Björn Hoops*

Two Tales of the Energy Commons Through the Lens of Complexity

https://doi.org/10.1515/gj-2024-0010
Received February 5, 2024; accepted April 8, 2024; published online April 22, 2024

Abstract: The Energy Commons embody the small-scale generation of renewable energy by groups of citizens. Existing scholarship and the European Union's rules on the internal governance of citizen and renewable energy communities envision the Energy Commons as making the energy transition more democratic, equitable, inclusive, and local. Based on empirical research on citizen-led energy generation in Germany, this contribution examines the extent to which Energy Commons in practice live up to these normative ideals, why they partially fail to do so and how regulatory change can enable Energy Commons to converge to these ideals. This contribution sets out different types of Energy Commons and assesses how each type performs against scholarly expectations and the EU rules on their internal governance. It identifies the complexity of the energy sector as the main obstacle to achieving said normative ideals and sketches guidelines for regulatory change to reduce this complexity.

Keywords: Commons; complexity; energy community; energy democracy

1 Introduction

An energy transition towards biomass, sun, wind, and other renewable energy sources not only contributes to the fight against climate change, but also forms an

Björn Hoops holds the Chair of Private Law and Sustainability at the Faculty of Law of the University of Groningen, The Netherlands. From April 2022 to March 2024 he was Marie Curie Fellow at the University of Turin. This contribution is a result of the project 'Private Law and the Energy Commons', which has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No. 101024836. The author is indebted to Bram Akkermans, Peter Bloom, Alessandra Quarta, Marc Roark, Camila Vergara, and the participants of the workshop 'Property Theory Compared: A European Perspective', held at the University of Oldenburg on 23 and 24 November 2023, for their comments on an earlier version of this contribution.

***Corresponding author: Björn Hoops**, Department of Private Law and Notarial Law, Faculty of Law, University of Groningen, Oude Boteringestraat 18, 9712 GH Groningen, Netherlands,
E-mail: b.hoops@rug.nl. https://orcid.org/0000-0002-1073-8004

opportunity to democratize the energy sector and curtail the market power of large energy companies. While the energy supply from fossil fuels mostly relies on large power plants, sources of renewable energy can support a decentralized and local energy supply, as biomass energy generators, solar panels, and wind turbines can be installed at a smaller scale in many different places.[1] Small-scale and local projects render it substantially easier for private citizens to participate in generating energy. Citizen involvement in the energy sector, in turn, is likely to give the energy transition an extra boost by mobilizing hitherto inaccessible private capital and reducing local resistance to often controversial projects such as windfarms.[2]

Citizens may pursue an individual path, for example by putting solar panels on their own roof to generate renewable energy for their own consumption and the public grid. This contribution does not deal with this individual path, but discusses a collective path, the 'Energy Commons'. The Energy Commons are here defined as groups of citizens who pool their resources, that is, their knowledge, money, and skills, to acquire and manage a renewable energy installation to generate and use or supply renewable energy together.[3] For example, a citizen initiative may buy solar panels, put it on the roof of a condominium, sell the energy to the inhabitants and the public grid, and distribute the revenue among the members. On this collective path, citizens benefit from, albeit limited, economies of scale, each other's knowledge and skills, as well as a community spirit and experience.

This contribution analyses the Energy Commons from two different angles of Commons research in property theory, through two tales of the Energy Commons. In property theory, energy can be analysed as a 'Commons' to the extent that it is collectively managed by a community of people according to their own

1 Lenhart, S., Chan, G., Grimley, M., and Wilson, E. 2021. "Comparing and Contrasting the Institutional Relationships, Regulatory Frameworks, and Energy System Governance of European and US Electric Cooperatives." In: *Routledge Handbook of Energy Democracy*, edited by A.M. Feldpausch-Parker, D. Endres, T.R. Peterson and S.L. Gomez, 34–50, 34–35. Abingdon: Routledge.

2 See, for instance, Vernay, A.-L., Sebi, C., and Arroyo, F. 2023. "Energy community business models and their impact on the energy transition: Lessons learnt from France." *Energy Policy* 175, 113473; Schwanitz, V.J., Wierling, A., Paudler, H.A., Von Beck, C., Dufner, S., Knutsdotter Koren, I., Kraudzun, T., Marcroft, T., Mueller, L., and Zeiß, J.P. 2023. "Statistical evidence for the contribution of citizen-led initiatives and projects to the energy transition in Europe." *Scientific Reports* 13:1342; and Goedkoop, F., and Devine-Wright, P. 2016. "Partnership or placation? The role of trust and justice in the shared ownership of renewable energy projects." *Energy Research & Social Science* 17: 135–146, 135–137.

3 Burke, M.J. 2021. "Energy Commons and Alternatives to Enclosures of Sunshine and Wind." In: *Routledge Handbook of Energy Democracy*, edited by A.M. Feldpausch-Parker, D. Endres, T.R. Peterson and S.L. Gomez, 200–214, 200. Abingdon: Routledge. *Cf.* Foster, S.R., and Iaione, C. 2019. "Ostrom in the City, Design Principles and Practices for the Urban Commons." In: *Routledge Handbook of the Study of the Commons*, edited by B. Hudson, J.D. Rosenbloom and D.H. Cole, 235–255, 239–240. Abingdon: Routledge.

rules.[4] A Commons as an institution for resource governance is typically distinguished from private property, which means that a private entity holds and manages a resource, and state property, held and managed by public bodies.[5] The first goal of this contribution is to introduce the Energy Commons to property theory. Descriptive in nature, this introduction sets out to analyse existing types of 'Energy Commons' using criteria already entrenched in property theory. Elinor Ostrom and other social scientists have firmly established that communities can sustainably manage a resource together.[6] More specifically, Ostrom distilled a number of conditions for the durable flourishing of the Commons in the form of design principles.[7] These design principles concern membership requirements, rule- and decision-making, rule monitoring and enforcement, and economies of scale through collaboration or integration with external entities. Given that EU Directives recognizing energy communities also regulate these aspects,[8] as is described in the next paragraph, the design principles provide a useful framework to analyse the internal governance of the Energy Commons, based on empirical research on the internal governance of Energy Commons in Germany.[9] This description furthers the understanding of the Energy Commons and can provide empirical underpinning to future regulation and legislation.

The second objective of this contribution is to view the Energy Commons through the lens of the prescriptive dimension of Commons research and to use them to develop this dimension further. This is the tale of the 'Virtuous' and 'Not So Virtuous' Commons. Some legislation and scholarship distinguish between different Commons based on the characteristics of the community, to justify a favourable treatment of the virtuous Commons.[10] An important example concerning the Energy Commons is the two EU Directives that recognize energy communities and enhance

4 Ostrom, E. 2015. *Governing the Commons. The Evolution of Institutions for Collective Action*. Cambridge: CUP, 30–33; Dagan, H., and Heller, M.A. 2001. "The Liberal Commons." *Yale Law Journal* 110, no. 4: 549–623, 556–557; Capra, F., and Mattei, U. 2015. *The Ecology of Law: Toward a Legal System in Tune with Nature and Community*. San Francisco: Berrett-Koehler Publishers, 149; and Quilligan, J. B. 2012 "Why Distinguish Common Goods from Public Goods?" In: *The Wealth of the Commons, A World Beyond Market & State*, edited by D. Bollier and S. Helfrich. Amherst: Levellers Press.

5 Dagan and Heller 2001, 556–558.

6 Fennell, L.A. 2011. "Ostrom's Law: Property Rights in the Commons." 5(1) *International Journal of the Commons* 5, no. 1: 9–27, 12–13.

7 Ostrom 2015, 90 *et seq*.

8 Art. 2, No. 11 Directive (EU) 2019/944; and Art. 2, No. 16 Directive (EU) 2018/2001.

9 See sub-section 2.2.1 below on methodology and data. All examined interview transcripts, statutes and responses to the questionnaire are on file with author.

10 See for a scholarly example: Di Robilant, A. 2011. "The Virtues of Common Ownership." *Boston University Law Review* 91: 1359–1374.

their access to the energy market.[11] The Internal Electricity Market Directive (IEMD; Directive (EU) 2019/944) and the Renewable Energy Directive (RED II; Directive (EU) 2018/2001) define 'citizen energy communities' and, respectively, 'renewable energy communities' through requirements for their internal governance regarding permissible purposes, membership, exits, and governance structures.[12] The Energy Commons that meet these requirements enjoy the privileges conferred by the Directives, the most significant of which is the so-called 'energy sharing'. Energy sharing roughly entails that even though the energy generated by the community is fed into the public grid, community members are roughly treated as if they consumed that energy, essentially as if they had their own physical grid.[13] The Energy Commons that do not meet said requirements will have to go without energy sharing and other privileges. The Directives are prescriptive in that they reward the 'virtuous' Energy Commons, while they exclude the 'not so virtuous' ones.

This contribution traces the distinction made by the Directives to property theory as well as the literature on Energy Democracy[14] and determines which types of the analysed Energy Commons would be considered 'virtuous' under the Directives. It uncovers dilemmas and choices that prevent Energy Commons from being virtuous. Based upon these dilemmas, this contribution tries to lay some groundwork for a theory of why Commons fail to follow legislative or scholarly prescriptions in practice and to sketch rough guidelines for proactive regulatory change that could be inferred from this theory.

This contribution is structured as follows. Section 2 tells the tale of the Energy Commons. Section 3 distinguishes the 'virtuous' from the 'not so virtuous' Energy Commons and explores the consequences of such a distinction. Section 4 introduces the theory of the complexity of the Commons and its implications for policy-making. Section 5 concludes this contribution.

2 The Tale of the Energy Commons

This section tells the tale of the Energy Commons by describing who they are, what they do, and how they do it. The first sub-section argues that citizen-led energy

11 Art. 16 Directive (EU) 2019/944; and Art. 22 Directive (EU) 2018/2001.

12 Art. 2, No. 11 Directive (EU) 2019/944; and Art. 2, No. 16 Directive (EU) 2018/2001.

13 The exact meaning of energy sharing is disputed: Giarmanà, E. 2023. "Managing Renewable Electricity within Collective Self-Consumption Schemes: A Systematic Private Law Approach." *Renewable and Sustainable Energy Review* 188, 113896.

14 For a definition and background of energy democracy, refer to Feldpausch-Parker, A.M., and Endres, D. 2021. "Energy Democracy, An introduction." In: *Routledge Handbook of Energy Democracy*, edited by A.M. Feldpausch-Parker, D. Endres, T.R. Peterson and S.L. Gomez, 1–14. Abingdon: Routledge.

generation can be described as a Commons (2.1). The second sub-section employs Ostrom's design principles to describe the different variations of the Energy Commons, their governance system, and activities (2.2). This description is based upon empirical research conducted in Germany. Finally, from these descriptions, the last sub-section distils five types of Energy Commons (2.3). These categories are used for further investigation in Section 3.

2.1 Characterization of Citizen-Led Energy Generation as a Commons

Since the publication of Hardin's 'The Tragedy of the Commons',[15] predicting the inevitable collapse of any resource held in common, the Commons has had to fight an up-hill battle to prove that groups of citizens could manage resources sustainably together. Hardin pre-supposed that the use of resources held in common could not be limited effectively. Through her work, Elinor Ostrom showed that groups can turn open access resources from which nobody can be excluded, into a well-managed resource.[16] She established the design principles under which common ownership is likely to be an effective and efficient means to manage a resource sustainably.

The application of these design principles to citizen-led energy generation presupposes that the Energy Commons are actually Commons. A Commons consists of three components: a common pool resource, a community that has access to it and cares for it, and the collective action of creating, restoring, maintaining, and governing the resource (the so-called 'commoning').[17] As is discussed in more detail below,[18] groups engaging in citizen-led energy generation hold up to four types of resources in common.[19] They together hold one or two resource systems, which is the energy generator and, if applicable, a grid, and one or two types of resource units, which are the energy produced and, if applicable, the revenue from the sale of that energy. All four are common pool resources because the citizens jointly hold them and must make an effort to regulate the use of these resources together.

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15 Hardin, G. 1968. "The Tragedy of the Commons." *Science* 162: 1243–1248.

16 Fennell 2011, 12–13.

17 Marella, M.R. 2017. "The Commons as a Legal Concept." *Law Critique* 28: 61–86, 66 and 72; Bollier, D. 2014. *Think Like a Commoner: A Short Introduction to the Life of the Commons*. Gabriola: New Society Publishers, 15; and Burke 2021, 200 and 203–204. *Cf.* Mattei, U., and Quarta, A. 2018. *The Turning Point in Private Law: Ecology, Technology and the Commons*. Cheltenham: Edward Elgar Publishing, 48–50; and Capra and Mattei 2015, 149 *et seq*.

18 See sub-section 2.2.1.

19 *Cf*. Fennell 2011, 13, for the distinction between resource systems and resource units.

There is also a community, which consists of the members of a cooperative[20] or another legal vehicle, who, as Commoners, jointly govern the resources and have access to the energy or the revenues from the sale of the energy. The last element – the commoning – is more problematic. As is discussed in more detail below,[21] many such communities have a layered governance structure. For instance, cooperatives generally have a Board of Directors and an Assembly of Members, to which the board is directly or, through a Supervisory Board, indirectly accountable. In the overwhelming majority of the examined energy cooperatives, the Directors take all decisions on new renewable energy installations, sometimes assisted by a salaried manager.[22] Without a single exception, interviewees describe the Assembly of Members as rather passive with only a say in the overall goals of the community and the distribution of benefits. Most community members are thus primarily involved through their financial contribution, their consumption of the produced energy, and/or their share in the revenue, while participating very little in decision-making. It is a small minority who actually manage the common resources.

The passive majority of members raises the question of how to distinguish citizen-led energy generation with such a governance structure from, for instance, limited-liability companies that could be regarded as having a common resource and being a community with an equally passive group of shareholders.[23] The striking difference appears to be the purpose of citizen-led energy generation.[24] While energy communities, as defined by EU Directives, generate energy from renewable sources at a relatively meagre return on investment,[25] to provide the members with cheaper energy or to reduce harmful emissions, limited-liability companies primarily pursue the maximization of their shareholders' wealth.[26]

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20 In German: *Genossenschaft*.

21 See sub-section 2.2.4.

22 See sub-section 2.2.4.

23 Cheffins, B.R. 2008. *Corporate Ownership and Control: British Business Transformed*. Oxford: OUP, Sections 1.I and 2.I.

24 MacArthur, J.L., and Tarhan, M.D. 2021. "Institutionalizing Energy Democracy." In: *Routledge Handbook of Energy Democracy*, edited by A.M. Feldpausch-Parker, D. Endres, T.R. Peterson and S.L. Gomez, 172–186, 172. Abingdon: Routledge. These authors also point to democratic decision-making in which voting shares are not contingent upon the size of shares in the organization's capital, as a distinguishing characteristic. In this contribution, as sub-sections 2.2 and 2.3 show, the term 'Energy Commons' also encompasses energy communities in which the share in the capital determines the voting shares.

25 Lowitzsch, J., and Hauke, F. 2019. "Renewable Energy Cooperatives". In: *Energy Transition, Financing Consumer Co-Ownership in Renewables*, edited by J. Lowitzsch, 139–162, 150. London: PalgraveMacmillan.

26 For a comparative account of the duties of directors towards shareholders, see Chapter 13 of Cahn, A., and Donald, D.C. 2018. *Comparative company law: text and cases on the laws governing corporations in Germany, the UK and the USA*. Cambridge: CUP.

Yet another aspect of Commons scholarship may prove problematic to the qualification of citizen-led energy generation as Commons. Commons are described as communities that operate beyond market and state.[27] However, most communities examined here are not only connected to the public grid, but they also feed at least part of their energy into the grid and consume electricity from the grid when their own renewable energy is not available. Thereby, they participate in the energy market, as producer of energy and maybe even as an energy supplier to non-members. There are three main reasons for this participation in the energy market.[28] First, most communities engaging in citizen-led energy generation have no grid of their own but have to use the public grid to transmit electricity, to members and non-members alike. Second, most countries do not permit energy sharing (yet).[29] This entails that the community has to sell unconsumed energy to an energy supplier because the energy produced by the community cannot be used to compensate for energy that has been taken out of the public grid. Third, most energy communities cannot produce enough energy whenever their members need it. Only a few energy communities, mainly those that produce heat from biomass, have their own grid and are fully self-sufficient.[30] Moreover, it would create absurd costs to have parallel grids to the public grid. It thus appears that the participation in the energy market is a necessary evil for most forms of citizen-led energy generation.[31] As *Bollier* argues,[32] this fate is anything but unique, as many Commons rely to some extent upon the market or the State. The farmers with a common irrigation system described by Ostrom also have to sell their produce on the food market. Reliance on the energy market should thus not prevent a qualification of citizen-led energy generation as Energy Commons. The conclusion is that energy cooperatives and similar citizen-led initiatives qualify as a Commons and can be described in terms of the design principles proposed by Ostrom.

27 Marella 2017, 66; and Bollier 2014, 12.

28 Lambing, J. 2012. "Electricity Commons – Toward a New Industrial Society." In: *The Wealth of the Commons, A World Beyond Market & State*, edited by D. Bollier and S. Helfrich. Amherst: Levellers Press.

29 REScoop, the European federation of citizen energy cooperatives, tracks the implementation of the right to sharing in the EU: https://www.rescoop.eu/policy#transposition-tracker. Accessed November 15, 2023.

30 Becker, S. 2021. "The State or the Citizens for Energy Democracy?" In: *Routledge Handbook of Energy Democracy*, edited by A.M. Feldpausch-Parker, D. Endres, T.R. Peterson and S.L. Gomez, 158–171, 159. Abingdon: Routledge; and Lenhart *et al.* 2021, 43.

31 *Cf.* Foster and Iaione 2019, 239.

32 Bollier 2014, 137, who discusses 'Business Commons'.

2.2 Application of Ostrom's Design Principles

In her masterpiece 'Governing the Commons', Elinor Ostrom examines Commons that have persisted over long periods of time, have proven resilient in the face of change, and have ensured the commitment of the members to the Commons and the sustainability of the common pool resource.[33] From her empirical research, Ostrom inferred a number of design principles for the organizational arrangements of the Commons that if observed, contribute to the endurance of the Commons. This sub-section applies these design principles to the examined Energy Commons. The purpose of the application is primarily descriptive, not evaluative. It is not meant to assess the quality of the examined organizational arrangements, but to describe these arrangements through the lens of these design principles.

A profound critique and adaptation of Ostrom's design principles to citizen-led energy generation fall outside the scope of this contribution.[34] Tailor-made design principles can be desirable because unlike the common resources studied by Ostrom, electricity and heat will only be replenished if the community has the required money, skills, and time.[35] However, as *Burke* persuasively argues, Ostrom's design principles can be fruitfully applied to Energy Commons.[36]

This sub-section is based upon empirical research in Germany and first sets out the employed methodology (2.2.1). It then deals with the design principles of the clear definition of the resource (2.2.2) and appropriators (2.2.3). Subsequently, it addresses the congruence between appropriation and provision rules and local conditions (2.2.4). This sub-section then discusses the participation of members in rule-making and the right to self-regulation (2.2.5). It follows a discussion of monitoring, sanctions, and conflict resolution mechanisms (2.2.6). Finally, this sub-section discusses the Energy Commons as part of nested organizations (2.2.7).

2.2.1 Methodology and Data

The description of the Energy Commons is based upon an empirical component that geographically focuses on Germany, which has the largest community energy sector in the EU with 1750 initiatives.[37] The empirical research consists of interviews, a desk review of statutes, and the responses to a questionnaire by groups of citizens who

33 Ostrom 2015, 58–61.

34 See for a reformulation of the design principles: Bollier 2014, 30–31.

35 Foster and Iaione 2019, 238.

36 Burke 2021, 207–209. *Cf.* Foster and Iaione 2019, 240, for alternative design principles for 'Urban Commons'.

37 Caramizaru, E., and Uihlein, A. 2020. *Energy communities: an overview of energy and social innovation*. Luxembourg: Publications Office of the European Union, 5.

Table 1: Overview of examined Energy Commons (own design).

	Interviews
Cooperative (*Genossenschaft*)	5
Desk review of statutes	
Cooperative	570
Responses to questionnaire	
Cooperative	94
Limited partnership of cooperative with private limited-liability company (*GmbH & Co. KG*)	23
Civil partnership (*Gesellschaft bürgerlichen Rechts*; GbR)	1
Other legal forms	9

jointly generate renewable energy. The following Table 1 shows the number of Energy Commons examined with each research method and their legal forms.[38]

The goal of the empirical research has been to uncover the characteristics of the Energy Commons that are relevant to the EU Directives on energy communities. The desk review of statutes provides information on the purpose of the Energy Commons, membership requirements, requirements for an exit, voting rights in an assembly of members, the appointment or dismissal of a management board, decision-making powers of the different bodies, and the disbursement of profits. The interviews and the responses to the questionnaire provide additional information on the number of members, paid positions, and the affiliations and residence of the members and managers. In addition, basic characteristics such as the year of foundation, the sources of renewable energy, and the generation capacity have been noted. The descriptive statistics tools and correlation analysis tools of SPSS 28 have served to analyse the material.

Note that this study does not purport to be fully representative of Energy Commons in Germany. However, the desk review of 570 statutes of German cooperatives generating energy is largely representative of the 70–75 % of 877 energy cooperatives that produce energy.[39]

38 For a more detailed description of the methodology, refer to Hoops, B. 2024. "EU Directives on the Internal Governance of Energy Communities and Their Exclusionary Effects." *Journal of World Energy Law & Business*, https://doi.org/10.1093/jwelb/jwae001.

39 https://www.dgrv.de/bundesgeschaftsstelle-energiegenossenschaften/#:~:text=Die%20877%20Energiegenossenschaften%20stehen%20mit,die%20breite%20Akzeptanz%20der%20Energiewende. Accessed September 1, 2023; and Yildiz, Ö, Rommel, J., Debor, S., Holstenkamp, L., Mey, F., Müller, J.R., Radtke, J., and Rognli, J. 2015. "Renewable energy cooperatives as gatekeepers or

2.2.2 Clearly Defined Resources

One part of Ostrom's first design principle is that the common pool resource must be clearly defined. Such a definition makes clear what resource has to be managed and protected from undesirable outside influence or appropriation.[40]

In the examined Energy Commons, there are up to four common pool resources. The renewable energy installations, such as biomass energy generators, solar panels, and wind turbines, form a common resource system. These installations are clearly defined, but a redefinition is regularly required as the Energy Commons acquires new installations or dismantles old ones. This resource system produces resource units in the form of electricity or heat. These resource units are fed into a grid and transferred directly to the consumers or, alternatively in the case of electricity, an energy wholesaler or retailer. These resource units are clearly defined in that they are counted by the Energy Commons, the grid operator, the energy wholesaler or retailer, and/or the metre of the consumer. The third common pool resource is the revenue from the sale of electricity or heat. The legal person legally embodying the Energy Commons receives the revenue, which can then be re-invested or disbursed to the members. The revenue is clearly defined through agreed upon energy prices, energy quantities, bank transfers and statements, and accounting practices.

Another potential common pool resource is the Energy Commons' own grid. A minority among the Energy Commons acquired the public grid or built their own grid, to transfer the energy to the consumers. This practice is substantially more common in the heat sector than in the electricity sector. This resource system is clearly defined by the delimitation of the grid, but may have to be refined if the Energy Commons expands or shrinks the grid.

2.2.3 Clearly Defined Appropriators

The first design principle also requires that the Energy Commons clearly define the appropriators of the resource. This definition establishes a shared relationship with the energy resource and a common goal.[41] It minimizes the risk of outsiders reaping the benefits of the common efforts, which would hollow out the commitment of the Commoners to the Energy Commons.[42]

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facilitators? Recent developments in Germany and a multidisciplinary research agenda." *Energy Research & Social Science* 6: 59–73, 62.

40 Ostrom 2015, 91.

41 Burke 2021, 208.

42 Ostrom 2015, 91.

In the context of the Energy Commons, there may be different groups of appropriators. If the Commoners do not consume their electricity themselves, but sell it to an energy wholesaler or retailer, the final appropriators of these resource units will be the customers of one or more energy retailers. As long as the energy wholesaler or retailer pays the agreed upon price for the quantity of electricity fed into the grid, the final appropriators are not relevant to the commitment of the members to the Energy Commons.

The relevant group of appropriators are the Commoners. They may consume the electricity or heat, or receive a share of the revenue from the sale of energy, or both.[43] In the heat sector, Commoners tend to be the only consumers of their own energy. By contrast, in the electricity sector, the Energy Commons consume only a share of the generated electricity directly and often feed a major part thereof into the public grid. The Commoners then benefit from the Energy Commons through energy sharing or a distribution of the revenue from the sale of electricity, such as dividends. It is therefore the Commoners or members of the Energy Commons that have to be defined clearly.

The definition of the Commoners is a layered process. The statute of the legal person will set abstract requirements for membership, while the management body or another body of the Energy Commons will then decide on the concrete application. As the desk review of statutes shows, the abstract requirements for membership vary widely among the Energy Commons. In the heat sector, members are those who are connected to the grid and receive heat from the energy generator. The grid and the possibility of expanding it naturally limit who can become a member. In the German electricity sector, between 40 and 45 % of the energy cooperatives require that members have their residence or seat in the local area. Membership is thus not only based on interest; these Energy Commons are place-based.[44] By contrast, 55–60 % of the German energy cooperatives in the electricity sector are purely interest-based and set no, or least no statutory, requirements regarding the residence or seat of the member.[45] In practice, whether they are purely interest-based or not, most Energy Commons retain a distinct local character. In the median respondent to the questionnaire, people from outside the German administrative district where the renewable energy installation is located, hold 5 % of the voting rights. In almost 96 % of the Energy Commons, they do not hold more than 30 % of the voting rights. However, in five out of 119 Energy Commons (4.2 %), people from outside the administrative district hold 50 % or more of the voting rights.

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43 *Cf.* MacArthur and Tarhan 2021, 177.

44 Moroni, S., and Tricarico, L. 2018. "Distributed energy production in a polycentric scenario: policy reforms and community management." *Journal of Environmental Planning and Management* 61: 1973–1993, 1976–1977; and Lenhart *et al.* 2021, 46.

45 *Cf.* Becker 2021, 167; and Lenhart *et al.* 2021, 40–41.

In practice, the size of their resource systems and their rules on membership lead to bodies of Commoners of different sizes. Of the 127 respondents to the questionnaire, 20 % had 21–100 members. Fourty percent had between 101 and 300 members, and 30 % had 301–1000 members. Only 5 % of the respondents have fewer than 21 members, and another 5 % had more than 1000 members.

As Energy Commons may be prone to dominance by a powerful company or authority,[46] which may discourage other members, it is also relevant whether the Energy Commons exclude such entities from membership. The analysis of statutes shows that 5 % of the statutes exclude energy companies from membership and 45 % give the management body an option to bar an energy company from being a member. When it comes to other companies or authorities, between 2 and 10 % of the statutes exclude them from membership.

2.2.4 Appropriation and Provision Rules in Line with Local Conditions

The second design principle prescribes that the appropriation and provision rules be in line with local conditions. To prevent the overexploitation of the resource and an equitable distribution of the benefits of the resource, these rules govern, amongst others, the time and quantity of extraction as well as payment for the provision.[47]

In the Energy Commons, there are two resources to appropriate: energy and money. In EU energy law, the starting point is that the consumers decide on how much energy to consume and that the energy suppliers ensure the provision of energy around the clock in accordance with the consumers' demand.[48] This far-reaching inability to set rules for consumption does not affect all the Energy Commons in the same way. The stability of the Energy Commons that merely feed electricity into the grid, is generally not affected at all. Unlike the Commons examined by Ostrom, such as common irrigation systems in dry areas, these Energy Commons do not have direct appropriators at their source. They feed their resource units into a greater pool that public bodies ensure is always roughly equal to demand. If the Energy Commons provide certain buildings with electricity, there will most often be excess demand. For example, while solar panels generate electricity during the day, they cannot cover the demand at night, at least not without a battery. Then, the Energy Commons are obliged by EU law to contract another energy supplier to ensure that the consumers can consume electricity around the clock.[49] This will not

46 See, for instance, Walker, G., Devine-Wright, P., Hunter, S., High, H., and Evans, B. 2010. "Trust and community: Exploring the meanings, contexts and dynamics of community renewable energy". *Energy Policy* 38, no. 6: 2655–2663, 2655 and 2657.

47 Ostrom 2015, 92.

48 Art. 10(1) Directive (EU) 2019/944.

49 Art. 16(3)(c) Directive (EU) 2019/944.

affect the stability of the Energy Commons as long as the price paid by consumers reflects the administrative and procurement costs. Unlike the Commons examined by Ostrom, these Energy Commons thus generally have a back-up in case their resource units do not suffice.

By contrast, Energy Commons with their own heat grid are affected by spikes in consumption, due to, for example, overconsumption or harsh winters, because their grid is not connected to a greater pool. The Energy Commons can address such spikes to some extent by procuring additional renewable fuel such as biomass. Moreover, if necessary, the Energy Commons can reduce the heat available to the members.[50]

The flow of money in the Energy Commons consists of the equity invested by the members, loans, and the revenue from the sale of electricity and heat. Where energy sharing directly lowers the energy bills of members, reduced sale revenues will diminish this flow. Members could destabilize the flow by withdrawing their investment. The law on legal persons and the statutes of the Energy Commons generally subject such a withdrawal to strict requirements. For example, German law allows for the cancellation of shares in a cooperative, but Section 68(2) of the German Cooperative Act (*Genossenschaftsgesetz*) sets a minimum notice period of three months, which can be extended to 60 months. The analysis of statutes produces a median of 24 months, with 112 statutes prescribing the maximum of 60 months. Another way of destabilizing the Energy Commons would be to steal the revenue from the sale of electricity or heat. However, accounting rules and mandatory audits will hopefully prevent this from happening. The resulting annual net profit, if any, can then be re-invested, reserved, donated, or distributed among the members. Whatever legal form the Energy Commons have, they generally let the members decide on the destinations of the net profit, in cooperatives by a simple majority. The inherent limit to how much can be disbursed, namely the net profit, and the joint decision by the members should ensure that no overexploitation of the Energy Commons' finances take place.

2.2.5 Participation in Rule-Making and Self-Regulation

The third design principle entails that the members who are subject to the Energy Commons' rules participate in making these rules,[51] ideally resulting in fair and legitimate rules and enhancing the commitment of the Commoners.[52] A pre-requisite

50 See, for instance, §§ 5 and 6 of the German regulation on the general conditions for the provision of heat through heat networks (*Verordnung über Allgemeine Bedingungen für die Versorgung mit Fernwärme*).

51 Ostrom 2015, 93–94.

52 Burke 2021, 208.

of this design principle is the right to self-regulation under the seventh design principle, that is, the right to devise the institutions of the Energy Commons without being challenged by public authorities.[53]

National law recognizes the right to self-regulation to a very large extent. The Commoners can base the Energy Commons on a simple contract, a partnership, without any institutional requirements or need for formalities.[54] If the Commoners wish to create a legal person, for example to protect their own assets from the Energy Commons' creditors, the cooperative is a common legal form.[55] The German legislation on cooperatives prescribes a basic institutional structure with an Assembly of Members, a Board of Directors, and, unless the cooperative has fewer than 20 members, a Supervisory Board,[56] a mix of mandatory and default rules on the decision-making powers of these bodies,[57] some basic procedural rules,[58] and more detailed rules on accounting and monitoring.[59] The Commoners can freely decide on the activities of the Energy Commons, the composition of each body, how the generated profits will be distributed, and, to some extent, the decision-making powers of these bodies.

While national law safeguards the right to self-regulation, notwithstanding EU and national energy and consumer regulations, new indirect restrictions to this right flow from EU law. In return for better access to the energy market and energy sharing,[60] the Directives IEMD and RED II require 'citizen energy communities' and, respectively, 'renewable energy communities' to adopt certain purposes and rules on membership, exits, and governance structures.[61] While the Directives do not directly compel the Energy Commons to adapt to these requirements, the promised advantages, in particular the possibility of energy sharing, create a strong incentive for the Energy Commons to give up part of their right to self-regulation.

While the law allows for self-regulation to a large extent, the extent to which the Energy Commons actually make use of this right is another matter. To find out who

53 Ostrom 2015, 101.

54 Yildiz *et al.* 2015, 61.

55 Caramizaru and Uihlein 2020, 5; and Holstenkamp, L. 2021. "Community Energy in Germany: From Technology Pioneers to Professionalisation under Uncertainty." In: *Renewable Energy Communities and the Low Carbon Energy Transition in Europe*, edited by F.H.J.M. Coenen and T. Hoppe, 119–152. Cham: PalgraveMacMillan. There are 1750 citizen initiatives in the German energy sector, 877 of which are energy cooperatives. See fn 40.

56 § 9(1) German Cooperative Act.

57 §§ 24–28, 36, 38, 43 and 48 German Cooperative Act.

58 §§ 43–47 German Cooperative Act.

59 §§ 53–64c German Cooperative Act.

60 Roberts, J. 2020. "Power to the people? Implications of the Clean Energy Package for the role of community ownership in Europe's energy transition." *RECIEL* 29: 232–244, 234–235.

61 Art. 2, No. 11 and Art. 16 Directive (EU) 2019/944; Art. 2, No. 16 and Art. 22 Directive (EU) 2018/2001.

fills in the space left by the law, 134 statutes of energy cooperatives in the State of Baden-Württemberg, home to the largest group of energy cooperatives in Germany, have been compared to the respective model statute published by the association of cooperatives in that state. Cooperatives in Germany have to become members of an association of cooperatives or another recognized body, which audits the cooperative, provides model statutes, and gives advice on legal and accounting matters.[62] The analysis shows that the overwhelming majority adopts the model statute to a great extent. A large number of cooperatives only deviate from residence requirements,[63] notice periods for cancellations,[64] decision-making powers with respect to the acquisition of land,[65] and the power to dismiss the Board of Directors.[66] Other deviations only occur in less than 5 % of the examined statutes.

The rule-making and governance of the Energy Commons is generally layered, in contrast to the widely spread ideal of direct democratic decision-making.[67] To stick with the example of energy cooperatives, the Assembly of Members decide on the statute, the purpose of the Energy Commons, and the use of the net annual profit. In the overwhelming majority of German energy cooperatives, the Assembly follows the principle of 'one-person-one-vote'. While this ensures democratic decision-making on the issues that the Assembly may address, its influence on day-to-day business and decisions on renewable energy installations is limited and merely indirect. The Assembly of Members appoint the Supervisory Board of the cooperative.[68] The analysis of statutes shows that it is the Supervisory Board who appoint the Board of Directors in 465 out of 570 cases (81.6 %), with the right to dismiss the Board immediately under 446 statutes (78.2 %). In rare cases, external parties such as cooperative banks or municipal energy utilities appoint the majority of Directors. The Assembly of Members only appoint the Board under 102 statutes (17.9 %) and may, sometimes along with the Supervisory Board, immediately dismiss the Board under 133 statutes (23 %). Although the Board of Directors is mostly only indirectly accountable to the Assembly of Members, they nearly always take all decisions on

62 §§ 53, 54 German Cooperative Act.

63 While one model statute stipulated that the Board of Directors had to approve the membership of people and legal persons from outside a certain area, 49 and, respectively, 68 statutes did not feature this restriction.

64 While the model statutes provide for a notice period of 24 months, 21 statutes featured a different notice period.

65 While the model statutes foresee a joint decision by the Board of Directors and the Supervisory Board, 45 statutes stipulate that the Board of Directors may take these decisions alone.

66 While the model statutes say that the Supervisory Board may dismiss the Directors, 23 statutes grant this power to the Assembly of Members.

67 *Cf.* MacArthur and Tarhan 2021, 178–180; and Lenhart *et al.* 2021, 36.

68 § 36(1) German Cooperative Act.

new renewable energy installations such as the acquisition and the financing thereof. That said, 374 statutes (65.6 %) require the approval of the project by the Supervisory Board. Only under eight statutes (1.4 %) do the Assembly of Members take or participate in these decisions.

A development towards professionalization seems to diminish the influence of members further. Around a third of the 127 respondents have a paid day-to-day manager. Eighteen percent of the responding Energy Commons pay their Directors a salary. Moreover, the Energy Commons tend to hire some external assistance in the fields of accounting, communication, construction, law, maintenance, and/or taxes. Another factor that disadvantages passive members is that the Directors not only have special expertise, but that they are closely affiliated to external parties. In a quarter of the 127 Energy Commons, a majority of Directors represented or worked for authorities or medium-sized or large enterprises.

This governance structure appears to be in line with a division in participation between active and passive members.[69] The interviewees describe the Assembly of Members as rather passive. However, the layered governance structure may not exist in, or may not be suitable for, small Energy Commons. Small Energy Commons can take the form of civil partnerships. This entails that members are liable with their own assets and decisions must be taken unanimously.[70] In this way, they at least formally safeguard broad-based active participation, while cooperatives only guarantee active participation in the distribution of benefits and the choice of management bodies or supervisory bodies. There are Energy Commons that reduce the role of members even more than the layered governance structure of cooperatives. In the German wind sector,[71] for instance, a limited partnership with a private limited-liability company is often used to guarantee for a certain entity such as a municipality, another authority, or an energy company to have full management control over the Energy Commons, while the citizens only participate financially.

2.2.6 Monitoring and Sanctions

The design principles 4–6 establish the need for monitoring, the accountability of the monitors to the members, graduated sanctions and accessible conflict resolution mechanisms.[72] In the case of German energy cooperatives, the monitoring from within the Energy Commons is in the hand of the Supervisory Board, which is

69 Becker 2021, 167.

70 §§ 714, 721 German Civil Code (*Bürgerliches Gesetzbuch*; BGB).

71 Fernandez, R. 2021. "Community Renewable Energy Projects: The Future of the Sustainable Energy Transition?" *The International Spectator* 56, no. 3: 87–104, 96.

72 Ostrom 2015, 94–101; and Burke 2021, 208.

supposed to ensure that the Board of Directors act prudently and in accordance with the statute and legislation.[73] There is also external monitoring that is not accountable to the members. As already said above,[74] German energy cooperatives have to be members of an association of cooperatives or another recognized organization that will conduct a yearly audit. The interviewees generally hold the expertise and help of the associations in high regard. To the extent that the Energy Commons act on the energy market, energy authorities monitor their activities.

Should a conflict arise, the interviews show that the Energy Commons will generally prefer an informal form of conflict resolution. If this approach fails, the statutes mainly foresee three types of sanctions, a provisional suspension of Directors by the Supervisory Board, a dismissal of the Directors by the Supervisory Board or the Assembly of Members, and an expulsion of a member that has inflicted substantial damage on the Energy Commons.

2.2.7 Nested Organizations

The eighth design principles prescribe for complex organizations that they be nested, creating mutual support networks of various organizations.[75] This entails that the different levels collaborate and adopt rules that supplement and are consistent with the rules of other levels.[76] Within larger Energy Commons, there may be teams that manage and maintain different renewable energy installations. The Energy Commons also take advantage of economies of scale and connect with external organizations to pool resources and exchange skills and expertise.[77] In Germany, the associations of cooperatives not only conduct audits of energy cooperatives, but are also a pool of expertise on accounting and legal matters. As said above, if an Energy Commons supplies buildings with energy, it has an obligation to ensure the energy supply around the clock. In Germany, there are a few cooperatives that have grown to become energy suppliers, whom other Energy Commons ask to meet the excess demand from the inhabitants of those buildings.[78]

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73 § 38(1) German Cooperative Act.

74 See sub-section 2.2.5.

75 Burke 2021, 209. *Cf.* Goyal, N., and Howlett, M. 2021. "Conceptualizing Energy Democracy Using the Multiple Streams Framework." In: *Routledge Handbook of Energy Democracy*, edited by A.M. Feldpausch-Parker, D. Endres, T.R. Peterson and S.L. Gomez, 66–81, 67. Abingdon: Routledge.

76 Ostrom 2015, 101–102.

77 MacArthur and Tarhan 2021, 180.

78 Lenhart *et al.* 2021, 39.

2.3 Five Types of Energy Commons

There is an incredible diversity of Energy Commons in terms of sources of energy, generation capacity, goals, number of members, governance structures, and the distribution of benefits.[79] Based on the empirical research conducted for this contribution, this sub-section distinguishes five common types of Energy Commons in Germany. These Energy Commons are described through their generation capacity and energy source, their members, their business model, the distribution of benefits, and their governance structure. The subsequent section is based upon these types.

The first type is **the self-sufficient and inclusive Energy Commons**. This Energy Commons typically has its own local grid and provides heat to all households connected to the grid. These households are also the only members, with the grid as an implicit residence requirement for membership. As long as the fuel burnt by the Energy Commons is not scarce, the members as consumers determine the resource units provided. The size of this type of Energy Commons generally depends on the size of the local area, municipality, or neighbourhood in which the grid is located, often in rural areas. The members of this Energy Commons, typically in the legal form of a cooperative, directly or indirectly elect the management body from the pool of active members and decide on the general goals of the Energy Commons and the distribution of profits. These active members take all major decisions on the creation, maintenance, and expansion of the grid. These Energy Commons hire professionals in the fields of accounting, communication, construction, law, maintenance, and/or taxes. The members benefit from the Energy Commons through lower energy prices rather than dividends, and the Energy Commons tend to reinvest the revenues into the community. Finally, it is interesting to note that the right to self-regulation is generally, and in any case at EU level,[80] given more room in the heat sector than in the electricity sector because the electricity sector is more heavily regulated.

The second type is the **small, local and democratic Energy Commons**. These Energy Commons have a small number of members and little generation capacity. They do not have a grid of their own and generally put solar panels on the roofs of members and/or public authorities. The generated electricity that is not used immediately in the building(s) connected to the panels, is fed into the grid, and, depending on the applicable mechanism, the members receive a share in the revenue and/or a lower energy bill. There is a residence requirement so that all members come from the local area. Also, the generation capacity determines the suitable

79 Walker *et al.* 2010.

80 While Directive (EU) 2019/944 regulates the internal electricity market, there is no such Directive on the supply with heat.

number of members as too high a number would water down the benefits for single members. The members themselves take all relevant decisions to manage the Energy Commons, with a few active members executing these decisions. The Energy Commons almost entirely relies upon voluntary work from active members and/or the public administration, with only incidental professional support from externals.[81]

The third type is the **place-based and medium-sized Energy Commons**. These Energy Commons put up wind turbines or have a substantial generation capacity in solar panels on roofs or fields. They do not have a grid of their own. Just as with the second type, a residence requirement applies to membership in the Energy Commons. Their business model is the same as the one of the second type. The main difference from the second type lies in the governance structure. Just as the first type, these Energy Commons follow a model of indirect democracy in which the management body consisting of active members take the major decisions on the renewable energy installation, while all the members decide on the purpose of the Energy Commons and the distribution of profits. As the generation capacity and complexity of the organization grows, these Energy Commons are more likely to procure professional support from outside. Particularly in the wind sector, the Energy Commons may be part of complex legal constructs, such as the limited partnership with a limited-liability company in Germany, to attract external investments in their expensive wind projects while protecting the Energy Commons from outside influence and the investment risk.

The fourth type is the **interest-based Energy Commons**. This type generally resembles the third type. The core difference lies in the absence of a residence requirement in the fourth type. Membership in the Energy Commons then becomes interest-based rather than place-based. This choice tends to increase the overall number of members, with a substantial number from outside the local area. These new members reinforce the inclination of the third type towards indirect democracy and professionalization. The additional skills and financial capacity make it more likely for the Energy Commons to carry out larger projects. Larger projects often require or stimulate further-reaching leeway for the management body and professionalization through paid positions and external professional support. Another difference from the third type is that the members from outside the local area may be excluded by law from energy sharing mechanisms, so that they only receive benefits through dividends from the profit.[82]

The fifth and last type is the **Investment Energy Commons**. While this type resembles the fourth type in terms of generation capacity, business model, and membership, it introduces a strict division of ownership and control. A municipality,

81 *Cf.* MacArthur and Tarhan 2021, 180.

82 See, for instance, Art. 8 of the Legislative Decree (*Decreto Legislativo*) 199/2021 in Italy.

cooperative bank, or publicly owned energy supplier has full control of the management of the resource and resource units, for example through the right to appoint the management body of a cooperative or being the managing partner in a limited partnership.[83] The other members of the Energy Commons only have the role of investor and, at best, have a say in the distribution of profits.

3 The Tale of the Virtuous Energy Commons

Ostrom's book on *Governing the Commons* was concerned with conditions for the organizational survival and resilience of the Commons.[84] Ostrom did not delve into whether the governance structures that ensured the longevity of the Commons were also desirable from a normative perspective, nor did she deal with the question of the extent to which the State should interfere with the organization of the Commons to achieve other goals than the organization's endurance.

However, as many Commons scholars have pointed out, the Commons are not automatically equitable or benign.[85] For instance, Bollier and Fennell argue that the State should set certain minimal ground rules and performance standards to protect Commoners from oppression and/or exploitation and outsiders from externalities.[86] Other Commons scholars propose various normative standards that they view as essential to realize an important value. For example, Dagan and Heller have discussed the right to exit the Commons as a cornerstone of 'Liberal Commons'.[87] To some extent, Ostrom's design principles such as the right to participate in making rules that are perceived as fair and legitimate prevent oppression and exploitation, more specifically of the majority of Commoners who have agreed on the rules. For the rest, the design principles and the longevity of the Commons are not enough to meet these normative standards.

Commons scholarship thus establishes a prescriptive, albeit non-legal, dimension of Commons research by making a distinction between virtuous Commons that comply with their normative standards and 'not so virtuous' Commons that do not. While these scholars are not always clear on what the consequences of non-compliance should be, the implicit expectation seems to be that the State

83 Burke 2021, 204; and Schmid, B., Meister, T., Klagge, B., and Seidl, I. 2020. "Energy cooperatives and municipalities in local energy governance arrangements in Switzerland and Germany." *Journal of Environment and Development* 29, no. 1: 123–146.

84 Ostrom 2015, 2; Di Robilant, A. 2012. "Common Ownership and Equality of Autonomy." *McGill Law Journal* 58, no. 2: 263–320, 272–273.

85 Capra and Mattei 2015, 164; and Bollier 2014, 162–163.

86 Bollier 2014, 162–163; and Fennell 2011, 20.

87 Dagan and Heller 2001.

should enforce these standards through legislation and regulation. A major complication for the implementation of any of those standards would be that the Commons are a heterogeneous group overall and in each societal sector.[88] Any favourable treatment of virtuous Commons as opposed to not so virtuous Commons would thus have to be tailor-made for each sector. The EU Directives IEMD and RED II, which introduce energy communities as new entities in EU law, reflect such a sector-specific favourable treatment of virtuous Commons, this time not just in scholarly work, but legally binding. The Directives define energy communities through requirements for their internal governance regarding permissible purposes, membership, exits, and governance structures.[89] The Directives reward those Energy Commons that meet these requirements with the privileges of energy communities, such as energy sharing, but deny them to the not so virtuous ones.

This section briefly discusses the requirements under the Directives and traces them to normative demands in the literature on the Commons and Energy Democracy. Energy Democracy refers to a strain in scholarly research that examines the democratization of the energy system through broad-based active and egalitarian citizen participation.[90] It further examines how the empirical data and the types of Energy Commons presented in the previous section relate to these requirements and normative demands, reflecting on the conflicting priorities or interests that may explain deviations of the empirical reality from the normative ideal.

First, this section discusses the requirement that financial benefits not be the primary goal of energy communities (3.1). This section then explores the exclusion of powerful entities and the requirement of effective control (3.2) as well as the requirement of voluntary participation (3.3). Subsequently, the focus is on the proximity requirement and the local character of energy communities (3.4). This section finally addresses the inclusion of vulnerable households in energy communities (3.5).

3.1 Non-Pecuniary Purpose

Under the EU Directives on energy communities, both citizen and renewable energy communities must not define their primary purpose as financial profits. Rather, their primary purpose must be to provide environmental, economic, *or* social community benefits for the shareholders or members or for the local areas where they operate.[91]

88 Bollier 2014, 162; and Di Robilant 2011, 1370–1374.

89 Art. 2, No. 11 Directive (EU) 2019/944; and Art. 2, No. 16 Directive (EU) 2018/2001.

90 Feldpausch-Parker and Endres 2021.

91 Art. 2, No. 11 Directive (EU) 2019/944; and Art. 2, No. 16 Directive (EU) 2018/2001.

This rule primarily excludes commercial enterprises that aim at generating profits for their shareholders. Profits still remain permissible, but generally have to be re-invested.[92]

The ban of financial profit as a primary motive is easy to trace to literature on Commons and Energy Democracy. Commons theory views the financial motives of market actors with suspicion, postulating that Commons do not strive for financial profit.[93] Profit maximization is associated with short-term thinking that exploits humans as well as nature and deters the necessary reinvestment of revenues in the involved communities. The Commons should rather pursue the sustainable management of resources, promote participatory and democratic decision-making, and reduce inequality.[94] The literature on the benefits of Energy Commons produces a similar picture. Energy Democracy scholars expect Energy Commons to counter concentration on the energy market, strengthen local economies, empower vulnerable people, and alleviate inequality.[95] By contrast, interest-based Energy Commons without a strong bond with a particular local community are sometimes viewed as not so virtuous due to their alleged focus on economic participation.[96]

The requirement of economic, environmental, or social benefits will not pose any obstacles to the Energy Commons with their own grid, in other words type 1 from sub-section 2.3, and those Energy Commons such as types 2 and 3 that, to the extent that this is legally possible and feasible, engage in energy sharing. Generally, the financial benefits from their activities are either re-invested or take the form of lower energy bills for Commoners, which are considered economic benefits. The Commoners of types 4 and 5 that cannot or can only to a limited extent share energy will only benefit from the Energy Commons through the disbursement of financial profits.[97] Of the 127 German Energy Commons that filled in the questionnaire around 72 % disburse a dividend, which cannot be re-invested by the Energy Commons.

The danger for the types 4 and 5 of the Energy Commons is that too strict an interpretation of the requirement would label them as primarily focused on financial

92 Roberts, J. 2021. "What Are Energy Communities Under the EU's Clean Energy Package?" In: *Renewable Energy Communities and the Low Carbon Energy Transition in Europe*, edited by F.H.J.M. Coenen and T. Hoppe, 23–48, 30. Cham: PalgraveMacMillan.

93 Capra and Mattei 2015, Introduction and 149–156; and Bollier 2014, 106–111.

94 Di Robilant 2012, 266–267.

95 Burke 2021, 202–203; Goedkoop and Devine-Wright 2016, 135–137. *Cf.* Brummer, V. 2018. "Community energy – benefits and barriers: A comparative literature review of Community Energy in the UK, Germany and the USA, the benefits it provides for society and the barriers it faces." *Renewable and Sustainable Energy Reviews* 94(C): 187–196, 190.

96 Lenhart 2021, 46.

97 *Cf.* Diestelmeier, L. 2021. "The Role of Energy Communities in Facilitating Sustainable Energy Democracy." In: *Sustainable Energy Democracy and the Law*, edited by R. Fleming, K. Huhta and L. Reins, 124–143, 140–141. Leiden/Boston: Brill/Nijhoff.

benefits, excluding them from the status of energy communities. Their statutes provide an important counterargument. The desk review of statutes shows that except for 21 cooperatives, all cooperatives postulate economic, environmental, or social benefits as their goals, which could satisfy the Directives. However, in over 60 % of these cases, these goals co-exist with financial goals under the statute. To relativize the importance of these financial goals, the amount of dividends disbursed should be taken into account. The median of the Energy Commons that filled in the questionnaire indicated that they disbursed around 30 % of their net annual profit to their members. The greater part of the net annual profit thus stays with the Energy Commons. Another reason to tolerate such disbursements is that energy communities generally face lower returns on investment due to their smaller size and higher transaction costs.[98] All this indicates that the primary motive of most Commoners is not to make a high return on their investment.[99] Moreover, banning disbursements may also pose a substantial obstacle to financing larger projects, as the Energy Commons would be unlikely to attract capital from citizens who would not be able to engage in energy sharing.

The conflict between the empirical reality of disbursed dividends and the normative ideal of an Energy Commons without any financial purpose, which the Directives do not pursue anyway, thus arises from legal obstacles to other forms of benefits and the necessity to attract capital from interested citizens. Even if sharing were available everywhere, an evaluation should also consider that energy sharing will be more administratively cumbersome due to the need to account for the energy consumption of large number of households. Overall, the costs and complexity of energy projects deter some Energy Commons from being virtuous.

3.2 The Exclusion of Powerful Entities and Effective Control of the Commons

Under the IEMD, citizen energy communities must be effectively controlled by members "[…] that are natural persons, local authorities, including municipalities, or small enterprises; […]".[100] Non-local authorities and medium-sized as well as larger enterprises[101] are thus excluded from effectively controlling a citizen energy

98 Lowitzsch and Hauke 2019, 150.

99 *Cf.* Fernandez 2021, 91; Prasad Koirala, B., Araghi, Y., Kroesen, M., Ghorbani, A., Hakvoort, R.A., and Herder, P.M. 2018. "Trust, awareness, and independence: Insights from a socio-psychological factor analysis of citizen knowledge and participation in community energy systems." *Energy Research & Social Science* 38: 33–40, 38.

100 Art. 2, No. 11 Directive (EU) 2019/944.

101 *Cf.* Art. 2, No. 7 Directive (EU) 2019/944.

community. The RED II prescribes that renewable energy communities be autonomous and effectively controlled by shareholders or members located in the proximity of the community's renewable energy projects.[102] The RED II already excludes energy companies, large enterprises, and non-local authorities from membership,[103] meaning they cannot have effective control in any case. The exclusion of these powerful entities clashes with the empirical reality of Energy Commons involving specialists affiliated with powerful entities to professionalize their activities.[104]

The legal debate has yet to clarify what effective control exactly entails.[105] The Directives tell us that effective control means that decision-making powers are held by the members who are not non-local authorities and enterprises of a certain size.[106] The IEMD further defines 'control' as decisive influence on an undertaking through, for instance, decisive influence on the composition and decisions of its organs.[107] Legal scholars advocate for entirely divergent approaches. Lowitzsch adopts a formal approach to effective control that is confined to ownership exercised through votes in an assembly of Commoners. In order to have effective control, citizens, local authorities, and enterprises of a certain size must hold 51 % of votes in that assembly.[108] Not required is control of a management board that takes decisions on the renewable energy installations. However, as indicated by the IEMD, the Commoners should at least have decisive influence on the composition of that management board. In this way, the Energy Commons of the first four types would easily pass the hurdle of effective control. By contrast, the fifth type, which essentially demotes Commoners to investors, would fall foul of this requirement.

Roberts attaches more weight to the influence of the members, proposing that effective control require a decisive voice in managing the energy community.[109] This approach is consistent with the local and democratic character of the ideal energy

102 Art. 2, No. 16 Directive (EU) 2018/2001.

103 Art. 2, No. 16(b) and Art. 22(1) Directive (EU) 2018/2001. *Cf.* Roberts 2021, 33–34.

104 See sub-section 2.2.3.

105 The requirement of autonomy is not discussed in this contribution. Refer to Sokołowski, M.M. 2021. "Models of Energy Communities in Japan (Enekomi): Regulatory Solutions From the European Union (Rescoms and Citencoms)." *European Energy and Environmental Law Review*: 149–159, 154–155; and Roberts 2021, 37–38.

106 Recital 44 Directive (EU) 2019/944.

107 Art. 2, No. 56 Directive (EU) 2019/944.

108 Lowitzsch, J. 2020. "Consumer Stock Ownership Plans (CSOPs) – The Prototype Business Model for Renewable Energy Communities." *Energies* 13, no. 1, 118: 6. In Lowitzsch, J. 2019. "Investing in a Renewable Future – Renewable Energy Communities, Consumer (Co-)Ownership and Energy Sharing in the Clean Energy Package." *Renewable Energy Law and Policy Review* 9, no. 2: 14–36, 24, Lowitzsch even argues that their share can be lower if the ownership of the rest is dispersed.

109 Roberts 2021, 34–35. He does note that the eventual definition and application of effective control will depend on the traditions in the respective Member State.

community that the Directives envision.[110] However, such an interpretation would contravene the empirical reality of a division between active Commoners and professionals managing the Energy Commons and the other Commoners taking decisions on the overall goals and the distribution of benefits. This interpretation would exclude all types of Energy Commons except for the second type of small, local, and democratic Energy Commons, creating incentives against growth and professionalization.

The literature on Commons and Energy Democracy reflects the need for the exclusion of powerful entities from control. For instance, Bollier argues that for the Commons to reproduce and protect themselves, legal rules must prevent outsider appropriation and interventions.[111] Specifically on the energy market, the energy provision is largely centralized and market power is often extremely concentrated. As Energy Commons are a means to combat concentration and decentralize the energy market, the literature on Energy Democracy unsurprisingly sees the danger of abuse by established corporate players.[112]

While it is theoretically and legally clear that citizens should have effective control of the Energy Commons, it is less than clear how effective control can be exercised. Through the Energy Commons, citizens assume a greater role in the energy market, as decision-makers and as prosumers, who participate in both producing and consuming energy.[113] Both Commons and Energy Democracy scholars posit that Energy Commons as organizations must adhere to democratic principles.[114] MacArthur and Tarhan explicitly argue that the Commoners should take decisions themselves and lament that Commoners in practice often see themselves as investors rather than Commoners and that cooperatives neglect democratic engagement.[115] Their vision is clearly more similar to Roberts' approach than to Lowitzsch's, and clashes with the governance structure of all types of Energy Commons except for the second type, the small, local, and democratic Energy Commons.

Concluding, the normative conflict that the exclusion of powerful entities and the definition of effective control address is one between the ideal community of broad-based active participation and democratic decision-making and the empirical reality of active Commoners managing the Energy Commons and their tendency towards growth and professionalization. Part of the explanation for this conflict is

110 Recital 43 Directive (EU) 2019/944; and Recital 71 Directive (EU) 2018/2001.

111 Bollier 2014, 140.

112 Burke 2021, 202–203; and MacArthur and Tarhan 2021, 181. *Cf.* Roberts 2021, 34.

113 MacArthur and Tarhan 2021, 172–173.

114 MacArthur and Tarhan 2021, 178; Becker 2021, 158; and Dagan and Heller 2001, 590.

115 MacArthur and Tarhan 2021, 178, 180–181.

the significant complexity of the energy sector, which favours professionalization and active members with expertise in the field.[116]

3.3 Voluntary Participation

Both Directives require that the participation in energy communities be voluntary.[117] Voluntary participation always implies a right to non-participation, which means that the Energy Commons must give their members an option to leave.[118]

In Commons literature, Di Robilant posed the question of whether the right to exit was secondary to community values,[119] and argued that the right to exit, as an expression of negative freedom, had to be balanced against other values in each specific case.[120] To Dagan and Heller, the right to exit is a prerequisite for a 'Liberal Commons'. They stress the danger of 'illiberal' Commons overly curtailing the Commoners' autonomy and view the right to exit as indispensable to securing their autonomy.[121] It is widely acknowledged that there are Commons that oppress the Commoners and that Commons are not inherently and automatically good,[122] making the right to exit an important addition to the governance of the Commons. That said, Dagan and Heller do recognize that a right to exit poses risks to the integrity of the Commons. It may encourage Commoners to seek their own advantage and exploit the Commons,[123] and if shares in the Commons are transferred without checks, the Commons will lose control over the membership.[124] They argue that clever restrictions to the right to exit may minimize these risks. A cooling-off period ensures that the decision to leave is well-founded and allows for time to adapt.[125] A right of first refusal could safeguard the Commons' control of the membership.

In practice, all legal forms generally allow for an exit from the Energy Commons, either through a transfer or cancellation of the shares or contractual relationships. The conditions for a transfer or cancellation may be problematic. For instance, under

116 MacArthur and Tarhan 2021, 179–180.

117 Art. 2, No. 11 and Art. 16(1)(a) Directive (EU) 2019/944; and Art. 2, No. 16 Directive (EU) 2018/2001.

118 Sokołowski, M.M. 2020. "Renewable and citizen energy communities in the European Union: how (not) to regulate community energy in national laws and policies." *Journal of Energy & Natural Resources Law* 38, no. 3: 289–304, 299; and Hoffmann, I. 2021. "Erneuerbare- und Bürgerenergiegemeinschaften im EU-Winterpaket – who is who?" *EnWZ*: 299–305, 303.

119 Di Robilant 2011, 1361.

120 Di Robilant 2012, 293–300.

121 Dagan and Heller 2001, 552–553.

122 Capra and Mattei 2015, 164; Bollier 2014, 162–163; and Fennell 2011, 20.

123 Dagan and Heller 2001, 574–579.

124 Dagan and Heller 2001, 601.

125 Dagan and Heller 2001, 598–600.

the 570 examined statutes of German cooperatives, 569 statutes subject the transfer of shares to the approval by the Board of Directors. The cancellation of shares is subject to a notice period of, on average, two years,[126] to safeguard the liquidity of the cooperative, which has to pay back the nominal value of the shares.

The approval requirement and the notice period reflect a conflict between the liberal ideal of the right to exit and the impact of an exit on the financial viability and cohesion of the Energy Commons. Commons theory indicates that these restrictions serve legitimate purposes, namely control over the membership and, respectively, the creation of room for adaptation, financial or otherwise. While notice periods of more than a year generally appear to be excessive restrictions to the right to exit, longer notice periods may be particularly justified if the exiting Commoner holds a substantial number of shares or an exit could otherwise threaten the survival of the Energy Commons.[127]

3.4 Local Identity and Proximity to the Renewable Energy Installations

Under the RED II, Energy Commons will only be a renewable energy community if they are effectively controlled by Commoners from the vicinity of their renewable energy installations.[128] While the Member States have considerable leeway in defining this criterion in more detail,[129] it does indicate that members must have their residence or their seat in the *physical* vicinity of the renewable energy installation.[130] While the Energy Commons of types 1–3 will not struggle to adhere to the proximity requirement, it potentially excludes interest-based Energy Commons of types 4 and 5.[131]

Proximity has diverging practical implications. On the one hand, this proximity requirement preserves the local character of the Energy Commons and enhances the acceptance of renewable energy installations, by keeping non-local citizens and

126 See sub-section 2.2.4.

127 *Cf.* Roberts 2021, 34–35.

128 Art. 2, No. 16 Directive (EU) 2018/2001.

129 Hoffmann 2021, 303.

130 Biresselioglu, M.E., Limoncuoglu, S.A., Demir, M.H., Reichl, J., Burgstaller, K., Sciullo, A., and Ferrero, E. 2021. "Legal Provisions and Market Conditions for Energy Communities in Austria, Germany, Greece, Italy, Spain, and Turkey: A Comparative Assessment." *Sustainability* 13, 11212: 7 and 9; Brummer 2018, 189; Yildiz *et al.* 2015, 66 and 69; Hicks, J., and Ison, N. 2018. "An exploration of the boundaries of 'community' in community renewable energy projects: Navigating between motivations and context." *Energy Policy* 113: 523–534, 524 and 527.

131 Moroni and Tricarico 2018, 1976–1977; and Lenhart *et al.* 2021, 46.

enterprises out of the driver's seat and particularly by preventing hostile takeovers.[132] On the other hand, Energy Commons that produce or seek to produce electricity at a larger scale may struggle to grow due to this requirement. This criterion limits the number of available sites for new projects because the sites have to be in the proximity of the residences or seats of Commoners.[133] Another problem is that the proximity requirement discourages interested people with valuable capital and skills from outside the area as well as fruitful collaboration across local boundaries.[134] A statistical analysis of the filled-in questionnaires further shows that non-local members positively correlate with growth and professionalization.[135]

The literature is divided over whether virtuous Energy Commons are always local and place-based. Some scholars assert that only place-based Energy Commons can be truly inclusive and empower the Commoners to take decisions autonomously.[136] Up-scaling and growth beyond the boundaries of a local community increases the complexity of the Energy Commons, which tends to make them more exclusive and to reduce the passive majority of Commoners to investors.[137] Others note that local Commons can be one ideal form of the Commons, but not the only one.[138] Yet other scholars argue for hospitable and open Commons,[139] which seems to primarily relate to discriminatory criteria other than one's residence, but still points to interest-based Energy Commons as a desirable model.

The empirical reality, the Directives, and the literature reveal a normative conflict that needs to be resolved anew in every single case. While the local character of a Commons can preserve the local community, strengthen democratic practices, and keep the generated wealth in the community, it can also hamper desirable growth and turn the community hostile against the outside world.

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132 Roberts 2021, 35.

133 Hoicka, C.E., Lowitzsch, J., Brisbois, M.C., Kumar, A., and Ramirez Camargo, L. 2021. "Implementing a just renewable energy transition: policy advice for transposing the new European rules for Renewable Energy Communities." *Energy Policy* 156, 112435: para. 3.2.

134 Lowitzsch 2019, 25.

135 Spearman correlation coefficient between renewable energy capacity and voting rights of members from outside the administrative district: 0.231 (p = 0.95); Spearman correlation coefficient paid day-to-day manager and voting rights of members from outside the administrative district: 0.209 (p = 0.95).

136 Burke 2021, 206; and Lenhart 2021, 46.

137 Feldpausch-Parker, A.M. 2021. "Scalar Dimensions of Power and Governance in Energy Democracy." In: *Routledge Handbook of Energy Democracy*, edited by A.M. Feldpausch-Parker, D. Endres, T.R. Peterson and S.L. Gomez, 17–19, 17. Abingdon: Routledge.

138 Bollier 2014, 155–156; and MacArthur and Tarhan 2021, 174.

139 Capra and Mattei 2015, 164; Fennell 2011, 21; and Bailey, S., and Mattei, U. 2013. "Social Movements as Constituent Power: The Italian Struggle for the Commons." *Indiana Journal of Global Legal Studies* 20, no. 2: 965–1013, 1007.

Equally, an interest-based Energy Commons is likely to be more open and have better opportunities for up-scaling, but they will be more complex, increase the number of passive members and care less about the communities in which they create new wealth.

3.5 Inclusivity

Both Directives aim to alleviate energy poverty and acknowledge the role of energy communities in this endeavour.[140] The RED II even compels Member States to ensure "[…] the participation in the renewable energy communities is accessible to all consumers, including those in low-income or vulnerable households; […]."[141] This provision bans exorbitant financial barriers in Energy Commons that seek the status of renewable energy community.[142]

In practice, many Energy Commons are progressive when it comes to their environmental impact as they promote renewable energy, but they tend to be the domain of the well-educated and wealthy.[143] Energy Democracy and Commons scholars view inclusivity as a fundamental tenet of virtuous Energy Commons. In the context of urban spaces, Marella distinguishes between conservative and transformative commons.[144] While conservative Commons are vehicles of enclosure of urban space and of segregation, transformative Commons allow for social mobility and differentiation. Energy Commons, particularly interest-based Energy Commons, tend to be conservative Commons in that they mostly consist of well-educated and/or wealthy Commoners and thus reproduce patterns of inequality and exclusivity.[145] By facilitating such Energy Commons, the Directives may be at risk of promoting these patterns instead of breaking them. Energy Democracy scholars therefore call for Energy Commons to empower disadvantaged households.[146]

In practice, most Energy Commons are not interested in new members if they do not plan to expand the grid or install new renewable energy capacity. If the Energy Commons seek new members, the complexity of energy generation and social as well

140 Recitals 43 and 59–60 Directive (EU) 2019/944; Recital 67 Directive (EU) 2018/2001.

141 Art. 22(4)(f) Directive (EU) 2018/2001. *Cf.* Diestelmeier, L. 2021. "Citizen Energy Communities as a Vehicle for a Just Energy Transition in the EU – Challenges for the Transposition." *Oil, Gas & Energy Law Intelligence* no. 1: 1–12, 10.

142 Roberts 2021, 32; and Sokołowski 2020, 298–299.

143 MacArthur and Tarhan 2021, 181–182.

144 Marella, M.R. 2019. "The Law of the Urban Common(s)." *The South Atlantic Quarterly* 118, no. 4: 877–893, 881–882.

145 Feldpausch-Parker 2021, 17; MacArthur and Tarhan 2021, 181–182; and Burke 2021, 202.

146 Burke 2021, 202–203; Becker 2021, 168; and Feldpausch-Parker 2021, 18.

as geographical segregation favour wealthy and well-educated citizens.[147] The costs of accessing an Energy Commons are a common access barrier excluding people for their ability to pay.[148] The analysis of statutes shows that the median of the minimum investment in a German energy cooperative amounts to 500 EUR, with 93 energy cooperatives asking 1000 EUR and 43 cooperatives asking more than 1000 EUR. Also, this amount generally has to be paid up-front in its entirety. Only 33 out of 570 statutes (5.8 %) allow for a payment in instalments.

Some interviewees acknowledge that the amount poses a problematic obstacle, but also give various reasons for this access barrier. While a Heat Commons or another type-1 Energy Commons may ask a high price to connect new Commoners to the grid, other types would like to avoid administrative costs associated with having a lot of members or to encourage potential Commoners to make a well-founded decision and to keep unmotivated Commoners out by setting a higher price.

Inclusivity provokes a conflict between the empowerment of vulnerable households and the private autonomy of the Energy Commons to select their members, for administrative reasons or to ensure motivated members. To the extent possible, a low minimum investment, low processing fees, and awareness campaigns beyond the boundaries of the usual pool of members could increase the inclusivity of the Energy Commons.[149]

4 Towards a Theory of the Complexity of the Commons?

This section proposes for further discussion in future research the hypothesis that the complexity of the activities of the Energy Commons may explain their non-compliance of their internal governance with the analysed normative prescriptions. It further sketches guidelines for legislatures and regulators to pursue a feasible balance between said prescriptions and the practical needs of the Energy Commons.

The Commons, in the energy sector or elsewhere, inspire hope of a third way between and beyond market capitalism and state control. Some idealize the Energy Commons and thus tend to normatively overburden them. Intellectual and emotional attachment can lead to disappointment where the Energy Commons do not meet normative standards. If the Energy Commons are not open to the outside,

147 MacArthur and Tarhan 2021, 181.

148 See, for instance, Diestelmeier 2021, 130; and MacArthur and Tarhan 2021, 181.

149 MacArthur and Tarhan 2021, 181.

we call them as exclusive as private property.[150] If their internal governance does not reflect democratic, egalitarian, and/or inclusive ideals, we brand them as conservative Commons.

To prevent this disappointment, we need a theory of why the Energy Commons do not meet our normative prescriptions and infer from it a framework for balancing the factors that push the Energy Commons in the normatively right direction and those that deter them from complying with normative prescriptions.[151] In this contribution, I propose for further discussion 'complexity' as one of the decisive factors. Complexity shall for now be defined as measuring the extent to which people with an average skillset cannot conduct an activity without (semi-)skilled help. The energy sector is many times more complex than other areas where Commons tend to occur. The technology is more demanding, the required investment is higher, the law is more intricate as it balances technological needs with the interests of producers, consumers as well as intermediaries, the accounting practices with endless flows of energy and money are more sophisticated, and social cohesion is difficult to safeguard in communities where experts and non-experts meet.

The five types of Energy Commons are exposed to this complexity to different degrees. The more generation capacity they have, the more complex the financing, management and maintenance of the renewable energy installations will be. Legal and accounting rules will be more complex if the Energy Commons share their energy or act as supplier than if they only consume and/or feed their energy into the grid in return for a fixed price. Interest-based and/or economically inclusive Energy Commons are more complex to turn into a cohesive community than place-based and/or non-inclusive Energy Commons.

Considering the reasons why the examined Energy Commons deviate from the normative prescriptions, it is clear that these complexities are at work. The Energy Commons disburse dividends because the law does not permit energy sharing or makes energy sharing cumbersome. They have layered governance structures, a largely passive membership and involve experts affiliated with energy companies and large enterprises because they are in need of skilled help to manage the renewable energy installations and the legal and accounting requirements. They cannot let Commoners leave without a notice period due to financial requirements. They struggle to retain their local character because opportunities for projects lie outside the boundaries of the community and outsiders bring both skills and money. The Energy Commons have difficulty becoming more inclusive for administrative and financial reasons. In essence, the Energy Commons prioritize economic survival

150 *Cf.* Rose, C.M. 1998. "The Several Futures of Property: Of Cyberspace and Folk Tales, Emission Trades and Ecosystems." *Minnesota Law Review* 83: 129–182, 155.

151 See on the balancing of values with respect to the Commons: Di Robilant 2012, 293–300.

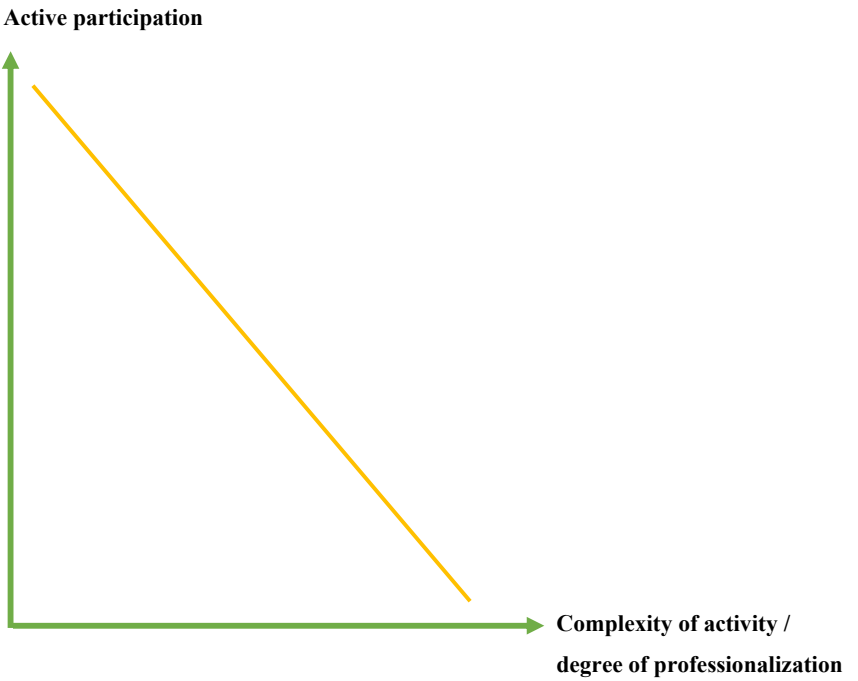

Chart 1: Relationship between the complexity of the Energy Commons' activity or the degree of its professionalization and active participation (own design).

and addressing complexity over other normative goals. The following Chart 1 visualizes the negative relationship between the complexity and professionalization of the activities of the Energy Commons and broad-based active participation by members.

We should recall that most Energy Commons largely consist of volunteers, few of whom have the necessary skills and expertise. This important characteristic makes Energy Commons vulnerable to complexity. To sustain the Energy Commons, we should temper our most passionate expectations. If normative ideals that go beyond the durability and economic sustainability of the Energy Commons are to be realized, the guideline for legislatures and regulatory should be to reduce complexity.

There are different avenues to reduce complexity. Energy Democracy scholars would likely opt for eliminating the need to grow, to enhance active participation by all members and preserve the local character of the Energy Commons. The need to grow flows from the high overhead costs, for example for administrative requirements and feasibility studies, in relation to generation capacity. If the feed-in

tariff or the unsubsidized market price per kWh is not sufficient to account for these and other costs, the Energy Commons will have to grow or become economically unsustainable. Some Energy Commons only survive thanks to some active members engaging in acts of self-exploitation. For instance, one interviewee worked 40 h per week for their energy cooperative in addition to their standard work week as an engineer. To eliminate the need to grow, the State would have to pay a generous feed-in tariff or force energy suppliers to pay a sufficient price for community energy.

Many Energy Commons would still want to grow, to promote the energy transition, offer lower energy prices to members, and/or to earn more money. The main avenue to reduce complexity would then be to reduce or provide effective assistance with administrative burdens in dealings with authorities, consumers, and energy suppliers.

Unfortunately, the EU Directives send out contradictory signals by incentivizing growth and adding to complexity while restricting avenues for growth. On the one hand, without providing for sufficient subsidies, the Directives implicitly require the economic viability of the Energy Commons on the energy market, encouraging up-scaling and growing complexity. Moreover, the Directives guarantee the consumer rights of the members of energy communities,[152] adding to the legal complexity and administrative burdens of the Energy Commons. The Directives thus do not reduce the need for professionalization and still favour active members with a certain skillset. On the other hand, membership restrictions and proximity requirements help Energy Commons retain their local identity, which will reduce social complexity and promote democratic practices. However, these conditions make it more difficult for the Energy Commons to up-scale and attract external skills, which they need to address the complexity created or at least sustained by the same Directives.

A complexity-based approach to the Energy Commons needs to find a coherent way of reducing the complexities and leaving the Energy Commons the tools they need to confront the remaining complexities if important normative ideals are to be realized. In so doing, legislatures and regulators need to take into account the specific needs of different groups of Energy Commons in achieving a certain normative goal. As regards local identity, active participation, and inclusivity, a translation of this contribution's theoretical insights into practical regulatory change could look as follows. Small Energy Commons with a local identity need more financial support than interest-based Energy Commons with lower overhead costs per kWh. There may be an argument for reducing consumer protection provisions and thus administrative burdens in small Energy Commons with a higher share of active

152 Art. 16(3)(e) Directive (EU) 2019/944; and Art. 22(1) Directive (EU) 2018/2001.

members that supply the members with energy. Energy Commons that strive to be inclusive of low-income households should have preferable access to administrative assistance and financing.

5 Conclusion

The Energy Commons make an essential contribution to a decentralized, more participatory and democratically controlled supply with renewable energy. From a Commons perspective, this contribution tells two tales about them. A description of the internal governance of the Energy Commons produces various types of Energy Commons that differ in generation capacity, inclusivity, their identity as interest-based or place-based communities, active participation, and degree of professionalization. The analysis shows connections between certain characteristics. In particular, the greater the generation capacity, the greater the need for professionalization and the less room for broad-based active participation.

While the descriptive dimension of Commons scholarship takes the Commons as they are and examines the roots of their durability and economic sustainability, the prescriptive dimension of Commons research poses normative requirements beyond mere survival, such as a non-profit character, active participation and democratic decision-making, the right to exit, a local identity, and inclusivity. Through the EU Directives on energy communities, these normative prescriptions have found their way into legislation that rewards the virtuous Energy Commons and excludes the not so virtuous ones. This contribution demonstrates that the Energy Commons in reality often do not meet such normative requirements because of the complexity of the energy sector. It is submitted that energy law and regulations should reduce the complexity facing the Energy Commons where normative ideals beyond or instead of the economic viability of the Energy Commons are to be realized. Future research should draw on this insight to develop a theory of the complexity of the Commons.