TU Delft

Delft University of Technology

Energy Citizenship

Envisioning Citizens' Participation in the Energy System

Dunphy, Niall; Lennon, Breffní ; Pearce, B.J.; Revez, Alexandra

DOI
10.1007/978-3-031-70153-5

Publication date
2024

Document Version
Final published version

Citation (APA)
Dunphy, N., Lennon, B., Pearce, B. J., & Revez, A. (2024). *Energy Citizenship: Envisioning Citizens' Participation in the Energy System*. Palgrave MacMillan Publishers. https://doi.org/10.1007/978-3-031-70153-5

Important note
To cite this publication, please use the final published version (if applicable).
Please check the document version above.

Copyright
Other than for strictly personal use, it is not permitted to download, forward or distribute the text or part of it, without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license such as Creative Commons.

Takedown policy
Please contact us and provide details if you believe this document breaches copyrights.
We will remove access to the work immediately and investigate your claim.

This work is downloaded from Delft University of Technology.
For technical reasons the number of authors shown on this cover page is limited to a maximum of 10.

palgrave pivot

Energy Citizenship

Envisioning Citizens' Participation in the Energy System

Niall P. Dunphy
Breffní Lennon
Alexandra Revez
Bin Bin J. Pearce

OPEN ACCESS

palgrave macmillan

Energy Citizenship

Niall P. Dunphy · Breffní Lennon ·
Alexandra Revez · Bin Bin J. Pearce

Energy Citizenship

Envisioning Citizens' Participation in the Energy System

palgrave
macmillan

Niall P. Dunphy
University College Cork
Cork, Ireland

Breffní Lennon
University College Cork
Cork, Ireland

Alexandra Revez
University College Cork
Cork, Ireland

Bin Bin J. Pearce
Delft University of Technology
Delft, The Netherlands

ISBN 978-3-031-70152-8 ISBN 978-3-031-70153-5 (eBook)
https://doi.org/10.1007/978-3-031-70153-5

This work has been conducted in the context of the ENCLUDE and ACCEPT Projects funded by the European Union's Horizon 2020 Programme for Research and Innovation under Grant Agreements No. 894759 and 957781.

© The Editor(s) (if applicable) and The Author(s) 2025. This book is an open access publication.

Open Access This book is licensed under the terms of the Creative Commons Attribution 4.0 International License (http://creativecommons.org/licenses/by/4.0/), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.
The images or other third party material in this book are included in the book's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the book's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.
The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.
The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Cover illustration: © Melisa Hasan

This Palgrave Macmillan imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

If disposing of this product, please recycle the paper.

Contents

List of Tables

CHAPTER 1

Citizen, Consumer, or (Energy) Serf: Where Does Our Energy Future Lie?

Abstract This chapter begins by introducing the reader to the many competing visions, expectations, and role(s) being placed on citizens in the energy system as it progresses to net zero. It introduces the reader to past energy transitions and highlights the social and cultural drivers of technical innovation, along with the unequal exchanges that arose as a result. Noting the simultaneous rise of European colonialism and the transition to fossil fuel economies, the chapter also highlights how energy has framed geopolitics ever since. Questions of power and agency are also addressed, and while it does point to some optimistic developments in the recent past, it highlights the very real potential for the current energy transition to slip into a more dystopian future than has heretofore been promised.

Keywords Power · Ideals · Energy imperialism · Justice

Despite the potential (and some would argue the need) for greater citizen participation around energy, there is a danger that co-option of the term 'energy citizenship' could mask certain dystopian quasi-feudal pathways that appear to be emerging. This chapter introduces the reader to competing visions of the role(s) for citizen as our energy system(s) evolve to net zero. It asks will we be expected to engage with energy as consumers, citizens, or as (energy) serfs? Building on earlier work (*e.g.*,

© The Author(s) 2025

N. P. Dunphy et al., *Energy Citizenship*,
https://doi.org/10.1007/978-3-031-70153-5_1

see Lennon et al., 2020), the chapter uses a number of different cases to argue that not all (energy) citizenships are created equally and for many the potential is very much for citizens to find themselves simply as energy denizens of an energy system where they have no real agency.

1.1 Introduction: Expressions of Power

Richard Rhodes opens the first section of his recent book 'Energy: A human history' (2018) with an evocative description of workmen hurriedly dismantling what was then the old Theatre in Shoreditch, London, during the late 1500s.[1] The workmen are gathered in the dead of night and dressed for the bitter cold. They needed to have the Theatre taken down and moved to a new location across the Thames River before the landlord who owned the site on which the theatre stood caught wind of their plans and claimed ownership of the building too. In the vignette, Rhodes describes the stamping cold, the ale-warmed breaths, and the work that must be done or the men's families go without. In the piece, Rhodes captures what is the essence of understanding the human dimension of energy and the systems on which it is sited and continually (re)negotiated, power. Power in its multiple manifestations is described here, from the capacity to do work with the workmen hammering and disassembling the timber structure; to the allusion to heat and light with the men operating under the cover of darkness despite the frigid cold; and the physical resource itself, the timber with its multiple applications as a fuel source, and an opportunity to create a home and find security; to finally the contested ownership and struggle for rights over both the building and the land that necessitates the need to undertake what was a risky and clandestine operation for the professed owners of the building, William Shakespeare's business partners the Burbage brothers. The timber would later be reused to construct the Globe Theatre some 4 km away in Southwark. Indeed, it is in this description we see the struggle for power—and by extension access to wealth creation—that in many ways

[1] The old Theatre had been built In 1576 by the brother's father James Burbage and his brother-in-law John Brayne on leased land. Following his death and the expiry of the lease, exorbitant fees were asked for a new lease. With the landlord claiming ownership of the building on the conclusion of the lease, the building had to be quickly and secretly moved. Accordingly, "*Burbage's sons had the Theatre dismantled, and its timbers moved to Bankside, Southwark, for the construction of the Globe in 1597–18*" (Ostovich, 2007).

characterises and underscores the intersecting human experiences that link energy and the systems that support its utilisation to one's individual choices and activities. There cannot be one without the other.

1.2 A Short History of (Energy) Transitions

The transition of power, in both political and energy terms, has long been a common theme of history with protagonists often unable to predict the outlying actors or events that may one day instigate systemic change. Life, with all its immeasurable intersecting complexities of cause and effect, often results in those very incumbents overseeing an existing power structure being ill-prepared for the changes that first undermine and inevitably undermine their position of dominance. Our ability to see patterns in events after the fact has not always served us well when trying to negotiate the many entanglements of late modernity (Bauman, 2000; Giddens, 1991). The current energy transition is no different.

If one were to inform a European charcoal manufacturer of the late Medieval period that wood was soon to lose its position as the primary-energy source for Western Europeans by the 1830s, it is likely incredulity and disbelief would characterise their response. After all, had not confirmative experience of over two thousand years shown to be a truism that wood in all its versatility and renewability to be the fuel source par excellence? The same can be said for those coal barons presiding over vast coal deposits from the late 1800s onwards that fuelled the steam age only for coal to be superseded by oil, nuclear fission, and natural gas over the course of the twentieth century. Looking at the evidence through a lens of confirmative experience invariably leads one not only to mistake or misrecognise the beginning of another technology shift in energy production and its consumption, but also how the new power structures (physical and otherwise) will take shape in order to breakdown the old and the build-up new systems.

In their analysis of shifting primary-energy sources, de Oliveira Matias and Devezas (2007) show how ever-increasing levels of sophistication within societal structures have resulted in what they consider to be five distinct technological transformations that coincide with what were significant shifts in how energy has been organised and utilised. The interlinking shifts in primary-energy sources usage and the technological transformations they facilitated can be sited along economic structural long waves, or Kondratieff waves (Hecht, 2023; Kondratieff, 1979;

Lewis, 2022; Philipson, 2022). Kondratieff waves (see also K-waves) describe long-range business cycles whereby new technologies drive the expansion of economic activities before they eventually contract or are abandoned as newer technologies overtake them. de Oliveira Matias and Devezas argue these technology transformations can be linked to clearly identifiable adaptations to newer primary-energy sources using this timeframe.

The first of these transformations takes place during the period 1770 to 1800, when wood and charcoal were superseded for the first time by coal as the primary-energy source for European industries, particularly ironmaking. They identify the second, and more complete, transformation as having occurred between 1830 and 1850 with the rise in the use of steam power in the textile and transport industries, again primarily sited in Europe colonial countries. These first two transformations have been linked together and can be understood as comprising the "*First Industrial Revolution*". The third transformation (1860–1900) centred on technological advances in a number of key industries, including steel and electricity production, chemicals, manufacturing, telecommunications, and the internal combustion engine. This "*Second Industrial Revolution*" also saw the increasing dominance of oil over coal as the primary-energy source for these key industries. While the fourth transformation, 1930 to 1950, centred on the production of synthetic goods, aviation, broadcasting, and electronics, all made possible by our ever-increasing dependence on the unsurpassed versatility of oil over all other energy sources. Finally, the fifth transformation they suggest started around 1980 and involved the growing enmeshment of microelectronics and telecommunications in every aspect of our day-to-day lives. Manuel Castells (2009) substantiates this assessment in the final volume of *The Information Age: Economy, Society and Culture*. However, he intimated that this transformation in fact began some five years earlier, around the mid-1970s. Regardless, there is agreement as to the nature of the current technological transformation, if not on its date of inception. For de Oliveira Matias and Devezas, the first and second K-waves saw significant technical and economic expansion arising from the growth in coal production, first as a competitor to wood and charcoal before its subsequent replacement of wood as a primary-energy source. Peak dependence on coal occurred during the third K-wave, with over 60% of the world's commercial and economic activity powered by it. During this third K-wave, non-solid fuels (NSFs) such as oil and natural gas grew in

importance before surpassing coal at the peak of the fourth K-wave. NSFs in turn helped drive the third and fourth sociotechnical transformations.

The height of the current and fifth K-wave is predicted by some to finally occur once we hit Peak Oil (Campbell, 1997; Campbell & Laherrère, 1998; Leggett, 2005) and again witness a new technological shift to renewable energy technologies. However, as Bardi (2019) outlines the peak oil concept has been largely abandoned having been a victim of a "*clash of absolutes*" with mainstream views on the economy and obsessions with perpetual growth that consign resource depletion and pollution as marginal phenomena to be overcome through technological advances. However, it was only partially correct due to it largely failing to account for the emergence of "*non-conventional*" oils and gas, particularly from fracking shale, which has played such a significant role in NSF production over the intervening years. Current economic models continue to ignore the external threats of runaway climate change (Albert, 2022) despite continued calls by the Intergovernmental Panel on Climate Change for current social, economic, and technological systems to undergo deep, rapid, and sustained mitigation and adaptations to achieve net-zero CO_2 emissions to limit human-caused global warming (IPCC, 2023). Some suggest we are already witnessing the start of this next technological transformation with renewable energy sources potentially overtaking NSFs as the primary-energy source over the course of this century. Indeed, there is very little choice to do otherwise, given the consequences. Interestingly, the leading technologies of the current K-wave, namely around Information Technology (IT), are in fact much less energy-intensive than any of the previous technologies that drove earlier transformations (Devezas & Modelski, 2003). In addition, the amount of carbon emitted per energy unit consumed has continued to decrease through the various K-waves described above (Table 1.1).

Table 1.1 Amount of carbon emitted per unit of energy consumed

Primary-energy source	*Carbon intensity (t-C/toe)*
Wood	1.25
Coal	1.08
Oil	0.84
Natural gas	0.64

Source (de Oliveira Matias & Devezas, 2007)

The carbon emission intensities of all available renewable energy sources are significantly lower than any of the four non-renewable energy sources, *i.e.*, coal, natural gas, oil, and nuclear power. Of these, wind power (particularly when sited in grassland areas like Inner Mongolia) is estimated to have the lowest carbon emission intensity when compared to other key renewable energy sources (hydropower, biomass, and photovoltaics). It is estimated that the carbon emission intensity of wind farms in such areas is approximately 148.45 times, 72.91 times, 127.85 times, and 3.50 times less than the carbon emission intensity of coal, natural gas, oil, and nuclear power, respectively (Liu et al., 2021). Despite this positive trend we face a Jevons paradox[2] whereby this trend downwards in terms of carbon intensity of the fuel sources used are being negated by a relentless upsurge in energy demand and will continue to have profound effects on how societies are to be structured into the future. We have been here before with previous energy transitions. With the expansion of infrastructures to facilitate the extraction and distribution of coal and oil, for example, saw costs drop and consumption increase and while renewables offer a unique potential to tackle carbon emissions and the climate crisis (particularly in terms of low-carbon, or even carbon–neutral electricity production), they are not without their own issues.

All transitions have essentially been a consequence of public policy and socio-economic power within societies (re)organising the economic and political structures required to accommodate the next transition. Understanding current public policy and the governance structures that regulate them is important if we are to maintain societal resilience in the face of the multiple challenges we are experiencing at present. It is important to note that these structures are not static but rather are consequence of evolving power plays and the abandoning or (re)capturing of ideological claims about how the world should be. How ideas form and operate as a social function, intervening in social conflicts by determining the practices and behaviours of individuals in their daily lives, relies on language as a tool for its operationalisation in such discourses (Coelho-Lima et al., 2021). In an earlier work (Lennon et al., 2020), we critiqued how language has been used to skew ideas around energy citizenship towards normative

[2] The Jevons effect or paradox suggests a positive relationship between efficiency and resources use. It posits that in addition to reducing the quantity of resources for a given use, improved efficiency of a technology also acts to lower cost of using resources, which will increase demand.

constructs of what it means to be a "*good* citizen", where the promise of agency in fact belies the reality of a further entrench doctrinaire neoliberalism within hegemonic visions of the energy systems of the future. In another example, Walker explains how the ecological sciences have moved from a position of critical collision with mainstream economics in the 1970s to one of collusion with the project of permanent growth, in and through the thermal crisis of the biosphere (Walker, 2020).

1.3 The Social and Cultural Dimensions to (Energy) Citizenship

Joost Alleblas' recent examination of energy history and policy points to an enmeshment or "*intertwinement of energy technologies with ideals*" (2024, p. 1) that plays a significant role in energy visioning and innovation pathways. Recurring aspirations towards a convergence of technical, social, and political ideals demonstrate a long-term commitment in the design of energy systems compared to realising other abstract goals, such as values. Alleblas' analytical model conceptualises these differences and their impact on energy policy into two spheres of interaction: A material sphere in which values and technologies co-evolve, and an imaginary sphere in which ideals interact with idealised technologies resulting in certain projects and technologies remaining a political rather than a techno-economic option. The cultural history of energy (systems) therefore is replete with ideals and utopian visions that intertwine with emerging technologies for the generation, distribution, and storage of energy all of which are underscored by contestations of power.

These idealisations of past and future are framed by technological innovations that can have both positive and negative impacts on the development of the energy system itself, but also on the social and cultural contexts from which they emerge. For example, the innovations in hydropower in Germany at the turn of the twentieth century led to the emergence of a romantic bias towards what were perceived to be preindustrial symbols at the time, encapsulated by watermills and more precisely the waterwheel in some quarters of German society (Limmer & Zumbrägel, 2020). In Ireland, aspirations of modernity in the nascent Irish state of the 1920s led to the establishment of the world's first state-owned national energy company, the Electricity Supply Board (ESB), and the roll-out of what was to be universal access to affordable electricity

through the Rural Electrification Scheme (RES) (Mercier, 2021). Indeed, the Shannon Hydroelectric Scheme which began construction in 1925 costed some IR£ 5.2 million for the 'first partial development' of the scheme, or approximately 20% of the government's revenue budget the same year (Schoen, 2002). The Shannon Scheme and the subsequent Rural Electrification Scheme (RES) were not only defining projects of the modern Irish State, but also were social watersheds that had deeply complex influences across the Irish arts scene including the painter Seán Keating and the writer Samuel Beckett. The intertwining of art and electrical power in the many artistic responses to the Scheme and the RES framed Irish electrification within wider political and social consolidations where the 'national character' was being reforged after what many saw as an unfinished war for independence from the British Empire and the bitter internecine civil war following independence. So much so that some contend that Beckett's plays, most notably Endgame (1957), can be best understood as 'electric' works (Bird, 2023).

The Irish romantic-realist painter, Seán Keating encapsulates the intersecting tensions within the new state in one of his most notable paintings "*Night's Candles are Burnt Out*" (1928–1929).[3] An allegorical piece, the foreground is filled with figures representative of the horrors of Ireland's recent history including a hanged figure suspended from the newly constructed national grid, though it is largely ignored by most of the other characters. The figures in the foreground also comprise remnants of colonial portrayals from Ireland's past including an alcoholic, a soldier, and a priest; while the future is represented by the professional figure in the centre, who is studiously ignoring the soldier, and by the young family pointing towards the newly constructed edifice of the dam which is bathed in sunlight (Boyd & McLaughlin, 2018). The painting captures much of the image the nascent Irish State was trying to project for itself. The power station was state of the art for the time and on completion was producing more electricity than the state needed. Also, the outward looking image the state wanted to portray is even more apparent when one discovers that a German company, Siemens-Schucker,[4] was commissioned to complete the project. Even the title

[3] This painting is usually housed at Gallery Oldham, UK. For an online visual example, see: https://artuk.org/discover/artworks/nights-candles-are-burnt-out-90693.

[4] Whereas prior to independence, it would have been unthinkable for such works not to have been awarded to companies from the colonial power.

itself, reminiscent of Shakespeare's metaphor in his play Romeo and Juliet, acts as an expression of the awakening of Ireland from the long night of its colonial history to something brighter and more optimistic (though the skeletal figure reminds us that the darkness is never far away).

As Boyd and McLaughlin have surmised, this new technology allowed for "*a profound altering of the daily social and working lives of the population*" at the time and is very much a condition of modernity whereby key (energy) infrastructure simultaneously shapes and is shaped across the micro-, meso-, and macro- scales of space, time, and social organisation (Edwards, 2002). Echoing Paul Edwards' contention that infrastructure is both invisible and ever-present, it only attracts attention when it is first created or destroyed. Boyd and McLaughlin's contention that "*Keating's painting, along with the physical artefact of the power station at Ardnacrusha, gather together and express vast, unseen and unknowable systems in a single moment*", which as a consequence of simply being renders the structure as occupying a "*space of interface between physical human experience and the larger, invisible networks*" affecting us all (Boyd & McLaughlin, 2018, p. 6).

1.3.1 Not All (Energy) Citizens Are Created Equal

Much like Keating's painting, in which none of the figures have an equal stake in the power station situated in the background, (energy) citizenship has been characterised more by inequalities particularly in terms of agency and power. The energy system continues to evolve as it decarbonises, but the very fact that decarbonisation should hopefully reduce the potential for climate catastrophe this does not excuse it from critical analysis. As we shall see, this book explores the various views and expectations being placed on citizens in realising what is to be new carbon–neutral energy future. The current energy system, itself constructed on a hydrocarbon foundation, has myriad overlapping injustices built into in terms of both the structures that support it and the behaviours and practices that sustain its operation. The historic exploitation of colonial territories and peoples who occupied them—through the appropriation of land, energy, and markets (Elkins, 2022)—helped to power the industrial revolutions in the Global North along with the subsequent capitalist economies that came after. Indeed, this exploitation only really benefited the very few, *i.e.*, those European capitalist imperialist oligarchies that prioritised the accumulation of resources over the needs of the majorities both domestically

and abroad (Hobson, 2018). This convergence of energy technologies with the political and economic interests of powerful oligarchies has characterised previous energy transitions and is again already beginning to define the trajectory of the current transition.

This unequal exchange is not a historical phenomenon. Existing literature highlights how fossil fuel consumption continues to shape urban environments; particularly the influx of motor cars into cities over the course of the twentieth century has had significant detrimental impacts on public spaces and public life (Feriel, 2020; Gehl, 2007; Pooley, 2010; Verlaan, 2021). Cities continue to be important hubs for organising and redistributing fossil fuels across global hydrocarbon commodity chains and have been produced and structured in such a way as to further consolidate existing racial, colonial, capitalist power structures, all of which are underscored by a deep-rooted logic of accumulation. Case studies from Vancouver, British Columbia, illustrate how fossil capital and the consolidating of global capitalist spaces put disadvantaged urban populations, Indigenous land, and waters at risk (Simpson, 2022). Indeed, fossil fuel pipeline-building continues largely without consent across Indigenous lands in North America and beyond, in what Samuel Spiegel describes as 'petro-colonialism' with its associated environmental destruction, threats to human and non-human health, and the moral and legal transgressions made by companies and state institutions tasked to facilitate these practices (Spiegel, 2021). So much so that pipeline developments across North America have become extremely controversial and draw considerable opposition from environmental activists, climate justice advocates, and Indigenous communities.[5] Invisibility and depoliticisation are the first barriers to critical thinking about energy systems (Loloum et al., 2021) and by extension the stakeholders and citizens who engage with them. Clearly, not all (energy) citizens can be considered to be treated equally with indigenous and socio-economically deprived communities often bearing the brunt of historical and current energy imperialism. However, there have been moments of opportunity within the current energy transition for citizens to disrupt fossil fuel flows and assert more just visions of a decolonised post-carbon future. These have often been led by Indigenous land protectors continuing a tradition of defending human and non-human life and informed by ontologies deeply rooted in ideas of

[5] See, *e.g.,* the grassroots Indigenous protests known as the Dakota Access Pipeline Protests (Whyte, 2017).

reciprocity and respect that continue to be largely ignored in extractivist settler-colonial cultures (Simpson, 2022).

The blockading of infrastructure can pose a very real economic threat to capital circulation, which explains in part why states invariably move to protect 'key infrastructure development' when threatened with disruption, *e.g.*, the Corrib Gas pipeline protests in Ireland during the 2000s resulted in state actors very much siding with the energy company over the protesters whom they were meant to represent. Consequently, activists can often capture a degree of power through strategic spatial occupations or Indigenous-led blockades of pipelines not just by disrupting economic flows of the projects themselves but also from what Bosworth and Chua describe as the eliciting of state anxieties around the racialised political, psychic, and economic framing of settler colonialism (Bosworth & Chua, 2023). Their analysis of the public discourse around the Keystone XL and Dakota Access pipelines, including legislative measures introduced to criminalise the successful blockade and protest at Standing Rock, describes the associated infrastructure security as a further appropriation of indigenous land rights through settler counter-sovereignty. Consequently, they argue, the subsequent criminalisation of (Indigenous) dissent through new, state-sanctioned protest legislation further demonstrates a continuity of enforcing settler political authority that is not only "*a form of anti-capitalist resistance, but also as a locus of anti-colonial struggle*" (Bosworth & Chua, 2023, p. 1345).

1.3.2 New Energy Infrastructure Tensions

Continuing support for the oil and gas industry by intentional energy policies that prioritise unsustainable growth represents a particular threat to ordinary citizens, as outlined above. However, citizen responses to this encroaching energy landscape include what Ternes et al. outline as localised mobilisations focused on protecting shared natural resources (2020). In applying grassroots opposition to the Keystone XL pipeline, for example, activists were able to build strong civil society coalitions centred on protecting local natural (water) resources while also contributing to wider climate change resistance, reflecting the history of social movements rooted in cultures of strong civic activism and progressive organising between what can often be disparate groups. Returning to the Keystone XL case study, Ternes et al. acknowledge that landowner; concerns about risks involved with the pipeline were not enough to

mobilise those most effected by the project, but rather it took the experience and capacity of a grassroots civil society organisation to align the common interests of landowners and communities along its route. When citizens organise in local coalitions along a proposed route, they are more likely to be successful in preventing the project from going ahead or at least to have a greater impact on how the project is ultimately developed.

Therefore, understanding the most appropriate modes of resistance will be essential if citizens are to be more than just energy denizens of existing power monopolies and is very much linked to the overall capacity of citizens and groups to be able to capitalise on this. This potential capacity and agency, however, is more likely to be available to citizens of states that are more energy independent than those with a high dependency on imported energy. Historically, the precursor to European colonial intervention was to breakdown the domestic market and the industrial capacity of the colonial territory in order to create the conditions whereby local populations become dependent on goods coming from the colonial centre in Europe. For example, British imperialism in India was first predicated on destroying indigenous industries there and flooding local markets with British goods made from the raw materials appropriated in India and other parts of the empire and shipped to factories in Britain (Mukherjee, 2010; Roy, 2016). Indeed, some have argued that the most recent phase of globalisation can be best understood as an instrument for continuing the economic exploitation of developing and poorer countries, in effect maintaining the colonial legacy of exploitation and plunder (Thakur, 2013). Consequently, there is a danger this energy transition will see a rise in energy imperialism between states, and between states and multinational corporations based outside their territory. The ongoing war in Ukraine, for example, was predicated upon years of protracted, on–off, successive gas crises orchestrated by Russia with threats to cut off the supply of natural gas to import-dependent European customers if certain geopolitical conditions were not met with regard to Ukraine (Skalamera, 2023; Stulberg, 2015, 2017).

The emergence of European imperialism and the transition to fossil fuel economies is no coincidence. Energy imperialism is best understood by first acknowledging the role fossil fuels have played—and continue to play—in framing international relations and driving the global economy, existing along nodes of influence that shape societies and have even changed the course of history (Musso & Crouzet, 2020). Historically, we can see multiple expressions, from the French conquest of Tonkin

and Annam (1873–1885) to appropriate coal resources there and secure energy supply for the French Navy (Campagne, 2020; Fichter, 2019); to the colonial ambitions of Nazi Germany and its attempted capture of the Caucasus oil fields to fuel its own war machine (Hayward, 1995; Toprani, 2016). Indeed, Timothy Winegard (2016) suggests how the First World War can be considered to be in many ways the first worldwide oil war, the consequences of which Kelanic (2016) notes have shaped the anticipatory strategies of powerful states ever since. These three strategies, (1) self-sufficiency, (2) indirect control, and (3) direct control, are all seen as viable approaches by states in countering coercive vulnerability in what she describes as the Petroleum Paradox. As Gonzalez (2018) rightly points out, energy, and by extension energy politics, is the basis of both the nation-state and globalism and frames all the inherent contradictions therein.

Some suggest the failed 1956 British-French-Israeli military intervention known popularly as the Suez Crisis may be seen as marking a shift away from more overt energy imperialism to alternative more indirect strategies. These arrangements include a mixture of direct foreign investment, trade agreements, joint ventures, long-term contracts, and infrastructural investments (Ciccantell, 2020) that often favour those more powerful stakeholders at the expense of often cash-strapped though resource-rich developing countries. In the Americas for example, as U.S. utilities reached peak growth over the course of the twentieth century U.S. engineers and businesses sought to create Northern-style rural electric cooperatives and monopoly utilities (often with little or no regulation) across much of Latin America. Consequently, they were able to create the conditions for locking in local dependencies on fossil fuel-based energy, while at the same time generating significant financial profit for their wealthy U.S.-based investors (Gustafson, 2017). As these utilities consolidated their control over local primary fuel sources, generation of electricity, and associated distribution infrastructure within what were effectively captured markets, they were able to maintain uninterrupted reliance and more importantly, profit. More recently, a growing dependence on electricity imports in North Macedonia has resulted in increased vulnerability to regional and global shocks such as the COVID-19 pandemic and the recent global energy crisis, where the sharp rise in energy prices has resulted in an equally sharp rise in the number of households falling into energy poverty, despite the roll-out of government supports. Chronic underinvestment in strategic energy infrastructure and

a reliance on outdated plant have resulted in over a third of its total gross electricity consumption having to be serviced from imports, leaving (energy) citizens there particularly vulnerable to the worst excesses of electricity market liberalisation. While in the Balkans deepening neoliberal restructuring of energy systems there has compounded recent democratic backsliding and intensified state-sponsored violence and coercion (Bochsler & Juon, 2020; Piletić, 2023). Indeed, Piletić contends that authoritarian governance should be seen as inseparable from the neoliberal market reform. In the Balkans, the adoption of the EU's *acquis communautaire*[6] has acted as a cover for local oligarchies to consolidate their control by triggering a more comprehensive privatisation programme of state-owned and natural resources. This capturing of the commons which should benefit ordinary energy citizens has instead created new highly lucrative sources of capital that primarily benefit existing (authoritarian) elites and reinforcing the clientelist structures close to—or within—the authoritarian state (Piletić, 2023).

Globally, some 1.1 billion people do not have access to electricity with 84% of those living in rural and remote areas of developing countries (de Almeida et al., 2020). In the Global South, there is a renewed interest in the off-grid city and how it might function as a conglomeration of place, lived space, and dynamic infrastructural configurations (Caprotti et al., 2022). Indeed, off-grid is seen as a potential solution to addressing access to electricity and clean cooking in the Global South (de Almeida et al., 2020; Grimm et al., 2019; Mugisha et al., 2021), the two key indicators of energy poverty (Ortega-Arriaga et al., 2021). Caprotti et al. (2022) offer a somewhat hopeful call for furthering off-grid urban research by first redefining academic and practical understandings of the "*grid*" and understood through decolonising and decentring the relationship between global, technocratic urban development practices and discourses in favour of a more needs-based approach to off-grid development that emphasises urban knowledge co-production with local communities. And while, hybrid renewable energy systems (HRES) with energy storage system (ESS) for domestic dwellings, where the vehicle-to-home (V2H) option is considered as backup/support, are becoming increasingly feasible and provide for a more reliable oversizing of the

[6] The corpus of European Union law encompassing *"multiple international treaties, well over 100,000 legislative acts, and tens of thousands of court rulings"* (Fjelstul, 2019, p. 671).

energy system, Groenewoudt and Romijn (2022) point to the limits of current corporate-led market development models with businesses often forced to choose between people-, profit-, and planet-oriented goals. They conclude, while corporate-led models may work well in much of the Global North, market-based approaches to technology diffusion in the Global South often prove counterproductive given the additional pressures placed on populations there, particularly those who need it most including the lowest-income and isolated populations.

A basic question arises, who controls the energy system? Clearly it is not the citizenry, despite efforts in some quarters to cultivate a more just energy system with (energy) citizens operating closer to the centre of decision-making processes (Laakso et al., 2023; Lennon & Dunphy, 2024). If we continue to incorporate renewable energy technologies into what has been—and continues to be—a deeply unjust global energy system, then we will see that nothing has really improved for the vast majority of citizens, and we will have missed another opportunity for genuine and legitimate change. Interestingly, work has begun on visioning the types of energy futures citizens would like to see, rather than the current one we are being presented with (Dahlgren et al., 2024; Morrissey et al., 2017; Mullally et al., 2022; Patel, 2024; Sovacool, 2019). Ryan Thombs, for example, suggests there are four potential energy futures facing us. The first involves what he describes as libertarian energy decentralism that is essential and monopolistic and decentralised where energy is seen as a private good with little or no collective decision-making with regard to energy production and use. This future is already taking place in parts of the United States, where policies implemented to facilitate this future are already in place in the likes of Nevada and Florida, where tax cuts, reregulating building codes, and subsidies are oriented towards supporting the rich, while at the same time exploiting and disadvantaging the most energy vulnerable who are left to rely on an increasingly dilapidated central grid system. The second future Thombs envisages, he describes as technocratic energy centralism, which can be seen in many ways as business as usual and most reflective of many present-day societies. While fossil fuel should hopefully be replaced by non-fossil energy, these would be organised in large, centralised spaces such as utility-scale solar and wind farms. Similar to the previous future, little or no attention is paid to the most vulnerable energy users in society with examples like New York State's Reforming the Energy Vision (REV) strategy to

prioritise large-scale renewable projects while maintaining utility companies and the overall structure of the current socio-economic system. The third future, democratic energy centralism, is a more imaginative future whereby democracy is multifaceted, participatory, associative, and deliberative while still organised along largely centralised structures. Having said that, it would still require a fundamental reorganisation of the political economy that prioritises democratic and just processes and outcomes across various social spheres. Thombs describes his fourth and final future as democratic energy decentralism, comprising of distributed generation, storage, and grid technologies that are closely connected to production to consumption and driven by community energy projects that see energy as a human right and a part of the commons, where communities have the power to redefine their relationship with natural systems (Thombs, 2019).

This shift towards democratising the institutions and experiences of daily life is intriguing. Rather than accepting non-fossil energy as a new means for capital accumulation and exploitation, the fourth potential future would see a de-commodifying of energy to become instead an essential human right and realised through more direct forms of democratic expression and localised control over existing highly centralised bureaucratic managerialism. The energy system is too important to be left to the business-as-usual pathway it is currently on. The following chapters will examine the pathways open to us as (energy) citizens. From current conceptualisations of energy citizenship, we will offer a framework typology that reflects the multiple sometimes overlapping expressions of (energy) citizenship that people must negotiate on a day-to-day basis. We will also examine emerging normative expressions of energy citizenship that already delineate how citizens are expected to participate in the energy domain. Most notably, notions of 'the good citizen' where economic participation is prioritised with rights and access to energy being 'earned' will be appraised, both in terms of their potential and with regard to their boundedness and usefulness in maintaining the status quo for the energy incumbents. While the later part of the book will suggest more participative understandings of the concept. Informed by debates around justice—distributive, procedural, recognition, and restorative—as they related to energy, we focus on the potentially positive roles new energy technologies offer to citizens that go beyond traditional consumption-orientated framings of participation and (energy) citizenship. Finally, we conclude this book by providing an overview of energy

citizenship both as a contested concept and exploring its potential for opening avenues for future study.

References

Albert, M. J. (2022). Beyond continuationism: Climate change, economic growth, and the future of world (dis)order. *Cambridge Review of International Affairs, 35*(6), 868–887. https://doi.org/10.1080/09557571.2020.1825334

Alleblas, J. (2024). Analyzing the role of values and ideals in the development of energy systems: How values, their idealizations, and technologies shape political decision-making. *Science and Engineering Ethics, 30*(8). https://doi.org/10.1007/s11948-024-00463-7

Bardi, U. (2019). Peak oil, 20 years later: Failed prediction or useful insight? *Energy Research & Social Science, 48*, 257–261. https://doi.org/10.1016/j.erss.2018.09.022

Bauman, Z. (2000). *Liquid modernity* (Vol. 1). Polity Press. https://doi.org/10.5565/rev/athenead/v1n0.10

Bird, D. (2023). You know what she died of, mother Pegg? Of darkness …. *Samuel Beckett Today/Aujourd'hui, 35*(1), 64–77. https://doi.org/10.1163/18757405-03501007

Bochsler, D., & Juon, A. (2020). Authoritarian footprints in Central and Eastern Europe. *East European Politics, 36*(2), 167–187. https://doi.org/10.1080/21599165.2019.1698420

Bosworth, K., & Chua, C. (2023). The countersovereignty of critical infrastructure security: Settler-state anxiety versus the pipeline blockade. *Antipode, 55*(5), 1345–1367. https://doi.org/10.1111/anti.12794

Boyd, G. A., & McLaughlin, J. (2018). No fixed form: The Infra-Éireann—Making Ireland modern pavilion and the sites of modernity. *ARENA Journal of Architectural Research, 3*(1). https://doi.org/10.5334/ajar.60

Campagne, A. (2020). French energy imperialism in Vietnam and the conquest of Tonkin (1873–1885). *Journal of Energy History | Revue d'Histoire de l'Énergie, 3*(Special Issue: Energy Imperialism? Resources, power and environment (19th–20th Century)).

Campbell, C. J. (1997). *The coming oil crisis*. Multi-Science Publishing Company.

Campbell, C. J., & Laherrère, J. H. (1998). The end of cheap oil. *Scientific American, 278*(3), 78–83. https://doi.org/10.1038/scientificamerican0398-78

Caprotti, F., de Groot, J., Bobbins, K., Mathebula, N., Butler, C., Moorlach, M., Schloemann, H., Densmore, A., & Finlay, K. (2022). Rethinking the off-grid city. *Urban Geography, 43*(8), 1217–1230. https://doi.org/10.1080/02723638.2022.2036928

Castells, M. (2009). *The information age: Economy, society, and culture, Vol. II: The power of identity*. Blackwell Publishers Ltd.

Ciccantell, P. S. (2020). Alternatives to energy imperialism: Energy and rising economies. *Journal of Energy History | Revue d'Histoire de l'Énergie*, *3*(Special Issue: Energy Imperialism? Resources, power and environment (19th–20th Century)).

Coelho-Lima, F., Varela, V., & Bendassolli, P. F. (2021). Ideology, sense, and meaning: A theoretical-methodological approach. *Culture & Psychology, 27*(1), 152–171. https://doi.org/10.1177/1354067X21993795

Dahlgren, K., Kaviani, F., Strengers, Y., Pink, S., & Korsmeyer, H. (2024). Bringing energy futures to life: Anticipatory household storylines as possible energy futures. *Futures, 158*, 103347. https://doi.org/10.1016/j.futures.2024.103347

de Almeida, A., Moura, P., & Quaresma, N. (2020). Energy-efficient off-grid systems—Review. *Energy Efficiency, 13*(2), 349–376. https://doi.org/10.1007/s12053-019-09813-y

de Oliveira Matias, J. C., & Devezas, T. C. (2007). Consumption dynamics of primary-energy sources: The century of alternative energies. *Applied Energy, 84*(7–8), 763–770. https://doi.org/10.1016/j.apenergy.2007.01.007

Devezas, T. C., & Modelski, G. (2003). Power law behavior and world system evolution: A millennial learning process. *Technological Forecasting and Social Change, 70*(9), 819–859.

Edwards, P. N. (2002). Infrastructure and modernity: Force, time, and social organization in the history of sociotechnical systems. In T. J. Misa, P. Brey, & A. Feenberg (Eds.), *Modernity and technology* (pp. 185–226). MIT Press. https://doi.org/10.7551/mitpress/4729.003.0011

Elkins, C. (2022). *Legacy of violence: A history of the British Empire*. Knopf Doubleday.

Feriel, C. (2020). The revolution that never was? Pedestrianization in a transnational perspective, Europe and North America (1960s–1980s). *Journal of World History, 31*(4), 761–783. https://doi.org/10.1353/jwh.2020.0051

Fichter, J. R. (2019). Imperial interdependence on Indochina's maritime periphery: France and coal in Ceylon, Singapore, and Hong Kong, 1859–1895. In J. R. Fichter (Ed.), *British and French colonialism in Africa, Asia and the Middle East* (pp. 151–179). Palgrave Macmillan. https://doi.org/10.1007/978-3-319-97964-9_8

Fjelstul, J. C. (2019). The evolution of European Union law: A new data set on the Acquis Communautaire. *European Union Politics, 20*(4), 670–691. https://doi.org/10.1177/1465116519842947

Gehl, J. (2007). Public spaces for a changing public life. In C. Ward Thompson & P. Travlou (Eds.), *Open space: People space*. Taylor & Francis. https://doi.org/10.4324/9780203961827

Giddens, A. (1991). *Modernity and self-identity: Self and society in the late modern age*. Stanford University Press.

Gonzalez, G. A. (2018). Energy, the nation-state, and imperialism. In *Star trek and the politics of globalism* (pp. 69–82). Springer International Publishing. https://doi.org/10.1007/978-3-319-95411-0_5

Grimm, M., Lenz, L., Peters, J., & Sievert, M. (2019). Demand for off-grid solar electricity—Experimental evidence from Rwanda. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3399004

Groenewoudt, A. C., & Romijn, H. A. (2022). Limits of the corporate-led market approach to off-grid energy access: A review. *Environmental Innovation and Societal Transitions, 42*, 27–43. https://doi.org/10.1016/j.eist.2021.10.027

Gustafson, B. (2017). The new energy imperialism in the Caribbean. *NACLA Report on the Americas, 49*(4), 421–428. https://doi.org/10.1080/10714839.2017.1409013

Hayward, J. (1995). Hitler's quest for oil: The impact of economic considerations on military strategy, 1941–42. *Journal of Strategic Studies, 18*(4), 94–135. https://doi.org/10.1080/01402399508437621

Hecht, J. (2023). Are long waves 50 years? Reexamining economic and financial long wave periodicities in Kondratieff and Schumpeter. *Review of Political Economy, 1–35*,. https://doi.org/10.1080/09538259.2023.2280803

Hobson, J. A. (2018). *Imperialism*. Routledge. https://doi.org/10.4324/9781315628523

IPCC. (2023). *Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, H. Lee and J. Romero (Eds.)]. IPCC, Geneva, Switzerland. https://doi.org/10.59327/IPCC/AR6-9789291691647

Kelanic, R. A. (2016). The petroleum paradox: Oil, coercive vulnerability, and great power behavior. *Security Studies, 25*(2), 181–213. https://doi.org/10.1080/09636412.2016.1171966

Kondratieff, N. D. (1979). The long waves in economic life. *Review (Fernand Braudel Center), 2*(4), 519–562. http://www.jstor.org/stable/40240816

Laakso, S., Eranti, V., & Lukkarinen, J. (2023). Practices and acts of energy citizenship. *Journal of Environmental Policy & Planning, 25*(6), 690–702. https://doi.org/10.1080/1523908X.2023.2251915

Leggett, J. (2005). *Half gone: Oil, gas, hot air and the global energy crisis*. Portobello Books.

Lennon, B., & Dunphy, N. P. (2024). Sustaining energetic communities: Energy citizenship and participation in an age of upheaval and transition. *Scientific Reports, 14*(1), 3267. https://doi.org/10.1038/s41598-024-53367-8

Lennon, B., Dunphy, N. P., Gaffney, C., Revez, A., Mullally, G. M., & O'Connor, P. (2020). Citizen or consumer? Reconsidering energy citizenship. *Journal of Environmental Policy and Planning, 22*(2), 184–197. https://doi.org/10.1080/1523908X.2019.1680277

Lewis, E. (2022). The paradigm shift cycle as the cause of the Kondratieff wave. In *Kondratieff waves: Processes, cycles, triggers, and technological paradigms*. Uchitel Publishing House. https://doi.org/10.30884/978-5-7057-6191-3_03

Limmer, A., & Zumbrägel, C. (2020). Waterpower romance: The cultural myth of dying watermills in German hydro-narratives around 1900. *Water History, 12*(2), 179–204. https://doi.org/10.1007/s12685-020-00252-6

Liu, P., Liu, L., Xu, X., Zhao, Y., Niu, J., & Zhang, Q. (2021). Carbon footprint and carbon emission intensity of grassland wind farms in Inner Mongolia. *Journal of Cleaner Production, 313*, 127878. https://doi.org/10.1016/j.jclepro.2021.127878

Loloum, T., Abram, S., & Ortar, N. (Eds.). (2021). *Ethnographies of power: A political anthropology of energy*. Berghahn Books. https://doi.org/10.3167/9781789209792

Mercier, S. (2021). Ireland's energy system: The historical case for hope in climate action. *New Labor Forum, 30*(2), 21–30. https://doi.org/10.1177/10957960211008165

Morrissey, J., Axon, S., Aiesha, R., Hillman, J., Lennon, B., & Dunphy, N. P. (2017). *Energy system visioning and low-carbon configurations* (D6.1). A research outputs of the ENTRUST H2020 Project. https://doi.org/10.5281/zenodo.3479205

Mugisha, J., Ratemo, M. A., Bunani Keza, B. C., & Kahveci, H. (2021). Assessing the opportunities and challenges facing the development of off-grid solar systems in Eastern Africa: The cases of Kenya, Ethiopia, and Rwanda. *Energy Policy, 150*, 112131. https://doi.org/10.1016/j.enpol.2020.112131

Mukherjee, A. (2010). Empire: How colonial India made modern Britain. *Economic and Political Weekly, 45*(50), 73–82. http://www.jstor.org/stable/25764217

Mullally, G. M., Revez, A., Harris, C., Dunphy, N. P., Rogan, F., Byrne, E., McGookin, C., Ó Gallachóir, B., Bolger, P., O'Dwyer, B., Flood, S., Boyle, E., Glynn, J., Barry, J., & Ellis, G. (2022). *A roadmap for local deliberative engagements on transitions to net zero carbon and climate resilience*. Environmental Protection Agency.

Musso, M., & Crouzet, G. (2020). Energy imperialism? Introduction to the special issue. *Journal of Energy History | Revue d'Histoire de l'Énergie, 3*(Special Issue: Energy Imperialism? Resources, power and environment (19th–20th Century)).

Ortega-Arriaga, P., Babacan, O., Nelson, J., & Gambhir, A. (2021). Grid versus off-grid electricity access options: A review on the economic and environmental impacts. *Renewable and Sustainable Energy Reviews, 143*, 110864. https://doi.org/10.1016/j.rser.2021.110864

Ostovich, H. (2007). Early modern theatre history. In A., Hiscock & L. Hopkins (Eds.), *Teaching Shakespeare and early modern dramatists. Teaching the new english* (pp. 14–25). Palgrave Macmillan. https://doi.org/10.1057/9780230593206_2

Patel, N. (2024). Performing energy justice futures: How visions of just futures shape discourses and practices in the United Kingdom's community energy sector. *Energy Research & Social Science, 111*, 103475. https://doi.org/10.1016/j.erss.2024.103475

Philipson, S. (2022). The end of the present mode of production—A new Kondratieff wave?—New directions for research? *International Journal of Innovation and Technology Management, 19*(03). https://doi.org/10.1142/S0219877022400028

Piletić, A. (2023). Renewable energy and EU-led authoritarian neoliberalization: small hydropower in Rakita, Serbia and the upscaling of environmental struggles. *Globalizations*, 1–16. https://doi.org/10.1080/14747731.2023.2167985

Pooley, C. G. (2010). Landscapes without the car: A counterfactual historical geography of twentieth-century Britain. *Journal of Historical Geography, 36*(3), 266–275. https://doi.org/10.1016/j.jhg.2009.12.007

Rhodes, R. (2018). *Energy: A human history*. Simon & Schuster.

Roy, T. (2016). The British Empire and the economic development of India (1858–1947). *Revista de Historia Económica / Journal of Iberian and Latin American Economic History, 34*(2), 209–236. https://doi.org/10.1017/S0212610915000336

Schoen, L. (2002). The Irish free state and the electricity industry, 1922–1927. In A. Bielenberg (Ed.), *The Shannon scheme and the electrification of the Irish free state* (pp. 28–47). The Lilliput Press.

Simpson, M. (2022). Fossil urbanism: Fossil fuel flows, settler colonial circulations, and the production of carbon cities. *Urban Geography, 43*(1), 101–122. https://doi.org/10.1080/02723638.2020.1840206

Skalamera, M. (2023). The geopolitics of energy after the invasion of Ukraine. *The Washington Quarterly, 46*(1), 7–24. https://doi.org/10.1080/0163660X.2023.2190632

Sovacool, B. K., & Furszyfer Del Rio, D. D. (2020). Smart home technologies in Europe: A critical review of concepts, benefits, risks and policies. *Renewable and Sustainable Energy Reviews, 120*(December 2019), 109663. https://doi.org/10.1016/j.rser.2019.109663

Spiegel, S. J. (2021). Fossil fuel violence and visual practices on Indigenous land: Watching, witnessing and resisting settler-colonial injustices. *Energy Research & Social Science*, *79*, 102189. https://doi.org/10.1016/j.erss.2021.102189

Stulberg, A. N. (2015). Out of gas?: Russia, Ukraine, Europe, and the changing geopolitics of natural gas. *Problems of Post-Communism*, *62*(2), 112–130. https://doi.org/10.1080/10758216.2015.1010914

Stulberg, A. N. (2017). Natural gas and the Russia-Ukraine crisis: Strategic restraint and the emerging Europe-Eurasia gas network. *Energy Research & Social Science*, *24*, 71–85. https://doi.org/10.1016/j.erss.2016.12.017

Ternes, B., Ordner, J., & Cooper, D. H. (2020). Grassroots resistance to energy project encroachment: Analyzing environmental mobilization against the Keystone XL Pipeline. *Journal of Civil Society*, *16*(1), 44–60. https://doi.org/10.1080/17448689.2020.1717151

Thakur, K. K. (2013). British colonial exploitation of India and globalization. *Proceedings of the Indian History Congress*, *74*, 405–415. http://www.jstor.org/stable/44158840

Thombs, R. P. (2019). When democracy meets energy transitions: A typology of social power and energy system scale. *Energy Research & Social Science, 52*, 159–168. https://doi.org/10.1016/j.erss.2019.02.020

Toprani, A. (2016). The first war for oil: The Caucasus, German strategy, and the turning point of the war on the Eastern front, 1942. *Journal of Military History*, *80*(3), 815–854.

Verlaan, T. (2021). Mobilization of the masses: Dutch planners, local politics, and the threat of the motor age 1960–1980. *Journal of Urban History*, *47*(1), 136–156. https://doi.org/10.1177/0096144219872767

Walker, J. (2020). *More heat than life: The tangled roots of ecology, energy, and economics*. Springer Nature Singapore. https://doi.org/10.1007/978-981-15-3936-7

Whyte, K. (2017). The Dakota access pipeline, environmental injustice, and US settler colonialism 'standing side by side in peaceful prayer'. *Red Ink: An International Journal of Indigenous Literature, Arts, & Humanities, 19*(1). https://ssrn.com/abstract=2925513

Winegard, T. C. (2016). *The first world oil war*. University of Toronto Press.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (http://creativecommons.org/licenses/by/4.0/), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

CHAPTER 2

Conceptualising Energy Citizenship

Abstract This chapter moves the discussion on by examining the conceptualisation of energy citizenship. Situating the reader within the authors' understanding of energy systems as fundamentally social structures, the chapter adopts an inclusive perspective of the citizen in the energy domain. It posits that an energy citizen is not something one becomes, nor something one earns, rather it is something that inherently exists. This chapter expands the discourse on energy citizenship by exploring emerging (often normative) notions that shape citizen engagement in energy. It also acknowledges how engagement is framed by different processes, including political struggles for recognition and prescriptive institutional ideas about being a 'good citizen'.

Keywords Citizenship · Republican tradition · Liberal tradition · Good citizen · Energy citizen · Post-cosmopolitanism

The ongoing decarbonisation of our societies both requires, and is resulting in, the emergence of new roles around energy and the energy system (Lennon et al., 2020). Energy citizenship is perhaps best understood as a sociotechnical imaginary of the "*roles that citizens could, or perhaps should play in the energy system*" (Dunphy & Lennon, 2022, p. 435). The term owes it popularisation, if not quite its origin, to Devine-Wright (2007) who positioned the "*energy citizen*" as a stakeholder in the

© The Author(s) 2025

N. P. Dunphy et al., *Energy Citizenship*,
https://doi.org/10.1007/978-3-031-70153-5_2

energy system in contrast to the traditionally passive role of consumer. However, what this concept might mean in practice, beyond a more active citizenry within the energy domain, has remained "*open to interpretation*" (Lennon et al., 2020, p. 184). Imagining the energy citizen and conceptualising energy citizenship requires us first to examine the ideas and theories associated with (traditional) citizenship.

2.1 The Meaning of Citizenship

> The nature of citizenship, like that of the state, is a question which is often disputed: There is no general agreement on a single definition
>
> —Aristotle (Barker, 1946, p. 93).

Terms like citizenship and citizen are powerful words with connotations of status and standing, of belonging and connection, and of responsibilities and duties. Citizenship was once thought to be of decreasing importance in the context of globalisation; however, the use of the term has increased dramatically in published works[1] since the 1980s, reflecting a burgeoning scholarly interest in the subject (Shachar et al., 2017). This renewed interest has been sparked (in part at least) by political issues, including international migration, the resurgence of nationalism, voter apathy, etc. (Somers, 1993; Kymlicka & Norman, 1994). It speaks also of a growing expectation for a greater role for citizens in decision-making.

The modern concept of citizenship is said to have its origins in antiquity, among the ancient Greek city states, in the Roman Republic and Empire, and through the medieval mercantile cities of Europe (especially Italy). Such claims however are open to allegations of Eurocentricity. Pocock (1995, p. 29) says that even when such claims are relegated to myth, in contrast to other civilisations "*the myth has a way of remaining unique as a determinant of 'Western' identity*".[2] However, some would argue that the concept of citizenship as we know it today is a more recent phenomenon, having developed over just the past few hundred

[1] Based on searches of the Google Books Ngram Viewer that charts the frequencies of search strings found in printed sources within Google's text corpora.

[2] Weber (1981/1927, p. 316) opined that "*the notion of citizens of the state is unknown to the world of Islam, and to India and China*".

years.[3,4] Riesenberg (1992, p. xviii) suggests that there have been two "*citizenships*" the first, a small-scale, discriminatory, hierarchal, participatory citizenship from the time of the Greek city states up until the French Revolution after which a larger scale, more egalitarian, less intimate, less active, anonymous, citizenship evolved, on which the democracies of today are built.

Leydet (2023) provides a broad definition of a citizen as "*a member of a political community who enjoys the rights and assumes the duties of membership*". However, describing the phenomenon of being a citizen, *i.e.,* citizenship, is somewhat more difficult. Canning and Rose (2001, p. 427) contend that citizenship is "*one of the most porous concepts in contemporary academic parlance*", noting it can variably be understood as a status, as a relation of being and/or as a set of practices with a political community.

Traditional notions of citizenship tend to be associated with formal membership of a polity[5] and have been conceived in statist terms. Such membership, typically predicated on belonging to a particular *demos* (Scherz, 2013), defines who "*belongs*" to the political community (and who doesn't) and the status that confers. A citizen can be viewed as "*having a stake*" in the society in which they reside (Anthias, 2013), and citizenship can be thought of as the formal relationship between polities and the people that live within their borders. Marshall (1992/1950) views citizenship as having three elements: Rights necessary for individual freedom of the person; rights to participate in the exercise of political power; rights to share in the social heritage and live a life in accordance with social standards prevailing in the society. This trio of civil, political, and social rights is recurring themes in citizenship discourse and as Turner (1990) observes are reflected in key institutions of modern liberal democracies, the law courts, parliaments, and welfare services.

[3] Burchell (2002, p. 90) for instance suggests that modern republicanism owes more to Protestantism than ancient citizenship or as he puts it to "more to *Calvin than it does to Cicero*".

[4] A significant milestone perhaps being Jefferson's purposive after-the-fact replacement of the word 'subject' with 'citizen' while drafting the US Declaration of Independence (The Library of Congress, 2010).

[5] Usually, but not always, expressed in terms of a national state; it is also commonly used in relation to other polities such as constituent units of a federation (*e.g.,* states of USA), autonomous regions (*e.g.,* Region of Åland, Finland), other subnational entities (*e.g.,* municipalities), or supranational communities (*e.g.,* European Union).

In addition to conferring membership of a polity on those who qualify, citizenship also acts to signify (and arguably amplify) non-belonging to those that fall outside of its citizenry.[6] Lister (2002, p. 98) posits that "*inclusion and exclusion represent the two sides of citizenship's coin*". Indeed, Riesenberg (1992, p. xvii) posits that being an agent of discrimination was one of its principal functions. This inclusion and exclusion are not always binary, rather they present as a continuum depending on a person's socio-demographics and their lived experience. For instance, Lister observes that the claims of marginalised groups such as women on citizenship remain rather fragile, noting for instance that women's ability to act as citizens in the public arena and derive benefits from citizenship "*is constrained by their responsibilities in the private (sphere)*" (Ibid., p. 99).

Canning and Rose (2001, p. 427) suggest "citizenship can be understood as a political status assigned to individuals by states, as a relation of belonging to specific communities, or as a set of social practices that define the relationships between peoples and states and among peoples within communities". Sociologist Margaret Somers argues that "citizenship rights were relational social practices not 'things'" and suggests a reorientation "away from a focus on status and toward citizenship as an 'instituted process'"[7] (1993, p. 611). This has the effect of refocusing away from individuals and towards networks of memberships and relationships in which people's social practices within particular sociocultural settings result in "citizenship" through their "interactions with institutions, ideals and rules of legal power" (Ibid., p. 661). Citizenship can be seen as a social construct whose extent (rules and norms of inclusion and exclusion), content (rights and responsibilities), and depth (thickness or thinness)[8] (Isin & Turner, 2002) have been, and will continue to be, contested and negotiated within different sociopolitical contexts.[9]

[6] This can lead to an othering of non-citizens, which in extreme cases facilitates a dehumanisation of 'others' evidenced in the discourse around immigration in the Global North (Fischer & O'Mara, 2023).

[7] See also Polanyi's (2011) treatment of "*The Economy as instituted Process*".

[8] Described by Isin & Turner (2002) as the three fundamental axes of citizenship.

[9] Khor (p. 112) for instance discussed "… *the range of changing ways in nation state decide to (re)frame, (re)define, and (re)determine criteria for admission to national citizenship at different times*".

There are two dominant models of citizenship. The civic republican tradition constructs citizenship as a "practice". It is based on duties and responsibilities (Dagger, 2002), and it emphasises the political agency dimension. Aristotle thought of eligibility for public office as central to citizenship much as today, we might see eligibility to vote (Walzer, 1989). Leydet (2023) posits the civic republican tradition draws from the experiences of Athenian democracy, from Republican Rome, the medieval Italian city states, and from workers' councils. The classical republican virtues are what have been termed "*masculine*", including courage, leadership, devotion, service, and sacrifice (Dobson, 2007). Its central themes are freedom, civic virtue, participation, and recognition (Honohan, 2002), with a fundamental principle of self-rule—that "*co-authoring of the laws* via *the general will that makes citizens free, and laws legitimate*" (Leydet, 2023). Thus, active participation in deliberation and decision-making is considered the defining feature that distinguishes citizens from subjects. In the words of Rousseau, "*obedience to the law one has prescribed for oneself is freedom*" (Ibid.).

The liberal tradition constructs citizenship as a "*status*"; it focuses on the entitlement of citizens to fundamental rights (Schuck, 2002). The liberal citizenship is associated with "*feminine*" virtues such as, "*caring, compassion. responsibility for the vulnerable*" (Dobson, 2007, p. 63). This tradition traces its origins to the Roman Empire, in which territorial expansion was in time accompanied by extension of citizenship to the conquered peoples.[10] This resulted in a profound transformation of the meaning of being a citizen. Citizenship came to mean being "protected by the law rather than participating in its formulation or execution" (Leydet, 2023). It became, in the words of Walzer (1989, p. 215), an "*important but occasional identity, a legal status rather than a fact of everyday life*". In the liberal tradition, "*citizens exercise their freedoms granted by their status, primarily in the world of private associations and attachments, rather than in the political domain*" (Leydet, 2023). Their status as a citizen is important primarily in so much as it protects their freedoms from interference from others and from the state.

The civic republican tradition sees "*citizenship as political agency*", while the liberal tradition sees "*citizenship as legal status*". The two models offer competing perspectives on "*the citizen*". The first sees

[10] Culminating in the *Constitutio Antoniniana,* of AD 212, which granted Roman citizenship to all free male adults of the empire (Benario, 1954).

the citizen as primarily a political actor active in the public sphere (to the possible detriment of their private life); in the second, the citizen's legal status is important on occasion (particularly when asserting rights)—but the citizen is focused on their private life, and they entrust decision-making to political representatives (Leydet, 2023).

However, the two citizenship traditions are not necessarily irreconcilable. Indeed, Michael Walzer (1989, p. 217) argues that "*citizenship as political participation or 'ruling' and citizenship as the receipt of benefits go hand in hand*". He suggests that securing the benefits of citizenship (from others and sometimes even from the state itself) and enjoying them requires otherwise passive citizens to become activist at least periodically. Ackerman (1988, cited in Leydet, 2023) agrees and suggests there is a time when people can be "private citizens" focusing on they activities in the private sphere, but a time also comes when they must become "private citizens" and contribute to the political community's public interest. Dagger (1997, p. 196) too argues that promoting civic virtue is not incompatible with individual autonomy, conceptualising a blended republican-liberal citizen "*who respects individual rights, values autonomy, tolerates different opinions and beliefs, plays fair, cherishes civic memory and takes an active part in the life of the community*".

The traditional statist view of citizenship explored above is inherently bound with membership of a specific polity, and as Linklater (1998, p. 23) says cannot be "*detached from the sovereign nation-state*". However, as discussed below there are alternative cosmopolitan perspectives, which acknowledge a shared humanity.

2.2 Cosmopolitan and Post-Cosmopolitan Citizenship

Cosmopolitanism is an ethical and moral philosophical tradition, which holds that "*human beings have equal moral and political obligations to each other based solely on their humanity*" (Brown et al., 2018). Warf (2020, p. 419) notes there are many varieties of cosmopolitanism, which although sometimes contradictory "*share a worldview centred on empathy and compassion, and frequently (but not always) reject parochial institutions such as the nation-state*". There are weak and strong perspectives on the concept; weak cosmopolitanism entails showing equal concern for all humans, while strong cosmopolitanism goes beyond this, requiring all people are afforded equal treatment.

The term is said to have originated with Diogenes of Sinope who when asked of his place of origin replied "*I am a citizen of the world*" (κοσμοπολίτης, kosmopolītes)[11] (Nussbaum, 1997, p. 5). Brock and Brighouse (2005, p. 2) comment that this Stoic "*idea of being 'a citizen of the world' neatly captures the two main aspects of cosmopolitanism: That it entails a thesis about identity and that it entails a thesis about responsibility*". Kleingeld (2016, p. 1) notes that the term "*cosmopolitanism*" has a variety of uses and that it takes different forms depending on the area of discourse (*e.g.*, morality, politics, etc.), and "*whether world citizenship is taken literally or metaphorically*". She posits that cosmopolitanism should be thought of "*as a family of positions, centred on the notion of world citizenship, either in a literal sense (political cosmopolitanism) or in a metaphorical sense*".

The basis of cosmopolitanism is acknowledgement of a shared humanity, the idea that people are citizens of the world and that as such owe a duty above all to the global community of people (Held, 2010). The archetype of political cosmopolitanism is a single world state encompassing all humanity, or the federation of free states suggested by Kant (Kleingeld & Brown, 2019). A distinction can be made between weak cosmopolitanism, which holds there are some global obligations that are extra-national, and strong cosmopolitanism, which holds that moral obligations are to all humans and not just fellow nationals (Brock & Brighouse, 2005).

In addition to the core concept of moral cosmopolitanism, there are a number of adjacent concepts, economic cosmopolitanism (that can be either right- or left-leaning) (Ritter, 2023), cultural cosmopolitanism (which adds a celebration of diversity) (Held, 2010), and political cosmopolitanism (which generally alludes to support for a global political community of some type).[12] Robertson (2019, p. 248) suggests the notion of cosmopolitan citizenship sees the coincidence of understandings of political and cultural cosmopolitanism. The political perspective places

[11] Although Diogenes asserted a primary affiliation with humanity over local affiliations, Nussbaum (1997, p. 4) contends that he "*seems to have little in the way of developed philosophical though, certainty not political thought*".

[12] Hannerz (2006, p. 14) quips that "*political cosmopolitanism is often a cosmopolitanism with a worried face, trying to come to grips with very large problems*" while cultural cosmopolitanism he suggests can be "*a cosmopolitanism with a happy face, enjoying new sights, sounds and tastes, new people*".

the focus on the right to belong and an obligation to be informed about issues, while the cultural perspective focuses on the right to information and an obligation to use that information to promote (global) solidarity.

Tan (2017, p. 696) identifies three main variants of cosmopolitan citizenship in the literature. The first is about global government. In this legal-political conception, citizenship is conceived in the same way of traditional citizenship, *i.e.,* linked in membership of a political community, in this case some formulation of a world state. The second concerns global governance. In this democratic conception, citizenship is conceived in terms of function and capacities of individuals, who have the right and obligation to contribute to global decision-making through empowered international organisations. The third takes a global justice perspective. This normative conception uses citizenship "*aspirationally to denote a moral perspective*" that individuals should adopt in consideration of their obligations and duties.

In his forwarding of ecological and environmental citizenships, Dobson (2003, 2007) introduced the idea of a post-cosmopolitan model of citizenship.[13] The new citizenship model places a focus on responsibilities rather than rights, and in contrast to traditional models of citizenship, it regards these responsibilities as unilateral, non-reciprocal, and non-contractual. It modulates the traditional public–private distinction found in ideas of citizenship, accepting that the "*private sphere may be a critical site of citizen activity*" (Dobson, 2003, p. 54). This idea of a post-cosmopolitan citizenship adds a perceived obligation of justice (of righting a wrong) to the idea of common humanity found in cosmopolitanism.

Dobson envisages the political space in ecological citizenship as "not the state or the municipality, or the ideal speech community of cosmopolitanism, but the 'ecological footprint'" (Ibid., p. 232). It is the individuals' ecological footprint "that gives rise to the obligations of ecological citizenship itself" (Ibid., p. 139). So, although post-cosmopolitan citizenships, like ecological and environmental citizenship, are conceived beyond the nation-state and are not territorially bound, that does not mean that they completely are divorced from "territory". Indeed, it is the injustice

[13] Some would question the need for a new model of citizenship. Barry (2006, p. 41) for instance argues that "*Dobson's notion of postcosmopolitan ecological citizenship is not as sharply distinguished from a republican notion as it first seems*".

represented in the "unequal occupation of ecological space" from which ecological citizenship came into being (Dobson, 2007).

Energy citizenship too is a citizenship beyond the state. While there is no agreed perspective on what constitutes citizenship in the energy domain, it can be said to share attributes of post-cosmopolitan citizenship, including a focus on virtues, applicability in both public and private spheres, and non-territorial-bound (Dunphy & Lennon, 2023).

2.3 Citizenship Within the Energy Domain

Terms like "energy citizenship" and "energy citizen" are increasingly used in the discourse around the energy transition, albeit perhaps used in different ways, and still to a large extent its use concentrated within academia and among policymakers. Devine-Wright (2007, p. 72) depicted an energy citizen as one who plays an active role in the energy system, contrasting them with the passive consumer—describing energy citizenship as "*a view of the public that emphasizes awareness of responsibility for climate change, equity and justice in relation to siting controversies as well as fuel poverty and, finally, the potential for (collective) energy actions*". However, as mentioned previously energy citizenship remains somewhat of a nebulous term and what it might look like in practice remains unclear and indeed is rather contested (Lennon et al., 2020). The concept of energy citizenship has only gained wider usage in the second decade of this century. In the context of the ongoing energy transition, different disciplines (including psychology, sociology, political science, and economics) have sought to adopt the concept. Dunphy et al., (2023a p. 34) suggest that the term "*has become somewhat polysemous in both how people interpret and apply it*"—not least because of the different disciplinary lens that have been deployed to explore the concept. Biresselioglu et al. (2021b p. 12) agree, observing "*in good part the different interpretations of citizenship coincide with the perspectives of the different scientific disciplines*". Mullally et al., (2018, p. 72) paraphrase Oliver Escobar by suggesting a key question (if not the key question) of energy citizenship is "*what kind of citizens are participants invited to be*?" Are they to be restricted to occasional voting for representatives who make decisions around energy? Will they be restricted to certain "*acceptable*" modes of participation in the energy domain? Will they be enabled to meaningfully participate in the planning and realisation of their energy future? In this respect, citizenship in the energy domain could potentially relate to one

or more of the three models discussed above, civic republican, liberal, and/or post-cosmopolitan, depending on context and the "*nature*" of the citizenship being discussed.

Governments and public agencies often use the framing of "*good citizens*" to encourage certain forms of behaviour and discourage others (Pykett et al., 2010). Lennon et al. (2020) argue that discussions on citizenship in the energy transitions discourse have been skewed towards normative descriptions of how a "*good citizen*" can contribute to energy conservation and decarbonisation by being an active consumer (and occasionally a prosumer) in the energy sphere. The term "*energy citizenship*" is often used as a synonym for a good citizen in the energy domain. Ryghaug et al., (2018, p. 285) note the concept is often simply used as a "*signifier employed to describe a desired outcome of energy transitions*". Policymakers for instance increasingly use the term to refer to the role(s) that they would like to see citizens adopt in the energy future as they would see it. This perspective emphasises the responsibilities of citizens—focusing particularly on their role as a consumer—with little acknowledgement of citizens' other roles around energy and a discounting of, and in many cases an indifference to, people's associated rights—such as a right to energy (Hesselman, 2022). Such a consumerist-orientated conceptualisation disregards the duality of the citizen who exists "*simultaneously as a 'communal being' ('citoyen') and as a private individual ('bourgeois)*" (Rosenow, 1992, p. 45), and in doing so, restricts the roles that citizens might be permitted to play in the energy system, thereby limiting their contribution to the energy transition.

A normative perspective is reflected for instance in Biresselioglu et al.'s (2021a, p. 16) definition of energy citizenship as "the degree to which, and the ways in which, the goals of a sustainable energy transition enter into the everyday practices of an individual". Energy citizens in this light have variously been described in terms of empowered consumers (Lennon et al., 2020), acquiescent neighbours in the context of new energy infrastructure (Sarrica et al., 2018), energy prosumers, (described by Szulecki, 2018, p. 22 as "an ideal typical citizen of energy democracy"), etc. The framing of energy citizenship in terms of consumer empowerment reflects perhaps a wider political shift towards narrow, prescriptive ideas of citizenship including a rather truncated version of Trentmann's (2007) citizen-consumer. Lennon and Dunphy (2023, p. 328) for instance note the invocation of terms and concepts around energy citizenship in the language of governments and supranational organisations, such as the

European Union. They comment that it "is applied interchangeably with that of the active consumer in a growing number of policy documents". Many policymakers (especially politicians) favour simple narratives like the citizen-consumer, which as Fox et al., (2017, p. 7) observe "shares affinities with, and reaffirms, dominant neoliberal ideologies that locate citizens as consumers and reduce change to a matter of market choice". However, this privatisation and individualisation of responsibility "shifts blame from State elites and powerful producer groups to more amorphous culprits like 'human nature' or 'all of us'" (Maniates, 2001, p. 43)—away from those with real power and influence, to individual citizens who have far less agency. This disregarding of the need for societal and structural changes coupled with the shift of "*much of the responsibility for the transition on the citizen-as-consumer has … [left] both citizens and consumers largely disconnected and disempowered*" (Lennon et al., 2020, p. 185).

Acceptance of energy infrastructure deployment deemed necessary for the energy transition (by those in decision-making positions) is increasingly positioned in terms of being a good citizen, an energy citizen. The views of opponents to such projects are often simplistically explained away as opposing simply due to a lack of knowledge or possessing a so-called not-in-my-backyard NIMBY attitude. Mullally et al., (2018, p. 75) identify this paternalistic strand in transitions discourse which holds that "*people are ill-informed but that given sufficient information and education they will become 'good' energy citizens*". In such perspectives, opposition to energy projects can be overcome by "*educating*" the opponents, and they are still "*unreasonable*" by invoking perceived popular support at national level to set aside the views of locals (Ibid.).

The adoption of appropriate renewable energy solutions (RES) by citizens enables them to become both producer and consumers of energy, so-called energy prosumers. This can be realised individually through household scaled RES or collectively through energy communities and/or cooperatives. For a growing number of people energy citizenship is synonymous with prosumption. Indeed, the European Environment Agency (2022, p. 9) uses the terms interchangeably positing that "*Individual citizens, small or medium-sized companies and public entities that consume and produce renewable energy are often called prosumers, energy prosumers or energy citizens*". So, it can be seen that for many, participation is central to their understanding of energy citizenship—recalling the citizenship of a practice found in the civic republican tradition. Hamann et al. (2022, p. 70), for instance, see energy citizens

"*as active agents that create the foundation for, participate in, and sustain a regenerative energy system*". In their view, "*energy citizenship describes people's opportunity and willingness for active participation in the energy transition, with the goal of achieving a decentralised, equitable, and regenerative energy system*". This focus on active participation portrays citizens primary as economic actors who become energy citizens by using their purchasing power and consumption habits (in certain prescribed ways) as citizen-consumers, and who get involved in production (where and as permitted) as citizen-prosumers. This focus on economic participation is exclusionary ignoring "*issues of unequal access to energy, limited financial resources, educational privilege and expertise, or differential levels of control over one's environment and practices*" (Lennon et al., 2020, p. 189). In this, we note an inherent classism found in many expressions of energy citizenship. Dunphy and Lennon (2022) warn that such a focus on economic participation risks the creation of an excluded group or groups—albeit perhaps this is somewhat in keeping with the core concept of citizenship, which has often been seen as a container for apportioning privilege (Gee et al., 2016).

Others, while acknowledging the importance of citizen participation (or at least them being permitted to participate), consider energy citizenship to be something more. Mullally et al. (2018) see citizenship within the energy domain as comprising both rights and responsibilities, reflecting both liberal and civic republican traditions. More recently drawing from the work of a number of significant EU-funded projects[14] on the topic, Pearce and Thalberg (2024, p. 3) succinctly describe that "*energy citizenship pertains to citizen engagement and involvement in the energy transition and the rights and responsibilities of citizens to that end*". Pel et al., (2021 p. 9) see the concept of energy citizenship as a way to "*make sense of the transition towards future energy systems*". They suggest it is a sociotechnical vision conceptualised by activists, academics, and increasingly, policymakers of the potential roles that citizens could, or perhaps should, play in the energy system—arguing it "*is a political ideal, a 'socio-technical imaginary', or a 'knowing of governance' that expresses various concerns and insights about the ongoing energy transition*" (Ibid., p. 26).

[14] EC2 (https://doi.org/10.3030/101022565), ENCLUDE (https://doi.org/10.3030/101022791), EnergyProspects (https://doi.org/10.3030/101022492) & DIALOGUES (https://doi.org/10.3030/101022585) H2020 projects.

2.4 The Energy Citizen

In contrast to many perspectives on citizenship in the energy domain, we start from the position that an energy citizen is not something one becomes, it is not something one earns, rather it is something that inherently exists by virtue of people's existing close relations with energy and the energy system (Dunphy & Lennon, 2022). We posit that energy citizenship can be expressed in multiple, overlapping, and sometimes transitory ways. An individual's expression of citizenship(s) in the energy sphere is strongly influenced by their socio-economic privilege and life experience (Dunphy et al., 2023b). In our view, energy citizenship involves a combination of rights and responsibilities representing a hybrid of civic republican and liberal traditions of citizenship. Depending on a particular expression, it is underpinned by key sustainability and social justice principles (Mullally et al., 2018), reflecting attributes of cosmopolitan and post-cosmopolitan citizenship.

In an earlier work (Dunphy & Lennon, 2022), we identified four modes of citizen participation and nonparticipation which act to frame ways in which energy citizenship can be expressed. The first concerns '*Access to energy*', a topic often overlooked in energy citizenship discourse; it is of most relevance for those who are at the margins of society, economically, socially, or even geographically. Those who find themselves expressing energy citizenship in this framing are marginalised, by the energy system, by the economic system, and possibly by wider society. They either operate outside of existing energy system structures or are negatively impacted by these structures. These expressions of energy citizenship include the dispossessed, marginalised people who have been displaced by, *e.g.,* resources extraction, infrastructure deployment, or from whom resources have been appropriated. The excluded are those who are unable or not allowed to connect to energy grids for sociopolitical and/or economic reasons. Another expression is the vulnerable, those for whom energy affordability is a serious concern, and who are at risk of energy poverty (*i.e.,* being unable to afford essential energy services and products). An interesting additional manifestation of the energy citizen is as the constrained consumer, economically or geographically peripheral people who have limited choice of, and access to, energy suppliers.[15]

[15] See also Hamidi (2020) for treatment of the analogous concept of food desert.

The second way in which energy citizenship can be expressed it through the traditional relationship citizens has with the energy system, as a consumer. These consumption-orientated expressions include the active consumer energy citizen persona discussed above, wherein people are expected to be "*good*" citizens in the energy domain. The active consumers are energy literate and use their purchasing power to influence the market (*e.g.,* procuring energy efficient appliance, choosing renewable energy suppliers, etc.) and they adjust their consumption habits in response to government and other power holder requests, *e.g.,* reducing demand, time-shifting use, etc.; the smart consumer, who is a digital native and for whom energy and the energy system are mediated through a plethora of smart meters (and associated smart plans), internet-connected appliances (and the additional control that goes with that) and gadgets[16]; the collectivist-consumer, one of those consumers of energy that combine "*with others to group purchase, manage, and/or consume energy (sometimes in the form of heat)*" (Dunphy & Lennon, 2022, p. 436).

The third mode of participation, and perhaps the most prominent in people's mind, is production-orientated; it encompasses the various ways in which citizens produce energy individually or with others. The first is the prosumer, a citizen who deploys technology to both produce and consume energy. This hybrid energy prosumer produces energy (using RES technologies such as solar-PV, wind, etc.), they use what they need at that time (reducing the amount required from the grid), they surplus may be stored in batteries for later use, or it can be exported to the grid.[17] The self-consumer is a variant of the prosumer, who does not (usually) export to the grid. In the extreme case, they may seek to be autonomous of energy grids by producing, storing, and using all their energy onsite. Alternatively, they may produce only some of their needs and have a need to import from the grid periodically. The collectivist-producer is a citizen who combines with others in collective energy generation projects. These are typically in the form of cooperative organisations,

[16] Sovacool and Furszyfer Del Rio (2020) offer a nice overview of the 'smart home revolution'.

[17] Depending on regulatory context, exports to energy companies via the grid may be sold or traded under net billing, net metering or feed-in-tariff arrangements (or in less developed markets simply exported to grid for no consideration).

social enterprises, or similar (indeed, such is the mind share of this type of activity, it is not uncommon for membership of an energy cooperative to be taken as synonymous with energy citizenship) but may also take other forms including conventional for-profit companies. The collectivist producers usually produce the energy for sale (but of course it can also be used for collective self-consumption see, for example, Reis et al. 2022). Another means of an energy citizen expressing through production of energy is as a citizen-investor in energy undertakings; this may be realised in a several ways including through regular shareholding in projects/companies, investment in energy investment funds, participation in crowdsourcing initiatives, etc. There are a variety of economic environmental and social motivations for such investments (Dunphy & Lennon, 2022).

The fourth mode of citizenship participation around energy is in the (socio-)political arena. The highly regulated (almost quasi-public) nature of energy governance lends itself to this mode of involvement. This mode of participation is centred on decision-making processes, practices, and outcomes. The citizen-litigator is focused on procedure and process. They acknowledge and work through existing established processes and institutions to ensure the correct application of law, with a focus on statutory consultation, information provision, and permitting/licensing. By working within the institutions (and indeed by being part of the system) in this way, they aim to deliver improved energy policy, planning, development, and operation. The citizen challenger sees the energy transition as a sociopolitical challenge and considers political action to be the best course of action. They are knowledgeable, motivated, and increasingly well-organised in these activities. They work with others to challenge the *status quo* and bring about change with the political sphere, through campaigning, lobbying, and electoral politics. Whereas the previous two expressions of energy citizenship were about working within the system, the citizen-activist works more on the margins, albeit there is some overlap with the politically focused citizen challenger. While the citizen-activist also wishes to change the *status quo*, they have no trust in the political system to deliver such change, so they get involved in radical action like protest and agitation. They are typically younger, idealistic, motivated, and quite frankly have less to lose—often they feel alienated by the mainstream discourse. Martin (2007, p. 27) observes that such activists are "… *challengers to policies and practices, trying to achieve a*

social goal, not to obtain power themselves". It is this idealism that gives them their strength. As Dunphy and Lennon (2022, p. 439) observe their "*aim is not so much to achieve change through the system but rather to change the system itself*".

2.5 Conclusion

The citizens' relationship with energy has been seen traditionally in transactional terms, energy was a necessary and a desirable commodity, and the citizens' only expected, or only permitted, role was that of a (passive) consumer. This has changed and continues to change. Consumers have more agency; they are better educated, better informed, and are more willing to play a greater role in the energy system. On the other hand, energy companies need consumers to become more active (*e.g.,* time-shifting energy use away from peak times to reduce the strain on energy grids during periods of high demand). The term 'energy citizenship' is increasingly used to reflect such new roles, whatever they may be. While there is an acceptance of the benefits of increased citizen participation, there is no agreement on the roles that citizens should permitted to play in the energy domain—once again raising the question posed by Mullally et al., (2018, p. 72) "*what kind of citizen are (energy) citizens invited to be*?".

The concept of energy citizenship can be understood as a social construct, a sociotechnical vision conceptualised by activists, academics, and policymakers of the potential roles that citizens could play in the energy system. We suggest that energy citizenship is best considered not as a single (ideal) state that one achieves. Rather it should be seen as a means of understanding (and explaining) people's complex and dynamic relationship with energy and the energy system (Dunphy & Lennon, 2022). In this view, energy citizenship is cosmopolitan in that we all share in it by virtue of the way in which energy and the energy system are so interwoven into our daily lives. It represents a hybrid of the civic republican citizenship as a practice and liberal citizenship as a status, incorporating both responsibilities and rights. Additionally, there is a glimpse of post-cosmopolitan sensibilities in the tendency of the energy citizenship discourse to also include sustainability and social justice principles (Dunphy et al., 2023a, 2023b; Mullally et al., 2018).

Therefore, we contend that energy citizenship is a concept describing people's relationship with the energy system. As Lennon and Dunphy (2023a) observe "*citizens play multiple evolving roles in the energy sphere, which overlap and can change over time*". There is therefore not just one way of being an energy citizen. Rather energy citizenship comprises multiple, overlapping interlinked, transitory expressions across several modes of participation/nonparticipation, including access to energy; consumption; production; and political and governance.

It is noteworthy that not all expressions of energy citizenship are equally supported by those with power. The traditional energy system powerholders have a marked preference for certain "*acceptable*" expressions of energy citizenship, those which do not pose a threat to the *status quo*. Those expressions which challenge energy policy or pose a threat to the activities of incumbents are less welcome. The acceptable expressions tend to be those that emphasise a normative perspective focused on responsibilities and obligations, with perhaps some toleration of rights relating to active consumerism and prosumerism in a rather prescribed manner.

References

Ackerman, B. (1988). Neo-federalism? In J. Elster & R. Slagstad (Eds.), *Constitutionalism and democracy* (pp. 153–194). Cambridge University Press.

Anthias, F. (2013). *Identity and belonging: Conceptualisations and political framings* (KLA Working Paper Series No. 8). Kompetenznetz Lateinamerika - Ethnicity, Citizenship, Belonging.

Barker, E. (Translator). (1946). *The politics of Aristotle*. Oxford University Press.

Barry, J. (2006). Resistance is fertile: From environmental to sustainability citizenship. In A. Dobson & D. Bell (Eds.), *Environmental citizenship* (pp. 21–48). MIT Press.

Benario, H. W. (1954). The Dediticii of the Constitutio Antoniniana. *Transactions and Proceedings of the American Philological Association, 85*, 168–187.

Biresselioglu, M. E., Demir, M. H., Solak, B., Turan, U., Clément, G., Sahakian, M., Kollmann, A., Musina, D., Kollmann, A., & Schibel, K.-L. (2021a). *Integrated Research White Paper (D2.1)*. A Research Output of the DIALOGUES H2020 Project.

Brock, G., & Brighouse, H. (2005). Introduction. In G. Brock & H. Brighouse (Eds.), *The political philosophy of cosmopolitanism*. Cambridge University Press.

Canning, K., & Rose, S. O. (2001). Gender, citizenship and subjectivity: Some historical and theoretical considerations. *Gender and History, 13*(3), 427–443. https://doi.org/10.1111/1468-0424.00238

Dagger, R. (2002). Republican citizenship. In E. F. Isin & B. S. Turner (Eds.), *Handbook of citizenship studies* (pp. 145–158). Sage Publications Ltd. https://doi.org/10.4135/9781848608276

Dagger, R. (1997). *Civic virtues: Rights, citizenship, and republican liberalism*. Oxford University Press.

Devine-Wright, P. (2007). Energy citizenship: Psychological aspects of evolution in sustainable energy technologies. In J. Murphy (Ed.), *Governing technology for sustainability* (pp. 63–86). Earthscan.

Dobson, A. (2003). *Citizenship and the environment*. Oxford University Press.

Dobson, A. (2007). Environmental citizenship: Towards sustainable development. *Sustainable Development, 15*, 276–285.

Dunphy, N. P., & Lennon, B. (2022). Whose transition? A review of citizen participation in the energy system. In K. Araújo (Ed.), *Routledge handbook of energy transitions* (pp. 430–444). Routledge. https://doi.org/10.4324/9781003183020-30

Dunphy, N. P., Revez, A., Lennon, B., & Brenner-Fließer, M. (2023a). *Typology of energy citizenship(s)*. A Research Output (D2.2) of the ENCLUDE H2020 Project. https://doi.org/10.5281/zenodo.10005552

Dunphy, N. P., Revez, A., Lennon, B., Quinlivan, L., & Brenner-Fließer, M. (2023b). *Report on Intersectional analysis of emerging examples of energy citizenship*. A Research Output (D2.1) of the ENCLUDE H2020 Project. https://doi.org/10.5281/zenodo.7598736

European Environment Agency. (2022). *Energy prosumers in Europe: Citizen participation in the energy transition*. Publications Office of the European Union.

Brown, G. W, McLean, I., & McMillan, A. (2018). Cosmopolitanism. In *A concise Oxford dictionary of politics and international relations* (4th ed.). Oxford University Press.

Fischer, V., & O'Mara, S. M. (2023). 'They deserve it for what they're doing': Dehumanising rhetoric as a facilitator of the recourse to violence against the defenceless. *Current Opinion in Behavioral Sciences*, *51*, 101280. https://doi.org/10.1016/j.cobeha.2023.101280

Fox, E., Foulds, C., & Robison, R. (2017). *Energy & the active consumer—A social sciences and humanities cross-cutting theme report*. SHAPE ENERGY.

Gee, G. C., Morey, B. N., Walsemann, K. M., Ro, A., & Takeuchi, D. T. (2016). Citizenship as privilege and social identity. *American Behavioral Scientist, 60*(5–6), 680–704. https://doi.org/10.1177/0002764216632834

Hamann, K. R. S., Bertel, M. P., Ryszawska, B., Lurger, B., Szymanski, P., Rozwadowska, M., & Goedkoop, F. (2022). *Interdisciplinary understanding of energy citizenship*. D2.1 of the Horizon 2020 project EC2, EC grant agreement no. 101022565.

Hamidi, S. (2020). Urban sprawl and the emergence of food deserts in the USA. *Urban Studies, 57*(8), 1660–1675. https://doi.org/10.1177/0042098019841540

Hannerz, U. (2006). *Two faces of cosmopolitanism: Culture and politics*. Serie: Dinámicas interculturales Número 7. Barcelona: Documentos CIDOB.

Held, D. (2010). *Cosmopolitanism. Ideals and realities*. Polity Press.

Hesselman, M. (2022). Right to energy. In C. Binder, M. Nowak, J. Hofbauer, & P. Janig (Eds.), *Elgar encyclopedia of human rights* (pp. 62–69). Edward Elgar Publishing. https://doi.org/10.4337/9781789903621.energy.right.to

Honohan, I. (2002). *Civic republicanism*. Routledge. https://doi.org/10.4324/9780203460894

Isin, E. F., & Turner, B. S. (2002). Citizenship studies: An introduction. In E. F. Isin & B. S. Turner (Eds.), *Handbook of citizenship studies* (pp. 1–10). Sage Publications Ltd.

Kleingeld, P. (2016). Cosmopolitanism. In *The international encyclopedia of ethics* (pp. 1–10). Wiley. https://doi.org/10.1002/9781444367072.wbiee629.pub2

Kleingeld, P., & Brown, E. (2019). Cosmopolitanism. In E. N. Zalta (Ed.), *The Stanford encyclopedia of philosophy* (Winter Ed.). https://plato.stanford.edu/archives/win2019/entries/cosmopolitanism/

Kymlicka, W., & Norman, W. (1994). Return of the citizen: A survey of recent work on citizenship theory. *Ethics*, *104*(2), 352–381. https://doi.org/10.1086/293605

Lennon, B., Dunphy, N. P., Gaffney, C., Revez, A., Mullally, G. M., & O'Connor, P. (2020). Citizen or consumer? Reconsidering energy citizenship. *Journal of Environmental Policy and Planning, 22*(2), 184–197. https://doi.org/10.1080/1523908X.2019.1680277

Lennon, B., & Dunphy, N. P. (2023a). Energy and citizenship in a time of transition and socio-technical change. In *The Palgrave handbook of global social change* (pp. 1–15). Springer International Publishing. https://doi.org/10.1007/978-3-030-87624-1_223-1

Leydet, D. (2023). Citizenship. In. E. N. Zalta & U. Nodelman (Eds.), *The Stanford encyclopedia of philosophy* (Fall Ed.). https://plato.stanford.edu/archives/fall2023/entries/citizenship/

Linklater, A. (1998). Cosmopolitan citizenship. *Citizenship Studies, 2*(1), 23–41. https://doi.org/10.1080/13621029808420668

Lister, R. (2000). Inclusion/exclusion: The Janus face of citizenship. In J. Cook, J. Roberts, & G. Waylen (Eds.), *Towards a gendered political economy*. Palgrave Macmillan. https://doi.org/10.1057/9780230373150_6

Maniates, M. F. (2001). Individualization: Plant a tree, buy a bike, save the world? *Global Environmental Politics, 1*(3), 31–52. https://doi.org/10.1162/152638001316881395

Marshall, T. H. (1992). *Citizenship and social class*. Pluto Press. (Original work published 1950).

Martin, B. (2007). Activism, social and political. In G. L. Anderson & K. G. Herr (Eds.), *Encyclopedia of activism and social justice* (pp. 19–27). Sage Publications.

Mullally, G. M., Dunphy, N. P., & O'Connor, P. (2018). Participative environmental policy integration in the Irish energy sector. *Environmental Science and Policy, 83*, 71–78. https://doi.org/10.1016/j.envsci.2018.02.007

Nussbaum, M. C. (1997). Kant and stoic cosmopolitanism. *Journal of Political Philosophy*, *5*(1), 1–25. https://doi.org/10.1111/1467-9760.00021

Pearce, B., & Thalberg, K. (2024). *Energy Citizenship in the making. Pathways to support citizen engagement in the European energy transition*. A Joint Policy Brief of the EC2, ENCLUDE, EnergyProspects & DIALOGUES H2020 projects. https://doi.org/10.5281/Zenodo.10814075

Pel, B., Debourdeau, A., Kemp, R., Dumitru, A., Schäfer, M., Vadovics, E., Fahy, F., Fransolet, A., & Pellerin-Carlin, T. (2021). *Conceptual framework energy citizenship*. A research output of the EnergyProspects H2020 Project.

Pocock, J. G. A. (1995). The ideal of citizenship since classical times. In R. Beiner (Ed.), *Theorising citizenship* (pp. 29–52). State University of New York Press.

Polanyi, K. (2011). The economy as instituted process. In M. Granovetter & R. Swedberg (Eds.), *The sociology of economic life* (3rd ed., pp. 3–21). Routledge.

Pykett, J., Saward, M., & Schaefer, A. (2010). Framing the good citizen. *British Journal of Politics and International Relations, 12*(4), 523–538. https://doi.org/10.1111/j.1467-856X.2010.00424.x

Reis, I. F. G., Gonçalves, I., Lopes, M. A. R., & Antunes, C. H. (2022). Collective self-consumption in multi-tenancy buildings—To what extent do consumers' goals influence the energy system's performance? *Sustainable Cities and Society, 80*(September 2021), 103688. https://doi.org/10.1016/j.scs.2022.103688

Riesenberg, P. N. (1992). *Citizenship in the western tradition: Plato to Rousseau*. University of North Carolina Press.

Ritter, C. (2023). Understanding cosmopolitanism: A morphological approach. *Journal of Political Ideologies*, 1–20. https://doi.org/10.1080/13569317.2023.2275040

Robertson, A. (2019). Media cultures and cosmopolitan connections. In G. Delanty (Ed.), *Routledge international handbook of cosmopolitan studies* (2nd ed., pp. 245–253). Routledge.

Rosenow, E. (1992). Bourgeois or Citoyen? The democratic concept of man. *Educational Philosophy and Theory, 24*(1), 44–50. https://doi.org/10.1111/j.1469-5812.1992.tb00218.x

Ryghaug, M., Skjølsvold, T. M., & Heidenreich, S. (2018). Creating energy citizenship through material participation. *Social Studies of Science, 48*(2), 283–303. https://doi.org/10.1177/0306312718770286

Sarrica, M., Biddau, F., Brondi, S., Cottone, P., & Mazzara, B. M. (2018). A multi-scale examination of public discourse on energy sustainability in Italy: Empirical evidence and policy implications. *Energy Policy, 114*, 444–454. https://doi.org/10.1016/j.enpol.2017.12.021

Scherz, A. (2013). The legitimacy of the demos: Who should be included in the demos and on what grounds? *Living Reviews in Democracy, 4*, 1–14. https://doi.org/10.5167/uzh-91127

Schuck, P. H. (2002). Liberal citizenship. In E. F. Isin & B. S. Turner (Eds.), *Handbook of citizenship studies* (pp. 131–144). Sage Publications Ltd. https://doi.org/10.4135/9781848608276

Shachar, A., Bauböck, R., Bloemraad, I., & Vink, M. (2017). Introduction: Citizenship – Quo Vadis? In A. Shachar, R. Bauböck, I. Bloemraad, & M. Vink (Eds.), *The Oxford book of citizenship* (pp. 15–34). Oxford University Press.

Somers, M. R. (1993). Citizenship and the place of the public sphere: Law, community, and political culture in the transition to democracy. *American Sociological Review, 58*(5), 587–620. https://doi.org/10.2307/2096277

Sovacool, B. K., & Furszyfer Del Rio, D. D. (2020). Smart home technologies in Europe: A critical review of concepts, benefits, risks and policies. *Renewable and Sustainable Energy Reviews, 120*(December 2019), 109663. https://doi.org/10.1016/j.rser.2019.109663

Szulecki, K. (2018). Conceptualizing energy democracy. *Environmental Politics, 27*(1), 21–41.

Tan, K.-C. (2017). Cosmopolitan citizenship. In A. Shachar, R. Bauböck, I. Bloemraad, & M. Vink (Eds.), *The Oxford handbook of citizenship* (pp. 694–716.). Oxford University Press.

Trentmann, F. (2007). Citizenship and consumption. *Journal of Consumer Culture, 7*(2), 147–158. https://doi.org/10.1177/1469540507077667

Turner, B. S. (1990). Outline of a theory of citizenship. *Sociology, 24*(2), 189–217.

Walzer, M. (1989). Citizenship. In T. Ball, J. Farr, & R. L. Hanson (Eds.), *Political innovation and conceptual change* (pp. 211–220). Cambridge University Press.

Warf, B. (2020). Cosmopolitanism. In *International encyclopedia of human geography* (2nd ed., Vol. 2, pp. 419–422). Elsevier. https://doi.org/10.1016/B978-0-08-102295-5.10167-2

Weber, M. (1981). *General economic history*. Transaction, Inc. (Original work published 1927)

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (http://creativecommons.org/licenses/by/4.0/), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

Check for updates

CHAPTER 3

Earned Citizenship? Normative Constructs of Participation

Abstract This chapter further develops these ideas of energy citizenship, particularly the concept of the 'good citizen' in the context of system change as it appears to be emerging as the rapidly normative notion shaping citizen engagement in energy. Broadening this discussion on emerging normative expressions, assumptions, and expectations that influence how citizens participate in the energy sector, the chapter provides an analysis of emerging ideals of energy citizenship from a normative perspective, focusing on solidarity, cosmopolitanism, and resilience. Embracing this dynamic and evolving concept to redefine its normative significance for diverse communities and locations can significantly serve as a foundational framework for questioning the processes of inclusion or exclusion within energy citizenship discourses.

Keywords Good citizen · Solidarity · Cosmopolitanism · Resilience

3.1 Introduction

This chapter critically examines the prevailing framing of the 'good citizen', particularly the normative constructs of citizens' roles in the energy system. It seeks to expand the discourse on visions of energy citizenship by exploring emerging normative expressions, assumptions, and expectations that shape how citizens engage in the energy domain. We will

© The Author(s) 2025

N. P. Dunphy et al., *Energy Citizenship*,
https://doi.org/10.1007/978-3-031-70153-5_3

briefly examine the concept of citizenship in the broader context of environmental and climate action domains and then delve into how it is increasingly used to foster new ideals of energy citizenship. These emerging normative notions are evident across various scales and boundaries, from shared global and national ideas to more individualised concepts of citizenship linked to self-creation, many of which arise from political struggles for recognition or from prescriptive and disciplining notions of what it means to be a 'good citizen'.

3.2 The 'Energy Citizenship' Project: Buzzword or Meaningful Idea?

As already mentioned, climate change represents an urgent and unprecedented challenge with knowledge and research rapidly evolving in this area. However, a significant gap exists between what is known and what is being done, which has resulted in calls for more 'action'-centred and participatory knowledge systems (Apetrei et al., 2021). Constant questions about science and technology are being asked in the rapidly changing context of climate change instability. The increased demand for solutions to address these concerns fuels growing scepticism about the scientific and political ability to provide them (Chilvers & Kearnes, 2015). As a result, a new approach to knowledge creation and decision-making is emerging, emphasising more democratic forms of collaboration between experts and non-experts and knowledge processes that address uncertainty and reinforce the scientific consensus on the direction needed for climate action (Apetrei et al., 2021; Grindsted, 2018; Oreskes, 2004). A main concern over current climate debates is that key climate action terminologies and concepts are mere buzzwords that lack conceptual clarity and have unclear links to help explain and advance societal change (Grindsted, 2018). In response, a multitude of public engagement and participatory innovations have emerged, aiming to reduce greenhouse gas emissions, develop adaptive systems to climate extremes, and decarbonise the energy system in ways that deliver change and uphold democratic systems of governance (Fischer, 2017). This places an unprecedented burden on governing institutions, which must navigate increased public scrutiny and social and political unrest triggered by the climate crisis. Escalating criticism, polarisation, and political upheaval in climate policy discussions, even within the EU, whose climate policy framework is considered the most advanced globally, highlights the immense challenge of achieving

high-ambition targets for deep decarbonisation (Dupont and Oberthür, 2015; Oberthür and Dupont, 2021). The social license required for transformative change is often seen as crucial. Without more profound forms of societal engagement and participatory governance to bridge technical and democratic objectives in climate mitigation, international commitments to decarbonise may prove ineffective.

In earlier chapters, we highlighted the increased relevance of concepts of energy citizenship in different manifestations. Indeed, its growing influence permeates contemporary debates around the delivery of climate action and energy transitions (Lazar, 2013; Pel et al., 2022). Its adoption in the energy policy domain is often seen to add legitimacy to the democratic process, particularly in the face of enduring tension and growing social divides over strategies to accelerate deep decarbonisation (Camilleri, 2015). The relevance of energy citizenship reinforces the idea that in an increasingly interconnected and vulnerable world, cultural and political resources are frequently harnessed for the agenda of climate action and the interlinked need to deliver social change (Strathern, 2007). Energy citizenship, offering a new sense of direction, is viewed by some as a promising pathway towards a more sustainable engagement with the energy system that promotes collective action based on shared visions of sustainability.

In the previous chapter, we noted that citizenship can foster a sense of togetherness and solidarity among individuals. Traditional citizenship concepts frequently align with notions of sameness and a shared sense of belonging that highlight the importance of being part of a community that shares rights and responsibilities equitably (Young, 2005). However, despite its growing currency as a tool within the 'consensus science' portfolio, it remains a concept in flux, with often vague and subjective applications from a policy and practice perspective (Dunphy & Lennon, 2022). This ambiguity has prompted some scholars to question whether energy citizenship is merely another buzzword used to embellish or justify a myriad of unrelated energy policies and climate action strategies; a counter argument suggests that it heralds the start of a new, more meaningful political project (Pel et al., 2022; Szulecki, 2018).

Ever since Marshall's (1992/1950) seminal work on citizenship theory, it has been widely accepted to envision the evolution of citizenship as a staged and gradual process, particularly in Europe and the Western world. This process began with the granting of civil rights in the eighteenth century, which led to the extension of political citizenship in

the nineteenth century and ultimately culminated in the recognition of social citizenship in the twentieth century (Rose & Novas, 2005). Such processes led to a widening range of political, civil, and social rights and the advancement of new governing methods. Importantly, Marshall's theory highlights citizenship as a gradual and continuous endeavour encompassing a complex and shifting bundle of civil, political, and social rights at specific points in time (Ryan, 2011). Rose and Novas (2005) use this political history lens as a departure point to propose a novel perspective of citizenship that moves the focus from political-philosophical considerations and focuses instead on citizenship as a 'project', which they claim is "*always operating in terms of specific rationalizations and directed toward certain ends*" (Rose et al., 2006, p. 84). The idea of citizenship projects highlights the reconstitution of citizenship within the state, giving details on how institutions, authorities, and civil society groups perceive potential citizens and how they interact with and mobilise them—essentially redefining what it means to be a citizen by actively shaping its normative and conceptual boundaries. In a parallel way, citizenship can be critically assessed as a technology of conduct—in a Foucaultian sense—that is used to institute key behavioural norms by providing the shared meanings and values that reinforce and regulate social behaviour as well as work to normalise desired outcomes (Ryan, 2011).

The literature provides various examples of the 'art of governing', whereby subjects' specific values, habits, and practices are prioritised in so far as they strengthen the state and its power to rule (Rose et al., 2006). For instance, this can be seen in the socialising of environmental hazards through risk-sharing systems, particularly the role of risk-sharing as a political tool employed by governing institutions in response to political challenges and regulatory shortcomings (Revez et al., 2017). As a political tool, it comprises top-down strategies that address climate exposure and environmental impacts from extreme weather events through a risk-based policy system that rationalises state involvement, mobilises communities, and enhances credibility, accountability, while de-risking decision-making processes (Kuklicke & Demeritt, 2016); Rothstein et al. (2006) point out that such risk management frameworks are instrumental in addressing intricate policy challenges and mitigating risks that might tarnish an institution's reputation, accountability, and legitimacy. Consequently, risk management is viewed as a tool that aligns with institutional goals around devolved responsibility and rationalised frames of justice

rendering government practices more comprehensible and controllable, particularly in times of uncertainty.

Similarly, energy citizenship discourses contribute to forming new modes of governance. Dismissing energy citizenship as just another buzzword fails to adequately grasp its role in shaping the energy transition as an emergent worldview. Buzzwords tend to allude to the fact that some concepts lose their meaning or significance over time as they are used in different contexts and for different purposes (Grindsted, 2018). Nevertheless, citizenship in different manifestations has pervaded where other key concepts, such as class struggle, have declined in salience (Dunphy et al., 2023a, 2023b; Phillips, 1998). Furthermore, much like risk management, without proper analysis of its normative foundations, we encourage energy citizenship to quietly slip into mainstream regulatory practice in a skewed manner heavily informed by institutional logic. In the context of present-day trends, such as the retreat of the welfare state and the entrenchment of neoliberal market ideologies, citizenship appears as a way to both optimise and temper market forces in the name of social cohesion and equality (Bauman, 2013; Ong, 2006; Ryan, 2011). At this juncture and responding to market influences, there is the possibility that citizenship is conceived as being 'earned' rather than conceived as a 'privilege' or a 'right'—thus, increasingly stressing elements of performance and self-responsibility and essentially mobilising the individual citizen uniquely as a "*productive working member of society*" (Joppke, 2021, p. 30). The practice of such energy citizenship is heavily tied to individual capacities and resources and leads to a meritocracy system that rewards the 'good citizen' accordingly.

Thus, when we talk about "*energy citizens*" we're talking about emerging expressions of citizenship that have involved, for instance, the nurturing and guiding of current generations towards becoming active and responsible energy citizens. In this regard, Escobar's (2017) work on the subject in the context of various democratic models is quite illuminating. By asking what type of citizen, we encourage people to be, he prompts us to reflect on our core values and aspirations for a better society. Russell Dalton also raises the question of what defines a good citizen in today's society. He identifies a competition between traditional duty-based citizenship, which involves voting, paying taxes, and serving on juries, and a newer form of engaged citizenship prioritising social and environmental issues, such as the ongoing climate crisis (Dalton,

2015). Environmental and sustainability ideas have shaped many citizenship projects, influencing conceptions of citizenship and distinctions between different types of citizens. Sage (2014) traces notions of food citizenship and compares this to a social and political movement that aims to transform the food system beyond individual consumer relations with food. Sovereignty, solidarity, and transnationality describe a new relationship between people and the food system. Similarly, Dobson (2006) emphasises the importance of ecological citizenship in promoting democracy, including participatory processes crucial in establishing new social and environmental justice standards. The ecological virtue of justice for Dobson emerges as foundational to ecological citizenship, and he further argues that "ecological citizenship and the virtue of justice are 'produced', simultaneously, by current regimes of production and consumption under conditions of scarcity and inequality" (Dobson, 2006, p. 450). Different visions are advanced for a new form of citizenship to help shape and drive society in the face of climate change. Raskin's (2009, p. 113) hopeful vision contends that "a new ethos is brewing, one that is rooted in the extended interdependencies now becoming more palpable. Our linked fates—North and South, rich and poor, people and planet, living and unborn—opens space for a correlated enlargement of human consciousness and political culture. An alternative suite of values—ecological awareness, human solidarity, quality-of-life, global citizenship—is spreading among an expanding global subculture, along with new forms of transboundary association and action".

We argue in this chapter that thinking and feeling differently is key to the advancement of energy citizenship and, as such, is politically instrumentalised and leveraged within policy. What implications do these new tenets have on how we view, mobilise, reward, and sanction different members of society, and what attributes we consider valuable and desirable within the emerging energy citizenship project are essential to explore by way of adding clarity and moving beyond notions of energy citizenship as merely a buzzword.

To offer some answers to these critical questions, we provide an exploratory analysis of emerging ideals of energy citizenship from a normative perspective. We aim to broaden and deepen our appreciation of energy citizenship by capturing expressions, values, and meanings in different cases and contexts. While the analysis is not exhaustive nor seeks to provide a comprehensive review of all normative constructs of participation, it documents a selected number of relevant instances which

capture the new kinds of citizenship taking shape in the context of the climate crisis and the energy transition. Namely, we will look closer at solidarity, cosmopolitanism, and resilience as ideals leveraged within energy citizenship discourses.

3.3 The Solidarity Ideal

In general terms, solidarity describes a special kind of relationship grounded on mutual understanding and indebtedness, respect, and unity. It is typically depicted as a bond that holds a group or community together, and it can further express increased awareness and empathy among otherwise different social groups in society (Bazzani, 2023). It is commonly invoked in contemporary social movements such as the Movement for Black Lives, Occupy, MeToo, and climate change activism (Sangiovanni & Viehoff, 2023).

However, solidarity relationships are evolving. In particular, climate change clearly challenges traditional solidarity bonds largely focused on the unity of groups and communities (Bazzani, 2023). Climate change's starkly uneven social and environmental impact has sharpened the enduring gap between wealthy societies and the needs of distant others in poorer regions and those of future generations. Notably, the wealthiest 10% of the world's population is responsible for over half of all greenhouse gas emissions (IPCC, 2018). The climate crisis inevitably becomes an issue of inequality, intergenerational injustice, and polarisation, eroding and weakening shared ties between different class strata and generations in society.

The most significant practical manifestation of solidarity leveraging principles of energy citizenship is the solidarity economy. Likened to a social movement, prosumerism is the lead expression of energy citizenship operating in the solidarity economy and it is seen as a means to create the space needed for knowledge-making and sociocultural learning, linking individual actors and organisations together for a common goal (Campos & Marín-González, 2020). The REScoop model is a prominent example of the solidarity economy, reclaiming the exploration of local energy resources by local communities and contrasting their production practices with those of large utilities (see Text box 1). The Community Energy for Energy Solidarity (CEES) project is developing a solidarity toolkit in this area, proposing legal, regulatory, and financial measures to help energy communities address energy poverty issues (CEES, 2024).

National examples of solidarity economy models include the Énergie Solidaire project, which started in 2014. This fundraising initiative in France seeks to mitigate energy poverty based on micro-donations from energy bills of consumers and energy donated by RES producers to support local social initiatives tackling fuel poverty (REScoop.ie, 2017). A complementary approach is that taken by EnergyCloud, an Irish social enterprise initiative that offers solutions to divert curtailed renewable energy that otherwise would be wasted to provide hot water to homes in energy poverty (Energy Cloud, 2023). Other emergent solidarity discourses include the development of participatory solutions to energy poverty, which has, to date, largely adopted an information deficit model to issues of exclusion and inequality (Sanz-Hernández, 2019).

Text box 1: REScoop.EU an example of solidarity economy in the energy transition

REScoop stands for Renewable Energy Source Cooperative. It's a term applied to community energy initiatives where members collectively own, operate, and supply energy from renewable sources (Coenen et al., 2017). The cooperative model enables members to decide collectively on cooperative projects, working principles, and future investments. The REScoop model commonly encourages a more sustainable engagement with energy production and use through various collective measures and pro-social behavioural interventions (Morandeira-Arca et al., 2024). REScoop.EU is a sectoral federation which seeks to represent at EU the energy cooperative movement across Europe. As an umbrella organisation, it seeks to promote core values such as participation, solidarity, and energy 'sobriety' (Campos & Marín-González, 2020; Coenen et al., 2017). The cooperative energy model is also used to increase public acceptance of renewable energy and overcome opposition to the siting of energy projects such as wind farms (Morandeira-Arca et al., 2024).

REScoop.eu is a fast-growing network that includes members of 2.250 European cooperatives.

Together, they represent over 1.50 million energy citizens, mostly prosumers (REScoop.eu, 2024).

Practical expressions of solidarity within the energy transition will doubtless continue to unfold and generate new exchange models between citizens. The complexity and global-scale challenge of climate change requires different solidarity instruments than those that dominated in

the past, usually tied to the nation-state. Energy literacy, focusing on behaviour change, is advanced as a key area in the evolution of solidarity and energy citizenship, with interventions seeking to advance a behavioural and normative shift in how citizens engage with energy based on a deeper awareness of collective needs and impacts.

3.4 The Resilience Ideal

According to W. Neil Adger (2000), social resilience refers to the ability of communities or groups to effectively manage external stress and disruptions arising from social, political, and environmental changes. Moreover, Adger highlights the interconnection between social and ecological resilience, indicating an opportunity to establish a link between communities and the natural resources and environments on which they depend. Indeed, the resilience discourse has been highly successful in transcending disciplinary and cross-sectoral differences from science, policy, and mass media (Meyen & Schier, 2019). The concept was initially coined by C.S. Holing to characterise a socioecological system's capacity to recover from a crisis (Amir & Kant, 2018). The politics of resilience in the current context of the climate crisis is a stream of research that seeks to consider the political consequences of energy system change across diverse social, political, and environmental geographies (Sovacool et al., 2020). Resilience is an increasingly leveraged approach to ascertain the capacity of communities and other social units to resist or recover from various forms of disruptive change (Naumann et al., 2019). Researchers typically see resilience as the ability to resist catastrophic change by preserving adaptive capacity (Zolli & Healy, 2012). In the aftermath of the Fukushima disaster, there has been an increased emphasis on resilience in technological politics, particularly in the research of energy infrastructures (Ibid.). This approach combines the social and technological structures of the energy system within the notion of 'sociotechnical resilience', highlighting the value of social dimensions to develop resilient capacities further. From an institutional standpoint, energy resilience ideas are also proposed as opportunities to diminish vulnerabilities linked to past energy systems, seeking to disrupt rather than perpetuating previous inequalities in access, affordability, and socio-economic benefits linked to energy production and distribution (Stephens et al., 2019). Amir and Kant (2018) identify three lead characteristics of sociotechnical resilience: informational relations, socio-material structures, and anticipatory practices. For instance,

resilient systems, whether they are energy grids or ecosystems, depend on feedback mechanisms to predict sudden changes or critical thresholds (Zolli & Healy, 2012). Species can adjust their behaviour within an ecosystem to maintain the system's stability (*Ibid.*). Equally, the energy system has access to various tools and technologies that improve control, awareness, and behaviours across the energy production and consumption supply chain. Therefore, system performance feedback mechanisms and big data are valuable resources for managing systems and ensuring their resilience to disruptive change. Additional approaches for enhancing a system's resilience involve minimising its dependence on specific materials or broadening the range of resources that can be utilised to accomplish a task. During challenging times, resilient systems may choose to disengage from their broader context, function at a local level, and reduce exposure to external dependencies (Zolli & Healy, 2012). In the context of energy, territorial resilience represents a conscious effort to consider emerging local energy community systems as a solution to enhance resilience in the grid through decentralised provisions (Mutani et al., 2021). Smart grids aim to offer novel informational relations, socio-material structures, and anticipatory practices to enhance resilience, fulfilling all three key categories of resilience as proposed by Amir and Kant (2018). Smart cities tied to active citizenship and data sharing are envisaged as key solutions to accelerate the energy transition (Tcholtchev & Schieferdecker, 2021). Seeking to outline common characteristics of smart cities and sharing economies, Gori et al. (2015) described these concepts as innovations driven by the needs of citizens and consumers, operating within clearly defined communities. Further, it is argued that the primary goal of these innovative concepts is to facilitate the sharing of resources, including material goods, skills, time, and data, using information and communication technologies (ICTs). However, others have argued that the smart city concept is a technological fix solution developed by decision-makers to outsource democratic participation and resilience, further noting that it will create divides marked by those with and without access to digital infrastructure (Viitanen & Kingston, 2014). This divide is significant since smart systems are embedded in local contexts. As citizens become increasingly active in regulating energy, we see an increased experimental approach to exchange between citizens, experts, and decision-makers, and smart technologies are moderating many of these novel relations (Lösch & Schneider, 2016). As seen during the crisis that unfolded

during Hurricane Sandy in 2012 in the US, needs linked to information and communication technologies (ICT) were prioritised alongside life-sustaining resources such as food and water (Viitanen & Kingston, 2014).

Text box 2: Smart City Berlin: example of resilience in smart decentralised-grid systems

In 2015, Berlin officially embraced its vision as a "*smart city*" by launching the *Smart City Berlin Strategy*. The city has since dedicated substantial resources to propel its smart city initiatives, including establishing a cross-departmental unit within the municipal government. Berlin's commitment to embracing the concept of sharing was evident through the business development unit's proactive efforts in organising meetings and workshops and producing a report on urban sharing potential in late 2014 and early 2015 (Zvolska et al., 2020). While the smart city agenda has continued to evolve, the city's focus on sharing has sparked initiatives led by individuals, organisations, and municipal entities, encompassing commercial sharing projects, civil society movements, and the efforts of municipal organisations and sub-units. The new strategy *Gemeinsam Digital: Berlin* (2022) was developed through dialogue with Berlin's diverse urban society, marking a departure from a purely technological focus to emphasise co-design and inclusion.

Resilience is outlined as part of the strategy and includes initiatives like crisis-proof local communication infrastructure. It is identified as essential for the resilience of an increasingly digitised city and supports disaster protection as needed. In the event of a crisis (*e.g.*, a power outage), new structures provide solar or battery-powered hotspots for the public. Wi-Fi is also made available to employees of emergency services, critical infrastructure companies, and citizens.

Energy democracy and resilience are increasingly connected (Stephens et al., 2019), and the struggle to find sustainable energy solutions underscores the ongoing challenge of delivering a technologically, socially, and environmentally feasible energy system. Citizen participation and community resilience initiatives are leveraged in this context, as argued by Fairchild and Weinrub (2017) it is called on "*to address the existential consequences of the extractive economy through the creation of a new regenerative economy—one based on a decentralized renewable energy model that advances ecosystem health, economic sustainability, and social justice*" (p. 205).

3.5 The Cosmopolitan Ideal

As established in the previous chapter, we are increasingly seeing the emergence of new actors, sites, and scales of citizenship, which has added complexity to the enactment of citizenship. Viewing nation-states as "*containers*" of citizens is no longer sufficient. New actors express demands for recognition and justice through different sites encompassing various and interconnected scales (Isin, 2009). Cosmopolitan ideals attempt to deal with the inherent tensions in citizenship concepts as a force for both inclusion and exclusion (Lister, 2008). Post-cosmopolitan concepts of citizenship, particularly those with an energy focus, often prioritise virtues and carries significant normative implications (Dunphy & Lennon, 2022). Indeed, the concept draws from and adds to energy justice ideas by placing emphasis on cosmopolitan justice, which recognises a common humanity and a duty to consider implications of actions around the energy system beyond the state and from a global perspective (*Ibid.*).

The European Union (EU) is a prime example of cross-border cooperation between multiple nation-states. It's often considered the most comprehensive and complex example of such cooperation globally. Advocates of the EU claim that it has promoted greater European solidarity and has been instrumental in delivering significant economic and political stability. However, critics argue that the EU is too far removed from the lives of ordinary people and has eroded their political, economic, and civil rights. Some countries, such as the UK, have also retracted their formal ties with the EU.

Text box 3: Energy Interconnectors: Example of Cosmopolitanism in the EU's Energy Union.

High geographical interconnection that spans borders between European countries is one of the pillars of the Energy Union strategy premised on ideas of an integrated internal energy market that will help stabilise the price of energy, add flexibility to the grid, and ensure energy resilience in the face of increased uncertainty over supply (*i.e.,* drastically reducing dependence on gas imports from Russia). The EU has set a 15% electricity interconnection capacity target for 2030 to fulfil such goals. Greater levels of technological, political, and economic cooperation are expected to set our future energy system apart from today's fossil fuel-based energy

system. Industry experts and policymakers consider interconnectors to be a vital component of a renewables-centric electricity grid.

Unlike most traditional forms of electric energy supply, such as oil, coal, or gas, which can be transported to power stations by trucks, ships, or trains, renewable energy, such as wind and solar, can only be transported through transmission lines. Thus, efforts to decarbonise the energy system are tied to developing new long-distance electric transmission lines to interconnect new utility-scale renewable sources. A greater level of connectivity between member states in Europe will allow for energy transport efficiencies and the use of renewables commonly far from load centres.

Although some of the benefits of increasing interconnectivity are well understood, and despite EU financial and regulatory support (*i.e.,* many interconnector projects benefit from the PCI designation by the EU), the expansion of cross-border interconnectors across Europe has been slow. Notorious delays include the interconnection between the Iberian Peninsula and the rest of Europe and the expansion of a pan-European interconnection between Norway, Germany, and the UK. Stalled progress on many European interconnector projects includes public acceptance issues, lack of awareness, and political uncertainty. This is unsurprising as interconnectors bring added complexities and place new land-use demands. Yet, grid expansion involving large-scale reinforcement and interconnection is expected to accelerate substantially because the transition to renewables is increasingly seen as inevitable.

To date, debates about interconnectors have been limited to expert discussions, with minimal engagement from the public except protests against the siting of specific technologies (Puka & Szulecki, 2014). Issues over energy supply across borders have always complicated the delivery of grid expansion projects, as geopolitical identity plays a part in public acceptance (Klass, 2015).

3.6 Concluding Remarks

Throughout the preceding chapters, we have observed that citizenship is interpreted in various ways across different contexts, leading to significant shifts in its meaning. Consequently, a single definition cannot encompass all its interpretations. Indeed, drawing on Wittgenstein's terminology, citizenship can be likened to a "*family resemblance*" concept, with its meaning evolving substantially based on its context (Haugaard, 2002) and politically influenced as a "*citizenship project*" (Rose & Novas, 2005).

In this section, we have delved into some of the normative aspects of citizenship, particularly in relation to ongoing discussions about climate action and energy transition. By exploring the normative aspects of energy citizenship, we aimed to uncover the fundamental ideals, values, and principles guiding a new worldview. This is essential for establishing new rights, responsibilities, and justifications for those involved in the energy transition. We highlight the potential for these new ideals to become ingrained and institutionalised, often in ways that may regulate, limit, or mediate public involvement with energy, rather than fundamentally transforming the relationship between citizens and energy. There is a risk that emerging ideals like solidarity, resilience, and cosmopolitanism may be reduced to a "*mode of subjectification*", without necessarily addressing inequalities through transformative change (Ryan, 2011). As these ideals permeate organisations, whether through connections to the solidarity economy or energy unions, it is imperative to continually question and critique predetermined strategies for energy citizenship. These new energy citizenship frameworks are imbued with values and political motivations and, therefore, are susceptible to control and manipulation. Embracing this meaningful and evolving concept to redefine its significance for different communities and locations today can serve as a valuable foundation for challenging processes of inclusion or exclusion within energy citizenship discourses.

References

Adger, W. N. (2000). Social and ecological resilience: Are they related? *Progress in Human Geography, 24*(3), 347–364. https://doi.org/10.1191/030913200701540465

Amir, S., & Kant, V. (2018). Sociotechnical resilience: A preliminary concept. *Risk Analysis, 38*(1), 8–16. https://doi.org/10.1111/risa.12816

Apetrei, C. I., Caniglia, G., von Wehrden, H., & Lang, D. J. (2021). Just another buzzword? A systematic literature review of knowledge-related concepts in sustainability science. *Global Environmental Change, 68*, 102222.

Bazzani, G. (2023). Climate solidarity: A framework and research agenda for low-carbon behavior. *Sociological Forum, 38*(2), 352–374. https://doi.org/10.1111/socf.12885

Camilleri, J. (2015). Dialogical citizenship: Dancing toward solidarity. *Great Transition Initiative*. https://greattransition.org/publication/dialogical-citizenship-dancing-toward-solidarity

Campos, I., & Marín-González, E. (2020). People in transitions: Energy citizenship, prosumerism and social movements in Europe. *Energy Research & Social Science, 69*, 101718. https://doi.org/10.1016/j.erss.2020.101718

CEES. (2024). *Energy solidarity toolkit*. CEES Community Energy for Energy Solidarity H2020 Project. https://www.energysolidarity.eu/solidarity-toolkit/

Chilvers, J., & Kearnes, M. (2015). Science, democracy and emergent publics. In J. Chilvers & M. Kearnes (Eds.), *Remaking participation* (pp. 19–46). Routledge.

Energy Cloud. (2023, February 23). *EnergyCloud Ireland launches new initiative to provide free hot water to 1,000 Irish homes using surplus renewable energy*. Energy Cloud. https://www.energycloud.org/news/new-initiative/

Coenen, F. H., Hoppe, T., Chalkiadakis, G., Tsoutsos, T., & Akasiadis, C. (2017). Exploring energy saving policy measures by renewable energy supplying cooperatives (REScoops). In *Proceedings of the ECEEE 2017 Summer Study on energy efficiency: Consumption, efficiency and limits*.

Dalton, R. J. (2015). *The good citizen: How a younger generation is reshaping American politics*. CQ press.

Dobson, A. (2006). Ecological citizenship: A defence. *Environmental Politics, 15*(03), 447–451.

Dunphy, N. P., & Lennon, B. (2022). Whose transition? A review of citizen participation in the energy system. In K. Araújo (Ed.), *Routledge handbook of energy transitions* (pp. 430–444). Routledge. https://doi.org/10.4324/9781003183020-30

Dunphy, N. P., Revez, A., Lennon, B., & Brenner-Fließer, M. (2023a). *Typology of energy citizenship(s)*. A Research Output (D2.2) of the ENCLUDE H2020 Project. https://doi.org/10.5281/zenodo.10005552

Dunphy, N. P., Revez, A., Lennon, B., Quinlivan, L., & Brenner-Fließer, M. (2023b). *Report on Intersectional analysis of emerging examples of energy citizenship*. A Research Output (D2.1) of the ENCLUDE H2020 Project. https://doi.org/10.5281/zenodo.7598736

Dupont, C., & Oberthür, S. (Eds.). (2015). *Decarbonization in the European Union*. Palgrave Macmillan UK. https://doi.org/10.1057/9781137406835

Escobar, O. (2017). Pluralism and democratic participation: What kind of citizen are citizens invited to be? *Contemporary Pragmatism, 14*(4), 416–438. https://doi.org/10.1163/18758185-01404002

Fairchild, D., & Weinrub, A. (2017). Energy democracy. In D. Lerch (Ed.), *The community resilience reader: Essential resources for an era of upheaval* (pp. 195–206). Island Press/Center for Resource Economics.

Fischer, F. (2017). *Climate crisis and the democratic prospect* (Vol. 1). Oxford University Press. https://doi.org/10.1093/oso/9780199594917.001.0001

Gori, P., Parcu, P. L., & Stasi, M. (2015). *Smart cities and sharing economy*. Robert Schuman Centre for Advanced Studies Research Paper No. RSCAS, 96.

Grindsted, T. S. (2018). Geoscience and sustainability—In between keywords and buzzwords. *Geoforum, 91*, 57–60. https://doi.org/10.1016/j.geoforum.2018.02.029

Haugaard, M. (2002). *Power: A reader*. Manchester University Press.

IPCC. (2018). *Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (V. Masson-Delmotte, P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P. R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, & T. Waterfield, Eds.). Cambridge University Press. https://doi.org/10.1017/9781009157940

Isin, E. F. (2009). Citizenship in flux: The figure of the activist citizen. *Subjectivity, 29*(1), 367–388.

Joppke, C. (2021). Earned citizenship. *European Journal of Sociology, 62*(1), 1–35. https://doi.org/10.1017/S0003975621000035

Klass, A. B. (2015). The electric grid at a crossroads: A regional approach to siting transmission lines. *UC Davis Law Review, 48*, 1895–1954.

Kuklicke, C., & Demeritt, D. (2016). Adaptive and risk-based approaches to climate change and the management of uncertainty and institutional risk: The case of future flooding in England. *Global Environmental Change, 37*, 56–68. https://doi.org/10.1016/j.gloenvcha.2016.01.007

Lazar, S. (2013). *The anthropology of citizenship: A reader*. Wiley.

Lister, R. (2008). Inclusive citizenship, gender and poverty: Some implications for education for citizenship. *Citizenship Teaching and Learning, 4*(1), 3–19.

Lösch, A., & Schneider, C. (2016). Transforming power/knowledge apparatuses: The smart grid in the German energy transition. *Innovation: The European Journal of Social Science Research, 29*(3), 262–284.

Marshall, T. H. (1992). *Citizenship and social class*. Pluto Press. (Original work published 1950).

Meyen, M., & Schier, J. (2019). The resilience discourse: How a concept from ecology could overcome the boundaries between academic disciplines and society. In B. Rampp, M. Endreß, & M. Naumann (Eds.), *Resilience in social, cultural and political spheres* (pp. 105–120). Springer Fachmedien Wiesbaden.

Morandeira-Arca, J., Etxezarreta-Etxarri, E., Azurza-Zubizarreta, O., & Izagirre-Olaizola, J. (2024). Social innovation for a new energy model, from theory to action: contributions from the social and solidarity economy in the Basque

Country. *Innovation*: *The European Journal of Social Science Research, 37*(1), 33–59. https://doi.org/10.1080/13511610.2021.1890549

Mutani, G., Santantonio, S., Brunetta, G., Caldarice, O., & Demichela, M. (2021). An energy community for territorial resilience: Measurement of the risk of an energy supply blackout. *Energy and Buildings, 240*,. https://doi.org/10.1016/j.enbuild.2021.110906

Naumann, M., Rampp, B., & Endreß, M. (2019). Introduction: Resilience as a perspective for the analysis of societal processes. In B. Rampp, M. Endreß, & M. Naumann (Eds.), *Resilience in social, cultural and political spheres* (pp. 1–7). Springer Fachmedien Wiesbaden.

Oberthür, S., & Dupont, C. (2021). The European Union's international climate leadership: Towards a grand climate strategy? *Journal of European Public Policy, 28*(7), 1095–1114. https://doi.org/10.1080/13501763.2021.1918218

Ong, A. (2006). *Neoliberalism as exception: Mutations in citizenship and sovereignty*. Duke University Press.

Oreskes, N. (2004). The scientific consensus on climate change. *Science, 306*(5702), 1686–1686. https://doi.org/10.1126/science.1103618

Pel, B., Debourdeau, A., Kemp, R., Dumitru, A., Vadovics, E., Schäfer, M., … Fransolet, A. (2022, June 1–3). Energy citizenship; ideals, ideology and ideal types in the energy transition. *European Forum for Studies of Policies for Research and Innovation (EU-SPRI)*, Utrecht, Netherlands.

Phillips, A. (1998). *The politics of presence*. Oxford University Press.

Puka, L., & Szulecki, K. (2014). The politics and economics of cross-border electricity infrastructure: A framework for analysis. *Energy Research & Social Science, 4*, 124–134. https://doi.org/10.1016/j.erss.2014.10.003

Raskin, P. D. (2009). Planetary praxis: On rhyming hope and history. In S. Keller & G. Speth (Eds.), *The coming transition: Values to sustain human and natural communities* (pp. 110–146). Yale School of Forestry and Environment.

REScoop.eu. (2017). *Local Energy Communities: A way to bring 'all Europeans' along in the energy transition*. https://www.rescoop.eu/toolbox/energy-communities-a-way-to-bring-all-europeans-along-in-the-energy-transition

REScoop.eu. (2024). *About Us*. https://www.rescoop.eu/about-us

Revez, A., Cortes-Vazquez, J. A., & Flood, S. (2017). Risky policies: Local contestation of mainstream flood risk management approaches in Ireland. *Environment and Planning A, 49*(11), 2497–2516.

Rose, N., & Novas, C. (2005). Biological citizenship. In O. Aihwa & S. J. Collier (Eds.), *Global assemblages: Technology, politics, and ethics as anthropological problems* (pp. 439–463). Blackwell Publishing. https://doi.org/10.1002/9780470696569.ch23

Rose, N., O'Malley, P., & Valverde, M. (2006). Governmentality. *Annual Review of Law and Social Science, 2*, 83–104. https://doi.org/10.1146/annurev.lawsocsci.2.081805.105900

Rothstein, H., Irving, P., Walden, T., & Yearsley, R. (2006). The risks of risk-based regulation: Insights from the environmental policy domain. *Environment International, 32*(8), 1056–1065. https://doi.org/10.1016/j.envint.2006.06.008

Ryan, K. (2011). Governing the future: Citizenship as technology, empowerment as technique. *Critical Sociology, 37*(6), 763–778. https://doi.org/10.1177/0896920510379445

Sage, C. (2014). The transition movement and food sovereignty: From local resilience to global engagement in food system transformation. *Journal of Consumer Culture, 14*(2), 254–275. https://doi.org/10.1177/1469540514526281

Sangiovanni, A., & Viehoff, J. (2023). Solidarity in social and political philosophy. In E. N. Zalta & U. Nodelman (Eds.), *The Stanford encyclopaedia of philosophy* (Summer ed.). https://plato.stanford.edu/archives/sum2023/entries/solidarity/

Sanz-Hernández, A. (2019). Media and stakeholders: Contribution to the public debate on poverty and energy justice in Spain (Medios de comunicación y stakeholders: Contribución al debate público de la pobreza y justicia energética en España). *Revista Española de Investigaciones Sociológicas, 168*, 73–92. https://doi.org/10.5477/cis/reis.168.73

Sovacool, B. K., & Furszyfer Del Rio, D. D. (2020). Smart home technologies in Europe: A critical review of concepts, benefits, risks and policies. *Renewable and Sustainable Energy Reviews, 120*(December 2019), 109663. https://doi.org/10.1016/j.rser.2019.109663

Stephens, J. C., Ruth, M., & Goessling-Reisemann, S. (2019). Assessing resilience in energy system change through an energy democracy lens. In M. Ruth & S. Goessling-Reisemann (Eds.), *Handbook on resilience of socio-technical systems* (pp. 341–359). Edward Elgar Publishing.

Strathern, M. (2007). Robust knowledge and fragile futures. In O. Aihwa & S. J. Collier (Eds.), *Global assemblages: Technology, politics, and ethics as anthropological problems* (pp. 464–481). Blackwell Publishing. https://doi.org/10.1002/9780470696569.ch24

Szulecki, K. (2018). Conceptualizing energy democracy. *Environmental Politics, 27*(1), 21–41.

Tcholtchev, N., & Schieferdecker, I. (2021). Sustainable and reliable information and communication technology for resilient smart cities. *Smart Cities, 4*(1), 156–176. https://doi.org/10.3390/smartcities4010009

Viitanen, J., & Kingston, R. (2014). Smart cities and green growth: Outsourcing democratic and environmental resilience to the global technology sector. *Environment and Planning A, 46*(4), 803–819.

Young, I. M. (2005). Polity and group difference: A critique of the ideal of universal citizenship: A critique of the ideal of universal. *Debates in Contemporary Political Philosophy* (pp. 229–248). Routledge.

Zolli, A., & Healy, A. M. (2012). *Resilience: Why things bounce back*. Simon & Schuster.

Zvolska, L., Lehner, M., Palgan, Y. V., Mont, O., & Plepys, A., et al. (2020). Urban sharing in smart cities: The cases of Berlin and London. In J. Evans (Ed.), *Smart and Sustainable Cities?* (pp. 72–89). Routledge.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (http://creativecommons.org/licenses/by/4.0/), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

CHAPTER 4

Participation and Energy Citizenship

Abstract This chapter connects the discourse on participation and energy citizenship to reframe participation as a vehicle for citizens' agency, rather than a mechanism for government authorities to gain legitimacy, acceptance, or control. The chapter explores how existing modes of participation can be enriched by incorporating a view of energy citizenship in the context of democratic processes to align the values of energy justice with the goals of the energy transition. It also considers the relationship between these modes of participation, expressions of energy citizenship, and its implications for energy justice. Finally, the chapter makes a link between how participation and energy citizenship as merged concepts may point the way to a "human-centred" approach to designing democratic processes to accompany major technological paradigm shifts within the energy transition.

Keywords Public participation · Energy citizenship · Modes of participation · Deliberation · Energy justice · Energy transition · Democratic processes

This chapter aims to connect the discourse on participation and energy citizenship to show how energy citizenship is a way of reframing participation as a vehicle of agency for citizens rather than a mechanism for government authorities to gain legitimacy, acceptance, or control

© The Author(s) 2025

N. P. Dunphy et al., *Energy Citizenship*,
https://doi.org/10.1007/978-3-031-70153-5_4

in arenas of collective decision-making where divergent values prevail. Expressed as the lived experience of citizens, energy citizenship can enrich the practice and processes of public engagement through a ground-up accounting of people's needs in relation to the energy transition. Rooting the activities of participation in the energy transition from this point of view may better align the aims of energy justice with those of the energy transition.

4.1 Introduction

A notable theme suggested so far in the book is that a transition to decentralised energy systems can facilitate a more just energy system. The energy transition has been framed as a key moment in the evolution of our socio-technological systems to not only accept the technological changes and perpetuate market conditions that are a part of the status quo, but question the power relations and social arrangements that underpin this status quo. In doing so, we suggest that a vision of a more just energy system sees energy not as a commodity, but as an essential human right. Yet, it has been well recognised that the operational scale of energy systems alone is not sufficient to guarantee the creation of just energy systems. Democratic processes must also be in place to ensure that how decentralised energy systems are initiated, operated, and maintained can adhere to the tenets of energy justice (Thombs, 2019). The aim of this chapter is to explore which kind of democratic processes can support such a just outcome. The chapter explores how existing variations of participation (used as an umbrella term to encompass concepts such as public engagement, public participation, collaborative governance, citizen engagement) can be enriched by incorporating a view of energy citizenship in the context of democratic processes to align the values of energy justice with the goals of the energy transition. We do this by first making explicit the motivations for initiating participatory actions in the energy transition, the political contexts in which they are found and the various manifestations of participation. We then move on to consider the relationship between these modes of participation, expressions of energy citizenship, and their implications for energy justice. Finally, the chapter makes a link between how participation and energy citizenship as merged concepts may point the way to a "*human-centred*" approach to designing

democratic processes to accompany the systemic technological paradigm shifts required to realise the energy transition (Pearce & Thalberg, 2024).

Three questions will anchor this exploration. First, what role has public participation thus far played in making and realising key decisions related to the energy transition in Europe? This section begins by highlighting the "*what*", "*how*", and "*why*" of participation. The "*what*" is accounted through an overview of the kind of activities that have counted as "*participation*" in the energy transition. We further describe the variations in how these activities have been carried out. The section ends by discussing exploring the "*why*" of current forms of participation through the diverse mental models of underpinning the role that governments, citizens, and other actors within the energy section should play in making key decisions for the energy transition. Second, how might the diverse expressions of energy citizenship provide additional insights about participation in the context of the energy transition? The section explores how expressions of energy citizenship map onto the existing concepts of participation and discusses how these assumptions might be broadened. Finally, we ask what are the implications for energy justice when we rethink participation considering a "*human-centred*" model for collaborative governance? This section first articulates the relationship between ideal and practice-based forms of energy justice. From there, it makes links to the aspects of energy justice that participation can address. The chapter closes by proposing a vision of the "*deep inclusion*" and "*deep closure*" of participation as a specific means of how participation can be made more practicable, meaningful, and inclusive for the energy transition.

Participation is a general term that can mean a myriad of things depending on the context in which the concept is applied. Energy citizenship is an equally varied concept that is based on fundamental assumptions of what we think of as governance in Western, developed nations. Therefore, before addressing the questions above, the rest of the introduction will discuss the range of philosophies underpinning models of democratic governance, types of citizenship (already discussed in Chapter 2), and the complexity of governance systems that draw the boundary within which participation and energy citizenship are discussed. This will set the scene for later discussions of how participation and energy citizenship can be re-examined for purposes of energy justice.

4.2 What Is the Setting for "*Participation*" and "*Energy Citizenship*"?

4.2.1 Models of Democratic Governance

The role that citizens should take on in democratic governance has been a topic of contention within political philosophy (Michels, 2006). Scholars differ on how essential the participation of citizens is for democracy with perspectives differing based their own views on the conception of democracy itself. On the one end of the spectrum, the primary way in which citizens should participate in a democracy would be to produce the government that will lead them and to make the decisions that will matter. Joseph Schumpeter in Capitalism, Socialism and Democracy (2010/1942), and Robert Dahl in A Preface to Democratic Theory (2006/1956) both argue that the role of citizens in democratic systems should be proscribed to that of a voter. Voters should leave the business of governing to the political leaders. Giovanni Sartori in Democratic Theory (1962), along more extreme lines, even argues that too much political activity by the "masses" may lead to totalitarianism. Summarised by Michels (2006, p. 325), this results in a viewpoint where "*people should react, not act*". On the other side of the spectrum are philosophers who believe that citizen participation in political processes is core to the democratic institution. Jean-Jacques Rousseau in Du Contrat Social (1782/1762) argued for a system in which citizens willingly and jointly decided upon rules and laws which promoted the general will of the public, rather than allowing individuals to pursue their own unbounded desires. In such a system, individual freedom is preserved through participation in the creation of these jointly agreed-upon limitations on individual freedom. Participation is how the individual interest can be expressed on the basis of the collective good. Citizens are thus the main agents of action and not the government. Participation, in this view, contributes to the personal growth of individuals (Mill, 1861), and to people's feeling of belonging to a community, and is a part of good government in that all are involved in producing and implementing the rules that society they abide by (Rousseau, 1782/1762). For our discussion of participation and energy citizenship, we take a position closer to that which sees participation as an essential feature of democracy. Participation has more than an instrumental function. Democracy is seen as a value in and of itself and not only a means to reach desired ends.

4.2.2 *Types of Citizenships*

As we discussed in the previous chapter, there are a number of understandings of the citizenship concept. The civic republican tradition, originating in Athenian Greece and the Roman Republic, focused on the practice of being a citizen and is based on responsibilities. In the civic republican, tradition citizens carried out their duties in public participating in decision-making and law-making. It was this very act that symbolised freedom. In contrast, the liberal citizenship tradition emerging in Imperial Rome saw citizenship principally as a status, which afforded them certain rights and provided them with protection of the law from other citizens and from the state. Their status enabled them to engage in their private lives and dealings, exercising the rights and freedoms of a citizen. Though different in its emphasis in rights versus obligations, both of these citizenship traditions hold that the relation between the citizen and the state is contractual and linked to a specific territory. Post-cosmopolitan citizenship (forwarded by Dobson, 2007) places an emphasis on unilateral, non-reciprocal, and non-contractual responsibilities rather than rights. It focuses on virtues, is applicable in both public and private spheres, and is non-territorially bound. Expressions of energy citizenship are not necessarily restricted to one of these types of citizenship but can combine attributes as appropriate.

4.2.3 *Complexity and Governance*

So far, the discussion of participation has taken place given under a vision of democracy in which the state articulates the goals and values that "*all*" of us share. In this governance model, the political leaders set a goal and then draws on the advice of experts to devise the rules and institutions to regulate the social order to control it (Gaus, 2021). When this occurs, however, as we have seen for example in the local implementation of European Union level policies to regulate carbon dioxide emissions, the government is seen as coercing a local population to pursue goals that are not the concerns of that population. Underlying this linear model of governance is the assumption is that the world is static, that plans always turn out as they are expected to, and that people behave perfectly rationally (Teisman et al., 2010). Anyone who has any experience of living in the world would know, however, that this is opposite to the way things

often turn out. Policies designed from this perspective often lead to unintended impacts and do not accomplish their initial goals (Swanson & Bhadwal, 2009). Complex sociotechnical systems, like the energy system, are dynamic, non-linear, and self-organised. The conditions of complexity are the following:

1. Not all information is known, nor can be known by all governing bodies/policymakers.
2. Values are diverse and conflicts among people in relation to energy use, generation, and innovation occur, particularly when they are not aligned.
3. Actions need to be taken from the bottom-up, while decisions are being made from the top-down. A large and varied number of people need to be motivated to act according to a prescribed way to achieve what is an ambitious goal of reducing carbon dioxide emissions.
4. People change their behaviour or have their behaviour influenced according to manipulation or inspiration, rather than from rules-in-place, since people can also avoid following rules.

This complexity is well recognised. Many solutions have also been developed to attend to these challenges. Adaptive policies, robust decision-making under conditions of deep uncertainty, agent-based modelling, participatory modelling, and other advanced modelling techniques of increasing sophistication are in the processes of attending to these challenges of complexity. Yet, the challenges still stand. All this effort has led some to question whether the management and governance of such complexity is even possible or if we are fooling ourselves into thinking that we have even a modicum of control over what may happen in the future. To what degree are we able to manage the diversity and complexity of systems through governance? Answers range between three prominent stances: effective governance of complexity—(1) …is possible through rational decision-making when sufficient and accurate knowledge and tools are made available, (2) …is not possible under any condition and beyond human control, (3) …is possible when the properties of complex systems are accepted into decision-making processes, including self-organisation and self-governance.

The first view of the governance of complexity is embedded in the belief that with sufficient individual freedom, respect of mutual rights, and the making of responsible, rational decisions would lead to a "*humane and enlightened life*" (Levinson, 2014/1953, p. 17). Rationalist decision-making (often encapsulated as economic analysis) has been the principal logic of many governments throughout the twentieth century. Such a logic assumes that decision-makers can access sufficient knowledge to determine clear objectives, that they can collect information about the costs and utility of all options and are able to choose the most effective course of action between alternatives. Risk and uncertainty are enumerated in scenario planning, forecasting, and other decision-making models, but chaos so often still triumphs over control, even after decades of technological advancement. The second, pessimistic view of governance is based on the observation that there is an inherent inability to predict future-specific spates of the system. Therefore, to plan or control them with any degree of precision is a fool's errand. Reason alone is not able to overcome this unpredictability because, in a system involving tightly coupled interaction of many parts, the controller cannot identify the causal effects of its intervention from a host of other changes (Hayek, 1944). In this view, society would be a decentralised network of interdependence based on mutual responsibility. In this "*spontaneous order*" version of governance, government provides the rule of law and space within which individuals act, but does not provide a particular plan, outcome, or vision for where society needs to go. Government aims at realising processes instead of a particular outcome because the outcome cannot be known anyway and in a state of constant change and evolution (Schmidtz & Boettke, 2021). The third view of governance still believes that complexity can be managed somehow, and that the direction can and should be set as a common project between individual entities. Karl Popper's ideal of the "*open society*" (1945) and Gerald Gaus' (2021) revision of the concept are close representations. Such a society is embedded in the belief that with sufficient individual freedom, respect of mutual rights and the making of responsible, rational decisions would lead to a humane and enlightened life. The complexity of society is recognised in that citizens must have sufficient freedom to adjust their actions to others' decisions, to explore new possibilities and niches, and to follow their self-interests. At the same time, however, democratic structures should provide a framework for action and goal setting that aims for moral justification and fairness on which large-scale human cooperation depends.

Individuals must come together to solve collective problems, such as the energy transition, but it must be done in the context of a (technical, institutional, social) system. In acceptance of complexity, participation must take on forms beyond simply voting. It becomes a means of confronting the challenges of incomplete information, reconciling the diversity of values and potential value conflicts that exist, aligning legislation and the types of actions that should be supported by citizens, and developing the public justification for actions rather than supposing the acceptance of actions based on governmental fiat. As Gaus (2021) has also advocated for in his description of an 'Open Society', governance and participation can be directed towards a deeper understanding of the human need for reciprocity and moral justification. This then becomes the basis of building a society in which diverse perspectives, needs, and values can help to create and implement rules jointly justified and agreed on.

4.3 What Has Been the Role of Participation in the Energy Transition?

The portrayal of the roles that citizens can and should play in the energy transition (primarily characterised by the shift from fossil-based energy production and consumption to carbon-neutral renewable sources) has ranged from being passive enactors of energy policies or energy consumers, to being key agents of a transformed system. In his seminal article "*Energy Strategy: The Road Not Taken*", Amory Lovins first spelled out the "*soft-energy*" pathway as an alternative to increasing investments in fossil fuel production and consumption (Lovins, 1976). This article inspired a call for the "*Energiewende*" in the state of Schleswig-Holstein and later continued to gain traction in the rest of Germany starting in 1979. This early vision of the energy transition was to move away from centralised and brittle (nuclear, oil, gas, coal) energy systems susceptible to market and technical failure in favour of more localised, small, renewable, and resilient forms of energy production. By making decentralisation a key element of transformation, citizens became inextricably linked to the strategies moving forward, even as discussions centred on the policies in the hands of politicians and knowledge provided by scientists. Reflecting the centrality of everyday people in the energy transition, "public *participation*" is mentioned in many of the key EU directives (*i.e.,* the Fit for 55 package) aimed to deliver the promises of reaching net-zero emissions as a part of the European Green Deal. However, there is a question whether

the type of participation being asked for is supported by the governance system in which this transition is taking place. This section examines a part of the response to this question by examining the "*what*" and "*how*" of participation that have been both implicitly and explicitly associated with the energy transition. We then move to looking at the motivations of this participation. Taken together, we can develop a clearer view of what is meant and what is enacted under the term of "*participation*" in the context of the energy transition.

4.4 The "*What*" of Participation in the Energy Transition

The concept of participation has most often been discussed as 'public participation' in literature. Terms such as public engagement, citizen engagement, and civic engagement have also been used to name it (Ekman & Amnå, 2012). No matter the label, the concept describes the action in which citizens, who are not a part of a governing body, contribute to a process of collective decision-making through various modes of action. Because 'public participation' has mainly been used in conjunction with government-initiated activities, we will use the more general term participation to emphasise the broader scope of the concept, which also includes citizen-initiated activities. It is beyond the scope of this chapter to provide a comprehensive review of the use of the term, but we highlight three conceptual models which are pervasive in discussions about "*participation*" that we draw from.

Participation as a ladder—The original and most influential model is the ladder of citizen participation created by the community development expert Sherry R. Arnstein (1969). This intentionally provocative conceptualisation makes the distinction between modes of participation that are "*empty rituals*" fulfilling the needs only of the organisers and modes of participation which yield benefit to those who participate. Her goal was to bring to light how the activity of citizen participation could be used to cover up a variety of motivations and actions which do not always lead to productive or democratic dialogue or actions. The bottom rungs of this ladder are defined as "*nonparticipation*" (*i.e.,* 'manipulation', 'therapy'). These are actions framed as participation but do not value what citizens have to say and focus on changing the citizens' attitudes. The middle rungs are "*degrees of tokenism*" (*i.e.,* 'informing', 'consultation', 'placation') in which people are given a chance to voice their opinions, but no

real pathways exist for which these perspectives can affect decisions to be taken. The upper rungs of the ladder are "*degrees of citizen power*" (*i.e.,* 'partnership', 'delegated power', 'citizen control'). In these settings, citizens begin to gain clout within the decision-making process and begin to reap benefits from the process of participation (Arnstein, 1969). Jules N. Pretty (1995) adapted the ladder by adding empirical details and nuance to various types of participation, including "*participation for material incentives*", "*functional participation*", "*interactive participation*", and "*self-mobilisation*". This typology moves beyond the considerations of power to the motivations that participants themselves might have for being involved (particularly in the context of development projects).

Participation as a cube—Archon Fung (2006) in a later conception of "direct participation" highlighted three dimensions along which participation can vary, forming what he calls a "*Democracy Cube*". This tool was developed as an analytical tool and considers the innovations in various formats of participation since Arnstein's day. The three dimensions used to understand the varieties of participation are: (1) who participates and how participants are selected, (2) how participants interact within a venue of public discussion or decision, and (3) what is the impact of participation. The participation selection ranges from self-selection (whoever wish to attend can attend), selectively recruiting participants who are traditionally less likely to engage, randomly selecting participants from the general population based on descriptive representativeness and engaging with lay stakeholders who have a deep interest and are willing to invest substantial time and energy to represent those who have similar interests but who choose not to participate themselves. Professional stakeholders represent a final group who are paid to represent organised interests. Fung refers to these mechanisms of recruitment as 'mini-publics' that expand the pool of those contributing to collective decision-making beyond professional politicians and expert administrators (Fung, 2003, 2006, 2015). Fung also identifies six modes of communication which fall into different types of decision-making settings. Three modes of communication, ranging from being passive spectators, expressing preferences, learning about issues and opportunities to change perspectives, do not translate the perspectives of individual participants into a collective one. When deciding on a collective path forward is the goal, Fung refers to this as aggregation and bargaining and may include the previous three modes of communication. Deliberation and negotiation are another mode where the aim is consensus, based on a process of developing views and

discovering interest through dialogue with one another. The final mode is participation of technical experts whose specialisation is directed towards specific problems and where citizens are not involved. The impact of participation ranges from personal benefit derived by the participant with little or no expectation of influencing policy or action to having direct authority over public decisions or resources. Citizens could also include having indirect influence over policy decisions through communication in the participatory setting. They could have impact by providing advice or consultation, but officials ultimately reserve the power to make the final decision while also committed to listening to input. Co-governing partnerships are much less common, in which citizens join with officials to develop strategies or decisions for action. These dimensions form a cube in which specific approaches to participation can be located and which can be assessed according to a basis of legitimacy, justice, and effectiveness.

Participation as an evolving collective—Finally, Chilvers and Longhurst (2016) describe participation as an emergent and co-produced phenomenon that is described by the way participation is orchestrated and the outcome of that orchestration. Participation is formed through how participants are drawn into participation (enrolment) and how this participation is held together with the aid of various devices, processes or skills (mediation). The outcome of participation can be described by 'socio-material' collectives consisting of the procedural format or configuration of participation, the identity of the participants and/or publics they belong to, and the issues that are at hand are continuously being created and recreated through the process of participation itself (Chilvers & Longhurst, 2016). While these elements are recognisable in the two other concepts of participation described, it emphasises the diversity of participation as a response to the ways in which publics themselves are created and recreated. It also highlights the dynamics of how actors interact with one another that manifests in the type of participation that can be observed. The material aspect of participation and the role of non-human artefacts in the way that it affects the issues and means of participation is also an additional facet of this perspective of participation. This view of participation is adapted to the context of sustainability transitions by emphasising that social actors are already and continuously engaging in actions beyond fixed arenas of action initiated by governmental authorities. Participation is conceived as a self-organised dynamic that is forming and reforming according to the needs and context of the issues that affect societal actors. Thus, participation is connected to

the management of a complex governance process, rather than a part of well-defined policy cycle that is directed by a controlling entity.

Comparing these approaches reveals that fundamental assumptions about participation varies according to who the authors consider to be the orchestrator of participation, the activities to be included in the orchestration of participation, and the possible outcomes of participation (see Table 4.1). Given the conditions of the energy transition in which the modes of participation relate in many cases to mediation through material devices and in which this participation is orchestrated not only by central or local authorities, but also by citizens themselves, the participation concept described by Chilvers and Longhurst is the one we will adopt for further investigation of what specific ways participation is carried out in the context of the energy transition.

4.5 The "How" of Participation for the Energy Transition

Brenner-Fließer et al. (2023) suggested four categories of collective energy initiatives in the energy transition based on the varied roles that citizens play in these various participative arrangements. We adapt this categorisation to better align with Chilver and Longhurst's concept of participation as evolving collectives, as well to include one additional category. These groups differ depending on who is the initiator of the participatory activity, how participants are recruited and how the group is mediated and the outcomes of the participation. These groups are energy communities and eco-farms (aligning with the solidarity ideal from Chapter 3), 'collective targeted actions', pilot projects/living labs (both aligning with the resilience ideal from Chapter 3), forms of participatory democracy, and political and social movements. Participatory democracy is an addition to the original categorisation. This last type of participation is not exclusive to actions taken for the energy transition, but it is nevertheless an important source of action for citizens that is prominent and promoted during the energy transition.

These categorisations also align with a review of a public participation process on energy policy in Ireland by Mullally et al. (2018). Six narratives were identified which described different perceptions of citizens' role within the energy system. These include paternalist, majoritarian,

Table 4.1 Comparison between conceptions of participation

	Chilvers and Longhurst (2016)	*Fung (2006)*	*Pretty (1995)*	*Arnstein (1969)*
Context of participation	Sustainability transitions	General democratic processes	Development programmes	Urban renewal, anti-poverty
Orchestrator	Self-organised	Controller (*i.e.*, governmental authority)	Development agencies and NGOs	Controller (*i.e.*, governmental authority)
Orchestration of participation	Enrolment	Participant selection	–	–
	Mediation (*i.e.*, formal procedures, memberships, online survey, shared devices, etc.)	–		
		The format of participation (spectator; expresses/ develops preferences; bargaining; deliberation; technical advice)	Passive/ Manipulative participation; Consultation	Therapy; Manipulation; Consultation; Informing
Outcome of participation	The issue or object of action/ discussion Who are the participants The format of participation	Personal benefits; indirect influence; advice; co-governance; direct authority	Material incentives; Capacity building; Self-mobilisation	Placation; Partnership; Delegated power; Citizen control

consumerist, constitutionalist, communitarian, and deliberative narratives. Of these, the paternalist and constitutionalist narratives yield additional categories of citizen action, while the other narratives correspond with either Brenner-Fließer *et al.*'s or with Chilver and Longhurst's categorisations. The paternalist narratives see citizens as an ill-informed group who require education and need to be persuaded to behave in a desired way, as

directed by technical experts and/or political decision-makers (Dunphy & Lennon, 2022; Mullally et al., 2018). These are then "*citizens-to-be-persuaded*" as a passive receiver of information rather than the initiator of action. The constitutional narrative sees citizens as having mandated rights which must be upheld but does not envisage active engagement outside of legal mechanisms (ibid., p. 437).

From the organisation of information in Table 4.2, two distinctive forms of participation in the energy transition emerge, based on who is the orchestrator of participation. One form is invited forms of participation; these are formats of participation which are set and framed by authorities and entities external to communities or citizens themselves. Another form is invented participation. These are formats in which citizens initiate activities themselves, even though these actions may be supported within the rules and institutions provided by government authorities. The enrolment to participation is mostly through self-selection, except in instances where particular citizens are selected for pilot projects or where sortition may be utilised to ensure a representative group of citizens for deliberative forums. The consequences here, which have also been documented in the study of energy communities, for example, are that the participants of many participatory actions, especially in invented forms of participation, are dominated by a small, homogenous group of older, white males (Brenner-Fließer et al., 2023). The mediation of participation is in large part through the technologies that are related to the production, storage, or consumption of energy.

This material participation sets citizen action in the energy transition apart from the settings in which deliberation, argumentation, and reasoning have been the main form of participation (Ryghaug et al., 2018). The outcomes of participation also reflect the particularities of material participation—self-sufficiency, a sense of community, as well as cost savings from using new or alternative technologies. These outcomes of participation are in addition to the types of outcomes that are more typical for participatory democracy in general. Civic republican and liberal types of citizenship are evident in these manifestations of participation. This means that participation defined in these terms excludes those who may not have the resources to participate. The post-cosmopolitan conception of citizenship in which compensatory measures are offered to citizens is not immediately evident.

Table 4.2 Formats of participation within the energy transition

	Orchestrator	*Orchestration of participation*		*Outcome of participation*
		Enrolment	*Mediation*	
Energy communities/ eco-farms—"Grassroots citizen"/ "Communitarians"	Citizens with or without the help of an intermediary (*i.e.*, umbrella organisation RESCOOP.eu)	Self-selection	Renewable energy/ energy efficiency technologies/ Shared property rights	Sense of community; self-sufficiency; Living out alternative lifestyles; cost saving;
Collective targeted actions—"Consumer citizen"	Municipalities/ regional authorities/ companies	Self-selection	Energy technologies, trainings, renovation projects	Cost saving; innovation; knowledge generation
Pilot projects/living labs–"Consumer citizen"	EU-funded research projects, universities	Self- or intentional selection based on needed expertise		
Consultations—"Citizens to-be-persuaded"	Municipalities/ regional authorities/ political decision-makers/ companies	Self- or intentional selection based on organiser goals	Town hall meetings, focus groups, presentations	Acceptance of pre-made decisions
Legal mechanisms—"Legally protected citizens"	Citizens	Self-selection	Judicial system	Upholding legally mandated rights

(continued)

Table 4.2 (continued)

	Orchestrator	*Orchestration of participation*		*Outcome of participation*
		Enrolment	*Mediation*	
Participatory democracy— "Deliberative citizens"	Local, regional, national, supranational agencies	Sortition (representative selection); self-or intentional selection	Citizen juries, Citizen Forums, Legislative Theatre, Participatory Budgeting, other deliberation forums, arguments, reasoning, digital participation, in-person voting	Choosing between policy options, development of strategies, expression of preference, policy design, goal setting in policy process
Political and social movements— "Activist citizens"	Citizens	Self-selection	Street demonstrations, visibility, media presence	Placation; Partnership; Delegated power; Citizen control

Adapted from Brenner-Fließer et al. (2023), Chilvers and Longhurst (2016), and Mullally et al. (2018)

4.6 The "*Why*" of Participation

The "*why*" of participation has been articulated in literature primarily from the perspective of governing or public administration authorities. The justification for the support of participation activities is based on the belief that the quality, legitimacy, and/or justice of the decisions made on behalf of the public would be improved (Fung, 2006; National Research Council, 2008). When the quality of the decisions is the focus, public participation is a means by which diverse and local knowledge bases can be accessed to grasp a more accurate or richer understanding of the problem situation, and to eliminate blind spots, reframe the problem, or help connect technical concepts to actual implementation needs. Fung (2006) also refers to this aim as "*effectiveness of governance*" including the need

for, for example, multi-sectoral problem solving. Legitimacy refers to how a process of decision-making can be perceived and accepted as being fair by following and making transparent shared rules and norms. The deliberative model of participation is designed to meet this goal by seeking a consensus for actions by coming to a shared meaning of actions based on the knowledge about consequences, common values, and moral standards (Renn & Schweizer, 2020). Enhanced legitimacy of decisions would also lead to acceptance of policies and thus be more likely to be carried out, as well contribute to maintaining social cohesion surrounding potential divisive issues. This perspective also relates to an assumption that legitimacy of decisions may be reached when they have been accepted according to the values and preferences in proportion to their share in the affected population. Capacity refers to the decision-makers, scientists, and other participants to become better informed about the issue at hand and to develop a shared understanding of the issues, as well as mutual trust in the exchange of relevant information. Additionally, Fung also posits that social justice is a basis of public participation. Renn and Schweizer refer to this as the emancipatory concept of participation.

So far, these reasons given for participation have come from a public administrator's perspective and that of the designer of a policy process. Yet, as Hafer and Ran (2016) have also pointed out, for participation to be perceived to be authentic and relevant for citizens, understanding the citizens' motives is paramount. Yes, surprisingly, the citizens' perspective of participation has been overlooked. There is very little information available regarding why it is that citizens do not take part in the various participation formats of the energy transition specifically.

A starting point for understanding a citizen's perspective of participation may be to start with acknowledging the well-known participation gap for traditional forms of political participation. Borrowing from studies of the participation gap in traditional forms of political engagement (including political activism, voting, membership to political associations), it is assumed that individuals with more education are enabled to understand complex political issues and to take part in politics (Acik, 2013). Middle-aged people, as compared to the young and old, are more likely to participate politically, as well as those in rural areas and small towns as opposed to urban areas (Acik, 2013). When looking at emerging forms of participation, these patterns are reversed. Younger, females living in urban areas were more likely to take on forms of participation such as political consumerism. To further elaborate, a study on gender and political

participation in Britain showed that while women vote in equal or greater numbers as compared to men, and they are equally or more engaged in direct forms of participation such as demonstrations, consumer boycotts, and petitions, men are twice as active in terms of giving donations, working for political parties and joining as members. Men also belong to a wider range of voluntary organisations (Norris et al., 2004). In a summary of studies about the participation gap in the United States, Robert Dalton (2017) writes that people participate when they feel like they can, and when they think they have enough skills and knowledge to make a difference. They participate when the want to. This affected by their sense of self- and collective efficacy in the participation activity itself. They believe that it makes a difference, and they can see how the activity can benefit themselves or the things they care about. People participate when others tell them to. Individuals participate when they are connected to groups or people who ask one to participate (Dalton, 2017).

Within the energy transition, a comprehensive study of citizens' motivations across all forms of participation is not available, but there are studies which track the motivations of citizens who join energy communities or cooperatives (many of these studies take place in Germany) specifically. These studies reveal that the motivations for joining can be categorised into economic and social reasons (Hackbarth & Löbbe, 2022). Economic benefits include reduced cost of energy or increased revenues from surplus electricity. The preference for being independent from an energy provider, self-sufficiency of energy use, a commitment to a sustainable lifestyle, having a notion of solidarity with others in the energy community, and the value of regionality all seem to be social drivers of participation in an energy community. These findings resonate with those in a study by Brenner-Fließer et al. (2023) which examines not only energy communities, but also other types of collective energy initiatives. The most important motivations found here also include living a climate-friendly lifestyle, being together with others, saving money, and self-sufficiency Table 4.3.

Comparing the citizens' and public administrators' reasons for participation, the contrast is rather clear. There is little overlap and a mismatch in perspectives. The overlap is in the shared view that citizens want to and public administrators may realise that citizens require the space to give dissent to the mainstream views being expressed, but it is ironically only in this space of protest where participation finds shared meaning. In all

Table 4.3 Motivations for participation from the citizens vs. governance perspective

Citizen-centred view of participation—"Why I should participate"	*Public agency-centred view of participation*—"Why you should participate"
	Improve output of decision by incorporating more knowledge, preferences and values,
	To empower less privileged groups and individuals
	Debate criteria of validity/truth to gain legitimacy of decisions to be made
To voice dissent and challenge the status quo	Allow dissent and plurality of views to be expressed in context of potential reconciliation for moral legitimacy
To benefit from financial returns of material participation	
To gain a sense of self-sufficiency	
To align with living a climate-friendly lifestyle	
To gain a sense of community and belonging, place/regionality	

other instances, whereas the public administrators seem to be interested in doing their job better with the help of citizens, the citizens themselves are looking for much more concrete reasons in the use of their time and resources which can direct back to fulfilling their own needs. These needs are not only self-interested, however, and are often motivated by a common sense of purpose, but it is simply not aligned with the participating in processes which help to public agencies to gain skills, legitimacy, and acceptance. A starting point for designing more effective participatory processes is perhaps by aligning these "why's" of participation. Considering how participation could be made beneficial to all according to diverse perspectives of participation itself would change the options and the types of support structures that could be offered to those who might want to participate but cannot do so or think they should not do so currently.

4.7 How Do the Modes of Participation and Expressions of Energy Citizenship Relate?

What happens when we connect the motivations of participation in the energy transition the expressions of energy citizenship that were discussed in Chapter 2? Might the concept of energy citizenship be able to point a way forward to a better way of orchestrating participation in the energy transition? When aligning the expressions of energy citizenship with the citizens' vs. public administrators' view of participation, we see that the expressions of energy citizenship align with the citizens' reasons for participation. Because these expressions were empirically identified, it is no surprise that they align with the citizens' needs in relation to the energy transition. Both the citizen-based motivations for participation and the expressions of energy citizenship represent a bottom-up *needs-based* approach to understanding action Table 4.4.

The expressions of energy citizenship are defined not only on the basis of what citizens can offer to government and the energy system but rather on the basis of their needs in relation to the energy system. This needs-based approach is helpful in filling in a missing piece of the puzzle around agency- or government-initiated public participation. The expressions include are categorised by citizens' relationship to energy access, energy consumption, energy production, and politics. Expressions related to energy access manifest as citizens who are excluded from the energy system, dispossessed of their energy resources or the energy poor. Expressions related to energy consumption manifest as citizens who are energy literate individuals who influence the market through their consumer choice. They are also digital natives who can quickly adapt to a changing energy market and more technologies. They are open to changing their consumption patterns based on data. The energy champion provides peer support to other consumers to guide them towards cost savings and/or sustainable practices. The collectivist-consumer comes together to amplify their buying and/or bargaining power to get better terms from suppliers. These expressions of energy citizenship align with the types of citizens that have been studied as a part of the energy transition.

Table 4.4 Considering the expressions of energy citizenship with participation

Citizen-centred view of participation—"Why I should participate"	*Public agency-centred view of participation*—"Why you should participate"	*Dunphy et al. (2023a, 2023b)—Expressions of energy citizenship*
	Improve output of decision (pragmatic legitimacy) by incorporating more knowledge, preferences and values,	
	To empower less privileged groups and individuals	Energy excluded, dispossessed, poor
	Debate criteria of validity/truth to gain legitimacy of decisions to be made (cognitive legitimacy)	
To voice dissent and challenge the status quo	Allow dissent and plurality of views to be expressed in context of potential reconciliation for moral legitimacy (Suchman, 1995)	Citizen litigator, citizen challenger, citizen activist
To benefit from financial returns of material participation		Energy active consumer, digital native, energy prosumer, citizen-investor
To gain a sense of self-sufficiency		Collectivist producer, self-consumer, collectivist-consumer, energy prosumer, citizen activist
To align with living a climate-friendly lifestyle		
To gain a sense of community and belonging, place/regionality		

4.8 What Are the Implications for Energy Justice?

When we consider participation to be a means for empowering less privileged groups and individuals, it becomes a vehicle not only for improving the quality of decision-making and legitimacy of public authorities for making these decisions, but also a means for progressing towards social

justice. McCauley et al. (2013) suggest that there are three principal tenets of energy justices, including: distributional justice (allocation of benefit and costs of the energy system), recognition justice (adequate acknowledgement of the views and identities of those who are participants in the energy system), and procedural justice (inclusive, transparent, and informed decision-making processes). Sovacool and Dworkin (2015) further elaborate that this triumvirate of principles should result in decisions which promote: (1) energy availability, (2) affordability, (3) due process, (4) good governance, (5) sustainability, (6) intergenerational equity, (7) intragenerational equity, and (8) responsibility. Participation is not a panacea to all aspects of energy justice, but it can be one of many means to move towards a more just energy transition. It may have direct links to the due process, good governance, equity, and responsibility aspects of energy justice. Connecting to the analysis carried out in the previous sections, there are three barriers in which a rethinking of participation can support energy justice.

4.8.1 Closing the Participation Gap of the Energy Transition

The energy transition requires a society-wide agreement on taking the next steps for transforming the current infrastructure. However, the citizens require sufficient resources to know, care and perceive their efficacy in collective decision-making. This leaves only a small number of people who can take place, despite the intention of the EU and policymakers to try to get more people involved. The well-educated and well-off can take part in both the economic and social benefits of the energy transition through a variety of means (see Table 4.2) because they have the resources to participate in the first place (*i.e.,* in the form of property on which technology can be installed, capital investment needed for equipment, time to acquire knowledge, *etc.*). This means that those without resources to begin with cannot partake in the potential benefits which are offered. This increases the disparity of energy resources between those who already have access to resources and those who do not. Recognition justice that ensures equity and responsibility is at risk here.

4.8.2 *Acknowledging the Importance of Material Participation in the Energy Transition*

A key element of participation in the energy transition that sets it apart from general discussions of participation in other domains is the centrality of technologies, devices, and infrastructure that mediates these processes. The result is that participation should not be thought about only in terms of discussions, debates, and reasoning. It is about the capabilities we are given to change infrastructure, even if that infrastructure is shaped by social norms, rules, and mental models. The tight coupling between the material realities of the energy systems along with participation means that one way in which we can approach the participation gap is through providing sufficient material support to provide people with a sense of efficacy in their capacity to access and thus change the way an entire system might operate in the future. The link between physical and moral realities may need to be given more attention in the design of participation in the future. Procedural justice could thus be bolstered when material means of participation can be explicitly supported.

4.8.3 *Rethinking the "***Why***" of Participation*

A final insight regarding how participation may contribute to energy justice is in considering who and what are the motivations for participation currently. There is a discrepancy in the reasons why public authorities desire more participation from the part of citizens and what citizens themselves seem to value from the process. Public authorities require better implementation of policy decisions, more legitimacy and acceptance of decisions and they also want localised knowledge to inform decision-making. Citizens, on the other hand, are concerned about making change or gaining benefit from the process and value knowing how their actions would lead to concrete outcomes. In some cases, citizens are not invited to the table at all, because local governments who are responsible for designing such processes do not have the capacity to do so and try to gain the knowledge through experts and gain legitimacy through other means of public communication that more streamlines and controllable (Devenish & Lockwood, 2024). Confronting the discrepancy between what authorities need from participation and what citizens need requires authorities to recognise the complexity of the change and to balance the

dynamics of maintaining control and allowing self-organisation. Distributional, recognition, and procedural justice can be supported through this rethinking of motivations and making sure that diverse values are acknowledged in designing the goals and processes of participation.

4.9 Concluding Remarks

Bringing these points together, energy justice in the energy transition can be bolstered by "*deep inclusion*" and "deep closure" of participation. Deep inclusion assures participation of populations whose voices are not heard by redesigning participation formats to match the motivations and needs of citizens rather than the needs of public authorities. This includes supporting and funding not only the forms of participation that are initiated by governmental authorities, companies, or technical experts, but also participation which is citizen-initiated. Deep inclusion takes seriously the practical realities of what stands in the way of participation for some populations. When participation in the energy transition is dependent in large part on material participation, what role might authorities and other entities play in ensuring that material participation is possible for all? Deep inclusion also ensures that how participation is carried out is actually accessible to diverse modes of communication and thinking. Instead of valuing deliberation and verbal articulation as the main mode of expression, would there be other means for others who are less comfortable with verbal articulation, or those who may not be physically mobile enough to arrive at a new physical location to also participate? What arenas might be made available to diverse capacities within the population? What role might art, music, or other expressions play in drawing different groups in?

Deep closure is designing the participation in which participants are all able to walk away from the process receiving clear benefits worth their investment in time and energy. This might mean that people are able to express their own vision of the energy transition. They are fully enabled to act according to their vision of the world they want to live in. They are supported to act by the means in which they feel they can best contribute and aligning to their needs. In a variety of ways, they are able to come to a reconciliation with a system that is able to support their capabilities in relation to the energy system. This has some basic requirements for availability and access and affordability of energy, but it offers pathways

and practical means to change this system. It also offers diverse pathways for participation that acknowledges these many pathways for action and change.

Energy justice is about providing the sufficient freedom to self-organise and choose, as well as providing the conditions which would allow this self-organisation to be possible rather than devolving to a free for all resulting in the abuse of freedom through domination of those more aggressive or with more resources over those less aggressive or with fewer resources.

The inconvenient truth about the energy transition is that, whether or not we want it to be the case, decision-making about how we implement the transition requires collective decision-making. Its success depends on a vast majority of the population getting on-board with change. This is a difficult proposition. People with extreme differences in life experiences, access to resources, and perceptions about the world in general have to agree on how and when to make changes to their everyday lives. Even when there is agreement among the political leaders in the EU about what is "*good*" for the world and the energy transition, the implementation of measures to realise change rests on the shoulders of individuals who are thoroughly convinced, by one reason or another, that change is good.

Change is never easy given individual and societal structures invariably lean towards maintaining an (imperfect) status quo over the unpredictable consequences of substituting one set of values for another. It never has been, never will be. Hard enough as change is for individuals, changing a way of doing things within a group, or indeed at across large groups of people, poses a grave challenge to our capacity to adapt to the existential crises currently facing us. Yet, change is an inherent part of the way that the humans have met challenges in the past. The potential of public participation is that it is a means of providing the space for reconciliation for a series of decisions that society and individuals must take to reach a common goal. These decisions are not only related to the economic decisions people make about what types of energy sources or technologies to invest in. Nor are they only emotional reactions to scenes of climate doom or blind fervour for climate activism. They are at their core, moral judgements about what is the right thing to do and why. Participation must help us find this moral core and help us to move forward together.

References

Acik, N. (2013). Reducing the participation gap in civic engagement: Political consumerism in Europe. *European Sociological Review, 29*(6), 1309–1322. https://doi.org/10.1093/esr/jct016

Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners, 35*(4), 216–224. https://doi.org/10.1080/01944366908977225

Brenner-Fließer, M., Matowska, M., Schwarzinger, S., & Blaettner, D. (2023). *Report on survey and structured interview results for identifying potential emergence and consolidation factors* (D3.1). A research output of the ENCLUDE H2020 Project. https://doi.org/10.5281/Zenodo.10696079

Chilvers, J., & Longhurst, N. (2016). Participation in transition(s): Reconceiving public engagements in energy transitions as co-produced, emergent and diverse. *Journal of Environmental Policy & Planning, 18*(5), 585–607. https://doi.org/10.1080/1523908X.2015.1110483

Dahl, R. (2006). *A preface to democratic theory* (Expanded ed.). University of Chicago Press. (Original work published 1956)

Dalton, R. J. (2017). *The participation gap* (Vol. 1). Oxford University Press. https://doi.org/10.1093/oso/9780198733607.001.0001

Devenish, A., & Lockwood, M. (2024). Locally-led governance of residential heat transitions: Emerging experience of and lessons from the Dutch approach. *Energy Policy, 187*, 114027. https://doi.org/10.1016/j.enpol.2024.114027

Dobson, A. (2007). Environmental citizenship: Towards sustainable development. *Sustainable Development, 15*, 276–285.

Dunphy, N. P., & Lennon, B. (2022). Whose transition? A review of citizen participation in the energy system. In K. Araújo (Ed.), *Routledge handbook of energy transitions* (pp. 430–444). Routledge. https://doi.org/10.4324/9781003183020-30

Dunphy, N. P., Revez, A., Lennon, B., & Brenner-Fließer, M. (2023a). *Typology of energy citizenship(s)*. A research output (D2.2) of the ENCLUDE H2020 project. https://doi.org/10.5281/zenodo.10005552

Dunphy, N. P., Revez, A., Lennon, B., Quinlivan, L., & Brenner-Fließer, M. (2023b). *Report on intersectional analysis of emerging examples of energy citizenship*. A research output (D2.1) of the ENCLUDE H2020 project. https://doi.org/10.5281/zenodo.7598736

Ekman, J., & Amnå, E. (2012). Political participation and civic engagement: Towards a new typology. *Human Affairs, 22*(3), 283–300. https://doi.org/10.2478/s13374-012-0024-1

Fung, A. (2003). Survey article: Recipes for public spheres: Eight institutional design choices and their consequences. *Journal of Political Philosophy, 11*(3), 338–367. https://doi.org/10.1111/1467-9760.00181

Fung, A. (2006). Varieties of participation in complex governance. *Public Administration Review, 66*(s1), 66–75. https://doi.org/10.1111/j.1540-6210.2006.00667.x

Fung, A. (2015). Putting the public back into governance: The challenges of citizen participation and its future. *Public Administration Review, 75*(4), 513–522. https://doi.org/10.1111/puar.12361

Gaus, G. F. (2021). *The open society and its complexities*. Oxford University Press.

Hackbarth, A., & Löbbe, S. (2022). What motivates private households to participate in energy communities? A literature review and German case study. In S. Löbbe, F. Fereidoon Sioshansi, & D. Robinson (Eds.), *Energy communities* (pp. 153–166). Academic Press. https://doi.org/10.1016/B978-0-323-91135-1.00026-2

Hafer, J. A., & Ran, B. (2016). Developing a citizen perspective of public participation: Identity construction as citizen motivation to participate. *Administrative Theory & Praxis, 38*(3), 206–222. https://doi.org/10.1080/10841806.2016.1202080

Hayek, F. A. (1944). *The Road to serfdom*. Routledge.

Levinson, R. B. (2014). *In Defense of Plato*. Harvard University Press (Original work 1953).

Lovins, A. (1976). Energy strategy: The road not taken? *Foreign Affairs, 55*(1), 65–96.

McCauley D. A., Heffron R. J., Stephan H., & Jenkins, K. (2013). Advancing energy justice: The triumvirate of tenets. *International Energy Law Review, 32*(3), 107–110.

Michels, A. M. B. (2006). Citizen participation and democracy in the Netherlands. *Democratization, 13*(2), 323–339. https://doi.org/10.1080/13510340500524067

Mill, J. S. (1861). *Representative Government*. Botache Books.

Mullally, G. M., Dunphy, N. P., & O'Connor, P. (2018). Participative environmental policy integration in the Irish energy sector. *Environmental Science and Policy, 83*, 71–78. https://doi.org/10.1016/j.envsci.2018.02.007

National Research Council. (2008). *Public participation in environmental assessment and decision making*. The National Academies Press. https://doi.org/10.17226/12434.

Norris, P., Lovenduski, J., & Campbell, R. (2004). *Closing the activism gap: Gender and political participation in Britain*. The Electoral Commission.

Pearce, B., & Thalberg, K. (2024). *Energy citizenship in the making. Pathways to support citizen engagement in the European energy transition*. A Joint Policy Brief of the EC2, ENCLUDE, EnergyProspects & DIALOGUES H2020 projects. https://doi.org/10.5281/Zenodo.10814075

Pretty, J. N. (1995). Participatory learning for sustainable agriculture. *World Development, 23*(8), 1247–1263.

Renn, O., & Schweizer, P.-J. (2020). Inclusive governance for energy policy making: Conceptual foundations, applications, and lessons learned. In O. Renn, F. Ulmer, & A. Deckert (Eds.), *The role of public participation in energy transitions* (pp. 39–79). Academic Press. https://doi.org/10.1016/B978-0-12-819515-4.00003-9

Rousseau, J. J. (1762). *Du Contrat Social* (The Social Contract). Translated by GDH Cole (1782), public domain. http://www.constitution.org/jjr/socon.htm

Ryghaug, M., Skjølsvold, T. M., & Heidenreich, S. (2018). Creating energy citizenship through material participation. *Social Studies of Science, 48*(2), 283–303. https://doi.org/10.1177/0306312718770286

Sartori, G. (1962). *Democratic theory*. Frederick A. Praeger.

Schmidtz, D., & Boettke, P. (2021). *Friedrich Hayek*. The Stanford Encyclopedia of Philosophy, Summer 2021 Edition. https://plato.stanford.edu/archives/sum2021/entries/friedrich-hayek

Schumpeter, J. A. (2010). *Capitalism, socialism and democracy*. Taylor & Francis e-Library (Original work published 1942).

Sovacool, B. K., & Dworkin, M. H. (2015). Energy justice: Conceptual insights and practical applications. *Applied Energy, 142*(2015), 435–444. https://doi.org/10.1016/j.apenergy.2015.01.002

Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review, 20*(3), 571–610. https://doi.org/10.5465/amr.1995.9508080331

Swanson, D., & Bhadwal, S. (Eds.). (2009). *Creating adaptive policies: A guide for policymaking in an uncertain world*. Sage Publications India Pvt Ltd.

Teisman, G., van Buuren, A., & Gerrits, L. (Eds.). (2010). *Managing complex governance systems: Dynamics, self-organization and coevolution in public investments*. Routledge.

Thombs, R. P. (2019). When democracy meets energy transitions: A typology of social power and energy system scale. *Energy Research & Social Science, 52*, 159–168. https://doi.org/10.1016/j.erss.2019.02.020

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (http://creativecommons.org/licenses/by/4.0/), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

CHAPTER 5

Towards a Better Understanding of Energy Citizenship

Abstract This chapter concludes the book. Despite considerable effort having been already expended within the academic communityn on conceptualising energy citizenship, a fundamental question remains. How can ideas around energy citizenship be harnessed for actioning fairer and more just citizen participation in the energy transition? Drawing together the key themes presented throughout the book, it seeks to conceptualise energy citizenship as a sociotechnical imaginary of the "roles that citizens could, or perhaps should play in the energy system" (Dunphy & Lennon, 2022, p. 435). Acknowledging its position as a contested notion, it provides an overview of its many expressions before summing up our definition of energy citizenship and the role it should take, along with potential avenues for future study.

Keywords Citizen engagement · Practice · Participation · Lived experience

Despite considerable effort having been already expended within the academic community on conceptualising energy citizenship a fundamental question remains. How can ideas around energy citizenship be harnessed for actioning fairer and more just citizen participation in the energy transition? It draws together themes from previous chapters; this chapter

© The Author(s) 2025

N. P. Dunphy et al., *Energy Citizenship*,
https://doi.org/10.1007/978-3-031-70153-5_5

conceptualises energy citizenship Providing an overview of energy citizenship as a contested concept Before we sum up our definition of energy citizenship and the role it should take (drawing from Dunphy et al., 2023a, 2023b) While also offering potential avenues for future study.

5.1 Introduction

As Vaclav Smil suggests, energy is the sole universal currency and all matter—from the fuel that drives one's car to the paper or screen you are reading this on—is essentially energy at rest. For anything to work, one of its many forms must be transformed into another across time and space, and manifests from the rotations of galaxies and the thermonuclear reactions of stars to the terra-forming forces that raise new mountain ranges on the Earth's crust, or the cumulative erosive impact water droplets have on rock (2018). Similarly, we need to take a more systems perspective approach to understanding energy citizenship and the contexts in which the expectations and roles set for individuals are introduced. In addition, the relationships and interactions between different actors and how they effect changes within the (energy) system require further study.

As Lushetich (2022) recently notes, the conceptual framework underpinning our understanding of energy, both in terms of both extraction and consumption, largely rests on a source-conversion-end-use imagining of energy that is rooted in the Greco-monotheistic-scientific tradition. Consequently, energy has invariably been associated with our dependence on burning fossil fuels to facilitate transportation, food production, and a spiralling array of commodities that (questionably) are presented as improving the quality of our lives. This energy transition, more than any in the past, has raised questions on not only the types of sources we exploit but also the sociotechnical structures designed to facilitate the extraction and consumption of these resources. In particular, the role and expectations being placed on 'the citizen' are both novel and represent a potentially transformative departure from previous expressions of participation framed by earlier systems. The previous chapters in this book have sought to outline how these expressions manifested in the past, but also how current power realignments are impacting current expressions too. Most notably, there is a very real danger that if we do not grasp the nettle, so to speak, and instigate the deep, systemic changes that are needed to

transform existing energy infrastructure, all we will do is end up strengthening historical injustices and indeed create new ones under the rubric of 'green' innovations around energy.

Dunlap (2018), for example, highlights how these innovations cannot be assessed on their own, but rather are tied up in historical grievances and other seemingly unrelated (at least to those lacking the correct knowledge) conflict situations, *e.g.,* the micro-politics of land acquisition in semi-subsistence Indigenous communities long used to manipulation and exploitative practices by those in power, and where wind energy developments there led aridification and a consolidating of old colonial relationships. Therefore, understanding energy citizenship not only involves knowing about the financial, legal, and political parameters of rolling out new technologies within the prevailing Greco-monotheistic-scientific, but also requires us to be knowledgeable of, and receptive to countering, the perpetuation of historical injustices and/or the establishing of new ones. As we alluded to in Chapter 1, not all energy citizens are created equally, nor have they ever been treated equally at any point of the energy supply chain either historically or today.

5.2 Pathways to a Better Understanding Energy Citizenship

Acknowledging the vulnerability of cohorts of citizens within the energy supply chain is essential given the potential role energy has for both strengthening and undermining democracy. As is evident with the democratic project more generally, how citizens are expected to participate should be decoupled entirely from the destructive tendencies encouraged by mass consumption if we are to achieve the type of transformation needed to curtail the potential for injustice, while at the same time to reduce our collective vulnerability to climate change (Lennon & Dunphy, 2023). We must therefore broaden our perspectives and embrace more inclusive ecologies of participation that allow for a diversity of publics to impactfully engage in the energy domain. When looking at sociotechnical systems, Chilvers et al.'s (2018) relational co-productionist framework offers one potentially useful point of departure for understanding the many diversities and inequalities already locked into notions of participation. Not only do we, as the authors suggest, need to see a systemic turn in the study of societal engagement with sociotechnical change but also this needs to translate further and be fully embraced throughout the

policy cycle. The value and positive implications associated with adopting an ecologies of participation approach are one potential pathway for combining the theoretical, empirical, and practical challenges of truly understanding and establishing a more inclusive, ethically responsible, and just sociotechnical (energy) transition.

Another critical question lies at the heart of any discussion around energy citizenship, is decentralisation even technical viable, given the social and technical challenges facing us? As Bauknecht et al. (2020) acknowledge, the decentralisation is multifaceted comprising numerous socio-technological dimensions that may lead to higher power plant costs and lower grid costs. Also, the degree of citizen participation varies by the type of decentralisation being prioritised. As an example, they highlight the German Energiewende (energy transition) which saw an increased decentralisation of the electricity infrastructure there. However, greater levels of citizen participation did not correlate with this uptick, rather they point to the significant power resting in the hands of project-initiating actors at the local level still controlled the level and manner of participation available to the citizenry. As Wolfe (2008) has suggested for some time now, considerable regulatory and policy reform remains to be implemented if we are to optimise the potential for onsite energy generation, along with effective two-way interchanges with centralised energy systems. However, the role of citizens in all this is still largely absent, despite positive indications in the energy white papers of national governments. As Berka and Dreyfus (2021) suggest, trends towards decentralised governance and practice are neither uniform nor indeed have they been universal and have been underscored by conflicting logics that have driven disputes over policy and regulation on the topic. Notably, it will require greater regulatory flexibility, power sharing across all levels of government, and a more inclusive policy process, in addition to relief from competitive intensity, if decentralisation is to become a significant component of future energy systems. Again, as we indicate in previous chapters this is only one aspect of energy citizenship.

Rather, one should consider energy citizenship more as a typology of experiences and expressions that is far richer and the current overriding perspective that (energy) citizenship is something that must be earned or is the outcome of a processes where one becomes and *energy citizen* through certain prescribed acts of participation. As Joppke (2021, p. 4) has observed, earned citizenship has in many ways become "*a metaphor for a post-welfare society that is unwilling to redistribute its wealth and*

protections internally". Instead, we would argue that such an approach that valorises an energy citizenship that is won or earned offers an illusory cover for those vested in maintaining an energy system that continues to be distributively and procedurally unjust and ignores the retributive and restorative justice potential the current energy transition can offer. Similarly, as mentioned in Dunphy and Lennon (2022, p. 441), a viable energy citizen framework should take into account "*people's relationship with energy, establishing rights and responsibilities for a continuum of expressions of energy citizenship*". Consequently, a more inclusive multifaceted understanding of energy citizenship allows space for different expressions of citizenship, as it relates to energy. Our research on the emerging perceptions of energy citizenship has allowed us to combine an appreciation of human understandings, perceptions, attitudes, and practices around energy and the expected roles expected of citizens within these arrangements. We also note the consideration of gender is quite pervasive in the literature and contrast this with an observed lack of gender relevant descriptions of energy citizenship within popular discourses on energy.

In Dunphy et al. (2023a), we identified five key "*sites of energy citizenship*" through a scoping literature review, including households, cities, municipalities, rural areas, and energy storage. This spatial perspective on energy citizenship is presented in Tables 5.1, 5.2, 5.3, 5.4, and 5.5. For each article, labels are forwarded noting specific focus, quality, process, and/or type of energy citizenship being discussed. These are not exhaustive lists, but they do illustrate a diversity and a weighting towards certain themes. Smart citizenship and demand side management emerged as strong themes in the 'Household site' as shown in Table 5.1. This bespeaks flexibility and efficiency associated with household energy use. Other labels of note included energy poverty, ownership, and activism.

Table 5.2 details the identified articles relevant to the *Cities* site of energy citizenship. In contrast to the Household site in which individual agency featured strongly, in the Cities site, collective forms of action were to the fore. The key emergent themes in the Cities as a site of energy citizenship were energy collectives, active citizenship, and activism (Dunphy et al., 2023b).

Municipalities as a site of citizenship have some similarities with the *Cities* site in the above table. However, it differs in that it relates to smaller urban areas, with lower population densities, and incorporates municipality administration concerns. As shown in Table 5.3, strong themes emerging in this site include citizens as passive recipients of

Table 5.1 'Household' relevant articles and energy citizenship labels explored in each

Household articles	*Labels explored*
Allan et al. (2022)	Lived citizenship, national identity, activism
Ambrose (2020)	Environmental citizenship, engaged, responsible citizenship, energy literacy
Beauchampet and Walsh (2021)	Ownership, active citizenship, prosumer, local democracy
Chaney et al. (2016)	Active citizenship, home occupancy, energy user, consumer
Cohen et al. (2021)	Ownership, prosumer, investment, private citizen cooperatives
DellaValle and Czako (2022)	Active citizenship, citizens as consumers, prosumer, energy poor, Collective action
Goulden et al. (2014)	Smart user, energy consumer, engaged persona, active citizenship
Karjalainen and Ahvenniemi (2019)	Early adopter, prosumer, energy user, empowerment
Lennon et al. (2019)	Imagined citizen, citizen-consumer, individualisation, private/ public-sphere
Longo et al. (2020)	Vulnerable consumer, vulnerable citizen, energy poverty
Mesarić and Krajcar (2015)	Smart user, demand side management, optimised consumption
Moles-Grueso and Stojilovska (2022)	Citizen alienation, energy poverty, engaged citizen
Rommetveit et al. (2021)	Energy user, smart user, extraction, innovation
Ruostetsaari (2020)	Consumer-citizen, prosumer, demand side management
Ryan et al. (2014)	Individual action, collective action, sociotechnical solutions
Ryghaug et al. (2018)	Active citizenship, everyday lives, material participation
Sanz-Hernández (2019)	Public opinion, energy justice, affected people, protest
Trivedi et al. (2022)	Smart citizens, active citizens, consumer-citizen, prosumer, energy communities

(continued)

Table 5.1 (continued)

Household articles	*Labels explored*
Wahlund and Palm (2022)	Energy democracy, energy collectives, energy communities
Wuebben et al. (2020)	Citizen science, energy communities, intermediaries, public control
Wylie (2018)	Energy collectives, citizen alliance, monitoring, citizen-consumer

Reproduced from Dunphy et al. (2023b)

Table 5.2 'Cities' relevant articles and energy citizenship labels explored in each

Cities articles	*Labels explored*
Allan et al. (2022)	Lived citizenship, national identity, activism
Ambrose (2020)	Environmental citizenship, engaged, responsible citizenship, energy literacy
Campos and Marín-González (2020)	Active citizens, prosumer, social movement
De Filippo et al. (2020)	Citizen science, active public engagement
Drożdż et al. (2022)	Active participant, spectrum of agencies, critical citizen, energy literacy, environmental citizen
Gunderson and Yun (2021)	Citizen participation, energy democracy, civic ownership, prosumer, right to energy
Mihailova et al. (2022)	Active citizens, prosumers, value creation, energy communities
Moles-Grueso and Stojilovska (2022)	Citizen alienation, energy poverty, engaged citizen
Reymers (2008)	Protest, resistance, coalition, citizen action groups, social movements
Ringholm (2022)	Government-led deliberative consultation, technological trial linked to domestic energy practices, environmental social movement, local grassroots innovation
Roversi et al. (2022)	Active citizens, political actors, users, producers, consumers, owners
Tcholtchev and Schieferdecker (2021)	Smart citizen, user-oriented, innovation
van Wees et al. (2022)	Energy community, energy districts, citizen-oriented city
Wylie (2018)	Energy collectives, citizen alliance, citizen monitoring, citizen-consumer

Reproduced from Dunphy et al. (2023b)

Table 5.3 Municipality-oriented articles and the energy citizenship labels explored in each

Municipality articles	*Labels explored*
Beauchampet and Walsh (2021)	Ownership, active citizenship, prosumerism, local democracy
Drożdż et al. (2022)	Active participant, spectrum of agencies, critical citizen, environmental citizen, energy literacy
Mihailova et al. (2022)	Active citizens, prosumers, value creation, energy communities
Roversi et al. (2022)	Active citizens, political actors, users, producers, consumers, and owners
Schwarz (2020)	Residents, financial participants, citizens in reach, special positions, associations
Thomas et al. (2020)	Domestic users, vulnerable groups, passive recipients

Reproduced from Dunphy et al. (2023b)

Table 5.4 Rural area relevant articles and energy citizenship labels explored in each

Rural articles	*Labels explored*
Campos and Marín-González (2020)	Active citizens, prosumer, social movement
Reymers (2008)	Protest, resistance, coalition, citizen action groups, social movements
Slee (2015)	Environmental citizenship, community ownership, shared equity
Szulecki and Overland (2020)	Prosumerism, individual household involvement, energy communities
Wylie (2018)	Energy collectives, citizen alliance, citizen monitoring, citizen-consumer

Reproduced from Dunphy et al. (2023b)

energy, and as service users of municipal utilities rather than collaborators or co-creators in the energy system.

Table 5.4 lists those articles focusing on rural areas as sites of energy citizenship. Rural–urban differences are apparent with smart solutions notably weaker than in the Cities site, while issues around RES deployment more to the fore in the rural areas.

Table 5.5 Storage relevant articles and energy citizenship labels explored in each

Storage articles	*Labels explored*
Bauwens et al. (2022)	Active citizen, energy communities, grassroots, energy cooperatives, energy storage communities
Moncecchi et al. (2020)	European citizen, active citizen
Nouri et al. (2022)	Engaged citizen, prosumer, customer
Thomas et al. (2020)	Domestic users, vulnerable groups, passive recipients
Wylie (2018)	Energy collectives, citizen alliance, citizen monitoring, citizen-consumer

Reproduced from Dunphy et al. (2023b)

Finally, Table 5.5 lists articles that focus on energy storage as a site of energy citizenship. This site is strongly associated with energy community as both producers of energy and sharing energy storage capabilities.

The predominance of *the household* as a site of (energy) citizenship in the reviewed literature aligns with reemphasis of the private sphere within the wider energy citizenship discourse and supports the proposition forwarded that the home has become a focal point for action, productivity, and political concern around energy (Dunphy et al., 2023a). The above tables suggest that conceptualisations around energy citizenship are already coalescing along specific themes that tend to favour incumbent powerholders rather than embracing the full transformative potential the concept offers. Rather than pointing to a more holistic contribution citizens can make as full participants in the energy system, it certainly points to a preference for more passive participation and a defining of the citizen as "*one against whom there was no official complaint*" (Auden, 2019/1940). Auden's critique of citizenship certainly captures the passivity and acquiescence expected of the citizen: "*when there was peace, he was for peace: when there was war, he went*" (ibid.). The same can very much be said about the energy citizen who is expected to remain bounded within the existing power structures—to contribute when asked, but otherwise consent to the prevailing systems of power (both social and technical) already in place. Consequently, a good definition of energy citizenship should not be "*free to ignore the variation and diversity of the world*" (Johnson, 1984, p. 73), but rather it must encompass the variety of lived experiences of citizens and the expressions of energy citizenship they adopt and respond to in their day-to-day lives.

5.3 Conclusion

As we have discussed throughout this book, the term energy citizenship is sociotechnical imaginary of the "*roles that citizens could, or perhaps should play in the energy system*" (Dunphy & Lennon, 2022, p. 435). It has been (and continues to be) used by policymakers, energy companies, activists, and others as a placeholder to refer to the role(s) around energy that they would like to see citizens adopt in the future. Given the very different (and sometimes conflicting) visions of energy futures and of the role of the citizenry, the idea of a 'energy citizen' has very different meanings for these various groups. Much of the use of the term has a very strong normative flavour with public authorities and energy companies for instance inviting people to "become" energy citizen by engaging in specific (usually rather limited) activities favoured by those holding power. There are others however, including activists for example, who have used the term more aspirationally to describe an enhanced role (defined to a greater or lesser extent) for the public in the energy domain. However, in both perspective energy citizenship is something you obtain through practice, aligning with the civic republican conception of citizenship as a practice. The energy citizenship as a practice focuses on responsibilities and duties excludes those who do not have the agency (or perhaps even the opportunity) to undertake the activities that will "make" them an energy citizen. The focus on economic modes of participation found in many understandings of energy citizenship is reminiscent of the distinction made by the early French Republic (1791 constitution) between economic active citizens (in effect male property owners) who held political rights and passive citizens, who were afforded only civil rights (Tilly, 1995). It is no coincidence perhaps that many of those excluded[1] from active citizenship of the young French republic would today lack the agency required to "become" an energy citizen based on such economic modes of participation.[2]

[1] Those excluded from 'active citizenship' under the 1791 French constitution included women. Prevailing social and economic structures mean that women are far more likely than men to be excluded from modes of economic participation forwarded by some as a means of becoming an energy citizen.

[2] Take for instance the case of the active consumer expression of energy citizenship. With many mixed-gender couples the energy account is often in the sole name of the man. This raises the question is it possible for a non-energy account holder to be an active consumer?

Kymlicka and Norman (1994, p. 353) argue "we should expect a theory of the good citizen to be relatively independent of the legal question of what it is to be a citizen, just as a theory of the good person is distinct from the meta- physical (or legal) question of what it is to be a person". In the same way, sociopolitical question of who is an energy citizens should be distinct from ideas of "good" energy citizen, in whatever way that is defined in a given time and place.[3] In this book, building on earlier work (e.g., Dunphy & Lennon, 2022), we have outlined a more inclusive vision of energy citizenship. An energy citizenry comprised of all those who have a relationship with energy system. In this perspective, one does not become an energy citizen or earn energy citizenship, rather by virtue of our existing close relationship with energy, by "having a stake" (after Anthias, 2013), we are each an energy citizen. Energy citizenship can be viewed and an assemblage of the formal (and informal) relationships a person has with the various components of the energy system. This recognition of energy citizenship by status can contribute to the realisation of a just energy transition a more equitable energy future. However, acknowledging this attribute of energy citizenship status with associated privileges and rights (in the liberal citizenship tradition) does not preclude a citizenship by practice element. In our view, energy citizenship involves a combination of rights and responsibilities representing a hybrid of civic republican and liberal traditions of citizenship. Moreover, in supporting the concept of a shared humanity and forwarding key sustainability and social justice principles, it reflects aspects of cosmopolitan and post-cosmopolitan citizenship (Mullally et al., 2018). There is no one form of energy citizenship, we suggest that it can be expressed in multiple, overlapping, sometimes transitory, and at times even conflicting ways. An individual's experience of energy citizenship is highly influenced by their socio-economic privilege and life experience and the way in which to express their citizenship in the energy domain may change depending on changing circumstance (Dunphy et al., 2023b).

Energy citizenship has been and continues to be portrayed as the answer to any one of numerous energy-related problems, climate change,

[3] Some expressions of energy citizenship may act to support energy public policy goals more than others and in turn be supported by public authorities. Other expressions may challenge the status quo directly or indirectly and as a result be less favoured or even marginalised by those in power. But all are energy citizens.

energy security, etc. Public authorities often seek to mobilise energy citizens to respond to public policy imperatives. Indeed, in public policy discourse, the term has almost become a pseudonym for "*good*" citizen in the energy domain. Acknowledging a common energy citizenship does not reduce its relevance for policymakers and other energy stakeholders, understanding the different ways in which energy citizenship manifests itself provide a greater appreciation of the human and societal dimension within the energy system. A better understanding of the ways in which people express their energy citizenship at different times and in different contexts, enables for example targeted support to encourage preferred expressions and to discourage those expressions of citizenship considered less desirable.

The ongoing decarbonisation of our energy systems will enable, and will require, a transformation in the way we relate to energy and the energy system. The key questions of this energy transition are which kind of energy citizenship(s) do we want? And perhaps just as important which will be allowed to materialise? Ultimately, the type of energy citizenship(s) we get will be a result of the choices we all make individually and collectively.

References

Allan, J., Lemaadel, M., & Lakhal, H. (2022). Oppressive energopolitics in Africa's last colony: Energy, subjectivities, and resistance. *Antipode: A Radical Journal of Geography, 54*(1), 44–63. https://doi.org/10.1111/anti.12765

Ambrose, A. (2020). Walking with energy: Challenging energy invisibility and connecting citizens with energy futures through participatory research. *Futures, 117*, 102528. https://doi.org/10.1016/j.futures.2020.102528

Anthias, F. (2013). *Identity and belonging: Conceptualisations and political framings* (KLA Working Paper Series No. 8). Kompetenznetz Lateinamerika––Ethnicity, Citizenship, Belonging.

Auden, W. H. (2019). The unknown citizen. In *Another time*. Faber & Faber. (Original work published 1940)

Bauknecht, D., Funcke, S., & Vogel, M. (2020). Is small beautiful? A framework for assessing decentralised electricity systems. *Renewable and Sustainable Energy Reviews, 118*, 109543. https://doi.org/10.1016/j.rser.2019.109543

Bauwens, T., Schraven, D., Drewing, E., Radtke, J., Holstenkamp, L., Gotchev, B., & Yildiz, Ö. (2022). Conceptualizing community in energy systems: A systematic review of 183 definitions. *Renewable and Sustainable Energy Reviews, 156*, 11999. https://doi.org/10.1016/j.rser.2021.111999

Beauchampet, I., & Walsh, B. (2021). Energy citizenship in the Netherlands: The complexities of public engagement in a large-scale energy transition. *Energy Research & Social Science, 76*, 102056. https://doi.org/10.1016/j.erss.2021.102056

Berka, A., & Dreyfus, M. (2021). Decentralisation and inclusivity in the energy sector: Preconditions, impacts and avenues for further research. *Renewable and Sustainable Energy Reviews, 138*, 110663. https://doi.org/10.1016/j.rser.2020.110663

Campos, I., & Marín-González, E. (2020). People in transitions: Energy citizenship, prosumerism and social movements in Europe. *Energy Research & Social Science, 69*, 101718. https://doi.org/10.1016/j.erss.2020.101718

Chaney, J., Owens, E. H., & Peacock, A. D. (2016). An evidence based approach to determining residential occupancy and its role in demand response management. *Energy and Buildings, 125*(1), 254–266. https://doi.org/10.1016/j.enbuild.2016.04.060

Chilvers, J., Pallett, H., & Hargreaves, T. (2018). Ecologies of participation in socio-technical change: The case of energy system transitions. *Energy Research & Social Science, 42*(February), 199–210. https://doi.org/10.1016/j.erss.2018.03.020

Cohen, J. J., Azarova, V., Kollmann, A., & Reichl, J. (2021). Preferences for community renewable energy investments in Europe. *Energy Economics, 100*, 105386. https://doi.org/10.1016/j.eneco.2021.105386

De Filippo, D., Lascurain, M. L., Pandiella-Dominique, A., & Sanz-Casado, E. (2020). Scientometric analysis of research in energy efficiency and citizen science through projects and publications. *Sustainability, 12*(12), 5175. https://doi.org/10.3390/su12125175

DellaValle, N., & Czako, V. (2022). Empowering energy citizenship among the energy poor. *Energy Research & Social Science, 89*, 102654. https://doi.org/10.1016/j.erss.2022.102654

Drożdż, W., Bilan, Y., Rabe, M., Streimikiene, D., & Pilecki, B. (2022). Optimizing biomass energy production at the municipal level to move to low-carbon energy. *Sustainable Cities and Society, 76*, 103417. https://doi.org/10.1016/j.scs.2021.103417

Dunlap, A. (2018). Insurrection for land, sea and dignity: Resistance and autonomy against wind energy in Álvaro Obregón, Mexico. *Journal of Political Ecology, 25*(1). https://doi.org/10.2458/v25i1.22863

Dunphy, N. P., & Lennon, B. (2022). Whose transition? A review of citizen participation in the energy system. In K. Araújo (Ed.), *Routledge handbook of energy transitions* (pp. 430–444). Routledge. https://doi.org/10.4324/9781003183020-30

Dunphy, N. P., Revez, A., Lennon, B., & Brenner-Fließer, M. (2023a). *Typology of energy citizenship(s)*. A research output (D2.2) of the ENCLUDE H2020 project. https://doi.org/10.5281/zenodo.10005552

Dunphy, N. P., Revez, A., Lennon, B., Quinlivan, L., & Brenner-Fließer, M. (2023b). *Report on intersectional analysis of emerging examples of energy citizenship*. A research output (D2.1) of the ENCLUDE H2020 project. https://doi.org/10.5281/zenodo.7598736

Goulden, M., Bedwell, B., Rennick-Egglestone, S., Rodden, T., & Spence, A. (2014). Smart grids, smart users? The role of the user in demand side management. *Energy Research & Social Science, 2*, 21–29. https://doi.org/10.1016/j.erss.2014.04.008

Gunderson, R., & Yun, S. J. (2021). Building energy democracy to mend ecological and epistemic rifts: An environmental sociological examination of Seoul's one less nuclear power plant initiative. *Energy Research & Social Science, 72*, 101884. https://doi.org/10.1016/j.erss.2020.101884

Johnson, C. (1984). Who is Aristotle's citizen? *Phronesis, 29*(1), 73–90. https://www.jstor.org/stable/4182188

Joppke, C. (2021). Earned citizenship. *European Journal of Sociology, 62*(1), 1–35. https://doi.org/10.1017/S0003975621000035

Karjalainen, S., & Ahvenniemi, H. (2019). Pleasure is the profit-the adoption of solar PV systems by households in Finland. *Renewable Energy, 133*, 44–52. https://doi.org/10.1016/j.renene.2018.10.011

Kymlicka, W., & Norman, W. (1994). Return of the citizen: A survey of recent work on citizenship theory. *Ethics, 104*(2), 352–381. https://doi.org/10.1086/293605

Lennon, B., & Dunphy, N. P. (2023). Mind the gap: Citizens, consumers, and unequal participation in global energy transitions. In M. Nadesan, M. J. Pasqualetti, & J. Keahey (Eds.), *Energy democracies for sustainable futures* (pp. 327–331). Academic Press. https://doi.org/10.1016/B978-0-12-822796-1.00035-8

Lennon, B., Dunphy, N. P., & Sanvicente, E. (2019). Community acceptability and the energy transition: A citizens' perspective. *Energy, Sustainability and Society, 9*(1), 35. https://doi.org/10.1186/s13705-019-0218-z

Longo, D., Olivieri, G., Roversi, R., Turci, G., & Turillazzi, B. (2020). Energy poverty and protection of vulnerable consumers. Overview of the EU funding programs FP7 and H2020 and future trends in Horizon Europe. *Energies, 13*(5), 1030. https://doi.org/10.3390/en13051030

Lushetich, N. (2022, June 15–17). *Energy: A philosophy of practice*. Paper presented at the 28th Annual Conference of the International Sustainable Development Society—Sustainable Development and Courage: Culture, Art and Human Rights. *International Sustainable Development Society*, Stockholm, Sweden.

Mesarić, P., & Krajcar, S. (2015). Home demand side management integrated with electric vehicles and renewable energy sources. *Energy and Buildings, 108*, 1–9. https://doi.org/10.1016/j.enbuild.2015.09.001

Mihailova, D., Schubert, I., Burger, P., & Fritz, M. M. (2022). Exploring modes of sustainable value co-creation in renewable energy communities. *Journal of Cleaner Production, 330*, 129917. https://doi.org/10.1016/j.jclepro.2021.129917

Moles-Grueso, S., & Stojilovska, A. (2022). Towards spatializing consumer energy sustainability. Empirical findings about the policy and practice of energy conservation and poverty in Barcelona and North Macedonia. *Journal of Environmental Policy & Planning, 24*(4), 407–420. https://doi.org/10.1080/1523908X.2021.2008234

Moncecchi, M., Meneghello, S., & Merlo, M. (2020). Energy sharing in renewable energy communities: The Italian case. In *55th International Universities Power Engineering Conference (UPEC)*. Turin, Italy. https://doi.org/10.1109/UPEC49904.2020.9209813.

Mullally, G. M., Dunphy, N. P., & O'Connor, P. (2018). Participative environmental policy integration in the Irish energy sector. *Environmental Science and Policy, 83*, 71–78. https://doi.org/10.1016/j.envsci.2018.02.007

Nouri, A., Khadem, S., Mutule, A., Papadimitriou, C., Stanev, R., Cabiati, M., Keane, A., & Carroll, P. (2022). Identification of gaps and barriers in regulations, standards, and network codes to energy citizen participation in the energy transition. *Energies, 15*(3), 856. https://doi.org/10.3390/en15030856

Reymers, K. (2008). The Country and the grassroots: Rural action for local control of energy policy and development. *Theory in Action, 1*(4), 72–113. https://doi.org/10.3798/tia.1937-0237.08020

Ringholm, T. (2022). Energy citizens—Conveyors of changing democratic institutions? *Cities, 126*. https://doi.org/10.1016/j.cities.2022.103678

Rommetveit, K., Ballo, I. F., & Sareen, S. (2021). Extracting users: Regimes of engagement in Norwegian smart electricity transition. *Science, Technology, & Human Values*. https://doi.org/10.1177/01622439211052867

Roversi, R., Boeri, A., Pagliula, S., & Turci, G. (2022). Energy community in action—Energy citizenship contract as tool for climate neutrality. *Smart Cities, 5*(1), 294–317. https://doi.org/10.3390/smartcities5010018

Ruostetsaari, I. (2020). From consumers to energy citizens: Finns' readiness for demand response and prosumerism in energy policy making. *International Journal of Energy Sector Management, 14*(6), 1157–1175. https://doi.org/10.1108/IJESM-11-2019-0001

Ryan, S. E., Hebdon, C., & Dafoe, J. (2014). Energy research and the contributions of the social sciences: A contemporary examination. *Energy Research & Social Science, 3*, 186–197. https://doi.org/10.1016/j.erss.2014.07.012

Ryghaug, M., Skjølsvold, T. M., & Heidenreich, S. (2018). Creating energy citizenship through material participation. *Social Studies of Science, 48*(2), 283–303. https://doi.org/10.1177/0306312718770286

Sanz-Hernández, A. (2019). Media and stakeholders: Contribution to the public debate on poverty and energy justice in Spain (Medios de comunicación y stakeholders: Contribución al debate público de la pobreza y justicia energética en España). *Revista Española De Investigaciones Sociológicas, 168*, 73–92. https://doi.org/10.5477/cis/reis.168.73

Schwarz, L. (2020). Empowered but powerless? Reassessing the citizens' power dynamics of the German energy transition. *Energy Research & Social Science, 63*, 101405. https://doi.org/10.1016/j.erss.2019.101405

Slee, B. (2015). Is there a case for community-based equity participation in Scottish on-shore wind energy production? Gaps in evidence and research needs. *Renewable and Sustainable Energy Reviews, 41*, 540–549. https://doi.org/10.1016/j.rser.2014.08.064

Smil, V. (2018). *Energy and civilization: A history*. The MIT Press.

Szulecki, K., & Overland, I. (2020). Energy democracy as a process, an outcome and a goal: A conceptual review. *Energy Research & Social Science, 69*, 101768. https://doi.org/10.1016/j.erss.2020.101768

Tcholtchev, N., & Schieferdecker, I. (2021). Sustainable and reliable information and communication technology for resilient smart cities. *Smart Cities, 4*(1), 156–176. https://doi.org/10.3390/smartcities4010009

Thomas, G., Demski, C., & Pidgeon, N. (2020). Energy justice discourses in citizen deliberations on systems flexibility in the United Kingdom: Vulnerability, compensation and empowerment. *Energy Research & Social Science, 66*, 101494. https://doi.org/10.1016/j.erss.2020.101494

Tilly, C. (1995). The emergence of citizenship in France and Elsewhere. *International Review of Social History, 40*(S3: Citizenship, Identity and Social History), 223–236. https://www.jstor.org/stable/26405181

Trivedi, R., Patra, S., Sidqi, Y., Bowler, B., Zimmermann, F., Deconinck, G., Papaemmanouil, A., & Khadem, S. (2022). Community-based microgrids: Literature review and pathways to decarbonise the local electricity network. *Energies, 15*(3), 918. https://doi.org/10.3390/en15030918

van Wees, M., Revilla, B. P., Fitzgerald, H., Ahlers, D., Romero, N., Alpagut, B., Kort, J., Tjahja, C., Kaiser, G., Blessing, V., & Patricio, L. (2022). Energy citizenship in positive energy districts—Towards a transdisciplinary approach to impact assessment. *Buildings, 12*(2), 186. https://doi.org/10.3390/buildings12020186

Wahlund, M., & Palm, J. (2022). The role of energy democracy and energy citizenship for participatory energy transitions: A comprehensive review. *Energy Research & Social Science, 87*, 102482. https://doi.org/10.1016/j.erss.2021.102482

Wolfe, P. (2008). The implications of an increasingly decentralised energy system. *Energy Policy, 36*(12), 4509–4513. https://doi.org/10.1016/j.enpol.2008.09.021

Wuebben, D., Romero-Luis, J., & Gertrudix, M. (2020). Citizen science and citizen energy communities: A systematic review and potential alliances for SDGs. *Sustainability, 12*(23), 10096. https://doi.org/10.3390/su122310096

Wylie, S. A. (2018). *Fractivism: Corporate bodies and chemical bonds*. Duke University Press.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (http://creativecommons.org/licenses/by/4.0/), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

References

Acik, N. (2013). Reducing the participation gap in civic engagement: Political consumerism in Europe. *European Sociological Review, 29*(6), 1309–1322. https://doi.org/10.1093/esr/jct016

Ackerman, B. (1988). Neo-federalism? In J. Elster & R. Slagstad (Eds.), *Constitutionalism and democracy* (pp. 153–194). Cambridge University Press.

Adger, W. N. (2000). Social and ecological resilience: Are they related? *Progress in Human Geography, 24*(3), 347–364. https://doi.org/10.1191/030913200701540465

Albert, M. J. (2022). Beyond continuationism: Climate change, economic growth, and the future of world (dis)order. *Cambridge Review of International Affairs, 35*(6), 868–887. https://doi.org/10.1080/09557571.2020.1825334

Allan, J., Lemaadel, M., & Lakhal, H. (2022). Oppressive energopolitics in Africa's last colony: Energy, subjectivities, and resistance. *Antipode: A Radical Journal of Geography, 54*(1), 44–63. https://doi.org/10.1111/anti.12765

Alleblas, J. (2024). Analyzing the role of values and ideals in the development of energy systems: How values, their idealizations, and technologies shape political decision-making. *Science and Engineering Ethics, 30*(8). https://doi.org/10.1007/s11948-024-00463-7

Ambrose, A. (2020). Walking with Energy: Challenging energy invisibility and connecting citizens with energy futures through participatory research. *Futures, 117*, 102528. https://doi.org/10.1016/j.futures.2020.102528

Amir, S., & Kant, V. (2018). Sociotechnical resilience: A preliminary concept. *Risk Analysis, 38*(1), 8–16. https://doi.org/10.1111/risa.12816

© The Editor(s) (if applicable) and The Author(s) 2025

N. P. Dunphy et al., *Energy Citizenship*,
https://doi.org/10.1007/978-3-031-70153-5

Anthias, F. (2013). *Identity and belonging: Conceptualisations and political framings* (KLA Working Paper Series No. 8). Kompetenznetz Lateinamerika - Ethnicity, Citizenship, Belonging.

Apetrei, C. I., Caniglia, G., von Wehrden, H., & Lang, D. J. (2021). Just another buzzword? A systematic literature review of knowledge-related concepts in sustainability science. *Global Environmental Change, 68*, 102222.

Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners, 35*(4), 216–224. https://doi.org/10.1080/01944366908977225

Auden, W. H. (2019). The unknown citizen. In *Another Time*. Faber & Faber. (Original work published 1940)

Bardi, U. (2019). Peak oil, 20 years later: Failed prediction or useful insight? *Energy Research & Social Science, 48*, 257–261. https://doi.org/10.1016/j.erss.2018.09.022

Barker, E. (Translator). (1946). *The politics of Aristotle*. Oxford University Press.

Barry, J. (2006). Resistance is fertile: From environmental to sustainability citizenship. In A. Dobson & D. Bell (Eds.), *Environmental citizenship* (pp. 21–48). MIT Press.

Bauknecht, D., Funcke, S., & Vogel, M. (2020). Is small beautiful? A framework for assessing decentralised electricity systems. *Renewable and Sustainable Energy Reviews, 118*, 109543. https://doi.org/10.1016/j.rser.2019.109543

Bauman, Z. (2000). *Liquid modernity* (Vol. 1). Polity Press. https://doi.org/10.5565/rev/athenead/v1n0.10

Bauwens, T., Schraven, D., Drewing, E., Radtke, J., Holstenkamp, L., Gotchev, B., & Yildiz, Ö. (2022). Conceptualizing community in energy systems: A systematic review of 183 definitions. *Renewable and Sustainable Energy Reviews, 156*, 11999. https://doi.org/10.1016/j.rser.2021.111999

Bazzani, G. (2023). Climate solidarity: A framework and research agenda for low-carbon behavior. *Sociological Forum, 38*(2), 352–374. https://doi.org/10.1111/socf.12885

Beauchampet, I., & Walsh, B. (2021). Energy citizenship in the Netherlands: The complexities of public engagement in a large-scale energy transition. *Energy Research & Social Science, 76*, 102056. https://doi.org/10.1016/j.erss.2021.102056

Benario, H. W. (1954). The Dediticii of the Constitutio Antoniniana. *Transactions and Proceedings of the American Philological Association, 85*, 168–187.

Berka, A., & Dreyfus, M. (2021). Decentralisation and inclusivity in the energy sector: Preconditions, impacts and avenues for further research. *Renewable and Sustainable Energy Reviews, 138*, 110663. https://doi.org/10.1016/j.rser.2020.110663

Bird, D. (2023). You know what she died of, mother Pegg? Of darkness …. *Samuel Beckett Today/Aujourd'hui, 35*(1), 64–77. https://doi.org/10.1163/18757405-03501007

Biresselioglu, M. E., Demir, M. H., Solak, B., Turan, U., Clément, G., Sahakian, M., Kollmann, A., Musina, D., Kollmann, A., & Schibel, K.-L. (2021a). *Integrated Research White Paper (D2.1)*. A Research Output of the DIALOGUES H2020 Project.

Biresselioglu, M. E., Demir, M. H., Solak, B., Turan, U., Clément, G., Sahakian, M., Kollmann, A., Musina, D., Trenti, C., Santoro, M., Schibel, K.-L., Massullo, C., Cardone, B., Carrus, G., Bogdanova V., Yakova, L., Tzvetkova, G., & Primova, R. (2021b). *Comprehensive, interdisciplinary report on energy citizenship* (D2.2). A Research Output of the DIALOGUES H2020 Project.

Bochsler, D., & Juon, A. (2020). Authoritarian footprints in Central and Eastern Europe. *East European Politics, 36*(2), 167–187. https://doi.org/10.1080/21599165.2019.1698420

Bosniak, L. (2000). Citizenship denationalized. *Indiana Journal of Global Legal Studies, 7*(2), 447–509. https://www.jstor.org/stable/20644737

Bosworth, K., & Chua, C. (2023). The countersovereignty of critical infrastructure security: Settler-state anxiety versus the pipeline blockade. *Antipode, 55*(5), 1345–1367. https://doi.org/10.1111/anti.12794

Boyd, G. A., & McLaughlin, J. (2018). No fixed form: The Infra-Éireann—Making Ireland modern pavilion and the sites of modernity. *ARENA Journal of Architectural Research, 3*(1). https://doi.org/10.5334/ajar.60

Brenner-Fließer, M., Matowska, M., Schwarzinger, S., & Blaettner, D. (2023). *Report on survey and structured interview results for identifying potential emergence and consolidation factors* (D3.1). A research output of the ENCLUDE H2020 Project. https://doi.org/10.5281/Zenodo.10696079

Brock, G., & Brighouse, H. (2005). Introduction. In G. Brock & H. Brighouse (Eds.), *The political philosophy of cosmopolitanism*. Cambridge University Press.

Brown, G. W, McLean, I., & McMillan, A. (2018). Cosmopolitanism. In *A concise Oxford dictionary of politics and international relations* (4th ed.). Oxford University Press.

Camilleri, J. (2015). Dialogical citizenship: Dancing toward solidarity. *Great Transition Initiative*. https://greattransition.org/publication/dialogical-citizenship-dancing-toward-solidarity

Campagne, A. (2020). French energy imperialism in Vietnam and the conquest of Tonkin (1873–1885). *Journal of Energy History | Revue d'Histoire de l'Énergie, 3*(Special Issue: Energy Imperialism? Resources, power and environment (19th–20th Century)).

Campbell, C. J. (1997). *The coming oil crisis*. Multi-Science Publishing Company.

Campbell, C. J., & Laherrère, J. H. (1998). The end of cheap oil. *Scientific American, 278*(3), 78–83. https://doi.org/10.1038/scientificamerican0398-78

Campos, I., & Marín-González, E. (2020). People in transitions: Energy citizenship, prosumerism and social movements in Europe. *Energy Research & Social Science, 69*, 101718. https://doi.org/10.1016/j.erss.2020.101718

Canning, K., & Rose, S. O. (2001). Gender, citizenship and subjectivity: Some historical and theoretical considerations. *Gender and History, 13*(3), 427–443. https://doi.org/10.1111/1468-0424.00238

Caprotti, F., de Groot, J., Bobbins, K., Mathebula, N., Butler, C., Moorlach, M., Schloemann, H., Densmore, A., & Finlay, K. (2022). Rethinking the off-grid city. *Urban Geography, 43*(8), 1217–1230. https://doi.org/10.1080/02723638.2022.2036928

Carens, J. H. (2000). *Culture, citizenship, and community: A contextual exploration of justice as evenhandedness*. Oxford University Press.

Castells, M. (2009). *The information age: Economy, society, and culture, Vol. II: The power of identity*. Blackwell Publishers Ltd.

CEES. (2024). *Energy solidarity toolkit*. CEES Community Energy for Energy Solidarity H2020 Project. https://www.energysolidarity.eu/solidarity-toolkit/

Chaney, J., Owens, E. H., & Peacock, A. D. (2016). An evidence based approach to determining residential occupancy and its role in demand response management. *Energy and Buildings, 125*(1), 254–266. https://doi.org/10.1016/j.enbuild.2016.04.060

Chilvers, J., & Kearnes, M. (2015). Science, democracy and emergent publics. In J. Chilvers & M. Kearnes (Eds.), *Remaking participation* (pp. 19–46). Routledge.

Chilvers, J., & Longhurst, N. (2016). Participation in transition(s): Reconceiving public engagements in energy transitions as co-produced, emergent and diverse. *Journal of Environmental Policy & Planning, 18*(5), 585–607. https://doi.org/10.1080/1523908X.2015.1110483

Chilvers, J., Pallett, H., & Hargreaves, T. (2018). Ecologies of participation in socio-technical change: The case of energy system transitions. *Energy Research & Social Science, 42*(February), 199–210. https://doi.org/10.1016/j.erss.2018.03.020

Ciccantell, P. S. (2020). Alternatives to energy imperialism: Energy and rising economies. *Journal of Energy History | Revue d'Histoire de l'Énergie, 3*(Special Issue: Energy Imperialism? Resources, power and environment (19th–20th Century)).

Coelho-Lima, F., Varela, V., & Bendassolli, P. F. (2021). Ideology, sense, and meaning: A theoretical-methodological approach. *Culture & Psychology, 27*(1), 152–171. https://doi.org/10.1177/1354067X21993795

Coenen, F. H., Hoppe, T., Chalkiadakis, G., Tsoutsos, T., & Akasiadis, C. (2017). Exploring energy saving policy measures by renewable energy supplying cooperatives (REScoops). In *Proceedings of the ECEEE 2017 Summer Study on energy efficiency: Consumption, efficiency and limits*.

Cohen, J. J., Azarova, V., Kollmann, A., & Reichl, J. (2021). Preferences for community renewable energy investments in Europe. *Energy Economics, 100*, 105386. https://doi.org/10.1016/j.eneco.2021.105386

Cripps, K. (2012). Indigenous children's 'best interests' at the crossroads: Citizenship rights, indigenous mothers and child protection authorities. *International Journal of Critical Indigenous Studies, 5*(2), 25–35.

Dagger, R. (1997). *Civic virtues: Rights, citizenship, and republican liberalism*. Oxford University Press.

Dagger, R. (2002). Republican citizenship. In E. F. Isin & B. S. Turner (Eds.), *Handbook of citizenship studies* (pp. 145–158). Sage Publications Ltd. https://doi.org/10.4135/9781848608276

Dahl, R. (2006). *A preface to democratic theory* (Expanded ed.). University of Chicago Press. (Original work published 1956)

Dahlgren, K., Kaviani, F., Strengers, Y., Pink, S., & Korsmeyer, H. (2024). Bringing energy futures to life: Anticipatory household storylines as possible energy futures. *Futures, 158*, 103347. https://doi.org/10.1016/j.futures.2024.103347

Dalton, R. J. (2015). *The good citizen: How a younger generation is reshaping American politics*. CQ press.

Dalton, R. J. (2017). *The participation gap* (Vol. 1). Oxford University Press. https://doi.org/10.1093/oso/9780198733607.001.0001

de Almeida, A., Moura, P., & Quaresma, N. (2020). Energy-efficient off-grid systems—Review. *Energy Efficiency, 13*(2), 349–376. https://doi.org/10.1007/s12053-019-09813-y

De Filippo, D., Lascurain, M. L., Pandiella-Dominique, A., & Sanz-Casado, E. (2020). Scientometric analysis of research in energy efficiency and citizen science through projects and publications. *Sustainability, 12*(12), 5175. https://doi.org/10.3390/su12125175

DellaValle, N., & Czako, V. (2022). Empowering energy citizenship among the energy poor. *Energy Research & Social Science, 89*, 102654. https://doi.org/10.1016/j.erss.2022.102654

de Oliveira Matias, J. C., & Devezas, T. C. (2007). Consumption dynamics of primary-energy sources: The century of alternative energies. *Applied Energy, 84*(7–8), 763–770. https://doi.org/10.1016/j.apenergy.2007.01.007

Devenish, A., & Lockwood, M. (2024). Locally-led governance of residential heat transitions: Emerging experience of and lessons from the Dutch approach. *Energy Policy, 187*, 114027. https://doi.org/10.1016/j.enpol.2024.114027

Devezas, T. C., & Modelski, G. (2003). Power law behavior and world system evolution: A millennial learning process. *Technological Forecasting and Social Change, 70*(9), 819–859.

Devine-Wright, P. (2007). Energy citizenship: Psychological aspects of evolution in sustainable energy technologies. In J. Murphy (Ed.), *Governing technology for sustainability* (pp. 63–86). Earthscan.

Dobson, A. (2003). *Citizenship and the environment*. Oxford University Press.

Dobson, A. (2006). Ecological citizenship: A defence. *Environmental Politics, 15*(03), 447–451.

Dobson, A. (2007). Environmental citizenship: Towards sustainable development. *Sustainable Development, 15*, 276–285.

Dobson, A. (2011). *Sustainability citizenship*. Green House.

Drożdż, W., Bilan, Y., Rabe, M., Streimikiene, D., & Pilecki, B. (2022). Optimizing biomass energy production at the municipal level to move to low-carbon energy. *Sustainable Cities and Society, 76*, 103417. https://doi.org/10.1016/j.scs.2021.103417

Dunlap, A. (2018). Insurrection for land, sea and dignity: Resistance and autonomy against wind energy in Álvaro Obregón, Mexico. *Journal of Political Ecology, 25*(1). https://doi.org/10.2458/v25i1.22863

Dunphy, N. P., & Lennon, B. (2020). *Citizen participation in the energy system at the macro level*. A research output of the EnergyPolities project.

Dunphy, N. P., & Lennon, B. (2022). Whose transition? A review of citizen participation in the energy system. In K. Araújo (Ed.), *Routledge handbook of energy transitions* (pp. 430–444). Routledge. https://doi.org/10.4324/9781003183020-30

Dunphy, N. P., Revez, A., Lennon, B., & Brenner-Fließer, M. (2023a). *Typology of energy citizenship(s)*. A Research Output (D2.2) of the ENCLUDE H2020 Project. https://doi.org/10.5281/zenodo.10005552

Dunphy, N. P., Revez, A., Lennon, B., Quinlivan, L., & Brenner-Fließer, M. (2023b). *Report on Intersectional analysis of emerging examples of energy citizenship*. A Research Output (D2.1) of the ENCLUDE H2020 Project. https://doi.org/10.5281/zenodo.7598736

Dupont, C., & Oberthür, S. (Eds.). (2015). *Decarbonization in the European Union*. Palgrave Macmillan UK. https://doi.org/10.1057/9781137406835

Edwards, P. N. (2002). Infrastructure and modernity: Force, time, and social organization in the history of sociotechnical systems. In T. J. Misa, P. Brey, & A. Feenberg (Eds.), *Modernity and technology* (pp. 185–226). MIT Press. https://doi.org/10.7551/mitpress/4729.003.0011

Ekman, J., & Amnå, E. (2012). Political participation and civic engagement: Towards a new typology. *Human Affairs, 22*(3), 283–300. https://doi.org/10.2478/s13374-012-0024-1

Elkins, C. (2022). *Legacy of violence: A history of the British Empire*. Knopf Doubleday.

Energy Cloud. (2023, February 23). *EnergyCloud Ireland launches new initiative to provide free hot water to 1,000 Irish homes using surplus renewable energy*. Energy Cloud. https://www.energycloud.org/news/new-initiative/

Escobar, O. (2017). Pluralism and democratic participation: What kind of citizen are citizens invited to be? *Contemporary Pragmatism, 14*(4), 416–438. https://doi.org/10.1163/18758185-01404002

European Environment Agency. (2022). *Energy prosumers in Europe: Citizen participation in the energy transition*. Publications Office of the European Union.

Fairchild, D., & Weinrub, A. (2017). Energy democracy. In D. Lerch (Ed.), *The community resilience reader: Essential resources for an era of upheaval* (pp. 195–206). Island Press/Center for Resource Economics.

Feriel, C. (2020). The revolution that never was? Pedestrianization in a transnational perspective, Europe and North America (1960s–1980s). *Journal of World History, 31*(4), 761–783. https://doi.org/10.1353/jwh.2020.0051

Fichter, J. R. (2019). Imperial interdependence on Indochina's maritime periphery: France and coal in Ceylon, Singapore, and Hong Kong, 1859–1895. In J. R. Fichter (Ed.), *British and French colonialism in Africa, Asia and the Middle East* (pp. 151–179). Palgrave Macmillan. https://doi.org/10.1007/978-3-319-97964-9_8

Fischer, F. (2017). *Climate crisis and the democratic prospect* (Vol. 1). Oxford University Press. https://doi.org/10.1093/oso/9780199594917.001.0001

Fischer, V., & O'Mara, S. M. (2023). 'They deserve it for what they're doing': Dehumanising rhetoric as a facilitator of the recourse to violence against the defenceless. *Current Opinion in Behavioral Sciences*, *51*, 101280. https://doi.org/10.1016/j.cobeha.2023.101280

Fjelstul, J. C. (2019). The evolution of European Union law: A new data set on the Acquis Communautaire. *European Union Politics, 20*(4), 670–691. https://doi.org/10.1177/1465116519842947

Fox, E., Foulds, C., & Robison, R. (2017). *Energy & the active consumer—A social sciences and humanities cross-cutting theme report*. SHAPE ENERGY.

Fung, A. (2003). Survey article: Recipes for public spheres: Eight institutional design choices and their consequences. *Journal of Political Philosophy, 11*(3), 338–367. https://doi.org/10.1111/1467-9760.00181

Fung, A. (2006). Varieties of participation in complex governance. *Public Administration Review, 66*(s1), 66–75. https://doi.org/10.1111/j.1540-6210.2006.00667.x

Fung, A. (2015). Putting the public back into governance: The challenges of citizen participation and its future. *Public Administration Review, 75*(4), 513–522. https://doi.org/10.1111/puar.12361

Gaus, G. F. (2021). *The open society and its complexities*. Oxford University Press.

Gee, G. C., Morey, B. N., Walsemann, K. M., Ro, A., & Takeuchi, D. T. (2016). Citizenship as privilege and social identity. *American Behavioral Scientist, 60*(5–6), 680–704. https://doi.org/10.1177/0002764216632834

Gehl, J. (2007). Public spaces for a changing public life. In C. Ward Thompson & P. Travlou (Eds.), *Open space: People space*. Taylor & Francis. https://doi.org/10.4324/9780203961827

Giddens, A. (1991). *Modernity and self-identity: Self and society in the late modern age*. Stanford University Press.

Gonzalez, G. A. (2018). Energy, the nation-state, and imperialism. In *Star trek and the politics of globalism* (pp. 69–82). Springer International Publishing. https://doi.org/10.1007/978-3-319-95411-0_5

Gori, P., Parcu, P. L., & Stasi, M. (2015). *Smart cities and sharing economy*. Robert Schuman Centre for Advanced Studies Research Paper No. RSCAS, 96.

Goulden, M., Bedwell, B., Rennick-Egglestone, S., Rodden, T., & Spence, A. (2014). Smart grids, smart users? The role of the user in demand side management. *Energy Research & Social Science, 2*, 21–29. https://doi.org/10.1016/j.erss.2014.04.008

Grimm, M., Lenz, L., Peters, J., & Sievert, M. (2019). Demand for off-grid solar electricity—Experimental evidence from Rwanda. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3399004

Grindsted, T. S. (2018). Geoscience and sustainability—In between keywords and buzzwords. *Geoforum, 91*, 57–60. https://doi.org/10.1016/j.geoforum.2018.02.029

Groenewoudt, A. C., & Romijn, H. A. (2022). Limits of the corporate-led market approach to off-grid energy access: A review. *Environmental Innovation and Societal Transitions, 42*, 27–43. https://doi.org/10.1016/j.eist.2021.10.027

Gunderson, R., & Yun, S. J. (2021). Building energy democracy to mend ecological and epistemic rifts: An environmental sociological examination of Seoul's One Less Nuclear Power Plant initiative. *Energy Research & Social Science, 72*, 101884. https://doi.org/10.1016/j.erss.2020.101884

Gustafson, B. (2017). The new energy imperialism in the Caribbean. *NACLA Report on the Americas, 49*(4), 421–428. https://doi.org/10.1080/10714839.2017.1409013

Habermas, J. (1996). *Between facts and norms: Contributions to a discourse theory of law and democracy*. Polity Press.

Hackbarth, A., & Löbbe, S. (2022). What motivates private households to participate in energy communities? A literature review and German case study. In

S. Löbbe, F. Fereidoon Sioshansi, & D. Robinson (Eds.), *Energy communities* (pp. 153–166). Academic Press. https://doi.org/10.1016/B978-0-323-91135-1.00026-2

Hafer, J. A., & Ran, B. (2016). Developing a citizen perspective of public participation: Identity construction as citizen motivation to participate. *Administrative Theory & Praxis, 38*(3), 206–222. https://doi.org/10.1080/10841806.2016.1202080

Hamann, K. R. S., Bertel, M. P., Ryszawska, B., Lurger, B., Szymanski, P., Rozwadowska, M., & Goedkoop, F. (2022). *Interdisciplinary understanding of energy citizenship*. D2.1 of the Horizon 2020 project EC2, EC grant agreement no. 101022565.

Hamann, K. R. S., Bertel, M. P., Ryszawska, B., Lurger, B., Szymanski, P., Rozwadowska, M., Goedkoop, F., Jans, L., Perlaviciute, G., Masson, T., Hofer, A., Held, J., Gutschi, C., Grosche, C., Fritsche, I., Favaro, T., Eisenberger, I., Corcoran, K., Athenstaedt, U. (2023). *Interdisciplinary understanding of energy citizenship*. A research output (D2.1) of the EC2 H2020 project

Hamidi, S. (2020). Urban sprawl and the emergence of food deserts in the USA. *Urban Studies, 57*(8), 1660–1675. https://doi.org/10.1177/0042098019841540

Hannerz, U. (2006). *Two faces of cosmopolitanism: Culture and politics*. Serie: Dinámicas interculturales Número 7. Barcelona: Documentos CIDOB.

Haugaard, M. (2002). *Power: A reader*. Manchester University Press.

Hayek, F. A. (1944). *The road to serfdom*. Routledge.

Hayward, J. (1995). Hitler's quest for oil: The impact of economic considerations on military strategy, 1941–42. *Journal of Strategic Studies, 18*(4), 94–135. https://doi.org/10.1080/01402399508437621

Hecht, J. (2023). Are long waves 50 years? Reexamining economic and financial long wave periodicities in Kondratieff and Schumpeter. *Review of Political Economy*, 1–35. https://doi.org/10.1080/09538259.2023.2280803

Held, D. (2010). *Cosmopolitanism. Ideals and realities*. Polity Press.

Hesselman, M. (2022). Right to energy. In C. Binder, M. Nowak, J. Hofbauer, & P. Janig (Eds.), *Elgar encyclopedia of human rights* (pp. 62–69). Edward Elgar Publishing. https://doi.org/10.4337/9781789903621.energy.right.to

Hobson, J. A. (2018). *Imperialism*. Routledge. https://doi.org/10.4324/9781315628523

Honohan, I. (2002). *Civic republicanism*. Routledge. https://doi.org/10.4324/9780203460894

IPCC. (2018). *Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response*

to the threat of climate change, sustainable development, and efforts to eradicate poverty (V. Masson-Delmotte, P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P. R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, & T. Waterfield, Eds.). Cambridge University Press. https://doi.org/10.1017/9781009157940

IPCC. (2023). *Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Core Writing Team, H. Lee & J. Romero, Eds., pp. 35–115). IPCC. https://doi.org/10.59327/IPCC/AR6-9789291691647

Isin, E. F. (2009). Citizenship in flux: The figure of the activist citizen. *Subjectivity, 29*(1), 367–388.

Isin, E. F., & Turner, B. S. (2002). Citizenship studies: An introduction. In E. F. Isin & B. S. Turner (Eds.), *Handbook of citizenship studies* (pp. 1–10). Sage Publications Ltd.

Johnson, C. (1984). Who is Aristotle's citizen? *Phronesis, 29*(1), 73–90. https://www.jstor.org/stable/4182188

Joppke, C. (2021). Earned citizenship. *European Journal of Sociology, 62*(1), 1–35. https://doi.org/10.1017/S0003975621000035

Karjalainen, S., & Ahvenniemi, H. (2019). Pleasure is the profit-the adoption of solar PV systems by households in Finland. *Renewable Energy, 133*, 44–52. https://doi.org/10.1016/j.renene.2018.10.011

Kelanic, R. A. (2016). The petroleum paradox: Oil, coercive vulnerability, and great power behavior. *Security Studies, 25*(2), 181–213. https://doi.org/10.1080/09636412.2016.1171966

Khor, Z. (2012). Changing conceptualisations of national citizenship and naturalisation in the UK: An anthropological perspective. In S. McMahon (Ed.), *Developments in the theory and practice of citizenship* (pp. 111–134). Cambridge Scholars Publishing.

Klass, A. B. (2015). The electric grid at a crossroads: A regional approach to siting transmission lines. *UC Davis Law Review, 48*, 1895–1954.

Kleingeld, P. (2016). Cosmopolitanism. In *The international encyclopedia of ethics* (pp. 1–10). Wiley. https://doi.org/10.1002/9781444367072.wbiee629.pub2

Kleingeld, P., & Brown, E. (2019). Cosmopolitanism. In E. N. Zalta (Ed.), *The Stanford encyclopedia of philosophy* (Winter Ed.). https://plato.stanford.edu/archives/win2019/entries/cosmopolitanism/

Kondratieff, N. D. (1979). The long waves in economic life. *Review (Fernand Braudel Center), 2*(4), 519–562. http://www.jstor.org/stable/40240816

Kuklicke, C., & Demeritt, D. (2016). Adaptive and risk-based approaches to climate change and the management of uncertainty and institutional risk: The

case of future flooding in England. *Global Environmental Change, 37*, 56–68. https://doi.org/10.1016/j.gloenvcha.2016.01.007

Kymlicka, W., & Norman, W. (1994). Return of the citizen: A survey of recent work on citizenship theory. *Ethics*, *104*(2), 352–381. https://doi.org/10.1086/293605

Laakso, S., Eranti, V., & Lukkarinen, J. (2023). Practices and acts of energy citizenship. *Journal of Environmental Policy & Planning, 25*(6), 690–702. https://doi.org/10.1080/1523908X.2023.2251915

Lazar, S. (2013). *The anthropology of citizenship: A reader*. Wiley.

Leggett, J. (2005). *Half gone: Oil, gas, hot air and the global energy crisis*. Portobello Books.

Lennon, B., & Dunphy, N. P. (2023a). Energy and citizenship in a time of transition and socio-technical change. In *The Palgrave handbook of global social change* (pp. 1–15). Springer International Publishing. https://doi.org/10.1007/978-3-030-87624-1_223-1

Lennon, B., & Dunphy, N. P. (2023b). Mind the gap: Citizens, consumers, and unequal participation in global energy transitions. In M. Nadesan, M. J. Pasqualetti, & J. Keahey (Eds.), *Energy democracies for sustainable futures* (pp. 327–331). Academic Press. https://doi.org/10.1016/B978-0-12-822796-1.00035-8

Lennon, B., & Dunphy, N. P. (2024). Sustaining energetic communities: Energy citizenship and participation in an age of upheaval and transition. *Scientific Reports, 14*(1), 3267. https://doi.org/10.1038/s41598-024-53367-8

Lennon, B., Dunphy, N. P., & Sanvicente, E. (2019). Community acceptability and the energy transition: A citizens' perspective. *Energy, Sustainability and Society, 9*(1), 35. https://doi.org/10.1186/s13705-019-0218-z

Lennon, B., Dunphy, N. P., Gaffney, C., Revez, A., Mullally, G. M., & O'Connor, P. (2020). Citizen or consumer? Reconsidering energy citizenship. *Journal of Environmental Policy and Planning, 22*(2), 184–197. https://doi.org/10.1080/1523908X.2019.1680277

Levinson, R. B. (2014). *In Defense of Plato*. Harvard University Press (Original work 1953).

Lewis, E. (2022). The paradigm shift cycle as the cause of the Kondratieff wave. In *Kondratieff waves: Processes, cycles, triggers, and technological paradigms*. Uchitel Publishing House. https://doi.org/10.30884/978-5-7057-6191-3_03

Leydet, D. (2023). Citizenship. In. E. N. Zalta & U. Nodelman (Eds.), *The Stanford encyclopedia of philosophy* (Fall Ed.). https://plato.stanford.edu/archives/fall2023/entries/citizenship/

Limmer, A., & Zumbrägel, C. (2020). Waterpower romance: The cultural myth of dying watermills in German hydro-narratives around 1900. *Water History, 12*(2), 179–204. https://doi.org/10.1007/s12685-020-00252-6

Linklater, A. (1998). Cosmopolitan citizenship. *Citizenship Studies, 2*(1), 23–41. https://doi.org/10.1080/13621029808420668

Lister, R. (2000). Inclusion/exclusion: The Janus face of citizenship. In J. Cook, J. Roberts, & G. Waylen (Eds.), *Towards a gendered political economy*. Palgrave Macmillan. https://doi.org/10.1057/9780230373150_6

Lister, R. (2008). Inclusive citizenship, gender and poverty: Some implications for education for citizenship. *Citizenship Teaching and Learning, 4*(1), 3–19.

Liu, P., Liu, L., Xu, X., Zhao, Y., Niu, J., & Zhang, Q. (2021). Carbon footprint and carbon emission intensity of grassland wind farms in Inner Mongolia. *Journal of Cleaner Production, 313*, 127878. https://doi.org/10.1016/j.jclepro.2021.127878

Loloum, T., Abram, S., & Ortar, N. (Eds.). (2021). *Ethnographies of power: A political anthropology of energy*. Berghahn Books. https://doi.org/10.3167/9781789209792

Longo, D., Olivieri, G., Roversi, R., Turci, G., & Turillazzi, B. (2020). Energy poverty and protection of vulnerable consumers. Overview of the EU funding programs FP7 and H2020 and future trends in Horizon Europe. *Energies, 13*(5), 1030. https://doi.org/10.3390/en13051030

Lösch, A., & Schneider, C. (2016). Transforming power/knowledge apparatuses: The smart grid in the German energy transition. *Innovation: The European Journal of Social Science Research, 29*(3), 262–284.

Lovins, A. (1976). Energy strategy: The road not taken? *Foreign Affairs, 55*(1), 65–96.

Lushetich, N. (2022, June 15–17). *Energy: A philosophy of practice*. Paper presented at the 28th Annual Conference of the International Sustainable Development Society—Sustainable Development and Courage: Culture, Art and Human Rights. International Sustainable Development Society.

Maniates, M. F. (2001). Individualization: Plant a tree, buy a bike, save the world? *Global Environmental Politics, 1*(3), 31–52. https://doi.org/10.1162/152638001316881395

Marshall, T. H. (1992). *Citizenship and social class*. Pluto Press. (Original work published 1950).

Martin, B. (2007). Activism, social and political. In G. L. Anderson & K. G. Herr (Eds.), *Encyclopedia of activism and social justice* (pp. 19–27). Sage Publications.

McCauley D. A., Heffron R. J., Stephan H., & Jenkins, K. (2013). Advancing energy justice: The triumvirate of tenets. *International Energy Law Review, 32*(3), 107–110

McKinley, M. A. (2009). Conviviality, cosmopolitan citizenship, and hospitality. *Unbound, 5*(55), 55–87.

Mercier, S. (2021). Ireland's energy system: The historical case for hope in climate action. *New Labor Forum, 30*(2), 21–30. https://doi.org/10.1177/10957960211008165

Mesarić, P., & Krajcar, S. (2015). Home demand side management integrated with electric vehicles and renewable energy sources. *Energy and Buildings, 108*, 1–9. https://doi.org/10.1016/j.enbuild.2015.09.001

Meyen, M., & Schier, J. (2019). The resilience discourse: How a concept from ecology could overcome the boundaries between academic disciplines and society. In B. Rampp, M. Endreß, & M. Naumann (Eds.), *Resilience in social, cultural and political spheres* (pp. 105–120). Springer Fachmedien Wiesbaden.

Michels, A. M. B. (2006). Citizen participation and democracy in the Netherlands. *Democratization, 13*(2), 323–339. https://doi.org/10.1080/13510340500524067

Mihailova, D., Schubert, I., Burger, P., & Fritz, M. M. (2022). Exploring modes of sustainable value co-creation in renewable energy communities. *Journal of Cleaner Production, 330*, 129917. https://doi.org/10.1016/j.jclepro.2021.129917

Mill, J. S. (1861). *Representative government*. Botache Books.

Moles-Grueso, S., & Stojilovska, A. (2022). Towards spatializing consumer energy sustainability. Empirical findings about the policy and practice of energy conservation and poverty in Barcelona and North Macedonia. *Journal of Environmental Policy & Planning, 24*(4), 407–420. https://doi.org/10.1080/1523908X.2021.2008234

Moncecchi, M., Meneghello, S., & Merlo, M. (2020). Energy sharing in renewable energy communities: The Italian case. In *55th International Universities Power Engineering Conference (UPEC)*. Turin, Italy. https://doi.org/10.1109/UPEC49904.2020.9209813

Morandeira-Arca, J., Etxezarreta-Etxarri, E., Azurza-Zubizarreta, O., & Izagirre-Olaizola, J. (2024). Social innovation for a new energy model, from theory to action: contributions from the social and solidarity economy in the Basque Country. *Innovation: The European Journal of Social Science Research, 37*(1), 33–59. https://doi.org/10.1080/13511610.2021.1890549

Morrissey, J., Axon, S., Aiesha, R., Hillman, J., Lennon, B., & Dunphy, N. P. (2017). *Energy system visioning and low-carbon configurations* (D6.1). A research outputs of the ENTRUST H2020 Project. https://doi.org/10.5281/zenodo.3479205

Mugisha, J., Ratemo, M. A., Bunani Keza, B. C., & Kahveci, H. (2021). Assessing the opportunities and challenges facing the development of off-grid solar systems in Eastern Africa: The cases of Kenya, Ethiopia, and Rwanda. *Energy Policy, 150*, 112131. https://doi.org/10.1016/j.enpol.2020.112131

Mukherjee, A. (2010). Empire: How colonial India made modern Britain. *Economic and Political Weekly, 45*(50), 73–82. http://www.jstor.org/stable/25764217

Mullally, G. M., Dunphy, N. P., & O'Connor, P. (2018). Participative environmental policy integration in the Irish energy sector. *Environmental Science and Policy, 83*, 71–78. https://doi.org/10.1016/j.envsci.2018.02.007

Mullally, G. M., Revez, A., Harris, C., Dunphy, N. P., Rogan, F., Byrne, E., McGookin, C., Ó Gallachóir, B., Bolger, P., O'Dwyer, B., Flood, S., Boyle, E., Glynn, J., Barry, J., & Ellis, G. (2022). *A roadmap for local deliberative engagements on transitions to net zero carbon and climate resilience*. Environmental Protection Agency.

Musso, M., & Crouzet, G. (2020). Energy imperialism? Introduction to the special issue. *Journal of Energy History | Revue d'Histoire de l'Énergie, 3*(Special Issue: Energy Imperialism? Resources, power and environment (19th–20th Century)).

Mutani, G., Santantonio, S., Brunetta, G., Caldarice, O., & Demichela, M. (2021). An energy community for territorial resilience: Measurement of the risk of an energy supply blackout. *Energy and Buildings, 240*. https://doi.org/10.1016/j.enbuild.2021.110906

National Research Council. (2008). *Public participation in environmental assessment and decision making*. The National Academies Press. https://doi.org/10.17226/12434

Naumann, M., Rampp, B., & Endreß, M. (2019). Introduction: Resilience as a perspective for the analysis of societal processes. In B. Rampp, M. Endreß, & M. Naumann (Eds.), *Resilience in social, cultural and political spheres* (pp. 1–7). Springer Fachmedien Wiesbaden.

Neumark, T. (2022). Leapfrogging the Grid. *Social Anthropology/Anthropologie Sociale, 30*(2), 140–160. https://doi.org/10.3167/saas.2022.300209

Norris, P., Lovenduski, J., & Campbell, R. (2004). *Closing the activism gap: Gender and political participation in Britain*. The Electoral Commission.

Nouri, A., Khadem, S., Mutule, A., Papadimitriou, C., Stanev, R., Cabiati, M., Keane, A., & Carroll, P. (2022). Identification of gaps and barriers in regulations, standards, and network codes to energy citizen participation in the energy transition. *Energies, 15*(3), 856. https://doi.org/10.3390/en15030856

Nussbaum, M. C. (1997). Kant and stoic cosmopolitanism. *Journal of Political Philosophy, 5*(1), 1–25. https://doi.org/10.1111/1467-9760.00021

Oberthür, S., & Dupont, C. (2021). The European Union's international climate leadership: Towards a grand climate strategy? *Journal of European Public Policy, 28*(7), 1095–1114. https://doi.org/10.1080/13501763.2021.1918218

Ong, A. (2006). *Neoliberalism as exception: Mutations in citizenship and sovereignty*. Duke University Press.

Oreskes, N. (2004). The scientific consensus on climate change. *Science, 306*(5702), 1686–1686. https://doi.org/10.1126/science.1103618

Ortega-Arriaga, P., Babacan, O., Nelson, J., & Gambhir, A. (2021). Grid versus off-grid electricity access options: A review on the economic and environmental impacts. *Renewable and Sustainable Energy Reviews, 143*, 110864. https://doi.org/10.1016/j.rser.2021.110864

Ostovich, H. (2007). Early modern theatre history. In A., Hiscock & L. Hopkins (Eds.), *Teaching Shakespeare and early modern dramatists. Teaching the new english* (pp. 14–25). Palgrave Macmillan. https://doi.org/10.1057/9780230593206_2

Patel, N. (2024). Performing energy justice futures: How visions of just futures shape discourses and practices in the United Kingdom's community energy sector. *Energy Research & Social Science, 111*, 103475. https://doi.org/10.1016/j.erss.2024.103475

Pearce, B., & Thalberg, K. (2024). *Energy Citizenship in the making. Pathways to support citizen engagement in the European energy transition*. A Joint Policy Brief of the EC2, ENCLUDE, EnergyProspects & DIALOGUES H2020 projects. https://doi.org/10.5281/Zenodo.10814075

Pel, B., Debourdeau, A., Kemp, R., Dumitru, A., Schäfer, M., Vadovics, E., Fahy, F., Fransolet, A., & Pellerin-Carlin, T. (2021). *Conceptual framework energy citizenship*. A research output of the EnergyProspects H2020 Project.

Pel, B., Debourdeau, A., Kemp, R., Dumitru, A., Vadovics, E., Schäfer, M., … Fransolet, A. (2022, June 1–3). Energy citizenship; ideals, ideology and ideal types in the energy transition. *European Forum for Studies of Policies for Research and Innovation (EU-SPRI)*, Utrecht, Netherlands.

Philipson, S. (2022). The end of the present mode of production—A new Kondratieff wave?—New directions for research? *International Journal of Innovation and Technology Management, 19*(03). https://doi.org/10.1142/S0219877022400028

Phillips, A. (1998). *The politics of presence*. Oxford University Press.

Piletić, A. (2023). Renewable energy and EU-led authoritarian neoliberalization: Small hydropower in Rakita, Serbia and the upscaling of environmental struggles. *Globalizations*, 1–16. https://doi.org/10.1080/14747731.2023.2167985

Pocock, J. G. A. (1995). The ideal of citizenship since classical times. In R. Beiner (Ed.), *Theorising citizenship* (pp. 29–52). State University of New York Press.

Polanyi, K. (2011). The economy as instituted process. In M. Granovetter & R. Swedberg (Eds.), *The sociology of economic life* (3rd ed., pp. 3–21). Routledge.

Pooley, C. G. (2010). Landscapes without the car: A counterfactual historical geography of twentieth-century Britain. *Journal of Historical Geography, 36*(3), 266–275. https://doi.org/10.1016/j.jhg.2009.12.007

Pretty, J. N. (1995). Participatory learning for sustainable agriculture. *World Development, 23*(8), 1247–1263.

Puka, L., & Szulecki, K. (2014). The politics and economics of cross-border electricity infrastructure: A framework for analysis. *Energy Research & Social Science, 4*, 124–134. https://doi.org/10.1016/j.erss.2014.10.003

Pykett, J., Saward, M., & Schaefer, A. (2010). Framing the good citizen. *British Journal of Politics and International Relations, 12*(4), 523–538. https://doi.org/10.1111/j.1467-856X.2010.00424.x

Quinn, N., Bromage, B., & Rowe, M. (2020). Collective citizenship: From citizenship and mental health to citizenship and solidarity. *Social Policy and Administration, 54*(3), 361–374. https://doi.org/10.1111/spol.12551

Raskin, P. D. (2009). Planetary praxis: On rhyming hope and history. In S. Keller & G. Speth (Eds.), *The coming transition: Values to sustain human and natural communities* (pp. 110–146). Yale School of Forestry and Environment.

Reis, I. F. G., Gonçalves, I., Lopes, M. A. R., & Antunes, C. H. (2022). Collective self-consumption in multi-tenancy buildings—To what extent do consumers' goals influence the energy system's performance? *Sustainable Cities and Society, 80*(September 2021), 103688. https://doi.org/10.1016/j.scs.2022.103688

Renn, O., & Schweizer, P.-J. (2020). Inclusive governance for energy policy making: Conceptual foundations, applications, and lessons learned. In O. Renn, F. Ulmer, & A. Deckert (Eds.), *The role of public participation in energy transitions* (pp. 39–79). Academic Press. https://doi.org/10.1016/B978-0-12-819515-4.00003-9

REScoop.eu. (2017). *Local Energy Communities: A way to bring 'all Europeans' along in the energy transition*. https://www.rescoop.eu/toolbox/energy-communities-a-way-to-bring-all-europeans-along-in-the-energy-transition

REScoop.eu. (2024). *About Us*. https://www.rescoop.eu/about-us

Revez, A., Cortes-Vazquez, J. A., & Flood, S. (2017). Risky policies: Local contestation of mainstream flood risk management approaches in Ireland. *Environment and Planning A, 49*(11), 2497–2516.

Reymers, K. (2008). The country and the grassroots: Rural action for local control of energy policy and development. *Theory in Action, 1*(4), 72–113. https://doi.org/10.3798/tia.1937-0237.08020

Rhodes, R. (2018). *Energy: A human history*. Simon & Schuster.

Riesenberg, P. N. (1992). *Citizenship in the western tradition: Plato to Rousseau*. University of North Carolina Press.

Ringholm, T. (2022). Energy citizens—Conveyors of changing democratic institutions? *Cities, 126*. https://doi.org/10.1016/j.cities.2022.103678

Ritter, C. (2023). Understanding cosmopolitanism: A morphological approach. *Journal of Political Ideologies*, 1–20. https://doi.org/10.1080/13569317.2023.2275040

Robertson, A. (2019). Media cultures and cosmopolitan connections. In G. Delanty (Ed.), *Routledge international handbook of cosmopolitan studies* (2nd ed., pp. 245–253). Routledge.

Rommetveit, K., Ballo, I. F., & Sareen, S. (2021). Extracting users: Regimes of engagement in Norwegian smart electricity transition. *Science, Technology, & Human Values*. https://doi.org/10.1177/01622439211052867

Rose, N., & Novas, C. (2005). Biological citizenship. In O. Aihwa & S. J. Collier (Eds.), *Global assemblages: Technology, politics, and ethics as anthropological problems* (pp. 439–463). Blackwell Publishing. https://doi.org/10.1002/9780470696569.ch23

Rose, N., O'Malley, P., & Valverde, M. (2006). Governmentality. *Annual Review of Law and Social Science, 2*, 83–104. https://doi.org/10.1146/annurev.lawsocsci.2.081805.105900

Rosenow, E. (1992). Bourgeois or Citoyen? The democratic concept of man. *Educational Philosophy and Theory, 24*(1), 44–50. https://doi.org/10.1111/j.1469-5812.1992.tb00218.x

Rothstein, H., Irving, P., Walden, T., & Yearsley, R. (2006). The risks of risk-based regulation: Insights from the environmental policy domain. *Environment International, 32*(8), 1056–1065. https://doi.org/10.1016/j.envint.2006.06.008

Rousseau, J. J. (1762). *Du Contrat Social (The Social Contract)*. Translated by GDH Cole (1782), public domain. http://www.constitution.org/jjr/socon.htm

Roversi, R., Boeri, A., Pagliula, S., & Turci, G. (2022). Energy community in action—Energy citizenship contract as tool for climate neutrality. *Smart Cities, 5*(1), 294–317. https://doi.org/10.3390/smartcities5010018

Roy, T. (2016). The British Empire and the economic development of India (1858–1947). *Revista de Historia Económica / Journal of Iberian and Latin American Economic History, 34*(2), 209–236. https://doi.org/10.1017/S0212610915000336

Ruostetsaari, I. (2020). From consumers to energy citizens: Finns' readiness for demand response and prosumerism in energy policy making. *International Journal of Energy Sector Management, 14*(6), 1157–1175. https://doi.org/10.1108/IJESM-11-2019-0001

Ryan, K. (2011). Governing the future: Citizenship as technology, empowerment as technique. *Critical Sociology, 37*(6), 763–778. https://doi.org/10.1177/0896920510379445

Ryan, S. E., Hebdon, C., & Dafoe, J. (2014). Energy research and the contributions of the social sciences: A contemporary examination. *Energy Research & Social Science, 3*, 186–197. https://doi.org/10.1016/j.erss.2014.07.012

Ryghaug, M., Skjølsvold, T. M., & Heidenreich, S. (2018). Creating energy citizenship through material participation. *Social Studies of Science, 48*(2), 283–303. https://doi.org/10.1177/0306312718770286

Sage, C. (2014). The transition movement and food sovereignty: From local resilience to global engagement in food system transformation. *Journal of Consumer Culture, 14*(2), 254–275. https://doi.org/10.1177/1469540514526281

Sangiovanni, A., & Viehoff, J. (2023). Solidarity in social and political philosophy. In E. N. Zalta & U. Nodelman (Eds.), *The Stanford encyclopaedia of philosophy* (Summer ed.). https://plato.stanford.edu/archives/sum2023/entries/solidarity/

Sanz-Hernández, A. (2019). Media and stakeholders: Contribution to the public debate on poverty and energy justice in Spain (Medios de comunicación y stakeholders: Contribución al debate público de la pobreza y justicia energética en España). *Revista Española de Investigaciones Sociológicas, 168*, 73–92. https://doi.org/10.5477/cis/reis.168.73

Sarrica, M., Biddau, F., Brondi, S., Cottone, P., & Mazzara, B. M. (2018). A multi-scale examination of public discourse on energy sustainability in Italy: Empirical evidence and policy implications. *Energy Policy, 114*, 444–454. https://doi.org/10.1016/j.enpol.2017.12.021

Sartori, G. (1962). *Democratic theory*. Frederick A. Praeger.

Scherz, A. (2013). The legitimacy of the demos: Who should be included in the demos and on what grounds? *Living Reviews in Democracy, 4*, 1–14. https://doi.org/10.5167/uzh-91127

Schmidtz, D., & Boettke, P. (2021). Friedrich Hayek. *The Stanford Encyclopedia of Philosophy*, Summer 2021 Edition. https://plato.stanford.edu/archives/sum2021/entries/friedrich-hayek

Schoen, L. (2002). The Irish free state and the electricity industry, 1922–1927. In A. Bielenberg (Ed.), *The Shannon scheme and the electrification of the Irish free state* (pp. 28–47). The Lilliput Press.

Schuck, P. H. (2002). Liberal citizenship. In E. F. Isin & B. S. Turner (Eds.), *Handbook of citizenship studies* (pp. 131–144). Sage Publications Ltd. https://doi.org/10.4135/9781848608276

Schumpeter, J. A. (2010). *Capitalism, socialism and democracy*. Taylor & Francis e-Library (Original work published 1942)

Schwarz, L. (2020). Empowered but powerless? Reassessing the citizens' power dynamics of the German energy transition. *Energy Research & Social Science, 63*, 101405. https://doi.org/10.1016/j.erss.2019.101405

Shachar, A., Bauböck, R., Bloemraad, I., & Vink, M. (2017). Introduction: Citizenship – Quo Vadis? In A. Shachar, R. Bauböck, I. Bloemraad, & M. Vink (Eds.), *The Oxford book of citizenship* (pp. 15–34). Oxford University Press.

Simpson, M. (2022). Fossil urbanism: Fossil fuel flows, settler colonial circulations, and the production of carbon cities. *Urban Geography, 43*(1), 101–122. https://doi.org/10.1080/02723638.2020.1840206

Skalamera, M. (2023). The geopolitics of energy after the invasion of Ukraine. *The Washington Quarterly, 46*(1), 7–24. https://doi.org/10.1080/0163660X.2023.2190632

Slee, B. (2015). Is there a case for community-based equity participation in Scottish on-shore wind energy production? Gaps in evidence and research needs. *Renewable and Sustainable Energy Reviews, 41*, 540–549. https://doi.org/10.1016/j.rser.2014.08.064

Smil, V. (2018). *Energy and civilization: A history*. The MIT Press.

Somers, M. R. (1993). Citizenship and the place of the public sphere: Law, community, and political culture in the transition to democracy. *American Sociological Review, 58*(5), 587–620. https://doi.org/10.2307/2096277

Sovacool, B. K. (2019). *Visions of energy futures*. Routledge. https://doi.org/10.4324/9780367135171

Sovacool, B. K., & Dworkin, M. H. (2015). Energy justice: Conceptual insights and practical applications. *Applied Energy, 142*(2015), 435–444. https://doi.org/10.1016/j.apenergy.2015.01.002

Sovacool, B. K., & Furszyfer Del Rio, D. D. (2020). Smart home technologies in Europe: A critical review of concepts, benefits, risks and policies. *Renewable and Sustainable Energy Reviews, 120*(December 2019), 109663. https://doi.org/10.1016/j.rser.2019.109663

Sovacool, B. K., Hess, D. J., Amir, S., Geels, F. W., Hirsh, R., Medina, L. R., … Ryghaug, M. (2020). Sociotechnical agendas: Reviewing future directions for energy and climate research. *Energy Research & Social Science, 70*, 101617.

Spiegel, S. J. (2021). Fossil fuel violence and visual practices on Indigenous land: Watching, witnessing and resisting settler-colonial injustices. *Energy Research & Social Science*, *79*, 102189. https://doi.org/10.1016/j.erss.2021.102189

Stephens, J. C., Ruth, M., & Goessling-Reisemann, S. (2019). Assessing resilience in energy system change through an energy democracy lens. In M. Ruth & S. Goessling-Reisemann (Eds.), *Handbook on resilience of socio-technical systems* (pp. 341–359). Edward Elgar Publishing.

Strathern, M. (2007). Robust knowledge and fragile futures. In O. Aihwa & S. J. Collier (Eds.), *Global assemblages: Technology, politics, and ethics as anthropological problems* (pp. 464–481). Blackwell Publishing. https://doi.org/10.1002/9780470696569.ch24

Stulberg, A. N. (2015). Out of gas?: Russia, Ukraine, Europe, and the changing geopolitics of natural gas. *Problems of Post-Communism*, *62*(2), 112–130. https://doi.org/10.1080/10758216.2015.1010914

Stulberg, A. N. (2017). Natural gas and the Russia-Ukraine crisis: Strategic restraint and the emerging Europe-Eurasia gas network. *Energy Research & Social Science*, *24*, 71–85. https://doi.org/10.1016/j.erss.2016.12.017

Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review, 20*(3), 571–610. https://doi.org/10.5465/amr.1995.9508080331

Swanson, D., & Bhadwal, S. (Eds.). (2009). *Creating adaptive policies: A guide for policymaking in an uncertain world*. Sage Publications India Pvt Ltd.

Szulecki, K. (2018). Conceptualizing energy democracy. *Environmental Politics, 27*(1), 21–41.

Szulecki, K., & Overland, I. (2020). Energy democracy as a process, an outcome and a goal: A conceptual review. *Energy Research & Social Science, 69*, 101768. https://doi.org/10.1016/j.erss.2020.101768

Tan, K.-C. (2017). Cosmopolitan citizenship. In A. Shachar, R. Bauböck, I. Bloemraad, & M. Vink (Eds.), *The Oxford handbook of citizenship* (pp. 694–716.). Oxford University Press.

Tcholtchev, N., & Schieferdecker, I. (2021). Sustainable and reliable information and communication technology for resilient smart cities. *Smart Cities, 4*(1), 156–176. https://doi.org/10.3390/smartcities4010009

Teisman, G., van Buuren, A., & Gerrits, L. (Eds.). (2010). *Managing complex governance systems: Dynamics, self-organization and coevolution in public investments*. Routledge.

Ternes, B., Ordner, J., & Cooper, D. H. (2020). Grassroots resistance to energy project encroachment: Analyzing environmental mobilization against the Keystone XL Pipeline. *Journal of Civil Society*, *16*(1), 44–60. https://doi.org/10.1080/17448689.2020.1717151

Thakur, K. K. (2013). British colonial exploitation of India and globalization. *Proceedings of the Indian History Congress*, *74*, 405–415. http://www.jstor.org/stable/44158840

The Library of Congress. (2010, September). An important revision. 'Subjects' now 'citizens' in Jefferson's declaration. *Library of Congress Information Bulletin, 69*(9). https://www.loc.gov/loc/lcib/1009/declaration.html

Thomas, G., Demski, C., & Pidgeon, N. (2020). Energy justice discourses in citizen deliberations on systems flexibility in the United Kingdom: Vulnerability, compensation and empowerment. *Energy Research & Social Science, 66*, 101494. https://doi.org/10.1016/j.erss.2020.101494

Thombs, R. P. (2019). When democracy meets energy transitions: A typology of social power and energy system scale. *Energy Research & Social Science, 52*, 159–168. https://doi.org/10.1016/j.erss.2019.02.020

Tilly, C. (1995). The emergence of citizenship in france and elsewhere. *International Review of Social History, 40*(S3: Citizenship, Identity and Social History), 223–236. https://www.jstor.org/stable/26405181

Toprani, A. (2016). The first war for oil: The Caucasus, German strategy, and the turning point of the war on the Eastern front, 1942. *Journal of Military History*, *80*(3), 815–854.

Trentmann, F. (2007). Citizenship and consumption. *Journal of Consumer Culture, 7*(2), 147–158. https://doi.org/10.1177/1469540507077667

Trivedi, R., Patra, S., Sidqi, Y., Bowler, B., Zimmermann, F., Deconinck, G., Papaemmanouil, A., & Khadem, S. (2022). Community-based microgrids: Literature review and pathways to decarbonise the local electricity network. *Energies, 15*(3), 918. https://doi.org/10.3390/en15030918

Tsing, A. (2013). More-than-human sociality: A call for critical description. In K. Hastrup (Ed.), *Anthropology and nature*. Routledge. https://doi.org/10.4324/9780203795361

Turner, B. S. (1990). Outline of a theory of citizenship. *Sociology, 24*(2), 189–217.

van Wees, M., Revilla, B. P., Fitzgerald, H., Ahlers, D., Romero, N., Alpagut, B., Kort, J., Tjahja, C., Kaiser, G., Blessing, V., & Patricio, L. (2022). Energy citizenship in positive energy districts—Towards a transdisciplinary approach to impact assessment. *Buildings, 12*(2), 186. https://doi.org/10.3390/buildings12020186

Verlaan, T. (2021). Mobilization of the masses: Dutch planners, local plitics, and the threat of the motor age 1960–1980. *Journal of Urban History*, *47*(1), 136–156. https://doi.org/10.1177/0096144219872767

Viitanen, J., & Kingston, R. (2014). Smart cities and green growth: Outsourcing democratic and environmental resilience to the global technology sector. *Environment and Planning A, 46*(4), 803–819.

Wahlund, M., & Palm, J. (2022). The role of energy democracy and energy citizenship for participatory energy transitions: A comprehensive review. *Energy Research & Social Science, 87*, 102482. https://doi.org/10.1016/j.erss.2021.102482

Walker, J. (2020). *More heat than life: The tangled roots of ecology, energy, and economics*. Springer Nature Singapore. https://doi.org/10.1007/978-981-15-3936-7

Walzer, M. (1989). Citizenship. In T. Ball, J. Farr, & R. L. Hanson (Eds.), *Political innovation and conceptual change* (pp. 211–220). Cambridge University Press.

Warf, B. (2019). Cosmopolitanism. In *International encyclopedia of human geography* (2nd ed., Vol. 2, pp. 419–422). https://doi.org/10.1016/B978-0-08-102295-5.10167-2

Warf, B. (2020). Cosmopolitanism. In *International Encyclopedia of Human Geography* (pp. 419–422). Elsevier. https://doi.org/10.1016/B978-0-08-102295-5.10167-2

Weber, M. (1981). *General economic history*. Transaction, Inc. (Original work published 1927)

Whyte, K. (2017). The Dakota access pipeline, environmental injustice, and US settler colonialism 'standing side by side in peaceful prayer'. *Red Ink: An International Journal of Indigenous Literature, Arts, & Humanities, 19*(1). https://ssrn.com/abstract=2925513

Winegard, T. C. (2016). *The first world oil war*. University of Toronto Press.

Wolfe, P. (2008). The implications of an increasingly decentralised energy system. *Energy Policy, 36*(12), 4509–4513. https://doi.org/10.1016/j.enpol.2008.09.021

Wuebben, D., Romero-Luis, J., & Gertrudix, M. (2020). Citizen science and citizen energy communities: A systematic review and potential alliances for SDGs. *Sustainability, 12*(23), 10096. https://doi.org/10.3390/su122310096

Wylie, S. A. (2018). *Fractivism: Corporate bodies and chemical bonds*. Duke University Press.

Yeatman, A. (2007). The subject of citizenship. *Citizenship Studies, 11*(1), 105–115. https://doi.org/10.1080/13621020601099948

Young, I. M. (2005). Polity and group difference: A critique of the ideal of universal citizenship: A critique of the ideal of universal. *Debates in Contemporary Political Philosophy* (pp. 229–248). Routledge.

Zolli, A., & Healy, A. M. (2012). *Resilience: Why things bounce back*. Simon & Schuster.

Zvolska, L., Lehner, M., Palgan, Y. V., Mont, O., & Plepys, A., et al. (2020). Urban sharing in smart cities: The cases of Berlin and London. In J. Evans (Ed.), *Smart and Sustainable Cities?* (pp. 72–89). Routledge.

Index

© The Editor(s) (if applicable) and The Author(s) 2025

N. P. Dunphy et al., *Energy Citizenship*,
https://doi.org/10.1007/978-3-031-70153-5