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ARTICLES

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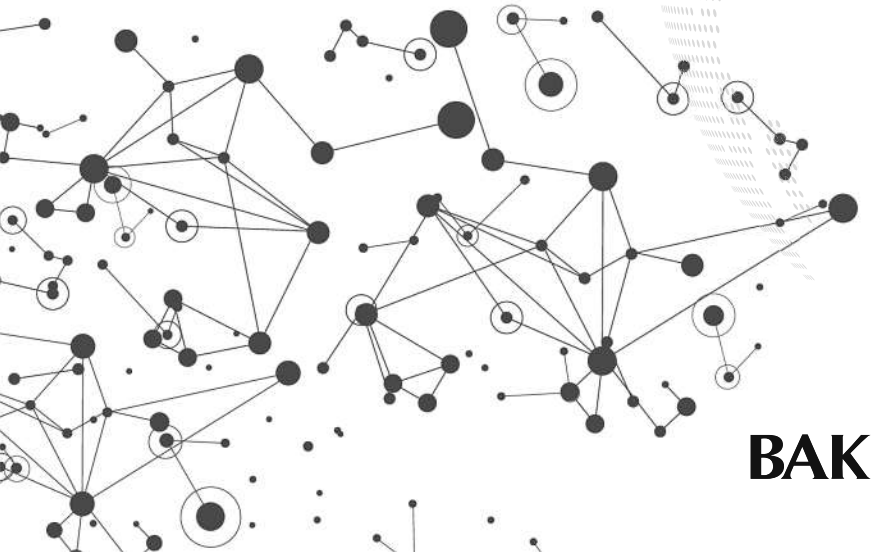

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Kevin J. Conoscenti
202.753.3408
kconoscenti@mccarter.com
Natural Gas and Electric

Allen R. O'Neil
202.753.3431
aoneil@mccarter.com
Natural Gas and Electric

John M. Adragna
202.753.3414
jadragna@mccarter.com
Electric

James H. Byrd
202.753.3412
jbyrd@mccarter.com
Natural Gas

Philip W. Mone
202.741.8212
pmone@mccarter.com
Natural Gas and Electric

F. Alvin Taylor, Jr.
202.753.3421
ataylor@mccarter.com
Electric

James R. Choukas-Bradley
202.753.3410
jchoukasbradley@mccarter.com
Natural Gas

Randolph L. Elliott
202.753.3428
relliott@mccarter.com
Electric

McCarter & English, LLP
1301 K Street, NW, Suite 1000 West, Washington, DC 20005
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This Award was created in memory of Paul Nordstrom, a past President of the Energy Bar Association (EBA) and motivating force in the organization of the Charitable Foundation of the EBA (CFEBA). The first award was given to Paul posthumously. It is an award to honor and to recognize exemplary long-term service or a particularly significant example of public service by a current or past member to the community through the EBA, the CFEBA, or the Foundation of the Energy Law Journal. Exemplary community service outside of these organizations may also be considered as a criterion for the Award.

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DIVERSITY AND INCLUSION POLICY

The Energy Bar Association (EBA), the Charitable Foundation of the Energy Bar Association (CFEBA), and the Foundation of the Energy Law Journal (FELJ) are committed to the goals of fostering an inclusive and diverse membership and increasing diversity across all levels of the Associations. Attorneys, energy professionals and students with varied and diverse characteristics practicing in the energy field are welcome to join our ranks, regardless of race, creed, color, ethnicity, Native American, Alaska, or Hawaiian Native tribal membership or descendance, gender (including gender identity or expression), sexual orientation, family and marital status (including pregnancy), family responsibilities, religion, national origin, age, personal appearance, political affiliation, veterans status, disability, source of income (government, solo, corporate, firm practice), or place of residence or business (geographic diversity) and are encouraged to become active participants in the Associations' activities.

INTRODUCTION TO THE SPECIAL EDITION

The *Energy Law Journal* publishes two volumes annually, with occasional special editions devoted to timely and thematically cohesive topics. This special edition brings together a collection of international articles that examine the challenges of implementing the European Union's vision for renewable energy communities. These communities—legal entities formed through bottom-up, grassroots efforts to promote renewable energy resources on a smaller, localized scale—stand apart from traditional utility models, emphasizing inclusiveness and community-driven, equitable energy solutions. American practitioners with expertise in community power or community energy may find some of the broad themes discussed here familiar.

The release of this special edition coincides with a transformative and uncertain period for the U.S. energy sector. The rise of artificial intelligence and energy-intensive data centers is driving unprecedented load growth and raising questions about the adequacy of existing legal and regulatory frameworks. At the same time, mounting concerns about grid reliability, resource adequacy, and resilience in the face of extreme weather events underscore the need for innovative legal and regulatory solutions at the federal and state levels.

Jurisdictions in Europe are grappling with similar questions about whether their energy systems are capable of meeting consumers' needs today. European policies like the Renewable Energy Directive (RED II)[1] have prompted critical discussions about the role of decentralized renewable energy facilities and communities within larger energy systems.

The articles in this volume remind us that broad policy visions are only one piece of the puzzle. Laws and regulations implementing such policies must keep pace with the realities and complexities of the modern energy landscape. The articles also highlight the value of examining how other jurisdictions address similar challenges, broadening our understanding of possible solutions.

Several recurring themes emerge throughout this edition. Authors consider foundational questions about the nature of energy. What kind of good is it? To what extent should consumers influence its development? And how should these considerations shape policies governing energy generation, delivery, and consumption? Several articles underscore the unique goals pursued by energy communities, including decentralization, prioritizing equitable access, reducing energy poverty, fostering community cohesion, ensuring open and voluntary governance, and aligning energy initiatives with local values.

The contributors also explore the challenges of scale. What legal and property issues arise when renewable energy ownership is held by smaller, decentralized actors? How do these challenges differ from those faced by traditional utilities? Notably, the obstacles faced by energy communities in Europe—such as

1. Directive 2018/2001, of the European Parliament and of the Council of 11 December 2018 on the Promotion of the Use of Energy from Renewable Sources, 2018 O.J. (L 328) 82.

outdated regulatory regimes, conflicts among different levels of governmental authority, and the need for adaptive governance—will resonate with U.S. practitioners. Together, these pieces emphasize the importance of flexible approaches to the challenges facing energy systems today.

Articles in this edition include:

- Professor Marc L. Roark's exploration of the Solar Commons Community Trust, a type of renewable energy community, through the framework of Resilient Property Theory, illustrating the importance of adaptive governance in managing the complexity of modern energy systems. Among other themes, his article explores how traditional legal frameworks limit the resilience of these communities by giving some stakeholders (the insiders) *de facto* veto power over the choices made by others (the outsiders).
- Professor Peter Bloom's discussion of "legal commoning," which conceptualizes energy as a commons resource that is collectively owned and managed by communities, rather than a commodity traditionally subject to market forces or managed by regulatory authorities. His work focuses on the need for context-sensitive, flexible legal structures, including in private and property law, to support this novel vision.
- Francesca Dealessi's and Andrea Lanciani's joint examination of how Italy's vision for energy communities sometimes conflicts with complex and unwieldy European Union and national regulations that prioritize other policy goals, revealing tensions inherent in multilevel governance. Among other issues, the authors consider the balance between the need for highly detailed rules to better control a nascent legal framework and the need for simpler rules to facilitate access to that framework.
- Stella Monegato's critique of the limitations within Italian public governance frameworks, which are crucial to the democratic management of energy resources but currently fall short of adequately supporting renewable energy communities. The article illustrates how the specific national and local laws that a Member State adopts may be in tension with the goals envisioned by an overarching European Directive.
- Professor Björn Hoops's and Elsabé van der Sijde's joint analysis of the economic and legal barriers facing smaller-scale renewable energy projects, including how traditional notions of property law, like the doctrine of accession, can hinder the growth of energy communities by imposing higher transactional costs. In doing so, the authors conduct a comparative analysis of variations of the doctrine in Dutch, German, Italian, and South African property law systems.

This special edition represents the culmination of a multi-year collaboration among academic institutions across multiple countries. The idea for a special edition of the Journal originated with Professor Warigia Bowman of the University of New Mexico School of Law during her tenure at the University of Tulsa College of Law, where she worked closely with student contributors to the Journal as an advisor. Building on this foundation, Professor Roark, also of the University of Tulsa, coordinated with Professor Björn Hoops at Groningen University in the

Netherlands to organize this special collection for the *Energy Law Journal*. This collection features select proceedings from the Energy Communities Symposium held in March 2024 in Turin, Italy. This symposium, entitled "Private Law in the Energy Commons," was the culmination of a multi-year EU-funded project on energy communities, with additional support from the University of Turin, Groningen University, and the University of Tulsa.[2]

We extend our deepest gratitude to the professors, academic institutions, and authors who contributed to this special volume. Special thanks go to our student editors at the University of Tulsa College of Law, whose dedication and hard work made this third volume of the year possible. We also owe our thanks to the University of Tulsa, which has generously agreed to fund the printing costs for this special edition. As a result, EBA members who have subscribed to receive hard copies of the Journal will receive this volume at no additional cost.

Finally, this international, interdisciplinary edition is a unique and valuable addition to the Journal's body of work. My personal thanks go to the Journal's leadership—Editor-in-Chief Harvey Reiter, Executive Editor Caileen Gamache, and Administrative Editor Nicholas Cicale—for their commitment to fostering innovative and timely discussions about energy law at the international level.

Mary Yang
International Articles Editor
March 2025

2. Professor Hoops and Professor Roark organized the Turin conference together with Anna Grignani, Bram Akkermans, Lorna Fox O'Mahony, and others. The products in this special issue are part of the project "Private Law and the Energy Commons," which has received funding from the European Union's Horizon 2020 research and innovation program under the Marie Skłodowska-Curie Actions, grant agreement No. 101024836.

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SCALING ENERGY RESILIENCE THROUGH ENERGY COMMONS AND THE SOLAR COMMONS COMMUNITY TRUST

Marc L. Roark[*]

Synopsis: Energy Communities in both the European Union and the United States are groups of citizen and commercial actors implementing renewable energy resources on a smaller scale than traditional utility companies. Their motivations are multiple and complex: climate consciousness; cost-effective energy access; participatory democracy in the governance of the energy sector; and rent-seeking as energy participants. While these motivations may animate participation, the laws that enable the creation of these energy communities may strike unique actors differently depending on their role in creating, governing, or utilizing energy coming from the energy communities; or as actors in the energy sector working alongside or in competition with the energy community. These motivations may also reflect the State's own resilience needs for reliable energy and the pragmatic concerns about costs of transitioning to renewable energy resources. What these challenges reflect are the resilience seeking needs of both individuals and the State as they navigate pressures to adopt renewable resources for climate, economic, and developmental reasons.

The topic covered by this article was discussed as a part of the Energy Communities Symposium held at the University of Turin, Italy, in March 2024. That symposium featured several critical papers delivered around the theme of how energy commons relate to local contexts and regulatory frameworks that dictate how communities are formed, where they are located, and what obligations they are bound to undertake as an Energy Communities. As a part of this special edition of the *Energy Law Journal*, Stella Monegato, Peter Bloom, Björn Hoops and Elsabé van der Sijde, Francesca Dealessi and Andrea Laciani, and I examine the contours of the energy renewable transition faced by small-scale actors, including the landscape of energy transmission in the United States; the intersection of local actor competencies and the complexities of the EU regulation (Francessca Dealessi & Andrea Lanciani); the challenges of public governance (Stella Monegato); the economic and legal barriers facing smaller-scale renewable energy projects (Björn Hoops & Elsabé van der Sijde); the role of regulation in shaping energy governance structures and their intersection with state resilience claims (Peter Bloom); and, this piece, how the Solar Commons Community Trust can be understood through the lens of Resilient Property Theory.

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* Professor of Law, University of Tulsa College of Law; Affiliate Research Professor, University of Pretoria, S.A. This paper was delivered as part of the Erasmus Project on Energy Communities, co-sponsored by the University of Tulsa and the University of Turin, Italy. Jessica Owley, Lorna Fox O'Mahony, Bram Akkermans, and Gwen Savitz provided useful and thoughtful comments on this draft.

I. INTRODUCTION

Energy poverty is a pressing development concern due to the positive correlation that energy resources have with economic development. Energy Poverty occurs when the level of energy consumption is insufficient to meet basic human needs.[1] Reddy defines energy poverty as "the absence of sufficient choice in accessing adequate, affordable, reliable, high-quality, safe and environmentally benign energy services to support economic and human development."[2] This definition incorporates the importance of autonomy as a pillar of suitability. Limited access to suitable energy sources renders access to other democratic promoting institutions more tenuous, including education, healthcare, or information for participation.[3] Reddy also references availability as a key construct.

National energy consumption correlates to that nation's economic growth as measured by the human development index (HDI) and life expectancy.[4] Researchers have found correlations between greater energy development by a nation with better health outcomes as measured by life expectancy, higher levels of education, and higher standards of living.[5] For example, in a 2007 study, nations that consumed 4000 KW per capita correlated to a .9 HDI score or nearly perfect; while

1. Mikel González-Eguino, *Energy Poverty: An Overview*, 47 RENEWABLE SUSTAINABLE ENERGY REV. 377, 379 (2015).

2. Amulya K.N. Reddy, *Energy and Social Issues*, *in* WORLD ENERGY ASSESSMENT: ENERGY AND THE CHALLENGE OF SUSTAINABILITY 38, 44 (J. Goldemberg ed., 2000).

3. *See generally* BJÖRN SÖREN GIGLER, DEVELOPMENT AS FREEDOM IN A DIGITAL AGE: EXPERIENCES FROM THE RURAL POOR IN BOLIVIA (2015).

4. Rajabrata Banerjee et al., *Energy Poverty, Health and Education Outcomes: Evidence from the Developing World*, ENERGY ECON., June 9, 2021, at 19; *see generally* Fatih Birol, *Energy Economics: A Place for Energy Poverty in the Agenda?*, 28 ENERGY J. 1 (2007); D L Linton, *The Geography of Energy*, 50 GEOGRAPHY 197 (2024); González-Eguino, *supra* note 1.

5. *Human Development Index (HDI)*, U.N. DEV. PROGRAMME: HUMAN DEV. REPS., https://hdr.undp.org/data-center/human-development-index#/indicies/HDI (last visited Feb. 10, 2025) (Human Development Index is a scoring system developed by the United Nations to measure how different nation-states fare in key dimensions of human life. The scoring is a value between 0-1, with 1 being the perfect score. The scores factor three other indexes that measure the health levels of a nation as determined by the life expectancy index, the knowledge levels of a nation as measured by the education index, and the standard of living as measured by the GNI index.); *see* AMIE GAYE, HUMAN DEVELOPMENT REPORT 2007/2008, ACCESS TO ENERGY AND HUMAN DEVELOPMENT 6-8 (2007), https://hdr.undp.org/system/files/documents/gayeamie.pdf.

nineteen countries with an HDI below .6 had an annual per capital electricity consumption below 1000 KW.[6] As countries enhance their energy access, three correlated measurements also are observable: economic development increases;[7] energy consumption also increases;[8] and human development increases in some locations, while it may actually be stymied or decreased in others.[9] Some countries have associated the growth of energy consumption with increased carbon emissions in the energy sector, leading to greater focus on renewable energy deployment.[10] Several countries then face a contradiction: a need to meet consumption demands without the infrastructure in place to provide energy from renewable sources. This drive for immediate energy production exacerbates climate change when the only "fast" sources are fossil fuels.[11]

While States navigate this seemingly Kafkaesque problem, small-scale actors (including individuals and businesses), communities, and collectives promote clean energy production and consumption through energy communities.[12] One example, the Solar Commons Community Trust (SCCT), seeks to foster cleaner energy entry through energy communities normally excluded from renewable access and participation.[13] In addition to promoting cleaner access to energy, the SCCT potentially provides energy savings to adopting communities and the reinvestment of gains made by providing energy through the electrical grid to participants. This essay analyzes the SCCT through the lens of Resilient Property Theory (RPT), demonstrating its role in closing resilience gaps in the delivery of clean energy. By looking at the SCCT through the lens of RPT, this article identifies how, in the mainstream, different energy resilience assets are scaled up or scaled back by law.

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6. Kathryn Milun et al., *Bringing New Light to One of The Oldest Forms of Property Ownership: An Innovative Solution for Benefitting Underserved Communities Using the Solar Commons Community Trust Model*, 47 VT. L. REV. 383 (2023).

7. *See generally* Scott C. Russell et al., *What Can Tribes Do? Strategies and Institutions in American Indian Economic Development*, 18 AM. INDIAN Q. 250 (1994); Kenneth B. Medlock & Ronald Soligo, *Economic Development and End-Use Energy Demand*, 22 ENERGY J. 77, 79 (2001).

8. Selçuk Bilgen, *Structure and Environmental Impact of Global Energy Consumption*, 38 RENEWABLE SUSTAINABLE ENERGY REV. 890, 891 (2014).

9. *Id.*

10. Ortzi Akizu-Gardoki et al., *Decoupling between Human Development and Energy Consumption within Footprint Accounts*, 202 J. CLEANER PROD. 1145, 1147 (2018).

11. Michaël Aklin, *The Off-Grid Catch-22: Effective Institutions as a Prerequisite for the Global Deployment of Distributed Renewable Power*, ENERGY RES. SOC. SCI., Feb. 10, 2021, at 1 (discussing how infrastructure can be defined broadly and is context specific).

12. Energy communities have both techno-legal and descriptive qualities. For example, the EU defines energy communities in a different way than the U.S. does in the Inflation Reduction Act. *See,* e.g., Björn Hoops, *Two Tales of the Energy Commons Through the Lens of Complexity*, GLOB. JURIST, Apr. 22, 2024; Irati Otamendi-Irizar et al., *How Can Local Energy Communities Promote Sustainable Development in European Cities?*, ENERGY RES. SOC. SCI., Nov. 11, 2022, at 1; Jason G. Eisdorfer et al., *Federal Support Opportunities to Remediate and Redevelop Energy Assets*, PAC. NW. NAT'L LIBR. (Apr. 2023), https://www.energy.gov/sites/default/files/2023-05/FSOTRREA%20Report.pdf; *see infra* text on Scaling Hierarchical Resilience associated with notes 71-83.

13. *See* SOLAR COMMONS PROJECT, https://solarcommonsproject.org/ (last visited Feb. 25, 2025).

RPT[14] is a methods assemblage approach for understanding complex problems involving land and resources.[15] At its core, RPT seeks to reduce the tendency to approach problems through reductive frames that omit certain aspects of problems. A key focus of RPT has been on the role of private property in the face of collective challenges, such as housing, consumer problems, or environmental concerns. We observed, in *Squatting and the State*, a growth in ideological framing of problems as creating binary values around private property interests that, taken to the extreme, results in a veto power of owners over collective action that requires their participation. Energy development interacts with private property on several levels. The land where energy infrastructure is located is owned by someone, whether that is a utility company or an individual, implicating land use schemes such as zoning or planning requirements, or restrictive covenants which can limit where and how renewables may be deployed.[16] Tax-credit schemes differentiate between "owners" of infrastructure and utilizers (lessees or others) that dictate who has access to state-backed credit financing arrangements.[17] And energy consumption (particularly its efficiency) is often related to how land is developed, from urban density requirements embodied in preferences for single-family housing units or multi-family housing; business development and the need for reliable, accessible energy supplies; and public services on that land.[18] Energy development intersects with multiple stakeholders and the different roles they play all at once — landowner, consumer, developer, service provider, and community.

In the rights framework, property sits as a rivalrous entitlement which requires courts to evaluate the comparative strength of competing rights.[19] In the U.S., state limits on property's use often trigger the takings analysis in evaluating the effectiveness of those rights. Where purely private actors are involved, the state often defers to the rules around ownership as a coordination approach to how those interests should be balanced. Either way, when land is involved, the tendency to frame the action as either a challenge between public and private rights

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14. *See generally* LORNA FOX O'MAHONY & MARC L. ROARK, SQUATTING AND THE STATE: RESILIENT PROPERTY IN AN AGE OF CRISIS (2022) (offering a multi-modal approach to dealing with challenging resource problems).

15. A methods assemblage approach is a multi-modal way of approaching problems, drawing on different methods to better understand the problem. Drawing on methods that emphasize triangulation, the approach is built off the view that methods contain inherent biases formed from the development of the method. By approaching problems through multiple methods, the problem can be better understood apart from inherent biases that might limit how the problem is approached. *See* JOHN LAW, AFTER METHOD: MESS IN SOCIAL SCIENCE RESEARCH (John Urry ed., 2004).

16. *See generally* Kristina Caffrey, *The House of the Rising Sun: Homeowners' Associations, Restrictive Covenants, Solar Panels, and the Contract Clause*, 50 NAT. RES. J. 721 (2010); Jenny Palm, *Household Installation of Solar Panels – Motives and Barriers in a 10-Year Perspective*, 113 ENERGY POL'Y 1 (2018); John Wiley, *Solar Energy and Restrictive Covenants: The Conflict Between Public Policy and Private Zoning Comment*, 67 CALIF. L. REV. 350 (1979).

17. Felix Mormann, *Beyond Tax Credits: Smarter Tax Policy for a Cleaner, More Democratic Energy Future*, 31 YALE J. REGUL. 303, 340 (2014); Mara Hammerle et al., *Solar for Renters: Investigating Investor Perspectives of Barriers and Policies*, ENERGY POL'Y, Jan. 14, 2023, at 4.

18. *See generally* Elena Safirova et al., *Spatial Development and Energy Consumption* (Res. for the Future, Discussion Paper No. 07-51, 2007), https://ssrn.com/abstract=1087042.

19. *See generally* Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089 (1972).

or as coordinated through the owner's entitlement is apparent. Thus, as we observe in *Squatting and the State*, though problems may be multi-faceted and hybrid in nature, the fact that property is implicated often means that courts limit their analysis through property approaches. While this may be beneficial for owners, individuals outside the ownership paradigm may be limited in how publicly beneficial objectives are carried out.

Consider the following problem as an illustration for how these framing limits can impact renewable deployment. Imagine a rural area with little access to reliable electrical service. The transmission lines that connect homes in the area are owned by the local public service corporation that delivers electricity to users in the region. Those lines are older and do not use photovoltaic lines necessary to put solar power back into the grid. Moreover, the costs associated with upgrading those lines are significant. The utility provider may not want to bear the costs of upgrading even a small portion of those lines for several reasons. First, the increased use of solar by users may disrupt their own rent-seeking actions as a utility provider. Second, the upfront costs of transitioning the transmission lines, without some form of public assistance, may deter the utility from making that investment. In this scenario, the ownership of transmission lines by the utility serves as a limit on how the collective interest in transitioning to renewables can be deployed.

Those challenges reveal more asymmetries between how users in that region may respond to this problem. Some owners may decide to install solar panels anyway as both a reduction of their own unclean consumption and as a cost-savings strategy towards their energy needs. But some users may be blocked from doing the same. Renters may find landlords unwilling to allow the installation of solar panels on rooftops. Neighborhoods may block the installation of solar through restrictive covenants. These asymmetries reveal resilience gaps that exist between property owners and non-property owners by limiting the analysis of problems to frames dictated by the existence of private property claims on resources.

To avoid the limits that property can confer on problem solvers, we make four distinct moves in RPT as we endeavor to think about what resilience claims mean in the context of property systems that create insiders and outsiders.

- **Wicked Problems Methods.**[20] Wicked problems are "a large-scale, social, economic, and political problem, embedded in complex causal webs of interlinking variables."[21] Easily subject to framing limits, "[p]rogress towards agreed solutions is stymied by the absence of a shared interpretation or collective understanding of

20. For a brief survey of writings relating to wicked problem theory, *see generally* Aleksander Jakimowicz, *The Energy Transition as a Super Wicked Problem: The Energy Sector in the Era of Prosumer Capitalism*, ENERGIES, Dec. 1, 2022; Anna Volkmar, Muddling through Wicked Complexity: Why We Should Look at Art When We Talk about Nuclear Power (Jan. 26, 2021) (Ph.D. dissertation, Leiden Univ.), https://hdl.handle.net/1887/3134622; Gerald M Allen & Ernest M Gould, *Complexity, Wickedness, and Public Forests*, 84 J. FORESTRY 20 (1986); JEFF CONKLIN, *WICKED PROBLEMS AND SOCIAL COMPLEXITY* (2006); Svein Jentoft & Ratana Chuenpagdee, *Fisheries and Coastal Governance as a Wicked Problem*, 33 MARINE POL'Y 553 (2009); Kelly Levin et al., *Overcoming the Tragedy of Super Wicked Problems: Constraining Our Future Selves to Ameliorate Global Climate Change*, 45 POL'Y SCI. 123 (2012).

21. FOX O'MAHONY & ROARK, *supra* note 14, at 3.

the problem."[22] Because the problem space is subject to different starting points or framing limits, "attributions of responsibility are disputed[] and definitive solutions are elusive."[23] RPT sets out to define property's role in problem solving — not as a constraining limit on the range of possibilities (defined by either the identity of the actor or the character of the problem, but rather a holistic approach that values the role of the institution of private property and its resilience affording role in context with other forms of resilience).

- **Vulnerability Theory.** RPT invokes Vulnerability Theory for understanding how individuals, groups, states, and institutions (like private property) interact with one another.[24] Starting from the universal reality that all humans experience the same inherent vulnerabilities, the Vulnerability Theory (as well as RPT) articulates that what creates distinctions is the embeddedness of humans and communities in institutions.[25] Embodiedness is a universal term and refers to the basic needs that all humans require — such as shelter, water, food, clean air, and society.[26] Those needs are mediated by the embeddedness of individuals in institutions that provide resilience, including the family, property, communities of faith, and more. Unlike embodiedness, embeddedness is a scaled concept reflecting that different actors may experience access to institutions differently. Resilience in this setting can mean access to financial resources, community belonging, or even rights recognized by state actors (like private property). We argue in *Squatting and the State* that the state itself is a vulnerable human institution, and as such, it seeks out its own resilience while simultaneously doling out resilience to others.[27] RPT seeks to take seriously the interests of all stakeholders in problem solving, and in particular accounting for what kinds of resilience stakeholders have access to and what kinds of resilience gaps emerge between stakeholders.

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22. *Id.*

23. *Id.*

24. Institutions emerge from a series of rules or ordering principles that serve the interests of different actors (including the state) enhancing the formation of stable systems of hierarchically situated groups. *See* ANTHONY GIDDENS, THE CONSTITUTION OF SOCIETY: OUTLINE OF THE THEORY OF STRUCTURATION 17 (1984); *Id.* (According to Giddens, institutions emerge in relation to structural commitments of society: "the most deeply embedded structural properties, implicated in the reproduction of societal totalities, [Giddens] calls structural principles. Those practices that have the greatest time-space extension within such totalities can be referred to as institutions."). Other scholars describe the effect of institutions and their relation to power and domination. *See generally* ULRICH BECK, POWER IN THE GLOBAL AGE (2005); LINDA WEISS, THE MYTH OF THE POWERLESS STATE (1998).

25. Martha Albertson Fineman, *The Vulnerable Subject and the Responsive State*, 60 EMORY L.J. 251, 255-56; *see* Martha Albertson Fineman, *Equality and Difference – The Restrained State,* 66 ALA. L. REV. 609, 626 (2015); *see also* Martha Albertson Fineman, *Vulnerability and Inevitable Inequality*, 1 OSLO L. REV. 133, 134 (2017).

26. *The Vulnerable Subject and the Responsive State*, *supra* note 25, at 268-69.

27. FOX O'MAHONY & ROARK, *supra* note 14.

- **Scaling Resilience.** The dimensions of resilience between differently situated actors are particularly important. Different actors have access to different forms of resilience that mitigate their vulnerabilities. Resilience itself, particularly as found around resource problems like energy, is scaled across three registers: rhetorical, material, and hierarchical. Material resilience can be found in having access to a physical asset, which is scaled against other assets for its size, value, and location. Hierarchical resilience is found in the recognition of distinct rights that emerge from the State — whether those rights are scaled by the different category of possessory claims (owners versus tenants) or whether they reflect the powers of different levels of the state to regulate a problem (federal, state, or local). Finally, rhetorical resilience is the embedded stories, norms, and values that justify the institutions we support.[28] Often these registers of resilience are combined into hybrid scales. For example, when the state promotes renewable energy supplies through tax incentives, it represents hybridity of resilience across multiple registers: the rhetorical value of promoting clean energy, the hierarchical power to control revenue collection through taxes, and the material resilience of allocating funding in the form of tax credits to would-be adopters.
- **Equilibrium.** Understanding that resilience is scaled across different actors prompts the question "how should institutions respond when resilience gaps emerge amongst individuals, communities, and institutions?" The fourth move we make in RPT is asserting that resilience should be allocated in a way that promotes the equilibrium of sustainable institutions.[29] Equilibrium is an economics theory that suggests a stable point in which neither supply nor demand alter behavior. As an economic concept, equilibrium has been relegated to an aspirational hypothesis. But as a political theory, equilibrium has come to reflect the steadiness of state institutions that enable actors to make choices without fear that disruption by outside forces will render actions as moot or costly. A key point in equilibrium analysis is the avoidance of tipping points that would severely impair an institution of the state (or the state itself). As resilience is allocated (such as through the property system), we should strive to promote equilibrium by encouraging flexibility of responsiveness to problems, mechanisms that enable individuals, institutions and the state to recover from crisis, adaptability, and innovation. One key indicator that the system is creeping towards a tipping point is when actors are able to use their resilience to block the resilience of others. For example, actors with vested interests in industries that compete with renewables may challenge the efficacy of investment by the state, by advancing stories that question the

28. FOX O'MAHONY & ROARK, *supra* note 14; *see* Marc L Roark & Lorna Fox O'Mahony, *Scaling Property Law*, *in* A RESEARCH AGENDA FOR PROPERTY LAW 93 (Bram Akkermans ed., 2024).

29. Timothy Sisk, *Democracy's Resilience in a Changing World*, *in* THE GLOBAL STATE OF DEMOCRACY: EXPLORING DEMOCRACY'S RESILIENCE 34 (1st ed. 2017).

> efficacy of renewable solutions. When climate denial or questions about whether state legitimacy limit the state's adoption of solutions aimed at solving energy problems, then the rhetorical scale effectively has "jumped" the material and hierarchical deployment of collective resources towards that problem. The effect of that "jumping" is the allocation of greater resilience in the purveyor of those challenging stories, rather than those who may benefit from state investment in renewable technologies.

Applying RPT to not only how energy is accessed but who has the power to distribute energy demonstrates that resilience through energy commons can offer a pathway for solving super wicked problems such as energy transition in the age of environmental crisis.

II. ENERGY TRANSITION AS A SUPER WICKED PROBLEM

RPT starts with wicked problem theory, highlighting the problems with reductive or selective framing of problems.[30] Wicked problems arise when there are multiple stakeholders with distinctive interests that call for different frameworks of analysis.[31] The problem becomes wicked when there is no clear means for coordinating those interests, which then creates externalities on actors who are excluded from those frameworks that dominate the problem space. Taking Merrill and Smith's coordination view of property[32] as the conventional view of property's social purpose, we argue that wicked problems arise when multiple stakeholders, with different values or interests (leading to different kinds of questions) and the means for coordinating those interests, create externalities on actors who lack access to resources that are capable of adequately reducing the harm they experience.

Energy transition is a super wicked problem because it is a global response to climate change and pollution control, wherein responses require cooperation and coordination among all sorts of disciplines and fields.[33] The problem (how to transition our energy sources; how to navigate the energy transition) is made more complex due to different capabilities of stakeholders in accessing energy technologies (so-called energy poverty). Stakeholders in renewable energy share interests in the reduction of costs related to energy consumption/production and the promotion of clean energy sources for more sustainable environmental outcomes. While the stakes that face consumers are renewable energy resources, the capabilities for

30. FOX O'MAHONY & ROARK, *supra* note 14.

31. Lisa V. Bardwell, *Problem-Framing: A Perspective on Environmental Problem-Solving*, 15 ENV'T MGMT. 603 (1991).

32. The coordination view of property understands that relationships are coordinated through interests in property. Integrally, the coordination view rejects abstractions, like the bundle of sticks theory of property that disaggregates various rights in property (even as held by the same owner). *See* Robert C. Ellickson, *Two Cheers for Bundle of Sticks Metaphor, Three Cheers for Merrill and Smith,* 8 ECON J. WATCH 215, 220 (2011). Rather, Merril and Smith advocate for a view of property as a social system that systemically orders relationships based on the interest, longevity, or access that one may have. *See also* Thomas Merrill & Henry Smith, *The Property/Contract Interface*, 101 COLUM. REV. 773, 787 (2001).

33. Jakimowicz, *supra* note 20, at 6.

harnessing energy technologies differ by income,[34] geography,[35] identity,[36] and access to knowledge.[37]

Spatial inequality is the differences that exist in resources across geographies, whether on the neighborhood, local, regional, or national level.[38] Vertical inequalities between stakeholders arise when there is a non-proportional distribution of wealth and resources among social groups within a community.[39] Consumers who share similar interests and similar access to resilience tools (such as property owners) are often more visible to policymakers who orient policies with the interests and capabilities of constituents in mind. Scaling a problem according to resources often means choosing to favor some individuals over others, creating vertical inequalities.[40]

The dominant U.S. model for consumer participation in the sustainable energy economy is a prosumer model, where the individual harnesses his own economic assets to acquire the technology necessary to participate in renewable energy production and consumption.[41] As Jakimowicz writes, the energy transition to *prosumer capitalism* is a complex process, subject to many sub-problems such as legislation, energy distribution, democracy, consumer policy, and cybersecurity.[42] The ability to access those incentives can be subject to both vertical and spatial inequalities. Vertical inequalities relate to the unequal distribution of income, wealth, or other social determinants. Spatial inequalities relate to how inequalities emerge by geographic region or location.

Federal and State tax policies create vertical inequalities by subsidizing access through taxable credits and deductions — which favor those who have taxable liabilities to the state.[43] Some localities have begun harnessing local physical resources to make renewable energy sources available to lower income consumers.[44]

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34. Birol, *supra* note 4, at 4; Jakimowicz, *supra* note 20, at 16; *see generally* Sulaman Muhammad et al., *European Transition toward Climate Neutrality: Is Renewable Energy Fueling Energy Poverty across Europe?*, 208 RENEWABLE ENERGY 181 (2023); Hoops, *supra* note 12.

35. *See generally* Palm, *supra* note 14; Linton, *supra* note 4; González-Eguino, *supra* note 1; Pauline M. McGuirk, *Power and Policy Networks in Urban Governance: Local Government and Property-Led Regeneration in Dublin*, 37 URBAN STUD. 651 (2000).

36. Jakimowicz, *supra* note 20, at 16.

37. Hoops, *supra* note 12, at 2; Patrycjusz Zarębski et al., *Renewable Energy Generation Gaps in Poland: The Role of Regional Innovation Systems and Knowledge Transfer*, ENERGIES, May 19, 2021, at 4.

38. Susan S. Fainstein & Norman I. Fainstein, *National Policy and Urban Development*, 26 SOC. PROBS. 125 (1978).

39. *Id.*

40. *Id.*

41. *See* Jakimowicz, *supra* note 20, at 2.

42. *Id.* at 1.

43. *See, e.g.*, Ann Carrns, *At 30%, Solar Panel Tax Credits Are at a High Point for Now*, N.Y. TIMES (Aug. 25, 2023), https://www.nytimes.com/2023/08/25/business/solar-panels-tax-credits.html.

44. Kaya Laterman, *What If Your Town Doubled as a Private Power Grid?*, N.Y. TIMES (Aug. 7, 2023), https://www.nytimes.com/2023/08/07/realestate/microgrid-solar-power-energy.html; Ivan Penn, *Los Angeles Will Offer More Energy Incentives to Low-Income Residents*, N.Y. TIMES (Nov. 16, 2023), https://www.nytimes.com/2023/11/16/business/energy-environment/los-angeles-energy-inequality.html.

Thus, while those in poverty have a "stake" in advancing renewable energy technologies, they often lack the individual threshold economic assets to participate as individuals on the same terms.[45]

Local laws, policies, and ordinances, as well as natural access to renewable resources, shape the range of energy options for communities. These geographic determinants result in spatial inequalities. For instance, persons in urban environments often have greater access to energy diversity than those living in rural settings.[46] Persons living in "wealthier countries tend to have various sources available," while those living in "poorer countries (and particularly in rural areas within those countries)" may have fewer available options or even none at all.[47] Finally, the energy sources must be adequate to the technology available to harness the energy; must be reliable; of good quality; safe and environmentally benign; and sufficient to support economic and human development.[48] Transition to renewable resources emphasizes the need to produce greater energy in developing places, while not creating greater ecological harm in the process. The state has an interest in not only reducing energy poverty through clean technologies for future generations but also to eradicate current economic, educational, and health disparities. Individuals who are "energy poor" devote more resources, labor, and time to gathering raw materials (like wood or coal) necessary to carry out energy-based functions, such as heating, cooking, and other household tasks.[49] Energy transition is a social, state, and market problem.

Socially, energy poverty disproportionately affects women and persons of color. It is also more prevalent in the global south than the global north.[50] Energy access is a necessary condition for obtaining forms of information distribution, such as radio and television. Additional research has found a correlation between educational access and energy access, in an increasingly digitized environment.[51] These findings become starker when health outcomes are measured against energy access. Studies have found that low birth rates,[52] increased risk for social and health conditions, including mental health illnesses associated with social and physical distancing,[53] and greater frequency of disease related to living in proximity to pollution caused by unclean sources of energy are among various health outcomes related to energy poverty.[54]

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45. Madeleine Ngo & Ivan Penn, *As Utility Bills Rise, Low-Income Americans Struggle for Access to Clean Energy*, N.Y. TIMES (Jan. 11, 2024), https://www.nytimes.com/2024/01/11/us/politics/utility-bills-clean-energy.html.

46. Alex O. Acheampong et al., *Promoting Energy Inclusiveness: Is Rural Energy Poverty a Political Failure?*, UTILS. POL'Y, July 21, 2023, at 1.

47. González-Eguino, *supra* note 1, at 379.

48. Reddy, *supra* note 2, at 42.

49. *Id.* at 46-47; Jun Zhao et al., *How Does Energy Poverty Eradication Promote Green Growth in China? The Role of Technological Innovation*, TECH. FORECAST. & SOC. CHANGE, Feb. 1, 2022.

50. *See, e.g.*, Reddy, *supra* note 2, at 43-44.

51. *See, e.g.*, Banerjee et al., *supra* note 4, at 1-2.

52. *See* Reddy, *supra* note 2, at 52; *see also* Banerjee et al., *supra* note 4, at 7.

53. Zhao et al., *supra* note 49.

54. González-Eguino, *supra* note 1, at 382; *see generally* Frederica Perera, *Pollution from Fossil-Fuel Combustion Is the Leading Environmental Threat to Global Pediatric Health and Equity: Solutions Exist*, 15 INT'L J. ENV'T RSCH. & PUB. HEALTH 16 (2018); Courtney J Keehan, *Lessons from Cancer Alley: How the Clean Air Act Has Failed to Protect Public Health in Southern Louisiana*, 29 COLO. ENV'T L. REV. 341 (2018).

Markets for energy access are driven by needs-based production and consumption cycles that are influenced by a growing complexity of market actors. For example, in Oklahoma, coal-based power plants historically operated at full capacity during the summer and winter seasons but cycled between minimum load and full load during other seasons.[55] During the seasons when coal-fired plants cycled below full capacity, they often lost revenue during the early morning hours when demand was low but remained at capacity to reignite as a way to make up the difference during peak hours.[56] The emergence of shale-based natural gas production and renewables forced coal-driven plants to reevaluate their economic model, raising the costs of both off-peak and peak energy times.[57] The result has been a change of practices where coal fire plants often shut down during non-peak time and return to service only when production will be expected to be profitable.[58]

Likewise, consumption itself is shaped by an ever-growing complexity between fossil fuel providers, state interests, and financial markets and marketeers. Just as financialization of land interests have resulted in an abstraction of how decisions about land are made based on "profit" motivation,[59] the financialization of utilities means that shareholder stakes shape how material choices about investment are made by power companies.[60] While individuals have a stake in the process of energy production, the processes are invisible to consumers, who only experience electricity by flipping a switch. The state's development of energy infrastructure and the adaptability of that infrastructure to renewable energy technologies shapes the market for energy access and deployment. In addition to state-supported infrastructure, state-backed financial commitments that are heavily reliant on fossil fuel production and consumption shape what kinds of access to renewable energy resources may be available to both consumers and producers of energy.[61] In Sandy Smith-Nonini's account of the Greek debt crisis, she observed a networked interplay between the energy infrastructure that was built around fossil fuels, the state's own financial debt crisis that was furthered in part from its reliance on fossil fuels, and the state's choice to recapture value in the form of heightened energy costs to its citizens in order to offset its debt liabilities.[62] The challenge, of course, is that consumption is also driven by consumer needs. As

55. Seth Schwartz & Phillip Graeter, *Recent Changes to U.S. Coal Plant Operations and Current Compensation Practices*, NAT. ASS'N OF REGUL. UTIL. COMM'RS 19-20 (Jan. 2020), https://www.osti.gov/servlets/purl/1869928/.

56. *Id.* at 20.

57. *Id*. at 4-5.

58. *Id.* at 19.

59. M. L. Roark & L. Fox O'Mahony, *Real Property Transactions in the Network Society: Platform Real Estate, Housing Hactivism, and the Re-Scaling of Public and Private Power*, 46 J. CONSUMER POL'Y 445, 449 (2023); Lorna Fox O'Mahony & Marc L Roark, *Speculation, Squatting and Sustainability*, *in* RESEARCH HANDBOOK ON PROPERTY, LAW AND THEORY 377 (C. Bevan ed., 2023).

60. Julia M. Wittmayer et al., *Contributing to Sustainable and Just Energy Systems? The Mainstreaming of Renewable Energy Prosumerism within and across Institutional Logics*, ENERGY POL'Y, Dec. 5, 2020, at 3.

61. Sandy Smith-Nonini, *Networked Flows through a "Porous" State: A Scalar Energo-Political Account of the Greek Debt Crisis*, *in* THE TUMULTUOUS POLITICS OF SCALE: UNSETTLED STATES, MIGRANTS, MOVEMENTS IN FLUX 93 (Donald M. Nonini & Ida Susser eds., 2020).

62. *See generally id.*

Reddy notes, "what human beings want is not oil or coal, or even gasoline or electricity per se, but the services that those energy sources provide."[63]

Besides the virtue of participatory environmental stewardship, financial motives can also drive prosumer activity in renewable energy solutions. As Jakimowicz notes, "[w]hen people are driven to prosume, it is usually due to economic factors—they hope to reduce utility bills, while also making a net profit," or increase reliability.[64] Incentives that enable prosumer action can include financial offsets, such as credits that enable individuals or enterprises to finance acquisition of renewable resources through tax credit options.

While energy transition is a desirable course, not all actors are motivated by the same climate consciousness. The energy transition has produced the opportunity for rent-seeking in various forms.[65] Some marketeers have focused on the production of energy infrastructure[66] while others have marketed expertise necessary to navigate regulatory frameworks.[67] A third set of networks of different stakeholders have emerged that prey on misalignment of interest and capability amongst poor consumers,[68] such as financial firms offers to "lease" solar equipment to consumers who lack the ability to otherwise purchase. The terms of these leases are often extractive, causing the consumer to ultimately pay significantly higher sums than their purchasing counterparts. Moreover, consumers drawn into these schemes do not qualify for state and federal subsidies because they do not own the equipment. Rather, the firms that lease the equipment to consumers take the subsidies themselves, often transferring them on the secondary market to financial institutions as a form of collateral to scale-up their rent-seeking operations and transaction base.[69] These transactions can emerge in a knowledge gap, where some consumers that were educated on the importance of renewable energy production are lured into a false promise of financial benefit, finding themselves as a medium for a new form rent-seeking by firms leveraging the need for renewable transitions. The current structure of prosumer policies often leaves out impoverished populations without greater state or collective action.[70] The demand for renewable energy sources due to environmental impact, as well as the goal of reducing energy poverty has incentivized innovation but not necessarily to the benefit of the impoverished consumer.[71]

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63. Reddy, *supra* note 2, at 41. Importantly, while pollution may be an output of utility production, it would be a leap to say that they desire environmental pollution as a byproduct of their efforts. *See* Blake Hudson, *Land Development: A Super-Wicked Environmental Problem*, 51 ARIZ. ST. L.J. 1123, 1136 (2019).

64. Jakimowicz, *supra* note 20, at 7.

65. Sarah Knuth, *"Breakthroughs" for a Green Economy? Financialization and Clean Energy Transition*, 41 ENERGY RSCH. & SOC. SCI. 220, 227 (2018).

66. *Id.* at 226.

67. Hoops, *supra* note 12, at 32-33.

68. D. Feldman et al., *Financing, Overhead, and Profit: An In-Depth Discussion of Costs Associated with Third-Party Financing of Residential and Commercial Photovoltaic Systems*, NAT'L RENEWABLE ENERGY LAB'Y (Oct. 2013), https://www.osti.gov/biblio/1107462.

69. Alana Semuels, *The Rooftop Solar Industry Could Be on the Verge of Collapse*, TIME (Jan. 25, 2024), https://time.com/6565415/rooftop-solar-industry-collapse/.

70. *See, e.g.*, Penn, *supra* note 44; *see also* Laterman, *supra* note 44.

71. The gap has prompted some states and cities to step in and facilitate access to renewable energy infrastructure. *See* Danila Longo et al., *Energy Poverty and Protection of Vulnerable Consumers: Overview of the*

In response to inequalities in access (both vertical and spatial) as well as knowledge gaps in accessing solar and wind power, a renewed focus on collective efforts to harness renewable energy resources have emerged, where neighbors, small governments, Tribes, or other collectives have organized to offer alternatives to the solo-prosumer model of energy renewables. The SCCT is one such collective effort. Importantly, the SCCT brings together stakeholders with different expertise, interests, and backgrounds to launch access to renewables in communities that previously were limited to traditional delivery of electrical power. These include outside experts, community organizers, financial partners, lawyers, and importantly community members to organize and govern the resources of the SCCT. In this way the SCCT is a form of collaborative prosumer wikinomics that emphasize openness, peering, sharing, and acting globally.[72] By drawing on a wide range of backgrounds and interests, the SCCT is able to harness the power of the trust instrument, not towards a single unitary end, but towards a pluralistic vision of renewable energy deployment.

III. SCALING RESILIENCE ACROSS DIFFERENT STAKEHOLDERS

In the RPT method, we deploy scale to understand resilience claims and assets amongst differently situated actors, including importantly the state. We describe the resilience claims of individuals and institutions across three registers of hierarchical power, rhetorical claims, and material interests. These registers are scaled in that different actors will have access to different types of hierarchical power, rhetorical claims, and material interests.

Scale at its core is a concept of measurement and comparison. Institutions and access to institutions are rarely replicated at zero cost. When policies of a state are designed to promote large-scale resource delivery shift to smaller scale or renewable delivery, it will likely create externalities. Those externalities can create their own ecosystem of response (or practices). If the institutional incentives are built around incentivizing ownership of equipment by creating tax credits, then those outside of ownership but who desire to participate in the renewable energy economy will absorb higher costs with fewer benefits to do so. Thus, while tax credit financing has served large-scale energy deployment well because those credits could realistically only be realized by a large-scale producer of energy, when that same system is deployed to incentivize renewable technology, there is a scaling back of resilience for individuals outside the ownership paradigm.

A. Hierarchical Resilience.

Whenever the state through law defines an interest (like a tax credit that is accessible by an individual or a company), then the state is using its agenda-setting power to shape how that interest can be engaged by the different actors that will encounter the interest.[73] States have ventured to define certain types of "energy communities" that garner special access to incentives towards the creation of renewable energy access. While "energy communities" is both a descriptive and a

EU Funding Programs FP7 and H2020 and Future Trends in Horizon Europe, ENERGIES Feb. 25, 2020, at 9-10; *see also* Penn, *supra* note 44.

72. Jakimowicz, *supra* note 20, at 13-14.

73. Calabresi & Melamed, *supra* note 19, at 1122.

techno-legal term, its power hierarchically lies in who it includes and who it does not.

Descriptively, energy communities are groups of citizens acting together to produce, consume, and benefit from renewable energy resources, such as the SCCT. Legally, the definition is narrower than the description in both the U.S. and European setting. The U.S. creates geographic definitions of energy communities based on targeted places for transition of former non-renewable energy sectors. Under the Inflation Reduction Act of 2022, an Energy Community falls into one of three categories: (1) coal closure energy communities, or a census tract in which a coal mine has closed after 1999, or in which a coal-fired electric generating unit has been retired after 1999; (2) fossil fuel energy communities or those that are economically tied via employment, or proximity, to the creation of energy through fossil fuel consumption; and (3) brownfields, or geographic areas whose expansion or redevelopment is complicated by the presence of hazardous substances or pollutants.[74] The Inflation Reduction Act focuses on these sites as potential places of transition by providing bonus credits for adopting renewable technologies.

In contrast, under the EU's Renewable Energy Communities Directive, an Energy Community is primarily organized around governance and geography.[75] Bjorn Hoops sets out a typology of five types of energy communities describing how they organize themselves around renewable resources.[76] These energy communities are shaped by market conditions along with the legal regulatory environment that defines geographic limits, participation, and access to existing infrastructure. The self-sufficient and inclusive community is built off a small grid that is only accessible to the household members of the residential area connected to the grid. By its nature, it is inclusive of those in the geographic zone where the grid is located but excludes those outside that geographic range.[77] Primarily located in neighborhood or small-population housing communities, the self-sufficient and inclusive community is often constructed as a part of the residential development that it serves. Small, local, and democratic energy commons draw on existing grid infrastructure, allowing for a larger footprint than the self-sufficient and inclusive energy commons. In the small, local and democratic energy commons, excess energy is fed back into the power grid providing members with shared revenue or lower energy costs from the excess energy.[78]

A third typology are communities that meet the criteria as place-based and medium sized energy commons. These communities generally draw on existing energy grid infrastructure but often contribute higher volumes of energy through scaled up resources. For example, place-based and medium sized energy commons may have solar farm installations and wind-farm installations, whereas

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74. *See* Inflation Reduction Act, Pub. L. No. 117-169, 136 Stat. 1912 (codified as amended at 26 U.S.C. § 45)**;** *see also* John Bistline et al., *Economic Implications of the Climate Provisions of the Inflation Reduction Act* 10 (Nat'l Bureau of Econ. Rsch., Working Paper No. 31267, 2023).

75. J. Lowitzsch et al., *Renewable Energy Communities under the 2019 European Clean Energy Package – Governance Model for the Energy Clusters of the Future?*, RENEWABLE SUSTAINABLE ENERGY REV., Jan. 30, 2020, at 9.

76. Hoops, *supra* note 12, at 18-20.

77. *Id.* at 23-25.

78. *Id.* at 17.

small, local, and democratic energy commons often use smaller scale deployment of renewable resources, such as rooftops.[79] Interest-based Energy Commons mimic the placed-based medium size energy commons except that instead of geography- based determinants for stakeholder participation, membership is primarily driven by financial investment criteria or access to necessary resources for the community's success, such as expertise.[80] Finally, investment energy commons, mobilize rent-seeking in the renewable sector by limiting control to cities, financial institutions, or energy suppliers.[81]

The U.S. and European approaches to defining energy community trigger different responsibilities and benefits. While the European model reflects tensions around control, whether based geographically or proprietarily, the U.S. definition is primarily an incentive-based identifier, using tax credits to create greater renewable production in geographies whose labor market was or will be adversely affected by clean energy transitions. The tax credit incentive then is designed to attract producers of clean energy to these geographies by subsidizing their enterprise. Other tax credit programs incentivize individual production and consumption through renewable technologies. The production-oriented approach draws on demand economics as a measure of public commitment. While solar panels on homes can serve as a semiotic indicator of public commitments to renewables, renewables also face stark challenges towards adoption when subject to demand. Namely, as adoption of renewables remains costly, some adopters may struggle to maintain consistent energy supply, therefore limiting effective energy deployment to geographically limited zones where public incentives, natural resources, and consumer interests align.

The Solar Commons Community Trust leverages a different form of hierarchical power to facilitate adoption — property ownership. The SCCT is a type of communal property interest that seeks to leverage the savings generated from renewable energy sources towards communal projects, rather than individual or corporate profit.[82] Drawing on the foundation of trust law, the property form "provides an economic tool for community empowerment and engagement."[83] Drawing on the success of the community land trust model, the SCCT engages a trust protector to evaluate, control, and protect the interests and needs of the solar array hosts, trustees, and community beneficiaries, with its primary focus on protecting the trust asset for the beneficiaries.

One example of the flexibility exhibited is the way the SCCT model innovates renewable energy deployment by addressing key limitations of existing energy infrastructure for adopting a greater scale of renewable technology. One such limitation is the traditional ownership model of current energy providers, where energy deployment and production are scaled on a profit-loss vector. As noted above, the choice by certain providers to ramp up power production is often dependent on whether the provider is able to recoup the costs of initiating the power

79. *Id.*; *see generally* Amy Morris et al., *Green Siting for Green Energy*, 5 J. ENERGY & ENV'T L. 17 (2014) (describing the necessity and yet challenges for distributed solar).

80. *Id.* at 22.

81. *Id.* at 29.

82. Milun et al., *supra* note 6.

83. *Id.* at 386.

production cycle — something highly dependent on costs of resources and costs of machinery and labor.[84] In contrast, the SCCT model starts from the conviction that the sun is a community resource that is capable of generating community wealth. The sun's power-producing rays enable communities to harness energy boosting technologies in parallel to existing energy infrastructures. Given the sun's limitless potential to generate greater energy resources, low-income communities can "name, claim, and legally reframe" energy production and consumption away from pure rent-seeking motivations to community-oriented values making projects.[85]

As the energy is produced, the beneficiaries (or community members) enjoy the fruits of the trust in two ways. First, because they are producers of energy in the energy marketplace, they now reap the benefits of lower cost energy consumption. Secondly, when the trust produces more energy than it consumes, the financial value of selling power back through the grid are reinvested in community enterprises. In the first SC 1.0 project, the benefit was given to a school, while the anticipated beneficiary of SC 2.0 is a UBI project for local tribal community members.

But it serves to point out that, in the U.S., the SCCT sits outside the legal definition of an energy community that would spread these benefits further. Expanding the definition of Energy Community beyond the geographic zones of former sits of energy production labor could mean greater deployment of renewable technologies while also serving disadvantaged communities with both lower costs of energy access and investment in local communities.

B. Material Resilience in SCCT

Material resilience can be found in the physical assets individuals can deploy to solve a problem. It can be measured by size, such as the extent of land holdings or the total wealth a community can aggregate to solve a problem. It can be compared by geography, such as rural versus communities where solar ray hours are greater, or where wind is more abundant. It can be compared by population, or the number of people impacted by a resource. Each of these delineations themselves can be combined to shape the way materiality effects access to resources. For example, the value of land and resources is often determined by size and by location. Urban geographies will have more people than rural geographies. In the energy sector, communities that produce greater amounts of solar power may be able to distribute those resources more easily. The SCCT navigates all of these comparisons of resources at various times.

On the one hand, at its core, the SCCT requires physical space (the *Res*) to produce solar power. The land is put into a trust, committing the physical space, the equipment, and the fruits produced from those resources to the objectives laid out by the SCCT. That space may be the top of a community building or a larger plot of land where a solar array may be placed. Identifying the land interest that can be used to physically locate the solar array may involve a bargaining of values between the owner and the community. In some solar settings, such as Indian Tribes, the community control of space and the economic benefits are controlled

84. Smith-Nonini, *supra* note 61, at 96; Schwartz & Graeter, *supra* note 55, at 1.

85. Milun et al., *supra* note 6, at 390.

hierarchically by the tribal government. Increasingly, Tribal communities have engaged with renewable deployment, leveraging their economic powers and sovereign status to build larger scale solar and wind farms than other types of collectives. To do so, many tribes have created new relationships with private actors to create grids, power sources, and delivery mechanisms to consumers. For example, the Choctaw Tribe of Oklahoma, in 2020, partnered with Oklahoma Gas and Energy to launch a 35 acre, 15,000 solar panel farm capable of producing 5 megawatts of power or enough energy to service 2,000 homes.[86] In doing so, the tribe has saved nearly $69,000 in utility costs for its members.[87] The tribal-private partnership, similar to the S.C. 2.0 project in Northern Minnesota, is a public-private partnership that leverages the role of a sovereign state, who has the power to solve certain problems, with private actors who benefit from being a part of the public problem-solving process.[88]

While the Choctaw Solar Farm is a top-down arrangement, the SCCT models describe the tribe as a passive beneficiary, rather than as a direct beneficiary. That is, the beneficiaries of the trust are largely members of the Bois Forte Band of Chippewas. The project sponsoring the project is the Bois Forte Food Sovereignty Group. But the tribe is not formally the partner in the trust, whereas the Choctaw nation is directly steering the application of the solar project within its territory. The physical location can also reflect the hierarchical limits on what can be done on land. Zoning laws, nuisance laws, and other planning requirements can limit the location of community-based renewable resources. Likewise, the amount of solar power or wind power can shape where the SCCT can be effectively deployed.

Second, the SCCT engages with material resilience in the start-up costs necessary to deploy solar-power-based systems. These costs can include not only the financial costs to make the energy consumable or storable, but also the expertise required to deploy these programs in communities. The state can offset the fiscal costs associated with adopting solar power but has tended to do so through ownership regimes that are driven through tax credit financing. That means that renters of homes likely are excluded because they either will choose not to invest in solar panels that they likely foresee leaving behind should their lease end, or they may simply be limited in making improvements on the house structure by the landlord.[89] Another challenge that small-scale energy communities face, particularly in isolated or rural locations, is the brain drain of expertise necessary to navigate

86. Jack Money, *Choctaw Nation Solar Farm in Durant to Double in Size as OG&E invests in more renewable energy,* THE OKLAHOMAN (April 22, 2021), https://www.oklahoman.com/story/business/energy-resource/2021/04/22/choctaw-nation-partners-with-oge-for-durant-solar-farm-expansion/7319116002/.

87. *Choctaw Nation Invests in Renewable Energy*, UNITED FOR OKLA., https://www.unitedforoklahoma.com/story/solar-power-partnership/ (last visited Feb. 13, 2025).

88. Lynda L. Butler, *Private Land Use, Changing Public Values, and Notions of Relativity*, 13 WM. & MARY L. REV. 629, 629-32 (1992); *see, e.g.*, Eduardo Engel et al., *The Basic Public Finance of Public—Private Partnerships*, 11 J. EUR. ECON. ASS'N 83 (2013) (Public Private Partnerships have been a feature of neoliberalism and the decay of strong, state backed programs, deferring instead to private actors to solve public problems); RORY HEARNE, PUBLIC PRIVATE PARTNERSHIPS IN IRELAND: FAILED EXPERIMENT OR THE WAY FORWARD FOR THE STATE? (2011) (Public Private Partnerships have been encouraged by the department of the Interior for Tribes to address other challenges); Press Release, U.S. Dep't of the Interior, Interior Department Strengthens Public-Private Partnerships to Benefit Indian Country (Dec. 5, 2023), https://www.doi.gov/pressreleases/interior-department-strengthens-public-private-partnerships-benefit-indian-country.

89. Hammerle et al., *supra* note 17, at 1-2.

regulatory, technical, and legal obstacles that must be accounted for in setting up a cooperative.[90] The SCCT serves a "match making function" by marshalling the resources to install solar power resources while also identifying the spaces and resources necessary to deploy them.

Third, material resilience implicates the kinds of existing assets that currently are available to facilitate small scale energy communities, like the SCCT. While the SCCT has advantages as it works within the existing infrastructure of U.S. Energy technology,[91] access to and distribution through the electrical grid is both a predictability problem and a resource problem. One limit that converting power generation to renewable energy sources has is the unpredictable nature of solar power generation. Solar generation is an on-demand power source, which occurs at times when consumption is often at its lowest. This has led to what economists have referred to as the duck curve, where the most consumption occurs in the beginning or end of the day, while dipping during peak solar hours.[92] As solar and wind energy have become more ubiquitous, power plants have strategically reduced conventional power generation systems, pushing the belly of the curve deeper. What this means in practicality is that solar systems need storage capacity to effectively deploy energy within communities. Savitz's article on the challenges of adopting solar in the face of current infrastructure highlights this point.[93]

C. Rhetorical Resilience

Rhetorical resilience relates to the stories and values that communicate how we engage with resilience assets. For example, the resilience of ownership can be demonstrated by the size and placement of no-trespassing signs or other semiotics that communicate the certainty of ownership.[94] Rhetorical resilience claims and their interaction with governance hierarchies also are an important consideration for thinking through these problems. For example, Kathryn Millun's Solar Commons 2.0 Project anticipates using dashboards for users to log into to see how their use of renewable energy resources shapes their own energy consumptions and the community energy consumption.[95] In this format, the semiotics, or the signals of cooperation, are embedded in the architecture of the program.[96] This narrative of what information the governance body conveys, and how it is conveyed, interacts not only with the rhetorical and hierarchical scale but also the material scale — including what resources does the association deploy to further communication to

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90. Björn Hoops, *EU Directives on the Internal Governance of Energy Communities and Their Exclusionary Effects*, 17 J. WORLD ENERGY L. & BUS. 147, 161-62 (2024).

91. Milun et al., *supra* note 6, at 419.

92. Schwartz & Graeter, *supra* note 55, at 19.

93. Gwendolyn Savitz, *Saving Solar (and Wind) Power: Why We need to Emphasize Storage to Fully Transition to Renewables*, 46 ENERGY L.J. (forthcoming May 2025).

94. Lorna Fox O'Mahony & Marc L. Roark, *Property as an Asset of Resilience: Rethinking Ownership, Communities and Exclusion Through the Register of Resilience*, 36 INT'L J. FOR SEMIOTICS L. 1477, 1503 (2023) (comparing the size and placement of neighborhood signage with the same by Squatter occupations).

95. *See SC 2.0 Northern Minnesota*, SOLAR COMMONS PROJECT, https://solarcommonsproject.org/minnesota/ (last visited Feb. 25, 2025).

96. Smart platform communication has been studied in various contexts including the user interface of smart appliances. *See* Peter Bøgh Andersen & Martin Brynskov, *The Semiotics of Smart Appliances and Pervasive Computing*, *in* HUMAN COMPUTER INTERACTION: CONCEPTS, METHODOLOGIES, TOOLS, AND APPLICATIONS 552 (2009).

members.[97] To that end, is the communication used for informational purposes, for behavioral adjustments (shaming), or both is a concrete example of how understanding the role of these registers helps us understand the powers deployed.[98]

Another example, in how semiotics shape community buy-in and participation, is found in the visible art on walls at the Wright Elementary School in the Dunbar neighborhood, as well as the development of the Solar Commons board game.[99] This mural located on the side of a school that has been the beneficiary of funds generated through the Solar Commons Community Trust reinforces the community value of sharing energy. The developers of the project saw the public art installation and the development of the board game as a link connecting the "technical solution" embedded in the project to a commons institution.[100] In doing so, the role of the art installation is towards defining a new "common language" that allows the community to not only communicate about climate change but also to be participants in an alternative future.[101] Finally, the presence of solar panels themselves are a semiotic (or signal) that work to reinforce community participation and buy-in for both the work of the SCCT and the role of renewables.[102]

This role of participatory access is critical to gaining support by would be participants. As Dealessi and Lancianai's piece on *Obstacles of Realization* demonstrates, complexity tends to favor top-down approaches by energy companies rather than participatory approaches by consumers.[103]

IV. CONCLUSION: PROMOTING EQUILIBRIUM

Because Resilience comes from the embeddedness in institutions, RPT observes that for states to be sustainable, its institutions must also be sustainable.[104] When institutions are imbalanced in the way registers of resilience are conferred, there is a greater propensity to create outsiders who are impacted by the resilience conferred to insiders. RPT's methods emphasize the needs to take different resilience stakes serious — not only in expanding the lens from which we see multifaceted problems but also in understanding how individual stakeholders are treated differently when resilience gaps are not taken into account in policy decisions.

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97. Placement and intentional design interfaces have been considered integral for considering how to make smart cities more accessible. MATEJ JAŠŠO & DAGMAR PETRÍKOVÁ, SMART TECHNOLOGY TRENDS IN INDUSTRIAL AND BUSINESS MANAGEMENT 401 (Dagmar Cagáňová et al. eds., 2019).

98. Marlyne Sahakian, *'More, bigger, better' household appliances: Contesting normativity in practices through emotions*, 22 J. CONSUMER CULTURE 21 (2022).

99. Kathryn Milun et al., *The Role of Public Art in Solar Commons Institution-Building: Community Voices from an Essential Partnership among Artists, Community Solar Researchers, and Activists*, INTERDISCIPLINARY J. P'SHIP STUD., Dec. 17, 2021, at 2-3.

100. *Id.* at 7.

101. *Id* at 6.

102. Ozzie Zehner, Producing Power: The Somatization of Alternative Energy in Media and Politics 58-60 (June 2007) (Ph.D. dissertation, Univ. of Amsterdam Sci. & Tech. Studies); Prisca Augustyn, *Solar Energy Discourse in the Sunshine State*, 49 SIGN SYS. STUD. 63, 83 (2021); Anne-Christine Stéphanie Amélie Maassen, Solar Cities in Europe: A Material Semiotic Analysis of Innovation in Urban Photovoltaics 217 (May 2012) (Ph.D. dissertation, Durham Univ.), http://etheses.dur.ac.uk/3592/.

103. Francesca Dealessi & Andrea Lanciani*, Obstacles to the Realization of a Renewable Energy Community in Italy Due to the (Unnecessary?) Complexity of European and National Regulations*, 46 ENERGY L.J. 49 (2025).

104. FOX O'MAHONY & ROARK, *supra* note 14.

When resilience is conferred in a way that gives some stakeholders *de facto* veto power over the deployment of renewables, those left outside the decision-making tent are left with less resilience. For example, politicians in the U.S. still question whether climate change is the result of increased carbon in the atmosphere.[105] Industry actors question and lobby political actors based on the cost of transition to renewable resources, or whether the transition to renewables as a long-term solution is even possible.[106] In both of these instances, the rhetorical scale of the problem is shaping whether and how the state will deploy resources to support renewable energy development. We call this phenomena scale jumping, as it is often reflected in the use of one register of resilience to distort or frame out another register's resilience conferring action.[107] When these kinds of rhetorical stories are able to shape decisions by the state about what resources to devote to public problems, both politicians and industry actors with a vested interest create a permission structure for the state to either refrain from deploying resources to promote renewable resources or restrict it in a way that limits their own political exposure.[108] The effect is to distort access to resilience assets that shape energy consumption. Several groups are impacted by those choices, including immediate consumers whose access to energy is channeled away from alternative resources; communities who lack the resources to participate in the energy economy in any way but as consumers; amongst others. As Bloom's contribution on *Legal Commoning* demonstrates, the success and scalability of Renewable Energy Communities depends critically on the legal and regulatory environments in which they operate, shaping how these communities can engage in the energy economy.[109]

The SCCT (like other energy communities) reframes consumers as participants by both giving them a stake in the decision making for how the energy community develops but also in the outcome of the renewable project. This reframing of roles reorients property, not as an exclusionary tool, but as a sharable tool to protect the social objective of creating greater and cleaner access to energy.[110] When viewed through an RPT lens, both Energy Communities and the Solar Commons Community Trust balances the needs of the state, the needs of stakeholders, and the needs of the community to solve multiple problems, by creating and conferring resilience assets to community members.

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105. Rachel Frazin, *Vance on Carbon Emissions and Climate Change: 'Let's Just Say That's True,'* THE HILL (Oct. 1, 2024), https://thehill.com/policy/energy-environment/4910800-vance-debate-climate-change-scientific-consensus-skepticism/.

106. Thomas Eichner & Rüdiger Pethig, *Lobbying for and Against Subsidizing Green Energy*, 62 ENV'T & RES. ECON. 925, 944-945 (2015).

107. Roark & Fox O'Mahony, *supra* note 28.

108. *See generally* Philippe Aghion et al., *The Impact of Regulation on Innovation*, 113 AM. ECON. REV. 2894 (2023).

109. Peter Bloom, *Legal Commoning: Legally Mobilizing Resilient Energy Commons,* 46 ENERGY L.J. 21 (2025).

110. Rashmi Dyal-Chand, *Sharing the Cathedral*, 46 CONN. L. REV. 647 (2013).

LEGAL COMMONING: LEGALLY MOBILIZING RESILIENT ENERGY COMMONS

Peter Bloom[*]

Synopsis: This article explores the potential of legal commoning as a transformative approach to overcoming barriers in the establishment and upscaling of renewable energy communities. By synthesizing Resilient Property Theory and the concept of mobile power, it proposes a novel framework for reimagining energy governance and property relations. The paper argues that current legal regimes, both private and public, often inhibit the growth of renewable energy communities while inadequately protecting or promoting commons-based approaches to energy production and consumption. Through an analysis of European Union policies and diverse national implementations, the study reveals the complexities and contradictions in existing regulatory landscapes. The proposed framework advocates for adaptive, context-sensitive legal structures that can accommodate the dynamic nature of energy commons while fostering their resilience and scalability. By reconceptualizing energy as a commons resource, the article suggests pathways for developing more democratic, sustainable, and just energy systems. It concludes that legal commoning can serve as a powerful tool for upskilling communities, fostering innovation, and addressing broader societal challenges related to energy transition and climate change. This approach offers valuable insights for policymakers, activists, and scholars seeking to cultivate more participatory and equitable energy futures in the face of ecological crisis.

I. INTRODUCTION

The global imperative to transition towards sustainable energy systems has never been more urgent. As the existential threat of climate change looms, policymakers, scholars, and activists are exploring diverse legal approaches and regulatory regimes to address this crisis and promote renewable energy adoption. These efforts range from carbon pricing mechanisms and renewable portfolio

* Peter Bloom is a Professor of Management at the University of Essex. He is the co-Founder and co-Director of the global research centre for "Commons Organizing, Values, Equalities and Resilience." He has published numerous books and articles on the social economy as well as written for top international media outlets on this topic. Many thanks to Bjorn Hoops, Lorna Fox O'Mahony, Mark L. Roark, Bram Akkermans, and Camila Vergara for their guidance.

standards to green investment incentives and international climate agreements. However, despite the proliferation of such initiatives, the pace of transition remains insufficient to meet the scale and urgency of the challenge at hand. The complexity of the problem demands innovative solutions that go beyond traditional regulatory frameworks and market-based approaches.[1]

In this respect, a fundamental rethinking of energy governance is necessary – one that reconceptualizes energy not merely as a commodity subject to market forces or a public utility managed by centralized authorities but as a commons resource that can be collectively owned, produced, and managed communities. This shift in perspective opens up new possibilities for addressing not only environmental concerns but also wider issues of inequality, exclusion, and political alienation that often accompany conventional energy systems.[2] Such a reconceptualization challenges existing legal and regulatory paradigms, necessitating a reevaluation of how we structure and implement energy policies across local, national, and global scales. It also invites us to consider the role of communities in shaping and participating in energy systems, moving beyond the traditional dichotomy of state and market actors.

A deeper philosophical debate underpins this reconceptualization, questioning the fundamental nature of energy as a good. Is energy inherently a private good best regulated by market mechanisms or a public good requiring state intervention and management? Or does it possess characteristics that defy this binary classification, demanding novel governance approaches? This paper posits that energy, particularly in the context of renewable sources, exhibits many of the characteristics of a commons resource – a shared system whose sustainable management requires collective action and governance beyond traditional public-private dichotomies. This perspective challenges us to rethink not only our legal frameworks but also our societal understanding of energy production, distribution, and consumption.

The emergence of renewable energy communities across Europe and beyond provides a compelling example of this commons-based approach in action. These initiatives, which involve local citizens collectively investing in, producing, and consuming renewable energy, reveal the possibilities of new ownership models that blend elements of private initiative with public-minded goals and collective governance.[3] However, the success and scalability of renewable energy communities depend critically on the legal and regulatory environments in which they operate. The ways in which renewable energy communities interact with and navigate existing legal principles, particularly those associated with property law,

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1. *See* ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION (1990); James Meadowcroft, *Who Is in Charge Here? Governance for Sustainable Development in a Complex World*, *in* GOVERNANCE FOR SUSTAINABLE DEVELOPMENT: COPING WITH AMBIVALENCE, UNCERTAINTY AND DISTRIBUTED POWER 107 (Jens Newig, Jan-Peter Voß & Jochen Monstadt eds., 2008).

2. Jouni Paavola, *Climate Change: The Ultimate Tragedy of the Commons?*, *in* PROPERTY IN LAND AND OTHER RESOURCES 417 (Daniel H. Cole & Elinor Ostrom eds., 2012); Imre Szeman, *Energy Commons*, 93 MINN. REV. 94 (2019).

3. Cristina Acosta et al., *Facilitating Energy Transition Through Energy Commons: An Application of Socio-Ecological Systems Framework for Integrated Community Energy Systems*, 10 SUSTAINABILITY 366 (2018).

demonstrate how regulations can adapt to support innovative models of energy ownership. The evolution of these legal structures to accommodate shared and decentralized governance models highlights the potential for property law to foster broader systemic change. Additionally, the experiences of these communities underscore the critical role of flexible, context-sensitive legal frameworks in enabling local engagement and collaboration, which are essential for advancing effective and equitable energy transitions.

Recent efforts to support renewable energy communities, particularly within the European Union, highlight both the potential and limitations of current legal frameworks in upscaling these initiatives. Notably, prevalent approaches tend to narrowly circumscribe renewable energy communities to local areas and private law arrangements, rather than situating them as part of an integrated transition of energy as a commonly produced, owned, and consumed resource.[4] This paper argues that realizing the full potential of energy as a commons requires a more comprehensive rethinking of both private and public law regimes. Such a rethinking must consider how legal structures can not only accommodate but actively promote and facilitate the development of commons-based energy systems across multiple scales. This involves reimagining property rights, regulatory frameworks, and governance structures in ways that support collective ownership and management of energy resources.

To address this challenge, we turn to two complementary theoretical perspectives: Resilient Property Theory and the concept of mobile power. Resilient Property Theory, as developed by scholars like Fox O'Mahony and Roark, highlights the dynamic, contextual, and relational nature of property rights and responsibilities.[5] It emphasizes the need for adaptive governance structures that can respond dynamically to the complex and evolving challenges of managing common resources like energy. Through fostering inclusive deliberation and conflict resolution processes, this theory suggests pathways for more effectively mobilizing commons-based energy initiatives across diverse contexts.[6] The resilient property perspective offers a framework for reconceptualizing energy systems in ways that prioritize flexibility, adaptability, and collective stewardship.

Additionally, the concept of "mobile power" highlights the importance of cultural adaptability in enabling commons governance models to effectively navigate and transform the diverse socio-political landscapes in which they operate.[7] It recognizes that the successful implementation of the energy commons depends not solely on technical or economic viability, but also on the ability to mobilize

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4. Robert Pollin, *Public Policy, Community Ownership and Clean Energy*, 5 CAMBRIDGE J. REGIONS, ECON. & SOC'Y 339 (2012).

5. Lorna Fox O'Mahony & Marc L. Roark, *Property as an Asset of Resilience: Rethinking Ownership, Communities and Exclusion Through the Register of Resilience*, 36 INT'L J. SEMIOTICS L. 1477 (2023) [hereinafter Fox O'Mahony & Roark I]; Lorna Fox O'Mahony & Marc L. Roark, *Operationalising Progressive Ideas About Property: Resilient Property, Scale, and Systemic Compromise*, 10 TEX. A&M J. PROP. L. 38 (2024) [hereinafter Fox O'Mahony & Roark II].

6. Stefano Carattini et al., *Cooperation in the Climate Commons*, 13 REV. ENV'T ECON. & POL'Y 227 (2019).

7. PETER BLOOM ET AL., GUERRILLA DEMOCRACY: MOBILE POWER AND REVOLUTION IN THE 21ST CENTURY (2021).

support attuned to local norms, practices, and power relations. This concept encourages us to consider how commons-based energy models can be effectively translated and adapted across different cultural and political contexts, while maintaining their core principles and benefits. Mobile power thus provides a lens through which to examine the scalability and transferability of successful commons-based energy initiatives.

Through bringing these two theoretical perspectives productively together, this paper develops a novel framework for understanding and promoting the worldwide emergence and upscaling of the energy commons. Central to this framework is the concept of "commoning" – representing the broader set of practices and strategies through which commons-based models are introduced, shaped, and sustained across multiple scales.[8] Commoning refers, in this respect, to the collective processes and practices through which communities establish, manage, and sustain shared resources. It involves creating inclusive governance structures, fostering collaboration, and negotiating shared responsibilities to ensure equitable access and sustainable use of these resources. Whereas traditionally the notion of "commoning" describes the active process of managing resources as a commons, in this article, it also encompasses the full scope of mobilization efforts required to translate the energy commons from theory into reality. By actively engaging in commoning, communities generate not only material benefits but also social bonds and a shared sense of purpose, reinforcing the resilience of the commons over time. This includes navigating complex socio-political contexts, reshaping legal and regulatory environments, and fostering new cross-scalar alliances and discourses.

The paper argues that legal commoning can only succeed if regulations are collaboratively transformed from fixed rules into flexible, democratic tools that empower communities to manage shared resources effectively and adapt to changing needs.[9] Rather than regulations acting as barriers, this perspective emphasizes the potential to iteratively restructure policies to enable the evolution of diverse energy commons models over time. Resilient Property Theory provides a basis for designing such inclusive, flexible property regimes attuned to the socio-ecological dynamics of managing energy as a shared resource. This approach to regulation and governance recognizes the need for ongoing adaptation and learning in response to changing environmental, technological, and social conditions.

Building on this theoretical foundation combining concepts of "mobile power" and Resilient Property Theory, this article contends that private and public law regimes should be created and implemented to best facilitate the transition of energy to a commonly owned resource, helping to produce and maintain resilient renewable energy communities. These legal arrangements should be context-dependent, recognizing the unique social, economic, and environmental conditions

8. Aoife Brophy Haney & Michael G. Pollitt, *New Models of Public Ownership in Energy*, 27 INT'L REV. APPLIED ECON. 174 (2013).

9. Fabian David Musall & Onno Kuik, *Local Acceptance of Renewable Energy – A Case Study from Southeast Germany*, 39 ENERGY POL'Y 3252 (2011).

of different localities. However, they should also be designed with sufficient flexibility and adaptability to be mobilized across contexts, informing and supporting the spread of resilient renewable energy communities as part of integrated local, national, and global energy systems. This approach requires a delicate balance between providing a supportive legal framework and allowing for local innovation and adaptation.

The remainder of this paper explores these ideas in depth, beginning with an examination of the relationship between commons and the law, critically identifying how the law variously inhibits, protects, or promotes commons property. It then provides a comprehensive overview of how renewable energy communities are currently regulated within the European Union, before offering a theoretical discussion of how Resilient Property Theory and mobile power could combine to create an innovative and robust legal perspective on fostering resilient and scalable commons property arrangements. The paper then applies these insights to the specific context of the EU, exploring how existing legal frameworks could be leveraged and reformed to better support the development of commons-based energy systems. It concludes with a summary of key arguments and an outline of a future research agenda focused on the legal mobilization of commons-based approaches in the energy sector. Throughout, the paper aims to contribute not only to scholarly dialogues around commons governance and sustainable energy transitions but also to provide valuable insights for policymakers, activists, and practitioners seeking to cultivate more just, sustainable, and democratic energy futures in the face of ecological crisis.

II. COMMONS LAW — INHIBIT, PROTECT, AND PROMOTE

The legal framework governing energy regulation is a key factor in determining the viability of commons-based approaches to energy production and consumption. Private and public law regimes can inhibit, protect, and promote commons ownership in the context of renewable energy communities in multifaceted ways. Understanding these legal dynamics is essential for developing effective strategies to support the growth and sustainability of energy commons initiatives. Legal frameworks can inadvertently or intentionally create barriers to the establishment and growth of energy commons. These inhibiting factors often stem from existing regulatory structures designed to support traditional, centralized energy systems, protect established market actors, or incentivize particular behavior. One significant barrier to commons ownership in the energy sector is the complexity of regulatory frameworks and administrative procedures.[10] Energy projects must navigate intricate rules surrounding land ownership, zoning, and permitting.

These regulations, often designed with large-scale, centralized energy production in mind, can create disproportionate burdens for community-led initiatives. The administrative complexity can overwhelm volunteer-led organizations, requiring significant time, expertise, and resources that many community groups lack. For instance, in Germany, despite supportive policies for renewable energy,

10. BENJAMIN K. SOVACOOL & CHRISTOPHER J. COOPER, THE GOVERNANCE OF ENERGY MEGAPROJECTS: POLITICS, HUBRIS AND ENERGY SECURITY (2013).

the regulatory environment remains challenging for small-scale producers. Frequent changes in the Renewable Energy Sources Act (EEG) have created uncertainty for community energy projects, particularly affecting their ability to secure financing and plan long-term investments.[11] The structure of energy markets, often designed to favor large-scale producers and incumbent utilities, can create significant barriers for community-owned energy initiatives. Competition law, while intended to promote market efficiency, can sometimes work against the interests of small-scale, cooperative energy producers. For example, antitrust laws, primarily focused on preventing market concentration and collusion among competitors, may not adequately account for the unique characteristics of community-owned energy projects.[12] These projects often require collaboration among multiple small producers, which has been potentially be misconstrued as anti-competitive behavior under traditional antitrust frameworks.[13] Collaborative efforts by small energy producers, such as Germany's renewable energy cooperatives engaging in joint market access, Spain's community energy projects sharing production and distribution, or U.S. solar co-ops pooling resources for bulk equipment purchases, have at times faced scrutiny under antitrust laws, which can mistakenly treat these community-oriented initiatives as anti-competitive rather than supportive of public interest goals.[14]

Furthermore, existing property rights regimes and land use regulations can pose substantial challenges to the development of energy commons. The complexity of property rights, particularly in urban areas, can hinder the installation of community-owned renewable energy systems. Restrictive zoning laws, historic preservation regulations, and conflicting land use priorities can limit the available space for renewable energy infrastructure, disproportionately affecting community-led initiatives that lack the resources to navigate these complex legal environments.[15]

Financial regulations and tax structures also can inadvertently disadvantage community-owned energy projects. Current financial regulations often fail to account for the unique characteristics of energy cooperatives and other community-owned models. For example, securities laws designed to protect investors can create onerous compliance requirements for community energy projects seeking to raise capital from their members. Alternatives to securities laws for community

11. Özgür Yildiz et al., *Consumer (Co-) Ownership in Renewables in Germany*, *in* ENERGY TRANSITION: FINANCING CONSUMER CO-OWNERSHIP IN RENEWABLES 271 (Jens Lowitzsch ed., 2019).

12. William E. Kovacic & Carl Shapiro, *Antitrust Policy: A Century of Economic and Legal Thinking*, 14 J. ECON. PERSPS. 43, 46-47 (2000).

13. EUROPEAN PARLIAMENT, DIRECTORATE-GENERAL FOR INTERNAL POLICIES, POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICY, PE 607.327, COMPETITION POLICY AND AN INTERNAL ENERGY MARKET (2017), https://www.europarl.europa.eu/RegData/etudes/STUD/2017/607327/IPOL_STU(2017)607327_EN.pdf.

14. Eckart Bueren & Jennifer Crowder, *Sustainability and Competition Law in Germany*, *in* SUSTAINABILITY OBJECTIVES IN COMPETITION AND INTELLECTUAL PROPERTY LAW 83 (Pranvera Këllezi et al. eds., 2024).

15. Edward B. Rock & Daniel L. Rubinfeld, *Common Ownership and Coordinated Effects*, 83 ANTITRUST L.J. 201 (2020); Xi Luo et al., *Distributed Peer-to-Peer Energy Trading Based on Game Theory in a Community Microgrid Considering Ownership Complexity of Distributed Energy Resources*, J. CLEANER PROD., Mar. 30, 2022.

energy projects include tailored regulatory exemptions, such as simplified disclosure requirements or cooperative models where members participate as co-owners rather than investors, as well as crowdfunding platforms and government-backed funding mechanisms like grants or community bonds. These approaches balance investor protection with reduced compliance burdens, fostering accessible and equitable capital-raising for local energy initiatives. Moreover, tax incentives for renewable energy investments are often structured in ways that primarily benefit large corporations or high-income individuals, rather than community-owned projects. This can create an uneven playing field, making it more difficult for energy commons initiatives to compete financially with corporate-owned renewable energy projects. These financial barriers are particularly challenging for low-income households, who face additional obstacles in participating in and benefiting from community energy projects.[16]

While legal frameworks can create barriers, they also have the potential to protect and safeguard commons-based approaches to energy production and consumption. Effective legal protections can help ensure the longevity and resilience of energy commons initiatives. Legal recognition of community energy entities as distinct from traditional corporate structures is a crucial step in protecting commons ownership. The EU's Clean Energy Package (CEP) formally recognizes "renewable energy communities" and "citizen energy communities" (CECs) as distinct actors in the energy market. This recognition provides a legal basis for the unique characteristics of these entities, including their emphasis on community ownership, non-commercial purpose, and democratic governance. Such legal recognition can protect energy commons from being co-opted by private interests or misused by commercial actors.[17] The CEP's definitions of Renewable energy communities and CECs include specific criteria related to ownership structure and decision-making processes, helping to ensure that these entities remain true to their community-oriented mission.[18]

Legal frameworks can protect energy commons by establishing specific rights and ensuring fair treatment in the energy market. The CEP grants key rights to energy communities, including rights for citizens to participate in energy communities, rights to engage in various energy activities (production, consumption, storage, selling, and sharing) and rights to access all suitable energy markets. These legally enshrined rights provide a foundation for energy commons to operate and compete on a more level playing field with traditional energy companies. Competition law could, in this regard, play a role in protecting energy commons by preventing excessive market concentration that could squeeze out community-owned initiatives. Merger control regimes could, specifically, be adapted to address the potential anticompetitive effects of common ownership in the energy

16. Jens Lowitzsch & Florian Hanke, *Consumer (Co-) Ownership in Renewables, Energy Efficiency and the Fight Against Energy Poverty – A Dilemma of Energy Transitions*, 9 RENEWABLE ENERGY L. & POL'Y REV. 5 (2019).

17. Joshua Roberts, *Power to the People? Implications of the Clean Energy Package for the Role of Community Ownership in Europe's Energy Transition*, 29 REV. EUR. COMP. & INT'L ENV'T L. 232 (2020).

18. Directive 2018/2001, of the European Parliament and of the Council of 11 December 2018 on the Promotion of Use of Energy from Renewable Sources, art. 2, 2018 O.J. (L 328) 82, 103.

sector.[19] While primarily focused on institutional investors, these principles could be extended to protect the diversity of ownership models, including community-owned energy projects.

The development of legal frameworks that facilitate collective ownership is crucial for protecting energy commons. German law already, for example, recognizes various legal structures for collective investments in the renewable energy sector, including civil law partnerships, limited partnerships, and energy cooperatives. These legal forms provide a basis for community members to collectively own and manage energy assets, with built-in protections for individual rights and democratic decision-making processes. Through offering a range of legal structures, this approach allows communities to choose the form that best suits their specific needs and circumstances, enhancing the resilience and adaptability of energy commons initiatives.

Beyond protection, legal frameworks can actively promote and facilitate the growth of energy commons. This involves creating enabling environments that incentivize community ownership and support the scaling up of these initiatives. Establishing comprehensive policy frameworks that explicitly back community energy initiatives is essential for advancing commons ownership. Such policies should address the specific needs of renewable energy communities by offering targeted financial incentives, simplifying administrative procedures, requiring utilities to collaborate with community projects, and embedding community energy goals within broader energy and climate strategies. A notable example is Scotland's Community and Renewable Energy Scheme (CARES), which delivers robust support for community energy efforts through funding, technical guidance, and capacity-building programs. By tailoring policies to the distinct characteristics of these initiatives, governments can foster their growth and integration into the wider energy transition.

Legal frameworks that support innovative financing mechanisms play a crucial role in promoting the growth of energy commons. Consumer Stock Ownership Plans (CSOPs) and other inclusive financing models address the capital challenges faced by many community energy initiatives. These mechanisms enable community members to invest in local energy projects with minimal upfront costs, often leveraging future energy savings to finance their participation. Legally sanctioning and providing guidelines for these financing models enhances their accessibility and reduces legal uncertainties for community organizers and participants. Establishing pathways for energy commons to participate fully in energy markets is essential for ensuring their long-term viability and expansion. Peer-to-peer and community-based energy markets empower community energy initiatives by creating opportunities for direct energy trading between members or across different energy communities, significantly improving the economic sustainability of such projects.

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19. Anna Tzanaki, *Varieties and Mechanisms of Common Ownership: A Calibration Exercise for Competition Policy*, 18 J. COMPETITION L. & ECON. 168 (2022).

Although not strictly a legal measure, government-mandated programs for capacity building and technical support play a crucial role in advancing energy commons. Energy education and skill development, particularly targeted toward low-income households, are essential for fostering broader participation in community energy initiatives. Legal frameworks that mandate and fund such programs ensure that communities gain the expertise necessary to successfully develop and manage energy projects. Strengthening energy commons efforts also benefits from incorporating supportive measures into broader environmental and social policies. Environmental corporate social responsibility (CSR) often focuses on institutional investors but can be adapted to emphasize the benefits of community ownership structures. Recognizing and rewarding the positive externalities of community-owned energy projects—such as lower emissions, greater energy security, and local economic development—creates further incentives to encourage their growth and sustainability.[20]

The complex interplay between inhibiting, protecting, and promoting factors underscores the need for a holistic legal approach to support energy commons. This approach should address not only the specific regulatory barriers and enablers but also the broader institutional and societal contexts in which these initiatives operate. Large institutional investors are leveraging their influence to push companies toward addressing climate change, highlighting how ownership structures can serve as powerful drivers of systemic change. While the context is different, this principle can be applied to energy commons, where community ownership can be leveraged to promote broader sustainability goals. A holistic legal approach should also consider the potential tensions between different policy objectives. Balancing the benefits of community ownership with the objectives of traditional competition policy may involve trade-offs, such as prioritizing local collaboration over market efficiency or competitive neutrality. Addressing these tensions demands thoughtfully crafted policies and a readiness to adapt existing legal frameworks to support both equity and innovation in community energy initiatives.[21] Furthermore, as energy systems become increasingly decentralized and digitalized, legal frameworks must evolve to address new challenges and opportunities. This includes developing regulations for emerging technologies like blockchain-based energy trading platforms, which could significantly enhance the capabilities of energy commons. This could be achieved by creating clear regulatory frameworks that address the unique characteristics of blockchain-based energy trading platforms, such as establishing standards for transparency, security, and interoperability. Policymakers could also pilot sandbox programs to test these technologies in controlled environments, enabling innovation while mitigating potential risks.

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20. Jens Lowitzsch, *Consumer Stock Ownership Plans (CSOPs)—The Prototype Business Model for Renewable Energy Communities*, ENERGIES, Dec. 25, 2019; Kosuke Hirose & Toshihiro Matsumura, *Common Ownership and Environmental Corporate Social Responsibility*, ENERGY ECON., Aug. 27, 2022.

21. Madison Condon, *Externalities and the Common Owner*, 95 WASH. L. REV. 1 (2020).

III. LEGAL COMMONING

Building on the discussion in Section II about the multifaceted role of commons law in inhibiting, protecting, and promoting shared resource management, this section delves into the concept of legal commoning as a dynamic approach to fostering energy commons. By emphasizing decentralization, participatory governance, social justice, and ecological sustainability, it offers a framework that transcends rigid legal models and adapts to the unique needs of diverse communities. It positions law not merely as a tool of regulation but as a catalyst for empowering communities to actively shape and innovate their energy systems in alignment with shared principles and local contexts.

The idea of commoning has garnered progressively increasing attention in recent times as a vehicle for envisioning and actualizing alternative forms of social and economic organization that transcend the dichotomy of state and market.[22] Commoning practices, such as community land trusts, urban gardens, and open-source software, have been extolled as a means of withstanding neoliberal encroachment and engendering more equitable, sustainable, and democratic modes of resource management.[23] Nevertheless, extant theories of commoning have frequently been reproached for their propensity to idealize local, place-based struggles and to disregard the intricate power relations and social disparities that mold commoning practices.[24]

The law, in this regard, must be a force for mobilising resilient types of renewable energy commons, eschewing one-size fits all approaches and instead be facilitative for a wide-range of strategies and practices linked to a set of core "commons" principles. These include:

> 1. *Decentralization and localization:* The commonization of energy seeks to decentralize energy production and consumption, moving away from large-scale, centralized infrastructure towards more distributed and locally-controlled systems.[25] This not only reduces the environmental and social impacts of energy transport and distribution but also enables communities to have greater control over their energy futures and to benefit directly from the economic and social value created by renewable energy projects.

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22. COMMONS STRATEGIES GROUP, PATTERNS OF COMMONING (David Bollier & Silke Helfrich eds., 2015); Massimo De Angelis, *Reflections on Alternatives, Commons and Communities*, THE COMMONER, Winter 2003.

23. David Bollier, *Commoning as a Transformative Social Paradigm*, *in* THE NEW SYSTEMS READER: ALTERNATIVES TO A FAILED ECONOMY 348 (James Gustave Speth & Kathleen Courrier eds., 2021); Sheila R. Foster & Christian Iaione, *The City as a Commons*, 34 YALE L. & POL'Y REV. 281 (2016); James McCarthy, *Commons as Counterhegemonic Projects*, 16 CAPITALISM NATURE SOCIALISM 9 (2005).

24. Patrick Bresnihan, *The More-Than-Human Commons: From Commons to Commoning*, *in* SPACE, POWER AND THE COMMONS: THE STRUGGLE FOR ALTERNATIVE FUTURES 93 (Samuel Kirwan et al. eds., 2015); Andrea J. Nightingale, *Commoning for Inclusion? Political Communities, Commons, Exclusion, Property and Socio-Natural Becomings*, 13 INT'L J. COMMONS 16 (2019).

25. Deokhwa Hong, *Energy Commons for a Transition Strategy*, *in* COMMONS PERSPECTIVES IN SOUTH KOREA: CONTEXT, FIELDS, AND ALTERNATIVES 167 (Hyun Choe et al. eds., 2022); Hyejin Namgung et al., *Putting New Wine in Old Bottles: Merging the Logic of the Urban Commons with Seoul's Energy Transition Experiment*, J. CLEANER PROD., Jan. 6, 2022.

2. *Participatory governance and ownership*: The commonization of energy emphasizes the importance of participatory and inclusive forms of governance and ownership, in which citizens and communities have a meaningful say in the decisions that affect their energy systems.[26] This may involve the creation of new democratic institutions, such as community energy boards or citizen assemblies, as well as the development of innovative ownership models, such as consumer stock ownership plans or community land trusts, that enable broad-based participation and benefit-sharing.[27]

3. *Social and environmental justice*: The commonization of energy is grounded in a commitment to social and environmental justice, recognizing that the transition to renewable energy must address the historical and ongoing inequalities and injustices that have characterized the fossil fuel economy.[28] This involves prioritizing the needs and voices of marginalized and vulnerable communities, such as low-income households, communities of color, and indigenous peoples, who have often borne the brunt of the negative impacts of energy extraction and production, while also being excluded from the benefits of the clean energy transition.

4. *Ecological sustainability and regeneration*: The commonization of energy is fundamentally about the creation of a more sustainable and regenerative energy system, one that works in harmony with natural systems and respects the limits of the planet.[29] This involves not only the rapid deployment of renewable energy technologies but also the development of new forms of energy production and consumption that prioritize efficiency, conservation, and the circular use of resources.[30]

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26. Maria Valentina Di Nicoli, Beyond the Build Environment: The Role of the Human Dimension Towards a Co-Ownership in a Sustainable Energy Community (Sept. 2021) (Ph.D. dissertation, Polytechnic University of Turin); Franziska Mey & Mark Diesendorf, *Who Owns an Energy Transition? Strategic Action Fields and Community Wind Energy in Denmark*, 35 ENERGY RSCH. & SOC. SCI. 108 (2018).

27. Kathryn Milun et al., *Bringing New Light to One of the Oldest Forms of Property Ownership: An Innovative Solution for Benefitting Underserved Communities Using the Solar Commons Community Trust Model*, 47 VT. L. REV. 383 (2023).

28. Cecilia Martinez, *From Commodification to the Commons: Charting the Pathway for Energy Democracy*, *in* ENERGY DEMOCRACY: ADVANCING EQUITY IN CLEAN ENERGY SOLUTIONS 21 (Denise Fairchild & Al Weinrub eds., 2017); Adrian A. Smith & Dayna Nadine Scott, *Energy Without Injustice? Indigenous Participation in Renewable Energy Generation*, *in* THE CAMBRIDGE HANDBOOK ON ENVIRONMENTAL JUSTICE AND SUSTAINABLE DEVELOPMENT 383 (Sumudu A. Atapattu et al. eds., 2021).

29. B. V. Venkatarama Reddy & K. S. Jagadish, *Embodied Energy of Common and Alternative Building Materials and Technologies*, 35 ENERGY & BLDGS. 129 (2003); Robert Wade & Geraint Ellis, *Reclaiming the Windy Commons: Landownership, Wind Rights, and the Assetization of Renewable Resources*, ENERGIES, May 19, 2022.

30. Chris Giotitsas et al., *From Private to Public Governance: The Case for Reconfiguring Energy Systems as a Commons*, ENERGY RES. & SOC. SCI., Aug. 13, 2020; Katy Roelich & Christoph Knoeri, *Governing the Infrastructure Commons: Lessons for Community Energy from Common Pool Resource Management* (Sustainability Rsch. Inst., Paper No. 87, 2015), https://sri-working-papers.leeds.ac.uk/wp-content/uploads/sites/67/2019/05/SRIPs-87.pdf.

Legal commoning can, in this way, serve as a powerful tool for upskilling people as active participants in their communities. By engaging in the process of creating, managing, and evolving shared energy resources, individuals develop a range of valuable skills and knowledge. They learn about renewable energy technologies, governance structures, and democratic decision-making processes. As people collaborate to design local energy systems, they gain expertise in project planning, financial management, and community organizing. The hands-on nature of legal commoning fosters problem-solving abilities and encourages innovative thinking, as participants work together to overcome challenges unique to their local context. Moreover, this process cultivates a deeper understanding of environmental and social justice issues, promoting a more holistic view of sustainability. As commoners become more proficient in these areas, they not only contribute to the success of their local energy projects but also become empowered citizens capable of addressing other community needs. This skill development extends beyond the energy sector, creating a ripple effect of engaged, knowledgeable individuals who can contribute meaningfully to various aspects of community life and governance.

The concept of legal commoning also underscores the notion that commons are not merely given or inherited but actively produced through the collective labor and ingenuity of commoners.[31] This productive facet of commoning is often overlooked in conventional accounts that focus on the management or preservation of already-existing common resources, such as forests, fisheries, or grazing lands.[32] In contrast, the notion of commonization illuminates the generative potential of commoning practices to create new forms of value, meaning, and social relations beyond the confines of capitalist markets and state bureaucracies.[33]

For legal frameworks, thus, to truly facilitate the commonization of energy resources, they must be adaptable and responsive to the context-specific needs and aspirations of different communities. Rather than imposing rigid, prescriptive models, the law should serve as an enabling framework that empowers communities to shape energy systems according to their unique social, cultural, and ecological circumstances. A key aspect of this would be the adoption of a more flexible and decentralized approach to energy governance. Instead of centralized, top-down regulations, legal frameworks could establish guiding principles while allowing for significant local autonomy and experimentation. This could involve granting communities the authority to develop their own locally-tailored rules, by-

31. Massimo De Angelis & David Harvie, *The Commons*, *in* THE ROUTLEDGE COMPANION TO ALTERNATIVE ORGANIZATION 280 (Martin Parker et al. eds., 2014).

32. Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (1990); Elinor Ostrom, *Reformulating the Commons*, AMBIENTE & SOCIEDADE, Sept. 1, 2002.

33. Yochai Benkler, *Commons and Growth: The Essential Role of Open Commons in Market Economies*, 80 U. CHI. L. REV. 1499 (2013); J. K. Gibson-Graham et al., *Commoning as a Postcapitalist Politics*, *in* RELEASING THE COMMONS: RETHINKING THE FUTURES OF THE COMMONS 192 (Ash Amin & Philip Howell eds., 2016).

laws, and governance structures for managing energy resources as commons. Furthermore, the law should recognize and support the dynamic and evolving nature of commoning processes. Rather than prescribing static models, legal frameworks should embrace the idea of commonization as an ongoing, iterative process of negotiation, adaptation, and transformation. This could involve mechanisms for periodic review and revision of governance arrangements, as well as provisions for conflict resolution and the peaceful resolution of competing claims over energy resources.

The theoretical framework of legal commoning presented here finds its practical expression in the complex landscape of European renewable energy communities, where the principles of decentralization, participatory governance, social justice, and ecological sustainability are tested against real-world institutional and regulatory challenges. As we will see in the following section, the implementation of these commons principles across EU member states reveals both the transformative potential and inherent tensions in translating commoning ideals into concrete legal frameworks. The varying success of different national approaches to renewable energy communities demonstrates how legal commoning must navigate existing power structures, market forces, and institutional path dependencies. This practical experience from the EU context provides valuable insights into how legal frameworks can either enable or constrain the development of energy commons, while highlighting the ongoing challenge of balancing standardized regulatory approaches with the need for flexible, context-sensitive solutions that emerge from local commoning practices.

IV. LEGALLY INHIBITING, PROTECTING, AND PROMOTING EUROPEAN RENEWABLE ENERGY COMMUNITIES

The legal framework governing renewable energy communities in the European Union (EU) presents a complex and often contradictory landscape that both enables and constrains the potential for upscaling community-based energy initiatives. This exemplifies the complex interplay between inhibiting, protecting, and promoting factors discussed in Section II. The EU's Clean Energy Package (CEP), particularly the recast Renewable Energy Directive (RED II), marks a significant shift in policy by formally recognizing and mandating support for renewable energy communities. However, this overarching directive has been unevenly implemented across member states, resulting in a patchwork of legal environments that variously facilitate or hinder the growth of energy commons. This heterogeneity reflects not only differing national priorities and existing energy market structures but also reveals the tensions between centralized policy-making and localized implementation in the EU's multilevel governance system. The disparate approaches across member states raise critical questions about the efficacy of EU-wide directives in fostering a cohesive environment for community energy initiatives and highlight the need for more nuanced, context-sensitive policy instruments.

The inhibiting factors for renewable energy communities often stem from regulatory structures that remain deeply entrenched in traditional, centralized energy paradigms. These barriers manifest in myriad forms, from complex administrative procedures to restrictive land use regulations and market structures that inherently favor large-scale producers. The case of Germany illustrates how even

well-intentioned legislation can inadvertently impede the upscaling of community energy initiatives. Despite a generally supportive policy environment, frequent changes in the renewable Energy Sources Act (EEG) have created a climate of uncertainty for community energy projects, undermining their ability to secure long-term financing and plan for future growth.[34] This regulatory instability not only hampers individual projects but also erodes investor confidence in the sector as a whole, potentially stifling innovation and expansion.[35] Regulatory instability significantly deters investment in renewable energy projects, particularly in contexts of asset specificity where firms face heightened risks, and broader research on G7 countries shows that economic policy uncertainty disrupts the macroeconomy and accelerates declines in renewable energy investments.

The German experience underscores the delicate balance policymakers must strike between adapting regulations to evolving market conditions and maintaining a stable, predictable environment for community-based initiatives to thrive. The situation in the Czech Republic and Spain further exemplifies the challenges posed by inadequate or restrictive legal frameworks. In the Czech Republic, the absence of explicit policy recognition for consumer ownership of renewable energy sources has created a vacuum in which community energy concepts struggle to gain traction.[36] This lack of formal acknowledgment not only limits the legal tools available to renewable energy communities but also signals a broader policy indifference that can discourage community engagement and investment in the sector. Spain's recent policy shift from restrictive net metering practices to more supportive self-consumption rules demonstrates the transformative potential of legal reforms.[37] However, it also highlights the opportunity costs associated with delayed policy action, as years of restrictive practices have likely stunted the growth and innovation of the community energy sector in the country.

Property rights regimes and land use regulations across the EU present another significant barrier to the upscaling of renewable energy communities, particularly in urban areas where the potential for distributed renewable energy generation is high. The legal ambiguities surrounding prosumers (reflecting individuals who are both consumers and producers of energy) in Italy, despite favorable government incentives for solar PV, create an uncertain environment for renewable energy communities looking to expand their operations.[38] This situation not only hampers the growth of existing projects but also deters new community initiatives, potentially limiting the sector's contribution to national renewable energy targets. Similarly, the Netherlands' limited legal operationalization of dis-

34. Yildiz et al., *supra* note 11.

35. Kira R. Fabrizio, *The Effect of Regulatory Uncertainty on Investment: Evidence from Renewable Energy Generation*, 29 J.L. ECON. & ORG. 765 (2013); Kahlid Khan & Chi Wei Su, *Does Policy Uncertainty Threaten Renewable Energy? Evidence from G7 Countries*, 29 ENV'T SCI. & POLLUTION RSCH. 34813 (2022).

36. Vítězslav Malý et al., *Consumer (Co-) Ownership in Renewables in the Czech Republic*, *in* ENERGY TRANSITION: FINANCING CONSUMER CO-OWNERSHIP IN RENEWABLES 201 (Jens Lowitzsch ed., 2019).

37. Millán Diaz-Foncea & Ignacio Bretos, *Consumer (Co-) Ownership in Renewables in Spain*, *in* ENERGY TRANSITION: FINANCING CONSUMER CO-OWNERSHIP IN RENEWABLES 421 (Jens Lowitzsch ed., 2019).

38. Andrea Borroni & Felicia van Tulder, *Consumer (Co-) Ownership in Renewables in Italy*, *in* ENERGY TRANSITION: FINANCING CONSUMER CO-OWNERSHIP IN RENEWABLES 295 (Jens Lowitzsch ed., 2019).

tributed energy, save for a narrow experimental decree, reflects a broader hesitancy to fully embrace the potential of community-led energy transitions.[39] These cases illustrate how the lack of comprehensive legal frameworks can create a chilling effect on community energy initiatives, even in the presence of growing societal momentum for such projects.

Financial regulations and tax structures in many EU member states inadvertently disadvantage community-owned energy projects, hindering their growth and scalability. The imposition of stringent securities laws, while intended to protect investors, often results in onerous compliance requirements that disproportionately burden smaller, community-led initiatives. This regulatory approach fails to account for the unique characteristics and motivations of community energy projects, potentially stifling their ability to raise capital and expand operations. The case of Poland exemplifies how policy frameworks focused primarily on individual prosumers can inadvertently marginalize more collective, community-based approaches.[40] By prioritizing individual over collective action, such policies may limit the potential for renewable energy communities to achieve economies of scale and maximize their impact on the broader energy transition.

Despite these challenges, the legal landscape in the EU also offers mechanisms that protect and promote renewable energy communities, potentially facilitating their upscaling. The formal recognition of renewable energy communities and Citizen Energy Communities (CECs) as distinct actors in the energy market, as mandated by the CEP, provides a legal basis for their unique characteristics. However, the effectiveness of this recognition varies significantly across member states, reflecting differing levels of political will and institutional capacity to support community energy initiatives. France's inclusion of provisions favorable to community and participative projects in its 2015 Energy Transition Act signals a growing acknowledgment of the role of local actors in energy transitions.[41] Yet, the true test of such policies lies in their implementation and the extent to which they can overcome entrenched interests and institutional inertia in the energy sector.

The comprehensive policy frameworks developed by some EU member states to support community energy initiatives offer valuable lessons for upscaling strategies. Scotland's integration of community and local ownership of renewable energy into its climate change, energy, and rural development policies demonstrates the potential of a holistic, cross-sectoral approach.[42] By setting ambitious targets and providing supportive funding mechanisms, Scotland has created an enabling environment that actively promotes the growth and replication of successful

39. Sanne Akerboom & Felicia van Tulder, *Consumer (Co-) Ownership in Renewables in the Netherlands*, *in* ENERGY TRANSITION: FINANCING CONSUMER CO-OWNERSHIP IN RENEWABLES 319 (Jens Lowitzsch ed., 2019).

40. Katarzyna Goebel, *Consumer (Co-) Ownership in Renewables in Poland*, *in* ENERGY TRANSITION: FINANCING CONSUMER CO-OWNERSHIP IN RENEWABLES 345 (Jens Lowitzsch ed., 2019).

41. Pierre Wokuri et al., *Consumer (Co-) Ownership in Renewables in France*, *in* ENERGY TRANSITION: FINANCING CONSUMER CO-OWNERSHIP IN RENEWABLES 245 (Jens Lowitzsch ed., 2019).

42. Maria Krug-Firstbrook et al., *Consumer (Co-) Ownership in Renewables in Scotland (UK)*, *in* ENERGY TRANSITION: FINANCING CONSUMER CO-OWNERSHIP IN RENEWABLES 395 (Jens Lowitzsch ed., 2019).

Renewable energy community models. However, the transferability of this approach to other EU contexts remains questionable, given varying political priorities, institutional structures, and cultural attitudes towards community ownership across member states.

Denmark's long-standing tradition of cooperative ownership in the energy sector, reinforced by legal provisions mandating local ownership shares in new wind energy projects, offers another model for facilitating the widespread development of community-owned renewable energy projects.[43] The significant penetration of community-based energy solutions in Danish households attests to the potential of supportive legal frameworks to drive large-scale adoption of distributed energy resources. However, replicating this success in countries without similar cooperative traditions or political consensus on energy decentralization presents considerable challenges, highlighting the need for tailored approaches that account for local institutional and cultural contexts.

Legal frameworks enabling innovative financing mechanisms have emerged as a crucial factor in promoting the growth and upscaling of renewable energy communities across the EU. Germany's recognition of various legal structures for collective investments in the renewable energy sector provides communities with the flexibility to choose models that best suit their specific circumstances and growth ambitions. Similarly, Switzerland's established tradition of cooperatives and direct ownership of renewable energy facilities offers multiple pathways for community participation in the energy transition.[44] However, the effectiveness of these financing models in driving large-scale uptake of community energy projects depends not only on their legal availability but also on broader economic factors, public awareness, and the capacity of communities to navigate complex financial and regulatory landscapes.

The development of legal pathways for renewable energy communities to participate fully in energy markets is essential for their long-term viability and potential for upscaling. The Netherlands' soft-legal instrument encouraging financial and non-financial participation of residents in onshore wind farms represents a step towards greater community involvement in larger-scale projects.[45] Switzerland's legal provision for self-consumption communities opens up new possibilities for community-based energy trading and sharing.[46] However, these

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43. Anita Rønne & Flemming Gerhardt Nielsen, *Consumer (Co-) Ownership in Renewables in Denmark*, *in* ENERGY TRANSITION: FINANCING CONSUMER CO-OWNERSHIP IN RENEWABLES 223 (Jens Lowitzsch ed., 2019).

44. Anna Ebers Broughel et al., *Consumer (Co-) Ownership in Renewables in Switzerland*, *in* ENERGY TRANSITION: FINANCING CONSUMER CO-OWNERSHIP IN RENEWABLES 345 (Jens Lowitzsch ed., 2019).

45. *See* Annemiek de Looze & Eefje Cuppen, *To Wind Up Changed: Assessing the Value of Social Conflict on Onshore Wind Energy in Transforming Institutions in the Netherlands*, ENERGY RSCH. & SOC. SCI., July 12, 2023; NEDZERO ET AL., GEDRAGSCODE: ACCEPTATIE & PARTICIPATIE WINDENERGIE OP LAND [CODE OF CONDUCT: ACCEPTANCE & PARTICIPATION OF ONSHORE WIND ENERGY] (Oct. 2020), https://nedzero.nl/media/pages/footer/c36506083c-1713527577/20201103-gedragscode-wol-opgemaakt-final.pdf.

46. *See* Liliane Ableitner et al., *Quartierstrom – Implementation of a Real-World Prosumer-Centric Local Energy Market in Walenstadt, Switzerland*, ARXIV, July 29, 2019; COUNCIL OF EUR. ENERGY REGULS. (CEER), REGULATORY ASPECTS OF SELF-CONSUMPTION AND ENERGY COMMUNITIES (June 25, 2019), https://www.ceer.eu/wp-content/uploads/2024/04/C18-CRM9_DS7-05-03_Report-on-Regulatory-Aspects-of-Self-Consumption-and-Energy-Communities_final.pdf.

innovations also raise critical questions about market integration, grid management, and the balance between decentralized community initiatives and broader system stability. As renewable energy communities scale up and seek to play a more significant role in national energy systems, policymakers must grapple with these complex technical and regulatory challenges.

The legal landscape for renewable energy communities in the EU presents a complex and often contradictory mix of inhibiting, protecting, and promoting factors that significantly influence their potential for upscaling. While innovative policies and legal frameworks in some member states offer promising models for supporting community energy initiatives, many challenges remain in various contexts. The uneven implementation of EU directives and the continued dominance of regulatory structures favoring centralized energy systems continue to limit the growth potential of renewable energy communities. Overcoming these challenges requires not only further policy innovation but also a fundamental rethinking of energy governance that can accommodate more decentralized, community-based approaches while ensuring system-wide stability and efficiency. The varying approaches across member states highlight the need for adaptive and context-sensitive legal strategies to support the commonization of energy resources. As the EU continues to pursue its clean energy transition, the evolution of legal frameworks for renewable energy communities will play a crucial role in determining the extent to which these initiatives can scale up and contribute meaningfully to a more democratic, sustainable energy future.

V. CREATING LEGALLY RESILIENT AND MOBILE COMMONS

The preceding section of this paper illuminated the complex legal landscape surrounding renewable energy communities in the European Union, highlighting both the potential and limitations of current frameworks in enabling the upscaling of these initiatives. We have observed how the uneven implementation of the Clean Energy Package, for instance, across member states has resulted in a patchwork of legal environments that variously facilitate or hinder the growth of energy commons. The analysis has revealed persistent barriers stemming from regulatory structures entrenched in traditional, centralized energy paradigms, as well as challenges posed by existing property rights regimes, market structures, and financial regulations. These obstacles highlight the need for legal commoning, reflecting a more comprehensive and adaptive legal approach to support the development and scaling of community-based energy initiatives.

In response to these challenges, this section proposes an innovative theoretical framework that integrates Resilient Property Theory (RPT) and the concept of mobile power for practically driving forward processes of legal communing. This synthesis offers a promising foundation for developing adaptive legal structures that can address the identified gaps and limitations in current approaches. By combining these complementary perspectives, we can envision legal frameworks that are better equipped to promote commons-based approaches, protect community interests, and inhibit potentially exploitative capitalist practices in the energy sector. This integrated approach provides a pathway for reimagining energy governance in ways that can support the emergence of more democratic, sustainable, and just energy systems across diverse contexts.

RPT emerges as a particularly insightful framework for reorienting legal structures to create resilient alternative systems of property use. This perspective highlights the critical role of context, relationships, adaptability, and inclusivity in shaping property arrangements, laying the groundwork for legal structures that are more flexible and responsive to the requirements of managing shared resources effectively.[47] For example, this can be seen in community land trusts that adapt governance rules to reflect local cultural practices, renewable energy cooperatives that evolve ownership models to include low-income participants, and urban commons that adjust resource-sharing agreements to balance environmental sustainability with community needs.[48]

The link between resilience and sustainability in property theory is crucial for understanding how legal frameworks can protect and promote commons ownership. RPT offers a pathway to incorporate sustainability into the core of the legal system by fundamentally redefining ownership as a dynamic framework that inherently balances individual rights with responsibilities to maintain, protect, and preserve property for the benefit of future generations. This aligns with the concept of social obligation in property law, as developed in German constitutional law.[49] The integration of RPT, for instance, with the concept of a "single system analysis" derived from South African constitutional law offers a powerful methodology for developing property law that includes positive obligations for property rights holders. This approach views all law as part of one system guided by constitutional principles, allowing for both top-down and bottom-up property initiatives as long as they align with the guiding principles of the system. Such an approach can accommodate diverse forms of property governance, including heat network cooperatives and community land trusts, which demonstrate how property arrangements can include both rights and responsibilities for community members, going beyond traditional property entitlements.[50] More generally, by framing property rights as having both entitlements and obligations, RPT provides a theoretical justification for incorporating positive proprietary obligations of sustainability into property rights. This approach aims to balance individual autonomy with community needs and ecological imperatives, potentially addressing crises of inequality, financial instability, and climate change that have resulted from traditional property law approaches based on utilitarian and neoliberal economic foundations.[51]

While the emphasis on commons resilience in legal theory is a significant step forward, there remains a need to better understand how these alternative property systems based on shared ownership and management can be effectively

47. Thomas Bauwens et al., *The Energy Commons: A Systematic Review, Paradoxes, and Ways Forward*, ENERGY RSCH. & SOC. SCI., Oct. 7, 2024.

48. Fox O'Mahony & Roark I, *supra* note 5; Fox O'Mahony & Roark II, *supra* note 5

49. Bram Akkermans, *Sustainable Property Law?*, 7 EUR. PROP. L.J. 1 (2018).

50. Bram Akkermans, *Obligations in Resilient Property Theory: Using Single System Analysis to Construe Positive Obligations*, *in* RESILIENT PROPERTY THEORY AND HOUSING (Lorna Fox O'Mahony, Marc L. Roark, Sue-Mari Viljoen & Ting Xu eds., forthcoming 2025).

51. BRAM AKKERMANS, SUSTAINABLE PROPERTY LAW: RECKONING, RESILIENCE, AND REFORM (2022); Bram Akkermans, *In Search for Sustainable Property Relations*, *in* PROPERTY LAW REFORM, SUSTAINABILITY AND THE COMMONS 89 (Vincent Sagaert et al. eds., 2024).

spread and scaled. The concept of mobile power offers valuable insights into how legal frameworks can be mobilized for both upscaling energy commons. Mobile power theory, with its focus on fluidity, decentralization, and adaptability, provides a lens for examining how commons-based legal structures can be flexibly applied and replicated across different contexts. Bloom, Jones, and Woodcock, in *Guerrilla Democracy: Mobile Power and Revolution in the 21st Century* (2021), redefine power as a fluid, decentralized, and adaptable force that thrives by evolving in response to diverse social, economic, political, and cultural conditions. Unlike traditional power structures, which rely on fixed hierarchies and centralized authority, mobile power gains strength through its flexibility and ability to reshape itself to fit varied contexts.

A central premise of mobile power is that its effectiveness lies in its adaptability. By dynamically adjusting strategies and forms, mobile power can navigate different socio-political landscapes, responding to the unique demands and challenges of each environment. This capacity to adapt enables it to build relational networks and mobilize resources effectively, whether in grassroots movements, decentralized governance systems, or transnational activism. Another critical feature of mobile power is its viral nature. It spreads by embedding itself in local contexts, drawing on existing norms, practices, and relationships, while simultaneously transforming them to align with broader goals. This viral spread relies on its capacity to resonate with diverse stakeholders, fostering a sense of shared purpose and collective action. It leverages decentralization and interconnectedness to replicate and expand across boundaries, creating a cumulative and self-reinforcing momentum.[52]

The integration of RPT and mobile power theory thus offers a potentially novel perspective for developing legal structures that can enhance both the resilience and scalability of energy commons. This synthesis provides a foundation for reframing property rights, governance mechanisms, and market structures in ways that promote commons-based approaches while protecting community interests. It aligns with emerging work on "commons-based property rights" that seeks to protect the core principles of commons ownership while enabling dynamic expansion. This could involve establishing "expansive commons easements" that automatically extend collective rights and responsibilities as energy initiatives incorporate new resources or expand into new geographical areas.[53]

The integration of RPT and mobile power theory provides a powerful framework for developing adaptable legal approaches to energy commons. By combining RPT's emphasis on flexible, context-sensitive property arrangements with mobile power theory's focus on redistributing power relations, we can envision legal templates that both protect community ownership and enable dynamic responses to changing conditions. This theoretical synthesis manifests in practical mechanisms like preferential grid access and community-specific tariff structures, which create resilient pathways for community energy projects to thrive within existing

52. Bloom et al., *supra* note 7.

53. Tomaso Ferrando & José Luis Vivero-Pol, *Commons and 'Commoning': A 'New' Old Narrative to Enrich the Food Sovereignty and Right to Food Claims*, *in* THE WORLD FOOD CRISIS: THE WAY OUT 50 (2017), https://www.sdgfund.org/sites/default/files/_right_to_food_and_nutrition_watch_2017.pdf.

power structures. Similarly, innovations like community energy credits and collaborative power purchase agreements (PPAs) demonstrate how this combined framework can support adaptive governance models that strengthen community agency while maintaining system stability.

This approach aligns naturally with the concept of "societal constitutionalism of the commons," which envisions a hybrid legal architecture combining state-level constitutional principles with community-level self-regulation.[54] Such a framework enables the development of a broader "law of the commons" that can institutionalize alternative forms of ownership and governance while remaining responsive to local contexts. By codifying successful commons practices into law while maintaining flexibility for local adaptation, this approach creates legal structures that can both protect community interests and adapt to varying political, cultural, and economic landscapes.

The synthesis of RPT and mobile power theory thus offers more than theoretical insights – it provides practical pathways for transforming energy governance through legal commoning. By creating resilient legal frameworks that can adapt to local conditions while maintaining core principles of community ownership and democratic participation, this approach helps bridge the gap between commons theory and practice. The resulting legal structures not only protect community energy initiatives but actively promote their growth and evolution, suggesting a way forward for scaling up energy commons while preserving their essential character as vehicles for local empowerment and sustainable development.

VI. LEGALLY MOBILIZING RESILIENT RENEWABLE ENERGY COMMUNITIES

The application of this integrated approach to energy commons also raises important questions about the relationship between property rights, environmental protection, and the public interest. As some scholars have noted, there is a "privatization paradox" where it is easy to convert public natural resources into private property but difficult to reverse this process due to constitutional protections for private property.[55] This highlights the need for legal frameworks that can better balance public and private interests in natural resource commons, potentially through modifications to regulatory takings doctrine or the development of new legal concepts that explicitly recognize the public's rights and interests in common resources.

Energy commons provide a foundational perspective for comprehending renewable energy communities as social institutions embedded in specific cultural and political milieus, transcending their portrayal as mere technical or economic entities. This framing acknowledges renewable energy sources as shared resources amenable to collective management for communal and ecological benefit, diverging from their conventional treatment as commodities or capital assets.[56]

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54. Antonios Broumas, *Movements, Constitutability, Commons: Towards a Ius Communis*, 26 L. & CRITIQUE 11 (2015).

55. Erin Ryan, *Privatization, Public Commons, and the Takingsification of Environmental Law*, 171 U. PA. L. REV. 617 (2023).

56. Matthew J. Burke, *Energy Commons and Alternatives to Enclosures of Sunshine and Wind*, *in* ROUTLEDGE HANDBOOK OF ENERGY DEMOCRACY 200 (Andrea M. Feldpausch-Parker et al. eds., 2021).

This perspective resonates with RPT principles, which underscore the contextual, relational, and adaptive nature of property rights.

The formulation of malleable and adaptive legal templates accommodating the multifarious forms of renewable energy communities is, therefore, paramount for enhancing their resilience. Hoops' (2023) investigation of German energy cooperatives illuminates the diversity of extant models, spanning from small, localized, highly democratic organizations to larger, investment-oriented entities.[57] This diversity is exemplified in the varying share prices, processing fees, and governance structures observed across different cooperatives. For instance, some cooperatives maintain high minimum investments, potentially excluding economically vulnerable individuals, while others adopt more inclusive financial models.[58]

Legal frameworks inspired by RPT could furnish a spectrum of options for community energy projects, enabling them to select structures congruent with their specific circumstances and objectives. This might entail the genesis of novel legal entities amalgamating characteristics of trusts, cooperatives, and networked organizations, empowering renewable energy communities to modulate their structure as they scale or diversify. For example, "adaptive community energy trusts" could be established, capable of evolving their governance structures and ownership models in response to changing local needs and broader energy transitions.

The contextuality principle inherent in RPT holds particular relevance in addressing the challenges posed by the inconsistent implementation of energy policies across jurisdictions. In the European Union, the Clean Energy Package has been applied heterogeneously across member states, engendering a mosaic of legal environments that both enable and constrain community energy initiatives. This heterogeneity is evident in the varying definitions and regulatory treatments of renewable energy communities across different countries. For instance, while some nations have embraced comprehensive support mechanisms for community energy, others lag in providing clear legal recognition or supportive frameworks.[59]

A context-sensitive approach could engender the development of legal instruments that accommodate varying political, cultural, and economic landscapes while preserving core principles of community ownership and democratic governance. This might encompass the establishment of "regulatory sandboxes" or experimental legal zones where innovative models of community energy ownership and governance can be trialed and refined prior to broader implementation.[60] Such approaches have been successful in fostering innovation in other sectors and could be particularly beneficial for renewable energy communities given their diverse and evolving nature.

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57. Björn Hoops, *Embrace the Diversity of the Energy Commons!* (Univ. of Groningen Faculty of Law Research Paper Series No. 17/2023), https://ssrn.com/abstract=4679127.

58. Björn Hoops, *Property Meeting the Challenge of the Commons in The Netherlands*, *in* PROPERTY MEETING THE CHALLENGE OF THE COMMONS 223 (Ugo Mattei et al. eds., 2023).

59. Björn Hoops, *EU Directives on the Internal Governance of Energy Communities and Their Exclusionary Effects*, 17 J. WORLD ENERGY L. & BUS. 147 (2024).

60. Björn Hoops, *Property and the Energy Transition*, *in* A RESEARCH AGENDA FOR PROPERTY LAW 145 (Bram Akkermans ed., 2024); Björn Hoops, *Property Law and (More Than One Notion of) Sustainability: A New Field*, *in* ROUTLEDGE HANDBOOK OF PRIVATE LAW AND SUSTAINABILITY 259 (Marta Santos Silva et al. eds., 2024).

The relational aspect of RPT, when integrated with insights from mobile power theory, can guide the creation of legal frameworks that reflect the interconnected nature of energy systems and the multiplicity of stakeholders involved. This approach recognizes that energy commons are embedded in broader social and ecological networks. Legal structures could be engineered to facilitate collaborative and inclusive forms of ownership and management, potentially through the development of novel constructs such as "energy commons easements" or "community energy trusts" that provide a stable foundation for shared governance while allowing for flexible participation and benefit-sharing arrangements.

The networked perspective derived from mobile power theory could shape the design of legal mechanisms supporting inter-community collaboration and resource sharing. This could enable smaller community initiatives to achieve economies of scale and compete more effectively with large-scale energy producers. Legal frameworks could facilitate the formation of "energy commons federations" that allow multiple renewable energy communities to pool resources, share risks, and collectively engage with larger energy systems and markets. Such federations could be structured with nested governance arrangements, drawing on polycentric governance principles, to maintain local autonomy while enabling coordination and scaling at higher levels.[61]

The adaptability emphasized by both RPT and mobile power theory, furthermore, is essential for addressing the regulatory instability that has impeded the growth of renewable energy communities in many contexts. Hoops' analysis of EU directives on the internal governance of energy communities highlights the potential for exclusionary effects arising from rigid regulatory requirements.[62] To mitigate these risks, legal frameworks could be designed with greater flexibility in interpreting and implementing governance requirements. Rather than imposing strict limitations on membership or decision-making structures, regulations could focus on ensuring core principles of community benefit and democratic control are upheld while allowing for diverse organizational forms.

For instance, the requirement for renewable energy communities to have environmental, economic, or social community benefits as their primary purpose could be interpreted more leniently, recognizing that financial sustainability and moderate returns for members may be necessary to ensure the long-term viability of these projects. Similarly, restrictions on the involvement of traditional energy companies or large enterprises in renewable energy communities could be relaxed to allow for beneficial collaborations and knowledge exchange, provided safeguards are in place to prevent domination by these entities.

The notion of "adaptive commons regulations" could be developed, including built-in review and adjustment mechanisms to ensure that legal frameworks remain aligned with the dynamic nature of commons ownership and the evolving

61. Barbara Cosens & Lance Gunderson, *Adaptive Governance in North American Water Systems: A Legal Perspective on Resilience and Reconciliation*, *in* WATER RESILIENCE: MANAGEMENT AND GOVERNANCE IN TIMES OF CHANGE 171 (Julia Baird & Ryan Plummer eds., 2021).

62. Björn Hoops, *The Clash of the Energy Commons*, 33 EUR. ENERGY & ENV'T L. REV. 115 (2024).

needs of energy communities.[63] This approach could help address the challenges posed by rapidly changing technological, social, and environmental conditions in the energy sector. The principle of mobile power can enlighten strategies for enhancing the ability of renewable energy communities to navigate and reshape legal and regulatory environments. The emphasis on fluidity and adaptability suggests that legal frameworks for commons governance should be designed to facilitate rapid learning, experimentation, and scaling of successful models across different contexts. This could involve creating legal structures that support knowledge sharing and resource mobilization among different commons initiatives, potentially transcending traditional jurisdictional boundaries.

Transnational legal and institutional frameworks for governing energy commons could, moreover, be developed, promoting cross-border knowledge-sharing and collaboration among energy communities.[64] Such frameworks could build upon existing initiatives like the European Federation of Citizen Energy Cooperatives (REScoop.eu), providing a more robust legal foundation for international cooperation and knowledge exchange among renewable energy communities. The "Rights of Nature" and environmental personhood, as explored in recent legal scholarship, offer an intriguing avenue for reconceptualizing the legal status of energy commons.[65] While current applications of this idea have focused primarily on natural entities like forests or rivers, extending similar principles to renewable energy resources could provide novel protections for community-managed energy systems. This might involve granting legal personhood to community-owned renewable energy installations, potentially offering stronger safeguards against encroachment by private or state interests.

In particular, they help to reconceptualize energy commons, shifting their legal status from mere assets to entities with rights and protections. Traditionally, the framework of environmental personhood has been applied to natural entities like rivers, forests, and ecosystems, recognizing their intrinsic value and granting them legal standing to safeguard their preservation and function. Extending this principle to community-managed renewable energy installations could provide a robust legal shield against exploitation by private or state interests. Granting legal personhood to energy commons, such as wind farms, solar cooperatives, or community microgrids, would enable these entities to hold rights analogous to those of natural ecosystems.[66] For instance, a legally recognized solar cooperative could claim the right to continued operation without undue interference, protection from

63. Alicia Mas-Tur et al., *Successful Entrepreneurial Learning: Success Factors of Adaptive Governance of the Commons*, 19 KNOWLEDGE MGMT. RSCH. & PRAC. 291 (2021).

64. Phillip Paiement, *Urgent Agenda: How Climate Litigation Builds Transnational Narratives*, *in* TRANSNATIONAL ENVIRONMENTAL LAW IN THE ANTHROPOCENE: REFLECTIONS ON THE ROLE OF LAW IN TIMES OF PLANETARY CHANGE 121 (Emily Webster & Laura Mai eds., 2021).

65. Björn Hoops, *The Final Search for the Common Core of Acquisitions of Immovables through Long-Term Use*, *in* THE ACQUISITION OF IMMOVABLES THROUGH LONG-TERM USE 677 (Björn Hoops & Ernst J. Marais eds., 2022).

66. Clara Esteve-Jordà & Marcos de Armenteras Cabot, *Energy Communities: Why (Sometimes) the Commons Need the State*, *in* LEGAL CHALLENGES AT THE END OF THE FOSSIL FUEL ERA: SHARING A JUST AND CLEAN ENERGY TRANSITION 73 (Daniel Iglesias Márquez et al. eds., 2024).

harmful encroachment, and access to the resources needed to sustain its energy generation. These rights would not only protect the infrastructure itself but also ensure that its benefits—such as affordable renewable energy and local empowerment—remain accessible to the community. Moreover, legal personhood could empower energy commons to litigate in defense of their interests, acting as plaintiffs in cases of harm or encroachment. This could be particularly important in disputes over land use, regulatory changes, or attempts by large utilities to undermine or co-opt community projects. Additionally, embedding environmental personhood in energy commons aligns with broader sustainability goals, as it inherently ties the success of these initiatives to their responsible and equitable management, fostering long-term environmental and social resilience.

Hoops' analysis of the potential application of environmental personhood to the Black Forest in Germany, for instance, provides valuable insights that could be adapted to the context of renewable energy communities.[67] For instance, granting legal personhood to community-owned renewable energy installations could confer standing to bring legal challenges up to the Constitutional Court, require justification for any limitation of their property rights, and necessitate additional legislative authorization for activities that might harm or exploit the energy commons. "Commons-based energy markets" offer another promising approach for creating economic structures that prioritize community needs and environmental sustainability over pure profit maximization. These markets could be legally structured to prioritize community-owned energy sources, potentially through mechanisms such as preferential grid access or community-specific tariff structures. By incorporating principles from both RPT and mobile power theory, these market structures could be designed to be more resilient to economic shocks and more responsive to changing societal values and environmental constraints. Legal frameworks could be designed to support and scale these types of initiatives, potentially creating a more decentralized and democratically controlled energy market system.

A more nuanced understanding of the diverse motivations and goals that drive community energy initiatives is essential. While EU directives emphasize environmental, economic, or social benefits as the primary purpose of energy communities, the evidence from existing cooperatives suggests a more complex reality. Legal frameworks should be flexible enough to accommodate this diversity, recognizing that financial sustainability and moderate returns for members may be necessary to ensure the long-term viability of these projects. This could involve developing more flexible criteria for assessing the "primary purpose" of energy communities, allowing for a balance between community benefit and financial sustainability. For instance, rather than imposing strict limitations on profit distribution, regulations could focus on ensuring that a significant portion of the benefits generated by renewable energy communities are reinvested in the community or used to support environmental and social objectives.

Mobile power can illuminate, consequently, strategies for enhancing the political influence and advocacy capacity of renewable energy communities. By

67. Björn Hoops, *What if the Black Forest Owned Itself? A Constitutional Property Law Perspective on Rights of Nature*, 11 TRANSNAT'L ENV'T L. 475 (2022).

conceptualizing these initiatives as part of broader social movements for energy democracy and climate justice, legal and institutional frameworks can be developed that support their ability to challenge dominant power structures and advocate for supportive policies. This might involve creating legal mechanisms for renewable energy communities to participate in energy policy-making processes at local, national, and international levels, or establishing protected spaces for civic engagement and deliberation around energy issues. The concept of "energy democracy" provides a useful framework for understanding and promoting the political dimension of renewable energy communities. Baker argues that reframing energy as an abundant, accessible resource rather than a commodity can support the development of more democratic and just energy systems.[68] Legal frameworks could be designed to support this reframing, potentially through the creation of new legal categories that recognize the unique characteristics of community-managed energy resources.

The integration of RPT and mobile power principles also offers insights into how to address potential conflicts between different rights and interests in the energy transition. Returning again to the insights of Hoops' analysis of the use of vacant buildings to house refugees in Germany provides an interesting parallel for considering how the rights of property owners might be balanced against the broader social and environmental benefits of renewable energy communities.[69] Similar principles of proportionality and compensation could be applied in cases where the development of community energy projects conflicts with existing property rights or land use regulations. The concept of "expropriation without compensation" explored by Hoops in the context of South African land reform could offer provocative insights for considering more radical approaches to energy system transformation.[70] While direct application of this concept to renewable energy communities would likely be controversial and face significant legal challenges in most contexts, it highlights the need for creative thinking about how to balance individual property rights with broader societal needs in the face of urgent environmental and social challenges.

The development of more resilient and mobilized renewable energy communities also requires addressing the property law challenges associated with new energy technologies and infrastructure. Current analysis of property issues related to the energy transition highlights several key areas that require legal innovation, including:

1. The state's power to compel property owners to make energy efficiency upgrades

68. Shalanda H. Baker, *Unlocking the Energy Commons: Expanding Community Energy Generation*, *in* LAW AND POLICY FOR A NEW ECONOMY: SUSTAINABLE, JUST, AND DEMOCRATIC 211 (Melissa K. Scanlan ed., 2017).

69. Björn Hoops, *Taking Possession of Vacant Buildings to House Refugees in Germany: Is the Constitutional Property Clause an Insurmountable Hurdle?*, 5 EUR. PROP. L.J. 26 (2016).

70. Björn Hoops, *Expropriation Without Compensation: A Yawning Gap in the Justification of Expropriation?*, 136 S. AFR. L.J. 261 (2019).

2. New fragmentation of property interests related to renewable energy installations
3. Legal issues around tubes and cables for energy infrastructure
4. Emergence of energy communities sharing renewable resources
5. New dependencies created by decentralized energy systems
6. Legal uncertainties around offshore wind farms

Addressing these challenges will require a comprehensive rethinking of property law in relation to energy systems. For instance, new legal frameworks could be developed to facilitate the installation of renewable energy infrastructure on existing buildings, potentially through the creation of new types of easements or shared ownership arrangements. Similarly, innovative legal structures could be designed to manage the complex property relationships involved in community-owned microgrids or energy storage systems.

The integration of Resilient Property Theory and mobile power principles offers a comprehensive framework for developing more resilient and mobilized renewable Energy Communities. This approach provides a pathway for reimagining energy governance structures in ways that can promote commons-based approaches, protect community interests, and challenge the dominance of centralized, profit-driven energy systems. By embracing flexibility, adaptability, and networked forms of organization, this integrated theoretical perspective offers valuable insights for designing legal and regulatory frameworks that can foster thriving energy commons across diverse contexts.

VII. CONCLUSION

The theory of legal commoning, introduced in this paper, can help to overcome the current barriers imposed on the resilience and upscaling of renewable energy communities by existing private law perspectives and regimes. It points to the need for a paradigm shift from a compliance-based approach to a more agile, open, and participatory framework focused on enhancing the overall resilience of these communities and potential to be upscaled. In doing so, it acknowledges the deep complexity and heterogeneity, as well as idiosyncratic and local context particularities of energy systems, and the need for law and organisation to remain open and supportive to local forms of knowledge, practice, and innovation.

Critically, this approach emphasizes the need for property systems to be adaptive, flexible, and responsive to changing social, economic, and ecological conditions, rather than rigid, hierarchical, and exclusionary. This combined theoretical perspective recognizes that the resilience and sustainability of property systems depends not only on their internal design principles and governance structures but also on their legal capacity to engage with and navigate the wider social-ecological systems in which they are embedded. Specifically, regarding energy systems, it highlights that energy property relations imply more and often competing values and interests than the market value of the energy resource heritage alone.[71] This includes the social and ecological values associated with energy

71. Eric T. Freyfogle, *Property and Liberty*, 34 HARV. ENV'T L. REV. 75 (2010)

commons, such as community empowerment or energy democracy, as well as the cultural or spiritual values attached to certain energy landscapes or resources.[72]

They also show that energy systems can prioritize a property relations strategy that promotes resilience and agility in energy systems, thereby ensuring their stability across a changing and uncertain climate. This means promoting diverse forms of ownership and governance of energy assets, including individual and privately held assets as well as collective and common-held assets.[73] It also means promoting the coexistence of, and complementarity between, different types of energy technologies and sources, including distributed renewable energy systems in combination with centralised grid infrastructure.[74]

Within the EU, operationalizing the distributed energy vision will necessitate amending patchworks of private law across Member States. Countries must align cooperative laws, contractual defaults, grid access and interconnection regulations, and energy rights to facilitate the scalable growth of cross-border renewable energy communities.[75] Broader conceptual alignment on the civic/social dimensions of energy provisioning versus purely economic activity is imperative.[76] Vitally, any private law reform agenda must confront the politically contentious question of entrenched incumbent rights. Does advancing community energy interests require diluting or even abrogating vested utility property claims and commercial energy contracts?[77] To what extent should optimizing systemic goals like sustainability override insular individual property protections?[78] Powerful interests will wield private law absolutism around inviolable property/contracts to resist transitions threatening investments and profits.[79]

A radical perspective might be to reconceptualize energy itself as a public trust resource outside traditional private law enclosures and commercialization.

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72. Andrea Capaccioli, Participatory Design for Community Energy-Designing the Renewable Energy Commons (2018) (Ph.D. dissertation, University of Trento); Lene Gjørtler Elkjær et al., *Different Pasts, Contested Presents and Desired Futures: Local Narratives and Identities in the Co-Production of a Shared Wind Energy Ownership Model*, 28 LOC. ENV'T 1515 (2023).

73. Marie Claire Brisbois, *Powershifts: A Framework for Assessing the Growing Impact of Decentralized Ownership of Energy Transitions on Political Decision-Making*, 50 ENERGY RSCH. & SOC. SCI. 151 (2019); Marie Claire Brisbois, *Decentralizing Energy Systems: Political Power and Shifting Power Relations in Energy Ownership*, *in* ENERGY DEMOCRACIES FOR SUSTAINABLE FUTURES 83 (Majia Nadesan et al. eds., 2023); Conrad Kunze & Sören Becker, *Collective Ownership in Renewable Energy and Opportunities for Sustainable Degrowth*, 10 SUSTAINABILITY SCI. 425 (2015).

74. Tineke van der Schoor & Bert Scholtens, *Power to the People: Local Community Initiatives and the Transition to Sustainable Energy*, 43 RENEWABLE & SUSTAINABLE ENERGY REVS. 666 (2015).

75. Dorian Frieden et al., *Are We on the Right Track? Collective Self-Consumption and Energy Communities in the European Union*, SUSTAINABILITY, Nov. 12, 2021.

76. Michiel A. Heldeweg & Séverine Saintier, *Renewable Energy Communities as 'Socio-Legal Institutions': A Normative Frame for Energy Decentralization?*, RENEWABLE & SUSTAINABLE ENERGY REV., Nov. 9, 2019; Michiel A. Heldeweg et al., *Public-Private or Private-Private Energy Partnerships? Toward Good Energy Governance in Regional and Local Green Gas Projects*, Energy, Sustainability & Soc'y, Mar. 24, 2015.

77. Simon Pirani, *Roads to an Energy Commons*, PEOPLE & NATURE (Nov. 18, 2021), https://peopleandnature.wordpress.com/2021/11/18/roads-to-an-energy-commons/.

78. Tomasz Bojar-Fijalkowski, *Reflections on Crossing the Boundaries Between Public and Private Law in Implementing the "European Green Deal"*, 2 ADMIN. & ENV'T L. REV. 97 (2021).

79. Larry Lohmann, *Toward a Political Economy of Neoliberal Climate Science, in* THE ROUTLEDGE HANDBOOK OF THE POLITICAL ECONOMY OF SCIENCE 305 (David Tyfield et al. eds., 2017).

Indeed, notions of atmospheric dominium and climate property rights suggest an expansive, holistic re-theorization of energy-as-commons beyond private/public bifurcations.[80] This resonates with philosophical traditions of energy democracy and recognizing energy provision as an indispensable civic function. Alternatively, more reformist approaches could retain core private law while realigning defaults and market mechanisms. This might entail private/public hybrid organizational models, cooperative licenses for utility infrastructure, restricting corporate rights claims hindering renewable energy communities, or formalizing communal forms of energy tenures.[81] Here, private law retains vitality for bottom-up institutional pluralism if suitably retooled.

Ultimately, the path forward hinges on multi-scalar normative assessments. Do energy systems call for retaining exclusionary private rights coupled with collective action workarounds?[82] Or do shared, inclusive, multi-constituent arrangements become the aspirational socio-legal institution? Is the regulatory challenge merely eliminating private law distortions? Or should private law dialectically evolve to reflect new energy ontologies?

Hence, while current private and public law perspectives and regimes are pivotal for moulding and upscaling renewable energy communities, this process irrevocably unspools deeper quandaries around foundational legal-economic axioms. The energy commons precipitates a reckoning for private law's role, perhaps even its identity, within broader systemic transformations for decarbonization and sustainability imperatives. Transcending this conceptual impasse requires not mere tinkering through legislative piecemeals but engaged normative theorizing on energy governance and the future of collective resource management.

In conclusion, Resilient Property Theory and mobile power offer a compelling and complementary theoretical framework for overcoming the legal barriers to the establishment and upscaling of renewable energy communities. By reconceptualizing property relations as dynamic, adaptive, and open and by recognizing the transformative potential of social movements embodying mobile power, these theories provide a foundation for developing legal structures that can support the energy transition and address the climate crisis. However, this process also necessitates a deeper reckoning with foundational legal-economic axioms and a willingness to engage in normative theorizing on energy governance and the future of collective resource management.

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80. Erin Ryan, *From Mono Lake to the Atmo; spheric Trust: Navigating the Public and Private Interests in Public Trust Resource Commons*, 10 GEO. WASH. J. ENERGY & ENV'T L. 39 (2019).

81. Avri Eitan et al., *Community–Private Sector Partnerships in Renewable Energy*, 105 RENEWABLE & SUSTAINABLE ENERGY REVS. 95 (2019).

82. Elinor Ostrom & Charlotte Hess, *Private and Common Property Rights*, *in* 5 ENCYCLOPEDIA OF LAW AND ECONOMICS: PROPERTY LAW AND ECONOMICS 53 (Boudewijn Bouckaert ed., 2nd ed. 2010); Elinor Ostrom et al., *Revisiting the Commons: Local Lessons, Global Challenges*, 284 SCIENCE 278 (1999).

OBSTACLES TO THE REALIZATION OF A RENEWABLE ENERGY COMMUNITY IN ITALY DUE TO THE (UNNECESSARY?) COMPLEXITY OF EUROPEAN AND NATIONAL REGULATIONS

Francesca Dealessi & Andrea Lanciani[*]

Synopsis: Directive (EU) 2018/2001 of the European Union ("RED II Directive") promotes the use of energy from renewable sources through Renewable Energy Communities, which are legal entities based on the open and voluntary participation of citizens, small and medium-sized enterprises, and local authorities. These communities aim to develop decentralized renewable energy production and storage, to increase local energy security, to reduce energy transmission losses, to create local income and jobs, and to combat energy poverty. The creation of Renewable Energy Communities is envisioned by the RED II Directive as a bottom-up process in which the local communities play an active role in driving their incorporation. However, the interaction between different regulatory layers (both European and Italian), the varying definitions of "proximity" and "control" within the regulations, and the impact of European State aid rules can pose significant legal and practical challenges to the establishment of these Renewable Energy Communities. Legal rules must strike a balance between the benefits of detailed regulation and the deterrent effects of complexity: simpler regulations could facilitate grassroots processes and local community engagement in Renewable Energy Communities, whereas complexity tends to support top-down approaches by large energy firms, thereby restricting local communities' autonomy. The current regulatory environment appears therefore misaligned with the initial goals and expectations.

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* Francesca Dealessi and Andrea Lanciani are lawyers advising Renewable Energy Communities in the process of incorporation and development; they have participated as lecturers in many courses and conferences on the subject. The authors wish to thank Prof. Dr. Björn Hoops, LL.M for their involvement as speakers in the international conference, Private Law in the Energy Commons — A Multidisciplinary Challenge, held in Turin on 27-28 March 2024, a meeting where both the different approaches from various jurisdiction and the common problems have been compared and discussed in an interesting and fruitful way.

I. INTRODUCTION

The European Union has an important policy action to promote the use of renewable energy sources all over Europe. This policy is intended not only to bring environmental benefits but also to enhance energy supply security, to ensure sustainable and affordable energy, and to foster technological development and innovation. One of the means to reach these objectives is the support to the creation of decentralized small renewable energy projects, such as rooftop solar installations, promoting as far as possible not only the local production but also the local consumption of the electric energy locally produced (indicated as self-consumption[1]). This approach not only ensures the local production of sustainable energy but also reduces the usage of the transmission grid, providing overall benefits.

The European RED II Directive[2] is an instrument of this policy and achieves its objectives in part through the promotion of local organization of small producers and consumers: the Renewable Energy Communities ("RECs"). Promoting and regulating local organizations to effectively enable citizens and small enterprises to operate in a coordinated manner as both producers and consumers within the complex energy market was evidently challenging.

This article aims to assess whether the objectives of straightforward and transparent regulations, as well as effective coordination among authorities, have been met or whether there are inconsistencies in the legal concepts employed and discrepancies between the involved authorities, alongside unnecessary complexities that may impede the grassroots development of RECs and the participation of local communities.

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1. Self-consumption is properly speaking the consumption of energy made by the same producer; such term has been extended to refer to the local consumption of energy locally produced

2. Directive 2018/2001, of the European Parliament and of the Council of 11 December 2018 on the Promotion of the Use of Energy from Renewable Sources, 2018 O.J. (L 328) 82 [hereinafter RED II Directive].

RECs are intended by the RED II Directive as autonomous legal entities, based on open and voluntary participation of citizens, small and medium enterprises, and local authorities, effectively controlled by the local members. RECs' main purpose is to contribute to the development of decentralized renewable energy production and storage and to the promotion of local consumption, and they should be primarily concerned with providing environmental, economic, or social benefits for the local area in which they have been created. In such a way, RECs may reach the purpose to increase local security of energy supply, to reduce energy transmission losses, to create local income and jobs, to empower consumers and citizens, and to fight energy poverty.

The creation of RECs is envisioned by the RED II Directive as a bottom-up process where the local communities play an active role.

According to the RED II Directive, engaging local communities is vital to raising citizens' awareness of climate change risks and building support for the energy transition. As the RED II Directive explains:

> [t]he participation of local citizens and local authorities in renewable energy projects through renewable energy communities has resulted in substantial added value in terms of local acceptance of renewable energy and access to additional private capital which results in local investment, more choice for consumers and greater participation by citizens in the energy transition.[3]

To support the grassroots development of RECs, EU authorities emphasize the importance of establishing clear and straightforward regulations. These regulations should govern RECs' formation and their activities. Additionally, it is crucial to outline the requirements that RECs must meet in order to qualify for the government economic support. The RED II Directive emphasizes this by stating, "the lack of transparent rules and coordination between the different authorisation bodies has been shown to hinder the deployment of energy from renewable sources."[4] The RED II Directive refers to problems arising out of the overlapping regulation issued by many authorities (Italian and European) having jurisdiction on the same issue.

In the European legal system, a Directive is not directly binding and requires implementation by the Member States. The national implementation of the RED II Directive involved various instruments such as laws, ministry decrees, regulations, and guidelines, which have been issued by different authorities including the parliament, the government, independent electricity market authorities, and authorities responsible for approving articles of association. During the national implementation process of RECs, further involvement from European Authorities was necessary. This was due to concerns that support provided by the Italian Government to RECs could indirectly aid small and medium enterprises members of the RECs and, in this way, could potentially violate European principles against anti-competitive State aid. Consequently, Italian citizens wishing to establish a REC must comply with multiple regulations issued by various Italian and European authorities and have to deal with multiple regulatory bodies.

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3. *Id.* para. 70.

4. *Id.* para. 50.

To conduct the analysis of which has been the result of such implementation process, we begin with a description of the purposes of RECs, of the main regulatory acts that govern them, and of the importance of public support, including financial support, in their development. Then we will examine some crucial aspects of this overall Italian implementation:

> (i) the notion of "proximity" between members and production plants used to qualify the RECs as local initiatives;
> (ii) the notion of "control" to assess who effectively controls RECs and the criteria to identify the members which may control the RECs, both used to assure that RECs are effectively locally governed;
> (iii) the contents of contracts between producers and RECs which may qualify a power plant as a part of the RECs and so legally relevant for the self-production and the self-consumption;
> (iv) the criteria for the distribution of the incentives granted by the Italian government among members of the RECs; and
> (v) the effective ability of the RECs to collaborate with energy producers, energy sellers, and large corporations which are in principle excluded from being a member of RECs but may have the know-how and the capacity to help the development of locally managed RECs.

We conclude that the initial objectives of the RED II Directive to facilitate the creation of RECs have not been fully reached, and existing inconsistencies, complexities, and ambiguities in the overall Italian implementation (deriving also from the requests of European authorities involved in the implementation process) may hinder the development of the RECs and, above all, their bottom-up creation as envisioned by the RED II Directive.

II. THE RED II DIRECTIVE AND THE RECS

The RED II Directive (EU) promotes RECs in the broader objective of promoting self-production and self-consumption of renewable electricity in Europe.

Self-consumption involves generating renewable electricity for end use, which can encompass the storage or the sale of any surplus electricity that has not been used. The RED II Directive aims to support all different types of self-production and self-consumption of renewable electricity and to expand the application of the concept of self-production and self-consumption from individual producers/consumers ("prosumer") to larger local communities.

Renewable energy self-consumers are defined as final customers (residential, industrial, and commercial end users) who generate renewable electricity on their premises for their own usage and may store or sell any excess electricity generated.

The first stage of expanding individual self-consumption includes final consumers located in the same building or multi-apartment block (including complexes of multiple buildings that function as a condominium) who can collectively consume the energy they produce.[5]

RECs represent a further extension of the local self-production and self-consumption concept: the self-consumption is not limited to a single person (using one or more of his/her premises) or to a group of people living in the same building or in the same multi-apartment block, but it is extended to a group of people living in the same local area.

The legal consequence of the distinction between the various forms of self-consumption mechanisms and the RECs lies in the necessity of an additional legal entity. In the case of a single individual or a group of individuals residing in the same building or multi-apartment block, such an entity is not required, but in the context of RECs, a specific legal entity is necessary to aggregate the individuals participating in the self-consumption group.

The establishment of RECs as autonomous entities requires a detailed legal framework to identify the purposes of the REC, the distribution criteria of the benefits produced or obtained by the RECs, and the governance rules which ensure that the REC is effectively controlled by citizens, small and medium enterprises, and local authorities.

The RED II Directive recognizes the importance of RECs in promoting acceptance of the need for the energy transition and clearly states that "measures to allow renewable energy communities to compete on an equal footing with other producers also aim to increase the participation of local citizens in renewable energy projects and therefore increase acceptance of renewable energy."[6]

The process of establishing a REC holds considerable importance. When an incorporation process is not the result of local initiatives (i.e., local citizens and local community organizations getting together to establish a REC) but derives from the passive acceptance of frameworks and models proposed by major energy corporations (interested in selling solar production plant together with the participation in a REC already organized on national basis in which the citizen has no real power), it is unlikely to meet all the goals established in the RED II Directive.

According to the RED II Directive, the Member States should promote the effective participation of citizens to the RECs: RECs are considered very important both in their role as aggregator of self-producers and self-consumers of renewable energy (which promotes the production of renewable energy) and in the

5. A condominium is a property complex comprised of individual units and each unit is owned separately, but the owners have a nonexclusive ownership in certain community property which are used by the owners of the individual units and are managed by the condominium management. The condominium may be vertical (a single building divided in apartments) or horizontal (a common lot made up of houses arranged side by side in terms of the law). There is no legal difference between vertical and horizontal property regimes: both of them have individual and community property and the community property is managed in the interest of the individual property. The store and sale of self-produced electric energy may remain an individual activity or may be collectively exercised. In any case to be granted incentive the members of the condominium should agree to act collectively on the basis of an agreement.

6. RED II Directive, *supra* note 2, para. 70.

role of spreading local awareness of environmental issues and of strengthening bonds in local communities.

RECs are established within local areas (small towns, portions of cities, etc.[7]) and stem from the efforts of volunteers and local authorities. However, they frequently lack the necessary funds and expertise to complete their projects without professional assistance and financial aid.

Therefore, RECs should be supported by public authorities to help them to reach their goals. The role of public authorities is essential in creating a supportive legal framework, granting the necessary authorizations, and providing financial aid and technical support. The RED II Directive recognizes this important role of Member States: they are required to eliminate regulatory and administrative barriers to the activities of RECs and ensure access to the financial support necessary for the establishment of RECs.

III. THE COMPLEXITY OF ITALIAN REGULATORY SYSTEM OF RECS IN THE FRAMEWORK OF EU PROVISIONS

The Italian regulatory framework consists of overlapping regulations issued by various authorities. The Italian State operates through a variety of bodies, including the Italian legislative bodies (the Parliament and the Government which may issue laws on the basis of a parliamentary delegation), the Ministry for Environment and Energy Security, the ARERA (the Italian Regulatory Authority for Energy, Networks and the Environment), and GSE s.p.a. (a company that is wholly owned by the Ministry of Finance and has been entrusted with the promotion of renewable energies and of energy efficiency).[8]

The main Italian provisions governing RECs are:

> (i) the Legislative Decree, November 8, 2021, n. 199, issued by the Italian Government on the basis of a delegation of the Italian Parliament, implementing the Directive (EU) 2018/2001 ("Legislative Decree");[9]
> (ii) the Decree of the Ministry of the Environment and Energy Security dated December 7, 2023, n. 414 ("Decree");[10]
> (iii) the Resolution 727/2022/R/eel of the ARERA, as amended on January 23, 2024 ("TIAD");[11]

7. The REC are established within the area covered by the primary substation of the distribution grid. The average surface area is approximately 143 km2.

8. While the European Union provisions and documents are cited in their English official text, the text of Italian provisions have been translated by the authors from the original Italian language.

9. Decreto Legislativo 8 novembre 2001 n.199, G.U. Nov. 30, 2024, n.385 (It.) (the up-date text can be found at www.normattiva.it).

10. Decreto Ministeriale 7 dicembre 2023, n.414, G.U. Feb. 7, 2024, n.31 (It.).

11. Autorità di Regolazione per Energia Reti e Ambiente (ARERA) [Italian Regulatory Authority for Energy, Networks and the Environment], Resolution of Dec. 27, 2022, No. 727/2022/R/eel, https://www.arera.it/fileadmin/allegati/docs/22/727-22.pdf [hereinafter TIAD].

(iv) the Operational Rules dated January 23, 2024, amended on April 24, 2024, issued by the GSE ("Operational Rules").[12]

The Italian regulation of the financial support to RECs contained in the Decree needed the prior approval of European authorities. Indeed, the financial support for RECs (which can also include small and medium enterprises as members) had to be submitted to the European Commission to ensure compliance with European State aid rules.[13] The involvement of the European Commission significantly influenced the content of the Italian regulation: the final text of the Decree, approved by the European Commission Decision C (2023) 8086 final on November 22, 2023, differed in several respects from the initial draft and all amendments were made to accommodate European Commission's objections; specifically, very complex rules have been introduced restricting the access of small-medium enterprises, which are members of RECs, to the State financial supports granted to RECs, and these restrictions were not contemplated in the original draft.[14]

Public authority rules governing the mechanisms for self-production and self-consumption, particularly RECs, which resulted from this process involving different Italian and European authorities, are highly detailed.

The regulations address several key legal concepts related to qualifying a REC as local, such as proximity and control, and outline criteria for distributing the benefits received by RECs. Additionally, these rules specifically govern the current financial aid scheme, allowing RECs to obtain the enhancement contribution ("contributo di valorizzazione") and the premium tariff ("tariffa premio"), both provided by the Italian Government.

Both financial incentives require that the RECs invest, directly or through their members, in the establishment of new renewable energy production power plants. The members of a REC may receive the enhancement contribution and the premium tariff for each hour of electricity that is self-produced (by the new re-

12. GESTORE DEI SERVIZI ENERGETICI (GSE) [ENERGY SERVICES MANAGER], DECRETO CACER E TIAD – REGOLE OPERATIVE PER L'ACCESSO AL SERVIZIO PER L'AUTOCONSUMO DIFFUSO E AL CONTRIBUTO PNRR [CACER AND TIAD DECREE – OPERATIONAL RULES FOR ACCESSING THE DIFFUSE SELF-CONSUMPTION SERVICE AND THE PNRR CONTRIBUTION] (2024), https://www.mase.gov.it/sites/default/files/ALLEGATO%201%20Regole%20operative%20CACER%20def.pdf [hereinafter OPERATIONAL RULES].

13. State aid regulation refers to any benefit conferred by a Member State or through state resources that distorts competition and impacts trade within the European Union. The EU's State aid rules are designed to foster fair competition and prevent undue advantages to specific companies or industry sectors. Member States are required to notify the European Commission of all new aid measures. The European Commission evaluates whether the proposed aid adheres to EU regulations and grants approval if it is consistent with EU regulations. In the case of the RECs, which can include SMEs (small and medium enterprises) as members, no block exemption was applicable (i.e., general exemption for whole kind of State aid actions considered not significantly affecting European competition), thus necessitating the notification of the aid scheme to the European Commission which examines it on a case-by-case basis. The European Commission demanded revisions to the draft decree from the Ministry of the Environment and ultimately approved the final text with Decision C (2023) 8086 final on November 22, 2023.

14. Commission Decision No. 8086 (Nov. 22, 2023), cited in 2024 O.J. (C 1159) 1, https://competition-cases.ec.europa.eu/cases/SA.106777 [hereinafter Commission Decision No. 8086]. The impact of the European Commission's involvement can be deduced by comparing the draft and the final approved version of the Decree and on these restrictions, there has been no public discussion.

newable energy production plants) and self-consumed (or "shared") by the members of the REC within the same area of the electricity grid (the area of the primary substation).[15]

The self-consumption is "virtual," meaning it is reconstructed *ex-post* from actual consumption data within the area of the same primary substation, and it is equal to the portion of electricity shared between producers and consumers belonging to the same REC who have their interconnection points to the grid in the area of the same primary substation. In particular, it is equal, each hour, to the lower value among the sum of electricity fed into the grid by the renewable power plants of the self-production and self-consumption mechanism and the sum of electricity consumption by the members of the RECs.[16]

The enhancement contribution compensates the fact that the transmission grid is not used due to the proximity of renewable energy power plants to consumers: one of the problems faced by the transmission and distribution grid is the loss of transmitted energy which is avoided or mitigated if producers and consumers are in the same local area.[17] It is determined by ARERA and paid for each MWh of shared energy of the REC: it is equal to 10.57 €/MWh for 2024.

The premium tariff represents a general support scheme designed to facilitate the development of self-production and self-consumption mechanisms (and, among them, the RECs). Specifically, the premium tariff is paid for each MWh of shared energy of the REC and consists of a fixed part and a variable part. The fixed part varies according to the size of the plant, while the variable part depends on the market price of energy.[18] The fixed part of the incentive tariff decreases as the plant power increases (from a maximum of 80€/MWh to a minimum of 60€/MWh), while the variable part ranges between 0 and 40€/MWh depending on the energy price (as the market price of energy decreases, the variable part increases up to a maximum of 40€/MWh). The sum of the fixed and variable part cannot exceed 80€/MWh. Additionally, to account for the lower productivity of the photovoltaic plants installed in the central-northern regions, where there is less

15. A primary substation connects the electric power transmission grid with the distribution grid. Basically, this device enables the transfer of high-voltage (HT) electricity to medium-voltage (MV) electricity. Each primary substation serves a specific area of the national territory and is connected to several secondary substations which transform electrical energy from medium-voltage (MV) to low-voltage (LV).

16. This is consistent with consideration No. 71 of the Directive (EU) 2018/2001: "*Renewable energy communities should be able to share between themselves energy that is produced by their community-owned installations*." RED II, *supra* note 2, para. 71. The virtual sharing is the only technical approach possible in the existing grid structure, and it allows the Italian regulation to reach the goals of the Directive (EU) 2018/2001: making it possible for virtual self-consumption to be realized in a specific local area, which also promotes local renewable energy production.

17. TIAD, *supra* note 11.

18. D.M. n.414/2023, art. 3, annex 1. The Decree also grants financial support to build new renewable energy power plants only for people or entities residing in municipalities with less than 5,000 inhabitants. This financial support reduces the amount of the premium tariff granted for the self-consumption of energy produced by the supported plants (to avoid an excessive accumulation of State aid).

sunlight compared to those in southern Italy, a higher premium tariff is granted in these central-northern regions than in southern regions.[19]

Finally, restrictions on the criteria for sharing the premium tariff granted to the REC among its members have been defined in the Decree to align them with European State aid regulations. In particular, incentives that exceed the funding gap cannot be granted to small and medium-sized enterprises. The funding gap refers to the shortfall in financing required for a project that is not covered by market resources, such as equity or debt (i.e., the discounted sum of the expected future net revenues is insufficient to offset the initial investment expenditure). Therefore, State aid may be permissible up to this funding gap when the investment serves the public interest, as the market alone cannot support the investment expenditure. For RECs, the European Commission has defined this funding gap as equivalent to the incentives produced by shared energy that exceeds 45% or 55%, depending on the type of power plants and on the total energy fed into the grid by the power plants connected to the same primary substation.[20] Any incentives paid for shared energy surpassing the funding gap cannot be allocated to enterprises: such incentives would not only compensate for the funding gap, but they would represent an unjustified reward to enterprises.

As stipulated by the Decree, following the European Commission decision, incentives exceeding the funding gap cannot be given to enterprises. Each REC shall have to implement distribution criteria which avoid any attribution of incentives exceeding the funding gap to its members which are small and medium enterprises.

IV. THE MULTIPLE NOTIONS OF PROXIMITY TO RENEWABLE ENERGY PROJECTS USED BY THE ITALIAN EXISTING REGULATION

The definition of "Renewable Energy Community" contained in the RED II Directive states that the Renewable Energy Community is a legal entity which is "based on open and voluntary participation, is autonomous, and is effectively controlled by shareholders or members that are located in the proximity of the renewable energy projects that are owned and developed by that legal entity."[21]

In the RED II Directive, the concept of proximity is applied solely to identify controlling individuals and entities, with the expectation that they should be situated in the proximity of the renewable energy projects. This concept is presented in a generic manner by the European Union. Rather, the European Union authorities expected that any needed clarifications were to be integrated into the national implementing regulations, which were able to consider the particular local context of the respective member state.

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19. The increase in respect of the premium tariff granted in South Italy is 4 €/MWh for the Central regions (Lazio, Marche, Tuscany, Umbria, Abruzzo) and 10 €/MWh for the Northern regions (Emilia-Romagna, Friuli-Venezia Giulia, Liguria, Lombardy, Piedmont, Trentino-Alto Adige, Valle d'Aosta, and Veneto).

20. The percentage is reduced from 55% to 45% for plants already supported by an investment grant up to 40% of the investment (on the basis of a proportional reduction); plants already supported by an investment grant exceeding 40% of the investment are completely excluded.

21. RED II Directive, *supra* note 2, art. 2, para. 16(a).

The Italian rules introduced different concepts of proximity in the regulation of RECs, each for a different purpose, and the various concepts together generated significant complexity which may be challenging for RECs.

A. The Concept of Proximity as a Requirement to be a Member of a REC

RED II Directive utilizes the concept of proximity solely to determine which member of the REC can act as a controlling member, i.e., members which have governance powers in the REC. When referring generally to the members of a REC, the RED II Directive specifies that they may include "natural persons, SMEs, or local authorities, including municipalities" without mentioning any proximity requirement.[22] The necessity for a REC to be closely tied to a local area can be inferred from the RED II Directive's stipulation that control should be exercised by members of a specific local area, and from consideration n. 70, which states that "local involvement is all the more crucial in an environment of increasing renewable energy capacity."[23]

Nevertheless, RED II Directive leaves unresolved whether a proximity requirement exists for membership in a REC. This issue was left to national implementing regulations. Unfortunately, Italian implementing rules are ambiguous on this matter. Legislative Decree 199/2021 mentions that all end customers may be members of a REC but does not specify any proximity requirements except for controlling members (i.e., being in the administrative area of the municipalities where there are the production plants).[24]

The TIAD (the Guidelines issued by Arera — the Italian energy authority) indicates that shared (self-consumed) energy is only relevant when entities belong to the same market area without giving any clarification on the possible impact of this concept: "For the purposes of accessing the service for widespread self-consumption, in the case of a renewable energy community, all of the following conditions must be met: a) the entities forming part of the configuration are end customers and/or producers with connection points located in the same market area."[25]

The Operating Rules issued by GSE (the state-owned company that is subject to the Arera's guidelines) state that an individual or entity may be a member of a REC even if not a consumer or producer relevant for the self-consumption of electric energy.[26]

In conclusion, the issue remains unresolved. It is unclear whether any proximity criteria must be met to become a member of a REC in Italy, and, if such criteria exist, what they are. At the very least, it seems clear that all persons and entities of a specific Market Area may be a member of any REC included in such Market Area.[27]

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22. RED II Directive, *supra* note 2, art. 2, para. 16(a).

23. *Id.* para. 70.

24. *See* Decreto Legislativo 8 novembre 2021, n.199, art. 31, G.U. Nov. 30, 2021, n.285 (It.).

25. *See* TIAD, *supra* note 11, art. 3.2.

26. OPERATIONAL RULES, *supra* note 12, at 18.

27. The Market Areas or Zones are the different portion of the European energy market defined according to Regulation 2015/1222 of the European Commission of 24 July 2015 (*Capacity allocation and Congestion*

B. The Concept of Proximity to be a Controlling Member of a REC

The concept of the proximity to be a controlling member of a REC, which was left indeterminate by the RED II Directive, has been specified by the Legislative Decree 199/2021: the exercise of the controlling powers shall be carried out exclusively by natural persons and other eligible entities, which are located "in the territory of the same municipalities" in which the power plants relevant for the energy sharing are located.[28] It is not clear why the connection should be so strict: not all the municipalities of the interested local areas are relevant but only such municipalities where the renewable energy power plants are located. It is clear that little towns included in the same primary substation area are prevented to cooperate if, due to such rules, the members of a community with no plants did not have the same governance powers as the members of another community which have plants.

C. The Concept of Proximity to Share Self-Produced and Self-Consumed Electric Energy

In order to obtain economic incentives, the members of a REC should be members of the same local area, meaning that they have to be connected to the distribution grid through existing connection points belonging to the same primary substation of the distribution grid (except for small islands) as specified by art. 3, paragraph 2, of the Decree: "production plants and withdrawal points forming part of RECs are connected to the distribution network through connection points forming part of the area underlying the same primary cabin, without prejudice to the provisions for minor islands of Article 32(8)(e) of Legislative Decree No. 199 of 2021."[29] To be a member of a REC whose activity as a consumer or as a producer may yield any financial incentives, it is therefore necessary to be in same primary substation area of the distribution grid: this is a reasonable requirement because the primary substation area identifies, from a technical point of view, the relevant proximity of producers and consumers in the distribution grid and, in the same time, identifies a small area where there are local communities which may easily cooperate.

D. The Concept of Proximity to Identify the Areas Where a REC May Spend the Received Incentives

As discussed, there are limits to the use of the state incentives received by a REC due to European State aid rules. The Decree, however, not only indicated that such incentives should not be given to small and medium-sized enterprises, otherwise leaving RECs free to choose their use, but also specified the possible uses. Specifically, the incentives exceeding the funding gap should only be distributed to non-enterprises or, alternatively, be directed to territories (without any

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Management – CACM). The zonal configuration valid for the Italian territory has been reviewed by the Transmission System Operator and approved by Arera and, from 2021, in Italy there are seven Market Areas: North, Center- North, Center-South, South, Calabria, Sicily, and Sardinia).

28. *See* D.Lgs. n.199/2021, art. 31.

29. D.M. n.414/2023, art. 3, para. 2. The same principle is stated by the TIAD for the enhancement contribution.

other qualification) where the power plants are located: the concept of territories is mentioned in the Decree without any clue to understand its meaning.[30]

In essence, not only is there a spending restriction favoring the local area over distant or unrelated areas, but there is also a possible distinction among various sections within the local area. The criteria for this distinction remain vague, unlike those used to identify controlling members, which relate specifically to the municipalities' administrative zones. The controlling members should be resident in the municipalities' administrative zones where there are the production plants while the economic support by the RECS should be directed to territories where there are the production plants. Are these territories larger, equal to, or smaller than the municipalities' administrative zones? Why such an indeterminate concept has been used in such a relevant issue? And, above all, it is unclear why such additional limitation has been inserted when the request of the European authorities was just to prevent the distribution to enterprises.

E. An Examination of the Different Existing Concepts of Proximity

To summarize these different concepts of proximity:

> (i) it is unclear whether there are or not criteria of proximity to be a member of a REC and, of course, what such criteria are; in any case, all persons and entities of the relevant Market Area seem to meet the criteria to qualify as members;
> (ii) to qualify as a controlling member of a REC it is necessary to have the point of contact to the grid in the administrative area of the municipalities where there are the renewable energy power plants relevant for the virtual self-consumption of the members of the concerned REC;
> (iii) to qualify as a member whose self-production or self-consumption is relevant for the grant of the incentives it is necessary to have the interconnection point to the grid in the area of the same primary substation of the distribution grid;
> (iv) the incentives exceeding the funding gap, if used to give benefits to the local area, may be directed only to the (not otherwise qualified) territories where there are the renewable energy power plants.

All these different concepts of proximity may create practical problems and confusion:

> (i) the proximity area to be a member and the proximity area to be a controlling member are different;
> (ii) the areas of primary substations and of the administrative zones of the municipalities do not coincide (usually a primary substation covers portion of territories of different municipalities, and a municipality's administrative zone includes areas of different primary substations);

30. *Id.* annex 1.

(iii) there are seven Market Areas (North, Center- North, Center-South, South, Calabria, Sicily, Sardinia), and there are 2,107 primary substations distributed among all these Market Areas;
(iv) the territory of a municipality where the power plants are located is a well-defined administrative area, but the territory where the power plants are located (relevant to receive the support using the premium tariff exceeding the funding gap) is an imprecise and indeterminate concept.

Many problems arise out of these different concepts of proximity. For instance, by-laws of the RECs might need to establish at least two member categories: controlling and non-controlling members. However, not all legal types which RECs may adopt can accommodate such distinctions.

Moreover, members living only a few kilometers or even meters apart might receive different powers due to being in different municipal areas. If a primary substation serves multiple municipalities with power plants located in only some of them, members from municipalities without power plants cannot be controlling members of a REC, even if they are energy consumers in the same primary substation area. Such disparities seem unreasonable, yet existing laws offer no room for doubt.

With reference to the territories where the power plants are located (relevant to receive the support using the premium tariff exceeding the funding gap) two different interpretative options remain open and remains unclear which is the correct one:

(i) these territories could be the same as the areas relevant to qualify the controlling members (i.e., the administrative zones of the municipalities where there are the power plants);
(ii) alternatively, these territories could be broader, encompassing the entire area covered by the primary substation's distribution grid.

A REC may face tough choices between complying with legal requirements and addressing social and political needs within its operational area. It seems impractical to exclude nearby local communities, which fall under the same primary substation, from support due to a lack of power plants in these areas and, in any case, may make difficult the agreement between different municipalities and communities.

Combining these rules with other requirements about RECs presents significant challenges. During the drafting process of Italy's regulations for RECs, a straightforward solution appeared feasible. This would have involved defining a single area notion to identify members, controlling members, members relevant for self-production and self-consumption, and the territories benefiting from the support of the premium tariff exceeding the funding gap, namely the primary substation area. It is puzzling why this clear-cut solution has not been adopted, especially given the potential confusion linked to different proximity definitions. In alternative, the additional limitation of the territories which may receive the support of the RECs could be simply deleted, with further simplification.

As a result, the fragmented and plural concept of proximity has the potential to significantly impact the activity of RECs, without advancing any tangible public

or social objectives. Involving citizens more extensively in the regulatory process and paying greater attention to the practical issues of local communities could have contributed to drafting simpler regulations. Practically, this can still be achieved by amending the existing regulations to incorporate and apply the single, straightforward concept of the primary substation area for all relevant purposes while also eliminating unnecessary limitations on the beneficial activities of RECs.

V. THE PECULIAR NOTION OF CONTROL OF A REC ADOPTED BY THE ITALIAN LEGISLATION

The Italian legal framework recognizes various concepts of control, as defined by the Italian Civil Code and specific sectoral regulations such as banking law, listed company law, and antitrust law. Legal scholars have long tried to develop a unified notion of control but have not succeeded in establishing a consistent general definition.

Various concepts of control have a common feature: the authority to designate an entity's managers. Essentially, that feature of control is present when one or more individuals hold the right to appoint those who manage the entity.[31] Consequently, the true controllers are those who can select the majority of the entity's managers.

The 2024 Operational Rules introduced a specific concept of control, without relying on existing concepts from other sectors: "Control powers mean those powers that, according to the various configurations assumed by Renewable Energy Communities, are attributed to the eligible subjects in order to give directions ("indirizzi") to the Renewable Energy Communities, ensure the achievement of the statutory purpose and compliance with the relevant legal and regulatory framework."[32]

This definition is perplexing from a number of perspectives.

Firstly, the power of control by a member or a shareholder of an entity is typically exercised indirectly (by appointing managers or directors of the entity) rather than directly managing the operation of the entity through directions or directives. The definition, as it stands, appears to imply a direct exercise of control.

Secondly, unlike other concepts of control in Italian law, the definition does not mention the power to appoint managers.

Thirdly, the definition encompasses the notion of ensuring compliance with the pertinent legal and regulatory framework, which is a supervisory power typically delegated in Italy to a designated board of the entity. This supervisory board is usually distinct from managing board and is usually not considered relevant for

31. *See* Art. 2359 c.c. (It.); *See also* Decreto Legislativo 24 febbraio 1988, n.58, art.93, G.U. Mar. 26, 1998, n.71 (It.); For a general overview of the concept of control under Italian and European law, *see* G. Mollo & D. Montesano, *Il controllo societario nel Testo unico della finanza – Problemi e prospettive di riforma* [Corporate Control in the Consolidated Finance Act – Problems and Prospects for Reform], COMMISSIONE NAZIONALE PER E SOCIETÀ E LA BORSA (June 2015), https://www.consob.it/documents/11973/201676/qg8.pdf/228bc96a-b225-4c54-b1db-00b3f40da4fc.

32. OPERATIONAL RULES, *supra* note 12, at 18.

control analyses (i.e., the supervisory board may be appointed by non-controlling minorities).[33]

As a practical matter, it would be challenging to confer direct control powers to members of a REC, if this is the real intention of the provision. All possible REC legal types entail the establishment of a designating body (to which the members of the REC belong), a managing body, and a supervisory body. The designating body is responsible for appointing members to the managing and supervisory bodies, with the vote of the majority of its members. While the designating body may provide guidance on the conduct of management and supervision activities, it is not and should not be directly involved in the management and supervision of the entity.[34]

It appears likely that, in practice, legal practitioners will rely on the more commonly understood concept of control rather than the specific definition outlined in the Operating Rules. However, this divergence between the standard definition of control and the one applied to RECs might cause problems in drafting the by-laws of the RECs: to meet the GSE's regulatory requirements, it is possible that peculiar clauses could be inserted into the by-laws of the RECs. This option may be not so easily adopted: the RECs have to be established according to a pre-existing legal type (association, foundation, non-profit company, etc.), and a clause drafted according to the definition of the Operational Rules potentially deviates from the standard provisions of the chosen legal type.

VI. THE COMPLEX CRITERIA TO IDENTIFY PERSONS ELIGIBLE TO BE A CONTROLLING MEMBER OF A REC

The RED II Directive states that the possible members of a RECs are "natural persons, SMEs or local authorities, including municipalities" and that control is to be given to the ones located in the proximity of the power plants (renewable energy projects).[35] Some categories of possible members are obviously missing from this definition under the RED II Directive: for example, non-profit organizations (not for profit associations and foundations) and non-local authorities. The approach adopted by the RED II Directive of indicating certain categories of members without giving a clear general criterion leads to obvious uncertainties of interpretation about categories that are not included. The main uncertainty concerns whether the list is exhaustive, covering all possible members: does it suggest that entities not specifically listed are excluded from joining a REC, or is it possible to include additional entities not explicitly mentioned?

The Italian Legislative Decree, deeming the RED II Directive not binding on this point, changed the approach, specifically:

33. *See* Mollo & Montesano, *supra* note 30 (the core concept of control is identified in the power to appoint and remove the managers of a company).

34. The designating body typically consists of a significant number of citizens, small to medium-sized enterprises, and non-profit organizations. It is not able to continuously and professionally oversee the compliance of the managing body.

35. RED II Directive, *supra* note 2, art. 2, para. 16(b).

> (i) with reference to members of the RECs, it adopted a general criterion that all end customers of energy non expressly excluded may be a member;
> (ii) with reference to controlling members, it introduced a list, but the list is different from the list in the RED II Directive.[36]

The list specified by the Legislative Decree includes:

> natural persons, SMEs, associations having legal personality under private law, territorial bodies and local authorities, including municipal administrations, research and training bodies, religious bodies, third sector and environmental protection bodies, as well as local administrations included in the list of public administrations published by the National Institute of Statistics (ISTAT) in accordance with the provisions of Article 1, paragraph 3, of Law No. 196 of 31 December 2009, which are located in the territory of the same municipalities in which the renewable power plants are located.[37]

This definition introduces some complexities because the entities included in the list are identified on the basis of heterogeneous criteria. Some entities are identified by their legal type (e.g., associations having legal personality under private law) while others are identified by their functions or purpose (e.g., research and training bodies). In some cases, an entity may be identified by reference to another specific list compiled by the Italian National Institute of Statistics (i.e., the ISTAT list).

The rationale behind the inclusion and exclusion of specific types of entities is not readily apparent. Additionally, like with the shorter RED II Directive list, it is unclear whether the Legislative Decree list is exhaustive or not. For example, associations lacking legal personality and foundations are not specified in the list as a legal type: as a consequence, an association lacking legal personality or a foundation may be admitted as controlling member only if it may be included on the basis of other criteria (e.g., they are research bodies).

The use of a specific list just for controlling members under a possible interpretation would suggest that entities not expressly mentioned can be members of a REC but not controlling members. The existence of heterogenous criteria means that a foundation which is a research body may be a member and a controlling member, thanks to its specific purpose. All associations without legal personality seem to be precluded from being a controlling member if not included on the basis of other criteria used by the list. Likewise, a small and medium-sized enterprise constituted as a partnership, which has no legal personality, may be a controlling member. These overlapping and contradictory possibilities lead to increased complexity for RECs trying to navigate the legal landscape.

Moreover, an alternative interpretation has been proposed to address the issue: to exclude all entities not explicitly mentioned in the list from being members of a REC based on the interpretation that the possible members and the possible controlling members should be identical. In such a scenario, the exclusion would be entirely irrational: it would prevent entities not listed not only from becoming a controlling member of a REC but also from being a member and participating in

36. D.Lgs. n.199/2021, art. 31 (It.).

37. *Id.*

a REC. This would undermine the principle of equality, as there is no clear reason to discriminate between entities included and not included in the list, and it would contradict the purpose of RECs, which is to involve all local citizens and entities.[38]

As a result of this complexity, the bylaws of the RECs must carefully include or exclude the different entities. The most popular solution among legal practitioners is likely to be referring to the applicable rules and regulation in the bylaws without any further specification, accompanied with a guide to be given to managers of the RECs to distinguish between members and controlling members.

Navigating this complex set of rules is not the only check that a manager of a REC has to make. When an enterprise applies for admission, being only small-medium enterprises admitted, it must be checked whether or not it falls under the notion of small or medium-sized enterprises, and the rules adopted by the European Union for such a distinction are not always easy to interpret and apply.[39]

As a result, REC managers will likely need legal guidance to distinguish between controlling and non-controlling members and between eligible and ineligible members.

VII. THE CONCEPT OF RENEWABLE ENERGY POWER PLANTS THAT ARE NOT OWNED BY RECS BUT ARE FULLY AVAILABLE AND UNDER THE CONTROL OF RECS

The RED II Directive, when referring to the power plants which may be included in a REC (crucial for the purpose of self-production), mentions only "the renewable energy projects that are owned and developed by that legal entity."[40] The Legislative Decree inserted a wider concept for eligible power plants: "for the purposes of shared energy, only the production of renewable energy from plants that are available to and under the control of the community is relevant."[41] Therefore, the Legislative Decree envisions a wider concept of available power plants and power plants under the control of RECs, rather than the stricter concept of an owned power plant.

The Operational Rules state that a production plant is available to a REC when there is an agreement between the REC and the producer and from this agreement it can be inferred that the plant "is operated by the producer in compliance with the agreements defined with the community for the purposes of the renewable energy community and in compliance with the Operational Rules."[42]

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38. It has been mentioned as a possible solution to the issue by GSE, being the final solution still under scrutiny.

39. The definition is contained in Commission Recommendation of 6 May 2003 Concerning the Definition of Micro, Small and Medium-Sized Enterprises, 20023 O.J. (L 124) 36. To help users apply such a definition, a sixty-page guide has been published by the European Union. *See* EUR. COMM'N, USER GUIDE TO THE SME DEFINITION (2015), https://op.europa.eu/en/publication-detail/-/publication/79c0ce87-f4dc-11e6-8a35-01aa75ed71a1/language-en.

40. RED II Directive, *supra* note 2, art. 2, para. 16.

41. *See* D.Lgs. n.199/2021, art. 31 (It.).

42. OPERATIONAL RULES, *supra* note 12, at 18.

Furthermore, the Operational Rule states that the energy power plant under control of the REC is still operated by the producer and the produced electric energy is sold by the producer, not by the REC.[43]

Thus, ownership of the power production plants by the REC is not necessary under the Italian Legislative Degree: it suffices that the producer operates under agreements or directions from the REC. This is a significant deviation from RED II Directive, which required renewable energy projects to be owned and developed by the REC. Nonetheless, the European Commission, while evaluating the Decree in the light of State aid regulations, acknowledged this difference but did not express any concern.[44] From a policy standpoint, the Decree's approach aligns with the goals outlined in RED II Directive: it incentivizes members of a REC to invest in new renewable energy generation facilities, and it promotes self-production and self-consumption of new renewable energy.

The scope of the legal concept of plant "available to and under the control of the REC" is larger than the concept of plant owned but it is not so easy to understand its application, having two conflicting requirements: the energy production plant should be under the control of the RECs, but it should be still available to the producer and managed by it. Is it available to both the REC and the producer?

The idea of a renewable energy power plant being available and controlled by a REC for shared energy purposes is fully new, without any prior use in the Italian legal system. Therefore, lacking specific guidelines by Italian authorities on how to share the control and the availability of the production plant between the REC and the producer,[45] it is challenging to establish the minimum requirements necessary to confirm that a power plant falls under the control and availability of a REC so as to qualify for incentives. GSE promised to provide further clarification but has not done so at the time of this article's writing. Such clarification would significantly aid the RECs in ensuring compliance with this crucial aspect of their operations.

VIII. THE COMPLEXITY OF THE CRITERIA FOR THE DISTRIBUTION OF FINANCIAL INCENTIVES TO MEMBERS AND LOCAL COMMUNITIES

As we have already observed, the premium tariff (but not the enhancement contributions) has been considered a possible State aid under EU regulations, considering the fact that small and medium-size enterprises may be members of the REC and receive a distribution of such incentive.[46] According to the rules of the

43. *Id.* The previous Operational Rules (referring to a previous temporary regulation when RECs could be created only within the area of the secondary substations) had a significantly different provision: "*The renewable energy community must own or have full availability of the power production plants belonging to the configuration on the basis of a legal title (such as, for example, usufruct, free loan or other contractual title)*"

44. *See* Commission Decision No. 8086, *supra* note 14.

45. Many producers of a REC shall be citizen with solar plant on the roof of their house: such plant should be at the same time (i) available and managed by the owner of the house and (ii) under the control and available to the REC.

46. The enhancement contributions are a compensation for an avoided use of the transmission grid and are not a discretionary economic support.

European Commission, if the incentives exceed the funding gap, the small and medium enterprises members of a REC may be overcompensated.[47]

The result is that the economic incentives which a REC may receive are subject to three different kinds of rules, and there is difference not only in the mandatory criteria to be adopted but also in the eligible production plants.

The enhancement contributions (granted for the avoidance of grid losses) can be distributed to anyone (enterprises or persons which are not enterprises), and there are no mandatory criteria to be complied with. Nevertheless, the production plants relevant for the self-production are different from the ones relevant for the premium tariff (for the premium tariff, only small and new renewable energy power plants built after the date of entry into force of the Italian law and with a power lower than 1 Mgw may be eligible for the premium tariff; for enhancement contribution, also those older and larger than 1 Mgw may be also relevant).[48] Therefore, the sharing of this incentive may not be the same as the sharing of the premium tariff.

The premium tariff up to the funding gap (i.e., premium tariffs granted by the sharing of up to 55% of the electric energy fed to the grid by renewable energy power plants of the REC) may be granted to anyone; the perimeter of relevant production plants is different — as above specified — from the case of the enhancement contribution.

The premium tariff exceeding the funding gap (i.e., premium tariffs granted by the sharing of the electric energy exceeding the 55% of the electric energy fed to the grid by renewable energy power plants of the REC) may be granted only to consumers which are not small-medium enterprises or to territories with energy production power plants.

So, we have three different criteria to calculate the sharing of the incentives: one for the enhancement contribution, one for premium tariff up to the funding gap, and one for the premium tariff exceeding the funding gap.

The complexity of the overall regulatory framework and the associated burden on RECs are significant. The Operational Rules stipulate that RECs should maintain separate accounting for different incentives to demonstrate compliance with the rules, which introduces an additional administrative burden. Furthermore, it is challenging to draft internal rules of the REC that align with the objectives of RECs without exceeding State aid limits: to include small-medium enterprises and their production plants may be crucial for a REC (as they provide more electric energy to shared), but the strict limit to the reward which may be granted to the small-medium enterprises may discourage them from participating.

In addition, as previously discussed, the fact that the use of the premium tariffs exceeding the funding gap is restricted to territories where power plants are located is not a reasonable policy choice: the only requirement of EU authorities was not to grant such incentives to small-medium enterprises and additional limitation to its use is an unjustified interference with the legitimate activity of the

47. Overcompensation in favor of an enterprise is an illegitimate State aid. *See, e.g.,* Commission Communication on Community Framework for State Aid in the Form of Public Service Compensation, 2005 O.J. (C 297) 4, 7.

48. In any case not exceeding the 30% of the overall small new power plants of the REC.

REC. This limitation is completely unrelated to concerns about State aid, and it is hard to understand why a local community is not permitted to aid another nearby local community through its REC.

All of these challenges raise the question of whether these restrictions and complex regulations were genuinely necessary. According to EU State aids regulation, block exemption regulations may be issued pursuant to Article 101(3) of the Treaty on the Functioning of the European Union, specifying the conditions under which certain types of agreements are exempted from the prohibition of State aids. A block exemption for the agreements between small-medium enterprises and small-scale RECs (for example, those under a specific limit for annual incentives) could have served as an effective alternative, promoting the development of RECs and renewable energy production without significantly affecting competitive fairness within the European Union.

IX. THE POSSIBLE RESTRICTIONS ON COOPERATION WITH ENERGY PRODUCERS, ENERGY SELLERS, AND LARGE ENTERPRISES

Large enterprises, electric energy producers, and electric energy sellers cannot be members of a REC, but they can cooperate with a REC as third-party producers. The Operational Rules state that "producers who are not members or shareholders of the community may mandate the Contact Person to have the electricity fed in from their plants count as shared electricity. Such persons may also carry out as their main commercial or professional activity the production and exchange of electricity, considering that they do not belong to the community ("third party" producers)."[49]

Third-party producers can play a crucial role in the success of a REC. For instance, in a small town, the roof of a local supermarket could serve as the site for installing a solar power plant. However, since the supermarket is owned by a large corporation that cannot join the REC, forming an agreement with this corporation might be essential to ensure the community has sufficient self-produced electricity to share among its members.

The problem is how to remunerate such large enterprises or electric energy producers which are willing to share the energy produced by new power plants for the self-consumption of the members of the REC. As discussed, due to State aid rules, the Decree limited the possibility of giving support to enterprises which are members of the REC when the support exceeds the funding gap. It is unclear if such limitation also applies to producers which are external to the REC. If the limitation applies, then agreements with third party producers may infringe upon the provision *a posteriori*, both if they have a fixed remuneration or if they are remunerated as a percentage of the shared energy of such producer (for instance, if the energy fed in the grid by other relevant plants is lower than expected).

As a result, a safeguard clause will need to be inserted in the agreement with any third-party energy producers in order to reduce any compensation if, *ex post*, it may exceed the limits arising out of the State aid rules applicable to the REC.

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49. OPERATIONAL RULES, *supra* note 12, at 18-19.

The need for such a clause and the connected legal complexities may chill cooperation with such entities to the detriment of the RECs and its policy purpose of benefiting the environment.

X. CONCLUSION

The legal problems associated with the creation of a REC and the risks of breaching the complex rules that govern it are significant, and this article discusses only a sample of some of those problems.[50]

The complexity of these rules shows the clear intention of the Italian authorities to implement a detailed regime to deal with many different possible situations but may have caused the perverse result of making RED implementation difficult and costly.

The complexity of these legal problems is further exacerbated by the fact that the rules have been issued by different authorities (at least four different Italian authorities) and are based on different legal systems (Italian and European).

Moreover, the rules show the tension between the different policies followed by the European Union legislation: i.e., on one side, the EU policies in energy, climate change, and environment, and on the other side, the EU policy to prevent anti-competitive State aid to enterprises.[51] These objectives may conflict within certain regulatory sectors, including with RECs, leading to tension between and within the rules.

What lessons can we learn from these complex rules and regulations, and how can they be reformed to better facilitate RECs? Ultimately, once rules surpass a certain level of complexity, inconsistencies, gaps, and ambiguities become unavoidable. Rules are necessarily complex when several different situations need to be treated in appropriately different ways. Greater complexity thus allows better control of all relevant situations. But learning and applying complex rules has costs, both *ex ante* (in terms of the cost of advice) and *ex post* (in terms of possible penalties for even unintentional non-compliance), and complexity may discourage people from learning the rules (thereby increasing the risk of breaking them) or from engaging in activities governed by complex rules (thereby losing potential benefits to themselves and the community).

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50. For additional problems and open issues, *see* Emanuele Cusa, *Studio n. 38-2024/i – Le incentivate comunità energetiche rinnovabili e il loro atto costitutivo*, CONSIGLIO NAZIONALE DEL NOTARIATO (Mar. 25, 2024), https://notariato.infinity.it/wp-content/uploads/Studio38-2024Iec.pdf.; *See also* Francesca Dealessi et al., *Comunità energetiche rinnovabili. alcuni profili problematici: nozione di p.m.i., rapporto di mandato e natura imprenditoriale*, 22 RIVISTA DI DIRITTO DELL'ECONOMIA, DEI TRASPORTI E DELL'AMBIENTE 267 (2024).

51. *Compare Energy, Climate change, Environment*, EUR. COMM'N, https://commission.europa.eu/energy-climate-change-environment_en (last visited Feb. 15, 20250) ("EU policy protects the environment and seeks to minimize risks to climate, human health and biodiversity. The European Green Deal aims to make Europe the world's first climate-neutral continent.") *with State aid*, EUR. COMM'N, https://competition-policy.ec.europa.eu/state-aid_en (last visited Feb. 15, 2025) ("A company that receives government support gains an advantage over its competitors. Therefore, the Treaty generally prohibits State aid unless it is justified by reasons of general economic development. To ensure that this prohibition is respected, and exemptions are applied equally across the European Union, the European Commission is in charge of ensuring that State aid complies with EU rules.").

Generally, rules should be drafted to balance the conflicting values of the benefits of a very detailed and appropriate regulation against the deterrent effects of complexity. Legislators and policymakers should aim to reach an optimal point in all areas of legislation.

In the area of RECs, if the aim was to encourage a bottom-up process, the balance should have been in favor of simplicity at the cost of disregarding or deemphasizing some other principle of law (so, for example, avoiding the application of State aid rules, streamlining the very fragmented regulation of different types of proximity, or reconsidering the detailed specification of the requirements for being a member and a controlling member). The low profitability of RECs should have been an additional reason to look for an optimal point towards regulatory simplicity, considering the fact that many RECs do not have the resources to tackle the complexities of the applicable rules.

However, choosing a simpler solution has been prevented by the need to comply with EU State aids rules and by the will of the Italian authorities to draft a detailed Italian regulation of the RECs and of their operations. Complexity tends to discourage the initiative of local communities and to benefit top-down, turnkey solutions offered by large energy companies, thereby reducing the independence and awareness of local communities who cannot rely on their own creativity to develop models tailored to their needs. However, strong backing from non-profit organizations and cooperative associations, and an information office established by the GSE for local authorities,[52] offers a possible mitigation opportunity to this complexity problem because they assist local communities in establishing RECs by providing free guidance and information. Even with these mitigating efforts, the complexities and difficulties remain huge. The repeal of unnecessary laws or regulations that unreasonably hinder the free initiative of citizens and enterprises has been a topic of discussion in Italy for several years. However, this objective remains largely unrealized. In promoting local communities, simplicity should be a critical goal, particularly regarding RECs. Achieving this goal was feasible by adopting a unified concept of proximity, establishing straightforward eligibility criteria for members and production plants, and not applying EU State aid rules. This required the involvement of fewer authorities, improved coordination between Italian and European authorities, and a less bureaucratic regulatory approach. There is an urgent need not only to amend RECs' regulation promptly but also to revise a regulatory process whose outcomes fall short of initial expectations and intentions.

52. In addition to detailed information on the website of the GSE and to an extensive information campaign organized by the GSE.

RENEWABLE ENERGY INSTALLATIONS AS COLLATERAL FOR COMMUNITY ENERGY PROJECTS

Björn Hoops[*] *& Elsabé van der Sijde*[**]

Synopsis: Energy communities develop mostly small-scale renewable energy projects, frequently on the land or roofs of other people. In financing these projects, the energy communities need inexpensive legal means to retain ownership of the renewable energy installation and to create a real security right in the installation for their lender. Relying upon solar panels on roofs of other people as a case study, this contribution comparatively examines the legal obstacles and costs involved for energy communities to achieve these goals in Germany, Italy, the Netherlands, and South Africa. This contribution shows that Dutch and Italian law generally bind the building and the solar panels together under the doctrine of accession. These legal systems require the creation of a right of superficies, which gives rise to costs for a legal professional, the civil-law notary, but tends to lower the interest rate for the community's loan. By contrast, German law will allow the energy community to deactivate the accession of solar panels by agreement, leading to lower costs for legal professionals but also potentially higher interest rates. South African law remains in a state of flux. This contribution argues that while small-scale energy projects will generally be at an economic disadvantage vis-à-vis large-scale projects, the route towards lower transaction costs for energy communities is not straightforward because it depends on the individual case whether lower costs for legal professionals will outweigh higher interest rates.

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* Professor of Private Law and Sustainability, University of Groningen. From April 2022 to March 2024, Björn Hoops 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. Email: b.hoops@rug.nl.

** Lawyer at the Law Commission of England and Wales and Fellow at the Department of Public Law, Stellenbosch University. Email: elsabevds@sun.ac.za. The authors would like to thank Prof Reghard Brits for helpful comments on an earlier draft.

I. INTRODUCTION

To decarbonize our economies and societies, we need an enormous amount of renewable energy. Communities of citizens that together produce renewable energy can facilitate and make a substantial contribution to this energy transition. Unlike the current system of energy supply with large-scale power plants that burn fossil fuels, such energy communities can support a decentralized and local transition because biomass energy generators, solar panels, and wind turbines can be installed at a smaller scale in many different places.[1] By participating in such small-scale energy projects, these communities make additional private capital available, increase the local acceptance of renewable energy projects, such as solar roofs and windfarms, and support local community building and economic development.[2] As energy poverty rages in both the Global North and the Global South, such communities are expected to provide more affordable energy to vulnerable citizens.[3]

Stressing their importance to the energy transition, the European Union (EU) recently recognized "citizen energy communities" under the Internal Electricity Market Directive (2019/944) and "renewable energy communities under" the Renewable Energy Directive (2018/2001). In South Africa, there is no such legislation, but recently there have been announcements of a significant expansion of

1. Stephanie Lenhart et al., *Comparing and Contrasting the Institutional Relationships, Regulatory Frameworks, and Energy System Governance of European and U.S. Electric Cooperatives*, *in* ROUTLEDGE HANDBOOK OF ENERGY DEMOCRACY 34, 34-35 (Andrea M. Feldpausch-Parker et al. eds., 2021).

2. *See*, *e.g.*, Anne-Lorène Vernay et al., *Energy community business models and their impact on the energy transition: Lessons learnt from France*, ENERGY POL'Y, Feb. 28, 2023, at 1-2; Valeria Jana Schwanitz et al., *Statistical evidence for the contribution of citizen-led initiatives and projects to the energy transition in Europe*, SCI. REPS., Mar. 2, 2023, at 7; Fleur Goedkoop & Patrick Devine-Wright, *Partnership or placation? The role of trust and justice in the shared ownership of renewable energy projects*, 17 ENERGY RES. & SOC. SCI. 135, 135-137 (2016).

3. *See generally* Romaric Duvignau et al., *Benefits of small-size communities for continuous cost-optimization in peer-to-peer energy sharing*, APPLIED ENERGY, Aug. 5, 2021.

renewable energy generation.[4] Already in 2023, the Department for Human Settlement announced a new policy change that all new subsidized housing will be provided with solar panels.[5] Also, there is the CHOICES project for community-driven electrification,[6] and at the provincial level, there are renewable energy independent power producers procurement and generation investment programmes.[7]

The EU Directives on energy communities compel Member States to remove unjustified obstacles to their flourishing.[8] When it comes to unjustified obstacles in the legal realm, the focus is often on restrictions and gaps in public energy regulation, such as the absence of the right for communities to share energy.[9] This contribution discusses a distinct issue: how private law obstructs the flourishing of energy communities. As all operators of small-scale energy projects, energy communities have a natural economic disadvantage compared to large-scale energy plants. They generally display lower returns and higher costs per generated energy unit because the overhead and transaction costs they incur are distributed over a lower amount of generated energy.[10]

In addition to this economic disadvantage, the small-scale nature of these energy projects may give rise to a distinctly private-law disadvantage. Energy communities often make use of land that does not belong to the community as a whole, especially for wind turbines on farmland and solar energy (PV) projects on farmland or roofs. In civil-law jurisdictions and those whose property law has been inspired by them, the so-called doctrine of accession may dictate that the owner of the land also owns the renewable energy installation.[11] This requires the energy community to incur additional transaction costs for notarial deeds or other legal

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4. Thabo Maeko, *Minister pursues renewable energy*, BUS. DAY 2 (July 9, 2024), https://bd.pressreader.com/article/281586655811507.

5. Even prior to this national policy, municipalities were providing free solar systems to some indigent households, with around 113,200 such households on record in 2019. *See* Blessings Masuku, *Rethinking South Africa's household energy poverty through the lens of off-grid energy transition*, 41 DEV. S. AFR. 467, 475-76 (2024). This follows from earlier national policies to provide solar water heaters in informal housing settlements. *See generally* Peta Wolpe & Yachika Reddy, *Urban energy poverty. South Africa's policy response to the challenge*, *in* ENERGY POVERTY AND VULNERABILITY: A GLOBAL PERSPECTIVE (Neil Simcock et al. eds., 2018).

6. *See generally CHOICES: Community Energy in South Africa*, INT'L INST. FOR ENV'T & DEV., https://www.iied.org/choices-community-energy-south-africa (last visited Feb. 10, 2025).

7. *See Independent Power Producer Procurement Programme*, MINERAL RES. & ENERGY REPUBLIC OF S. AFR, https://www.ipp-projects.co.za/Home/About (last visited Feb. 3, 2025); *Embedded Generation Investment Programme (EGIP)*, DBSA, https://www.dbsa.org/projects/embedded-generation-investment-programme-egip (last visited Feb. 3, 2025).

8. Directive 2019/944, of the European Parliament and of the Council of 5 June 2019 on Common Rules for the Internal Market for Electricity and Amending Directive 2012/27/EU, art. 16, art. 59 para. 1(z), 2019 O.J. (L 158) 125, 151-152, 182; Directive 2018/2001, of the European Parliament and of the Council of 11 December 2018 on the Promotion of the Use of Energy from Renewable Sources, art. 22, 2018 O.J. (L 328) 28, 121-122.

9. *See*, *e.g.*, Joshua Roberts, *Power to the people? Implications of the Clean Energy Package for the role of community ownership in Europe's energy transition*, 29 RECIEL 232 (2020); Enrico Giarmanà, *Managing Renewable Electricity within Collective Self-Consumption Schemes: A Systematic Private Law Approach*, RENEWABLE & SUSTAINABLE ENERGY REV., Oct. 16, 2023, at 4-5.

10. Jens Lowitzsch & Florian Hauke, *Renewable Energy Cooperatives*, *in* ENERGY TRANSITION, FINANCING CONSUMER CO-OWNERSHIP IN RENEWABLES 150 (Jens Lowitzsch ed., 1st ed. 2019).

11. SJEF VAN ERP & BRAM AKKERMANS, CASES, MATERIALS AND TEXT ON PROPERTY LAW 618-659 (2012); Hendrik Ploeger et al., *Circular economy and real estate: the legal (im)possibilities of operational lease*, 37 FACILITIES 653, 654 (2019).

documents to ensure the energy community retains control of the renewable energy installation and can use it as collateral for loans. This is particularly important in the case of the landowner's bankruptcy. In the worst-case scenario, the energy community would have no guarantee of controlling the renewable energy installation and/or not be able to use it as collateral, rendering the project financially and practically infeasible. Put together, these disadvantages increase the already high transaction costs of the energy communities. Large-scale energy projects, by contrast, do not suffer from the same disadvantages. They are more likely to be located on the land of the operator, can distribute higher transaction costs over more energy units, or the operator is more likely to be able to provide other forms of security.

Private property law currently imposes the unity of the ownership of the land and of objects directly or indirectly attached to it, but the energy transition in practice requires a fragmentation of these rights. This contribution comparatively examines Dutch, German, Italian, and South African law to determine where the energy community would lose ownership of the renewable energy installation when it is directly or through a building attached to another person's land, using solar panels on roofs as a case study. An examination of property rights in solar panels is particularly urgent because the ratio of transaction costs and the value of PV projects is generally higher than with other renewable energy installation. Moreover, there are different types of solar panels — (1) integrated into the façade/roof or (2) not integrated — that may be subject to different regimes. The chosen jurisdictions all foresee the doctrine of accession but choose different avenues — with Dutch law being the strictest, South African and Italian law offering a viable way out, and German law providing for an exception to accession. The comparison also has great practical value as in all these jurisdictions the energy transition is underway or at least urgently needed. In all of them, but in particular in South Africa, small-scale energy projects would be a tool to alleviate energy poverty.[12]

In jurisdictions where the renewable energy installation would belong to the landowner, this article then investigates whether and, if so, how and at what cost the energy community could retain control of it and/or use it as collateral. Finally, based on current law and scholarly debates in the examined jurisdictions, it discusses the reasons for relaxing the doctrine of accession in stricter jurisdictions to lower the transaction costs involved in the energy transition. Overall, this contribution provides a legal toolbox for ensuring the fragmentation of rights[13] that small-scale renewable energy projects need.

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12. *Cf. GOAL OF THE MONTH – Goal 7: Affordable and Clean Energy*, U.N. SUSTAINABLE DEV. GOALS (Jan. 2025), https://www.un.org/sustainabledevelopment/goal-of-the-month-goal-7-affordable-and-clean-energy-4/#:~:text=Sustainable%20Development%20Goal%207%20is,%2C%20communications%2C%20business%20and%20agriculture; Directive 2019/944, *supra* note 8, paras. 43, 59-60; Directive 2018/2001, *supra* note 8, para. 67.

13. *Cf.* Björn Hoops, *Property and the energy transition*, *in* A RESEARCH AGENDA FOR PROPERTY LAW 145, 147-48 (Bram Akkermans ed., 2024).

The remainder of this contribution is structured as follows. Section II sketches how community energy projects are financed in practice, with a focus on Germany because it has the greatest community energy sector in the EU and therefore has the most available information.[14] Section III sets out the comparative-law questions answered in this contribution. Section IV addresses the accession of solar panels in the Netherlands. Section V deals with the accession of solar panels under German law. Section VI reviews the rules on the accession of solar panels in Italy. Section VII addresses the accession of solar panels under South African law. Section VIII presents a comparison of the examined rules and a discussion of reform proposals. Section IX concludes this contribution.

II. FINANCING COMMUNITY ENERGY PROJECTS

The German community energy sector is the largest in the EU, and the financing of community energy projects in Germany is fairly well researched. Based on the available literature and empirical research, this section outlines the financing mechanisms for community energy projects to indicate the place of renewable energy installations as collateral.

Citizens who directly participate in the energy community, non-affiliated citizens, local authorities, energy suppliers, and institutional lenders play a major role in financing community energy projects in Germany. Members of the energy community provide funds by purchasing shares in cooperatives, which is the most common legal form among German energy communities[15] or other legal persons.[16] In most cooperatives, members are private citizens, but local authorities and companies may also provide equity through membership.[17] Energy suppliers may become members of a cooperative as well, but cooperatives tend to engage in a limited partnership (*GmbH & Co. KG*) with energy suppliers to protect the cooperative from the financial risks of larger projects and the influence of energy suppliers.[18] Members and partners directly participate in the profits of the energy community through a dividend or another form of disbursement. Many energy

14. *See e.g.*, AURA CARAMIZARU & ANDREAS UIHLEIN, ENERGY COMMUNITIES: AN OVERVIEW OF ENERGY AND SOCIAL INNOVATION 5 (2020).

15. *Bundesgeschäftsstelle Energiegenossenschaften* [*Federal Office of Energy Cooperatives*], DGRV, https://www.dgrv.de/bundesgeschaftsstelle-energiegenossenschaften/#:~:text=Die%20877%20Energiegenossenschaften%20stehen%20mit,die%20breite%20Akzeptanz%20der%20Energiewende (last visited Feb. 13, 2025).

16. Lowitzsch & Hauke, *supra* note 10, at 149; Özgür Yildiz, *Financing renewable energy infrastructures via financial citizen participation - The case of Germany*, 68 RENEWABLE ENERGY 677, 680-681 (2014).

17. Thomas Meister et al., *How municipalities support energy cooperatives: survey results from Germany and Switzerland*, ENERGY SUSTAINABILITY & SOC'Y, Mar. 18, 2020, at 2-3.

18. Rosa Fernandez, *Community Renewable Energy Projects: The Future of the Sustainable Energy Transition?*, 56 INT'L SPECTATOR 87, 96 (2021) (Due to the costs of the wind turbine, such limited partnerships are particularly common in the wind sector).

communities raise money from members and non-members alike through borrowed capital such as bearer bonds, savings certificates, and subordinated loans, which guarantee a percentage of the invested capital as return.[19]

Institutional lenders play a less prominent role here than in other sectors. Energy communities still take out loans, but mostly from cooperative banks and often in the form of subsidized loans.[20] Public authorities, such as municipalities, help create favourable conditions through guarantees and subsidies as well.[21]

To build on this literature, author Hoops has conducted empirical research on, amongst others, the financing of energy community projects.[22] Groups of citizens who together produce renewable energy in Germany were requested to fill in a questionnaire on, among other aspects, their activities, internal organization, and sources of funding. The questionnaire was available online for five months, from April to August 2023, and distributed throughout the networks of several regional associations of cooperatives and national stakeholders. 178 responses were received. After the data was cleaned to eliminate substantially incomplete or otherwise unusable responses, 127 responses were used for the statistical analysis. The descriptive statistics tools and correlation analysis tools of SPSS 28 have been applied to the data.

Respondents indicated the average share of four sources in financing their community energy projects: reserves of the community, capital increases, loans from institutional lenders, and subordinated loans. The responses are as follows.

19. Lars Holstenkamp, *Community Energy in Germany: From Technology Pioneers to Professionalisation under Uncertainty*, *in* RENEWABLE ENERGY COMMUNITIES AND THE LOW CARBON ENERGY TRANSITION IN EUROPE 127 (Frans H.J.M. Coenen & Thomas Hoppe eds., 2021).

20. Stephen Hall et al., *Financing the civic energy sector: How financial institutions affect ownership models in Germany and the United Kingdom*, 12 ENERGY RSCH. & SOC. SCI. 5, 11 (2016); Yildiz, *supra* note 16, at 680-81.

21. Meister et al., *supra* note 17, at 10; Lowitzsch & Hauke, *supra* note 10, at 149.

22. For a comprehensive analysis of the data, *see* Björn Hoops, *Internal Organisation of German Energy Cooperatives: An Analysis of 570 Statutes*, UNIV. OF GRONINGEN (Nov. 9, 2023), https://pure.rug.nl/ws/portalfiles/portal/921213955/Analysis_and_data_statutes_of_German_cooperatives_full_text.pdf.

Table 1: Average Share of a Source of Money in Project Finance (Own Design).

Source of Finance	Average Share in Project Finance (in %)	Standard Deviation (in Percentage Points)
Reserves of the Community	22.65	26.193
Capital Increases	31.66	31.153
Loan from Banks or Other Institutional Lenders	31.29	32.648
Subordinated Loans	14.39	22.689

The average figures show a slight dominance of equity in project finance and a backseat role for institutional lenders. The stark standard deviations indicate disparities among the respondents. Remarkable findings confirm these disparities. 50 out of 127 respondents (39.4%) finance their projects without resort to loans from institutionalized lenders. Seventy-five (59.1%) finance their projects without resort to subordinated loans from members. The type and size of the project and, connected to this factor, the required investment seem to explain these disparities. While the share of bank loans in project finance is substantially and significantly negatively correlated with PV projects,[23] the share of subordinated loans in financing PV projects is significantly higher than with other types of projects.[24] By contrast, the share of bank loans in financing heating[25] or wind[26] projects is significantly higher than with other types of projects. Hydropower projects are less likely to use subordinated loans than other types of projects.[27] The size and price of the heating, hydropower, and wind projects may be behind these correlations. The more renewable energy capacity a respondent has, the less likely it is for the respondent to rely on equity[28] and the more likely they are to rely on loans from institutional lenders.[29]

One of the reasons energy communities and, at least, commercial institutional lenders do little business with each other is the required security. Security rights in shares of a legal person that owns the installations may be ruled out by law or

23. Spearman correlation coefficient -0.482, p=0.99.
24. Spearman correlation coefficient 0.23, p=0.99.
25. Spearman correlation coefficient 0.3, p=0.99.
26. Spearman correlation coefficient 0.206, p=0.99.
27. Spearman correlation coefficient -0.202, p=0.95.
28. Spearman correlation coefficient -0.187, p=0.95.
29. Spearman correlation coefficient 0.28, p=0.99.

lead to additional transaction costs for creating a legal vehicle for this particular purpose.[30] Revenue streams could be assigned to the lender, but only with difficulties. If the energy community acts as an energy supplier or rents out their renewable energy installation to the inhabitants of a building, the revenue may, depending on the contract with the inhabitants, be uncertain due to fluctuating amounts of generated energy and/or energy prices. If the energy community feeds the electricity into the public grid, guaranteed feed-in tariffs, if any, give a little certainty but are increasingly insufficient to cover the loans. By contrast, security rights in land or the renewable energy installations such as a hypothec or a pledge, which are *in-rem* security rights in immovable or, respectively, movable property in civil-law jurisdictions, can play an important role in project finance because they represent enduring value and, if the loan is secured by a hypothec, allow for lower interest rates.[31] From this angle, biomass and hydropower projects are less problematic for project finance because they tend to be carried out on the property of the energy community or at least on the property of one of the members, such as a farmer or municipality.[32] Solar and wind projects are more problematic because they are more often located on the property of a third party because the community does not own a suitable location of a suitable size. It is essential that it should be both possible and inexpensive to create security rights in such projects to help energy communities access the resources of commercial institutional lenders.

III. COMPARATIVE QUESTIONS

For a comparative examination, the discussion of each jurisdiction must answer the same societal questions.[33] The first question is whether the owner of the land automatically becomes the owner of the solar panels once they are attached to the land or roof. Ownership is a term specific to civil-law jurisdictions and those whose property law is inspired by civil law,[34] but this is not problematic as all examined jurisdictions recognize a similar concept of ownership, even if the detailed rules on ownership may differ slightly. Ownership also entails the power to create security rights in the owned object. If the landowner is also owner of the solar panels, the energy community will lose control of them and not be able to

30. *See* Gesetz betreffend die Erwerbs- und Wirtschaftsgenossenschaften [Genossenschaftsgesetz] [GenG] [Cooperative Act] Oct. 16, 2006, BGBL I at 2230, §§ 22, 76, last amended by Gesetz, Oct. 23, 2024, BGBL I at 323, art. 22 (Ger.) https://www.gesetze-im-internet.de/geng/GenG.pdf; Art. 2:34 BW (Neth.); Art. 3:228 BW (Neth.).

31. Under the Basel Accords, banks have to maintain less equity relative to the value of the loan if the loan is secured by a hypothec or other security right in immovable property. This enables banks to charge a lower interest rate.

32. Depending upon the jurisdiction, municipalities and other public bodies own or tend to own plots along rivers. Biomass facilities can be connected with a farming business and have a less significant impact upon the environment than wind turbines.

33. MATHIAS SIEMS, COMPARATIVE LAW 13 (2014).

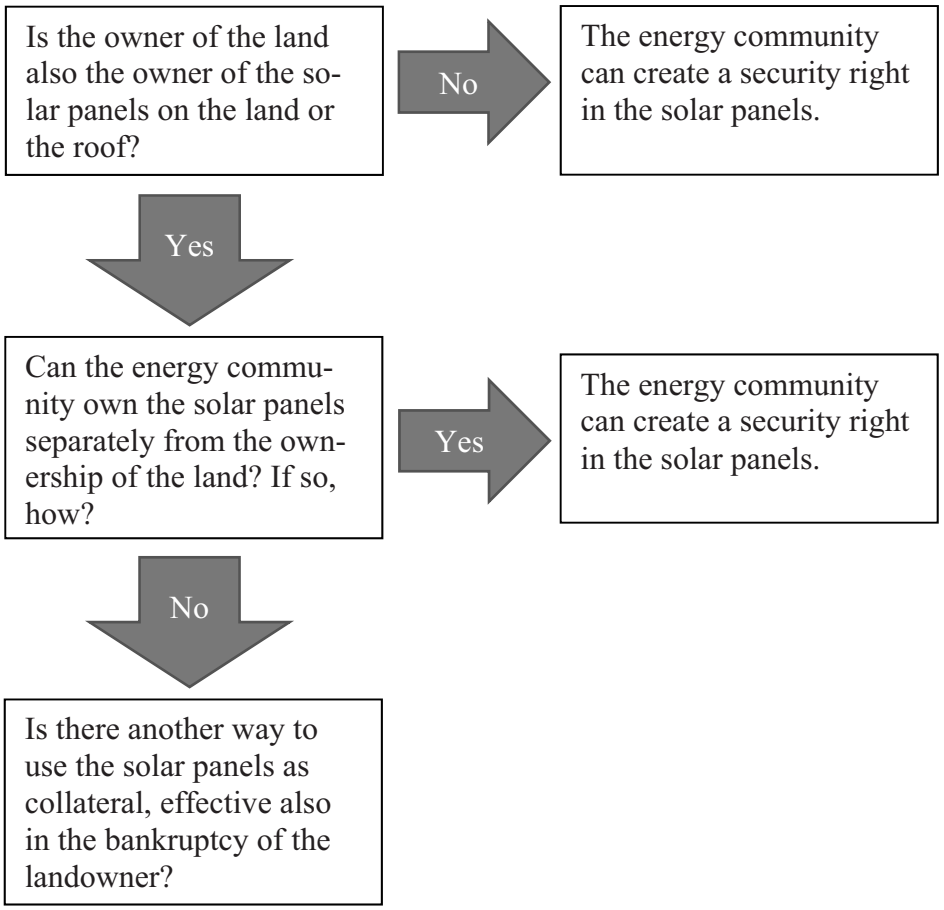
34. VAN ERP & AKKERMANS, *supra* note 11, at 306 (South Africa is a mixed jurisdiction (meaning it has elements of both civil law and common law), but its property law system closely resembles that of a civil law jurisdiction).

create a security right in the solar panels. If the landowner is not owner of the solar panels, the energy community will retain control of them and be able to create a security right.

If the law binds the solar panels and the land together, the community would have to legally separate the ownership of the solar panels from the landownership in order to retain control of the solar panels and be able to create a security right in them.[35] The second question therefore is how, if at all, the energy community can achieve this goal. If there is no such option, the last question is whether there is another legal instrument pertaining to the solar panels that would ensure the community's control of the solar panels and protect their lender's interests in the landowner's bankruptcy.

The following chart summarizes the questions:

Figure 1: The Comparative Questions (Own Design).



35. *Cf.* Ploeger et al., *supra* note 11, at 658-59.

IV. THE NETHERLANDS

The landowner in the Netherlands owns not only the land but also, amongst other objects, the buildings and plants on the land. However, the exact boundaries of landownership remain unclear.

Since the introduction of the new Dutch Civil Code (*Burgerlijk wetboek*; BW) in 1992, a lively debate has ensued about what objects are regarded as forming one unit with the land for the purposes of property law. Dutch courts tend to expand the boundaries of landownership, interpreting the Dutch rules on the components of a thing (*bestanddeelvorming*) and vertical accession (*verticale natrekking*) widely.[36] For instance, in a notorious 1997 judgment, the Dutch Supreme Court (*Hoge Raad*) ruled that an easily removable portacabin that was only connected to the soil through tubes and cables fell under the landownership.[37] Refer to sub-section VIII.A below for a discussion of the goals of these two legal figures.

This expansive interpretation of the rules on accession, which is used here as an overarching term to refer to both legal figures together, poses an obstacle to new business models in the energy transition. This obstacle not only faces energy communities or other entities using land or roofs not owned by themselves but also homeowners who have to take out a loan for the solar panels or for whom it is more affordable to rent instead of owning the solar panels on their roofs. If the landowner automatically becomes owner of the solar panels when the panels are put on the roof, the energy community, the lessor of solar panels, or the lender will lose their security. Further legal steps would be required to ensure that the parties can use the solar panels as collateral and are protected in case the landowner goes bankrupt.

Sub-section IV.A sets out the *status quo* of accession under Dutch law. Where the landowner becomes owner of the solar panels, it may be an option for the energy community to become owner of the solar panels through a right of superficies (*opstalrecht*). Sub-section IV.B examines the extent to which the parties can create a right of superficies with respect to the solar panels. Sub-section IV.C points to some alternatives to the right of superficies that have been developed in legal practice.

A. Accession: The Status Quo

The Dutch rules on accession provide two mechanisms whereby the landowner can also become owner of other objects. The first mechanism is laid down in Art. 3:4 and Art. 5:3 BW, which read as follows in English:[38]

> Art. 3:4 BW
> (1) A component of a thing is anything commonly considered to form part of that thing.
> (2) A thing attached to a principal thing in such a manner that it cannot be separated therefrom without substantial damage to either, is a component of that thing.
> Art. 5:3 BW

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36. B. Hoops, *Een rechtseconomisch perspectief op natrekking in de energietransitie en de transitie naar de circulaire economie*, 41 NTBR 298, 300-01 (2020).

37. HR 31 Oktober 1997, ECLI:NL:HR:1997:ZC2478 (Neth.).

38. *Translated in* HANS C.S. WARENDORF ET AL., THE CIVIL CODE OF THE NETHERLANDS (2d ed. 2013).

> To the extent that the law does not provide otherwise, the owner of a thing is owner of all its component parts.

Through this first mechanism, objects attached to a building or another work on the land can become component parts of that building according to Art. 3:4 BW. As the landowner owns that building or work, s/he would own that object as a component part of the building under Art. 5:3 BW because a component part of the building the attached object itself loses its identity and ceases to exist in property law.[39]

Even where the landowner does not become owner through the first mechanism, their landownership may include an object through the second mechanism, vertical accession. Article 5:20(1) lit. e BW and Art. 3:3(1) BW govern this mechanism and read as follows in English:

> Art. 3:3(1) BW:
> The following are immovable: land, unextracted minerals, plants growing on land, buildings, and work durably united with land, either directly or by incorporation with other buildings or works.

> Art. 5:20(1) lit. e BW:
> The ownership of land includes: . . . buildings and works forming a permanent part of the land, either directly or through incorporation with other buildings or works, to the extent that they are not part of an immovable thing of another person.

The second mechanism labels buildings and works that are durably united with the land or with a building or work on the land, as immovable, according to Art. 3:3(1) BW. Under Art. 5:20(1) lit. e BW, the landowner, in principle, owns all immovable things on their land.

In order for the landowner to become owner of the solar panels, only one of the two mechanisms would have to kick in.[40] Solar panels that are integrated into the façade or roof could be component parts of the building under Art. 3:4(2) BW and thus belong to the landowner. Generally speaking, integrated solar panels can only be removed from the roof with substantial damage to either the building or the panels. However, many integrated solar panels in Dutch practice are made from light materials and can be removed easily.[41] The question would then be whether the integrated solar panels are commonly considered to form part of the building. In 1991, the Dutch Supreme Court gave two criteria for assessing whether a machine used for industrial purposes and attached to cables and tubes in a factory formed part of the building.[42] The Supreme Court held that if the factory were considered incomplete and unfit to serve its purpose without the machine, there would be a strong indication that the machine formed part of the factory. Also, if the machine has been tailored to serve or fit in the factory, the machine is very likely to be a component of the factory. Integrated solar panels are

39. S.E. BARTELS & A.I.M. VAN MIERLO, ASSER 3-IV: ALGEMEEN GOEDERENRECHT 65, 88-93 (17th ed. 2022).

40. S.E. BARTELS & A.A. VAN VELTEN, ASSER 5: EIGENDOM EN BEPERKTE RECHTEN 84 (16th ed. 2017).

41. EMIEL VAN SAMBEEK ET AL., FINANCIERBAARHEID VAN INNOVATIEVE ZON-PV CONCEPTEN (2021).

42. HR 15 November 1991, ECLI:NL:HR:1991:ZC0412, para. 3.7 (Neth.); *see also* HR 28 Juni 1996, ECLI:NL:HR:1996:ZC2116 (Neth.).

very likely to be components of the building under either criterion. As they serve as roof tiles or part of the façade, their removal would leave a hole in the building's roof or façade. A house, to name a practical example, with holes in the roof cannot serve as a home. For this reason, the house would be considered incomplete without the integrated solar panels. Also, integrated solar panels must be tailored to the specific type of roof or façade. All this strongly indicates that integrated solar panels are components of the house. The Amsterdam Court of Appeal came to the same conclusion in 2018.[43] The energy community would thus lose their ownership and face legal obstacles to securing their position.

Non-integrated solar panels, by contrast, are not components.[44] They can be installed on every roof and can be easily removed. Moreover, a building without solar panels is still considered complete as long as it is connected to the electricity grid. Note, however, that this may change should the generation and supply of electricity become totally decentralized. Future public regulations that require solar panels on the roof in order for the owner of a building to meet energy efficiency standards, may also render the building incomplete without solar panels.

While non-integrated solar panels are not components, vertical accession appears likely to deprive the energy community of their ownership. The applicable requirement is that solar panels are durably united with the land under Art. 5:20(1) lit. e BW. There is no doubt that solar panels are indirectly connected to the land through the building.[45] With respect to the durability of the connection, parliamentary history shows that the connection will be durable if the type and design of the solar panels indicate that they are intended to stay on the land permanently.[46] However, the actual intention of the parties is only decisive to the extent that this intention is visible.[47] It is irrelevant whether the solar panels can be removed.[48]

With respect to non-integrated solar panels, one could argue that the solar panels have a limited lifetime of around twenty-five years and that the energy community that leases the roof does not intend for the solar panels to stay on the roof permanently. However, the lease is not visible. The type and design of the solar panels rather indicate the opposite because they are attached to the roof in a stable manner. The fact that they can be removed easily is irrelevant. Also, the house has to be equipped with special facilities for the electricity generated by the solar panels, and the solar panels are visibly linked to the house and the electricity

43. Hof 26 Juni 2018, ECLI:NL:GHAMS:2018:2113, para. 3.3 (Neth.).

44. K.L.G. Berger & W.L.J. Kremer, *Zonnepanelen: stimuleringsmaatregelen en verhuurscenario's*, 19 BOUWRECHT 127, 131 (2017).

45. *See* HR 15 Januari 2010, ECLI:NL:HR:2010:BK9136 (Neth.); *see* HR 24 December 2010, ECLILNL:HR:2010:BO3644 (Neth.); E.F. Verheul, *Eigendomsvoorbehoud, bestanddeelvorming en natrekking*, 7053 WPNR 237, 241 (2015).

46. C.J. VAN ZEBEN ET AL., PARLEMENTAIRE GESCHIEDENIS VAN HET NIEUWE BURGERLIJK WETBOEK - BOEK 3: VERMOGENSRECHT IN HET ALGEMEEN 70 (1981).

47. *Id.* at 69.

48. HR 31 Oktober 1997, ECLI:NL:HR:1997:ZC2478, para. 3.3 (Neth.); HR 25 Oktober 2002, ECLI:NL:HR:2002:AE6999, para. 3.4.2 (Neth.).

grid. These are aspects that the Dutch Supreme Court used to substantiate a durable connection in its case law.[49] Arguably, the landowner would also become owner of the non-integrated solar panels, and the energy community would lose their ownership of the solar panels.[50] It should be noted though that there are recent judgments of lower courts that draw the opposite conclusion.[51]

B. The Right of Superficies: The Status Quo

The right of superficies could separate the ownership of the solar panels from the landownership.[52] The right of superficies is a limited property right, based upon an agreement with the landowner and good against the whole world, that allows a person who is not the landowner to install and own an object that is durably united with the land. In this way, the right of superficies accommodates fragmented interests in the land. As holder of a right of superficies with respect to the solar panels, the energy community could keep their ownership and create a security right of hypothec in the solar panels. The downside of this option is the costs involved — the parties have to go to a notary, sign a notarial deed, and have it registered in the public records.[53] While these increased costs could reduce the number of buildings with solar panels, standardization has substantially reduced costs over the past years. While in the past, each notary drew up their own deed at high costs for the parties of around 6,000 EUR, there is now a model deed recognized by the Royal Association of Notaries (KNB) and the Dutch Association of Banks (NVB) that has driven down costs for a right of superficies to 1,500 EUR.[54]

In addition to costs, another hurdle is whether a right of superficies can actually be created for all types of solar panels. For this purpose, solar panels have to qualify as a "work" under Art. 5:101(1) BW,[55] which determines the objects for which a right of superficies can be created. It is settled that solar panels that are not integrated can be the object of a right of superficies.[56] By contrast, it is disputed whether a right of superficies can be created to separate the ownership of

49. HR 31 Oktober 1997, ECLI:NL:HR:1997:ZC2478, para. 3.2 (Neth.).

50. Berger & Kremer, *supra* note 44, at 131; *cf.* HR 27 September 2013, ECLI:NL:HR:2013:CA0813, para. 3.3.3 (Neth.).

51. *See generally* Rb Overijssel 3 September 2024, ECLI:NL:RBOVE:2024:4694 (Neth.); Rb Overijssel 15 November 2022, ECLI:NL:RBOVE:2022:3361 (Neth.).

52. Art. 5:101 BW.

53. *See* Art. 3:89 BW; *see also* Art. 3:98 BW.

54. A.H.G. Wilod Versprille & M. Wever, *Verduurzaming in de notariële praktijk: het standaardmodel opstalakte zonnepaneleninstallatie*, *in* DUURZAAM WONEN: KNB PREADVIEZEN 2019, at 141 (L.C.A. Verstappen & F.J. Vonck eds., 2019). That said, this assessment is in part too simplistic because, often, solar panels are installed on condominiums (a property split in apartment rights; *appartementsrechten*). For a right of superficies to be created, at least a four-fifth majority will have to change the deed of division, leading to lengthy and costly procedures.

55. This provision reads as follows in English: "The right of superficies is a right *in rem* to own or to acquire buildings, works or vegetation in, on or above an immovable thing owned by another."

56. Hoops, *supra* note 36, at 300-01.

solar panels that are part of the façade or serve as roof tiles. While the parliamentary history and some authors indicate that component parts cannot be made independent through a right of superficies,[57] more recent literature advocates for a more generous and nuanced approach to the creation of the right of superficies.[58]

Even this approach, however, offers little hope for integrated panels for now. It sets two requirements for a "work." First, the thing is sufficiently identifiable.[59] Secondly, separating the ownership of the thing from the landownership must be economically acceptable. Economic acceptability pertains to one of the goals of accession.[60] Accession is supposed to protect the added value of uniting two things.[61] The value of the bricks of a house when they together form the house is higher than the aggregated value of all detached bricks. By turning the bricks into one legal unit, accession deters the owner or other persons, in particular their creditors, from taking the house apart and thereby preserves this added value. Economic acceptability as a criterion is intended to prevent the right of superficies, which separates the ownership of an object from the landownership and thus makes it easier to remove that object, from frustrating this goal of accession.[62] See sub-section VIII.A below for a more detailed account of the goals of these criteria.

The *status quo* in the debate about the two criteria seems to be that the solar panels will only be sufficiently identifiable if there is some degree of physical separation or independence of the solar panels.[63] Unlike non-integrated ones, integrated solar panels could not meet this requirement. Whether or not the separation would be economically acceptable would therefore be irrelevant. There could thus be no separate right of ownership and no hypothec on integrated solar panels under the *status quo*. A right of emphyteusis (*erfpacht*), which confers a right to use the solar panels as if its holder were owner and on which a hypothec can be created, is no option either for the same reasons.[64]

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57. VAN ZEBEN ET AL., *supra* note 46, at 355; H.D. PLOEGER, HORIZONTALE SPLITSING VAN EIGENDOM 217 (1997); E.C.M. Wolfert, *Bestanddeel of zaak? Over het onderscheid en de samenhang tussen de artikelen 3:4 en 5:20 BW*, 6523 WPNR 191 (2003); E.C.M. Wolfert, *Bestanddeel of zaak? Over het onderscheid en de samenhang tussen de artikelen 3:4 en 5:20 BW*, 6525 WPNR 279 (2003).

58. BARTELS & VAN VELTEN, *supra* note 40, at 248; P.J. van der Plank, *Is het mogelijk art. 3:4 BW bestanddelen te verzelfstandigen door middel van het vestigen van een recht van opstal*, 7108 WPNR 399 (2016); W.M. Kleyn, *Wat is onroerend en wat is roerend?*, JBN, Nov. 1, 1995.

59. *See*, *e.g.*, van der Plank, *supra* note 58, at 402; *see also* PLOEGER, *supra* note 57, at 213.

60. F.J. VONCK, DE FLEXIBILITEIT VAN HET RECHT VAN ERFPACHT 61 (2013); *cf.* H.W. Heyman & S.E. Bartels, *Is een huis bestanddeel van de grond? Een rechtsgeleerde dialoog tussen H.W. Heyman en S.E. Bartels*, NTBR, Sept. 1, 2006, at 7 n.8.

61. P.J. VAN DER PLANK, NATREKKING DOOR ONROERENDE ZAKEN 133 (2016); W.H.M. REEHUIS & E.E. SLOB, PARLEMENTAIRE GESCHIEDENIS VAN HET NIEUWE BURGERLIJK WETBOEK - INVOERING 3, 5 EN 6, BOEK 3: VERMOGENSRECHT IN HET ALGEMEEN 76 (1990).

62. VONCK, *supra* note 60, at 61.

63. *Cf.* A.J. Mes et al., *Eigendom van onroerende zaken, met name natrekking (titels 1 en 3)*, *in* BOEK 5 BW VAN DE TOEKOMST 159 (L.C.A. Verstappen ed., 2016); *see generally* Rosalie Koolhoven, *Gebouwen en hun bestanddelen in een meer circulair goederenrecht: Van een wegwerpeconomie naar een kringloop van hoogwaardige, modulaire producten die worden verdienstelijkt*, *in* CIRCULAIR BOUWEN 5, 35 (2018).

64. VONCK, *supra* note 60, at 61.

C. Alternatives

Where, as is the case with integrated solar panels, a right of superficies cannot be created to separate the ownership of the solar panels from the landownership, notaries and other legal "architects" have to come up with unorthodox designs. A contract of lease, for instance, gives the lessee a right to remove improvements under Art. 7:216 BW.[65] The energy community could lease the roof or façade on which the solar panels will be placed. However, this right or the contract of lease itself cannot serve as security for the bank of the energy community.[66] The lease contract could be linked with a step-in right for the bank so that if the energy community defaults on their loan, the bank can assign the lease to a new operator of the solar panels.[67] In addition, such solutions are only now being refined and, unlike the model deeds for the right of superficies, still require expensive legal "tailoring." The parties will thus have to incur considerable additional costs, while lenders are reluctant to embrace unorthodox designs. This poses an enormous legal obstacle to developing renewable energy installations and related business models further.

V. GERMANY

The German Civil Code (*Bürgerliches Gesetzbuch*; BGB) stipulates what forms part of a thing in sections 93-96 BGB. Sections 946-947 BGB provide who the owner is of a thing that is composed of different things that were the object of separate property rights before they were combined. An important difference from Dutch law is that both of these groups of provisions connect to "essential components" (*wesentlicher Bestandteil*) as the criterion for what forms the object of the right of ownership. While German law thus only applies one criterion, Dutch law applies two criteria, specifically "common opinion" and "durable unity" with different outcomes.

Buildings are essential components of the land under section 94(1) BGB. As the solar panels are put on the roof of a building, the essential question is whether they constitute essential components of the building. Section 93 BGB stipulates that essential components of a thing are any objects that cannot be separated from the thing without destroying or changing the nature of the objects or the thing. Section 94(2) BGB specifically adds regarding buildings that the objects that serve the construction of the building and remain integrated into it after completion, constitute essential components of the building and, as a consequence, the land.

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65. This provision reads as follows in English: "Up until the eviction the lessee is entitled to undo and remove the changes and additives he has introduced, provided that the leased property is brought back to a condition which at the end of the lease period reasonably can be regarded as being in conformity with its original state."

66. C.H.A. van Oostrum, *(On)zekerheden bij het financieren van het product-als-dienstmodel*, 28 ONDERNEMING EN FINANCIERING 27, 41-42 (2020); R.M. Wibier, *Servitization en goederen- en insolventierecht*, 7326 WPNR 416, 421 (2021) (A pledge can be created in rights to remove based upon contract).

67. M.M.G.B. van Drunen & I.C.J. Hoving, *Opstalloos financieren van dakprojecten voor zonnepanelen*, 7387 WPNR 689 (2022).

Integrated solar panels are, without any doubt, essential components of the building because they form part of the roof or façade and the building would not be complete with a hole.[68] By contrast, solar panels that are not integrated are generally not essential components of the building because they can be removed without substantial damage and the building will still serve its purpose.[69] Such solar panels will only be essential components if they exclusively provide this specific building with electricity and no electricity is fed into the public grid.[70] The rationale behind this conclusion is that the solar panels cannot serve their purpose without the building.

Non-integrated solar panels are generally independent things, and the energy community will remain their owner.[71] Such solar panels can be the object of a security transaction. For security purposes, the ownership of solar panels can be transferred to the lender of the energy community. Once the energy community has paid off their debt, they will get the ownership back, either automatically or upon a transfer.[72]

By contrast, under section 946 BGB, solar panels that are an essential component of the building are, by operation of law and against the will of the parties, owned by the landowner. The energy community would lose the ownership. That said, German law provides for an important exception to the qualification of objects integrated into buildings as essential components. Section 95(2) BGB preserves the legal independence of things where they are only integrated into the building "for a temporary purpose" (*zu einem vorübergehenden Zweck*). This exception also applies where energy communities use somebody else's roof or façade for their integrated solar panels and non-integrated solar panels that do not feed electricity into the public grid. The temporary purpose, based upon the intentions of the party installing the solar panels,[73] must be clear from the factual circumstances and the legal relationship between the energy community and the

68. BGB § 94, as interpreted by Christina Stresemann, *in* MÜNCHENER KOMMENTAR ZUM BÜRGERLICHEN GESETZBUCH, para. 32 (Franz Jürgen Säcker et al. eds, 9th ed. 2021) [hereinafter MÜKO-BGB]; BGB § 94, as interpreted by Jörg Manfred Mössner, *in* BECK-ONLINE.GROSSKOMMENTAR BGB, para. 24.1 (Beate Gsell et al. eds., 2023) [hereinafter BECKOGK-BGB]; Oberlandesgericht [OLGZ] [Higher Regional Court] Nuremberg Oct. 10, 2016, ECLI:DE:OLGNUER:2016:1010.14U1168.15.0A, para. 24. (Ger.).

69. BGB § 94, as interpreted by Christina Stresemann, *in* MÜKO-BGB, para. 33; Oberlandesgericht [OLGZ] [Higer Regional Court] Nuremberg Oct. 10, 2016, ECLI:DE:OLGNUER:2016:1010.14U1168.15.0A, paras. 24-27 (Ger.); Oberlandesgericht [OLGZ] [Higher Regional Court] Oldenburg Sept. 27, 2012, ECLI:DE:OLGOL:2012:0927.12W230.12.0A, para. 5 (Ger.).

70. BGB § 94, as interpreted by Jörg Manfred Mössner, *in* BECKOGK-BGB, paras. 26, 26.1; BGB § 94, as interpreted by Christina Stresemann, *in* MÜKO-BGB, para. 33.

71. BGB § 97, as interpreted by Christina Stresemann, *in* MÜKO-BGB, para. 33 (Noting that non-integrated solar panels qualify as accessories (*Zubehör*) of the building in terms of § 97 BGB). This entails risks in case the landowner sells and transfers the land and the building with "accessories" (presumed under § 311c BGB). Buyers acting in good faith may acquire the solar panels even though the energy community is owner of the solar panels; §§ 926, 932-936 BGB. For this reason, a model contract by *NÜMANN+SIEBERT Rechtsanwälte* (on file with author) foresees the registration of a servitude in favour of the energy community, which would prevent the good faith on the part of the buyer.

72. BGB § 930, as interpreted by Fabian Klinck, *in* BECKOGK-BGB, paras. 64-66, 198-203.

73. BGB § 95, as interpreted by Jörg Manfred Mössner, *in* BECKOGK-BGB, para. 9.

landowner. If the energy community contractually leases the roof or façade from the landowner, it will be presumed that the solar panels are only temporarily integrated into the building and belong to the energy community that installed them.[74] Importantly, this presumption even holds where the lease concerns the whole lifetime of the solar panels.[75] Also, even a very solid connection with the building, as is the case with integrated solar panels, does not stand in the way of a temporary purpose.[76] To further ensure that the solar panels will be the property of the energy community, the parties should agree that the energy community will remove the solar panels after their lifetime has expired.[77]

Things that are not essential components due to their integration with a temporary purpose can serve as collateral in the same way as other independent things. The energy community can transfer them for security purposes to their lender.

VI. ITALY

Italian law presents yet another solution. Two interacting provisions govern the ownership of solar panels attached to the roof or façade. Under Art. 812(1) of the Italian Civil Code (*Codice civile*; CC), buildings and other works (*costruzioni*) are immovable property if they are permanently or temporarily united with the land. Unless the law or a valid title provides otherwise, the ownership of the immovable property vests in the owner of the land, according to Art. 934 CC. This provision is an expression of the doctrine of accession (*accessione*).

In order for the solar panels to become immovable, they must be connected, directly or indirectly, with the land in such a way that they lose their physical autonomy and that a separation would substantially change the building.[78] In practice, neither the strength of the connection with the land nor its permanent or temporary nature will be decisive for the qualification as immovable property. Rather, it is of particular importance whether the solar panels perform a valuable function for the land.[79] Based upon this criterion, there does not seem to be much doubt that both integrated and non-integrated solar panels will, in the vast majority of cases, be immovable property because they provide electricity. Confirming this conclusion, a notice issued by the Italian tax authority in 2013 qualified solar panels on roofs as immovable property.[80]

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74. *Id.* § 95(1); BGB § 95, as interpreted by Christina Stresemann, *in* MÜKO-BGB, para. 18; BGB § 95, as interpreted by Jörg Manfred Mössner, *in* BECKOGK-BGB, paras. 10.1, 44.

75. BGB § 95, as interpreted by Jörg Manfred Mössner, *in* BECKOGK-BGB, para. 10.3; *see id.* at n.122.

76. BGB § 95, as interpreted by Christina Stresemann, *in* MÜKO-BGB, para. 18; BGB § 95, as interpreted by Jörg Manfred Mössner, *in* BECKOGK-BGB, paras. 10.2, 11.

77. BGB § 95, as interpreted by Jörg Manfred Mössner, *in* BECKOGK-BGB, para. 10.2.

78. ANDREA TORRENTE & PIERO SCHLESINGER, MANUALE DI DIRITTO PRIVATO 188-189, 299 (Franco Anelli & Carlo Granelli eds., 25th ed. 2021).

79. Art. 812 c.c., as interpreted by Rosamaria Ferorelli, *in* CODICE CIVILE COMMENTATO (Mariconda Vincenzo & Alpa Guido eds., 2013).

80. AGENZIA DELLE ENTRATE, IMPIANTI FOTOVOLTAICI – PROFILI CATASTALI E ASPETTI FISCALI (Dec. 19, 2013), https://def.finanze.it/DocTribFrontend/getContent.do?id={3B5AB640-E772-44BB-BB0B-2B9FBA269ED9}.

Under Art. 952 CC, the parties can create a right of superficies (*superficie*), permanent or limited in time, for the energy community to have the right to put the solar panels on the roof or façade and to separate the ownership of the solar panels from the landownership. In practice, this limited property right is frequently used for solar panels.[81] Once the right of superficies has been created, a right of hypothec (*ipoteca*) can be created in favour of the lender of the energy community.[82] These legal acts will involve substantial costs for the notarial deeds and their registration,[83] estimated to be 4,000 EUR for notarial fees, 9% of the project value for the registration and 0.25% of the loan taken out in banking taxes. Unlike in the Netherlands, there is no apparent discussion about whether integrated solar panels as part of the roof or façade can regain their legal independence. There does not seem to be any ground in the rules on the right of superficies on which to distinguish between integrated and non-integrated solar panels.

VII. SOUTH AFRICA

Energy communities are not yet common in South Africa, but there is significant social and political interest in moving to green energy alternatives, especially in light of the national energy crisis under the national energy provider, Eskom.[84] As its lower middle and middle class generally cannot afford to acquire solar panels as alternative electricity systems, removing legal obstacles to accessing financial resources for households and energy communities should be a key priority if the anticipated unbundling and partial privatization of Eskom and the decentralization of energy in South Africa are to be a success.[85]

Sub-section VII.A explains that it is unclear whether accession would take place and who would be owner of the solar panels. Unlike Dutch and Italian law, South African law has not received a comparable right of superficies from Roman law.[86] Sub-section VII.B sets out alternative mechanisms for energy communities to retain control of the solar panels and to create security rights in them.

81. TORRENTE & SCHLESINGER, *supra* note 78, at 311; Francesca Bartolini, *Le comunità energetiche - I contratti di godimento per lo sviluppo delle comunità energetiche*, 12 GIUR. IT. 2781 (2023).

82. Art. 2810(1) n.3 c.c. (It.).

83. Art. 2643 c.c. (It.).

84. *See generally* Rural Maintenance (Pty) Ltd and Others v. Eskom Holdings SOC Ltd and Another (2023/027739) [2023] ZAGPJHC 354 (20 April 2023) (S. Afr.) (Illustrating tensions where a solar plant in the town of Frankfort in South Africa lost a case against Eskom on a technicality, resulting in it being forced to dump solar generated electricity even though Eskom was unable to provide electricity for the residents of the town.).

85. See, e.g., Masuku, *supra* note 5, at 482; *see generally* Wolpe & Reddy, *supra* note 5. Some sectional title schemes do make use of solar panels to provide sectional title holders with electricity, but this is usually only in well-off schemes. In such a case, the body corporate of the sectional title scheme would pay for and install the solar panels, usually funded by levies from the sectional title holders.

86. C.G. VAN DER MERWE, SAKEREG 538 (2d ed. 1989).

A. Accession

South African law has received the rule of *superficies solo cedit*, whereby everything that has been erected on land is regarded as forming part of it.[87] One of the most influential and prevalent manifestations of this rule is accession by building (*inaedificatio*).[88] Accession by building is a form of original acquisition of ownership and pertains to the permanent attachment of moveable things to immovable property.[89] On the basis of this maxim, the owner of the land becomes the owner of the acceded structure, since the movable property loses its independent identity by becoming "an integral part of the immovable."[90] As there is no statute stipulating whether solar panels affixed to land or a building would be owned by the landowner and no longer by the energy community, the question will be decided with reference to the common law as it has been developed by the South African courts. The following sub-sections set out this test and apply it to solar panels.

1. The Common Law Test of Accession

A three-pronged test is used to determine whether a thing has attached to the building. This test has been developed in South African law with reference to Roman, Roman-Dutch, and arguably also English law.[91] The three factors to consider are:

i) the nature and purpose of the movable thing.

ii) the manner and degree of attachment of the movable thing to the immovable thing.

iii) the intention of the owner of the movable thing in respect of the attachment of their thing to the land or immovable property at the time of attachment.[92]

The application of these three factors (and the respective weight attached to each of them) have caused practical difficulties in South African law for several decades, with the test leading to diverging approaches in case law.

Early case law such as the 1915 case of the Appellate Division, *Macdonald Ltd v Radin NO and the Potchefstroom Dairies and Industries Co Ltd*,[93] is regarded

87. GUSTAV MULLER ET AL., SILBERBERG AND SCHOEMAN'S THE LAW OF PROPERTY 166 (6th ed. 2019); *see* CYRIL GODFREY HALL, MAASDORP'S INSTITUTES OF SOUTH AFRICAN LAW: VOL II - THE LAW OF PROPERTY 36 (9th ed. 1971) (The rule of superficies solo cedit is also sometimes stated as the *mazim omne quod inaedificator solo cedit*).

88. *See* VAN DER MERWE, *supra* note 86, at 245.

89. MULLER ET AL., *supra* note 87; *but see* Ina Knobel, *Accession of movables to land, South African law and Dutch law*, 45 CILSA 77, 87 (2012) (Contesting accession by building).

90. USS Graphics (Pty) Ltd and Others v. Urban Print Factory (Pty) Ltd and Others (30921/2019) [2023] ZAGPJHC 1119 (14 February 2023) para. 17 (S. Afr.).

91. VAN DER MERWE, *supra* note 86, at 247.

92. MULLER ET AL., *supra* note 87, at 166.

93. MacDonald Ltd v. Radin NO and the Potchefstroom Dairies & Industries Co Ltd 1915 (454) AD (A) at 466 (S. Afr.).

as the primary authority for the "traditional approach" to accession in South African law.[94] In *Konstanz Properties (Pty) Ltd v Wm Spilhaus en Kie (WP) Bpk*,[95] the court explained that the traditional approach does not consider the third (subjective) factor when the first two factors provide a definitive answer that accession had occurred.[96]

The traditional approach is contrasted to a new approach, which emphasizes the subjective intent in the third factor of the test.[97] This new approach was adopted in cases such as *Theatre Investments (Pty) Ltd v. Butcher Brothers Ltd*[98] and *Melcorp SA (Pty) Ltd v. Joint Municipal Pension Fund (Tvl)*,[99] where the court considered that all the evidence had to be evaluated together and that the court should then decide, on a balance of probabilities, whether the annexer intended for the movable to be permanently affixed.[100] Under the new approach, the intention of the annexer is paramount, and the other factors are factors from which the intention can be determined.[101]

Academics such as *Van der Walt* and *Sono* have been critical of the view of a clear-cut shift from a traditional to a new approach in respect of the subjective intention.[102] According to *Van der Walt* and *Sono*'s analysis, the factors have always been interlinked to some degree, with evidence pointing to the position that "both early and recent cases have emphasized, more or less strongly, the intention of the owner of the movable to determine whether or not accession had occurred."[103] *Van der Walt* and *Sono* do stress that the objective factors remain important.[104]

2. The Adjustment of the Test to Industry Practices

The traditional three-pronged test is arguably difficult to apply in a predictable fashion since there is limited clarity on the weight and relevance of the individual factors. The unpredictable nature of this area of South African property law is well illustrated by the case of *USS Graphics (Pty) Ltd v Urban Print Factory*

94. Konstanz Properties (Pty) Ltd. v. Wm Spilhaus en Kie (WP) Bpk 1996 (3) SA 273 (A) (S. Afr.).

95. *Id.*; *see also* MULLER ET AL., *supra* note 87, at 168.

96. Konstanz Properties (Pty) Ltd. v. Wm Sphilhaus en Kie (WP) Bpk 1996 (3) SA 273 (A) at 281 (S. Afr.); *see also* AJ van der Walt & Nhlanhla L. Sono, *The law regarding inaedificatio: A constitutional analysis*, 79 THRHR 195, 196 (2016); Knobel, *supra* note 89, at 79.

97. van der Walt & Sono, *supra* note 96, at 196.

98. Theatre Investments (Pty) Ltd and Another v. Butcher Brothers Ltd 1978 (3) SA 682 (A) (S. Afr.).

99. Melcorp SA (Pty) Ltd v. Joint Municipal Pension Fund (Tvl) 1980 (2) SA 214 (WLD) (S. Afr.).

100. Theatre Investments (Pty) Ltd and Another v. Butcher Brothers Ltd 1978 (3) SA 682 (A) at 688 (S.Afr.); *see also* Unimark Distributors (Pty) Ltd v. Erf 94 Silvertondale (Pty) Ltd 1999 (2) SA 986 (TPD) (S. Afr.) (confirming the existence of these approaches and the discussion by Van der Walt & Sono).

101. Knobel*, supra* note 89, at 80 (see the brief overview of a possible third approach, where the purpose of the annexation is considered the most important consideration, but this approach has garnered limited support, and we do not discuss it further here.); *see also* MULLER ET AL., *supra* note 87.

102. van der Walt & Sono, *supra* note 96, at 203; *see also* Warren Freedman, *The test for* inaedificatio*: what role should the element of subjective intention play?*, 117 S. AFR. L.J. 667, 670 (2002).

103. van der Walt & Sono, *supra* note 96, at 203.

104. *Id.*

(Pty) Ltd,[105] where the High Court considered whether a large printing machine had attached to the building. This case provides an interesting set of facts to consider the application of the test to determine whether *inaedificatio* had taken place and specifically brings to the fore the role that commercial interests and industry customs and standards can play.

The court referred to the three relevant factors to consider in its inquiry to determine whether accession had taken place, namely the nature of the thing, the manner of its attachment, and the intention of the owner of the movable at the time of its annexation.[106] The court correctly stated that the first two factors are objective while the third factor is subjective in nature.[107] Relying on *Macdonald Ltd v Radin NO and the Potchefstroom Dairies and Industries Co Ltd*,[108] the court further stated that every case stands to be considered on its own facts,[109] presumably meaning that it is a contextual inquiry with the factors acting as guidelines rather than definitive rules. The court's approach could also be taken to mean that precedent is of limited value in this area insofar as every case is unique, and the three-pronged test highlights the importance of the specific factual context in which accession must be considered.

Finally, the court stated that the subjective intention factor is often regarded as the most important, due to it being the deciding factor in the event of an uncertain or equivocal result when applying the first two factors to a particular set of facts,[110] but pointed out that it accepted that the "requirements" are interlinked.[111] The interlinked nature of the factors is highlighted by the fact that if the first two factors yield a clear answer ("a clear inference of [objective] intention"), then "there is no need to consider evidence pointing to a contrary subjective intention."[112] This is reminiscent of the traditional approach discussed in the previous sub-section.

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105. *See generally* USS Graphics (Pty) Ltd and Others v. Urban Print Factory (Pty) Ltd and Others (30921/2019) [2023] ZAGPJHC 1119 (14 February 2023) (S. Afr.) (This case discussion is based on Elsabé van der Sijde & Sameera Mahomedy, *Property Law*, 4 YEARBOOK S. AFR. L. 1181, para. 2.3 (2023), and the authors have benefited from a discussion with the Pretoria Property Law Reading Group on 25 July 2023, which was led by Prof. Warren Freedman).

106. *Id.* para. 18 (citing P.J. BADENHORST ET AL., SILBERBERG AND SCHOEMAN'S THE LAW OF PROPERTY 140 (4th ed. 2003)).

107. USS Graphics (Pty) Ltd and Others v. Urban Print Factory (Pty) Ltd and Others (30921/2019) [2023] ZAGPJHC 1119 (14 February 2023) para. 18 (S. Afr.).

108. MacDonald Ltd v. Radin NO and the Potchefstroom Dairies & Industries Co Ltd 1915 (454) AD (A) at 466 (S. Afr.).

109. USS Graphics (Pty) Ltd and Others v. Urban Print Factory (Pty) Ltd and Others (30921/2019) [2023] ZAGPJHC 1119 (14 February 2023) para. 18 (S. Afr.).

110. *Id.* para. 19; *see also* MULLER ET AL., *supra* note 87, at 167.

111. It is unclear why the court's language shifted from factors to requirements since the three prongs of the test for accession are not requirements and this terminology is best avoided. The court's earlier use of factors is apt.

112. USS Graphics (Pty) Ltd and Others v. Urban Print Factory (Pty) Ltd and Others (30921/2019) [2023] ZAGPJHC 1119 (14 February 2023) para. 19 (S. Afr.). (first citing MacDonald Ltd v. Radin NO and the Potchefstroom Dairies & Industries Co Ltd 1915 (454) AD (A) at 467 (S. Afr.).; and then citing Unimark Distributors (Pty) Ltd. v. Erf 94 Silvertondale (Pty) Ltd. 1999 (2) SA 986 (T) at 998G–I (S. Afr.)).

In *USS Graphics*, the printer in question weighed ninety-eight tons and was installed in the building with the intention of operating at that location for the life cycle of the machine, approximately ten years.[113] Correspondingly, the owner of the building made substantive changes to the building to accommodate the machine, which was not bolted down but held in place by its weight.[114] It would take up to two weeks to dismantle the printer, with reassembling taking up to two months.[115] Another machine would have to be shut off for a period of time, or even potentially dismantled, to remove the printer from its location.

To reach its decision, the court made reference to the opinions of two expert witnesses, noting specifically that the machines were regarded as "intrinsic to the business, but not to the functioning of the building,"[116] and that "[i]t is not unusual for structural changes to be made to buildings before installing or moving printing presses of this nature. These changes may include removing or replacing walls or windows and strengthening foundations."[117]

In respect of industry standards, industry experts commissioned by the applicants informed the court that "[e]ven Web Offset or Newspaper presses which may occupy several floors of a building, are not considered to be permanent fixtures, but rather separate moveable entities which can be moved and re-assembled elsewhere."[118] It could not be treated simply as a big heavy machine: it had to be considered as a big heavy machine *in the printing industry*.

The court accepted that it was customary ("standard practice") in this industry for these machines to be dismantled and removed at significant cost to repair the damaged premises and that they were not regarded as permanent fixtures. In doing so, the court developed the test for the first factor — the nature of the thing. The court's approach to the second factor — the manner of attachment — was also generous and influenced by the industry custom: despite its removal causing significant damage to the building, the court was willing to regard the machine as not having attached. Although it would be difficult to remove, it was not impossible and not contrary to expectations in the industry. In this respect, the court sought to ensure that the judgment was fair, practical and in line with industry standards.[119]

The court's engagement with industry standards is an interesting and potentially positive development in property law: courts fulfill a crucial role in ensuring that the rules and principles of property law are fair and suitable to modern commercial realities. One of the criticisms of the "new" approach, where all factors are considered together on a balance of probabilities or where intention is the most important, is that it can give undue weight to the intention of the owner of the

113. *Id.* paras. 20.1-20.2.

114. *Id.* paras. 20.3-20.4.

115. *Id*. para. 20.5.

116. USS Graphics (Pty) Ltd and Others v. Urban Print Factory (Pty) Ltd and Others (30921/2019) [2023] ZAGPJHC 1119 (14 February 2023) para. 20.7 (S. Afr.) (emphasis omitted).

117. *Id*. para. 21.2.

118. *Id*. para. 21.3.

119. *Id*. para. 29.

movable property.[120] This can conflict with the publicity principle, which emphasizes objective, not subjective, intent.[121] In considering industry standards when applying the "nature of the thing" and the "manner of attachment" factors, further weight can be given to objective factors that reflect the objectively determined expectations of the parties that can be ascertained by third parties.

Based upon these facts in the context of the specific industry, the court held that the first two factors did *not* point to a definitive result. Following the traditional approach,[122] the court went on to consider the third factor, the intention of the owner of the movable.[123]

In the case, the owner of the factory had purported to sell the printing machine. The court held that they could not have held any subjective intention that the printer had attached to the building, since it would have been regarded as having lost its independent identity and therefore would have been impossible to transfer separately.[124] In sum, the court held that none of the factors of the test indicated that accession had taken place and that the printing machine was a movable.[125]

A similar approach to that of *USS Graphics* was followed also in *Choppies Supermarkets (SA) (Pty) Limited v Heriot Properties (Pty) Limited*,[126] where the court held that racks and shelving had not attached to the immovable property, despite significant costs involved in removing them.[127] Furthermore, the court regarded the agreement between the parties "that the shelving and racking fell within the ambit of a covering notarial bond,"[128] a form of security for movable property, as indicative of the racking and shelving being able to be removed and held that accession had not taken place.

3. Application to Solar Panels

The legal position regarding attachment of solar panels to immovable property has not yet been clarified through statute or case law and is therefore still an open question in South African law. Courts are likely to continue following a flexible approach, taking all three factors into account. Given that the test is highly contextual and will be influenced by all the facts of a specific matter, it is worth

120. *See* Freedman, *supra* note 102, at 667 (Analyzing the implications of the subjective element of the test).

121. van der Walt & Sono, *supra* note 96, at 205.

122. *See generally* van der Sijde & Mahomedy, *supra* note 105 (discussing the court's lack of engagement with key cases such as Konstanz Properties (Pty) Ltd. v. Wm Sphilhaus en Kie (WP) Bpk 1996 (3) SA 273 (A) (S. Afr.)).

123. USS Graphics (Pty) Ltd and Others v. Urban Print Factory (Pty) Ltd and Others (30921/2019) [2023] ZAGPJHC 1119 (14 February 2023) para. 22 (S. Afr.).

124. *Id.* para. 25.

125. *Id.* para. 27.

126. Choppies Supermarkets (SA) (Pty) Ltd v. Heriot Properties (Pty) Ltd (015457/2024) [2024] ZAGPJHC 1654 (1 March 2024) (S. Afr.).

127. *Id.*

128. Deeds Registries Act 47 of 1937 § 102 (S. Afr.) (A notarial bond under the Deeds Registries Act 47 of 1937 is "[a] bond attested by a notary public hypothecating movable property generally or specially").

considering factors that might influence how the three prongs of the general test are applied.

First, based on *USS Graphics* and *Choppies Supermarket*, discussed in the previous sub-section, the fact that removal might cause damage to the immovable property is not likely to be a deciding factor by itself. Second, the intention of the parties will remain prevalent, especially where there is evidence that both parties had that specific intention. Third, the development of an industry standard or practice might carry weight if or when the matter finally comes before a court.

Brits has put forth the view that solar panels could go the way of geysers, which, while easily removable, are considered a fixture.[129] This makes sense for rooftop solar systems on detached houses, which are most common in South Africa at the moment, but would be inconvenient for energy communities putting solar panels on roofs of third parties. However, as *Brits* indicates, the potential weight given to the subjective intent of the parties could mean that a situation could arise where two identical solar panels systems are installed in identical ways, but, due to the subjective intention factor, one could attach to the immovable property while the other may not.[130] Such uncertainty may be a significant barrier to accessing financing for the installation of solar panels. *Brits* rightly argues that a desire of financiers to retain ownership cannot dictate the outcome of the accession test as this would amount to "the tail wagging the dog," although *Brits* does recognize that in the past, courts have considered the existence of an agreement to retain ownership, a secured credit financing strategy, significant.[131] This constitutes a criticism of the court's approach in *Choppies Supermarket*, where the court considered the existence of a notarial bond significant.

The legal position of owners of solar panels installed on third-party property is thus unclear in South African law, which affects the possibilities of creating security rights to finance the installation of said panels. What can be said at this point is that save for legislative interference, the legal position will have to be clarified by the courts on a case-by-case basis and would be determined with reference to the type of solar panels, the way that they are attached to the property, and the intention of the owner of the solar panels at the time of building. Moreover, if energy communities developed a strong "industry practice," there is some authority, albeit only at the High Court level, that this may be taken into account. We submit that if non-integrated solar panels are installed on third party property in a manner easily removable, with minimal or no damage to the existing structure, and with the intention to remain movable, the courts are likely to and should accept that these installations are movable property, if only to preserve existing energy community business models. By contrast, integrated solar panels are, in our view, very likely to be immovable property.

129. Reghard Brits, Rooftop Solar Panels: Movable or Immovable? (2024) (unpublished manuscript) (on file with authors).

130. *Id.*

131. *Id.*

B. Instruments for Energy Communities to Retain Control and Create Security Rights

Depending on contextual factors, it might be possible for solar panels on roofs to be immovable or movable property in South African law. We therefore discuss the possibilities for the energy community to retain control of the solar panels and to create real security over them in both scenarios. Business models for energy communities with solar panels can fund their installation by selling "shares" in the specific project, via a so-called "crowd-sale" or "crowd-fund."[132] However, due to limitations of scalability of such an approach, we conclude that traditional means of financing, via secured credit, remain prevalent.

1. Immovable Property

We first consider the scenario where solar panels are deemed to have attached and therefore form part of the immovable property of a third party. We recall that South African law does not recognize a right of superficies.[133]

In South African law, it is possible to create a security right over immovable property by way of a mortgage bond. A mortgage bond is a "bond attested by the registrar specially hypothecating immovable property."[134] Section 102 of the Deeds Registries Act 47 of 1937 includes in the definition of "immovable property" a registered long lease (of at least ten years). This provides a useful mechanism for energy communities to retain control of solar panels and obtain funding for them: the energy community could negotiate to register a long lease over the immovable property or a part thereof, such as the roof, and then register a mortgage over the long lease (which would include operation of the solar panels).[135]

One limitation to note is that, where immovable property is already burdened with a mortgage, the first mortgagee has the right to prevent the debtor from further burdening the property without the mortgagee's consent. This power could preclude energy communities from being able to register a mortgage bond over a long lease.

There are also costs involved in registering a mortgage bond, but the costs would not be prohibitively high, depending on the value of the transaction and duration of the agreement, which cannot be for less than ten years. For example, the costs of registration for a loan worth one to two million South African rands (roughly, 50,000 to 100,000 euros) amount to 1,544 rands (roughly, 80 euros), and the conveyancer is supposed to charge 24,560 to 34,485 rands (roughly, 1,300 to

132. *See*, *e.g.*, *Completed solar projects*, SUN EXCH., https://sunexchange.com/projects/ (last visited Nov. 17, 2024).

133. VAN DER MERWE, *supra* note 86, at 538.

134. Deeds Registries Act 47 of 1937 § 102 (S. Afr.); *see also* G. MULLER ET AL., GENERAL PRINCIPLES OF SOUTH AFRICAN PROPERTY LAW 286 (1st ed. 2019) [hereinafter GENERAL PRINCIPLES OF SOUTH AFRICAN PROPERTY LAW].

135. *See* REGHARD BRITS, REAL SECURITY LAW 28 (2016) (discussing the definition of "immovable property" for purposes of a mortgage bond).

1,730 euros) according to the Law Society's Guidelines.[136] The registration of the mortgage bond provides notice to third parties, who can ascertain the burdens imposed on a property by accessing the deeds registry for a fee of the equivalent of five euros per deed.

2. Movable Property

If the solar panels are movable, the energy community remains owner but cannot use a mortgage bond to create a real security right. In cases where solar panels are classified as movable property, a notarial bond must be used to create a real security right.[137] The Deeds Registries Act provides for two types of notarial bonds: a special and a general notarial bond.[138] The former creates a real security right over specified assets, while the latter creates a general security right over all of the debtor's movable assets.[139] Notarial bonds that comply with the Security by Means of Movable Property Act 57 of 1993 provide a fully enforceable real security right, while bonds that do not fully comply with this Act will require for the bond to be "perfected" through the transfer of physical control of the movable property.[140] The costs of registration and conveyancing are roughly the same as with a mortgage bond.

Insofar as notarial bonds allow for the creation of a real security right over movable property without having to deliver the property to the creditor, they present a useful mechanism for energy communities seeking to finance a solar panel installation of third-party property through a secured finance transaction.[141] The legislative framework providing for registration of the notarial bond provides adequate notice to third parties. While there is an expense involved in creating a notarial bond, costs do not appear to be prohibitively expensive, with prices depending on a variety of factors, ranging from the size of the law firm used to the complexity of the transaction. It is our understanding that the total cost would not be disproportionate to the value of the solar panel installation and lease. However, as energy communities are not common in South Africa at this stage, it is difficult to draw any firm conclusions on whether this would provide a viable financing mechanism.

In addition to the option of creating and registering a special notarial bond over the movable property, a further option would be a retention of ownership

136. *See* Deeds Registries Act of 1937: Amendment of Regulations, GN R.4447 of GG 50239 (29 February 2024); L. SOC'Y OF S. AFR., CONVEYANCING: CONVENTIONAL DEEDS (ACT 47/1937) – GUIDELINE OF FEES (May 27, 2024), https://www.lssa.org.za/wp-content/uploads/2024/05/CONVEYANCING-FEE-GUIDELINES-27-MAY-2024.pdf.

137. South African law recognizes pledge as a way of creating a real security right over movables, but since it is a possessory form of real security, in the absence of attornment, it does not provide a useful solution to the question of financing solar panel installations on third-party property. *See* BRITS, *supra* note 134, at 108, 121-137.

138. Deeds Registries Act 47 of 1937 § 102 (S. Afr.)

139. GENERAL PRINCIPLES OF SOUTH AFRICAN PROPERTY LAW, *supra* note 134, at 303.

140. BRITS, *supra* note 135, at 230, 262-263.

141. GENERAL PRINCIPLES OF SOUTH AFRICAN PROPERTY LAW, *supra* note 134, at 318; *see also* BRITS, *supra* note 135, at 23.

agreement. In this case, the transfer of ownership is contractually suspended until the agreed purchase price has been paid.[142] These agreements are also known as hire-purchase agreements or installment agreements.[143] The retention of ownership of the movable property thus operates as a form of real security over the property: in the event of non-payment, the creditor would be entitled to reclaim the property using the *rei vindicatio*.[144] These agreements are subject to legislative control. For example, the National Credit Act 34 of 2005 can apply if the contract falls within the scope of the Act, and the Insolvency Act 24 of 1936 has a special provision for dealing with installment agreements in the event of the debtor's insolvency.[145]

VIII. REFORM

The review of the four jurisdictions shows that while they all use a doctrine of accession to determine the extent of a right of ownership and share similar criteria, the application of these criteria or special statutory provisions leads to diverging outcomes. While an express provision in the German Civil Code allows for party autonomy to break open accession to a large extent, the other jurisdictions do not have such a provision. Under Italian and Dutch law, the landowner will be owner of both types of solar panels. By contrast, accession under German law only targets integrated solar panels. To make the energy community owner again, a right of superficies can be created for all types of solar panels in Italy. By contrast, current Dutch law only provides for this way out to owners of non-integrated solar panels. South African law veers closest to German law insofar as the intention of the owner of the movable thing is taken into account, but the fate of solar panels in property law remains unclear, with integrated solar panels much more likely to be owned by the landowner than non-integrated ones.

This review shows that Dutch property law cannot facilitate the financing of, in particular, integrated solar panels through the option of security rights in the solar panels. Italy does facilitate such transactions but at the expense of substantially higher transaction costs in the form of notarial fees. In South Africa, there are financing mechanisms available for both scenarios, but it depends on the development of the common-law doctrine of accession whether or not energy communities can stay owner of the solar panels. Only under German law can energy communities create security rights in the solar panels with ease as German law gives effect to the parties' intention to attach the solar panels only temporarily.

It would be too simplistic to state that the doctrine of accession in Italy, the Netherlands, and South Africa and the right of superficies in the Netherlands have to be adjusted only to facilitate the work of energy communities. Such a statement easily invites resistance from property-law scholars who seek to protect doctrine from possibly temporary trends outside the legal arena. The Netherlands in particular has seen a large legal debate about such changes in recent years. The fol-

142. GENERAL PRINCIPLES OF SOUTH AFRICAN PROPERTY LAW, *supra* note 134, at 319.

143. *Id.*

144. *Id.*

145. *Id.*

lowing sub-sections discuss the arguments presented in favour of deactivating accession and, in the Netherlands, of a greater scope for the right of superficies. These arguments spring from the goals of accession (sub-section VIII.A), the recognition of common practices (VIII.B), improvements of the system of land registration (VIII.C), and a priority for party autonomy (VIII.D). An argument against deactivating accession across the board could be that for loans secured by rights in immovable property based upon a notarized and registered deed, such as solar panels targeted by accession, institutional lenders tend to charge lower interest rates.[146] The higher the value of a renewable energy project, the more likely it is for lower financing costs to outweigh the additional transaction costs caused by accession.

A. The Goals of Accession

In the reviewed jurisdictions, accession pursues up to four goals: protection of the *status quo*, the clear delineation of objects and property rights in them, the promotion of legal certainty, and the preservation of the economic value of the combination of objects. It is these legal goals that will increasingly require an approach different from the current one as the energy transition progresses.

The first goal, the protection of the *status quo*, is mentioned separately in the Dutch literature.[147] Traditionally, accession turns a composition of things owned by a single person into a single legal unit and thereby deters the owner or other persons from breaking the units apart. In the energy transition, by contrast, accession binds together what the parties do not want to be bound together *and* deprives the energy community of their ownership. Instead of protecting the *status quo*, accession turns out to undermine it. From the energy community's point of view, a more lenient interpretation of accession would be in order.

The second goal is legal certainty, which can be divided into two sub-goals. First, legal certainty can mean clarity. Accession needs to provide clear and stable rules on property law relations.[148] This sub-goal says very little about the content of these rules and only requires clarity and stability. The second sub-goal, by contrast, concerns the content of the rules. Accession is supposed to protect the confidence in the appearance of unity created by the connection between the land and a building or another thing so that third parties are not surprised by invisible rights in legally separate movable things.[149] The goal of legal certainty also underlies the criterion of sufficient identifiability for the right of superficies and its restrictive scope under Dutch law, excluding in particular rights of superficies with respect to integrated solar panels. Separating components from a building, it is

146. *See supra* note 31.

147. *See*, *e.g.,* IZAAK KISCH, BESCHOUWINGEN OVER DE ONDERSCHEIDING TUSSCHEN ZAKELIJKE EN PERSOONLIJKE RECHTEN 294 (1932).

148. *See, e.g.,* VAN DER PLANK, *supra* note 61, at 135; BGB § 93, as interpreted by Jörg Manfred Mössner, *in* BECKOGK-BGB, para. 5; Freedman, *supra* note 102, at 673; VAN DER MERWE, *supra* note 86, at 257.

149. *See*, *e.g.*, VAN DER PLANK, *supra* note 61, at 136; PLOEGER, *supra* note 57, at 34; BRITS, *supra* note 135, at 4.

said, cannot be made visible in a reliable and cost-effective manner.[150] By contrast, the importance of legal certainty as a goal of accession under German law is limited as the parties can deactivate accession through agreements on a temporary attachment under section 95 BGB.[151]

The first sub-goal discourages change in general because energy transitions and other forms of change entail uncertainty and litigation. However, once a more lenient interpretation of accession favouring the energy transition has been consolidated, this sub-goal would no longer pose an obstacle as long as the new interpretation with respect to renewable energy installations is clear. Moreover, the goal of ensuring stability would protect the consolidated interpretation. Particularly in the Dutch context, the second sub-goal at first glance appears to be an even bigger obstacle to a shift towards new rules because it seems that the confidence protected by accession that solar panels are legally bound to the building and land will persist in the energy transition. However, this is a misconception. As the energy transition progresses, common perception, for example in line with common practices in relevant economic sectors discussed in sub-section VIII.B, is likely to shift and people will no longer be surprised to find solar panels not forming a legal unit with a building. There would thus no longer be a justification for consolidating one legal unit. That said, a more lenient interpretation will nevertheless bring about more uncertainty because rights in movables are not registered and therefore invisible. However, as registers evolve, they can also include information on things that are attached to buildings, but do not form part of the land. Registers can already display rights of superficies pertaining to solar panels without major problems or costs. This shows that at least a more generous approach to the right of superficies would already now in no way contravene legal certainty. See also sub-section VIII.C below on improved systems of land registration.

The last goal of accession most clearly shows the need for reform from within. As already explained in sub-section IV.B above, accession is meant to preserve the added value of the unity of two things.[152] The same goal underlies the restrictive scope of the right of superficies.[153] However, in the energy transition, accession itself deters parties from combining solar panels and buildings — and thereby the creation of the very added value that it is supposed to protect. As several scholars have pointed out,[154] a more lenient interpretation of accession would thus reflect this goal better in the energy transition than the current approach.

The same reasons justify a more generous approach to the right of superficies in the Netherlands and, specifically, the second requirement for the solar panels to be qualified as a "work." As discussed in sub-section IV.B above,[155] the separation

150. VONCK, *supra* note 60, at 61.

151. BGB § 946, as interpreted by Martin Schermaier, *in* BECKOGK-BGB, para. 14.

152. *See, e.g.*, VAN DER PLANK, *supra* note 61, at 133; REEHUIS & SLOB, *supra* note 61, at 76; BGB § 93, as interpreted by Christina Stresemann, *in* MÜKO-BGB, para. 1.

153. VONCK, *supra* note 60, at 61.

154. Koolhoven, *supra* note 63, at 20, 44; Mes et al., *supra* note 63, at 164.

155. *See supra* Section IV.B.

of the ownership of the solar panels through a right of superficies must be economically acceptable. The familiar goal of this requirement is to prevent the added value created by a combination from being destroyed.[156] This goal would suggest that it should not be possible to create a right of superficies with respect to a brick because the loss of value caused by the brick's removal from the wall exceeds the value of the brick itself or the value it could add to another wall. In the context of solar panels, however, legally separating the solar panels from a building can actually preserve the value created by the combination of solar panels with buildings. If a right of superficies cannot be created for integrated solar panels, such panels are less likely to be financed, leased, or put on the roof of a third party. Hence, the additional value of the combination of such panels with a building is less likely to accrue. A restrictive scope for the right of superficies thus contravenes the goals that the requirement of economic acceptability is supposed to promote in this case.[157] The requirement itself is thus a strong indication for a more generous scope for the right of superficies.

B. Common Practices

Standard practices in an economic sector or other common practices have received particular attention under Dutch and South African law[158] as an argument to deactivate accession while ensuring legal certainty.[159] In the Netherlands, to ensure that solar panels, integrated or otherwise, do not form a single unit with the building, in addition to merely arguing for a reinterpretation of "common opinion" or "durable unity," scholars point to the *Radio Holland* judgment of the Dutch Supreme Court from 1979.[160] This judgment concerned movables installed in a ship. The essence of this judgment is that common practices whereby the owner of the ship does not acquire, but only leases movables installed in their ship, can create a common opinion that such movables do not form part of the ship. Scholars argue that once solar panels on the roofs of third parties or leases of solar panels have become common practice, common opinion would change and solar panels would stay movables independent from the building.[161] This proposal is related to the argument that as the energy transition progresses, the perception that a physical unit of a building and a solar panel implies a legal unit will fade away and will thus no longer be in need of protection.

C. Improved Systems of Land Registration

Dutch scholars also point to innovations in the field of land registration to show that deactivating accession will not pose a threat to legal certainty. Even

156. VONCK, *supra* note 60, at 61; *cf.* Heyman & Bartels, *supra* note 60, at 7 n.8.

157. *Cf.* Koolhoven, *supra* note 63, at 49; Mes et al., *supra* note 63, at 162.

158. For South African law, *see supra* Section VII.A.2.

159. *See*, *e.g.*, Koolhoven, *supra* note 63, at 36; Mes et al., *supra* note 63, at 162; VAN DER PLANK, *supra* note 61, at 25-26.

160. HR 16 Maart 1979, ECLI:NL:HR:1979:AC6518 (Neth.).

161. Mes et al., *supra* note 63, at 165; M.A.B. Chao-Duivis, *Privaatrechtelijke aspecten van de circulaire economie in het bijzonder circulair bouwen (Deel II)*, 154 TBR 1032, para. 7.3 (2017).

though they have yet to be introduced as public systems for information on land, the "3D-Kadaster"[162] and building passports like Madaster[163] are promising tools to ensure the publicity of rights in movables attached to buildings. Such systems would take away the need to rely on perceptions of the physical world for determining the shape of legal units, while at the same time preserving legal certainty.

With respect to the scope of the right of superficies, this argument already holds water with the current system of land registration in the Netherlands. It seems odd to rely upon the difference between components of a building and other immovable things to delineate the scope for the right of superficies. To ensure legal certainty, the first requirement for "works" in terms of Art. 5:101(1) BW, *i.e.*, they be identifiable, should instead be based upon what can actually be clearly circumscribed in a notarial deed and the land registration system and can then be identified in physical reality without significant problems.[164] Integrated solar panels definitely meet this requirement.[165]

D. Priority for Party Autonomy

The justifications for a reform presented up to here aim at deactivating accession with respect to solar panels on roofs generally. Another basis for a reform would be to let party autonomy prevail against the appearance of unity between the roof and the solar panels.

German law, through section 95 BGB, gives precedence to party autonomy if the purpose of the attachment is only temporary. Where objective factors cannot resolve the issue, the South African test of accession also gives precedence to party autonomy.[166] In the Italian literature, *Busani* has argued that a contractual lease that involves the right to put solar panels on the roof, to use and maintain them, and to remove them at the end of the contract, can deactivate the accession of the solar panels.[167] This would allow for security transactions, in the form of the creation of a pledge (*pegno*) in the solar panels, without the need to resort to a right of superficies. This argument would effectively introduce a rule that resembles section 95 BGB into Italian law. However, both the highest court (*Corte di Cassazione*) and doctrine have refused to give such a contractual arrangement third-party effect and thus to enlarge the party autonomy in shaping the objects of property rights in this way.[168]

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162. Mes et al., *supra* note 63, at 181; *see* A. Mes, *Driedimensioneel eigendom*, 7043 WPNR 1189 (2014).

163. Benjamin Verheye, *Toekomst van de circulaire vastgoedeconomie*, 1 TPR 107, 174-75 para. 42 (2019); Chao-Duivis, *supra* note 161, para. 7.3; Mes et al., *supra* note 63, at 164; *see Transforming the future of building together*, MADASTER, https://madaster.com/ (last visited Feb. 10, 2025).

164. Koolhoven, *supra* note 63, at 47.

165. Mes et al., *supra* note 63, at 161.

166. *See supra* Section VII.B.2 (discussing the relevance of ownership retention agreements in South African law); *see also* BRITS, *supra* note 129, at 4-5 (Prioritizing party autonomy is not uniformly regarded as the appropriate approach in South African law).

167. Angelo Busani, *Impianto fotovoltaico costruito su fondo condotto in locazione e principio di accessione*, 3 NOTARIATO 315 (2012).

168. Art. 934 c.c., as interpreted by Onofrio Troiano, *in* CODICE CIVIL COMMENTATO; ANTONIO GAMBARO, IL DIRITTO DI PROPRIETÀ 760 (1995).

In line with the view of the Italian courts, Dutch law sticks to the irrelevance of the parties' intentions. If parties could separate the ownership of things attached to the soil by agreement, the separation would not be visible to third parties. Unlike in Germany, the value judgment in the Netherlands seems to be that this would too greatly reduce legal certainty as to what the right of ownership includes.[169] Another aspect worth considering is that as accession impacts small-scale and large-scale projects differently, as indicated in the introduction to this section, a provision like section 95 BGB could offer small-scale projects the flexibility to avoid transaction costs for deactivating accession, while leaving accession in place for large-scale projects that would like to pay lower interest rates on their loans.

IX. CONCLUSION

Energy communities and other operators of small-scale renewable energy projects are in need of accessible financing opportunities and low transaction costs. In addition to equity and subordinated loans from members as well as subsidies, loans from commercial institutional lenders play an increasingly important role as the size of the project grows. However, such lenders will often require collateral, and the most suitable form of security in the energy community context tends to be a security right in the renewable energy installation.

When the energy community lack a suitable location for their renewable energy installation, such as a roof for their solar panels, they will have to place it on somebody else's land. The doctrine of accession can then deprive the energy community of their ownership by making the landowner owner of the renewable energy installation. If the *lex rei sitae* offers the option of a security right in a suitable limited property right, such as the right of superficies, the energy community can create a security right but at the expense of high transaction costs for notarial deeds. If there is no such option, the energy community will obtain no loan, pay higher interest rates, or have to provide more expensive forms of security.

This survey of Dutch, German, Italian, and South African law shows various approaches to this issue. German law will allow the energy community to deactivate the accession of solar panels by agreement because of the limited lifetime of solar panels, providing the security transfer of the renewable energy installation to the lender as an accessible form of security. Depending on the development of South African common law, South African law may also follow this route. By contrast, Dutch and Italian law make the landowner owner of the renewable energy installation but offer the right of superficies as a solution at the expense of higher transaction costs. That said, Dutch law adds an additional hurdle. Energy communities may not be able to create a right of superficies with respect to integrated solar panels and other components of the building. Even more creative legal tools will be needed for the energy community to provide security in such cases.

In the literature, scholars have made several arguments in favour of a reform, to deactivate accession in many cases. They rely upon the goals of accession, the development of common practices, improvements of the systems of land registration, and the importance of party autonomy to argue that energy communities and

169. VAN DER PLANK, *supra* note 61, at 136; PLOEGER, *supra* note 57, at 34; *cf.* Schermaier, *in* BECKOGK-BGB, *supra* note 68, § 946, para. 14.

other actors should remain owner of their renewable energy installations. These proposals are promising and should be considered by courts and legislatures in the course of a careful examination of their potential drawbacks, such as higher interest rates for loans secured by rights in movable property.

RENEWABLE ENERGY COMMUNITIES IN ITALY: THE CHALLENGES OF PUBLIC GOVERNANCE

Stella Monegato[*]

Synopsis: The Renewable Energy Directive (Directive (EU) n. 2018/2001, RED II as amended in 2023) sets a central role for public authorities in the transition towards renewable energy produced from (*inter alia*) renewable energy communities. From a legal point of view, it may be argued that the challenges faced by local public authorities that may want to set up or actively participate in renewable energy communities, at least in the Italian legal context (which can be regarded as an interesting case-study of a European country where these initiatives are having widespread diffusion), are multifaceted. From a private law perspective, regulating control powers by local authorities inside the governance structure of a renewable energy community is crucial in order to ensure the strategic control of the essential resources of a renewable energy community remains within the community (and not to private companies).

If these issues may be regulated through the use of contracts and bylaws, the challenges faced by local authorities become even more complex within the public law framework (which, in this case, is represented by Legislative Decree No. 175/2016).

Consistently, this article suggests that a reflection should be made over the initiatives to be implemented in order to provide "*regulatory and capacity-building support*" to public authorities that may want to set up and participate directly to renewable energy communities, in the spirit of article 22, paragraph 4 of the Renewable Energy Directive.

* Stella Monegato is an attorney at the law firm Dal Piaz, with a special interest in environmental law and renewable energy communities. Many thanks to Bjorn Hoops, Chair of Private Law and Sustainability at the Faculty of Law of the University of Groningen, who organized the international conference "Private Law in the Energy Commons – A Multidisciplinary Challenge" held at the University of Turin, 27-28 March 2024, from which this article was born. Thank you as well to the student editors of the Energy Law Journal for their feedback and editorial assistance. Any errors are the author's own.

I. INTRODUCTION

As the European Commission has underlined, renewable energy communities (RECs) can be regarded as grassroots initiatives that offer a unique opportunity to build an energy-oriented identity and social bond tied to the industrial production of energy.[1] In fact, renewable energy communities are usually associated with an open and voluntary governance that reflects a common identity and sense of cohesion.[2] The Renewable Energy Directive (Directive (EU) n. 2018/2001, RED II as amended in 2023) sets a central role for public authorities, both through intensive planning and in terms of regulation. Significantly, the amending Renewable Energy Directive (EU) 2023/2413 provides that:

> *Member States shall ensure that their competent authorities at national, regional and local level include provisions for the integration and deployment of renewable energy, including for renewables self-consumption and renewable energy communities, and for the use of unavoidable waste heat and cold when planning, including early spatial planning, designing, building and renovating urban infrastructure, industrial, commercial or residential areas and energy and transport infrastructure, including electricity, district heating and cooling, natural gas and alternative fuel networks.*[3]

Public authorities play an active role by adopting measures to foster citizen participation and involve local stakeholders to collectively develop, own, and manage renewable energy installations.

The participation of public authorities, especially at the local level, is all the more crucial for the democratic management of the resources (e.g., solar panels, the public grid, and the revenue from the sale of energy) owned by the community. Such a decentralized model of energy production which, according to the European Directives included in the Clean Energy Package,[4] is at the core of the renewable energy communities' design needs to be confronted with concentration on the energy market and the risk of dominant influence over RECs being exerted by a small minority of their members (only those with a certain degree of professionalization and expertise in the energy sector).[5]

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1. EUR. COMM'N, ENABLING ENERGY COMMUNITIES - A TOOLKIT FOR JUST TRANSITION REGIONS 5 (Nov. 2023), https://ec.europa.eu/regional_policy/sources/funding/just-transition-fund/toolkit-enabling-energy-communities.pdf.

2. *Id.*

3. Directive 2023/2413, of the European Parliament and of the Council of 18 October 2023 Amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as Regards the Promotion of Energy from Renewable Sources, and Repealing Council Directive (EU) 2015/652, at 30, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202302413 [hereinafter Directive 2023/2413].

4. The Clean Energy for all Europeans Package, adopted in 2019, is the latest update in the European energy policy framework, aiming to facilitate a clean energy transition. It consists of eight legislative acts (four directives and four regulations) which lay the ground for establishing a new electricity market design. For the purpose of this article, reference is made to Directive 2018/2001, of the European Parliament and of the Council of 11 December 2018 on the Promotion of the Use of Energy from Renewable Sources, 2018 O.J. (L 328) 82 [hereinafter RED II] and to Directive 2019/944, of the European Parliament and of the Council of 5 June 2019 on Common Rules for the Internal Market for Electricity and Amending Directive 2012/27/EU, 2019 O.J. (L 158) 125 [hereinafter IMED].

5. Björn Hoops, *Two Tales of the Energy Commons Through the Lens of Complexity*, GLOB. JURIST, Apr. 22, 2024, at 6.

This article aims at shedding a light on the challenges that most authorities-driven energy communities face in the Italian legal context.[6] In fact, especially in Italy, the growth of renewable energy communities can be regarded as the result of cooperation between the public and private sectors, and the involvement of public authorities, especially at the local level, in the promotion and expansion of RECs is considered undeniable.[7] From a legal perspective, it is therefore necessary to consider what legal forms may be adopted by local public authorities (e.g., municipalities) that may want to set up or participate in renewable energy communities. As a result of the legal framework currently in force in Italy, it can be observed that, despite a general consensus over the need to promote such bottom-up initiatives, there are still significant limits, both from the private law and the public law perspective, that public authorities may face when involving in an energy community project.

II. LEGAL FORMS AND GOVERNANCE STRUCTURES FOR LOCAL PUBLIC AUTHORITIES-DRIVEN ENERGY COMMUNITIES

As remarked by Hoops (2024), the definition of "*renewable energy communities*"[8] revolves around their primary purposes (environmental and social, rather than economic in nature) and the governance requirements needed to pursue them.[9]

In compliance with European legislation, Italy transposed the Renewable Energy Directive through Legislative Decree n. 199/2021, whose article 31 defines what a renewable energy community is and what its normative requirements are. According to this definition, the renewable energy community is a legal entity that is controlled exclusively by natural persons, small and medium-sized enterprises (SMEs), local authorities including municipalities, research and training entities, religious entities, third sector and environmental protection associations, as well as local administrations included in the list of public administrations published by National Institute of Statistics — ISTAT.[10] Those members should be located under the same primary substation, which corresponds to the relevant geographical

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6. In literature, sometimes, the term public authorities and public administrations are used interchangeably. European Directives always refer to "public authorities" (from national to local levels), while the term "public administration" refer, more broadly, to all the bodies that are in charge of the management of government policies and public affairs.

7. Elisa Moretti & Ettore Stamponi, *The Renewable Energy Communities in Italy and the Role of Public Administrations: The Experience of the Municipality of Assisi between Challenges and Opportunities*, SUSTAINABILITY, Aug. 2, 2023, at 3.

8. RED II, *supra* note 4, art. 2, para. 16 ("'*renewable energy community'* means a legal entity: *(a) which, in accordance with the applicable national law, is based on open and voluntary participation, is autonomous, and is effectively controlled by shareholders or members that are located in the proximity of the renewable energy projects that are owned and developed by that legal entity; (b) the shareholders or members of which are natural persons, SMEs or local authorities, including municipalities; (c) the primary purpose of which is to provide environmental, economic or social community benefits for its shareholders or members or for the local areas where it operates, rather than financial profits.*").

9. Hoops, *supra* note 5, at 4.

10. For the definition of small and medium-sized enterprises, *see* Commission Recommendation 2003/361/EC of 6 May 2003, Concerning the Definition of Micro, Small, and Medium-Sized Enterprises, annex, art. 2, 2003 O.J. (L 124) 36, 39 [hereinafter Commission Recommendation 2003/361/EC]. The SME definition

perimeter to access the economic incentives recognized by the Italian government.[11]

Recently, the provisions contained in Legislative Decree n. 199/2021 were implemented with the entry into force of the Ministerial Decree No. 414 of 7 December 2023, which defines incentive tariffs[12] dedicated to shared energy among the members within the community's perimeter for the development and widespread diffusion of renewable energy communities.

Although the approval for the Ministerial Decree on incentives for RECs has been considered a significant regulatory change for sector operators, it has recast attention to the need to comply with EU State aid rules set by the European Treaties also for these economic activities.[13] In fact, it has been clarified that only small and medium-sized enterprises can take part in renewable energy communities, with the exclusion of large enterprises. Accordingly, the economic benefits that SMEs may have access to cannot overcome a precise threshold.[14]

The exclusion of powerful, large enterprises and the need for effective control being exerted only by members located in the proximity of the renewable energy projects (both essential requirements in order to access economic incentives) clearly influence the governance structure of RECs, which sees at its core the role of public local authorities.

In particular, the legal framework currently in force in Italy allows local public authorities to be members of the associative or corporate community contract (as founding partners or active participants). Due to the fact that, according to the European Directives, each Member State is free to adopt a different discipline to establish which legal form the energy community may adopt, it is generally underlined that local public authorities should opt for legal structures characterized by limited liability so that only the company is liable for obligations with its assets.

Provided that each governance structure should be tailored to the specific needs of the renewable energy community, within the Italian legal framework, the legal forms that may be used by public authorities in order to establish RECs are the following:

- Cooperatives, which are defined by article 2511 of the Civil Code as companies with variable capital based on mutualistic, solidarity,

takes into account three criteria: staff headcount, annual turnover, and annual balance sheet total. *Id.* "*The category of micro, small and medium-sized enterprises (SMEs) is made up of enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million*." *Id.*

11. Decreto Ministeriale 7 Dicembre 2023, n.414, G.U. Feb. 7, 2024, n.31 (It.).

12. In Italy, renewable energy communities can benefit from a premium tariff on the quantity of electricity consumed by renewable energy communities, paid over a 20-year period and an investment grant of up to 40% of eligible costs for projects located in municipalities with less than 5.000 inhabitants.

13. European Commission Press Release IP/23/5787, Commission Approves €5.7 Billion Italian State Aid Ccheme Under the Recovery and Resilience Facility to Support Renewable Energy Communities and Self-Consumers (Nov. 22, 2023).

14. The premium tariff is granted up to 55% of the electric energy fed into the grid by power plants of the REC; the premium tariff in excess of the financing cap may only be granted to non-enterprise consumers or to the territories where the power plants are located for social purposes.

and democratic principles.[15] This legal form is particularly interesting as it is considered the most democratic business organization that can best reflect[16] all the requirements set by the European Directives[17] for renewable energy communities.

- Community cooperatives that can be defined as "a specific type of cooperative that has been emerging in the Italian socio-legal context and which, more than other forms of legally recognized grassroots initiatives, is characterized by a very strong connection with the territory where the activities are located."[18] In particular, community cooperatives have not been uniformly regulated in Italy, and only some regions, so far, have adopted a specific regional law.
- Recognized associations are non-profit organizations with altruistic purposes (e.g., religious, political, ideals, trade unions, sports, or cultural). These entities are made up of their members, which can be natural or legal persons. In particular, recognized associations can be suited for small-scale projects of RECs since they have perfect patrimonial autonomy, and, therefore, the assets of the organization are always and only liable for the association's debts and are separate from those of its members. Nonetheless, it has been observed[19] that associations (and the same applies for participatory foundations) were not designed in the Civil Code as entities that normally exercise entrepreneurial activities, and, as a consequence, their structure may not be suited for large renewable energy communities which, for instance, promote integrated home automation interventions, energy efficiency interventions, as well as electric vehicle charging services to their members.[20]
- Participatory foundations combine the collective aspect of the association with the patrimonial aspect of foundations. Under Italian law, participatory foundations are not defined by any specific provision since their features gradually emerged from case-law (especially from the decisions of Courts of Auditors). It is believed that

15. *See* Anna Grignani et al, *Community Cooperative: A New Legal Form for Enhancing Social Capital for the Development of Renewable Energy Communities in Italy*, ENERGIES, Oct. 27, 2021, at 2.

16. Emanuele Cusa, *Sviluppo sostenibile, cittadinanza attiva e comunità energetiche – Sustainable development, active citizenship and energy communities*, *in* ORIZZONTI DEL DIRITTO COMMERCIALE [HORIZONS OF COMMERCIAL LAW] 71, 120 (2020).

17. At the European scale, RESCOOP is the European Federation of energy communities, in the form of cooperatives. *See The REScoop Model*, RESCOOP, https://www.rescoop.eu/the-rescoop-model (last visited Jan. 15, 2025).

18. Grignani et al., *supra* note 15, at 2.

19. Cusa, *supra* note 16, at 120 (The author observes that associations and foundations were not designed in the Civil Code as entities that normally exercise entrepreneurial activities, while the renewable energy community should be an entrepreneur. Therefore, it is suggested that if the renewable energy community was in an associative or foundational form, it would risk being governed by rules incapable of adequately protecting the various interests involved in its economic activities and, particularly, the interests of its creditors.).

20. Examples of some of the activities covered by RED II, *supra* note 4, art. 22, para. 2 and, more specifically, by its national transposition in Decreto Legislativo 8 Novembre 2021, n.199, art. 31, para. 2(f), G.U. Nov. 30, 2021, n.285 (It.).

> the very absence of a strict legislative discipline allows for the drafting of statutes characterized by flexible forms of governance, which, unlike associations, recognize greater control to the founding members and owners of the renewable energy plants that become part of the foundation's assets.

Given that, from practical experience,[21] some of the most common and fastest-growing legal forms for establishing large projects of public authorities-driven energy communities (at least in Italy) are cooperatives and participatory foundations, it is relevant to understand by which provisions local authorities may maintain a pivotal role in the decision-making process while respecting the need for a democratic governance of energy communities.

According to the Italian Civil Code, the corporate bodies of a cooperative are the General Assembly of Members,[22] the Board of Directors,[23] and the Supervisory Board.[24]

Since cooperatives are based on democratic governance and decisions are made on a "*one member — one vote*" principle[25] apparently there is limited possibility for public authorities to effectively control the energy community. Nonetheless, the Civil Code provides an exception to the "*one member — one vote*" rule, so that legal persons may have the right to a maximum of five votes in the General Assembly.[26] Therefore, public authorities could then use this provision, considering the representation of the community they exercise.

In addition, the Civil Code states that public bodies can appoint one or more members of the Board of Directors, even if the majority of its members shall be nominated by the General Assembly.[27] The Statute of the Cooperative may attribute the right to vote in the election of the Supervisory Board in proportion to the quotas or shares held or by reason of participation in the mutual exchange.[28]

From the analysis of the applicable provisions of the Italian Civil Code concerning the governance of cooperatives, it is possible to argue that there are limited possibilities for recognizing, at least formally, significant control powers to legal persons (including enterprises and public authorities).

The same conclusion does not entirely apply for participatory foundations.

In fact, these legal entities are based on a patrimony (which, in the case of RECs, may be represented by renewable energy installations, for instance) aimed

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21. Fondazione Diocesi Treviso Energy, a participatory foundation a participatory foundation that has the aim of coordinating the energy communities that will arise in the approximately 30 primary cabins. CER Italia Participatory Foundation expanded from the area surrounding the primary cabin of the municipality of Montevarchi to a national level, thus making it possible for new members from all over Italy to join. *See Chi siamo* [*Who we are*], FONDAZIONE CER ITALIA [CER FOUNDATION ITALY], https://www.fondazioneceritalia.it/chi-siamo (last visited Jan. 15, 2024). Based on the first decisions of the Courts of Auditors on RECs, many municipalities opted for the legal form of cooperatives.

22. Art. 2538 c.c. (It.).

23. *Id.* art. 2542.

24. *Id.* art. 2543.

25. *Id.* art. 2538, para. 2.

26. Art. 2538, para. 3 c.c. (It.).

27. *Id.* art. 2542, para. 6.

28. *Id.* art. 2543, para. 2.

at accomplishing a specific purpose identified by the founder. As a consequence, more powers are attributed to the President of the Foundation and the Board of Directors. The main difference here with cooperatives is that the General Assembly of Members is not the supreme organ. In other words, as it has been previously observed, the governance structure can be atypical precisely because of the absence of a strict legal discipline that conform participatory foundations.

When drafting the statutes of RECs, it is therefore of utmost importance to consider the territorial dimension of the project and a governance structure with a vision to the future balance of all the relevant organs (including, for instance, in the perspective of its expansion, some provisions that would allow the decentralization of the decision-making process, especially for large communities).

In fact, when a renewable energy community expands beyond the boundaries of a municipality,[29] the risk is that territorial communities may feel under-represented in a large project that may lose its primary purposes (which are primarily of a social and environmental nature, with the exclusion of financial profits).

III. THE CHALLENGES OF PUBLIC GOVERNANCE: CONTROL BY LOCAL AUTHORITIES

One of the key challenges faced by local authorities willing to engage in energy-communities projects is the need to ensure some degree of control over the "*common pool*"[30] of RECs' resources (such as the renewable energy installations and the distribution of economic incentives recognized to the community by GSE[31]). To a certain extent, some degree of control may be even necessary in order to align heterogeneous interests and guarantee the pursuit of social and environmental benefits, other than economic interests. From the experience gained from legal assistance provided to the first energy community projects, it can be observed that when public authorities join or establish renewable energy communities, most times they do provide renewable energy installations and invest public resources in the project (since citizens may have not the means to do so). In this perspective, it is somehow natural that they may want to know how these resources will be managed, especially considering the heterogeneous members that could join the community.

At the same time, this top-down approach may reduce direct participation of citizens and their involvement in the community. In fact, as the geographic dimension of the project expands,[32] control over the community may be exerted by

29. According to the Italian framework, the geographical dimension of a REC may cover entire market areas. In Italy, there are around seven market areas that correspond almost to entire regions (North, Centre-North, Centre-South, South, Calabria, Sicily and Sardinia) identified by Terna – Italy's primary transmission and dispatching operator.

30. Hoops, *supra* note 5, at 5.

31. GSE - Gestore dei Servizi Energetici S.p.A. [Energy Services Manager] is a state-owned company that promotes and supports renewable energy sources and, specifically, is in charge of acknowledging the incentives provided by the legal framework to the renewable energy communities.

32. Renewable energy communities may be constituted in forms of legal entities that encompass entire market areas even if, in order to access economic incentives, each configuration within the REC must be composed of members that are located under the same primary substation. *See* GESTORE DEI SERVIZI ENERGETICI (GSE) [ENERGY SERVICES MANAGER], DECRETO CACER E TIAD – REGOLE OPERATIVE PER L'ACCESSO AL

public authorities not in the sense of decisive influence on the decision of its organs but through the management of the energy communities' assets.

Therefore, increasing complexity in the REC's technical management may reduce its members to passive members rather than active participants.[33]

In this perspective, especially when companies and private actors become members of a renewable energy community alongside local authorities, it becomes even more important to regulate (through bylaws) the control of data, the digital platform used for the management of the community,[34] the ownership of renewable energy installations, and liability for the maintenance of community infrastructures for the community. The role of local public authorities here is strategic[35] since municipalities can offer areas or rooftops (e.g., public buildings such as town halls and schools) for the installation of solar plants and collaborate with other prosumers in energy production.

Nonetheless, as it has been already observed, the risk of this model is that it introduces "*a strict division of ownership and control*"[36] so that citizens may view their role as passive investors rather than active community participants.

The second legal challenge has to do with the exclusion of large enterprises and companies for which the energy sector constitutes a primary area of economic activity from membership of renewable energy communities.[37]

As it has been remarked, the reason behind the exclusion of large enterprises can be linked to the danger of abuse by established corporate players[38] and the consequent risk that RECs could not be autonomous entities if controlled by only some of their members.

At the same time, "*an enterprise cannot be considered an SME if 25% or more of the capital or voting rights are directly or indirectly controlled, jointly or individually, by one or more public bodies*."[39]

SERVIZIO PER L'AUTOCONSUMO DIFFUSO E AL CONTRIBUTO PNRR [CACER AND TIAD DECREE – OPERATIONAL RULES FOR ACCESSING THE DIFFUSE SELF-CONSUMPTION SERVICE AND THE PNRR CONTRIBUTION] (2024), https://www.mase.gov.it/sites/default/files/ALLEGATO%201%20Regole%20operative%20CACER%20def.pdf.

33. Hoops, *supra* note 5, at 29.

34. With the awareness that a well-functioning electricity market design is the key factor for enabling the uptake of renewable energy, the Internal Market for Electricity Directive (EU) 2019/944 (or IMED Directive) has highlighted the crucial importance of data and new technologies for active consumers participation (in the perspective of a more decentralized and democratic energy market), such as smart metering systems that provide consumers with near real-time access to consumption data. IMED, *supra* note 4. Great emphasis at the European level is also placed on Internet of Things (IoT) technologies for energy management and on the use of Artificial intelligence for smarter grid management that may allow to predict energy consumption and production patterns. *See* EUR. COMM'N, AI AND GENERATIVE AI: TRANSFORMING EUROPE'S ELECTRICITY GRID FOR A SUSTAINABLE FUTURE (Sept. 25, 2024), https://digital-strategy.ec.europa.eu/en/library/ai-and-generative-ai-transforming-europes-electricity-grid-sustainable-future.

35. Gianluca Ruggieri et al., *Key Economic Drivers Enabling Municipal Renewable Energy Communities' Benefits in the Italian Context*, BUILDINGS, Nov. 25, 2023, at 7.

36. Hoops, *supra* note 5, at 19.

37. RED II, *supra* note 4, art. 22, para. 1.

38. Hoops Björn, *EU Directives on the internal governance of energy communities and their exclusionary effects*, 17 J. WORLD ENERGY L. & BUS. 147, 150 (2024).

39. Commission Recommendation 2003/361/EC, *supra* note 10, annex, art. 3, para. 4.

Consequently, this provision poses a problem for local authorities that may want to participate in renewable-energy-communities projects through their municipal energy utilities which, despite their expertise in the field, cannot become members of RECs either because they are controlled by public bodies or because they normally act in the energy sector as energy service companies (ESCOs).

Participation in renewable energy communities and control powers that can be exercised by local authorities are, furthermore, influenced by the regulatory framework represented by Legislative Decree n. 175/2016.

IV. ITALIAN LEGISLATIVE DECREE N. 175/2016 AND THE CASE-LAW OF THE COURTS OF AUDITORS ON RECS

In Italy,[40] national law controls the circumstances in which "*public administrations*[41] *can take part in and/ or control private companies for their institutional purposes with the aim to safeguard market competition and rationalize and reduce (or at least keep under control) the use of public money.*"[42]

The efficiency and cost containment of public participation constitute one of the pillars of the Legislative Decree of 19 August 2016 n. 175 (the Italian Consolidated Act/framework for the participation of public administration in subsidiary companies[43]), and the external control exercised by regional Courts of Auditors becomes even more relevant when public administrations are involved in economic activities that entail risks of public money expenditure.

According to the procedure set by article 5 of the Consolidated Law,[44] public administrations need to ask for permission by the Court of Auditors[45] if they want to set up or acquire shareholdings in a company (even in the form of cooperatives). Generally, during this procedure, the Court of Auditors may ask local authorities to produce a business plan of a renewable energy community project,[46] examining the objectives of the newly established (or acquired) company and its relevance to the attainment of institutional goals pursued by public authorities.[47]

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40. In Italy, there are jurisdictional divisions and review divisions for each of the sixteen jurisdictional territories of audit: Piedmont, Lombardy, Venetia, Liguria, Emilia-Romagna, Tuscany, Latium, Marche, Umbria, Abruzzo, Molise, Campania, Puglia, Basilicata, Calabria, and Valle d'Aosta.

41. The reference made by Legislative Decree n. 175/2016 is not specifically to local public authorities but, more broadly, to public administrations.

42. EUR. COMM'N - ENERGY CMTYS. REPOSITORY, BARRIERS AND ACTION DRIVERS FOR THE DEVELOPMENT OF DIFFERENT ACTIVITIES BY RENEWABLE AND CITIZEN ENERGY COMMUNITIES 27 (2024), https://circabc.europa.eu/ui/group/8f5f9424-a7ef-4dbf-b914-1af1d12ff5d2/library/22055ff9-1f49-41f8-a321-cbf20ca3d316/details.

43. This expression results from the translation of "*Testo unico in materia di società a partecipazione pubblica*." *Id.*

44. Pietro Algieri, *I controlli esterni collaborativi della Corte dei Conti sulle società partecipate: tra autonomia negoziale ed esigenze di contenimento della spesa pubblica* [*The External Collaborative Controls of the Court of Auditors on Investee Companies: Between Negotiating Autonomy and the Need to Contain Public Spending*], FEDERALISMI [FEDERALISMS], May 27, 2020.

45. Here, the singular form is used to refer to the institution (Court of Auditors) which is in charge of controls according to the law, without regard to its regional divisions.

46. Corte dei Conti, Sezione Regionale di Controllo per l'Emilia-Romagna, 25 Gennaio 2023, Deliberazione n. 32/2023/INPR.

47. Decreto Legislativo 19 Agosto 2016, n.175, art. 4, G.U. Sept. 8, 2016, n.210 (It.).

At the core of this procedure, public administrations send the deliberative act with which they set up a new company or acquire direct or indirect participations in it to the Competition Authority (known in Italy as "AGCM") and to the Court of Auditors, which decides, within sixty days of receipt, regarding the conformity of the act with particular regard to financial sustainability and the compatibility of the choice with the principles of efficiency, effectiveness and cost-effectiveness of administrative action.[48] If the Court does not rule within this deadline (sixty days), the public administration may proceed to establish the company or the purchase of the shareholding.

Even if the pursuit of a service of general interest could justify the acquisition of shares in companies whose corporate purpose is energy production from renewable sources,[49] the creation of a renewable energy project is not automatically excluded from a strict control over the company's financial sustainability, especially in a long-term perspective.[50]

In addition to this, the deliberative act of establishing a publicly held company or acquiring shareholdings, even indirect, in already established companies must be analytically motivated by public administrations with specific reference to the compatibility of the financial intervention envisaged with the rules of the European treaties and, in particular, the European rules on state aid to companies.[51]

The approval of Ministerial Decree No. 414 of 7 December 2023 on incentives for RECs by the European Commission has reminded that renewable energy projects are not automatically exempted from compliance with state aid rules. As clarified at the time of approval of the scheme of the Ministerial Decree:

> *The Commission assessed the scheme under EU State aid rules, in particular Article 107 (3)(c) of the Treaty on the Functioning of the European Union ('TFEU'), which enables Member States to support the development of certain economic activities subject to certain conditions, and the 2022 Guidelines on State aid for climate, environmental protection and energy*.[52]

Nevertheless, at a local scale, it may not always be clear whether, for instance, the provision of public funds (or public resources in other forms) for renewable energy community projects infringe, or not, state aid rules. In fact, for the purpose of state aid rules, "*The Court of Justice has consistently defined undertakings as entities engaged in an economic activity, regardless of their legal status and the way in which they are financed*."[53] Consequently, provided that all the requirements set by the Commission Notice are fulfilled, renewable energy communities participated by the public authorities can also be, at least in theory, regarded as undertakings engaged in economic activities.

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48. D.Lgs. n.175/2016, art. 5, para 3.

49. D.Lgs. n.175/2016, art. 4.

50. This assumption was made clear in the decision of Corte dei Conti, Sezione Regionale di Controllo per la Toscana, 30 Marzo 2023, Deliberazione n. 77/2023/PASP.

51. D.Lgs. n.175/2016, art. 5.

52. European Commission Press Release IP/23/5787, Commission Approves €5.7 Billion Italian State Aid Scheme under the Recovery and Resilience Facility to Support Renewable Energy Communities and Self-Consumers (Nov. 22, 2023).

53. Commission Notice on the Notion of State Aid as Referred to in Article 107(1) of the Treaty on the Functioning of the European Union, 2016 O.J. (C 262) 1, 3.

From the regulatory framework depicted, case-law from Italian Courts of Auditors has stressed the need to guarantee the efficiency and good performance of the public administration in the corporate management of a public service even when local authorities engage in initiatives aimed at pursuing energy and climate targets and objectives.[54] In this perspective, the role of the Courts of Auditors can be considered new and unprecedented in that it involves a strict control over the financial management of RECs and their financial sustainability (also) in the future perspective, through an in-depth investigation into costs, revenues, and financial flows generated by a renewable energy community.

At the same time, some doubts may arise regarding the strict approach that characterize the motivational burdens of public administrations (especially as concern the application of European state aid rules to local projects).

V. CONCLUSION

The challenges of public governance of renewable energy communities are multifaceted from a legal point of view, since designing the internal governance of RECs implies a complex analysis of a local project and, more importantly, of its mission and vision for the future. While the role of local authorities in Italy is certainly strategic for the wide expansion of these initiatives, some legal issues have already emerged, proving the difficulty of adapting the model of a decentralized and democratic energy community to the energy sector.

If local authorities do not involve in renewable energy communities, the risk that can be envisaged is that these projects may not be sufficiently implemented in the whole territory[55] (at least not to the extent that is necessary in order to accomplish the ambitious targets that have been set out by the European Directives[56]). In fact, considering that renewable energy communities cannot be regarded as profitable projects for the private sector,[57] the involvement of local authorities becomes crucial for pursuing social and environmental targets that could be implemented within wider climate and energy policies. In a costs-benefits perspective, private companies that may want to produce renewable energy

54. Corte dei Conti, Sezione Regionale di Controllo per la Toscana, 30 Marzo 2023, Deliberazione n. 77/2023/PASP, para. 4.1.3.2, https://banchedati.corteconti.it/documentDetail/SRCTOS/77/2023/PASP (Among the first decisions on renewable energy communities, the court significantly underlined that the meritorious goals aimed at by the renewable energy communities cannot be considered in themselves sufficient to justify the establishment of a new company.).

55. In Italy, according to data reported from GSE, there were around 154 forms of shared energy that have been created (including renewable energy communities and collective self-consumption configurations). *See* GSE, COMUNITÀ ENERGETICHE RINNOVABILI - RAPPORTO 2024: IL PUNTO DELLA SITUAZIONE IN ITALIA [RENEWABLE ENERGY COMMUNITIES - 2024 REPORT: THE POINT OF THE SITUATION IN ITALY] (2024), https://www.legambiente.it/wp-content/uploads/2021/11/Comunita-energetice_report_2024.pdf. Many more RECs are expected after the approval of Ministerial Decree No. 414 of 7 December 2013 on incentives for RECs. 168 initiatives have been identified for the creation of configurations for self-consumption between energy communities and collective self-consumption, approximately double compared to 2023. *See* POLITECNICO DI MILANO, ELECTRICITY MARKET REPORT 2024 (Nov. 13, 2024), https://www.energystrategy.it/download/1044124/?tmstv=1738816470.

56. *See* Directive 2023/2413, *supra* note 3, at 26 ("*Member States shall collectively ensure that the share of energy from renewable sources in the Union's gross final consumption of energy in 2030 is at least 42,5 %.*").

57. RED II, *supra* note 4, art. 2, para. 16.

benefitting from state-recognized economic incentives can make use of other configurations (such as, for instance, renewable self-consumption, as provided by art. 21 of RED II) that do not involve an engagement with the whole community and that do not provide benefits to the most vulnerable households.

To this aim, it is especially important that the law does not act as a barrier but, rather, as an "action driver"[58] for local authorities' direct participation into these projects, finding a proper balance between the need to monitor the management of public resources with a more "lenient" approach for initiatives aimed at pursuing energy and climate targets (particularly as regard the analytical motivational burdens set by Legislative Decree No. 175/2016). Consistently, the Renewable Energy Directive states that "*Member States should provide an enabling framework to promote and facilitate the development of renewable energy communities.*"[59] That framework should ensure, in particular, that "*regulatory and capacity-building support is provided to public authorities in enabling and setting up renewable energy communities, and in helping authorities to participate directly*"[60] In addition to that, "*Without prejudice to Articles 107 and 108 TFEU, Member States shall take into account specificities of renewable energy communities when designing support schemes in order to allow them to compete for support on an equal footing with other market participants*"[61]

In this light, in accordance with the European legal framework, specific provisions that promote the direct involvement of local authorities in renewable-energy-communities projects should be envisaged. In fact, despite the challenges underlined in this contribution, the role of local public authorities is regarded as crucial in order to ensure the achievement of the mission of renewable energy communities (which also reflect national and European goals): providing social, environmental, and economic benefits to the whole community in which they operate.

58. Referencing the same expression used in EUR. COMM'N - ENERGY CMTYS. REPOSITORY, *supra* note 42.

59. RED II, *supra* note 4, art. 22, para. 4.

60. *Id.* art. 22, para. 4(h).

61. *Id.* art. 22, para. 7.

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