despite these insights, the main focus of the COP 27 was on the creation of a fund towards "loss and damage", sustained by vulnerable countries as a result of climate disasters.[130] In relation to renewable energy, the main noteworthy event was the creation of the *"Global Renewables Alliance"*, an alliance between all the relevant energy technology sectors to both achieve the energy transition and accelerate this transition. Other than that, the recurring reliance on members to increase the uptake of renewable energy sources on their own accord once again persisted.

2.1.2. EU framework on renewable energy

104. As has been mentioned throughout this work, the main metric of climate change is the increase in global average temperature (see *supra* nr.11). As such, it is an eminently global problem, requiring a global response. This response has consistently been expected to come from the bottom up however, since the inception of international climate policy itself. The EU recognized this as an opportunity to lead the way and therefore positioned itself as the global leader on climate change, by virtue of ample progressive policies and legislation.[131]

105. In what follows, a chronological overview of relevant European policies and legislation is explored, with individual attention to the presence of specific mentions regarding renewable energy sources.

2.1.2.1. 2009: Renewable Energy Directive I

106. In line with the goal of reducing GHG-emissions as required by the Kyoto Protocol and UNFCCC, and two years after the Lisbon Treaty made combatting climate change an integral policy goal, the EU realized that both control over energy consumption and an increased use of renewable energy were paramount.[132] While pre-existing Directives on renewable energy existed, these were mainly

[127] S. CASSOTTA and M. M. SOKOLOWSKI, "Regulatory Models on Community Energy (CE) in a Multi-Regulatory Approach: Juxtaposing the Global, the EU, the Japanese and Swedish Cases", *European Energy and Environmental Law Review*, Elsevier 2022, 189-199.
[128] L. DE BRUCKER, "Good COP or bad COP? Enkele nabeschouwingen bij de klimaatconferentie van Glasgow", *STORM* 2021, Vol.. 4, 25/01-13.
[129] IRENA, *Renewable energy targets in 2022, A guide to design,* International Renewable Energy Agency, Abu Dhabi, 2022.
[130] UN, "COP27 Reaches Breakthrough Agreement on New "Loss and Damage Fund for Vulnerable Countries", *UN Climate Press Release*, 20 November 2022.
[131] C. PARKER, C. KARLSSON and M. HJERPE, "Assessing the European Union's global climate change leadership: from Copenhagen to the Paris Agreement", *Journal of European Integration*, 2017, Vol. 39(2), 239-252.
[132] Preamble 1, 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, *Pb.L.* 5 June 2009, Vol. 52, 16. (Hereafter: RED I)

concerned with setting indicative targets for Member States and defining different types of renewable energy, and were perceived accordingly in RED I.[133] The Commission had already identified this as a potentially problematic situation in 2006 by stating "*The absence of legally binding targets for renewable energies at EU level, the relatively weak EU regulatory framework for the use of renewables in the transport sector, and the complete absence of a legal framework in the heating and cooling sector, means that progress to a large extent is the result of the efforts of a few committed Member States*."[134]

107. The concept of using such targets was therefore not entirely unfounded, yet mere indicative targets were deemed insufficient or impractical. Indeed, the Commission deemed mandatory targets a better fit for the cause, as it allowed for greater stability and sustainable investments.[135] At the same time, the European Parliament had highlighted the importance of setting such targets at both a Community level as well as at the Member State level.[136] With regards to the target at Community level, the Commission agreed to set a strict, mandatory target of 20% energy from renewable sources for the entirety of the European Community.[137] For a long time, it remained unclear how this target would be divided on a Member State level however. At first, the option of dividing the Community target based solely on the potential development of Member States was considered, yet this was quickly abandoned as this would lead to an uneven spread of obligations across the Member States, with newer Members bearing the brunt of the weight to catch up with older Member States.[138] As such, both the differing starting points as well as the renewable energy potentials needed to be taken into account when setting Member State targets.

108. In relation to these targets, the European Parliament explicitly requested the inclusion of mandatory interim targets and even sanctions upon failure to reach said targets, hoping to prompt Member States to take the appropriate, necessary measures.[139] These requests were not heeded however, as the Commission deemed it only possible for the Member State targets to be made mandatory by use of differing indicative trajectories.[140] As such, the Directive set forth an obligation for the Member States to create a "National renewable energy action plan", in which the Member States had to set out their national targets for energy from renewable sources, as well as their indicative trajectories.[141] While this obligation itself was mandatory, the targets therein were in essence not. Given that the Commission failed to include intermittent targets as well as sanctions upon failure to adhere to these targets, failing to stick to the indicative trajectory only lead to an

[133] Preamble 7, RED I.; Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market.; Directive 2003/30/EC of the European Parliament and of the Council of 8 May 2003 on the promotion of the use of biofuels or other renewable fuels for transport, *Pb.L.* 17 May 2003, Vol. 46, 42.
[134] Commission Communication, COM(2006) 848 final, Renewable Energy Road Map, Renewable energies in the 21st century: building a more sustainable future, 10 January 2007, 5.
[135] Preamble 8 RED I.
[136] Preamble 10, RED I.
[137] Preamble 8, 13 RED I, Art. 3, RED I.
[138] M. DEKANOZISHVILI, *Dynamics of EU Renewable Energy Policy Integration,* Palgrave Macmillan, Switzerland, 2023, 109.
[139] European Parliament (2006), European Parliament resolution on a European strategy for sustainable, competitive and secure energy – Green paper, (2006/2113(INI)).
[140] Preamble 15, RED I.
[141] Art. 4 (1), RED I.

obligation to submit an amended National renewable energy action plan containing the appropriate measures the Member State would take to return to its original indicative trajectory.[142]

2.1.2.2. 2014: Policy Framework for climate and energy in the period from 2020 to 2030.

109. Having made progress towards the GHG-emission reduction and renewable energy targets, it was deemed necessary to re-evaluate and adjust these targets when necessary.[143] To this extent, the European Council indeed concluded on multiple new targets with an increase in GHG-emissions reduction towards 40% by 2030, as compared to 1990, as the overarching goal.[144] Specifically in relation to energy from renewable sources, the Council concluded on a new binding EU target of at least 27% by 2030, based on a proposal by the Commission, thereby again reaffirming the importance of renewable energy in relation to the reduction of GHG-emissions.[145]

110. Once again, this target was to be reached through Member State contributions on the basis of a *"collective need to deliver the EU target"*, in line with previous points of view. To this extent, the Council agreed that a transparent governance system was required to reach this target, whereby it explicitly foresaw the need for an enlargement of the role and rights of consumers.[146]

2.1.2.3. 2018: Renewable Energy Directive II

111. Given that the 2009 Renewable Energy Directive had been heavily amended throughout the years, it was deemed advantageous to recast it in its entirety, rather than continue the practice of consecutive amendments.[147] This recast once again presented the EU with an opportunity to reaffirm its global leadership position on renewable energy, while simultaneously allowing the EU to be more ambitious in relation to its GHG-emission reduction and renewable energy targets.

112. As such, the target share regarding energy from renewable sources was once again updated, this time targeting at least a 32% share.[148] More importantly however, as was brought up in the 2014 policy framework (see *supra* nr. 109), the Parliament and the Council gave shape to the requirement to enlarge the role and rights of consumers in the energy provision, by adopting community energy initiatives as one of the pillars in the Directive.[149] Such active participation had once again been recognized by the EU in the 2015 Energy Union as being beneficial to the energy transition, as it would hand *ownership of the energy transition to the citizens*.[150] This belief holds

[142] Art. 4(4), RED I.
[143] European Council, 169/14 European Council, Brussels, 24 October 2014, 1.
[144] *Ibid.*
[145] A. HESHMATI, S. ABOLHOSSEINI and J. ALTMANN, *The development of Renewable Energy Sources and its Significance fort he Environment*, Singapore, Springer 2015, 1-175.
[146] European Council, 169/14 European Council, Brussels, 24 October 2014, 10.
[147] Preamble 1, Directive (EU) 2018/2001 of the Euroepean Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (recast), *Pb.L.* 21 December 2018, Vol 61, 82-209. (Hereafter: RED II)
[148] Art. 3(1), RED II.
[149] H. BUSCH, S. RUGGIERO, A. ISAKOVIC and T. HANSEN, "Policy challenges to community energy in the EU: A systematic review of the scientific literature", *Renewable and Sustainable Energy Reviews*, Elsevier 2021, Vol. 151, 111535.
[150] Preamble 76, RED II, jo. COM/2015/080, "EU Energy Union Strategy", 25 February 2015.

true to this day, and is seen as one of the most important innovations of the energy sector, although it does require the citizens to step away from a so-called "fit and forget"-mentality.[151]

113. To this extent, the RED II Directive foresaw in a legal framework for both "renewables self-consumers" as well as "renewable energy communities" as forms of community energy initiatives. Together with the separate concept of "citizen energy communities" as coined in the Internal Electricity Market Directive, these forms of community energy will be explored later (see *infra* nr. 128). While the legislative framework was first publicized for the EU in the RED II Directive, the division between "renewables self-consumers" and "renewable energy communities" falls in line with the differentiation based on either geographical location or a shared interest, as was already coined in 2008.[152]

2.1.2.4. 2019: European Green Deal and EU Climate Pact

114. Following the 2015 Paris Agreement, as well as part of the implementation of the United Nations 2030 Agenda and the EU Clean Energy Package, the EU set out the 2019 European Green Deal to reaffirm the EU's commitment to tackling climate change. As stated before, the main goal of the European Green Deal revolved around setting new targets for GHG-emissions reductions at -55% by 2030 and net-zero emissions by 2050 (see *supra* nr. 11). While the European Green Deal sought to reach this target through further decarbonisation of the energy system, its main focus was on further increasing energy efficiency.[153] This lead the Commission to propose a recast of the 2018 energy efficiency directive, further enhancing energy efficiency.[154] On the topic of renewable energy, the European Green Deal mainly reaffirmed the need to create a power sector based largely on renewable sources, whereby the power sector needed to involve and benefit consumers, in line with the provisions of the RED II Directive.[155]

2.1.2.5. 2021: European Climate Law

115. As was announced in the 2019 European Green Deal, the Commission had set out a goal for climate neutrality by 2050, which it sought to enforce and make irreversible by enshrining it in binding legislation, rather than in policy frameworks and directives.[156] This was indeed achieved by enshrining the framework for climate neutrality in the European Climate Law.[157] As such, it requires mentioning in the energy framework as it stands today, yet will receive little further attention.

[151] L. MARTIRANO, S. ROTONDO, M. KERMANI, F. MASSARELLA and R. GRAVINA, "Power Sharing Model for Energy Communities of Buildings", *IEEE transactions on industry applications*, 2021, Vol. 57 (1), 170-178.
[152] G. WALKER and P. DEVINE-WRIGHT, "Community Renewable Energy: What Should It Mean", *Energy Policy*, Elsevier 2008, Vol. 36(2), 497-500.
[153] European Green Deal, under 2.1.2.
[154] COM(2021) 558 final, 2021/0203(COD), Proposal for a Directive of the European Parliament and of the Council on energy efficiency (recast), Brussels, 14 July 2021.
[155] European Green Deal, under 2.1.2.
[156] European Green Deal, under 2.1.1.
[157] Reg.(EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No. 401/2009 and (EU) 2018/1999, *Pb.L.* 9 July 2021, Vol. 64, 1. (Hereafter: the EU Climate Law)

2.1.2.6. 2021: Amendment to Renewable Energy Directive II

116. In aiming to reach the -55% reduction in GHG-emissions by 2030, the EU deemed the then-existing 32% energy from renewable sources-target insufficient based on its Climate Target Plan.[158] According to this Target Plan, the 32% target was insufficient and needed to be replaced with a target between 38 and 40%. As the EU sought to be ambitious, the target was increased towards the top-end. As such, the target was indeed once again increased to at least a 40% share of renewable energy by 2030.[159]

2.1.2.7. 2022: REPower EU

117. In light of the unprovoked military aggression by the Russian Federation on Ukraine's territory, starting on 24 February 2022, the EU recognized the need to commence a reform of the EU's energy system by decreasing the dependency on Russian energy imports (see *supra* nr. 10). To this extent, the recent REPowerEU Plan further increased the targeted share of renewable energy to 45% by 2030, where it stands today.[160] A specific message was however targeted towards EU Member States in that they were explicitly requested to speed up the transposition of the Electricity Directive to allow for further consumer participation in energy markets, amongst others through the use of energy communities.[161] As such, the EU reaffirmed its 2018 vision for a more active consumer role, in continuance of the RED II Directive.

2.1.2.8. 2023: Commission proposal to improve the Union's electricity market design

118. A final Commission proposal worth mentioning was only just recently announced, on the 24th of March 2023, envisioning a reform of the EU electricity market.[162] This proposal is mainly concerned with tackling price volatility of consumer energy, as well as the related lack of flexibility of electricity grids. Both of these factors once again showed an overdependence on fossil fuels, highlighting the continued need to accelerate the deployment of renewable energy "*at a much faster pace".*[163]

119. While this proposal does not propose new targets for energy from renewable sources, it does provide, in no uncertain terms, a renewed motivation for a shift towards more active consumer participation. In doing so, it recognizes a need for increased financial support schemes, both for direct and indirect financial support.

2.1.2.9. Non-binding nature of the EU renewable energy framework

120. Throughout the history of the legislation on renewable energy, it becomes painfully clear that a consistently returning difficulty revolves around the non-binding nature of the legislation. Even on an international level, this was already prevalent in the Kyoto Protocol leading to a weak and troubled

[158] Communication from the Commission COM/2020/562 final, Stepping up Europe's 2030 climate ambition: Investing in a climate-neutral future for the benefit of our people, Brussels, 17 September 2020
[159] COM(2021)557 final, Proposal for a Directive of the European Parliament and of the Council, Brussels, 14 July 2021, 29.
[160] Commission Communication COM(2022) 230 final, REPowerEU Plan, Brussels, 18 May 2022.
[161] Commission Communication COM(2022) 230 final, REPowerEU Plan, Brussels, 18 May 2022, 11.
[162] Com(2023) 148 final, Proposal for a Regulation of the European Parliament and of the Council amending Regulations (EU) 2019/943 and (EU) 2019/942 as well as Directives (EU) 2018/2001 and (EU) 2019/444 to improve the Union's electricity market design, Strasbourg, 14 March 2023.
[163] *Ibid,* preamble 26.

enforcement. [164] Even the Paris Agreement suffered the same fate, as it is in theory legally binding through the EU level, yet its enforceability is severely limited on a domestic level. It relies on social, mental and institutional reform starting from the bottom up.[165] In essence, it relies on both social and political will for it to be enforceable.

121. While the EU sought to be more efficient, even within EU legislation this same problem reappeared. Already in RED I, the dichotomy of binding and non-binding targets was clear. While the target for the European Community was binding at 20%, the Member States' contributions were based on unsanctioned indicative trajectories, making them in essence non-binding. Even under the guise of the EU Clean Energy Package, this issue was only tackled indirectly within the recast RED II Directive which further introduced the right to share renewable energy in two forms.[166] On the one hand, jointly acting renewables self-consumers, on the other hand renewable energy communities.

122. Indeed, heightened enforcement by the Member States was envisioned together with the RED II Directive through the use of binding EU Regulation.[167] While the Governance Regulation did introduce mandatory "Integrated national energy and climate plans", it also fell short of introducing binding targets and sanctions with respect to renewable energy. The Governance Regulation mostly maintains the use of indicative trajectories, with the addition of binding percentual intermediate "reference points" the trajectory has to pass.[168] Given this indicative trajectory for Member States, as well as the envisioned role of sharing renewable energy as a main pillar of how this objective will be reached, a proper transposition of the RED II Directive is required, as this will unlock the potential for consumers to actively participate and carry this transition.

2.2. Renewable Energy Communities under the RED II Directive

2.2.1. Defining Renewable Energy Communities

123. Originating from within the EU Clean Energy Package, the constituting elements of energy communities are closely related to the organisation of such communities, rather than specific formal conditions that must be adhered to.[169] This is not all too surprising, as the definition of a Renewable Energy Community was sourced by merging organisational elements from pre-existing community energy movements.[170]

124. Given those circumstances, the RED II Directive defines a Renewable Energy Community as *"a legal entity, which, in accordance with the applicable national law, is based on open and voluntary*

[164] S. CASSOTTA, "The Paris Agreement in Logic of Multi-regulatory Governance: A Step Forward to a New Concept of "Global Progressive Adaptive-Mitigation"?", *European Energy and Environmental Law Review,* Elsevier 2016, 196-215.
[165] S. CASSOTTA, "The Paris Agreement in Logic of Multi-regulatory Governance: A Step Forward to a New Concept of "Global Progressive Adaptive-Mitigation"?", *European Energy and Environmental Law Review,* Elsevier 2016, 196-215.
[166] A. MANIATIS, "Approche de paquet "Énergie propre"", *Revue du droit de l'Union européenne*, Bruylant 2021, Vol. 3, 135-148.
[167] Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, *Pb.L.* 21 December 2018, Vol. 61, 1. (Hereafter: The Governance Regulation)
[168] Art. 4(a)(2), Governance Regulation.
[169] J. ROBERTS, "What Are Energy Communities Under the EU's Clean Energy Package?" in *Renewable Energy Communities and the Low Carbon Energy Transition in Europe*, Palgrave Macmillan 2021, Switzerland, 26-27.
[170] J. ROBERTS, "What Are Energy Communities Under the EU's Clean Energy Package?" in *Renewable Energy Communities and the Low Carbon Energy Transition in Europe*, Palgrave Macmillan 2021, Switzerland, 24.

participation, is autonomous, and is effectively controlled by shareholders or members that are located in the proximity of the renewable energy projects that are owned and developed by that legal entity; the shareholders or members of which are natural persons, SME's or local authorities, including municipalities; the primary purpose of which is to provide environmental, economic or social community benefits for its shareholders or members or for the local areas where it operates, rather than financial profits."[171]

125. Within this definition, four organisational elements relating to the legal character, its members or its way of operating can be distilled. Interestingly, all these elements have been categorized along the lines of either *procedural*, *substantive* or *recognition justice*, providing clear arguments that the use of renewable energy communities falls in line with the EU pursuit of a just transition.[172] These constituting elements will be discussed in the subsequent chapters.

2.2.1.1. A required legal entity

126. Under the RED II Directive, a citizen cooperation can only be classified as a Renewable Energy Community under the condition that it obtains a legal entity.[173] The term 'legal entity' is open-ended, leaving it to Member States' discretion to choose or limit the applicable legal entities in their implementing legislation.[174] While such an open-ended description reduces the accuracy of the definition, it was also a requirement given the variety in possible legal entities. To this extent, energy communities in general were observed in the shape of, amongst others, partnerships, co-operatives, community trusts, non-profit customer-owned enterprises and housing associations.[175] Within the EU, the creation of a RES Community was conceived around the notion of cooperative partnerships, based on three models relating to 'production and work cooperatives', 'purchase cooperatives' or 'mixed cooperatives.'[176]

127. This requirement for a legal entity seemingly does not preclude national implementation allowing for this legal entity to be comprised of other legal entities however, as can be seen in Italy.[177]

2.2.1.1.1. Juxtaposing against other citizen initiatives

128. The requirement of a legal entity already provides a major deviation from other forms of citizen initiatives, although this same criterium does apply regarding the 'Citizen Energy Community' which was envisioned together with the Renewable Energy Community in light of the Clean Energy Package.[178] A first distinction can be made between both Renewable Energy Communities and Citizen

[171] Art. 2(16) REDII.
[172] M. A. HELDEWEG and S. SAINTIER, "Renewable energy communities as 'socio-legal institutions': A normative frame for energy decentralization?", *Renewable and Sustainable Energy Reviews*, Elsevier 2020, Vol. 119, 109518.
[173] *Ibid.*
[174] Recital 71, RED II.
[175] J. ROBERTS, F. BODMAN and R. RYBSKI, *Community Power: Model legal frameworks for citizen-owned renewable energy*, Clientearth 2014, 86.
[176] A. DI MARCO, "Les communautés d'énergie renouvelable et la transition verte de l'UE", *Revue Juridique de l'Environnement* 2018, Vol. 43, 47-69.
[177] C. CANDELISE and G. RUGGIERI, "The Community Energy Sector in Italy: Historical Perspective and Recent Evolution" in *Renewable Energy Communities and the Low Carbon Energy Transition in Europe*, F. H. J. M. COENEN and T. HOPPE (eds.), Palgrave Macmillan, 2021, 97-118.
[178] Art. 2(11), Directive (EU) 2019/944 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. (Hereafter: The Electricity Directive or IEMD.); L. DE FONTENELLE, "Increasing the Resilience of the Energy System Through Consumers", *Resilience in Energy, Infrastructure, and Natural Resources Law,* 2022, 342-355.

Energy Communities on the one hand, and the concept of 'energy clusters' on the other. This concept lacks legal recognition and definition under EU law, yet is prevalent throughout the EU. Rather than the RES Community operating as a separate legal entity, an "energy cluster" constitutes a mere practical cooperation between different, independent legal entities on the basis of an agreement under civil law.[179] This distinction mustn't always be made however, as some existing RES Communities have essentially been found to operate and meet the criteria of a 'renewable energy cluster'.[180]

129. Regardless of the different parties being a legal entity or not, the operation of a 'cluster'-construction, which revolves around contract-based direct energy trading between market participants, is more closely comparable to a peer-to-peer trading construction.[181] Such a construction typically requires predetermined contractual conditions that both producers and consumers of energy have agreed to, allowing for a shared online platform to instantaneously match and trade energy between a producer and consumer.[182]

130. With regards to the requirement of a separate legal entity, another distinction must be made between RES Communities and 'Jointly acting renewables self-consumers', defined as *"a group of at least two jointly acting renewables self-consumers (…) who are located in the same building or multi-apartment block."*[183] As is evident from this definition, this constitutes a more local, pratical sharing of energy, whereby a separate legal entity is not required by law.

2.2.1.2. Shareholders and members of a RES community

131. Regarding participation in a RES Community, the RED II Directive opens up membership- and shareholder positions to three different possible categories, those being 'natural persons', 'small and medium-sized enterprises' or 'local authorities, including municipalities'.[184] All three categories are explored separately, after which a number of explicit or implied overarching principles regarding the membership and its consequences are discussed.

2.2.1.2.1. Natural persons

132. Under the REDII-Directive, the category 'natural persons' does not get a separate definition, yet the Directive refers to 'final customers' throughout. As such, this category is to be interpreted as consisting of persons who would be considered a customer in the traditional sense. This is reinforced as the Directive reserves an explicit mention for 'household customers' having their right to participate ensured by the Member States.[185] Even more specifically, special attention should be paid to vulnerable consumers, ensuring they are not left behind and underrepresented in RES

[179] D. DRAGAN, "Legal Barriers to the Development of Energy Clusters in Poland", *European Energy and Environmental Law Review,* Kluwer Law International, Alphen aan den Rijn, 2020, Vol. 29, nr. 1, 14-20.
[180] J. LOWITZSCH, C.E. HOICKA and F.J. VAN TULDER, "Renewable energy communities under the 2019 European Clean Energy Package – Governance model for the energy clusters of the future?", *Renewable and Sustainable Energy Reviews*, Elsevier 2020, Vol. 122, 109489-109462.
[181] See Art. 2(18) RED II.
[182] C. ZHANG, J. WU, Y. ZHOU, M. CHENG and C. LONG, "Peer-to-Peer energy trading in a Microgrid", *Applied Energy*, Elsevier 2018, Vol. 220, 1-12.
[183] Art. 2(15) RED II., L. DE DEYNE and D. VAN OVERLOOP, "Het EU *Clean Energy* Package biedt nieuwe mogelijkheden voor consumenten", *DCCR*, Larcier Intersentia, 2020, Vol. 129, nr. 4. 69-93.
[184] Art. 2(16), b, RED II.
[185] Art. 22(1) RED II.

Communities, keeping in mind the general notion of a just transition.[186] Mainly natural persons lacking the necessary financial means to participate in a RES community are considered such vulnerable consumers.[187] This heightened attention should be put at the forefront regarding RES Communities, given that existing energy communities have done the opposite by having limited measures to include these vulnerable groups.[188]

133. The inclusion of natural persons as a separate category is evident, yet the inclusion of vulnerable consumers implicitly seems to recognize a pressing contradiction. Indeed, the RED II Directive recognizes that participation by local citizens has resulted in, amongst others, '*access to additional private capital'.*[189] At the same time, nearly a decade earlier, the preamble of RED I explicitly mentioned that "*Production of energy from renewable sources often depends on local or regional small and medium-sized enterprises (SMEs).*[190] As such, the question regarding the accessibility and use of private capital requires further examination. To this extent, an exploratory look will be taken in relation to the application of financial support schemes (see *infra* nr. 167).

2.2.1.2.2. Small and Medium enterprises

134. A second category of members and shareholders is reserved for "*SME's*", meaning a micro, small or medium-sized enterprise.[191] What constitutes such an enterprise is determined according to both staff headcount as well as financial ceilings. As a general rule, any enterprise employing fewer than 250 persons, with one or both of the conditions relating to an annual turnover not above EUR 50 million or an annual balance sheet total not above EUR 43 million being fulfilled, is to be considered part of the micro-, small or medium-sized enterprises.[192] Should the enterprise employ fewer than 50 employees, with either the annual turnover or annual balance sheet not exceeding EUR 10 million, it will be classified as a *small* enterprise.[193] A micro-enterprise is then one employing fewer than 10 employees, with the financial criteria not exceeding EUR 2 million.[194]

135. An important limitation is placed on the inclusion of small- and medium enterprises as members or shareholders in that their participation cannot constitute their main commercial or professional activity.[195] This limitation therefore excludes energy companies from participating in a RES Community, under the rationale that such companies may abuse the RES Communities for sheer financial profits.[196] As ROBERTS also points out, this does not take away their opportunity to interact with a RES Community, albeit that this will occur under the form of a bilateral agreement akin to an energy cluster (see *supra* nr. 128).

[186] F. HANKE and J. LOWITZSCH, "Empowering Vulnerable Consumers to Join Renewable Energy Communities – Towards an Inclusive Design of the Clean Energy Package", *Energies* 2020, Vol. 13, 1615-1642.
[187] F. HANKE and J. LOWITZSCH, "Empowering Vulnerable Consumers to Join Renewable Energy Communities – Towards an Inclusive Design of the Clean Energy Package", *Energies* 2020, Basel, Vol. 13, 1615-1641.
[188] F. HANKE, R. GUYET and M. FEENSTRA, "Do renewable energy communities deliver energy justice? Exploring insights from 71 European cases", *Energy Research & Social Science,* Elsevier 2021, Vol. 80, 102244.
[189] Recital 70, RED II.
[190] Preamble 3, RED I.
[191] Art. 2(8) RED II.
[192] Art. 2(1) Annex to Commission Recommendation 2003/361/EC concerning the definition of micro, small and medium-sized enterprises, *Pb.J.* L 124, Vol. 46, 24 May 2003, 36.
[193] Art. 2(2) Annex to Commission Recommendation 2003/361/EC.
[194] Art. 2(3) Annex to Commission Recommendation 2003/361/EC.
[195] Art. 22(1) RED II.
[196] J. ROBERTS, "What Are Energy Communities Under the EU's Clean Energy Package?" in *Renewable Energy Communities and the Low Carbon Energy Transition in Europe*, Palgrave Macmillan 2021, Switzerland, 34.

136. Given that the RED I Directive already recognized that small and medium enterprises often produce most renewable energy, it's understandable that the RED II Directive seeks to ease their access to RES Communities by asking the Member States to provide a simple notification procedure to the competent authority.[197]

137. When compared to other citizen energy initiatives, this limitation of enterprises to small- and medium-sized enterprises does not exist for Citizen Energy Communities under the IEMD.[198] There, the scope of application regarding potential members and shareholders is broader as it also allows enterprises exceeding the aforementioned limits to become a member.

2.2.1.2.3. Local authorities and municipalities

138. A third and final group of potential members or shareholders concerns local authorities, including municipalities.[199] The inclusion of local authorities as potential members is an important pillar, as government support has been closely linked to the succeeding of citizens initiatives.[200] Indeed, certain community energy initiatives allow for the installation of renewable energy facilities on community-owned sites, whereby the main upfront costs are also carried by the community as represented by the local authority.[201] A particular role of importance was clearly envisioned for local authorities within the framework of RES Communities, as the RED II Directive obliged Member States to provide adequate support for the local authorities in both setting up and participating in RES Communities.[202] Given that local government authorities are only willing to contribute to '*eco-energy*' projects under the condition of the application of financial funding to support the financial structure of such projects, while the directive only explicitly refers to regulatory and capacity-building support, it should be interpreted as mainly including financial support.[203]

139. The inclusion of municipalities as potential members is a valiant inclusion. These local authorities, closest to the citizens, have been proven to be the best-placed institutions for community energy.[204] Indeed, this makes sense as their policies are specifically designed to cater towards their constituents, putting the local success at the forefront.[205]

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[197] Recital 51, RED II.
[198] J. LOWITZSCH, C.E. HOICKA and F.J. VAN TULDER, "Renewable energy communities under the 2019 European Clean Energy Package – Governance model for the energy clusters of the future?", *Renewable and Sustainable Energy Reviews*, Elsevier 2020, Vol. 122, 109489-109462.
[199] Art. 2(16)b RED II.
[200] M. A. HELDEWEG and S. SAINTIER, "Renewable energy communities as 'socio-legal institutions': A normative frame for energy decentralization?", *Renewable and Sustainable Energy Reviews*, Elsevier 2020, Vol. 119, 109518.
[201] See P. MIRZANIA, A. FORD, D. ANDREWS, G. OFORI and G. MAIDMENT, "The impact of policy changes: The opportunities of Community Renewable Energy projects in the UK and the barriers they face", *Energy Policy*, Elsevier 2019, Vol. 129, 1282-1296.
[202] J. LOWITZSCH, C.E. HOICKA and F.J. VAN TULDER, "Renewable energy communities under the 2019 European Clean Energy Package – Governance model for the energy clusters of the future?", *Renewable and Sustainable Energy Reviews*, Elsevier 2020, Vol. 122, 109489-109462.
[203] R. KATA and R. PITERA, "Local Authority Investments in the Field of Energy Transition and Their Determinants (on the Example of South-Eastern Poland)", *Energies*, Basel 2023, Vol. 16(2), 819.
[204] A. HINSCH, C. ROTHBALLER and L. RUSSELL, *Municipalities and Renewable Energy Communities – A perfect match*, COM-RES HORIZON2020 Project, Germany, 2022.
[205] E. N. EFTHYMIOU, S. YFANTI, G. KYRIAKARAKOS, P. L. ZERVAS, P. LANGOURANIS, K. TERZIS and G. M. STAVRAKAKIS, "A Practical Methodology for Building a Municipality-Led Renewable Energy Community: A Photovoltaics-Based Case Study for the Municipality of Hersonissos in Crete, Greece", *Sustainability* 2022, Vol. 14, 12935.

2.2.1.2.4. Open and voluntary participation

140. As a general rule of thumb for all three applicable categories, the directive requires for the membership to be based on open and voluntary participation in accordance with applicable national law.[206] While it hasn't been further defined by the directive, the criteria of open participation is to be interpreted as to allow all local citizens in the surrounding area of the RES Community to participate in the energy initiative.[207] Should a Member State wish to limit the possibility of participating by including criteria which must be met to be eligible for participation, the Member State must ensure that these criteria are objective, transparent and non-discriminatory.[208] To this extent, the inclusion of entry fees or investment thresholds must be noted. Even if such requirements are non-arbitrary and not egregious, thus falling in line with this requirement, they could result in the exclusion of the vulnerable households deserving of specific, additional attention (see *supra* nr. 132).[209]

141. With regards to the voluntary aspect of the participation, the REDII Directive mainly refers to the right of members and shareholders to opt out of the RES Community, without the possibility to be forced to remain. To this extent, ROBERTS makes a distinction between the "*business-customer connection"* and the *"member/investor connection".*[210]

142. The aspect of open and voluntary participation does come with its drawbacks however. Given the highly technical nature of the matter on both the practical and legal front, community energy initiatives might prove difficult to understand for the average citizen. Those who do participate might then lack the necessary qualifications or professional expertise to properly operate the renewable energy project.[211] This also holds true for the RES Communities, potentially turning everyday citizens away from participating.

2.2.1.2.5. Effective control

143. The RED II Directive requires for the renewable energy community to be "*effectively controlled by shareholders or members*".[212] Despite proportion-based suggestions being made, no clear definition is given by the directive, leaving it up to the Member States to define it in accordance with their applicable national laws.[213] Given that these national laws vary between Member States, the interpretation also varies. As such, it can be a general majority of voting rights being held by members in the proximity of the RES Community, majority voting rights in general meetings of the

[206] Art. 2(16) a, RED II.
[207] F. HANKE, R. GUYET ea., "Do renewable energy communities deliver energy justice? Exploring insights from 71 European cases", *Energy Research & Social Science,* Elsevier 2021, Vol. 80, 102244.
[208] Recital 71, RED II.;
[209] J. ROBERTS, "What Are Energy Communities Under the EU's Clean Energy Package?" in *Renewable Energy Communities and the Low Carbon Energy Transition in Europe*, Palgrave Macmillan 2021, Switzerland, 32.
[210] J. ROBERTS, "What Are Energy Communities Under the EU's Clean Energy Package?" in *Renewable Energy Communities and the Low Carbon Energy Transition in Europe*, Palgrave Macmillan 2021, Switzerland, 32-33.
[211] See P. MIRZANIA, A. FORD, D. ANDREWS, G. OFORI and G. MAIDMENT, "The impact of policy changes: The opportunities of Community Renewable Energy projects in the UK and the barriers they face", *Energy Policy*, Elsevier 2019, Vol. 129, 1282-1296.
[212] Art. 2(16) a RED II.
[213] Art. 22, Comm.(EU), Proposal for a Directive on the promotion of the use of energy from renewable sources, COM/2016/767, 23 February 2017.

RES Community, but also having a decisive influence in the decisions of the RES Community is considered to be an acceptable interpretation of *"effective control".*[214]

2.2.1.2.6. Geographical link

144. A further common criterium for all three categories requires a geographical link between the members of the RES Community and the renewable energy projects, as the REDII-Directive states the members must be "*located in the proximity of the renewable energy projects.*"[215] While this seems to be a clear criterium regarding possible participants, it has been rightfully commented that the REDII-Directive does not provide a definition for what it considers to be "*in the proximity"*, leaving it up to the implementing Member States to define this and set forth the necessary criteria.[216] At the same time, the inclusion of this criterium has been questioned altogether, under the premise that renewable energy citizen initiatives perhaps work best when all members share a common interest regardless of their location, whereby the proximity-requirement could potentially lead to the exclusion of such members and in turn hamper the optimalisation of the citizen initiative.[217]

2.2.1.2.7. Autonomy

145. The aspect of autonomy is not clearly defined in the RED II Directive, yet it carries both an external and an internal dimension regarding RES Communities. When referring to the external autonomy of a RES Community, it refers to the capacity of the legal entity to act in its own name towards the outside world.[218] While doing so, it should be able to exercise certain rights and be held to certain commitments regardless of the type of legal entity that was chosen by the Member State.[219]

146. It is understood that the internal dimension of the autonomy-requirement relates to the internal decision-making powers within the RES Community, thereby providing boundaries for the effective control by the shareholders and members (see *supra* nr. 143). While the recitals of the recast renewable energy directive provide no further context beyond "*the entity should be autonomous from individual members and other participating traditional market actors"*, this must be read as a requirement for the legal entity to remain in joint control by all or a majority of the members, as opposed to one or a small number of members having a decisive influence.[220] The internal autonomy of a RES Community should be considered upheld so long as no single member or shareholder owns a controlling stake in the entity, with a threshold for such a controlling stake placed at one third of the total amount of shares.[221]

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[214] J. LOWITZSCH, C.E. HOICKA and F.J. VAN TULDER, "Renewable energy communities under the 2019 European Clean Energy Package – Governance model for the energy clusters of the future?", *Renewable and Sustainable Energy Reviews*, Elsevier 2020, Vol. 122, 109489-109462.; J. ROBERTS, "What Are Energy Communities Under the EU's Clean Energy Package?" in *Renewable Energy Communities and the Low Carbon Energy Transition in Europe*, Palgrave Macmillan 2021, Switzerland, 35.
[215] Art. 2(16) a, RED II.
[216] A. SAVARESI, "The Rise of Community Energy from Grassroots to Mainstream: The Role of Law and Policy", *Journal of Environmental Law*, Oxford 2019, Vol. 31, 487-510.
[217] A. SAVARESI, "The Rise of Community Energy from Grassroots to Mainstream: The Role of Law and Policy", *Journal of Environmental Law*, Oxford 2019, Vol. 31, 487-510.
[218] Recital 71, RED II.
[219] *Ibid.*
[220] J. ROBERTS, "What Are Energy Communities Under the EU's Clean Energy Package?" in *Renewable Energy Communities and the Low Carbon Energy Transition in Europe*, Palgrave Macmillan 2021, Switzerland, 37.
[221] J. LOWITZSCH, C.E. HOICKA ea., "Renewable energy communities under the 2019 European Clean Energy Package – Governance model for the energy clusters of the future?", *Renewable and Sustainable Energy Reviews*, Elsevier 2020, Vol. 122, 109489-109462.

2.2.1.3. Renewable energy sources

147. While seemingly self-evident, it is worth mentioning that RES Communities can only exclusively be constructed around renewable energy projects.[222] Once again, this requirement sets it apart from a Citizen Energy Community as such a citizen initiative does not necessarily need to be based around renewable energy projects, although energy from renewable energy sources is not excluded.[223]

148. Under the RED II Directive, such renewable energy projects are to be understood as projects involving "*energy from renewable non-fossil sources, namely wind, solar (solar thermal and solar photovoltaic) and geothermal energy, ambient energy, tide, wave and other ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogas*".[224] This provides a broader concept of renewable energy than it is often understood to be, whereby the overarching principle relies on sources of energy that are either virtually infinite or regenerative by nature. To this extent, a "*hydrogen-based Power-to-Power system"* was indeed deemed a viable possibility for renewable energy generation in the context of a RES Community.[225]

149. Another interpretation of the renewable energy-criterium even allows for a combination of different renewable energy sources to be used within the same Renewable Energy Community. As each type of renewable energy source has its benefits and drawbacks, a synergised combination of multiple renewable energy sources could lead to an optimisation of the RES Community. This was shown to be applicable to a combination of "*Power-to-Heat"* and "*Power-to-Gas"* applications, as such a combination allowed for the advantages of both types of energy storage to be exploited while at the same time countering their respective drawbacks.[226]

150. The possibility of future inclusions is implicitly included in "energy from renewable non-fossil sources", as any types of energy meeting this definition could also be included as a viable renewable energy source within the scope of a RES Community. That being said, the 2021 proposal for an amendment to the RED II Directive only proposed an amendment to article 2 of the RED II Directive in that it modified the definition of renewable fuels of non-biological origin, while simultaneously adding new definitions for, amongst others, renewable fuels.[227] The definition of renewable energy projects as such therefore remained unchanged for now.

2.2.1.4. Community benefit purposes

151. The final constituting element relates to the purpose of the RES Community, in that its primary purpose should be "*providing environmental, economic or social community benefits for its shareholders and members, as opposed to pure financial profits*."[228] While a primarily commercial objective is therefore out of the question, this criterium is not so strict as to preclude any kind of

[222] Art. 2(16) a RED II.
[223] Art. 2(11) c IEMD.
[224] Art. 2(1) RED II.
[225] G. RAIMONDI and G. SPAZZAFUMO, "Exploring Renewable Energy Communities integration through a hydrogen Power-to-Power system in Italy", *Renewable Energy*, Elsevier 2023, Vol. 206, 710-721.
[226] L. MARIO PASTORE, G. LO BASSO, G. RICCIARDO and L. DE SANTOLI, "Synergies between Power-to-Heat and Power-to-Gas in renewable energy communities", *Renewable Energy*, Elsevier 2022, Vol. 198, 1383-1397.
[227] Art. 1(1), COM(2021)557 final, Proposal for a Directive of the European Parliament and of the Council, Brussels, 14 July 2021, 27.
[228] Art. 2(16) c REDI II.; J. ROBERTS, "What Are Energy Communities Under the EU's Clean Energy Package?" in *Renewable Energy Communities and the Low Carbon Energy Transition in Europe*, Palgrave Macmillan 2021, Switzerland, 30.

financial profits. Indeed, granting shareholders with a return on investment or turning out dividends for instance is permitted, so long as these actions do not constitute the primary objectives of the RES Community.[229] The monetary aspect cannot be disregarded however, as most individual players require some form of financial incentive to participate. Indeed, while an investment could have an overall net-positive profitability, it could still be hampered or even halted by financial shortcomings or lack of financial returns for a number of individual members.[230]

152. Indeed, a study on the practical implementation of a RES Community in the Greek town of Hersonissos revealed that a for-profit energy community could indeed lead to a reduced public acceptance.[231] As such, while the operation of a RES Community can contain a for-profit element, it risks losing local acceptance and trust in case this financial motive becomes too great. Naturally, this also ties into the prohibition of small and medium enterprises becoming members or shareholders of a RES Community, when this membership would be their main commercial activity. (see *supra* nr. 135)

2.3. Powers of a RES Community

153. Under the RED II Directive, the Parliament and the Council chose to adopt an obligation for the Member States to ensure a minimum of competences that should be available to a RES Community.[232] First and foremost, the RES Community must be able to "*produce, consume, store and sell renewable energy, including through renewables power purchase agreements."*[233] Within this first aspect of the powers of a RES Community, it immediately becomes clear that the aforementioned community benefit purposes (see *supra* nr. 151) should not be interpreted so strictly as to preclude any kind of commercial activity. Indeed, the possibility of commercial activities is directly related to the viability of the community.

154. Next to the production and storage of renewable energy, tied to a commercial incentive, the Directive also requires the Member States to allow a RES Community to share renewable energy that was produced by the renewable energy projects owned by the RES Community within that RES Community itself between its members.[234] This is what is more classically envisioned as a form of energy-sharing. Based on the idea of open participation, this should once again not be interpreted too strictly, as the Directive also requires that national implementation must not preclude the right of the members of a RES Community to maintain their rights and obligations as customers.[235] As such, this allows for members to combine various sources of energy, with the energy from the RES Community only being a part of their gross required energy.

[229] J. ROBERTS, "What Are Energy Communities Under the EU's Clean Energy Package?" in *Renewable Energy Communities and the Low Carbon Energy Transition in Europe*, Palgrave Macmillan 2021, Switzerland, 30.
[230] M. MONCECCHI, S. MENEGHELLO and M. MERLO, "A Game Theoretic Approach for Energy Sharing in the Italian Renewable Energy Communities", *Applied sciences,* MDPI, 2020, 9.
[231] E. N. EFTHYMIOU, S. YFANTI ea., "A Practical Methodology for Building a Municipality-Led Renewable Energy Community: A Photovoltaics-Based Case Study for the Municipality of Hersonissos in Crete, Greece"*, Sustainability* 2022, Vol. 14, 12935.
[232] Art. 22(2), REDII.
[233] Art. 22(2)(a), REDII.
[234] Art. 22(2)(b), REDII.
[235] *Ibid.*

155. A final power that should be available to the RES Community relates to how it should be able to enter the market. Indeed, the Directive requires that the Community should be able to "*access all suitable energy markets both directly and through aggregation in a non-discriminatory manner."*[236] While the Directive does not mention how exactly the access should take place, it does make reference to a more general obligation for the Member States to provide a framework that allows for the RES Communities not to be subject to discriminatory treatment with regards to their activities, rights and obligations as, amongst others, distribution system operators.[237] As such, it stands to reason that RES Communities can both own and operate distribution networks, as well as heating and cooling networks.[238]

2.4. Analysing RES Communities according to the revised 4A-framework.

156. As has been mentioned before, RES Communities not only stimulate private investment in renewable energy sources, but they can also help in achieving the broader goal of further advancing the security of supply.[239] Assessing the potential impact of RES Communities on the security of supply can be carried out by assessing their impact on the existing threats thereto, applied to the relevant pillars of the revised 4A-framework which constitute EU energy security. As such, all four pillars of the revised 4A-framework are examined from the point of view of implementing RES Communities, outlining potential benefits and dangers of RES Communities.

2.4.1. The impact of RES Communities on energy availability.

157. Under the current EU energy supply, the EU relies heavily on imported energy sources. These energy sources often stem from a multitude of geographic location, with the import to the EU being agreed upon through bilateral and multilateral agreements. (see *supra* nr. 81) This reliance leaves the EU exposed to global political and diplomatic instability, as the pursuance of these agreements can often be unilaterally halted, leaving the EU without the necessary traditional energy sources.

158. The impact of a RES Community on the overall availability of energy in the context of EU energy security is then dependent on the availability of renewable energy and renewable energy sources themselves. Given the vast array of available renewable energy sources and the differences between them, such an assessment is best carried out separately for each renewable energy sector, including potential threats.[240] Within the confines of this thesis, this assessment is limited to the main renewable energy sectors, advantages and threats.

159. The availability of potential solar energy is often described as the physically available solar energy on the surface, relying on a GIS (Geographic Information System)-based model.[241] Such a

[236] Art. 22(2)(c), REDII.
[237] Art. 22(4)(e), REDII.
[238] J. ROBERTS, "What Are Energy Communities Under the EU's Clean Energy Package?" in *Renewable Energy Communities and the Low Carbon Energy Transition in Europe*, Palgrave Macmillan 2021, Switzerland, 40.
[239] F. DE SANTI, M. MONCECCHI, G. PRETTICO, G. FULLI, S. OLIVERO and M. MERLO, "To join or Not to Join? The energy Community Dilemma: An Italian Case Study", *Energies*, 2020, Vol. 15, 7075.
[240] A. ANGELIS-DIMAKIS, M. BIBERACHER, J. DOMINGUEZ, G. FIORESE, S. GADOCHA, E. GNANSOUNOU, G. GUARISO, A. KARTALIDIS, L. PANICHELLI, I. PINEDO and M. ROBBA, "Methods and tools to evaluate the availability of renewable energy sources", *Renewable and Sustainable Energy Reviews*, Elsevier, 2011, Vol. 15, 1183.
[241] *Ibid.*; M. SÚRI and J. HOFIERKA, "A New GIS-based Solar Radiation Model and Its Application to Photovoltaic Assessments", *Transactions in GIS*, 2004, Vol. 8(2), 176.

model can then be further optimised by incorporating dynamic factors such as atmospheric effects.[242] At the same time, the availability of wind energy can be assessed similarly by looking at geographical constraints.[243] The downside of these forms of renewable energy is that they are, by their nature, potentially not always available. Indeed, such a natural source risk could relate to the absence of sunlight or the intermittency of wind.[244]

160. As such, where the availability-pillar under the revised 4A-framework poses the question "*Do the resources, required to create renewable energy, physically exist and are they available?"* (see supra nr. 24), this question must be answered in the positive under the caveat that the availability is vulnerable to natural intermittency.

2.4.2. The impact of RES Communities on energy accessibility

161. Within the confines of the EU energy supply, the aspects of energy availability and accessibility are closely tied together as a result of the reliance on access to imported energy sources on the basis of multilateral agreements. As such, the current EU energy supply is heavily at the mercy of political goodwill and geopolitical stability. As RES Communities are by definition based around local renewable energy projects, they offer the potential to significantly reduce the reliance on geopolitical goodwill and increase resilience to external shocks.[245] As such, the use of RES Communities also increases the accessibility to energy in the context of the EU energy security.

162. Given that the exploitation of renewable energy sources such as solar or wind energy require additional technology and infrastructure, the access to renewable energy in the context of a RES Community is not guaranteed however. It could be hindered by both a technological and knowledge-based hurdle, as was already noted in the 2007 APERC report.[246] Those technological hurdles can present themselves as the need for new technology on smart metering, the need for *'smart cities'* as well as the need for resources on transport, distribution and storage of energy.[247]

163. With regards to the knowledge-based hurdle, The APERC report already noted the need for such information to be transferred from developed countries to developing countries (see *supra* nr. 27), a principle that should also be applied internally within the EU. Under this notion, EU Member States with a high uptake in Renewable Energy Sources or a high adoption rate of RES Communities would be required to share their methods or share information on implementation, thereby increasing the accessibility to renewable energy and in turn, increasing the energy accessibility of the EU energy supply as a whole.

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[242] M. ZHANG, B. WANG, D. LI LIU, J. LIU, H. ZHANG, P. FENG, D. KONG, J. CLEVERLY, X. YANG and Q. YU, "Incorporating dynamic factors for improving a GIS-based solar radiation model", *Transactions in GIS*, 2020, Vol. 24, 423.
[243] A. ANGELIS-DIMAKIS, M. BIBERACHER ea., "Methods and tools to evaluate the availability of renewable energy sources", *Renewable and Sustainable Energy Reviews*, Elsevier, 2011, Vol. 15, 1183.
[244] G. C. VAN KOOTEN, "Wind power: the economic impact of intermittency", *Letters in Spatial and Resource Sciences*, 2010, Vol. 3, 1-17.
[245] Commission Communication, COM(2006) 848 final, Renewable Energy Road Map, Renewable energies in the 21st century: building a more sustainable future, 10 January 2007, 5.
[246] APERC, "A quest for energy security in the 21st century", Institute of Energy Economics, Japan, 2007.
[247] A. DI MARCO, "Les communautés d'énergie renouvelable et la transition verte de l'UE", *Revue Juridique de l'Environnement* 2018, Vol. 43, 47-69.

2.4.3. The impact of RES Communities on energy affordability

164. The EU energy security affordability-pillar should be assessed according to the general purchase price or volatility of the energy price fluctuations. (see *supra* nr. 28) As will become clear however, assessing the affordability-pillar under the EU energy security concept varies wildly based on the personal or geographic scope.

165. With regards to private capital, it was already noted that the participation of local citizens as well as local authorities had resulted in substantial access to local private capital.[248] This innovative form of private financing was seen as an ideal solution, given the shortcomings of the EU investments in the energy transition.[249] Indeed, while a distinction can be made between accessible private capital without subsidisation and with subsidisation, the minimum available amount is reported to be around €176 billion.[250]

166. However, the existence of this private capital is one thing, accessing it is another. At the minimum, doing so requires a stable regulatory framework and *"low risk market conditions".*[251] This was shown recently in relation to an Italian RES Community, whereby the project was deemed not viable due to Italian law not providing and *incentivizing* the technology required for the RES Community. As a result, it was deemed economically unsustainable due to high capital costs, even while factoring in existing subsidies.[252]

167. As such, the importance of subsidisation and RES Support Schemes (hereafter RESSS) becomes clear, as they have indeed been identified as one of the main drivers behind Community Energy projects.[253] The need for support schemes is not entirely surprising however, given their presence in the RED II Directive.[254] Indeed, the recast Directive allows for Member States to apply support schemes in order for them to reach the Union target.[255] The wording here is chosen carefully, as the Directive explicitly states "*Member States <u>may</u> apply support schemes".*[256] Once again, the principle of conferral reappears, as the chosen wording refers to the inability of the EU to mandatorily intervene in a Member States' energy mix. This position has been long held in that Member States can't be mandated to take measures to reach their GHG emission reduction targets.[257]

168. Should a Member State choose to implement subsidisation or RESSS, they must give consideration to the application of EU State Aid Law, in that the funds and support schemes must be

[248] Preamble 70, RED II.
[249] C., PONS-SERES DE BRAUWER and J. J., COHEN, "Analysing the potential of citizen-financed community renewable energy to drive Europe's low-carbon energy transition.", *Renewable and Sustainable Energy Reviews*, Elsevier, 2020, Vol. 133, 110300, 1-12 (1).
[250] *Ibid.*
[251] *Ibid.*
[252] G. RAIMONDI and G. SPAZZAFUMO, "Exploring Renewable Energy Communities integration through a hydrogen Power-to-Power system in Italy", *Renewable Energy*, Elsevier 2023, Vol. 206, 710-721.
[253] S. RUGGIERO, H. BUSCH, A. ISAKOVIC and T. HANSEN, "Community Energy in the Eastern Baltic Sea Region: From Standstill to First Steps" in *Renewable Energy Communities and the Low Carbon Energy Transition in Europe*, Palgrave Macmillan 2021, Switzerland, 63.
[254] Art. 4-5, RED II.
[255] Art. 4(1), RED II.
[256] *Ibid.*
[257] See joined CJEU cases, 20 September 2017, nr. C-215/16, C-216/16, C-220/16, C-221/16, ECLI:EU:C:2017:705, *Elecday Carcelen.*, CJEU 3 March 2021, nr. C-220/19, ECLI:EU:C:2021:163, *Promociones Oliva Park.*

in accordance with the rules regarding admissible State Aid.[258] With that in mind, the first consideration should be whether the adopted RESSS is to be considered as State Aid in the first place. To this extent, reference can be made to article 107 (1) of the TFEU, containing the applicable conditions for an assessment as State Aid.[259] To be considered as State aid, the measure must first of all relate to an undertaking performing economic activities. As such, these support schemes should only be applied in the event where the RES Community at least acts in the economic interest of its local controlling members, although those interests cannot be purely commercial. These members should be actively involved as prosumers and be entitled to *'equitable distribution of the results of economic performance'.*[260]

169. Next, the measures should be attributable to a Member State or its financing.[261] While the wording 'or' seems to suggest the attributability or financing are distinct criteria, the Court of Justice rectified this notion by asserting that these are in fact, two cumulative elements of the same criterium.[262] Finally, the measure should also grant an advantage to a selective recipient. Should these criteria be met, the support scheme will in theory be seen as State aid, incompatible with article 107(1) TFEU if it distorts competition and is able to affect trade between Member States.[263]

170. The State aid could however be acceptable and in line with the internal market under one of the conditions under article 107(3) TFEU. It is within these categories that RESSS, classified as State aid, could indeed be justified as they would '*aid in facilitating the development of an economic activity or economic area, where they would not adversely affect trading conditions to an extent that is contrary to the common interest.'*[264] As such, under the interpretation that RESSS constitute State aid, they would fall in line with, and be acceptable for the EU internal market.[265]

171. The question then remains what the RESSS might look like, based on the aforementioned criteria and the criteria put forward by article 4 of the RED II Directive. As a first option, it must be noted that feed-in tariffs are deemed acceptable, again under the condition that they do not unnecessarily distort the electricity market.[266] When it comes to financing or subsidisation, two options are available. On the one hand, the subsidisation can happen entirely internally within the Member State, in which case all financing will naturally be sourced within the Member State. On the other hand, such subsidisation or financing can also occur in the hands of the EU, in the form of the

[258] C. E. HOICKA, J. LOWITZSCH, M. C. BRISBOIS, A. KUMAR and L. R. CAMARGO, "Implementing just energy transition: Policy advice for transposing the new European rules for renewable energy communities, *Energy Policy*, Elsevier 2021, Vol. 156, 112435.; T. ILIOPOULOS, , *The law of support schemes for renewable energy sources: towards a new legal framework in the EU,* Doctorate thesis, University of Hasselt, 2021, 151.
[259] Art. 107(1) TFEU.
[260] C. E. HOICKA, J. LOWITZSCH ea., "Implementing just energy transition: Policy advice for transposing the new European rules for renewable energy communities, *Energy Policy*, Elsevier 2021, Vol. 156, 112435.
[261] M. MEROLA and F. CALIENTO, "Is the notion of aid broadening or shrinking over time, and if so, why? A subjective view on the rationale of the case law", in *EU STATE AID LAW, Emerging Trends at the National and EU level*, Edwar Elgar Publishing, 2020, 20.
[262] CJEU 13 March 2001, nr. C-379/98, ECLI:EU:C:2001:160, *PreussenElektra.*
[263] M. MEROLA and F. CALIENTO, "Is the notion of aid broadening or shrinking over time, and if so, why? A subjective view on the rationale of the case law", in *EU STATE AID LAW, Emerging Trends at the National and EU level*, Edwar Elgar Publishing, 2020, 20.; T. ILIOPOULOS, *The law of support schemes for renewable energy sources: towards a new legal framework in the EU*, Doctorate thesis, University of Hasselt, 2021, 197.
[264] Art. 107(3)(c) TFEU.
[265] T. ILIOPOULOS, *The law of support schemes for renewable energy sources: towards a new legal framework in the EU*, Doctorate thesis, University of Hasselt, 2021, 222.
[266] T. ILIOPOULOS, *The law of support schemes for renewable energy sources: towards a new legal framework in the EU*, Doctorate thesis, University of Hasselt, 2021, 394.

'Union renewable energy financing mechanism.'[267] In this case, the funding can be based on a multitude of sources, ranging from private contributions to Member State payments or Union funds.[268] Other forms of support schemes or funding can naturally also occur, so long as they meet the aforementioned criteria on acceptable State aid.

172. Based on the aforementioned application of RESSS and State aid legislation, the impact of RES Communities on the affordability-pillar of EU energy security depends on the existence and application of a financial support scheme, as well as who finances it. In the absence of a support scheme, the financial burden is expected to be carried by private capital, which wouldn't necessarily be detrimental to the affordability-pillar of EU energy security.

173. On the other hand, in the case of the existence and application of a support scheme, the answer is dependent on the financing of the support scheme. Should the support scheme be financed by private capital, this would be beneficial to EU energy security. However, in case the support scheme is financed by the Member States themselves, or even through EU funds, this financial burden falls on the Member States or the Union, thereby being either directly or indirectly detrimental to the affordability-pillar of EU energy security.

2.4.4. The impact of RES Communities on energy acceptability

174. Regarding the potential impact of RES Communities on the acceptability-pillar of EU energy security, reference can be made to the dichotomy between binding EU targets and *de facto* non-binding Member State targets. (see *supra* nr. 88) Under this notion, the application of RES Communities would not necessarily have an impact on the energy acceptability for the Member States, as is evidenced by the recent uptake of coal-usage in Germany.

175. At the same time, the binding GHG-emissions reduction targets and RES-usage targets for the EU lead to the logical conclusion that an uptake within the Member States of RES Communities would be beneficial for the acceptability-pillar of EU energy security.

[267] Commission implementing regulation (EU) 2020/1294 of 15 September 2020, on the Union renewable energy financing mechanism, *Pb.L.* 17 September 2020, Vol. 63, 1.
[268] Art. 4(1), Commission implementing regulation (EU) 2020/1294.

Chapter 3. An analysis of the implementation of Renewable Energy Community legislation into national legislation in Belgium, the Netherlands and France.

176. As noted within the RED II Directive, implementation by the EU Member States should have occurred by the end of June 2021.[269] Regrettably however, the transposition into national law has remained limited throughout the EU at the time of writing and is expected to be ongoing throughout the following years.[270] Marked differences are even noted between different Member States, with Germany even stating in 2021 they had no intention of implementing the RED II Directive. German legislators were under the impression that their existing legislation was already sufficient to allow for the existence and widespread application of RES Communities, although German legislation had no legal definition of a RES Community, had no applicable legislation for RES Communities, did not carry out an assessment of existing barriers to the development of RES Communities and was therefore not in compliance with the RED II Directive.[271]

177. While the use of broad wording certainly does not ease the transposition of the RED II Directive, it must be noted that a lacklustre implementation of the Directive creates delays in the development of RES Communities, thereby affecting their effectiveness.[272]

178. In this chapter, the thesis will take a look at the implementation of the RED II Directive in three different EU Member States, those being Belgium, the Netherlands and France. Belgium was chosen as it is both the native country of the writer but also has a lacklustre implementation of the necessary support schemes. It must be noted that, within Belgium, the competence for renewable energy has been conferred to the regions.[273] As such, the thesis will look at the transposition within the Flemish region of Belgium, the impact of existing subsidisation for RES Communities in Flanders as well as a number of practical examples. The Netherlands was selected on the basis of a more robust, yet different transposition as Dutch national legislators have chosen not to differentiate between RES Communities and Citizen Energy Communities, yet have provided for a specific, clear and well-funded support scheme. Finally, France was chosen on the basis that French legislation did not even allow for long-term renewable energy projects until recently. This therefore provides an interesting perspective as French transposition of the RED II Directive has provided further strengthening of French legislation regarding renewable energy.

[269] Art. 36 (1) RED II.
[270] C. E. HOICKA, J. LOWITSCH ea., "Implementing a just renewable energy transition: Policy advice for transposing the new European rules for renewable energy communities", *Energy Policy*, Elsevier 2021, Vol. 156, 112435.
[271] K., STANDAL and S. AAKRE, Assessment Report on Technical, Legal, Institutional and Policy Conditions (Deliverable 2.1.), COME RES – Advancing Renewable Energy Communities, 2021, 40.
[272] J. ROBERTS, "What Are Energy Communities Under the EU's Clean Energy Package?" in *Renewable Energy Communities and the Low Carbon Energy Transition in Europe*, Palgrave Macmillan 2021, Switzerland, 41.
[273] Art. 6, §1, VII, (f), BWHI, jo. Art. 39 Belgian Constitution.

3.1. Transposition in Belgium

3.1.1. Implementation of the defining framework in Flanders

3.1.1.1. Definition and characteristics of RES Communities in Flanders

179. While Belgium is split in three different regions, this thesis limits itself to an assessment of the implementation in Flanders, which occurred before the required transposition date with the amendment decree of 2 April 2021, amending the Flemish Energy decree.[274] While the amending decree transposes both the RED II Directive containing RES Communities and the Internal Energy Market Directive containing Citizen Energy Communities, this part of the thesis will only focus on the provisions concerning Renewable Energy Communities as this is the central theme of the thesis.

180. According to the Flemish transposition, a Renewable Energy Community is defined as "a legal entity, based on open and voluntary participation by its members or shareholders, with its main purpose being providing ecological, economic or social benefits to its shareholders, members or the surroundings in which it's active, without having a profit motive or such a motive being a subsidiary to the main motive."[275] This description already contains many of the different elements put forward in the Directive regarding a definition of a RES Community (see *supra* nr. 124). With regards to the requirement of a legal entity, the current Belgian national law allows either partnerships (*vennootschappen*) or associations (*verenigingen*) as a form of legal entity.[276]

181. Similar to the recast Directive, Flemish legislation explicitly refers to the obligation for the energy to be sourced from renewable energy sources.[277] Likewise, the enumeration of the possible members of a Flemish RES Community is similar to that in the Directive, with explicit mentions regarding the required autonomy.[278] Indeed, both the Directive and the Flemish Energy Decree refer to natural persons, local authorities and SME's whose participation in the RES Community does not constitute its main commercial or professional activity.[279] With regards to the potential members under the Flemish Energy Decree, it is also notable that both requirements concerning control over the RES Community and the autonomous operation of the RES Community are withheld in the Flemish transposition.[280]

182. While the REDII-Directive stated that the members must be "*located in the proximity of the renewable energy projects",* it neglected to elaborate on the term 'proximity' and left it up to the implementing Member States to further define it. Regrettably, the Flemish Energy Decree does not entirely delineate the concept of 'proximity' either, although it does provide further context in that it limits participation on the basis of '*technical or geographical proximity*, *taking into account the*

[274] Decreet tot Wijziging van het Energiedecreet van 8 mei 2009 tot gedeeltelijke omzetting van richtlijn (EU) 2018/2001 van het Europees Parlement en de Raad van 11 december 2018 ter bevordering van het gebruik van energie uit hernieuwbare bronnen en tot omzetting van richtlijn (EU) 2019/944 van het Europees Parlement en de Raad van 5 juni 2019 betreffende gemeenschappelijke regels voor de interne markt voor elektriciteit en tot wijziging van Richtlijn 2012/27/EU, *BS* 28 May 2021, 55177.
[275] Art. 4.8.2. §1, section 1, Energiedecreet, 8 May 2009. (hereafter: Energiedecreet)
[276] Art. 1:1, 1:2, Wetboek van vennootschappen en verenigingen (hereafter: WVV)
[277] Art. 4.8.2. §1, section 2, Energiedecreet.
[278] Art. 4.8.2. §1, section 3, Energiedecreet.
[279] *Ibid.*
[280] *Ibid.*

function of the purposes or activities which the renewable energy community aims to achieve'.[281] This introduces a novel concept of 'technical or geographical proximity', which will potentially be explained by the Flemish Government through a delegated act.[282] As such, the concept of proximity is to be interpreted in relation to the activities of the RES Community. As a bare minimum, given that the activities of the Renewable Energy Community must be based within Belgium, it stands to reason that the geographical scope cannot exceed Belgian borders.[283] More interestingly however, the Flemish implementation in fact leaves it up to the RES Communities themselves to give substance to the criterium of '*technological or geographical proximity*', as a result of which it is to be expected that interpretations will vary wildly and judicial discussions are to be expected.[284]

183. While the definition and scope of application in the Flemish implementation is in fact reasonably coherent and clear, the absence of this element leads to one big point of remark that must be noted with regards to the Flemish implementation. By not legally defining the concept of 'proximity' and adding the obligation for the RES Communities to inform the VREG, the relevant Flemish energy authority, of its interpretation while simultaneously allowing the RES Community to operate autonomously, the Flemish Decree has introduced a far greater requirement of active oversight by the VREG than was potentially intended by the recast directive.

3.1.1.2. Competences of RES Communities in Flanders

184. Similar to the RED II Directive, the Flemish Energy Decree lists a number of possible activities and competences an energy community may undertake.[285] So long as the energy is sourced from renewable energy sources, these activities are also available for RES Communities.[286] However, article 4.8.2. §2 of the Energy Decree stipulates that all members of the RES Community must enter into a contract with the RES Community, which must contain well-stipulated elements.[287] On the other hand, the by-laws of the RES Community define the competences of the RES Community as well as the autonomy of the REC.[288] Once again, this is potentially problematic as the following article mandates the RES Community to inform the relevant authority of its activities as written down in their by-laws, within 30 days of its conception.[289] This requires a more active role from the VREG, the national energy regulator, as it will have to provide oversight and actively monitor the activities of the RES Community.

185. Regarding the competences of the Flemish RES Communities, the Flemish legislator has been slightly more ambitious than required by the directive. At first, it must be noted that the Flemish Energy Decree mentions potential activities relating to the production, self-consumption, storage, sharing and sale of energy produced by its own renewable energy sources, similar to article 22 (2)

[281] Art. 4.8.2. §1, section 4, Energiedecreet.; S. VANHOVE, "Het Clean Energy-pakket in de drie Belgische gewesten, een eerste analyse", *MER* 2021, nr. 2, 112.
[282] L., DE DEYNE and D., VAN OVERLOOP, "Het EU Clean Energy Package biedt nieuwe mogelijkheden voor consumenten", *DCCR*, 2020, nr. 4, 69-93.
[283] C., DEGREEF, P., CLAEYS and P., VAN BOGAERT, *Energierecht in België en Vlaanderen 2023*, Mortsel, Intersentia, 2023, 192.
[284] Art. 4.8.3., 2°, Energiedecreet.
[285] Art. 4.8.4. §1, section 1 Energiedecreet.
[286] Art. 4.8.4., §1, section 2 Energiedecreet.
[287] Art. 3.3.1., Energiebesluit van 19 november 2010 (hereafter: Energiebesluit)
[288] Art. 4.8.2., §2, section 2 Energiedecreet.
[289] Art. 4.8.3., 1° Energiedecreet.; Art. 3.3.2. Energiebesluit.

(a, b) of the recast Directive.[290] Also similar to the Directive, the Flemish Decree allows for the RES Community to offer energy services and access the energy markets, either by means of flexibility or through aggregation.[291]

186. In addition to these activities, which were in essence baseline requirements under the recast Directive, the Flemish Decree introduces another, rather specific potential activity as it specifically mentions the possibility for the RES Community to provide 'charging services for electric vehicles'.[292] At the moment of this writing, it is unclear whether these charging services will be limited to the members of the RES Community or will be available to a wider public.

3.1.2. Implementation of enabling frameworks and support schemes in Flanders

3.1.2.1. Implementation of enabling framework in Flanders

187. Under article 22 (4) (a) of the RED II Directive, the EU Member States are required to provide an enabling framework that will ensure, amongst others, the removal of unjustified regulatory and administrative barriers. To accomplish this goal, the Directive also requires a preliminary assessment of the existing barriers which may hinder the development of RES Communities.

188. With these obligations in mind, the transposition into Flemish law can be marked as somewhat lacklustre. On the one hand, it must be noted that a preliminary assessment was indeed performed by the independent research organisation VITO at the behest of the Flemish Government, noting Finance and Organization, Market and Economy, Technology, Institution and Governance as well as Regulation as the main existing barriers to be tackled.[293] Even within the Energy Decree, explicit mention is made of the obligation for the Flemish Government to undertake measures to promote and ease the development of RES Communities, thereby referring to a cost-benefit analysis which is to be performed by the VREG.[294]

189. On the other hand however, the Flemish Energy Decree does not go beyond these assessments. While the Decree does mention the obligation to notify the VREG of the by-laws of a RES Community as an implicit means of limiting administrative barriers for the existence of a RES Community, no other mention is made of how the other relevant existing barriers will be tackled. As such, pre-existing regulatory and administrative barriers may persist, leading to a reduced uptake of RES Communities in Flanders.

190. Indeed, some of the remaining barriers that have been left unaddressed in the Flemish Energy Decree concern the requirement of non-discriminatory treatment, the special attention for low-income and vulnerable households and perhaps most pressingly, a lack of tools to facilitate access to information for citizens.[295] Next to these barriers, also the financial barrier has been left largely untouched, which will be discussed in the following chapter on Flemish support schemes.

[290] Art. 4.8.4., §1, 1°-3°, 6°, 8° Energiedecreet.
[291] Art. 4.8.4., §1, 4°-5°, Energiedecreet.
[292] Art. 4.8.4., §1, 7°, Energiedecreet.
[293] A., DELNOOZ, J., VANSCHOENWINKEL, Y., MOU and H., HÖSCHLE, *Possibilities of collective activities in Flanders*, EnergyVille, November 2020.
[294] Art. 4.8.4., §4, section 1, Energiedecreet.
[295] Art. 22 (4) (e-g, i), RED II.

3.1.2.2. Provision of Flemish support schemes

3.1.2.2.1. Provision of subsidisation in Flanders

191. While the provision of tools to access financing is required by the RED II Directive under article 22(4)(g), this requirement has also been left unaddressed by the Flemish Energy Decree. Currently, the transposition does not provide for a separate financial support scheme designed specifically for RES Communities. As such, no separate subsidisation mechanism has been provided for RES Communities in Flanders.

192. Indeed, under the current legislation, the main potential financial subsidisation in Flanders relies on a pre-existing system of investment subsidisation which has now been made applicable to renewable energy communities.[296] These investment subsidies are assigned through a 'call-system', calling on interested persons, installations or legal entities to request subsidisation.[297] These calls must be launched by the minister at least every six months.[298]

193. Regrettably, the competent Flemish Minister decided to organize only three such calls for the entirety of 2023, with all three calls lasting for a period no longer than two weeks. At the time of this writing, the first call has only recently concluded, spanning from 17 April 2023 until 2 May 2023. The remaining two calls will span from 30 May 2023 until 13 June 2023 and from 17 October until 31 October 2023.[299] Keeping in mind the objective of removing unjustified regulatory and administrative barriers as requested by the RED II Directive, the provision of only three such calls for periods of only two weeks can hardly be considered a sufficient removal of an administrative barrier.

194. Besides the administrative and procedural limitations regarding the call system, questions can also be raised regarding the total maximum valuation of the combined approved subsidies. The first call-period has a gross maximum subsidisation ceiling at 3 million Euro, to be spent across all the approved requests for subsidisation.[300] In similar fashion, the second call period has a combined maximum subsidisation of 2 million Euro.[301] Even more striking however is the limitation on the total amount of subsidisation, specifically reserved for RES Community-subsidisation requests in Flanders during the first call, as this is capped at a total of 500.000 Euro for all of Flanders.[302] Where it could have been surmised that this limited subsidisation for RES Communities was due to it being only the first call period to be applied to RES Communities, it is regrettable to note that the recently announced second call period maintains a 500.000 Euro subsidisation budget for RES Communities.[303] Given the importance of subsidisation for the widespread adoption of RES

[296] Art. 7.11.1., §1, section 3, 2°/2, Energiebesluit.
[297] Art. 7.11.1., §2, section 1, Energiebesluit.
[298] Art. 7.11.1., §2, section 2, Energiebesluit.
[299] Art. 1, Ministerieel besluit houdende de organisatie van calls voor het jaar 2023 voor het indienen van steunaanvragen voor middelgrote installaties op basis van zonne-energie en kleine en middelgrote windturbines, 17 February 2023. (hereafter: Ministerieel besluit houdende de organisatie van calls.)
[300] Art. 3, section 1, Ministerieel besluit houdende de organisatie van calls.
[301] Art. 1, Ministerieel besluit houdende de wijziging van het ministerieel besluit van 17 februari 2023 houdende de organisatie van calls voor het jaar 2023 voor het indienen van steunaanvragen voor middelgrote installaties op basis van zonne-energie en kleine en middelgrote windturbines, 10 May 2023.
[302] Art. 3, section 3, Ministerieel besluit houdende de organisatie van calls.
[303] Art. 1, Ministerieel besluit houdende de wijziging van het ministerieel besluit van 17 februari 2023 houdende de organisatie van calls voor het jaar 2023 voor het indienen van steunaanvragen voor middelgrote installaties op basis van zonne-energie en kleine en middelgrote windturbines, 10 May 2023.

Communities, such limited financial support will most likely do very little in improving the development of RES Communities in Flanders.

3.1.3. Practical examples of RES Communities in Flanders

195. In what follows, the thesis will take a look at a number of Flemish Renewable Energy Communities, how they defined the proximity-requirement and what the contents of their by-laws are like, on the basis of a 2022 report by the VREG. The report mentions a total of 131 notifications for the period between 1 January 2022 and 1 December 2022. From the outset, 43 of those were not published or retracted afterwards as they were manifestly faulty submissions related to the lack of a required legal entity, or reference to a non-existent legal entity. As such, 88 notifications remained, with a number of those being duplicate applications as both a RES Community and a Citizen Energy Community. After counting those as only a single application, a total of 60 individual submissions remained.

196. Of note is the clear presence of pre-existing energy initiatives submitting a notification as a RES Community or Citizen Energy Community. This already gives the impression that the Flemish implementation of the Directive has, in essence, missed its start and has only resulted in limited new initiatives being launched.

197. Interestingly, this report confirms the heightened workload for the VREG due to the duty to notify the VREG of the conception of a new RES Community, yet immediately highlights potential problems regarding the duty to notify the VREG. On the one hand, the report by the VREG notes that the data it had received at the time of this writing were too limited to be able to perform an assessment of all the applicable conditions of both RES Communities and CEC's, while on the other hand noting that some of the conditions have been defined too vague or broad in the Energy Decree, rendering an effective control of those conditions nigh on impossible.[304] To this extent, the VREG notes the vagueness of the subsidiarity of the profit-objective as well as the vagueness of the requirement "*not to be involved with large scale commercial activities and not to have the energy sector as its main economic activity"*. The VREG also refers to the difficulty in controlling the main purpose as "*granting ecological, economic or social benefits to the members or surroundings"*, as this main purpose is not always easily identifiable, with the by-laws of the RES Communities often listing a host of potential activities, thereby often merely copying the Energy Decree verbatim.[305]

3.1.3.1. Ampère

198. Ampère is a legal entity in the form of a cooperative company, located in the municipality of Hamme in the Province East-Flanders, which was conceived in August of 2019. Given that this citizen energy initiative was launched before the existence of the amendment to the Energy Decree, this is one of the mere notifications to the VREG of a pre-existing initiative which is expected to meet the conditions on membership, activities and objectives. It is also one of the many other citizen energy

[304] VREG, *"Rapport: Energiegemeenschappen, energiedelen en peer-to-peerhandel van groene stroom in 2022",* VREG, December 2022, 10.
[305] *Ibid.*

projects which notified the VREG of its existence as both a RES Community and a Citizen Energy Community due to the large overlap in both concepts.

199. According to the VREG report, the members of 'Ampère' consist of 90% natural persons, 5% local governments and 5% small enterprises. This is not entirely reflected clearly in the by-laws however, as they merely mention that the applicant-member must be either a natural person or legal entity who signs the by-laws and buys at least one share. With regards to the category of natural persons, the by-laws state the cooperative company *'unites a group of citizens who want to realize a local, ecological and societal transition*'. This already refers to the notion of the main purpose of the RES Community, which the VREG noted as problematic due to the vagueness.

200. With regards to its activities, it is clear that these activities were established on the basis of the enumeration in the RED II Directive. Indeed, the VREG report notes that the RES Community seeks to produce, use, store and sell energy produced by their installations, while also offering energy services and accessing the energy markets through flexibility or aggregation. This enumeration of activities clearly reflects the contents of the recast Directive and sheds light on the comments made by the VREG on the difficulty of assessing the veracity of these activities.

201. A minor mention is made of the proximity-requirement, in that the Ampère RES Community has chosen to define it according to the geographical proximity-interpretation. To this extent, the notification to the VREG however simply stated *'Participants all live in Flanders.'* Clearly, such an interpretation gives very little substance to the proximity-requirement, with the VREG similarly noting that many of the registered RES Communities apply *'incredibly vague interpretations of the proximity-requirement'*.[306]

3.1.3.2. Limburg Windt

202. Limburg Windt is an energy initiative in the form of a limited company, located in the Flemish municipality of Hasselt. It also concerns a pre-existing energy initiative, founded in November 2009 by energy company Aspiravi NV and investment firm LRM with by-laws dating back to December 2014. On the basis of its by-laws, it is an energy initiative which focuses on the development of renewable energy projects, mainly the development and exploitation of windmill-parks and an investment- and holding partnership. Included therein are the management of investments and participations in subsidiaries and the granting of advice. These activities are however not entirely reflected in its notification to the VREG, as therein is included a verbatim copy-paste of the potential activities as noted in the Flemish Energy Decree, including the specific mention regarding charging activities for electric vehicles.

203. According to the notification to the VREG, the membership of Limburg Windt is comprised of 57% local authority membership and 43% SME's. This is however not clearly depicted within the by-laws, as no mention is made of the different members or the applicable conditions for membership.

204. Defining 'proximity' in the notification to the VREG happened on the basis of the geographical interpreting criterium, yet the notification either does not elaborate on this, or elaborates by stating

[306] VREG, *"Rapport: Energiegemeenschappen, energiedelen en peer-to-peerhandel van groene stroom in 2022",* VREG, December 2022, 15.

the RES Community is aimed at 'developing wind energy', which does not appear to be a geographical connection. This would be somewhat surprising as the by-laws of Limburg Windt indicate that it will only invest in projects which are at least partially located in the Flemish province of Limburg, which would be a far clearer geographical criterium.

3.1.4. Preliminary conclusion on the transposition of RES Community legislation in Flanders

205. Having reviewed the implementation of RES Community legislation in Flanders and its current application in practice, multiple comments can be made with regards to the defining framework, the provision of an enabling framework and support scheme as well as the application in practice.

206. On the topic of the defining framework, it can be said that the Flemish implementation of the RED II Directive provisions on the definition of renewable energy communities is sufficient, yet offers little additional information or concretisation when compared to the Directive. As is noted by the VREG in its report, the lack of a binding interpretation of the proximity-requirement has led to very vague substantiations of the proximity-requirement, making effective control of the veracity difficult. The same can be said about the vague enumeration of potential activities, with the VREG even calling upon the Flemish legislator to clarify or get rid of vague conditions of application. At the same time, the VREG also notes that perhaps, the mere notification procedure is not sufficient to allow for a genuine control of the conditions for application as a RES Community, given that the notification is not a constituting element. As such, it suggests a potential prior procedure of recognition, while keeping in mind the additional administrative workload this would ensure for the recognizing authority.[307]

207. Focusing on the enabling framework and the provision of a support scheme, much is left to be desired. Firstly, while the removal of regulatory and administrative barriers was examined, Flemish legislators did not go beyond that as not much was actually adapted. In the same vein, an explicit mention of the principle of non-discrimination as well as the additional attention which should be granted to low-income and vulnerable households seem to have been lost while transposing and should be added as they provide additional protection to vulnerable persons or households. The absence of tools to provide access to information should also be addressed as soon as possible, as the access to information regarding RES Communities is essential to accelerating the development of RES Communities. This is currently clearly lacking as very few genuine new RES Communities sent a notification to the VREG.

208. Of absolute importance is the lack of a sufficiently funded support scheme in the form of RES Community-specific subsidisation. The application of a pre-existing subsidisation mechanism to RES Communities, reliant on three call periods of two weeks each, with the first one only having a budget of 500.000 Euro for the entirety of Flanders cannot be considered sufficient. It provides very little financial incentive to citizens, thereby undoubtedly adding in the low uptake in new RES Communities.

[307] VREG, *"Rapport: Energiegemeenschappen, energiedelen en peer-to-peerhandel van groene stroom in 2022",* VREG, December 2022, 17.

3.2. Transposition in The Netherlands

209. Although it is in the works, the Dutch implementation of the RED II Directive has not been finalised yet. The last proposal for a Dutch implementation in the form of the Dutch *'Energiewet'* was published on 12 July, 2022 together with an explanatory memorandum. At that point, both the proposal and the memorandum were presented to the Dutch Council of State for an advisory opinion. The advice by the Council of State was published on 6 February 2023 and should therefore be taken into account when assessing the proposal, in combination with the explanatory memorandum.

210. That being said, the main issues and remarks of the Council of State revolve around the intention of the Dutch legislator to combine the pre-existing Dutch Electricity-law and Gas-law, while simultaneously implementing the EU Clean Energy Package including the Electricity Directive and Renewable Energy Directive as well as benefitting the execution of other national policy-goals. It took the Council of State *'an above-average amount of time to grasp the proposal and assess which parts concern implementation, re-implementation or policy choices, be that national or EU policy, and how all those elements are interconnected.'*[308] Such a combination of pre-existing as well as new, European and national policies leads the Council of State to consider the proposal as needlessly complicated, with the different functions being insufficiently separated and elaborated on.[309]

211. As a result of this assessment, the Dutch Council of State has recommended the legislator to abandon the combination of the Electricity law and Gas law at this point. Should the legislator choose to continue, the Council has recommended to succinctly explain which legislation stems from where, if it concerns domestic policy or binding EU obligations, in order for the Energy Law to preserve its clarity and coherence. For the purpose of this thesis, this chapter is based on the Energy Law as it was proposed on July 12, 2022.

3.2.1. Implementation of the defining framework in the Netherlands

3.2.1.1. Definition and characteristics of RES Communities in the Netherlands

212. Under the proposed Dutch Energy law, it must first be noted that no specific definition is reserved for Renewable Energy Communities. Instead, the Dutch legislator has opted for a single definition of an 'Energy Community', broad enough to encompass both the RES Communities originating from the RED II Directive and the Citizen Energy Communities from the IEMD. As such, an Energy Community is defined in the proposed Dutch Energy law as "*A legal entity which, for the purpose of its members, partners or shareholders conducts activities on the energy market and has, as its main purpose, offering environmental, economic or social benefits to its members, partners, shareholders or to the local areas in which they operate, and is not aimed at making a profit.*"[310]

213. In accordance with both the RED II Directive and IEMD, the Dutch Energy law requires the presence of a legal entity, whose establishment is defined by law. The Dutch legislator has however chosen to apply a *'sensu lato'* interpretation of the term 'legal entity' as defined in both Directives.

[308] RvS(NL) Advisory department, W18.22.0119/IV9, 6 February 2023, 1.
[309] *Ibid.*
[310] Art. 1.1., Conceptvoorstel van wet houdende regels over energiemarkten en energiesystemen (Energiewet), 12 July 2022. (hereafter: Energiewet)

This leads to the Dutch Energy law having a broader scope of application, as it also allows for the inclusion of corporations and partnerships without 'legal personality'.[311]

214. When it comes to the potential members of the Energy Community under the proposed Dutch Energy law, the general scope of application does not place limitations on potential members. This is a natural consequence of the inclusion of Citizen Energy Communities, as the definition of these communities does not have limitations on potential members. As such, large scale corporations and even regular energy suppliers can also become a member or shareholder of a Dutch Energy Community. This does not apply to Energy Communities which develop renewable energy projects however, as they can adopt the 'guarantee' or 'assurance' in their by-laws that the members can only be natural persons, SME's or local authorities.[312] Here as well, the Dutch Council of State considered the wording 'guarantee' or 'assurance' (in Dutch: *borgen)* problematic, as it was too vague to convey the actual breadth of the obligations.[313]

215. For both the general Energy Community as well as the Energy Community developing renewable energy projects, the Dutch Energy Law requires the effective control over the Energy Community to be held by the members or shareholders of the Energy Community.[314] Additionally, the Energy Law refers to the proximity-requirement in relation to RES Communities, as it allows for the Energy Communities developing renewable energy projects to limit the effective control to members or shareholders who live in the near vicinity of the renewable energy projects.[315] As such, the Dutch legislator has chosen to limit the application of the proximity-requirement based on the geographical interpretation. While this geographical interpretation has not been further substantiated in the proposed Energy Law itself, it did receive further substantiation within the confines of the financial subsidisation as it was therein defined along the lines of a 'postal code rose' (*postcoderoos)* (see *infra* nr. 222).

216. With regards to the main goals of the Dutch Energy Communities, the definition indeed requires the main goal to be the offering of environmental, economic or social benefits to its members, shareholders or the local areas in which they operate, and cannot be to make a profit.[316] As such, the main goal of the Energy Communities is almost entirely based on the directives, with little else added. Similar to the Flemish implementation, and reiterated by the Dutch Council of State, this has resulted in a vague wording, as a result of which varying interpretations are to be expected.

3.2.1.2. Competences of RES Communities in the Netherlands

217. Somewhat problematic is the lack of an explicit mention of the possible competences or activities which the Energy Community can perform under the proposed Dutch law. In reading the explanatory memorandum, it is clear that this was an intentional decision by the Dutch legislator, as they chose to focus on a legal framework for the energy-related tasks, rather than focusing on who would be able to perform which task. The consequences of this could go either way, with DIESTELMEIER noting

[311] Memorie van toelichting Energiewet – versie RvS, 12 July 2022, 172.
[312] Art. 2.5, section 2, (a), Energiewet.
[313] RvS(NL) Advisory department, W18.22.0119/IV9, 6 February 2023, 15.
[314] Art. 2.5., section 1, (c), Energiewet.; Art. 2.5., section 2, (b), Energiewet.
[315] *Ibid.*
[316] Memorie van toelichting Energiewet – versie RvS, 12 July 2022, 172.

than on the one hand, this could lead to an open category allowing for a whole host of activities, perhaps not foreseen by the directives, while on the other hand perhaps not providing sufficient support for the Energy Communities in that they would need to adhere to conditions which, in reality, should not be applied to them.[317]

3.2.2. Implementation of enabling frameworks and support schemes in the Netherlands

3.2.2.1. Implementation of enabling framework

218. Regarding the existence of an enabling framework, it is best to distinguish between the enabling framework for Energy Communities on the one hand and the enabling framework for the citizens themselves on the other hand. When assessing the existence of an enabling framework for Energy Communities, reference must be made to the Member State obligation to ensure the removal of unjustified regulatory or administrative barriers.[318] Under certain conditions, the Netherlands have indeed done so, by allowing the Energy Community to supply electricity without needing a prior permit or notification. This provision applies to the delivery of energy by the Energy Community to its members or shareholders, under the condition that the Energy Community had not delivered more energy to its members than it generated during the previous year.[319] The proposed Energy law has however foreseen the possibility for a Ministerial Decision to impose a maximum amount of members an Energy Community can have for this exception to be applicable.

219. The enabling framework for citizens is however less substantiated, as is also noted by the Dutch Council of State. Indeed, the Council notes that, while the active participation of citizens in the energy provision is admirable, little attention is put on how exactly the proposed structures are clear and 'achievable' for citizens. It is not clear for citizens which possibilities they genuinely have in terms of locally sharing energy amongst each other or how they could gain more experience on this, but also that it is not sufficiently clear which risks this active participation entails for the citizens.[320]

220. To this extent, the Council of State suggests applying the preliminary Dutch '*Doenvermogentoets'*, essentially a pre-emptive feasibility-study which mainly consists of the question '*Does the envisioned regulation rely on realistic assumptions of the capacity of citizens?'.*[321] To this extent, multiple procedural and substantial questions should be asked by the Dutch legislator while creating this policy. These questions relate to the expected mental load for citizens, the impact of a potential cumulation of loads stemming from other regulations or obligations, the consequences of inertia or mistakes by the citizens and the availability of assistance.[322]

[317] L., DIESTELMEIER, "'Energiegemeenschappen' – een decentrale oplossing voor de energietransitie", *Nederlands Tijdschrift voor Energierecht,* 2021, 113.
[318] Art. 22(4), a, REDII.
[319] Art. 2.19, section 2, a, Energiewet.
[320] RvS(NL) Advisory department, W18.22.0119/IV9, 6 February 2023, 9.
[321] RvS(NL) Advisory department, W18.22.0119/IV9, 6 February 2023.
[322] M., BOVENS, A.-G., KEIZER, *Doenvermogen: Van toets naar tools*, Wetenschappelijke Raad voor het Regeringsbeleid, 2020, 20.

3.2.2.2. Provision of Dutch support schemes

221. While the Dutch implementation of the RED II Directive is yet to be finalised and the enabling framework is not yet impervious, the same cannot be said for the Dutch financial support scheme. Indeed, even before the first proposal for a new Dutch Energy law, forms of collective energy generation could already enjoy the Dutch reduced fiscal tariff, also known as the '*postcoderoosregeling'*.[323] However, in line with the first proposals for a new Dutch Energy law, this support scheme was replaced in April 2021 by a financial support scheme granting subsidisation for local, communal energy generation.[324] This was explicitly made applicable to Energy Communities, despite the definitive Energy Law not being finalised yet.[325]

222. Based on the division of powers in the Netherlands and confirmed in the proposal to the Dutch Energy Law, the provision of energy concerns a federal matter in which the provinces and municipality-councils are not authorized to legally bind the production, transport or delivery of energy.[326] This is however not so strict as to prohibit all actions by the provinces and municipality-councils, so long as they do not intersect with the federal regulations.[327] As such, the Dutch subsidisation, applicable to Energy Communities, is federally regulated and controlled.

223. Under the Dutch subsidisation scheme, the amount of approved subsidisation is mainly based on the amount of kWh that qualifies for subsidisation produced in a given year, and for which a guarantee of origin can be presented.[328] This guarantee of origin has many different interpretations, yet in this case must be read as relating to a guarantee of origin for sustainable electricity.[329] In order for the Energy Community to then apply for the subsidisation, it must, amongst others, submit its name, location, category of production-installations and amount of kWh that are to be generated and fed in over the period for which the subsidies are requested.[330] Next to this, the request for subsidisation also requires a geographical notion in that it must contain the so called 'postal code rose', which can be seen as the interpretation of the locality-requirement by the Dutch Government.[331] In essence, the locality principle as substantiated by the 'postal code rose' is tied to a specific postal code, combined with the bordering postal codes.[332]

224. Under the aforementioned criteria, the Energy Community can apply for the federal subsidisation in the Netherlands. While this scheme is open to other renewable energy initiatives outside of RES Communities, it is notable that the Dutch Government foresaw a 92 million Euro

[323] L., DIESTELMEIER, "'Energiegemeenschappen' – een decentrale oplossing voor de energietransitie", *Nederlands Tijdschrift voor Energierecht,* 2021, 107.
[324] Regeling van de Minister van Economische Zaken en Klimaat van 27 februari 2021, nr. WJZ/20120093, tot vaststelling van een regeling voor de verstrekking van subsidie voor het lokaal en gezamenlijk opwekken van hernieuwbare elektriciteit, *Staatscourant*, 3 March 2021, nr. 11080. (Hereafter: Subsidieregeling coöperatieve energieontwikkeling.)
[325] Explanation to the Subsidieregeling coöperatieve energieontwikkeling, 23.
[326] Art. 6.8, Energiewet.
[327] Memorie van toelichting Energiewet – versie RvS, 12 July 2022, 139.
[328] Art. 3 (1), Subsidieregeling coöperatieve energieontwikkeling
[329] Art. 1, Wet van 1 juni 2022, houdende Regels omtrent garanties van oorsprong voor energie uit hernieuwbare bronnen, *Staatsblad van het Koninkrijk der Nederlanden,* 2022, 212. (Hereafter: Wet implementatie EU-richtlijn hernieuwbare energie voor garanties van oorsprong)
[330] Art. 13(2), Subsidieregeling coöperatieve energieontwikkeling.
[331] Art. 13(2), b, Subsidieregeling coöperatieve energieontwikkeling.
[332] Art. 1, Subsidieregeling coöperatieve energieontwikkeling.; L., DIESTELMEIER, "'Energiegemeenschappen' – een decentrale oplossing voor de energietransitie", *Nederlands Tijdschrift voor Energierecht,* 2021, 107.

budget for this subsidisation fund in 2021, with this budget even swelling to 150 million Euro for 2023. At the time of this writing, a total of 23.5 million Euro has been approved, 10.8 million Euro in requests is under review and 115.7 million Euro is still to be distributed or requested. With the period of application running from 9 January 2023 until 1 November 2023, it is to be expected that a large majority of the subsidisation budget will be approved by the end of the application period.

3.2.3. Preliminary conclusion on the transposition of RES Community legislation in the Netherlands.

225. Based on the aforementioned look into the Dutch implementation, once again a number of conclusions and remarks can be drawn. Naturally, the main remark to be made relates to the fact that the Dutch transposition of provisions relating to RES Communities is still tied up in a complex law proposal which is yet to be accepted into law, with the Dutch Council of State even suggesting dropping the current proposal altogether and separating the different elements into different laws. Such a delay in transposition is naturally detrimental to the legal certainty and clarity for the citizens, as well as the uptake of RES Communities in the Netherlands.

226. The defining framework is reasonably well-implemented, although vague wording is expected to lead to varying interpretations on the scope of application. While the specific purpose of an Energy Community is defined in the proposed Energy Law, this does not hold true for the potential activities which are absent in the transposition. As such, this part of the defining framework of the Energy Communities still relies on the contents of the directives.

227. With regards to the enabling framework, the difference between enabling the Energy Communities and the citizens persists. While the exception to the requirement of a permit is commendable, the lack of clear wording and explanation regarding the possibilities and risks for citizens makes it hard for them to judge the genuine available possibilities. It must also be noted that the Dutch legislator cannot forego the *'Doenvermogentoets'*, as the risk remains that the proposed Energy Law builds on unreasonable expectations of the Dutch citizens.

228. A big positive of the Dutch transposition relates to the inclusion of a well-funded, broad subsidisation scheme. While it also applies to other renewable energy initiatives outside of RES Communities, the provision of a 150 million Euro fund for which applications can be entered from 9 January until 1 November for 2023 is highly commendable. The approval of a total of 23.5 million Euro then also highlights the importance of subsidisation, as the existence of subsidisation clearly ties to an increase in uptake of renewable energy initiatives.

3.3. Transposition in France

229. As was the case with all EU Member States, the requirement to implement the RED II Directive by June 2021 also applied to France. To this extent, the French Government requested authorisation by the French Parliament to act on this matter in accordance with article 38 of the French constitution, as this competence ordinarily lays with the French legislator. This then resulted in the approval of the French ordinance 2021-236 of 3 March 2021.[333] Confined within this ordinance are, amongst others, amendments to the French Energy Code introducing provisions regarding RES Communities.[334]

230. At the time of this writing, this ordinance is however amended only very recently, on 10 March 2023.[335] As a result of this, certain provisions of the French Energy Code have been amended once again, adding onto the pre-existing implementation of the RED II Directive. Given the recency of the latest amendment at the time of this writing, the assessment of the French transposition of provisions on RES Communities is limited to an assessment in light of the contents of the RED II Directive and does not go into too much details.

3.3.1. Implementation of the defining framework in France

3.3.1.1. Definition and characteristics of RES Communities in France

231. Under the 2021 French ordinance, Renewable Energy Communities were defined as a legal entity (*une personne morale*) in accordance with a number of cumulative criteria.[336] However, this definition of a legal entity was deemed vague in terms of the meaning of small and medium enterprises, as a result of which the recent French law of 10 March 2023 added the additional criteria that the term 'legal entity' must be read in accordance with article 3 of the annex to the Commission recommendation of 6 May 2003 regarding SME's.[337]

232. Adopted in the ordinance and naturally maintained under the recent law, the French Energy Code explicitly mentions the required open and voluntary participation of its members, in accordance with the RED II Directive.[338] With regards to its members, the ordinance already made reference to the directive by limiting the potential members to natural persons, SME's, local authorities or their joint projects. This was then once again extended by the French law in that the category of SME's must be interpreted in accordance with the RED II Directive. Next to this, a list of additional, specific potential members or shareholders was added such as social enterprises with an investment specialty in renewable energy and companies focusing on renewable energy development.[339]

[333] Ordonnance n° 2021-236 du 3 mars 2021 portant transposition de diverses dispositions de la directive (UE) 2018/2001 du Parlement européen et du Conseil du 11 décembre 2018 relative à la promotion de l'utilisation de l'énergie produite à partit de sources renouvelables et de la directive (UE) 2019/944 du Parlement européén et du Conseil du 5 juin 2019 concernant des règles communes pour le marché intérieur de l'électricité, *JORF*, 4 March 2021, Vol. 0054.
[334] Art. L291-1-L291-3, Code de l'énergie
[335] Loi n° 2023-175 du 10 mars 2023 relative à l'accélération de la production d'énergies renouvelables, *JORF*, 11 March 2023, Vol. 0060.
[336] Art. L.291-1, Ordonnance n°2021-236.
[337] Commission recommendation 2003/361/EC, concerning the definition of micro, small and medium-sized enterprises, *Pb.L.*, 20 May 2003, Vol. 46, 36.
[338] Art. L.291-1, 1°, Code de l'énergie.
[339] Art. 3, b, Loi n° 2023-175., Art. L.291-1, 2° Code de l'énergie.

233. In line with article 2(16)(a) of the RED II Directive, the French Energy Code explicitly requires the RES Community to be effectively controlled by members or shareholders who live in proximity to the renewable energy projects.[340] This proximity requirement has been substantiated under French law in relation to natural persons and SME's, where 'proximity' is to be interpreted as the natural person or SME having their address in the department where the RES project is located, or a bordering department. This interpretation is therefore similar to the Dutch 'postcoderoosregeling'.

234. Next to the proximity-requirement however, the French Energy Code extensively details further requirements regarding effective control which are to be enshrined in the by-laws of the RES Community. The effective control should be exercised by the members, with no member or shareholders exceeding 40% of the voting rights and all members having guaranteed minimum voting rights.[341]

235. With regards to the purpose of the RES Community under French Law, the ordinance copied the RED II Directive verbatim by referring to the environmental, economic or social benefits for its members, shareholders or local area in which it resides, rather than financial profits.[342] Given that no more elaboration was provided by the French legislator, it is to be expected that the vague wording of this provision will lead to further discussion.

3.3.1.2. Competences of RES Communities in France

236. Similar to much of the defining legislation surrounding RES Communities in France, the enumeration of potential competences and activities of RES Communities is a verbatim copy-paste of the RED II Directive. As such, the French Energy Code allows for RES Communities to produce, consume, store and sell its renewable energy.[343] At the same time, the French Energy Code allows for RES Communities to share the energy which was generated by the community-owned installations between its own members and shareholders, as well as access the relevant energy markets either directly or through aggregation.[344]

3.3.2. Implementation of enabling frameworks and support schemes in France

3.3.2.1. Implementation of enabling framework

237. Even before the implementation of the RED II Directive, the French Government already conducted an assessment regarding existing barriers and goals for the acceleration of the uptake of renewable energy in France.[345] Within this assessment, a distinction was made between 'accelerating the dynamic of local government-projects', 'accompanying and communicating about projects' and most importantly 'simplifying the development and financing of projects'.[346] While this assessment of necessary actions and barriers is admirable, not much has happened beyond this assessment. As

[340] Art. L291-1, 3° Code de l'énergie.
[341] Art. L291-3, section 3, Code de l'énergie.
[342] Art. L291-1, 4° Code de l'énergie.
[343] Art. L291-2, 1° Code de l'énergie.
[344] Art. L291-2, 2°-3° Code de l'énergie.
[345] Ministère de la transition écologique, *10 mesures en faveur des énergies renouvelables citoyennes*, November 2021.
[346] *Ibid.*

such, the required preliminary assessment under article 22(3) of the RED II Directive has been performed, yet the barriers that have been identified have largely remained in place to this day.

238. One of the suggested enabling elements relates to a reduction of connection-costs for small renewable energy projects, whereby the general tariff for usage of public energy resources would be used to cover up to 60% of these costs. Such a system would work akin to financial subsidisation, with the main difference being that the owner of the small renewable energy projects would not be granted subsidisation, but also would not have to pay the majority of the connection fees, thereby significantly reducing the initial costs of renewable energy projects.[347] To this day however, this plan has not proceeded beyond the theoretical assessment.

239. With regards to the working of RES Communities themselves however, the French Energy Code does provide some clarity in the form of a guiding principle, in that Energy Communities in general enjoy a non-discriminatory, proportionate treatment with regards to their activities, rights and obligations as final consumers, producers, suppliers or as other market participant.[348] While this is mainly a reference to article 22(4)(d-e) of the RED II Directive, its inclusion is a welcome addition in terms of enabling the RES Community in its activities. Interestingly though, this provision implicitly excludes certain activities of RES Communities, as the French provision does not mention the activity of '*distribution system operators',* as is foreseen in the Directive.

240. Other than this however, many of the enabling elements from the RED II Directive are missing in the French transposition. Mention can be made of the absence of specific protections for low-income and vulnerable households, support for public authorities in their set up of RES Communities and mainly, a lack of tools to facilitate access to information. While the latter was explicitly foreseen in the preliminary assessment as the French Government sought to launch a national campaign aimed at familiarising citizens with citizen energy initiatives, this has not come to fruition and has seemingly not been reiterated in the French Energy Code.[349]

3.3.2.2. Provision of French support schemes

241. Similar to the provision of tools to access information, the French assessment included the assessment of existing financial barriers, amongst which a reduced cost of grid connection. (see *supra* nr. 238) However, at the time of this writing most of these barriers still remain, with the amended French Energy Code not providing for a financial support framework which is specifically aimed at RES Communities. As such, the main financial support of RES Communities potentially relies on the application of pre-existing feed-in tariffs and feed-in premiums, to be applied to the sale of generated energy.[350]

242. Next to this however, the French Government created a national fund in 2018, EnRCiT, aimed at financing the development of bigger Citizen Renewable Energy Projects, who are eligible for the

[347] Ministère de la transition écologique, *10 mesures en faveur des énergies renouvelables citoyennes*, 9, November 2021.
[348] Art. L293-3 Code de l'énergie.
[349] Ministère de la transition écologique, *10 mesures en faveur des énergies renouvelables citoyennes*, 6, November 2021.
[350] Art. 1, Décret n° 2016-691 du 28 mai 2016 définissant les listes et les caractéristiques des installations mentionnées aux articles L.314-1, L.314-2, L.314-18, L.314-19, L.314-19 et L.314-21 du code de l'énergie, *JORF*, 2016, Vol 124, 29 May 2016.

application of feed-in premiums.[351] This national fund is aimed at providing financial support to the Citizen Renewable Energy Projects during the creation, development and installation of the RES project, thereby reducing the financial risk of participants. On the other hand, while a national fund does not exist for smaller Citizen Renewable Energy Projects in France, who would not be able to benefit from the feed-in premiums but only the more general feen-in tariff, multiple regional authorities have provided financial support in the form of subsidisation for feasibility studies, financing bank loans and indeed, even investment grants.[352]

243. As such, while these financial support mechanisms were perhaps not created with Renewable Energy Communities in mind, they can certainly provide a financial boost to the development of Renewable Energy Communities in France.

3.3.3. Preliminary conclusion on the transposition of RES Community legislation in France.

244. Based on the foregoing, it can be noted that the defining framework in the French transposition of the RED II Directive-provisions on Renewable Energy Communities mostly relies on a limited copy-paste of the RED II Directive. That being said, the defining framework is relatively complete in that most of the relevant provisions have been transposed, such as provisions on the specific definition, potential members or shareholders and the principle of open and voluntary participation of those members. The mere copy-paste of the purpose of a RES Community as stated in the RED II Directive should perhaps be addressed however, as the vague wording therein is bound to lead to future discussions. A similar remark is to be made regarding the enumeration of the potential competences and activities of RES Communities.

245. With regards to the enabling framework, the transposition is still limited in that, while the requirement of non-discriminatory treatment is present, not much else is. Given the specific mention of low-income and vulnerable households in the RED II Directive, the absence of this element in the French transposition is a sore spot. Next to this, the absence of tools to advance the access to information is a major shortcoming of the French transposition.

246. Finally, no RES Community-specific financial support scheme has been envisioned by the French legislator. While the presence of such financial support schemes would certainly accelerate the development of Renewable Energy Communities in France, the presence of pre-existing feed-in tariffs and feed-in premiums does already provide some relief. Coupled with a pre-existing national fund for large projects and several regional financial support schemes for smaller projects, some financial support may already be present. This notwithstanding, the creation of an all-encompassing national fund, specifically tied to Renewable Energy Communities is recommended.

[351] C. SEBI and A.-L., VERNAY, "Community renewable energy in France: The state of development and the way forward, *Energy Policy*, 2020, Vol. 147, 111874, 10.
[352] C. SEBI and A.-L., VERNAY, "Community renewable energy in France: The state of development and the way forward, *Energy Policy*, 2020, Vol. 147, 111874, 10.

3.4. Conclusion on the transposition of the RED II Directive in Belgium, the Netherlands and France.

247. In summary, it is clear that the transposition of the RED II Directive into national legislation is still in its infancy, despite the deadline having expired in June 2021. While some elements of the RED II Directive provisions on RES Communities have been extensively implemented and expanded upon, others appear to be a mere copy-paste of the directive into national legislation, thereby transposing the directive *pro forma* yet leaving it, in essence, virtually untouched.

248. As concerns the defining framework, the overarching consensus appears to be a lack of concretisation, with the Flemish, Dutch and French transposition carrying over the vague wording of the Directive in certain aspects. This is evident in the enumeration of potential competences in Flanders and France, as well the wording of the main goals and objectives of RES Communities in the Netherlands and France. Specifically for Flanders, the lack of a clear delineation of the proximity-requirement is bound to lead to future discussions.

249. On the topic of the enabling framework, even more is left to be desired. Throughout all three assessed transpositions, the preliminary assessment by the Member State was performed, but not much else happened after that. Specifically, the lack of attention to vulnerable households, non-discriminatory treatment and access to public information are pressing needs which should be addressed. A positive note relates to the exemption for a permit-requirement however. Even if this only applicable under certain conditions, the removal of such an administrative barrier is bound to ease the development of Renewable Energy Communities in the EU.

250. Finally, and most importantly, the implementation and provision of financial support schemes in the assessed Member States is rather precarious. While the Flemish transposition has led to the application of a pre-existing support scheme to RES Communities, the regional nature of this support scheme drastically limits the available budget. On the other hand, the Dutch transposition has foreseen in an Energy Community-specific subsidisation fund, which can rely on a far greater budget due to its national structure, rather than the regional structure of the Flemish support scheme. Lastly, on the topic of the French financial support scheme, it must be said that while no Renewable Energy Community-specific subsidisation scheme is provided, a combination of pre-existing feed-in tariffs, feed-in premiums and both national and regional financial support schemes and subsidisation could be applied to RES Communities, thereby still providing a solid yet differentiated financial support scheme.

Chapter 4. Conclusion

251. In answering the main research question, this thesis first sought to assess the concept of energy security in relation to the EU energy supply. Naturally, this required a preliminary assessment of the current EU energy supply. To this extent, the defining question revealed that the EU energy supply consists of two main categories of energy sources, those being internally produced energy and imported energy sources. Between these two categories, the latter is however the majority share, leading to a preliminary conclusion that the current EU energy supply is indeed heavily reliant on imported energy sources.

252. Next, the thesis addressed the concept of energy security, seeking to provide a defining framework fitting within the confines of the EU energy policy under article 194 TFEU. To this end, reference was made to the widely accepted theory of applying the so-called '4A-framework' in assessing energy security, whereby energy security is assessed by looking at the Availability, Accessibility, Affordability and Acceptability of the energy sources. This notion should however be expanded to include the preliminary questions "energy security for whom?" and "energy security from which threats?", thereby allowing the 4A-framework to be applied and interpreted in a variety of situations, looking at a number of different categories of threats.

253. In applying these preliminary questions to the EU energy supply, it becomes clear that the energy security of the EU is in fact dependent on the Member States, as a result of an *a contrario* interpretation of article 194 TFEU and the principle of conferral. Thus, EU energy security must be interpreted on a member state level. In doing so, this thesis showed that the EU energy security is indeed at risk as a result of the overreliance on imported energy. These imports are mostly based on bilateral or multilateral agreements, exposing the Member States and therefore the EU to a potential politically sourced, fast shock threat as a result of the unilateral withholding of energy sources by the supplier. This would drastically reduce the accessibility of energy sources, with little domestically available energy sources to replace them.

254. The question then arose what potential impact the development of Renewable Energy Communities could have in reducing this import dependency, thereby increasing EU energy security. To this end, a preliminary assessment of the overarching regulatory framework on renewable energy presented itself on both an international and European level. This evaluation resulted in a conclusion that, while a wide array of both international and European legislation on renewable energy is available, this legislation is historically partially afflicted by a discrepancy in its binding nature. Especially with regards to European legislation, the existence of binding targets regarding renewable energy shares and greenhouse gas emissions reductions does not carry over to the Member States, where such targets are only indicative.

255. As the targets are still binding at the EU level, the thesis sought to define Renewable Energy Communities according to the recast Renewable Energy Directive 2018/2001. As such, the recast Directive defines Renewable Energy Communities as legal entities in a broad sense, whereby the members or shareholders can only be natural persons, small or medium-sized enterprises, local authorities or municipalities who must live in proximity to their renewable energy projects. Its main

purpose must be to provide environmental, economic or social community benefits, whereby financial profits can only be a subsidiary goal.

256. Having provided a defining framework for Renewable Energy Communities, the thesis sought to assess their potential impact on EU energy security by analysing them according to the revised 4A-framework, keeping in mind the vulnerability related to the overreliance on imported energy sources. Indeed, it can be assessed that the development of Renewable Energy Communities in the EU would vastly increase the accessibility of already available renewable energy sources, thereby drastically improving EU energy security.

257. Even on the topic of affordability, Renewable Energy Communities have the potential of unlocking vast quantities of private capital, yet this requires low risk market conditions. Indeed, accessing private capital relies on government support or subsidisation, which would necessarily happen at the member state-level. The recast directive however states that Member States are not obliged to do so. As such, a full assessment of the potential impact of Renewable Energy Communities on EU energy security requires a look at national transpositions, including the potential provision of subsidisation or support schemes.

258. With this in mind, the thesis looked at the national transposition of the relevant provisions on Renewable Energy Communities in Flanders, the Netherlands and France. It is clear that national transposition in the chosen Member States is still in its infancy, with many provisions being a mere copy-paste of the recast directive or transposed in vague wording. Many of the guiding principles such as open and voluntary participation, access to information and a removal of barriers remain missing.

259. Looking specifically at financial support schemes or government subsidisation, a distinction presents itself. A member state where the implementing power is reserved for the regions only provides minimal support schemes and no Renewable Energy Community-specific subsidisation, whereas a member state where the implementing power is explicitly reserved for the federal authority is able to provide well-funded Energy Community-specific subsidisation. In that case, the fact that requests for a value approaching 35 million Euro were made seems to indicate that so long as sufficient subsidisation is present, the development of Renewable Energy Communities drastically increases, thereby impacting the member state energy security and in turn, EU energy security.

260. As such, the main research question must be answered in the following:

"**By interpreting EU energy security along the lines of the Availability, Accessibility, Affordability and Acceptability-pillars under the revised 4A framework, Renewable Energy Communities have the potential of drastically improving EU energy security by granting widespread access to renewable energy sources, thereby reducing dependence on imported energy sources.**

Achieving this relies on the Member States increasing the quality of their implementation to provide clear, accessible and understandable legislation on Renewable Energy Communities, while simultaneously providing a well-funded financial support scheme without unnecessary administrative barriers."

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