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Energy Citizenship in Energy Transition: The Case of the Baltic States

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Abstract: The governance of energy systems is undergoing a transformative shift, vital to advancing the energy transition. Understanding the dynamics of energy citizenship and the factors that influence citizen engagement in energy matters is critical for driving social and institutional change. This paper informs on the key results of a comprehensive analysis of 54 energy citizenship cases in the Baltic states (Latvia, Estonia, and Lithuania). The study explores the role of citizens in the energy transition and characterizes the socio-economic and geopolitical factors shaping energy citizenship activities in the region. The governance of energy systems represents a significant transformational shift that is essential for energy transition. A more comprehensive understanding of the current state of energy citizenship and the factors influencing the energy transition process could inform the social and institutional changes necessary for the involvement of citizens in energy matters. This desk study represents a crucial element of the EU Horizon 2000 EnergyPROSPECTS project, which aims to map the landscape of energy citizenship in Europe. This paper presents an in-depth analysis of 54 cases from the Baltic states. The findings provide insight into the role of citizens in the transition process and the underlying factors and conditions that shape energy citizenship activities within the specific socio-economic and geopolitical context of the region. In general, energy citizenship in the Baltic states can be seen to exist on a spectrum between reformative and transformative practices. Overall, progress is being made toward systemic changes in the energy sector, with a focus on the democratization of processes. Nevertheless, additional measures to enhance and reinforce energy citizenship, coupled with the advancement of enabling conditions, are imperative at all levels of governance and across all energy transition scenarios.

Keywords: Baltic states; energy citizenship; energy transition scenarios; reformative case; transformative case

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1. Introduction

The transition to a low-carbon economy when greenhouse gas (GHG) emissions are reduced to much below current levels, as set by the European Union (EU) [1], is a crucial policy goal for addressing climate change and energy security. The European Green Deal (EGD) targets a 55% reduction in GHG emissions from 1990 levels by 2030 [2], with the European Commission's 2024 recommendation pushing for a 90% reduction by 2040 [3] and net-zero emissions by 2050, emphasizing the necessity of overhauling the energy system. Achieving these objectives requires awareness, involvement, and engagement of stakeholders at all levels of governance and smart and sustainable solutions [4], including empowering citizens to participate in the energy transition.

The energy transition has multiple dimensions. It is both technical and social, as well as conceptual and political [5]. Citizens are asked to play a more central role in achieving energy transition by changing their lifestyles and behaviors and participating proactively in the policymaking process [6]. However, participation has to go beyond individual lifestyles and traditional forms of public participation and collective engagement [7]. The transition

toward low-carbon energy that is socially acceptable and, as a result, more efficient can be facilitated by grassroots movements from the bottom up [8]. This is a governance level where the potential of communities could be unlocked, making it easier for people to adapt to major changes and making them more socially acceptable through providing adequate policy instruments [8]. Involving citizens in energy-related decision-making processes can shape how communities respond to and adopt decarbonization solutions, particularly when the energy transition exposes existing inequalities and highlights the actions needed to address them [9].

The rise in scholarly articles examining energy and environmental policies and the broader energy research domain reflects a growing interest in citizen engagement within the energy transition. A new term of energy citizenship has emerged due to the increasingly active role of citizens in energy system governance [10]. In political theory and sociology, citizenship is commonly defined as the relationship between individuals and the state. Although citizenship may appear to pertain to vastly different political systems, Devine-Wright highlights the importance of recognizing the deep interconnection between the energy system and state structures [11].

Generally, energy citizenship marks the increasingly active role of citizens in energy system governance [10], thus shaping energy policies and practices. Wahlund and Palm [12] link energy citizenship with the emphasis on "behavior change and opportunities for individuals to engage with energy systems", often viewing individuals as key drivers of change. A people-centered debate on self-consumption and self-generation of energy (prosumerism) is imperative for promoting energy transitions at the local level and as close to individuals as possible [13]. However, it must be emphasized that energy citizenship goes far beyond merely consumer philosophy. Forms of energy citizenship vary from proactive citizen participation in public debate to joining energy communities [14–17], implementing solutions in households [18,19], and individual initiatives of energy consumers [20]. It involves adopting renewable technologies [7], as well as supporting local initiatives, participating in policymaking, and sharing experiences. These actions contribute to a more qualitative and sustainable energy transition while addressing existing inequalities in the process [9]. However, the potential of communities could be unlocked at the appropriate level of governance, making it easier for people to adapt to major changes and making them more socially acceptable through incentivizing and providing adequate policy instruments [8].

This paper studies energy transition and energy citizenship in the Baltic states (Latvia, Estonia, and Lithuania), which is intriguing due to the limited research conducted in this area thus far. The Baltic states offer a unique context for examining these topics, characterized by their geographical location, energy infrastructure, and historical background. While there has been some research on the energy transition in the broader Baltic Sea region [8,21,22], including comparative analyses of the energy sector in the Baltic states [23], such studies remain relatively scarce. This scarcity of research in the Baltic states contrasts with the burgeoning interest in energy citizenship and transition manifested elsewhere in Europe. Therefore, delving into energy transition and energy citizenship dynamics in the Baltic states provides a unique opportunity to fill this research gap and shed light on the challenges and opportunities specific to the region.

Moreover, the Baltic states had already experienced an energy transition in the 1990s after regaining their independence from the Soviet Union in 1991. The principal features of this transition had been a radical decrease (almost by half) in total energy consumption and a shift to the utilization of local renewable resources, particularly biomass. All this minimized the national energy dependence. However, unlike the current energy transition, this earlier shift did not involve system democratization or active citizen participation.

This research contributes to the existing knowledge of energy citizenship by examining its significance as a crucial element in the energy transition process in the Baltic states, where academic exploration of these practices and pathways has been relatively limited. The paper aims to explore the concept of energy citizenship within the context of the three Baltic states, focusing on the various types and forms it takes in the transition to

sustainable energy systems. By investigating the role of citizens in this transition, the paper seeks to identify the unique challenges and opportunities specific to the region. Additionally, understanding the energy transition in the Baltic states can contribute to broader discussions on regional energy governance and the role of citizens in shaping energy policies and practices.

2. Contextual Description

The three Baltic states offer a distinctive setting for examining the dynamics of energy transition and energy citizenship within their broader context. Estonia, Latvia, and Lithuania are located on the Eastern coast of the Baltic Sea and represent 6 million inhabitants. The Baltic states are the only EU countries to have been part of the Soviet Union until they regained their independence in 1991. The countries were closely integrated in the Soviet energy systems and Russia was an important source of energy. Energy use per unit of GDP decreased very rapidly in the Baltic states in the 1990s as the economies went through major restructuring, shifting away from energy-intensive sectors, but the pace of decline has slowed considerably since the beginning of the 2000s. The Baltic economies remain small and energy-intensive, which increases their vulnerability to energy price fluctuations or supply disruptions [24]. In 2022, the total final energy consumption in the Baltic states was around 500 PJ, with an average final energy consumption per capita of 83 GJ/capita.

In 2004, all three countries became members of the enlarged EU, and economic support from the EU structural funds was and still is an important factor in stimulating the fast development of their economies. The Baltic states share a common historical legacy, a long-standing tradition of collaborative governance, and a convergence of national policies that align with those of the EU. However, the distinct structural characteristics of their economies and energy regimes give rise to distinctive characteristics within their primary energy supply [25] and disparate national policy approaches to the energy transition [23,26].

All three Baltic states have set themselves the objective of achieving climate neutrality by 2050 [27] and have consequently indicated national GHG targets for 2030, 2040, and 2050. In order to achieve their climate and energy goals, the Baltic states must implement substantial socio-technical changes within the energy sector. The enhancement of energy efficiency represents a pivotal strategic objective in the Baltic states, with the potential to significantly accelerate the transition to a low-carbon economy [26]. The annual net deficit of electricity in the Baltics persists as a key challenge [28] and also an opportunity for energy citizenship.

Energy independence and security have become a top strategic priority of all three countries, which is explicitly stipulated in their updated national energy and climate plans for 2030. For all Baltic states, the main objective in the field of renewable energy sources (RES) is to continue to increase their share in domestic energy production and total final energy consumption, thus reducing the dependence on fossil fuel imports and increasing local electricity generating capacities. The Baltic states have made significant progress in increasing their share of renewable energy, starting from a low baseline and now boasting high levels of renewables in their energy mix, as demonstrated in Table 1.

Table 1. Share of renewable energy in the Baltic states, 2023 [29–31].

	Estonia	Latvia	Lithuania
Share of renewable energy in gross final energy consumption, %	38.5	43.3	29.6
Share of renewable energy in electricity, %	29.1	53.3	26.5
Share of renewable energy in heating and cooling, %	65.44	60.99	51.54
Share of renewable energy in transport, %	8.5	3.1	6.7

The geopolitical instability resulting from Russia's invasion of Ukraine has accelerated efforts to expedite the decoupling of the Baltic states from Russia's energy networks,

reinforcing the region's commitment to energy security and furthering the EU's broader objective of reducing dependency on Russian energy sources [32]. This historical context adds another layer of complexity and significance to studying energy transition and citizenship in the region. There are important differences in how dependent each of the Baltic states is on imports of energy [23,24]. Studies often analyze Baltic energy security within the Baltic Sea region [33,34]. However, recent research [35] highlights improvements in energy security following the development of liquefied natural gas (LNG) terminals in the region while focusing on the energy trilemma—balancing security, equity, and environmental concerns in the Baltic Sea region [36].

Estonia's dependence on imported energy has been one of the lowest among the EU countries in the past. However, Estonia's energy system historically relied heavily on oil shale, a locally abundant resource, making it one of the most carbon-intensive economies in the EU. Estonia aims to phase out oil shale energy production by 2040 and increase the share of renewables in its energy mix, particularly through offshore wind and solar power. Estonia's natural gas consumption accounts for less than 10% of its energy balance and is showing a decreasing trend. Due to reduced electricity production from oil shale, Estonia has recently shifted to being a net importer of electricity. Another notable aspect of Estonia's energy profile is its significant export of solid biomass fuel, with around half of its solid biomass gross inland consumption being exported [37].

Latvia has a more renewable-centric energy system than its Baltic neighbors, with over 40% of its gross final energy derived from renewable sources, particularly biomass and hydropower. However, natural gas remains a key input in the energy transformation sector, accounting for over 35% of its fuel for power and district heating, though it comprises less than 10% of total final energy consumption. Hydropower, especially during spring, makes up a substantial share of electricity generation but has not spurred accelerated support for other renewables, and Latvia exhibits a comparatively low level of political commitment to the energy transition, resulting in relatively limited incentives for renewable energy [23]. Like Estonia, Latvia exports a significant portion of its solid biomass fuel, with over half of its biomass consumption exported. Meanwhile, in the Baltic states, biomass constitutes around 85–90% of renewable use, with interest in solar and wind energy growing steadily in recent years.

Lithuania's energy system has shifted dramatically since its closure of the Ignalina Soviet-type (RBMK reactor) nuclear power plant in 2009. The country has since sought to reduce reliance on imported electricity and gas from Russia by focusing on renewable energy, particularly wind and solar. Lithuania displays the most pronounced national political commitment to renewable energy with its revised National Energy Independence Strategy of July 2024 setting the goal to achieve complete energy independence by 2050. The Lithuanian government has also set a target of increasing the proportion of prosumers in the country from 2% in 2020 to 50% by 2050 and set mechanisms to support this transition.

Lithuania has been the most proactive in addressing energy security, notably with the 2014 launch of the Klaipėda LNG terminal. Subsequent infrastructure projects, including the Gas Interconnection Poland-Lithuania and the Baltic connector pipeline linking Estonia and Finland, have further integrated the region with the broader European energy market. By 2022, Lithuania successfully eliminated its reliance on natural gas imports from Russia, with Estonia and Latvia following a similar trajectory. However, the region faces continued challenges due to limited LNG infrastructure and increased competition for supply, prompting efforts to establish additional LNG terminals both in Estonia and Latvia.

The electricity systems of Estonia, Latvia, and Lithuania currently operate synchronously with the Russian and Belarusian interconnected energy systems, with synchronization to the continental European power grid planned in early 2025 [37]. Challenges associated with this synchronization process have been examined in various studies, including work by Radziukynas et al. [38], which explores the technical and operational issues involved in aligning the Baltic power system with Continental Europe.

Regulatory provisions, government support schemes, and energy pricing methodologies can support self-consumption practices aimed at maximizing the benefits at the system level and optimizing self-consumption [39]. Political barriers, such as inadequate regulation, slow administrative processes, and prolonged adoption timelines for critical policies, hinder a smooth energy transition across all the Baltic states [23]. Under these conditions, public engagement in energy transition remains marginal, and trust in government initiatives is low. It is particularly evident in Latvia that the not-in-my-backyard movement opposes large-scale wind energy projects and is threatening the country's ability to achieve its renewable-energy targets by 2030. Support for wind farms depends on several factors, particularly distance and ownership, as noted by studies such as [40–42]. In Latvia, surveys indicate strong public support for offshore wind farms [43], though the country lags behind Estonia and Lithuania in community investment willingness, with Estonia ranking 2nd and Lithuania 10th among EU-27 and UK states in a Choice Experiment, while Latvia ranks 21st [44].

Energy accounts for a relatively large part of consumer spending in the Baltic states. As well as energy being relatively expensive, demand is high as the climate is cold and energy efficiency is low in the transport sector and the housing stock inherited from the Soviet Union. The rise in energy prices in the EU and particularly in the Baltic states began in the second half of 2021 but accelerated rapidly during 2022. The higher energy prices, combined with higher prices for food, have caused overall consumer price inflation to increase dramatically in 2022 [24]. The already fragile global economy, still reeling from supply chain disruptions because of the pandemic, was set back even further when Russia's unprovoked full-scale invasion and war against Ukraine started in February 2022. The war led to sudden and large increases in energy prices, pronounced uncertainty about the availability of gas and electricity, and a more pessimistic sentiment among households and businesses. High inflation and uncertainty about energy security adversely affected consumer and investor confidence and reduced private consumption and investments [45].

According to the EU Energy Poverty analytics [46], in 2023, the rate of population at risk of poverty and social exclusion in the Baltics was slightly down compared to the 2022 energy crisis. Currently (2024), Latvia is in the most unfavorable situation (25.6%), followed by Lithuania (24.3%) and Estonia (24.2%). To support households and businesses, reduce uncertainty, secure energy supply, and react to energy poverty risks, the governments in all Baltic states took bold measures, especially to mitigate the consequences of higher energy prices for households and vulnerable groups (pensioners and low-income families). However, the OECD has criticized over 80% of Latvia's energy-related measures as untargeted, which raises fiscal costs and weakens incentives for energy savings [45]. In response, Latvia's Parliament enacted a more targeted Law on State Aid for Energy Supply Costs in November 2023 [47].

Thus, the Baltic states' Soviet legacy and emphasis on energy security have strongly influenced their approach to energy transition and energy citizenship. Geopolitical tensions have heightened the focus on security, although interest in prosumer participation is rising. Political and regulatory barriers still shape the extent of citizen involvement in the energy transition.

3. Methodology and Material

This desk-based research represents a fundamental element of the Horizon 2020-funded EnergyPROSPECTS research project, which has been implemented by 10 partner institutions, including the University of Latvia (UL). The following section outlines the methodological approach and lists the case studies that form the basis of the analysis.

3.1. Methodological Approach

The methodology and sampling approach employed, including the questionnaire template for data collection, was developed by the project consortium [48]. The methodology includes a structured questionnaire or case study template, largely shaped by the

needs of Qualitative Comparative Analysis (QCA). This structured approach enabled a thorough examination of three key research areas: ENCI achievements, influencing factors and intermediation, and the evolution of ENCI over time [49]. Our research is grounded in the definition of these three main topics, which were crucial for guiding our empirical questions and organizing the case studies following QCA's methodological guidelines.

1. ENCI Achievements: This section played a key role in identifying the concrete success of ENCI initiatives. A varied selection of cases, including successful and less successful examples, allowed for an examination of different combinations of conditioning factors that resulted in diverse outcomes. Achievements were measured using clear and observable indicators, enabling a detailed comparison across cases. Additionally, this analysis was deepened through a qualitative investigation into the political, social, and environmental principles that underpin ENCI initiatives.
2. Conditioning Factors and Intermediation: This section concentrated on identifying the factors that shape the varying degrees of success in ENCI outcomes. Utilizing QCA, we explored a broad spectrum of conditioning elements, including intermediaries, business models, social innovation, and information and communication technologies (ICT). This in-depth analysis also examined the empowerment of individuals involved in ENCI processes, offering key insights essential for informing policy recommendations and guiding future research efforts.
3. Development Over Time: Acknowledging the evolving nature of ENCI initiatives, this section investigated their progression over time. By analyzing shifts in strategies, collective behaviors, and roles within the energy transition, this area provided a deeper understanding of ENCI typologies and their development across different stages.

3.2. Objective and Scope of the Case Mapping

The main objective of this stage was to map the landscape of energy citizenship in Europe, examining practices in 30 European countries (EU, European Economic Area, and accession countries). The mapping was conducted by the project consortium partners between January and May 2022. A total of 596 cases were collected, of which 54 were identified in the Baltic states. The UL research team was responsible for the collection of data in the Baltic states. An overview of all European cases is accessible via the EnergyPROSPECTS online database (https://data.energyprospects.eu/), accessed on 31 October 2024.

3.3. The Case Selection and Sampling Approach

The conceptual framework for energy citizenship typology guided the selection of cases. Cases were defined based on typologies established by Pel et al. [50]. These cases were constellations of actors in specific contexts, enabling citizens to actively contribute to energy transitions either privately or publicly. Selected cases had to focus on direct energy production, energy use, or mobility and had to be either ongoing or completed no earlier than 2015. Many initiatives also adopted a broader sustainability-oriented approach, encompassing climate change, air pollution, and equality.

The selection of cases in the Baltic states followed a systematic approach formulated during brainstorming sessions within the EnergyPROSPECTS consortium. The UL team employed purposive sampling, leading to the identification of 32 cases in Latvia, 12 in Estonia, and 10 in Lithuania. The cases were identified through expert consultations, desk research, and the climate and energy expert network. Some additional cases were suggested by peer researchers and governmental officials, and a limited number of cases were extracted from the ENERGISE project database [51]. Special attention was given to innovative characteristics and citizen involvement in these initiatives.

Given that the objective was to ascertain the extent and nature of energy citizenship, the number of cases documented in each country should not be interpreted as an absolute figure. Additionally, it should be noted that not all potential cases have been identified, nor have all theoretical categories been exhaustively considered. In some respects, comparisons were made with the wider European and Northern European context, utilizing data from

European-level survey analysis conducted within the EnergyPROSPECTS project. In this study, Northern Europe encompasses the three Baltic states, plus Finland, Sweden, Norway, Denmark, and Iceland.

3.4. Data Analyses

Data were analyzed using descriptive statistics and QCA to examine ENCI achievements, conditioning factors, and the development of initiatives. A categorization of actors and types of agency (private/public) was developed, allowing the examination of collective agency, energy practices, and public participation in policy processes.

The spectrum of aspects explored encompasses the motivations behind the energy citizenship activities, objectives, and the involved actors. Additionally, the study examines the level of justice, equity, environmental sustainability, and recognition of ecological limits within these initiatives to provide insights into their potential for advancing sustainable energy transitions. Moreover, data have been collected on the utilization of information dissemination channels, with a particular emphasis on the use of social media platforms. Moreover, the intention has been to investigate the scope of partnerships and collaboration between European countries, given the recent acceleration of knowledge expansion in the field of energy citizenship, which has largely been achieved through collaborative efforts.

The categorization of the cases was guided by the EnergyPROSPECTS consortium's typology. By considering the individual as an agent, we were able to distinguish between private and public agencies. This approach enabled an exploration of energy practices within households and other organizational contexts, such as workplaces and educational institutions. Collective agency was further classified into two main subcategories: energy practices and public participation in policy processes, often mediated through non-governmental organizations (NGOs) or social movements.

A list of the Baltic cases, country, year of implementation, and scale (collective or individual case) is provided in Table S1 (see Supporting Materials). The list includes cases that are relevant to the analysis and whose impact on energy citizenship can still be observed today, even though they were concluded before 2015 (cases identified by numbers 11, 22, 27, 42, 48, and 53).

4. Results and Discussion

The following sections present the findings pertaining to selected sections of the survey questionnaire. The findings shed light on the role of citizens in the transition process and allow us to explore the underlying factors and conditions of energy citizenship activities shaping energy transition in the Baltic states.

4.1. Overview of the Cases: Focus, Geography, Collective vs. Individual and Time

The analysis of the energy citizenship cases reveals a certain diversity in the primary thematic focus of the cases. Nevertheless, more than half of the cases (31 cases or 58%) deal with direct energy production and/or its consumption. These are both individual and collective efforts, but the latter are predominant in this study. In 16 cases (29%), the knowledge of the activities has encompassed a more comprehensive, holistic perspective on the challenges and solutions pertaining to the energy sector. This could potentially contribute to the advancement of sustainable development and the conservation of natural resources and environmental quality. It should be noted that such a statement is derived from available descriptions of cases (projects) in public sources (websites, social accounts). Nevertheless, a desk study does not indicate whether these descriptions are reflected in practice.

A total of 7 cases (13%) concentrate on the development of solutions within the mobility sector to optimize energy consumption and/or promote the use of alternative modes of transport. In this category, the percentage is slightly lower in Lithuania, while in Latvia and Estonia, it is approximately 16%. Bicycle-sharing schemes represent one model of this activity, and they are especially prevalent in urban areas, as demonstrated by initiatives in

Tartu and Riga (cases 12; 38). However, in addition to these activities steered mostly by municipal authorities, there are also individual initiatives, such as the acquisition of electric vehicles. The impetus behind these individual solutions can, to some extent, be attributed to the availability of state support for the transition to electric vehicles, which is reinforced by political commitments, infrastructure, and financial instruments, including subsidies as well as free parking.

Of the 54 cases identified, 10 (19%) were activities implemented at the individual level, with the remainder being collective endeavors. This may be attributed to the fact that individual initiatives are less documented and publicly reported. It can be reasonably deduced that the individuals who have made notable contributions to energy citizenship matters (cases 11; 20) have gained considerable recognition in their respective countries due to their stewardship of various sustainability ideas.

Regarding the targeted territory, no explicit trend can be discerned. While over half of the cases are not specific to the population structure (whether urban, peri-urban, or rural), 16 cases (almost a third) were implemented in urban areas. In this regard, Estonia displays a greater prevalence of urban initiatives than the other two Baltic states. This may be attributed, at least in part, to the fact that a considerable number of projects are already well-known and identified in the two largest Estonian cities, Tallinn and Tartu. Tartu has been particularly active in the implementation of sustainability initiatives, which aligns with the long-term municipal commitments initiated during the 1990s as part of the Local Agenda 21 process in the Baltics [52].

From an academic perspective, it is particularly intriguing to examine cases where activities are introduced at the level of individual villages, including ecovillages or specific communities (such as a church congregation in case 45). A more detailed investigation of these matters is beyond the scope of the present article.

Regarding the implementation period, 63% of cases were initiated between 2016 and 2020. In 2022, the year under review, more than 80% of these cases remained active. A notable proportion of cases were initiated in 2021 and the initial months of 2022, which coincides with the energy crisis in the Baltics. This may also be a factor that helps to explain the prevalence of initiatives focused on energy production and saving within the energy citizenship spectrum.

4.2. Motivations and Objectives

The decision to engage in energy citizenship practices is informed by a multitude of factors. The questionnaire template proposed a predefined list of 15 potential sources of motivation, with a limitation of three factors per case. These sources encompass the recognition of personal responsibility, frustration due to the lack of action by decision-makers, or the necessity to respond to local or national demand. The five most significant factors are presented in Figure 1. In 50% of the cases, the availability of the initiative was identified as a significant catalyst for the commencement of activity. In Lithuania and Estonia, this factor accounts for up to 60% of cases, while in Latvia only for 44%. This factor is also the most decisive in the array of factors within the Northern European context, where it accounts for 25% of the total [53].

In the context of energy citizenship as a form of active engagement, it is significant that almost a third of the cases (32%) show an interest and are motivated by the need or opportunities for public involvement in energy policy and its implementation. This highlights the importance of proactive individuals, groups, and organizations taking a leading role in promoting and implementing energy citizenship initiatives. In Latvia, this factor is highest among the three states (34%). Proactive participation in the decision-making process is limited in all countries, which reflects the motivation to increase public involvement through energy citizenship initiatives in 31% of cases.

Not to be overlooked in the context of clean energy transition is the third top motivator, the interest in producing and/or using renewable energy, which accounts for almost 26% of cases. This aligns with the objective of boosting energy self-sufficiency and motivation

in 22% of cases, as well as the increased availability of state aid (investment co-financing) to support the expanded use of renewable energy sources. The highest levels of interest in self-sufficiency (50% of the country's cases) and the use of renewable energy (40%) are observed in Lithuania. The results suggest that a significant proportion of initiated cases are driven by a practical need arising from energy security and skyrocketing energy costs in these countries.

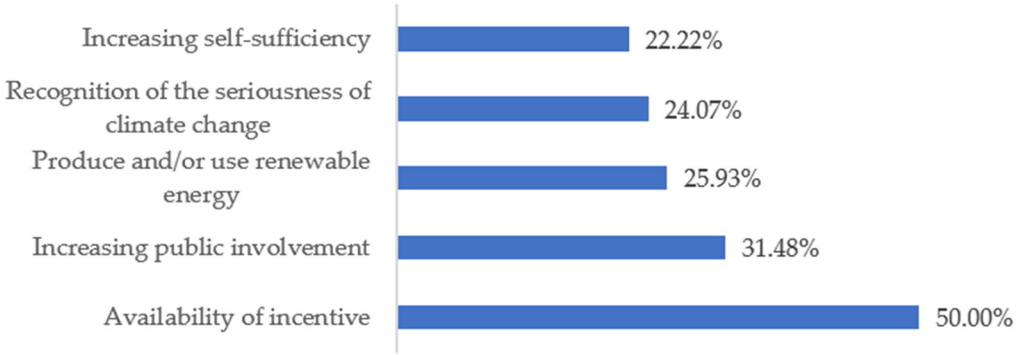

Figure 1. Factors motivating to start an energy citizenship case (Top 5).

In addition, awareness of climate change seriousness (over 24% of cases) and an understanding of personal responsibility (20%) have a significant impact on choices and motivation to engage in energy citizenship activities leading to the sector's transformation.

In 20% of cases, the intention to contribute to the energy transition is explicitly stated. Notably, none of the cases report that discontent due to the perceived lack of expediency in the energy transition or the absence of fundamental reforms to the current energy system has been a motivating factor in their activities. In comparison to the broader European context, the primary drivers are the motivations to contribute to the energy transition (35%), especially in Western Europe, where it reaches almost 45%, and the motivation to produce and use renewable energy (30%) [53], the situation in the Baltic states looks more pragmatic. However, there is a lack of an explicit recognition of the necessity for systemic change in society.

It is notable that in 9% of cases, the acknowledgment of energy-related injustice is identified as a motivating factor for action. These cases have set themselves the objective of alleviating energy poverty. This highlights the necessity for the energy sector to evolve in a manner that is consistent with the principles of a just transition.

Less than a fifth of cases (19%) are driven by ideas gained from similar activities elsewhere. In this context, it is crucial to recognize the significance of employing dissemination and communication tools prudently, as this can contribute to the broader dissemination of information. Almost all cases created their websites. In most cases (54%) use Facebook as their main social media channel, followed by YouTube (41%), newsletters (30%), and, to a lesser extent, Instagram and LinkedIn accounts.

Further analysis of what the actors wanted to achieve through the energy citizenship activity, considering 17 predefined choices, leads to the top five objectives, as shown in Figure 2. All these are an explicit demonstration of objectives that are in line with current EU and national policies in the unified energy and climate sector.

Consequently, climate change is a prominent theme in energy citizenship cases, motivating nearly one quarter of all cases and correspondingly articulated in the objectives of over 31% of cases in the Baltic states. In Europe, this objective is slightly higher, at approximately 39%, while in the Nordic region, at the 24% level [53]. This illustrates the congruence between energy citizenship initiatives and the overarching sustainability challenges, underscoring the imperative to curtail climate impacts. Nevertheless, the reduction of carbon footprints is explicitly identified as an objective in only one quarter of cases,

whereas at the Nordic level, this figure rises to 37%. This may be attributed to incomplete knowledge and the complexity of the footprint concept for society.

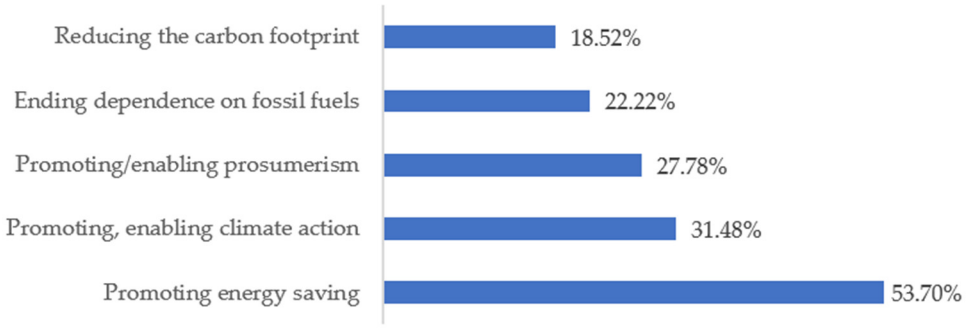

Figure 2. What do the actors involved in the case want to achieve (Top 5).

The decision to engage in energy citizenship initiatives is informed by a range of considerations. The rationale behind the energy citizenship initiatives is substantiated by the fact that over 54% of them are designed to promote energy saving. In general, technical and economic considerations are significant in the context of energy citizenship initiatives, which are primarily driven by the objective of reducing energy consumption, reliance on fossil fuels (22%), and facilitating the development of renewable energy sources (28%). Such initiatives are designed to effect reformative changes in the system, whether in private or public energy use. Given the low level of energy efficiency in the Baltic states, and especially in the household sector (particularly outdated building stock), this explains why this objective in its importance prevails over the figure in the Nordic countries as a whole-where it is at 34% level [53].

It is noteworthy that the objectives of most publicly funded energy citizenship incentives (projects) include both energy savings and GHG emission reduction objectives. This dual focus underlines the urgency of tackling climate change and transitioning to cleaner energy sources. The stipulation that public-funded project beneficiaries quantify their impact in terms of GHG emissions reduction is indicative of a commitment to implement efficacious actions for the mitigation of climate change.

Moreover, with only two cases in each of the other two countries, Estonia stands out with an objective to promote energy democracy (5 cases or 42%), which is somehow related to the different practices of participation and maturity of democracy in countries. The total Baltic score is 17%, which is higher than the average for energy democracy in Northern Europe (8%) but below the figure of 23% given to Southern Europe [53]. It is noteworthy that new forms of participation are identified in cases 2 and 10. Only in Latvia and Lithuania are a few cases identified where one of the main objectives is to lobby for a specific institutional act or the revision of an existing act. Only three initiatives aim at changing proposed projects and one protested an energy-related issue, the construction of a wind farm in the municipality (case 23). This prompts the question of how energy citizenship can affect the decision-making process.

4.3. Initiating Actors, Stakeholders, and Partnerships

The energy citizenship is either a constellation of actors or includes individual citizens. The list of the 12 predefined actors in the questionnaire template, reported to have initiated the case, is dominated by three top actors: educational or research institutions (schools or universities)—25% of cases, closely followed by municipalities and NGOs. These actors play a pivotal role in starting initiatives and promoting energy citizenship. However, while in Estonia and Lithuania, schools or universities are responsible for almost a third of case initiations, in Latvia, it is only 13%. As regards NGOs, Lithuania dominates with 40% of cases, while Estonia lags other Baltics with 8%.

The initiation of energy citizenship activities is largely dependent on the actions of public decision-making bodies, including governmental institutions (ministries) and municipal departments, as well as energy agencies. These entities are responsible for establishing frameworks to implement specific policy goals related to energy, climate, and mobility. Additionally, they must develop support mechanisms, such as consultancies, funding sources, and programs. At the municipal level, this often involves applying for national programs or engaging in EU-funded projects, which frequently involve international collaboration. Departments, agencies, or public bodies of a national government are significant initiators of energy citizenship cases in Lavia (25% of cases), while in other countries, those are reported below 10% of cases. This is understandable when looking at cases of energy subsidies to citizens (cases 34, 37, and 40) run by those institutions. The role of individuals or informal groups of individuals (including community groups) in initiating the case is reported in 12% of cases.

In the European context, among the actors that initiated cases, two or more individuals/an informal group of individuals (incl. community groups) make up the largest proportion (27%). This is followed by one or more NGO (s) (20.8%) and then one or more municipalities (17.8%) [54]. In an expert brainstorming session about the Baltics, a dominant structure of actors was elucidated through the lens of several explanatory factors. These include the role of both knowledge and organizational/administrative capacity, both of which are prerequisites for initiating a case and securing its financing and implementation. Additionally, the formal limitations on receipt of public funding, which exclude individuals from the energy transition process and other such constraints, were identified as significant contributors.

The involvement of a multitude of actors/stakeholders in energy citizenship initiatives, including NGOs, municipalities, business enterprises, national government bodies, educational institutions, and a variety of other groups, exemplifies the collaborative nature of these endeavors. These diverse actors collectively contribute to the implementation of sustainable energy practices and the fostering of community engagement.

The energy transition must be conducted inclusively, considering the needs of all groups, including those who are marginalized (such as the elderly, families with children, and so forth) and other vulnerable populations. Nevertheless, as the analysis demonstrates, gender issues remain particularly marginalized practices and have not yet received sufficient attention in the Baltic states. A total of 13 cases (24%) mentioned concerns related to social groups or gender-specific needs.

In the implementation of innovative practices such as energy citizenship, international collaboration plays a significant role. A total of 40% of the mapped cases operate in several countries, given that they have been implemented as EU-funded projects. The Baltic states collaborate with 23 EU countries in energy citizenship initiatives. The most frequent collaborative partners are Germany and Spain (each accounting for eight cases) and Denmark and Finland (each accounting for six cases). Non-EU partners include Norway, Iceland, Switzerland, and the United Kingdom. Lithuania demonstrates the highest intensity of collaboration with other countries (25 partners). Furthermore, Lithuania exhibits the most extensive geographical scope in terms of partners. In contrast to the other two Baltic states, it is actively engaged in collaborative initiatives with partners from Central and Eastern Europe, spanning six countries. The elevated prevalence of collaborative cases between Estonia and Latvia (nine cases) can be attributed, at least in part, to the fact that numerous sustainable energy initiatives have been implemented with the backing of the EU Interreg Latvia–Estonia program.

4.4. Scale and Organizational Form

A review of the distribution of cases across different operational scales (from the individual/household level to the international/global level) reveals that most cases (41%) are concentrated at the national level. In Latvia, the proportion of such cases exceeds 53%. This suggests the importance of nationwide initiatives that are supported by government

policy and financing. The remaining two operational scales are distributed between the local level, which is defined in this study as a local community, neighborhood, or a block of apartments in a multistorey building, accounting for 44%, and households (20%). These private-level activities account for nearly two thirds (65%) of all energy citizenship activities, indicating a significant potential for behavioral change. At the municipal scale, cases operating within the confines of a specific town or settlement account for a mere eight cases (15%), with the highest concentration in Estonia. This is largely attributable to the numerous projects undertaken in Tartu and Tallinn in the present study.

It is notable that there are specific regional-level cases in Latvia implemented by regional planning agencies (cases 15, 30, 43, and 44). Such cases frequently entail capacity-building or feasibility studies covering a region. Their beneficiary is the regional population or specific groups (for example, schoolchildren). These cases illustrate the necessity of administrative resources for the dissemination of knowledge to a wider population.

Subsequently, cases operating on an organizational scale account for approximately one fifth of the total. Studying what is the organizational form of the case, project consortia emerged as the most prevalent structure, representing approximately a quarter of the identified cases. This is followed by cases belonging to a program or project framework. In Estonia, approximately half of the organizational forms are directly related to energy consumption. This confers the ability to influence business practices within the utility sector. Examples of these forms are housing cooperatives, energy communities, and public transport companies (cases 5–8).

4.5. Sources of Funding

The data provides evidence of the pivotal role played by public funding in ensuring the success of initiatives that promote energy citizenship. The results indicate that EU funds represent the primary source of funding in 55% of cases. However, in 22% of cases, insufficient information on financing was available through desk research. In 60% of cases, national financing is identified as a source, either primary or secondary. The significance of national co-financing (identified as a secondary source of financing in 48% of cases) may be attributed to the prevalence of EU project-based energy citizenship initiatives. Indeed, in 34% of cases, national co-financing is identified as a secondary source of financing for initiatives based on EU projects. The data indicate that in the absence of EU funding, numerous energy citizenship projects would encounter substantial constraints or may even fail to materialize. This dependency underscores the crucial role of financial assistance from the EU in advancing energy citizenship initiatives, underscoring the necessity for sustained investment to sustain and expand these endeavors.

It is noteworthy that approximately 17% of cases utilize private funding, either the owner's finances or loans. The relevance of private funding as a secondary source for energy citizenship initiatives gives rise to the question of acceptable co-financing rates and green financing. A subset of cases (10%) did not involve additional funding, which suggests that changes in management practices (such as lifestyle changes and energy consumption) may also yield positive outcomes. Four cases explicitly indicate that their implementation did not entail supplementary financing. It is also noteworthy that local-level financing has not been a primary factor in initiating cases and appears to become a factor only when the initial source of funding is secured. In approximately one third of cases (31%), local public funds have been employed as a secondary co-financing resource. This may be attributed to the prevalence of municipal initiatives among the cases under study.

In the European context, while EU public funding represents the primary source (18%), it nevertheless occupies a significantly lower level of importance than in the Baltic states [55]. Similarly, national funding (24% as a primary or secondary source) does not have the same impact as in the Baltic states. This may be indicative of a higher degree of financial independence from public funds in the Baltic states compared to the European average. This also indicates that the consumer nature of projects may be more prevalent in the Baltic states than prosumerism.

4.6. Outcome Orientation and Agency Dimension

A conceptual typology of energy citizenship, which classifies in terms of outcome orientation (reformative or transformative), has informed further analysis of the cases. Reformative cases manifest engagement in the energy system and its limited interpretation in terms of involvement within concrete projects/activities and in technological interventions [56]. A transformative outcome orientation tends to embrace the broader goals of the energy transition and climate change.

To differentiate between reformative and transformative cases, a 100-point scale was used. A form of triangulation was employed, whereby an additional criterion was introduced to assess the extent to which these activities challenge or contest the prevailing energy system. A three-level system was devised, comprising low, medium, and high levels of contestation. This enabled the differentiation to be made that the profile of transformative cases corresponds to a high level of contestation. Consequently, values between 0 and 64 were attributed to reformative cases, while values between 65 and 100 were assigned to transformative cases. The categorization process yielded the following outcomes.

The overall energy citizenship in the Baltic states is balancing between reformative and transformative practices (Figure 3). The average score on the scale is 64 points, indicating that numerous cases exhibit elements that are crucial for transformative practices. The cases from Estonia demonstrate a higher transformation degree (72), while the score for Lithuania is 64 and Latvia—60. Consequently, the latter two countries are still situated within the category of reformative process oriented. This finding is consistent with other results and, to some extent, reflects the state policies outlined in the introduction.

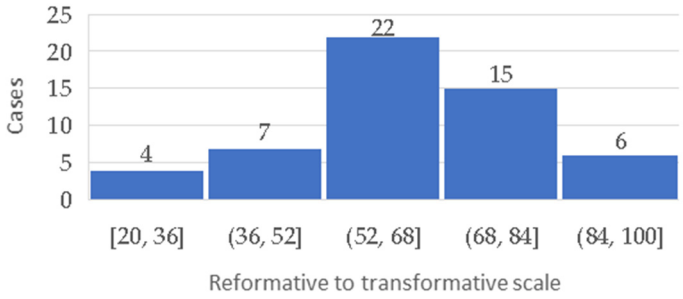

Figure 3. Distribution of cases in the scale of reformative to transformative case.

As illustrated in Table 2, the most prevalent types of energy citizenship in the Baltic states can be classified as collective citizen-based and hybrid initiatives (34 cases, representing 63% of the total). Among these, there is a relatively equal distribution between transformative and reformative initiatives, with a slight prevalence of reformative initiatives. None of the cases fall into the category of reformative-organizational embedded. This may be attributed to the fact that internal organizational initiatives are insufficiently communicated in public; thus, they were not mapped in this study.

Table 2. Distribution of energy citizenship cases by type.

	Individual			**Collective**	
	Private	**Organizationally Embedded**	**Public**	**Citizen-Based and Hybrid**	**Social Movements**
Reformative	9 (16.67%)	0	2 (3.70%)	18 (33.33%)	1 (1.85%)
Transformative	1 (1.85%)	3 (5.56%)	1 (1.85%)	16 (29.63)	3 (5.56%)

It is also noteworthy that a considerable proportion of the initiatives can be classified as individual-private (19%), although the majority of these are reformative as regards outcome orientation. This is because these citizen activities involve either changing habits at the household level, replacing energy equipment, insulating houses, or undertaking other

measures that support the transition to renewable resources. However, these activities are not yet occurring on a systemic level but rather as isolated acts. For purposes of clarification, the term collective hybrid refers to energy-related practices that encompass various other-than-citizen actors, notably public authorities and private/business actors.

4.7. Level of Hybridity and Public–Private Distinction

The degree of hybridity in the cases has been evaluated through a categorization of the assessments into three tiers: low (2 or 3 types of actors/institutional logistics are involved or represented), medium (4 or 5 types), and high hybridity (more than 5 types). The prevalence of low to medium hybridity in the analyzed energy citizenship cases suggests a predominant reliance on singular approaches rather than integrated or multifaceted strategies. Specifically, 50% of the cases exhibit low hybridity, while 33% demonstrate medium hybridity, with only a minority (17%) displaying high hybridity. The proportion of high-hybrid cases in Estonia is 33%, which is significantly higher than the figures for Latvia and Lithuania, where the corresponding proportion is only 10%. In comparison to the European context, where low hybridity remains the dominant trend (40% of cases) [54], the observed trend in the Baltic states can be attributed to the significant influence of the EU and state-support mechanisms. Such programs frequently prioritize particular activities, which results in a reduced degree of hybridity as initiatives concentrate primarily on their designated objectives rather than integrating multiple components. Consequently, while these initiatives effectively utilize external support to advance aspects of energy transition, their overall hybridity remains relatively constrained, which may limit their capacity for comprehensive and synergistic impact.

Speaking about public–private distinction categorization, the majority (78%) of energy citizenship cases operate within the public domain, with 45% of cases occurring at the public/smaller scale (e.g., community groups, local shared-ownership and/or renewable-energy projects), followed by 24% at the public/larger scale (city or regional level), and another 22% at the private/household level. In the European context, the prevailing trends indicate a higher level of activity at the public/larger scale (41%), followed by the public/smaller scale (28%) [57].

Identifying initiatives at the private level was challenging, as private initiatives have limited public outreach. Moreover, societal openness towards private-level initiatives is limited. Nonetheless, exploration of the cases at a private level reveals a narrower spectrum of energy citizenship diversity and very focused content, primarily addressing energy efficiency improvements, renewable-energy utilization in private settings, electric vehicle mobility, and individually driven actions. This suggests a nuanced landscape where public initiatives dominate, potentially reflecting greater visibility and accessibility, while private-level efforts may remain less apparent despite their contributions to energy transition endeavors.

4.8. Activity Level and Citizen Power

In assessing the activity levels of energy citizenship cases, a scale ranging from 1 to 100 has been employed, categorizing assessment into five tiers: very passive (1–20), passive (21–40), moderately active (41–60), active (61–80), and very active (81–100). The classification reflects the extent to which cases engage with energy consumption, with passivity indicating a lack of initiative due to disempowerment or disinterest, while higher activity levels denote awareness, empowerment, and proactive involvement in energy-related matters. Most cases (48%) exhibit moderate activity with an average score of 53.46 points, therefore demonstrating a proclivity towards higher levels of activism. This proclivity is reinforced by 31% of cases classified as active, with an average score for cases reaching almost 70 points. Furthermore, 19% of cases are reported as very active. This distribution aligns with expectations, considering the emphasis during desk research on identifying relatively active energy citizenship types. Furthermore, the nature of energy citizenship

initiatives underscores the need for cooperation and empowerment, contributing to the prevalence of active to high activity levels.

The mean level of activity among cases from the Baltics is 64, indicating that these cases are approaching the threshold of actively promoting energy citizenship objectives. The presence of 19% very active cases is noteworthy, suggesting a positive outlook despite more typical societal hesitance towards cooperation (as a legacy of the Soviet era forced collectivism, which shows up in current practices in the Baltic states), underscoring the significance of proactive engagement in advancing energy transition objectives. In the country section, the highest level of activism is demonstrated by Estonia, which collects an average of 67.75 points, followed by Latvia and Lithuania. The results achieved by Estonia may be seen as an indication of the extent to which the commitments set out in the national strategies for 2030 have been fulfilled.

The expert-based assessment of the efficacy of the citizen power and control identified 37 energy citizenship initiatives for whom this consideration was deemed relevant, excluded individual cases and those where this aspect was deemed irrelevant. Most cases demonstrate a high level of citizen power, accounting for 51% of cases. Citizens are dedicated to restructuring the energy or mobility system, or the system as a whole, more holistically, towards a more democratic and sustainable system. In 12 cases (23%), this commitment is of significant consequence.

49% of cases exhibit a medium level of citizen power, which means that citizens can express their views, but their voices are not compulsory (within deliberative, representative, or consultative processes). Within formally organized participation mechanisms, citizens are not able to impose their views on other groups. A variation in citizen power/control levels can be attributed to differences in the primary objectives and organizational structures of each initiative. Some initiatives prioritize the empowerment of citizens to actively participate in decision-making processes, which results in higher levels of citizen control. In contrast, other initiatives may focus on different aspects where citizen influence is less pertinent. Notwithstanding the variability, the acknowledgment of citizen power and control serves to highlight the pivotal role of public engagement and participation in propelling energy transition efforts, albeit to varying degrees across initiatives. Those cases considered transformative by the researchers are significantly more likely to be classified as "high" in terms of citizen power than reformative ones. In addition, the findings substantiate a significant differentiation between reformative and transformative cases regarding the exercise of citizen power. They underscore the possibility that reformative cases may also be classified as high, whereas transformative cases may be designated as medium (or even low) with respect to the exertion of citizen power. This exemplifies the intricate nuances inherent to the concept of energy citizenship. In comparison to other European contexts, where citizen power/control is categorized as high in 37% and medium in 24% of cases [58], the energy transition process in the Baltic states could be perceived as progressing in a manner conducive to greater democratization of the process.

4.9. Social and Environmental Sustainability

In addition to the concept of citizen power, the social sustainability dimension of the energy sector transition is also concerned with the principles of justice and equity. In terms of justice and equity, most cases (77%) are at a medium level, with 20% exhibiting a high level of consideration of these issues. Though this figure is below the European average level [58], the total share of cases where those issues are reasonably considered is well above the European level (60%). The designation of medium-level justice signifies the conferral of equal access to all concerned citizens. However, the framing of this access is often constrained by geographical boundaries or financial aspects, which may not fully guarantee the realization of genuine equity. This medium-level status reflects a balance between the pursuit of inclusivity and accessibility on the one hand and the practical constraints imposed by geographical and financial limitations on the other.

Several initiatives are constrained by their locations or face limitations due to the finite financial support available through public funding programs. Most public programs define narrow beneficiary groups, which jeopardizes the equity principle. Furthermore, infrastructural limitations exist, for example, in the availability of bicycles for sharing and their distribution across the area. Some activities are constrained by limited equity due to a digital divide. Similarly, initiatives pertaining to energy efficiency are typically confined to a limited number of multi-apartment buildings.

In most cases (80%), environmental sustainability is addressed at the medium level, with energy (and primarily efficiency strategies) remaining the primary focus of activities. Moreover, there is a distinct absence of dedicated assessments of environmental sustainability outcomes. Environmental sustainability is a key consideration or core issue in less than one fifth of cases. In some cases (6%), the evaluation is low in terms of sustainability, as social considerations are given priority over environmental ones. In the European context, environmental sustainability is identified as a key consideration in 42% of cases [59].

In 70% of the Baltic cases, there is an implicit acknowledgment of the influence of energy consumption on climate change and the existence of ecological constraints on atmospheric carbon emissions. In Europe, the situation is reversed, with explicit recognition of these challenges identified in almost 43% of cases [59].

Cases characterized by a high level of environmental awareness recognize the existence of additional ecological constraints, including biodiversity loss, deforestation, and chemical pollution. The impact of energy saving and the reach of national RES goals by the cases are not significantly correlated with other concepts of ecological limits. There is a paucity of understanding regarding the potential for local actions to contribute to global challenges, which in turn makes it challenging for case actors to evaluate relevant environmental impact.

5. Energy Citizenship in Energy Transition Scenarios

Considering the findings presented in the results section, it can be concluded that the energy citizenship cases from the Baltic states lend support to a range of energy transition scenarios, with a particular focus on diverse aspects of energy production, consumption, and sustainability. Furthermore, a synthesis of the principal findings and their implications for four types of energy transition scenarios is presented.

5.1. Renewable-Energy Adoption Scenario

The cases examined in this study predominantly concern the direct generation of energy from RES. This shift away from the previous reliance on traditional fossil fuels in the Baltic states is a notable outcome. In contrast, the cases indicate a transition towards a more sustainable energy landscape characterized by cleaner and environmentally friendly alternatives. The adoption of renewable energy in these cases reflects a broader transition scenario that prioritizes sustainability and resilience in energy systems. By utilizing RES, communities and individuals are actively engaged in the reduction of GHG emissions and the mitigation of the impacts of climate change. Furthermore, the emphasis on direct energy production indicates a shift towards decentralized energy generation, which effectively empowers individuals and communities to become prosumers. This scenario has several implications for the trajectory of the energy transition in the Baltic states. First, it highlights the potential for a considerable reduction in GHG emissions, which is in line with international, EU, and national commitments to tackle climate change. Second, it encourages the development of energy independence and security through the diversification of energy sources and a reduction in reliance on imported fossil fuels, which is particularly significant in light of the geopolitical situation in the region. Thirdly, it encourages innovation and economic development within the renewable energy sector, creating new opportunities for investment, job creation, and technological advancement.

5.2. Community Participation and Collaborative Governance

The scenario of community participation and collaborative governance in energy transition initiatives within the Baltic states reflects a comprehensive approach to inclusive and participatory decision-making processes that harness the collective knowledge and resources of diverse stakeholders to build a more sustainable and resilient energy future. Community participation is a key aspect of this scenario, which underscores the active involvement of various stakeholders, including NGOs, municipalities, and local communities, in the development of initiatives. This bottom-up approach provides communities with the capacity to assume control of their energy futures, therefore facilitating the development of decentralized energy systems that prioritize local autonomy. To achieve this, Seyfang and Haxeltine [60] provide theory-based practical recommendations for initiatives to expand beyond their niche: they suggest fostering stronger engagement with influential regime actors, setting more realistic expectations by offering tangible opportunities for action and participation, and adopting a community-based, action-oriented approach to social change rather than relying solely on cognitive behavior change theories.

Engaging communities in energy production, consumption, and decision-making benefits both local resilience and sustainability by diversifying energy sources and reducing dependence on external suppliers. Energy communities, in particular, represent a viable approach for managing surplus electricity. They bring added value by helping stabilize the grid through demand-shifting, aggregation, and flexibility services, provided they are well-integrated into the broader power system to support supply and demand balance.

Moreover, community-driven energy initiatives often prioritize social and environmental objectives alongside economic considerations [61]. By integrating community values and preferences into energy projects, these initiatives strive to maximize local benefits, minimize environmental impacts, and promote social equity and justice in the local contexts. This community-centric approach not only strengthens social cohesion and solidarity but also enhances the overall effectiveness and sustainability of energy transition efforts.

The scenario of collaborative governance complements community participation by emphasizing the importance of inclusive and participatory decision-making processes involving governmental and non-governmental entities. Collaborative governance embodies a cooperative approach where stakeholders from various sectors come together to address common challenges and pursue shared goals. This inclusive approach recognizes the complex nature of energy systems, requiring input and cooperation from multiple actors to achieve meaningful outcomes.

The involvement of governmental entities evinces a commitment to fostering partnerships and dialogue between the public sector and civil society, therefore enriching discussions and contributing to the development of more robust and inclusive energy strategies. Similarly, the involvement of non-governmental entities contributes a distinct set of knowledge, grassroots perspectives, and innovative approaches to the discourse, therefore enhancing transparency, accountability, and consensus-building in decision-making.

Collaborative governance prioritizes adaptive management and learning, enabling stakeholders to continuously evaluate and adjust energy policies and practices based on evolving circumstances and emerging challenges. This iterative approach enhances the capacity of energy systems to respond effectively to changing conditions and address complex challenges such as climate change, energy security, and social equity.

5.3. Energy Justice and Equity

The recognition of justice and equity issues across cases highlights a growing awareness of the need to prioritize social justice and equity in energy transition efforts. While there may be variations in the level of consideration given to these issues, the overall trend indicates a transition towards a more equitable energy system that ensures equal opportunities and benefits for all members of society. This scenario acknowledges that energy systems have historically perpetuated inequalities, with certain groups experiencing disproportionate barriers to accessing affordable, reliable, and clean energy services [62].

Vulnerable and marginalized communities, including low-income households and rural populations, often bear the brunt of energy poverty [63].

The objective of this scenario is to create a more inclusive energy system that prioritizes the needs and interests of marginalized groups by recognizing and addressing the existing inequalities. This necessitates the implementation of policies and initiatives that facilitate universal access to affordable and clean energy, in addition to the equitable distribution of the benefits and burdens associated with the energy transition. Furthermore, the scenario underscores the significance of inclusive decision-making processes that guarantee that the voices of all stakeholders, particularly those from marginalized communities, are heard and considered in energy policy and planning. This participatory approach fosters transparency, accountability, and empowerment, therefore enabling communities to actively engage in the shaping of their energy futures. Furthermore, the energy justice and equity scenario recognizes the interconnected nature of social, economic, and environmental justice, advocating for holistic solutions that address multiple dimensions of inequality. This involves integrating social equity considerations into energy policies, such as implementing targeted energy assistance programs, promoting community-owned renewable-energy projects, and prioritizing energy efficiency measures in low-income housing.

5.4. Environmental Sustainability

The scenario of environmental sustainability within the context of energy transition initiatives in the Baltic states underscores a commitment to prioritizing environmental protection, conservation, and climate action. The consideration of environmental sustainability and a climate focus, in many cases, reflects a transition towards energy practices that minimize environmental impact and contribute to overall sustainability goals.

In this scenario, energy transition initiatives prioritize the adoption of RES, energy efficiency measures, and sustainable energy practices to reduce GHG emissions, mitigate climate change, and minimize environmental harm. Renewable-energy technologies such as solar, wind, and biomass are increasingly embraced as alternatives to fossil fuels, enabling a shift towards cleaner and more sustainable energy sources and utilized in many cases. Moreover, energy efficiency measures play a crucial role in enhancing environmental sustainability by reducing energy demand, improving resource efficiency, and lowering carbon emissions. These measures encompass a wide range of strategies, including energy-efficient buildings and technologies and a shift away from private motorized transport.

This scenario also underscores the necessity of integrating environmental concerns into the formulation of energy policy and the planning of related initiatives. This necessitates the establishment of ambitious targets for the deployment of renewable energy sources, coupled with the implementation of regulations and incentives designed to facilitate the development of clean energy infrastructure.

5.5. EU and National Policy Alignment

In this scenario, energy transition initiatives are designed and implemented to support national efforts in the implementation of the EU policy and legislation related to energy efficiency, renewable-energy deployment, and GHG emissions reduction. At the national level, governments formulate and implement energy and climate policies that are aligned with the objectives set out by the EU and contribute to the achievement of regional and global sustainability goals. National energy and climate plans are designed to ensure consistency with overarching policy frameworks, complementing EU initiatives.

The utilization of EU and national public funds for the financing of energy transition initiatives is indicative of a commitment to leveraging available resources to facilitate the implementation of EU and national policies. These funds are allocated to projects and initiatives that demonstrate alignment with policy priorities, address key energy and climate challenges, and contribute to the attainment of established targets and objectives.

By aligning with EU and national energy and climate policies, energy transition initiatives in the Baltic states aim to enhance energy security, reduce dependency on fossil

fuels, promote economic growth and innovation, and mitigate the impacts of climate change. This scenario represents a proactive approach to energy governance, one that recognizes the importance of policy coherence, regulatory certainty, and collective action in driving the transition towards a sustainable energy future.

6. Conclusions

This research offers valuable insights into the landscape of energy citizenship in the Baltic states, highlighting a diverse range of initiatives that extend beyond individual households to community and national levels. The analysis reveals that energy citizenship manifests in multiple forms, including direct energy production, mobility, and broader sustainability goals. A significant takeaway is the Baltic region's growing commitment to RES, with many initiatives focused on reducing reliance on fossil fuels. Furthermore, mobility and sustainability efforts underscore a holistic approach to energy transition.

Energy citizenship in the Baltic states is driven by a wide range of factors, such as the recognition of climate change, the availability of government-led initiatives, and the rising involvement of civil society. The research identifies a diverse array of actors, including governmental bodies, NGOs, municipalities, and educational institutions, all of whom contribute to a collective push for sustainable energy practices. This collaborative and multi-level governance approach is key to fostering systemic changes within the energy sector, from national to community levels.

Funding sources predominantly stem from EU and national public funds, underlining the crucial role of financial support in driving energy citizenship projects forward. Despite variations in hybridity and citizen power/control levels, the prevailing focus remains on reformative activities and transformative actions aimed at catalyzing community-driven change. Furthermore, while justice and equity issues are addressed at a moderate level, efforts to ensure equal access and opportunity are evident. By aligning with EU and national policies and embracing principles of justice, equity, and collaboration, these initiatives pave the way towards a more inclusive and environmentally responsible energy future for the region.

6.1. Implications for Policymakers and Practitioners

To further strengthen energy citizenship and drive the energy transition forward, policymakers should:

- Expand financial support: Continue to prioritize and increase funding for grassroots energy initiatives, particularly those that empower citizens to participate in renewable-energy production and consumption.
- Enhance policy frameworks: Develop clearer policies that promote citizen involvement in energy transitions, ensuring these initiatives are inclusive and accessible to all social groups.
- Support education and capacity-building: Increase investment in educational programs and workshops that enhance citizens' understanding of energy transitions and foster greater participation.
- Facilitate cross-sector collaboration: Encourage partnerships between government, private actors, and civil society to maximize the impact of energy citizenship initiatives, particularly at local levels.

6.2. Study Limitations and Future Research Directions

While the study provides a comprehensive overview of energy citizenship initiatives, it is limited by the desk-based nature of the research, which may not capture all possible cases or variations in energy citizenship across the region. Additionally, while the study focuses on the Baltic states, further comparative research across Northern Europe could offer more nuanced insights into regional differences in energy citizenship practices.

Future research should explore:

- Longitudinal studies: Tracking the evolution of energy citizenship initiatives over time to better understand their sustainability and long-term impact.
- Justice and equity: A deeper investigation into the distributional impacts of energy citizenship initiatives, particularly regarding marginalized and vulnerable groups.
- Digital platforms and technologies: How digital tools, like social media, can further enhance citizen participation and engagement in the energy transition.

Overall, it can thus be posited that progress is being made towards systemic changes in the energy sector and the transition to climate neutrality with a focus on energy democracy. Nevertheless, further enhancements and reinforcement of energy citizenship, along with the advancement of facilitating factors and conditions, are essential at all levels of governance and in all energy transition scenarios.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/su16229665/s1, Table S1: Mapped energy citizenship cases in the Baltic states.

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