
COME RES

Advancing Renewable Energy Communities

**Deliverable 3.4**

# Consultation series of the eight country desks. Summary Report

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# About COME RES

COME RES - Community Energy for the uptake of renewables in the electricity sector. Connecting long-term visions with short-term actions aims at facilitating the market uptake of renewable energy sources (RES) in the electricity sector. Specifically, the project focuses on advancing renewable energy communities (RECs) as per the EU's recast Renewable Energy Directive (REDII). COME RES takes a multi- and transdisciplinary approach to support the development of RECs in nine European countries; Belgium, Germany, Italy, Latvia, the Netherlands, Norway, Poland, Portugal, and Spain.

COME RES covers diverse socio-technical systems including community PV, wind (onshore), storage and integrated community solutions, investigated in nine European countries. The project has a specific focus on a number of target regions in these countries, where community energy has the potential to be further developed and model regions where community energy is in a more advanced stage of development. COME RES analyses political, administrative, legal, socioeconomic, spatial and environmental characteristics, and the reasons for the slow deployment of RECs in selected target regions. COME RES synchronises project activities with the transposition and implementation of the Clean Energy Package and its provisions for RECs in policy labs. Policy lessons with validity across Europe will be drawn and recommendations proposed.

# Abstract

Deliverable 3.4 aims to elicit stakeholders' experience and perspectives concerning renewable energy communities (RECs), to identify solutions to improve legal and policy frameworks and provide enabling conditions for RECs development, and opportunities and limitations for cross-country knowledge transfer. Building on the in-depth and qualitative study on how relevant actors perceive drivers and barriers to establish and successfully run RECs in Deliverable 2.3 - Synthesis Report on case-studies of drivers and barriers in five selected target regions (Standal et al. 2022), this Deliverable explores national and target region stakeholders' views on attitudes, motivations, relevant technologies and legal forms, promising sectors for RECs, main barriers for developing RECs. Furthermore, the stakeholders' familiarity with REDII and REC as a concept is explored, as well as national and local policies and support mechanisms that are seen as relevant for cross-country/region transfer.

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# 1. Introduction

Local and renewable energy systems, often referred to as renewable energy communities, are increasingly highlighted as important for the energy transition. Local ownership and potential benefits of community energy are expected to increase social acceptance of renewables and to stimulate increased production of renewables in the electricity mix locally and nationally. This Deliverable aims to elicit stakeholders' experience and perspectives concerning Renewable Energy Communities (RECs), to identify solutions to improve legal and policy frameworks and provide enabling conditions for RECs development, and opportunities and limitations for cross-country knowledge transfer. RECs are defined and outlined in the recast of the Renewable Energy Directive (REDII) as a grassroot energy model suitable for the low-carbon energy transitions (for more detail see section 1.2), which is the focus of our study. However, we also include similar models of community energy when referring to RECs as the concept is new in many of the countries and regions investigated. This Deliverable builds on the in-depth and qualitative study on how relevant actors perceive drivers and barriers to establish and successfully run RECs in Deliverable 2.3 Synthesis Report on case-studies of drivers and barriers in five selected target regions (Standal et al. 2022). More specifically, this Deliverable explores national and target region stakeholders' views on attitudes, motivations, relevant technologies and legal forms, promising sectors for RECs, main barriers for developing RECs. Furthermore, the stakeholders' familiarity with REDII and REC as a concept is explored, as well as national and local policies and support mechanisms that are seen as relevant for cross-country/region transfer.

In recent years there has been an emerging policy attention to community energy systems. Community energy production and storage will be important components in electricity systems as future electrification of society puts new demand on energy production, supply and flexibility. The recast of the Renewable Energy Directive (REDII) is one of the latest examples, which includes requirements for EU Member States to provide enabling frameworks for renewable community energy empowering them to participate in the energy market. Moreover, several countries have provided economic incentives (e.g. Feed-In Tariffs, subsidies and tax schemes) to increase the attractiveness for prosumers to engage in local decentralised energy productions that are integrated into the grid supply (Standal, and Feenstra 2022; Inderberg *et al*. 2018). Furthermore, the current technological innovation enables the rise of new collective forms of distributed energy systems that can be viewed as a potential bottom-up transformation of national electricity systems (Schleicher-Tappeser 2012). Research has shown that community ownership of renewable energy projects can be a main driver for local acceptance (Cowell and Devine-Wright 2018, Leiren et al. 2020; Linnerud et al. 2018). Despite the policy commitment on EU level and positive gains, the development of RECs is slow in several regions and countries in Europe as shown in Deliverable 7.1 Comparative assessment of enabling frameworks for RECs and support scheme designs (Krug et al. 2022).

## 1.1. Research questions

To fulfil the above-mentioned aims, this Deliverable is guided by the following overarching research question: *How do relevant stakeholders understand and evaluate RECs and measures to promote them in the energy transition on target region and national level?* The Deliverable addresses the following sub-questions:

1. What aspects and measures (e.g. legal forms, policy frameworks) do stakeholders find most important for promoting REC initiatives in their target region and on the national level?
2. What are the main barriers (e.g. regulations) or opportunities (e.g. support schemes) for RECs identified by stakeholders in their target regions and on the national level?
3. What actors, technologies and fields of activities do the stakeholders consider most relevant for REC initiatives in their target region and on the national level?
4. How do stakeholders perceive the potential role of RECs in the energy transition in their target region and on the national level?
5. Are stakeholders well acquainted with REDII and what measures of REDII's enabling framework do they find most pressing to promote RES community energy in their target region and on the national level?

## 1.2. Scope and definitions

This stakeholder consultation was carried out as an online survey in the target regions and national contexts of the countries in the COME RES project, as shown in the table below. The COME RES project has a focus on target regions with a slower development of RECs and aims to produce knowledge that can help advance RECs in the energy transition. In addition to the target regional level, the survey also included national level stakeholders.

### *Table 1 - Overview of countries and target regions surveyed*

| Country | Target regions |
|---|---|
| **Belgium** | Limburg and West-Flanders |
| **Germany** | Thuringia |
| **Italy** | Apulia |
| **Latvia** | Due to the small size of the country, and the low number of RECs, Latvia as a whole is a target region |

| Country | Target regions |
|---|---|
| **Netherlands** | North-Brabant |
| **Norway** | Due to the low number of RECs, Norway as a whole is a target region |
| **Poland** | Warmian-Masurian |
| **Portugal** | Norte |
| **Spain** | Balearic and Canary Islands |

In line with the COME RES project, this Deliverable has a focus on community energy in the form of RECs as defined in REDII or similar community energy models that share the same value principles of benefits, proximity and grassroot ownership. In REDII, RECs are understood as innovations initiated by citizens, Small and Medium Enterprises (SMEs) or local governments. In line with the Directive, RECs should be autonomous and controlled by shareholders or members close to the renewable energy projects they promote. Their primary purpose is to provide environmental, economic or social benefits for their members and the local communities where they operate, rather than financial profit. The details of RECs, and interlinked community energy concepts, as outlined in the EU policy framework is provided below:

### *Table 2 - Key legal concepts and definitions contained in REDII and IEMD*

| Term | Definition |
|---|---|
| **Renewable energy community**<br><br>*REDII, Article 2(16)* | "A legal entity:<br>(a) which, in accordance with the applicable national law, is based on open and voluntary participation, is autonomous, and is effectively controlled by shareholders or members that are located in the proximity of the renewable energy projects that are owned and developed by that legal entity;<br>(b) the shareholders or members of which are natural persons, SMEs or local authorities, including municipalities;<br>(c) the primary purpose of which is to provide environmental, economic or social community benefits for its shareholders or members or for the local areas where it operates, rather than financial profits" |

| Term | Definition |
|---|---|
| **Citizen energy community**<br><br>*IEMD, Article 2(11)* | "A legal entity that:<br>(a) is based on voluntary and open participation and is effectively controlled by members or shareholders that are natural persons, local authorities, including municipalities, or small enterprises;<br>(b) has for its primary purpose to provide environmental, economic or social community benefits to its members or shareholders or to the local areas where it operates rather than to generate financial profits;<br>(c) may engage in generation, including from renewable sources, distribution, supply, consumption, aggregation, energy storage, energy efficiency services or charging services for electric vehicles or provide other energy services to its members or shareholder" |
| **Renewables self-consumer**<br><br>*REDII, Article 2(14)* | "A final customer operating within its premises located within confined boundaries or, where permitted by a Member State, within other premises, who generates renewable electricity for its own consumption, and who may store or sell self-generated renewable electricity, provided that, for a non-household renewables self-consumer, those activities do not constitute its primary commercial or professional activity" |
| **Jointly acting renewables self-consumer**<br><br>*REDII, Article 2(15)* | "A group of at least two jointly acting renewables self-consumers in accordance with point 2(14) who are located in the same building or multi-apartment block." |

As the COME RES project also has a focus on target regions with low deployment of RECs, RECs are not a well-known concept for some of the stakeholders participated in this study. To elicit the experiences and perspectives of all stakeholders we provided a simplified definition in the beginning of the survey: "Local and renewable energy systems, often referred to as renewable energy communities, are becoming increasingly highlighted as important in the energy transition. Local ownership and potential benefits of community energy are expected to increase social acceptance of renewables and the share of renewables in the electricity production mix locally and nationally". Later on in the survey we provided a more detailed definition of RECs and information when asking about respondents' familiarity with REDII and the provisions for RECs:

> The EU recast Renewable Energy Directive (2018/2001/EU) (REDII) has provisions for Renewable Energy Communities (RECs) and their capacity to generate, consume, store and sell renewable energy. Renewable energy communities are defined under this directive as legal entities where natural persons, local authorities (including municipalities), or small and medium enterprises participate directly in producing, selling or distributing renewable energy, either on their own or acting in partnership with others (REDII, Article 2, IEMD, Article 2).
>
> Renewable energy communities are further defined upon principles of open and voluntary participation, autonomy and where effective control is held by shareholders or members that are located in the proximity of the renewable energy projects owned and developed by that community. In accordance with REDII, the

primary purpose of a renewable energy community is to provide environmental, economic or social community benefits for its members or the local areas where it operates rather than financial profits. REDII requires that Member States provide an enabling framework to promote and facilitate the development of Renewable Energy Communities.

## 1.3. Outline of Deliverable

This first introductory section provides the aims, research questions, scope and definition of this Deliverable. The second section provides detailed information on the methods used and sample characteristics of the respondents. The third section will present the survey findings, while the fourth section will provide a brief summary and discussion of the findings. Respondents' answers to open-ended questions are given in the Appendix.

# 2. Methods

The stakeholder consultation was conducted as an online survey in the period of May/June of 2022. The survey targeted relevant stakeholders for RECs at the regional and national level in the COME RES countries (see table 1). The survey was executed using the software SurveyMonkey and applied Likert scale questions on a 5 point scale to elicit whether respondents agreed or disagreed or were neutral towards given statements. As the survey was intended for stakeholders with relevant knowledge, there was no category for 'don't know'. Several questions also had the possibility to enter open ended answers (with a character limit). Italy and Norway included specific questions targeted at their national respondents. All respondents who agreed to participate in the survey are included in the results, including those who did not complete the full survey. The results were analysed using the software R.

The results of the survey are intended to provide information on how stakeholders understand and evaluate RECs and measures to promote them in the energy transition on target region and national level (see also research questions). As described below, the targeted respondents were stakeholders with valuable information and experience on RECs and not society in general. The recruited respondents thus are not only knowledgeable on different aspects of RECs and their role in the energy transition, but also more inclined to be positive towards RECs. The results need to be understood with this in mind. Further, the composition and number of respondents in the different countries and target regions vary considerably and are therefore not suitable for statistical generalisations and comparisons. Despite these limitations, the results present a basis to understand relevant stakeholders' recommendations and prioritisations across and within national and regional contexts, which are an important input to REC development in the surveyed countries and target regions.

## 2.1. Recruitment

Recruitment of potential respondents was primarily done through the COME RES projects network of interested stakeholders who participate in the COME RES national desks[1]. An invitation with information about the survey and the rights of the participants and a link to the survey was distributed using the emailing lists of the respective stakeholder desks. To ensure significant participation in the survey the invitation to join the survey was also distributed to other relevant stakeholders at national level through 'snow-balling techniques´ or mapping of relevant actors. In several countries the survey was also shared through newsletters of willing stakeholder desk or research networks. Further, channels such as social network (Facebook, LinkedIn) was used by posting on relevant groups. The survey was active for approximately 5 weeks in April-May 2022, but despite extensive efforts to recruit respondents the response rate varied considerably in the different target regions and countries (see figure 1 below).

[1] The COME RES project includes eight national stakeholder desks that organise activities at the country and/or regional level to ensure wide engagement of market actors and stakeholders throughout the project duration and to create networks that can evolve after the end of the project. The number of national stakeholder desk members vary considerably (from 35 to 180 participants).

There were no respondents from the target region Warmian-Masurian and only one from Apulia. Apulia and Italy (other) are therefore combined in the category Italy.

## 2.2. The Sample

In total, 651 respondents agreed to be part of the study. The median time needed to complete the survey was 11 minutes. Even though most questions were mandatory, some survey responses were not complete, most likely due to respondents exiting the survey early. 458 respondents completed the full survey (or 70 %). There is some geographical variation in terms of the attrition rate[2]. We do not find a pattern of higher attrition rate in countries where the implementation of RECs and REDII have been slower. In order to include as much data as possible, all respondents who agreed to participate in the survey are included in the results, including those who did not complete the full survey.

### Respondents' geographical composition

There is a relatively large variation in the number of respondents between the COME RES countries (e.g. 30 in the Netherlands and 188 in Italy) and in the share of the respondents per target region (5 in West-Flanders and the Balearic Islands and 23 in Norte). In the Netherlands, this might be explained by the fact that recruitment mainly took place among the stakeholders of the target region (i.e., province of North-Brabant). Moreover, the development of the regional energy strategies in the Netherlands relies heavily on stakeholder participation, deliberation and negotiation, so there might be an issue of stakeholder fatigue (especially for contribution to a survey with no direct impact on policy). In countries where the concept of REC is relatively new, such as Latvia, Norway and Poland, the reason for low response rates could be that the invited participants were critical of their knowledge of REC related issues. However, the number of inhabitants and the number of personnel working in the energy sector and related domains also vary, thus influencing the response rate somewhat. We have chosen to also report the results from the target region level where this is available. This is to highlight whether actors associated with the target regions might have different perspectives and experiences than at the national level.

The large variation in the number of respondents per country means that the aggregated results will be skewed in favour of the responses from the countries with the largest sample. In our case the Italian respondents dominate the results. Instead of weighing the responses for nationality, we have chosen to depict the results for each country and each target region separately. This allows us to illuminate geographical differences in results. Also, some countries or target region samples are dominated by a specific type of stakeholders. Still, the results present a basis to understand relevant stakeholders' recommendations and prioritisations across and within national and regional contexts, which are an important input to REC development in the surveyed countries and target regions.

[2] Attrition is calculated at the relative number of respondents between the question 3 (location) and question 14 (familiarity with RED11). Respondents who reach question 14 usually complete the full survey.

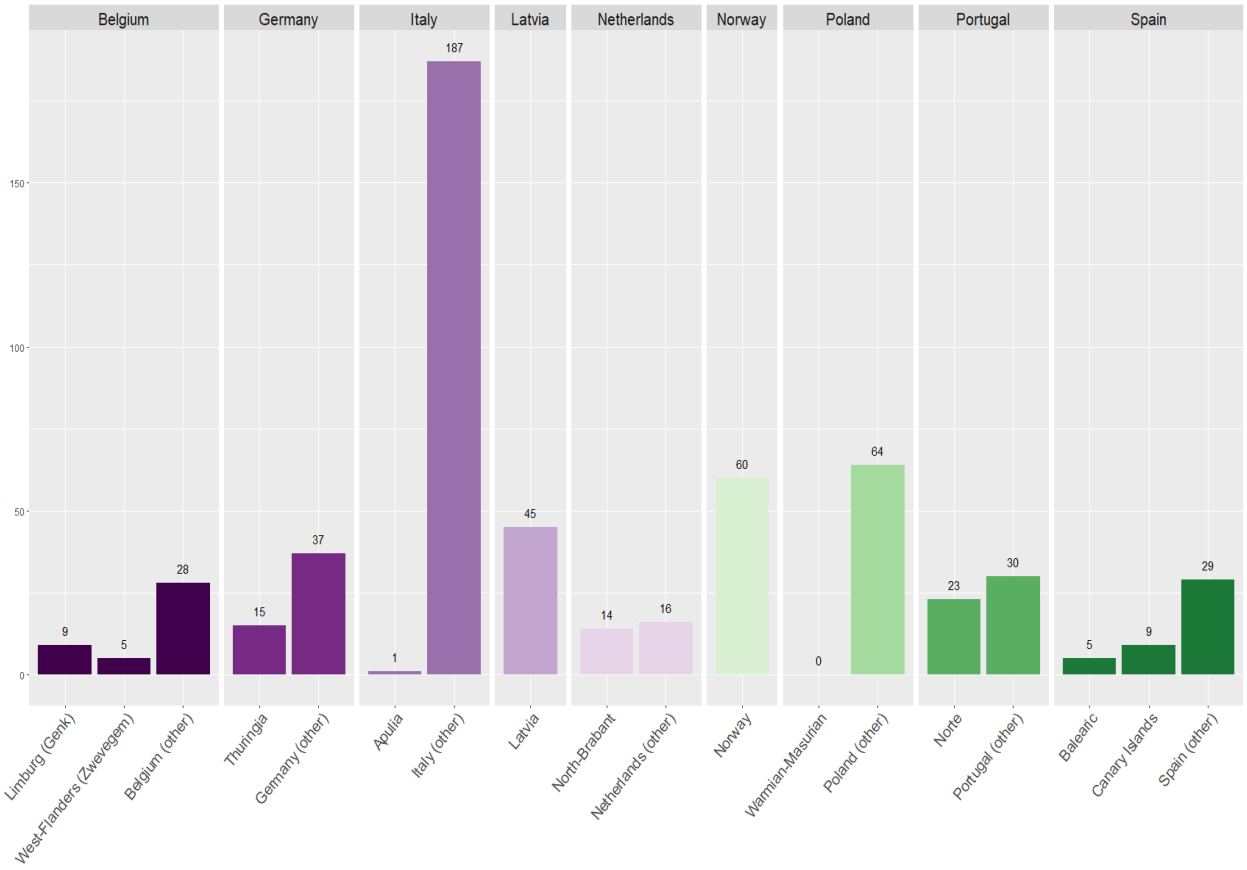


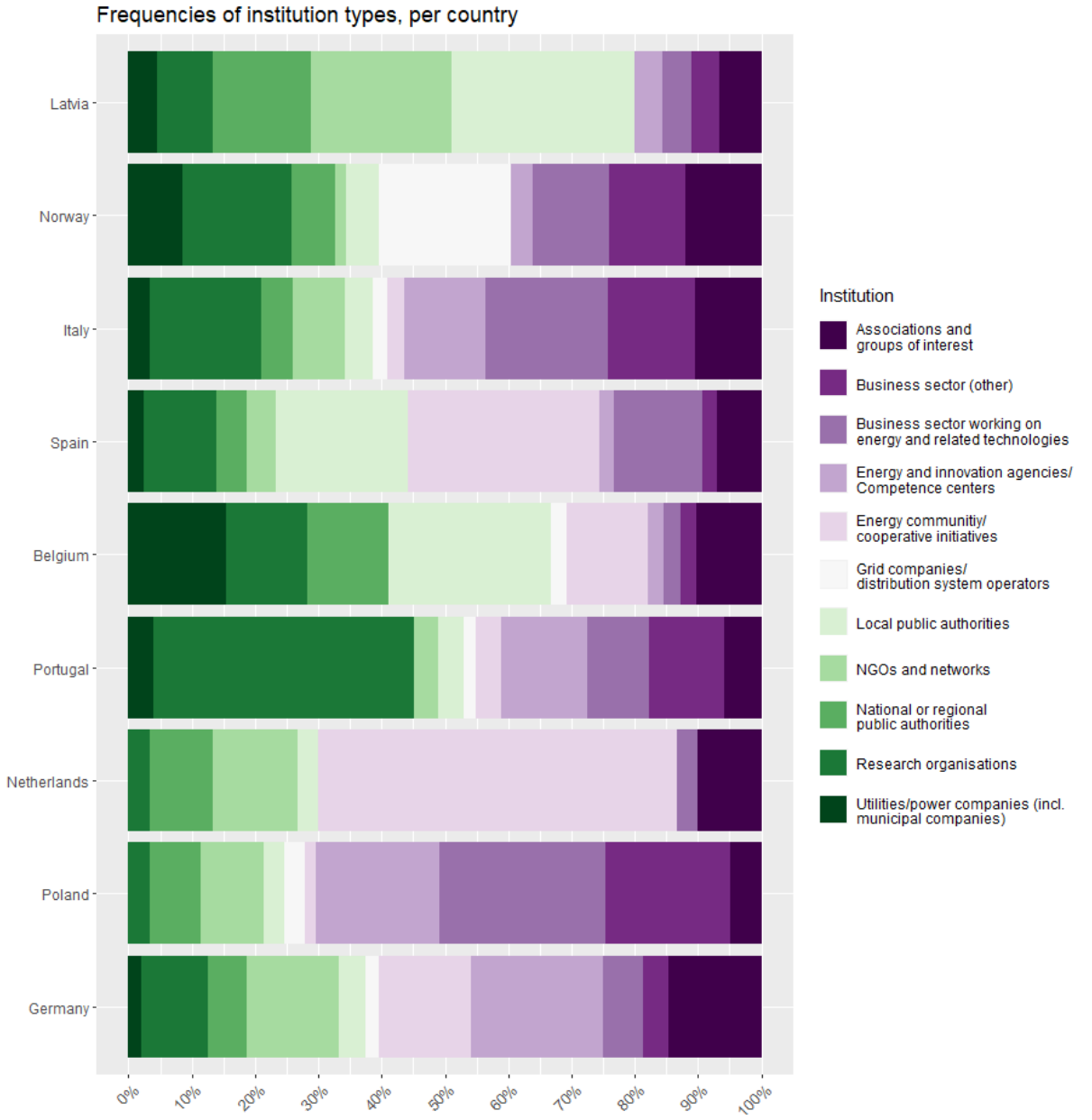

*Figure 1- Number of respondents in each region*

## Respondents' institutional attainment

The respondents of the survey represent a diversity of sectors and institutions. The largest respondent groups are research organisations and the business sector working on energy and related technologies, making up more than 28 % of the respondents. Around 3.5 % of the sample belong to the "other" category. This category contains private citizens, media, politicians and financing institutions. Financing institutions is the largest group in the "other" category, making up around 1 % of the respondents.

When looking at each country separately, there are differences in the composition of respondents. Actors from energy communities/cooperative initiatives dominate in the Netherlands. This group is also the largest one in the Spanish sample, together with local public authorities. On the other hand, energy communities/cooperative initiatives are a very small or non-existent group in the Latvian, Polish, Portuguese, Italian and Norwegian samples. For Latvia, Poland and Norway, the this can be explained by the fact that the REC model is not well-known and there are few RECs in these countries. The largest groups in the Latvian sample are local public authorities, NGOs and networks, and national and regional public authorities. The same groups are relatively large in the Belgian sample, making up around 67 % of the sample together with utilities/power companies and energy communities/cooperative initiatives.

Research organisations largely dominate in the Portuguese sample. This is also the largest group in the Norwegian sample, together with grid companies/distribution system operators. Among the Polish respondents, business sector actors and energy innovation agencies/competence centres make up around 67 % of the sample. The German and Italian sample is more heterogenous with representatives from a diverse set of actors.



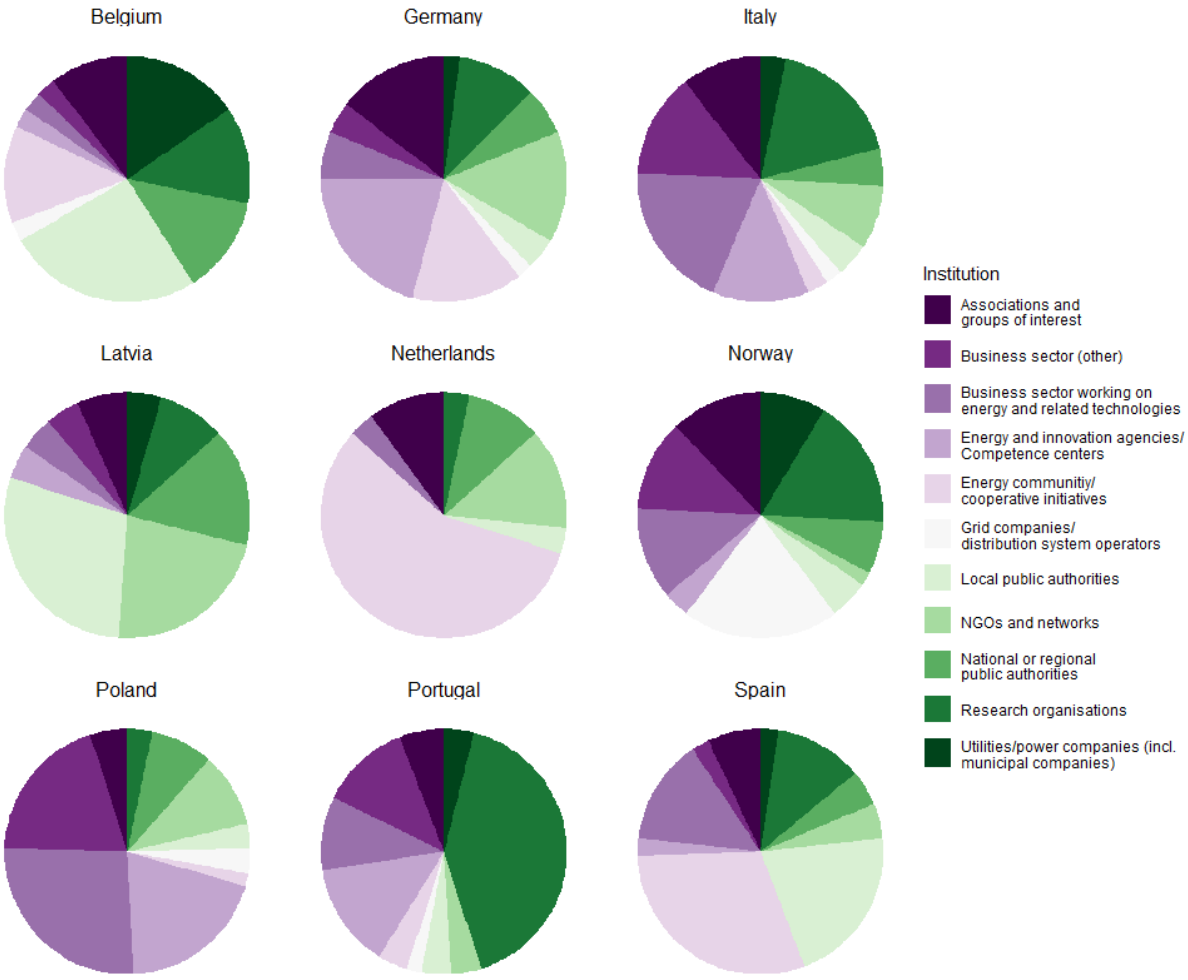
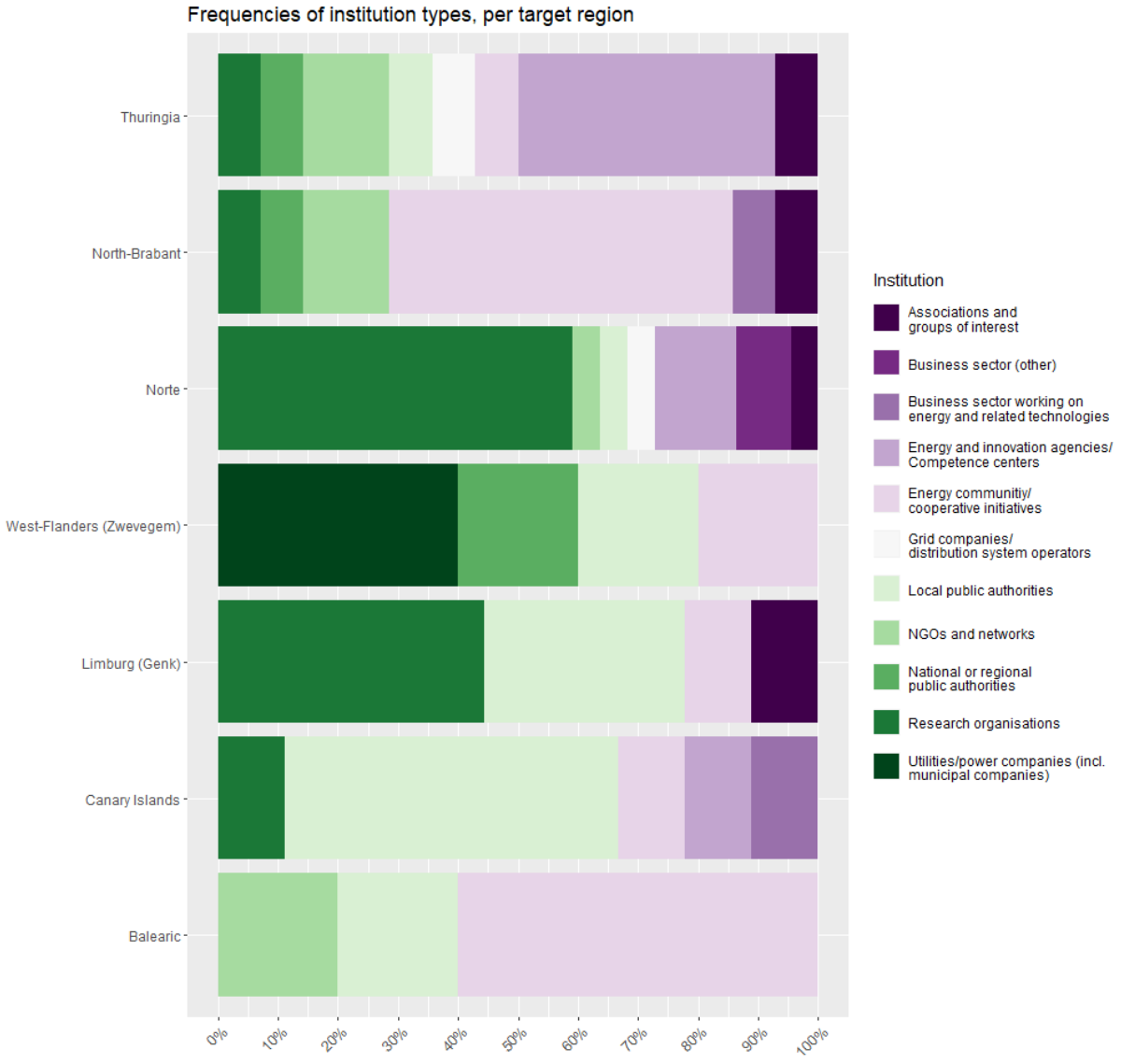



*Figure 2 - Frequencies of institutions per country*

Looking more closely into the target regions, there is less variation in terms of institutional affiliation within the target regions than at the country level. This is as expected, since the number of respondents from these regions is limited.


Frequencies of institution types, per target region
Thuringia
North-Brabant
Norte
West-Flanders (Zwevegem)
Limburg (Genk)
Canary Islands
Balearic
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Institution
Associations and groups of interest
Business sector (other)
Business sector working on energy and related technologies
Energy and innovation agencies/ Competence centers
Energy communitiy/ cooperative initiatives
Grid companies/ distribution system operators
Local public authorities
NGOs and networks
National or regional public authorities
Research organisations
Utilities/power companies (incl. municipal companies)

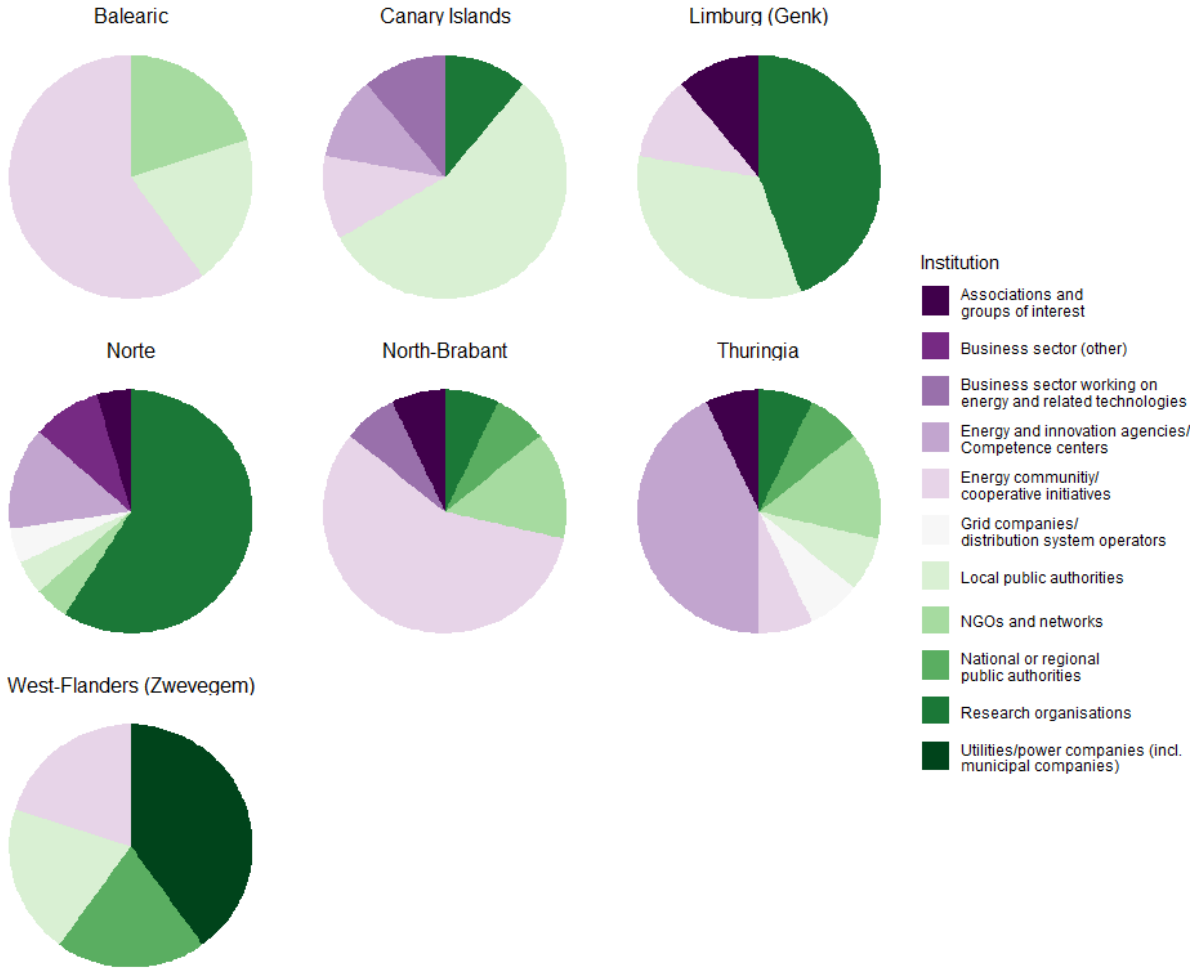



*Figure 3 - Frequencies of institutions per target region*

## Respondents' affiliation with RECs

Around 35 % of the respondents are affiliated with an institution that engages in a REC. The relatively low rate of affiliation with RECs is likely driven by the institutional attainment of the respondents in our sample. Less than 27% of the research organisations and the business sector, which are the most frequent institution types in the sample, are engaged in a REC.

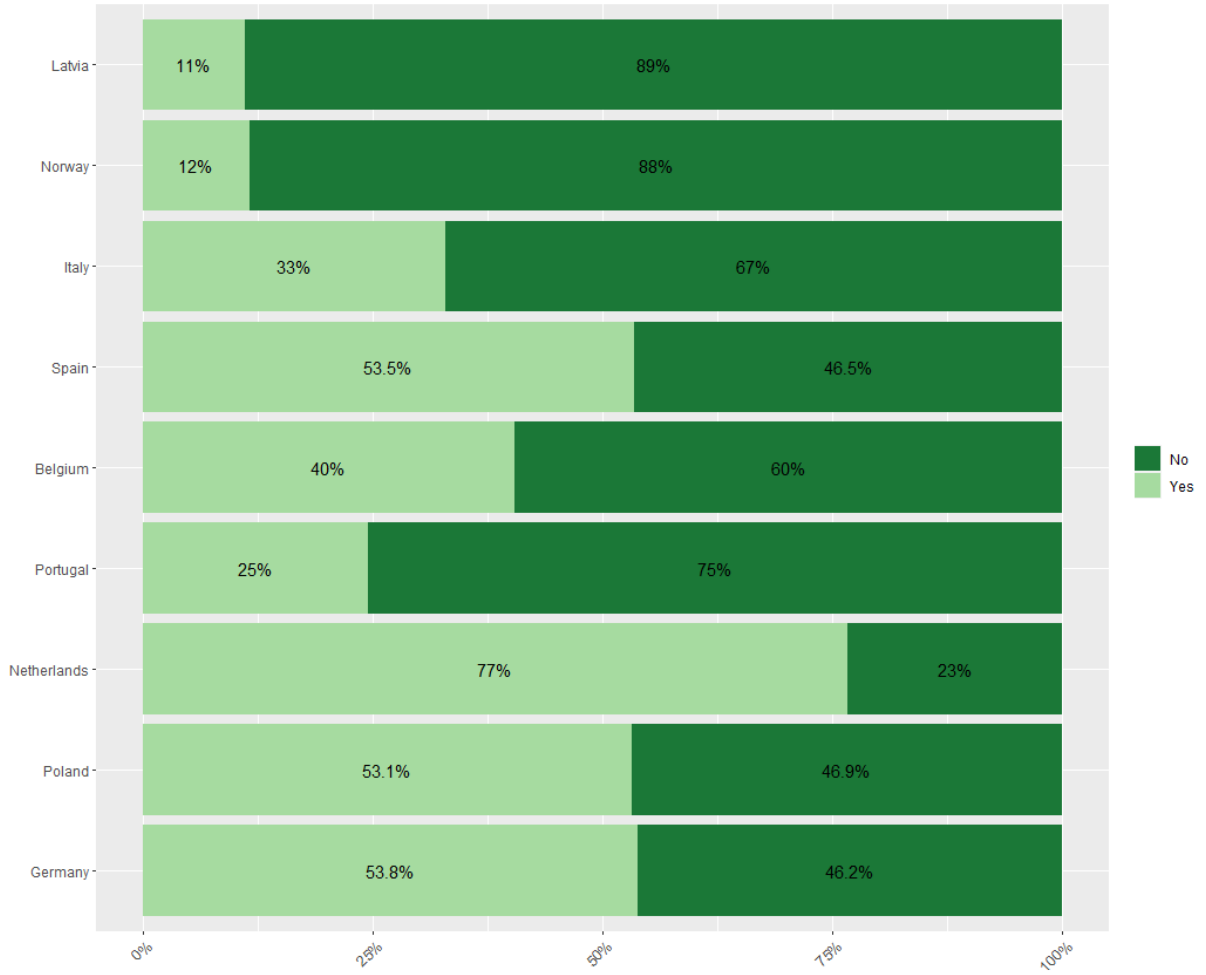



*Figure 4 - Responses to the question "Are you or the institution you are affiliated with engaged in a renewable energy community?", per country*

The institutional attainment composition of the samples may also explain the observed differences between countries regarding affiliation with RECs. Naturally, countries with a large portion of respondents from energy community/cooperative initiatives tend to have more respondents affiliated with a REC. Portugal's low share of affiliated respondents (27 %) could be due to the large presence of research organisations in the Portuguese sample, and due to the limited development of RECs in the country. The relatively high share of respondents affiliated with RECs in Poland (53 %) is somewhat unexpected, since the provisions for RECs have not been transposed yet in Poland. One explanation could be that the respondents come from the renewable energy industry and thus engage with RECs. Furthermore, the respondents in Poland may have different interpretations of REC as a concept since RECs are a new phenomenon.

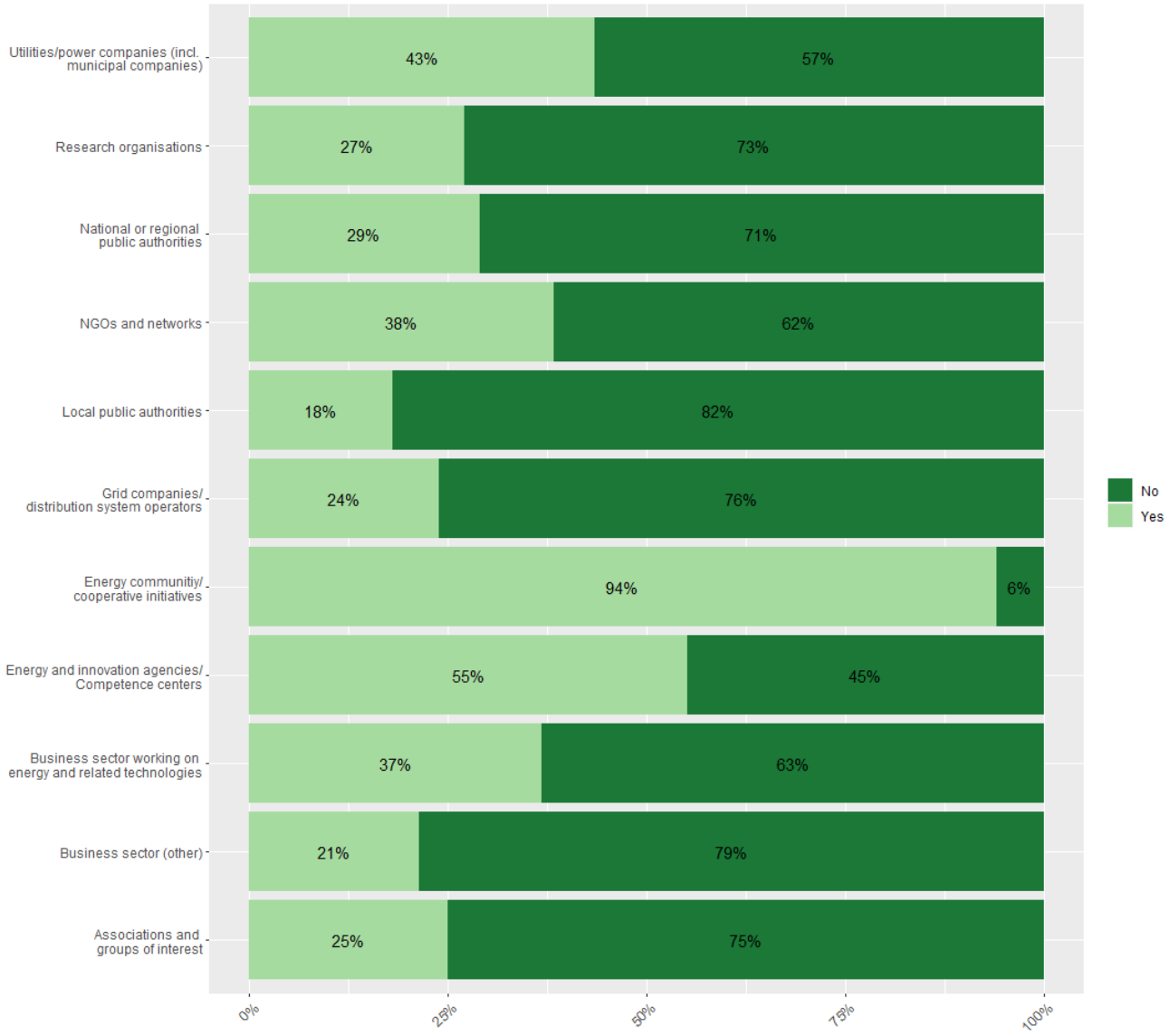



*Figure 5 - Responses to the question "Are you or the institution you are affiliated with engaged in a renewable energy community?", per institution*

The responses on the target region level corresponded with the national level with the exception of Limburg, which had a lower number of respondents affiliated than Belgium in general. The target regions are selected on the basis of low deployment of RECs, so this finding is to be expected.

# 3. Survey Findings

This section presents a descriptive depiction of the survey results. The results include all respondents outlined above in section 2.2. We have included all responses from those who agreed to participated in the survey, also those who did not complete the full survey.

## 3.1 Attitudes: The role of RECs in the energy transition

In this section, we asked the respondents the following question (question 5): “Do you think renewable community energy will play an important role in the energy transition towards low-carbon society?” The respondents were given a list of interrelated statements they could rate from highly important to not important. These statements refer to RECs’ contribution to avoid costs of grid expansion, increased RES in the national energy mix and flexibility in the energy systems, as well as attitudes towards RECs only playing a minor role in the energy transition through nudging consumer behaviour and that governments should focus on large scale RES energy infrastructure in the energy transition. The statements build on previous research in the COME RES project and dimensions discussed among stakeholders (Standal et al. 2022).

In general respondents think that RECs will play an important role in the energy transition, meaning that more than 70 % agreed or highly agreed to the first four statements. This is not surprising, as the survey participants were mostly recruited from stakeholders with a supportive attitude towards RECs. In some contexts such as Germany there are groups in society that are actively opposing RECs and RES (see Standal et al. 2021 for an elaboration). Consistent with the reactions to the rest of the statements, few respondents believe RECs will only play a minor role in the transition. However, more respondents agree that governments should focus on large scale RES energy infrastructure in the energy transition. Some respondents might not see these statements as juxtaposed (RECs play an important role, but governments should prioritise large scale RES) depending on their view of how governments should prioritise their efforts to enable a low-carbon energy transition.


*Figure 6 - Responses to the question "Do you think renewable community energy will play an important role in the energy transition towards low-carbon society?"*

At the country level, the Netherlands and Belgium stand out as respondents are somewhat less positive than the respondents in the other countries, as fewer respondents disagree or highly disagree that RECs will play only a minor role and more agree or highly agree with this statement. Among the respondents from the Netherlands, no one disagrees with the statement that the main focus of the government should be a shift towards renewables in large scale energy infrastructure. This could be seen as inconsistent with the relatively high share of respondents (over 60 %) who agree that RECs will play an important role, but as mentioned above, this depends on the respondents view of governments role in enabling RECs. In Italy and Poland, less than 21 % agree that RECs will only play a minor role, but the majority agrees that the main focus of the government should be a large scale transition. In Latvia there is a

relatively large share of respondents that has answered neutral regarding the role of RECs, which could be explained by the low experience with RECs.

Furthermore, we observe that in countries where RECs are less developed, as Norway, Portugal, Poland and Spain, more than 56 % of respondents disagree with the statement that RECs will only play a minor role and more than 35 % respondents disagree with the statement that the main focus of governments should be a shift towards large-scale RES.


*Figure 7 - Responses to the question "Do you think renewable community energy will play an important role in the energy transition towards low-carbon society?", per country*

## 3.2 Relevant legal forms for renewable energy communities

In this section, we asked the respondents the following question (question 6): "What legal form do you consider the most relevant for community energy initiatives in your local area?" The respondents were given a list of legal forms they could rate from highly important to not important.

Many different legal forms are considered most relevant by the respondents. Energy cooperatives are considered most relevant legal forms for community energy initiatives by more than 80 % of the respondents. Limited partnerships, meaning partnership with limited companies, seem to be considered as the least relevant legal form. Public-private partnerships, public-owned utility companies, non-profit customer-owned enterprises, housing associations and associations are considered relevant by a majority of the respondents.


*Figure 8 - Responses to the question "What legal form do you consider the most relevant for community energy initiatives in your local area?"*

On the country level housing associations and associations in general are important in most countries, with the exceptions of Italy and the Netherlands where they seem to play a relatively smaller role (less than 34 % deem them most relevant). Norway is the only country where housing associations are considered the most important legal form. Norway further stands out as the only country where a majority of respondents consider limited partnerships to be one of the most relevant legal forms. Energy cooperatives are considered more important in the countries that already have experience with energy cooperatives such as Germany, Belgium and the Netherlands.

There is also quite some variation in the perception of the relevance of community trusts and foundations. More than 54 % of the respondents deem these legal forms relevant in countries such as Latvia and Portugal, as opposed to Norway, Italy and Spain where less than 32 % of the respondents have marked them as most relevant.


*Figure 9 - Responses to the question "What legal form do you consider the most relevant for community energy initiatives in your local area?", per country*

On the target region level, there is a considerable difference in the responses between the target region and country level for Belgium. There is also a notable difference between Spain and the target regions of the Balearic and Canary Islands. These results must be read with caution as the sample of respondents from some target regions are too low for generalisations.


*Figure 10 - Responses to the question "What legal form do you consider the most relevant for community energy initiatives in your local area?", per target region level*

At the institutional level, there is little variation in opinions about relevant legal forms. The majority of respondents from all institutional groups considers limited partnerships and community trusts and foundations as less relevant. It might be noted in addition that the business sector working on energy and related technologies see energy cooperatives as very important compared to other forms. The respondents representing energy community/cooperative initiatives assign low relevance to housing associations.


*Figure 11 - Responses to the question "What legal form do you consider the most relevant for community energy initiatives in your local area?", per type of institution*

An overview of the open-ended responses is given in the appendix of this report.

## 3.3 Relevant actors for participation in RECs

In this section, we asked the respondents the following question (question 8): "What actors do you think will find it most relevant to participate in renewable energy communities?" The respondents were given a list of actors they could rate from highly important to not important. Overall, respondents' rate that all mentioned actors will find it relevant or highly relevant to participate in RECs. Citizens (in the capacity of civil society groups and neighbourhoods or housing associations) together with local authorities (municipalities, parishes etc.) are deemed as the most relevant actors by the respondents. Next, small and medium enterprises are considered most relevant. This is in line with REDII's definition of REC shareholders to be natural persons, local authorities, and small and medium enterprises. Grid

companies and farmers are seen as least relevant, but still considered important or highly important by many respondents.

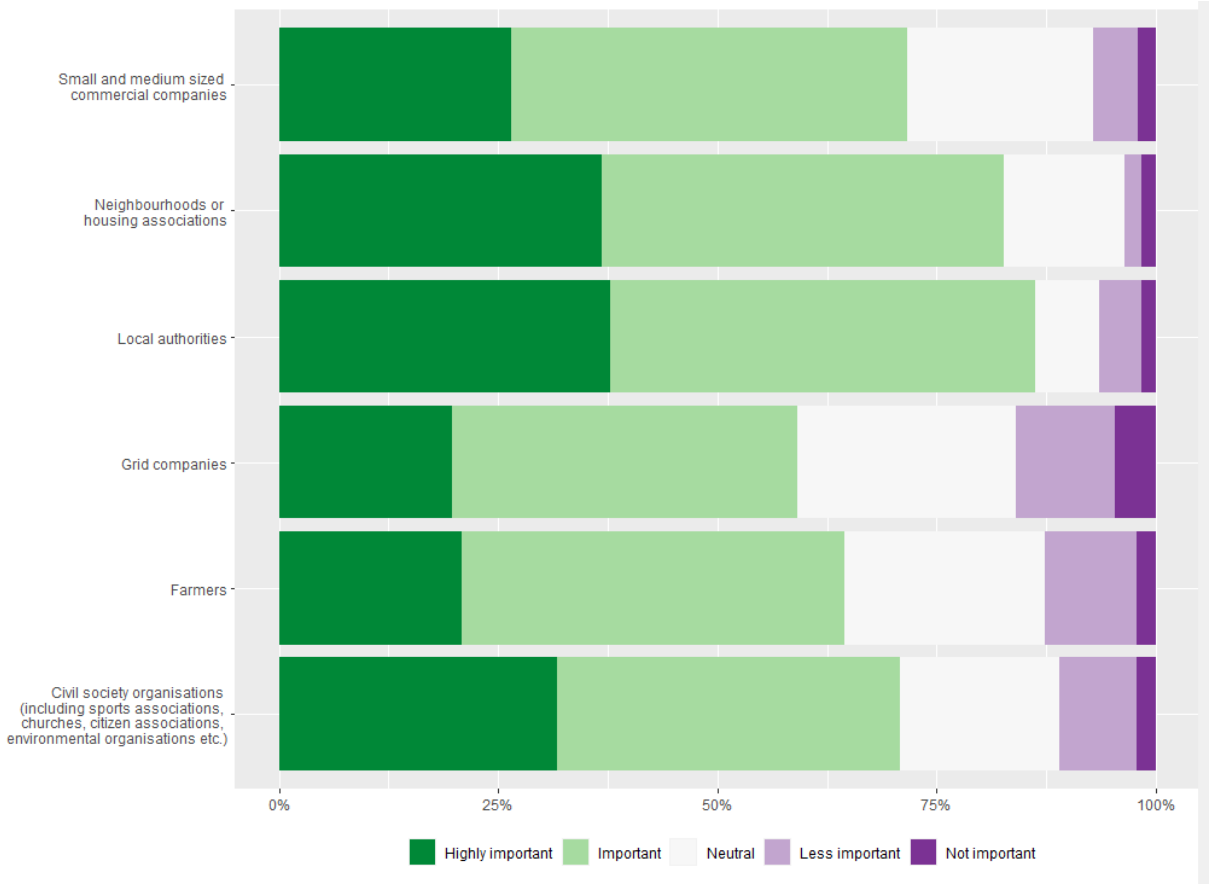



*Figure 12 - Responses to the question "What actors do you think will find it most relevant to participate in renewable energy communities?"*

On the country level, grid companies are the actors for which the perceived relevance varies the most between the countries, from around 90 % of the respondents considering these actors important or highly important in Poland, to less than 40 % in Germany. The lower score for grid companies could be due the definition of RECs in REDII that excludes grid companies from being shareholders or having effective control. For countries that have experience with RECs and have transposed and implemented REDII, grid companies may thus be seen as less relevant (only considered relevant for cooperation regarding technical issues etc.). In Norway there is a higher scepticism towards civil society groups as relevant actors for RECs, while neighbourhoods/housing associations and farmers are considered most relevant. The regulations for sharing self-produced electricity in Norway currently hinder many actors from becoming RECs, but new regulations planned to be implemented by the end of 2022 will allow for electricity sharing between households in condominiums (Standal et al. 2022, GoN 2021, 2022). At the same time there is a political focus on measures to reduce greenhouse gas (GHG) emissions in the farming sector that will make local, renewable energy production more relevant.

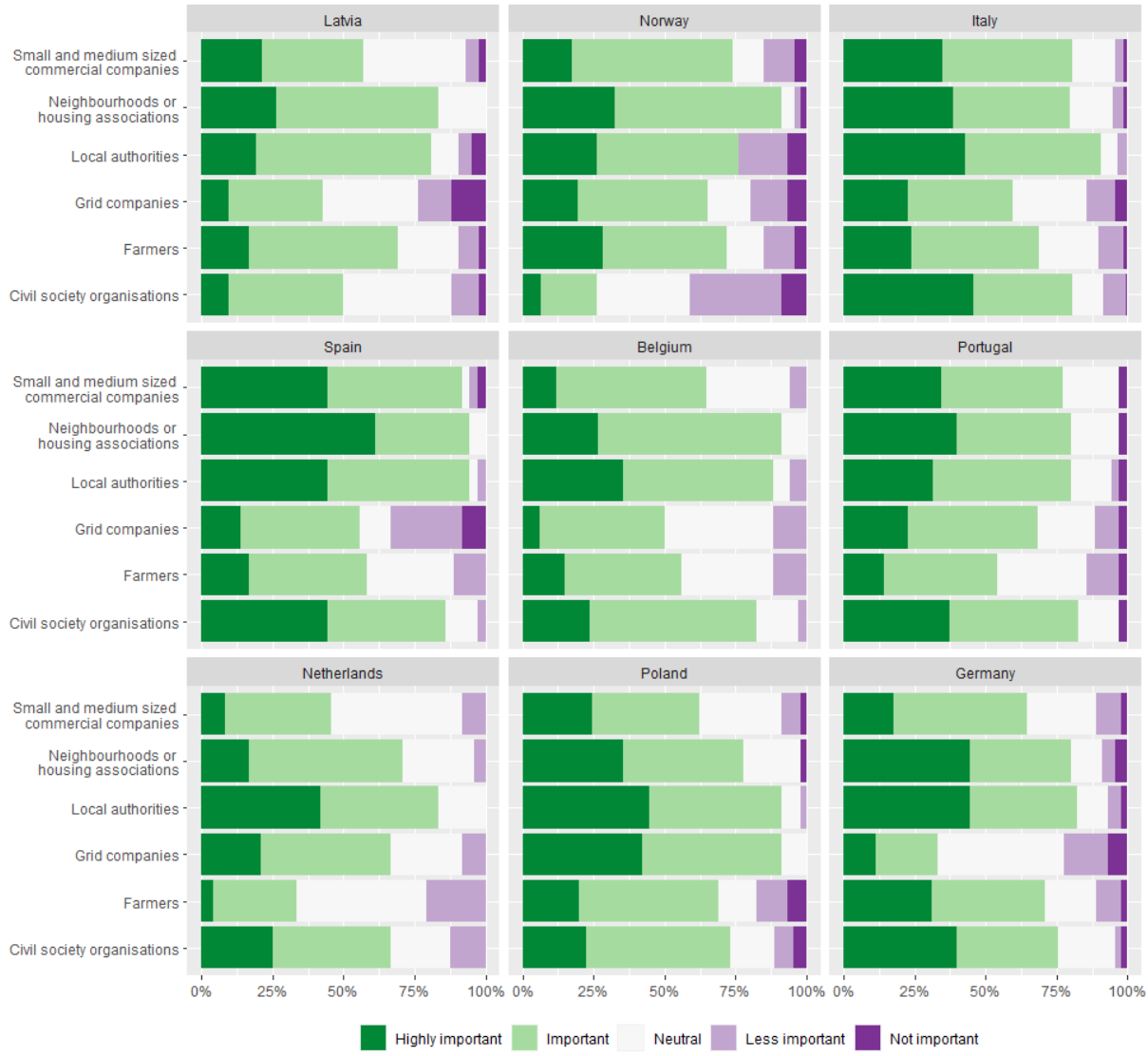



*Figure 13 - Responses to the question "What actors do you think will find it most relevant to participate in renewable energy communities?", per country*

On the target region level the results differ somewhat from country level. In the Balearic Islands more respondents find grid companies and farmers to be less relevant or irrelevant actors for RECs than in the Canary Islands and Spain in general. There are also differences between the national level and the target regions of Belgium, the Netherlands, Germany and Portugal. These results must be read with caution as the sample of respondents from some target regions is too low for generalisations.


*Figure 14 - Responses to the question "What actors do you think will find it most relevant to participate in renewable energy communities?", per target region*

An overview of open-ended responses is given in the appendix of this report.

## 3.4 Promising fields for REC initiatives

In this section, we asked the respondents the following question (question 7): "In what fields do you think renewable energy community initiatives will be most relevant or promising?" The respondents were given a list of sectors and fields for energy use (transport, farming, electricity production etc.) relevant to RECs that they could rate from highly important to not important.

All fields mentioned in the survey are considered relevant or promising for RECs by the respondents, meaning that more than 50 % of the respondents consider them to be important or highly important. This is not surprising as the respondents generally have a very positive stance towards RECs, as we could see from the responses to the question on RECs' role in the energy transition. However, electricity generation is considered as the most important field, and farming is considered as the least important.

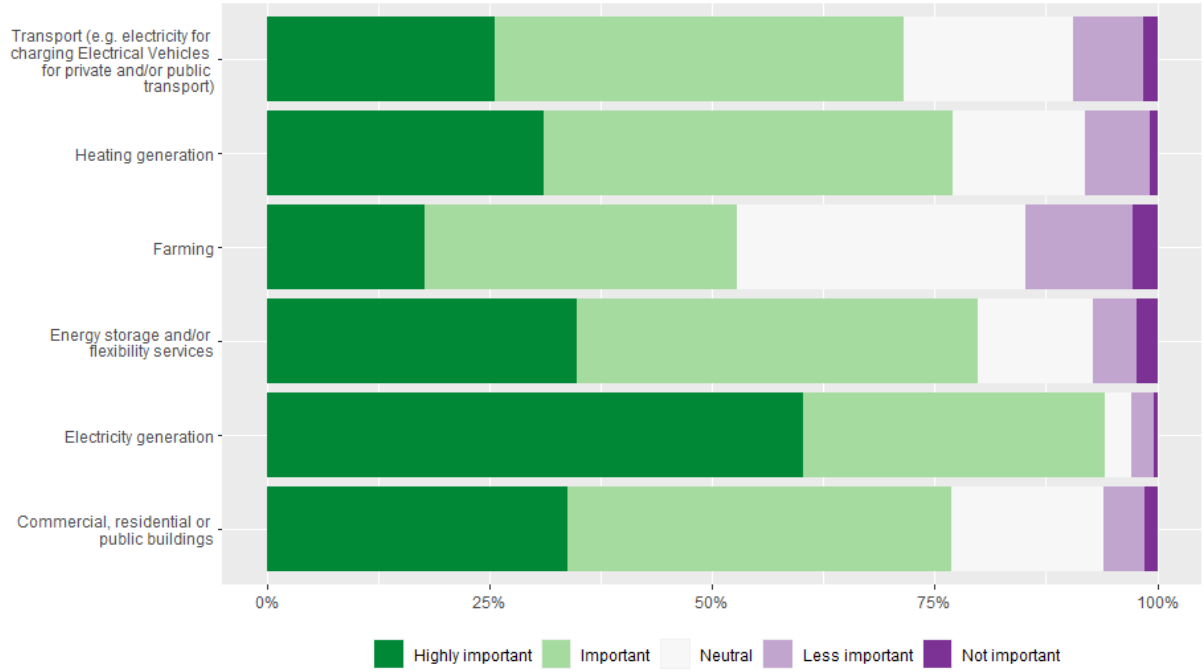



*Figure 15 - Responses to the question "In what fields do you think renewable energy community initiatives will be most relevant or promising?"*

On the country level, all listed fields are seen as relevant. The Polish respondents stand, as more than 80 % of the respondents consider farming to be important or highly important. Currently, Poland is implementing legislation for energy cooperatives that is addressed to farmers, which may explain the results. The importance of commercial, residential or public buildings varies between countries. In Norway, this is considered the most important field, which is consistent with housing associations (e.g. rooftop solar) being considered the most important legal forms for community energy initiatives.


*Figure 16 - "In what fields do you think renewable energy community initiatives will be most relevant or promising?", per country*

On a target region level the results differ somewhat from country level. In the Balearic Islands heating, farming and energy storage and flexibility services are considered of different relevance than in the Canary Islands and Spain in general. There are also differences between Belgium, West-Flanders and Limburg and Netherlands and North-Brabant. There are also slight differences between Germany and Thuringia. These results must be read with caution as the sample of respondents from some target regions is too low for generalisations.


*Figure 17 - "In what fields do you think renewable energy community initiatives will be most relevant or promising?", per target region*

An overview of open-ended responses is given in the appendix of this report.

## 3.5 Relevant technologies for REC initiatives

In this section, we asked the respondents the following question (question 9): “What technologies do you consider most relevant for renewable energy community initiatives (electricity production and heating)?” The respondents were given a list of technologies they could rate from highly important to not important.

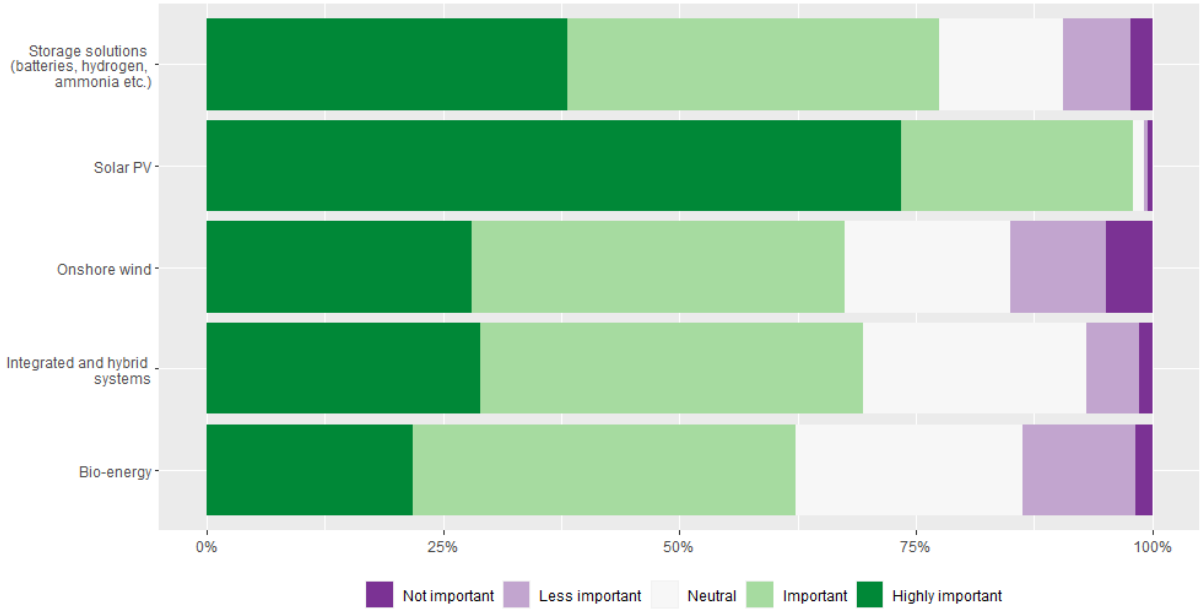



*Figure 18 - Responses to the question “What technologies do you consider most relevant for renewable energy community initiatives (electricity production and heating)?”*

Respondents in all countries consider Solar PV to be the most relevant technology for REC initiatives. Storage solutions (like batteries, hydrogen, ammonia etc.) are also deemed relevant by more than 50 % of respondents in all countries.


*Figure 19 - Responses to the question "What technologies do you consider most relevant for renewable energy community initiatives (electricity production and heating)?", per country*

On the country level, there are relatively large differences in the perception of relevance of some of the technologies, notably onshore wind and bioenergy. In Poland, bioenergy is considered highly important by more than half of the respondents, and important by another 25 %. It is also deemed an important technology by more than 50 % of respondents in Norway, Germany, Latvia, Italy, Portugal and Spain (except the Balearic region). In Poland, Latvia and to some extent Norway biomass is widely utilised for heat production. On the other hand, less than 35 % of the respondents consider it a relevant technology in Belgium and the Netherlands. This could partly be explained by the available resources in the observed countries. As an example, though Norway's electricity system is almost exclusively derived from hydropower (and a small share of onshore wind) the country has vast resources within forestry. The differences concerning onshore wind can perhaps be better explained by social acceptance. In several countries there has been a notable resistance towards onshore wind power developments (Standal et al. 2021, Leiren et al. 2020). Further, in Poland and Norway the legal and regulatory framework has made it impossible to develop new onshore wind. This is about to change in Norway and it is again open for actors to apply for a license for onshore wind projects (Krug et al. 2022).

On the target region level, there are noticable differences between the national level and the target regions of the Balearic Islands (Spain) and West-Flanders (Belgium). Interestingly, the respondents of the Balearic Islands rate the importance of storage technologies lower than average, as well as see bioenergy as less important than average. There are also differences between national level and the target regions North-Brabant (Netherlands) and Norte (Portugal). These results must be read with caution as the sample of respondents from some target regions is too low for generalisations.


*Figure 20 - Responses to the question "What technologies do you consider most relevant for renewable energy community initiatives (electricity production and heating)?", per target region*

An overview of open-ended responses is given in the appendix of this report.

## 3.6 Main barriers for RECs

In this section, we asked the respondents the following question (question 12): “What do you see as the main barriers for renewable energy community development in your local area?” The respondents were given a list of barriers they could rate from highly important to not important. These barriers were based on COME RES project findings (Standal et al. 2022).

All the barriers for RECs listed in the question were considered important by more than 60 % of the respondents. Administrative burdens in the form of regulations and lack of clear and adequate legislation are considered the most important barriers. This supports the results concerning the question on support measures needed for promoting REC development, which is discussed in 2.9 and 2.10.


*Figure 21 - Responses to the question “What do you see as the main barriers for renewable energy community development in your local area?”*

On the country level, lack of network and knowledge is considered less important by respondents from Belgium, Italy, the Netherlands, Norway and Germany compared to the rest of the countries. In some of these countries this can be partly explained by the active federation of energy cooperatives on national

or local level (e.g. Belgium and Netherlands). In Norway decentralised energy systems are often involved in government supported research and development and thus engage in knowledge exchange and knowledge production. However, lack of networks and knowledge exchange are described as a considerable barrier by many stakeholders in previous research on Latvia, Norway, Poland, Portugal and Spain (Standal et al. 2022).

Lack of acceptance for cooperative models and joint investments also vary considerably between countries. This aspect is seen as of less importance in Norway, Belgium, the Netherlands and especially Germany. Lack of awareness of the REC model is reported as less important in Latvia, Norway, Belgium, the Netherlands, and Germany. This is an unexpected result compared to previous research (Standal et al. 2022) and the fact that the implementation of REDII and enabling frameworks for RECs have the least progress in Norway, Latvia (and Poland).

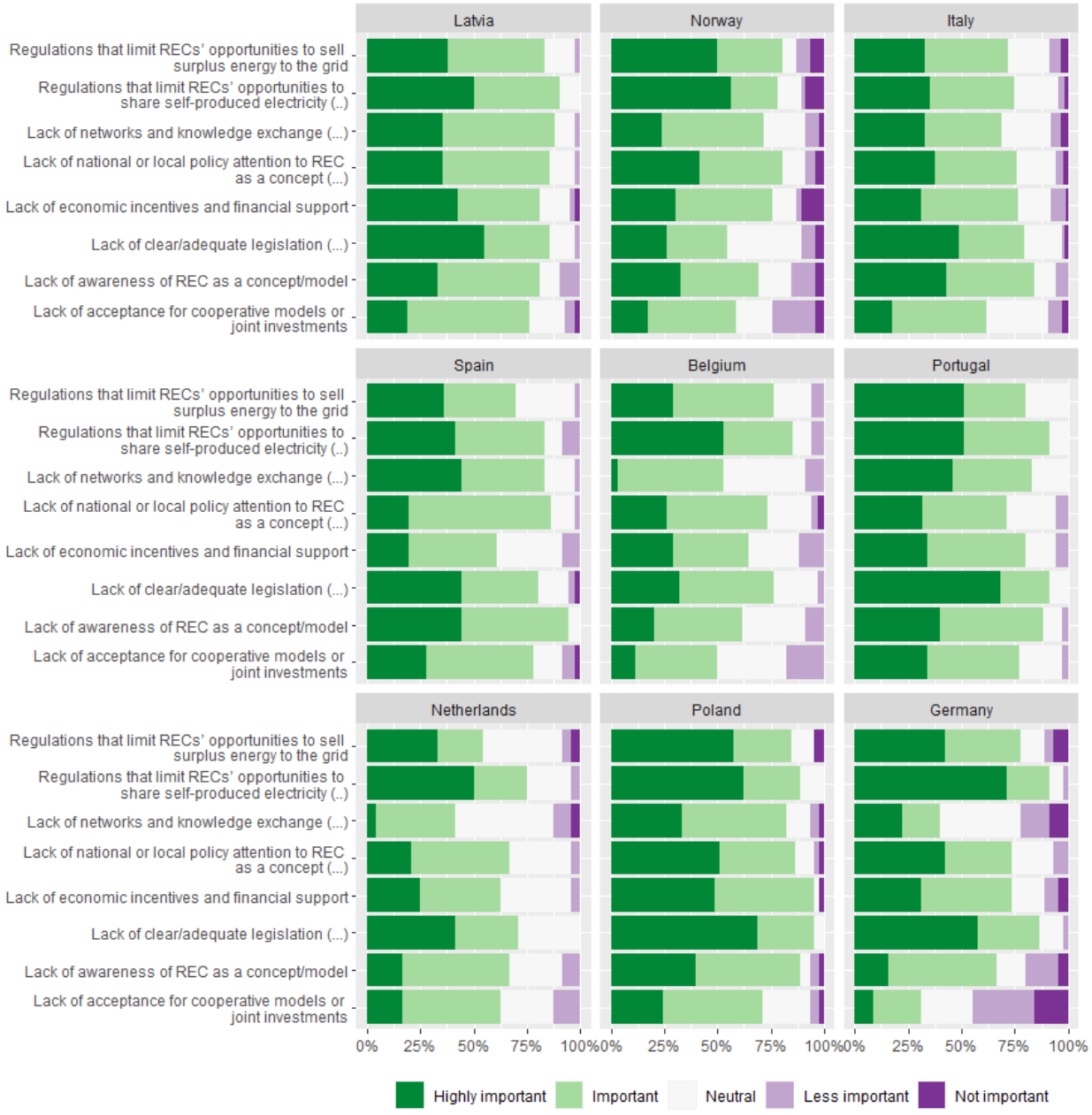



*Figure 22 - Responses to the question "What do you see as the main barriers for renewable energy community development in your local area?", per country*

On the target region level there is considerable difference concerning lack of acceptance for cooperative models and joint investments and awareness of REC in North-Brabant and the Netherlands in general. The lack of clear legislation is also seen as less important in the Balearic and Canary Islands than Spain in general. These results must be read with caution as the sample of respondents from some target regions is too low for generalisations.

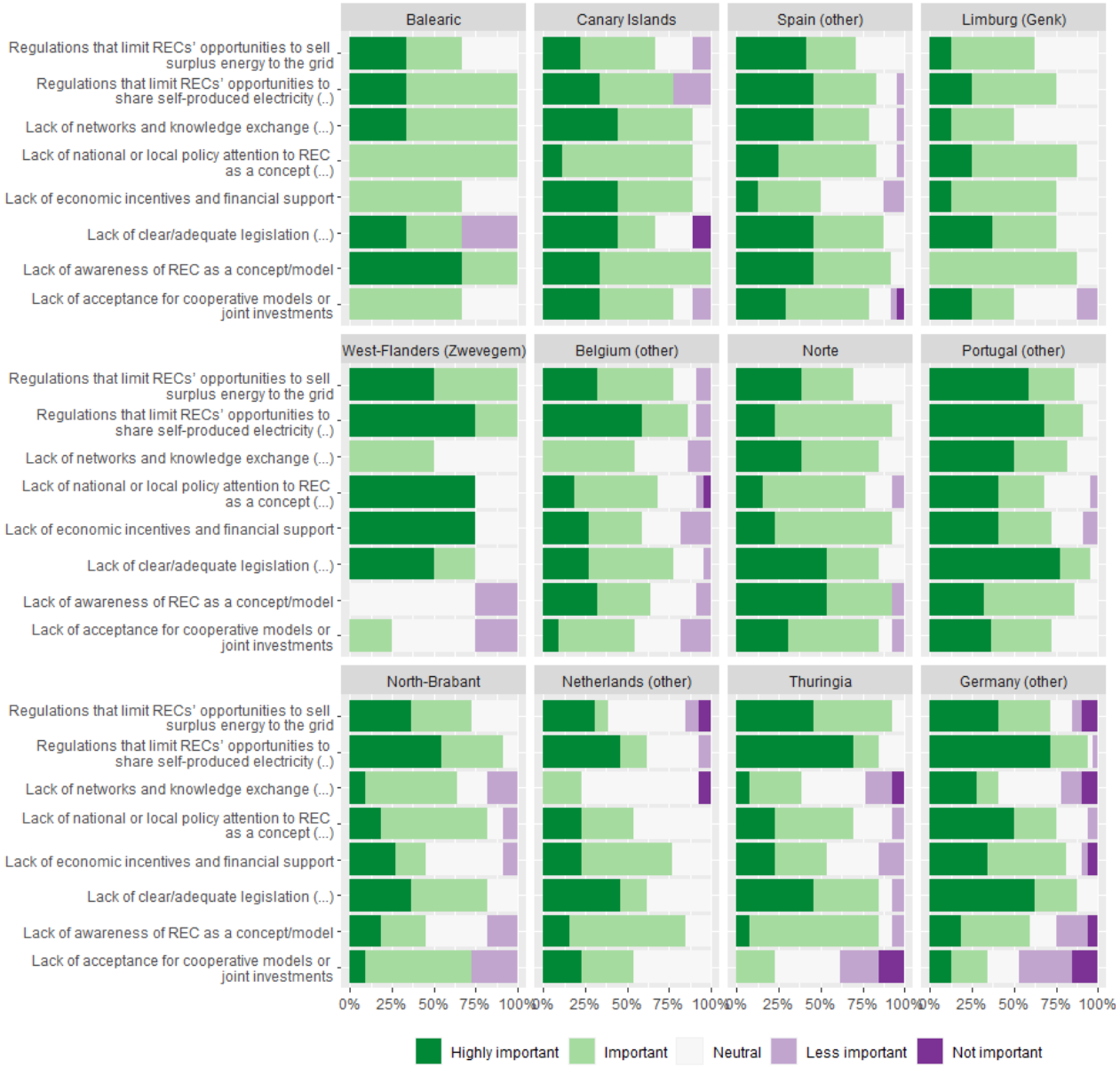



*Figure 23 - Responses to the question "What do you see as the main barriers for renewable energy community development in your local area?", per target region*

We did not find any noticable differences in the responses when seperating respondents according to affiliation with RECs.


*Figure 24 - Responses to "What do you see as the main barriers for renewable energy community development in your local area?", distributed between actors affiliated with RECs or not*

An overview of open-ended responses is given in the appendix of this report.

## 3.7 Facilitation of REC development

In this section, we asked the respondents the following question (question 10): "What aspects do you think are most needed to facilitate the development of renewable energy communities in your local area?" The respondents were presented with facilitation aspects they could rate from highly important to not important.

Most of the mentioned aspects for facilitating the development of renewable energy communities are deemed important or highly important by the respondents. Overall, regulations that allow energy transfers/sharing within the energy community are considered important with a particularly high share

of respondents (more than 92 %), along with access to adequate information for those interested (90 %), regulations that defines RECs' rights to become suppliers or producers that sell surplus electricity to the grid (90 %) and national or regional government support to local authorities concerning regulatory issues and opportunities for direct participation in community energy (89 %).

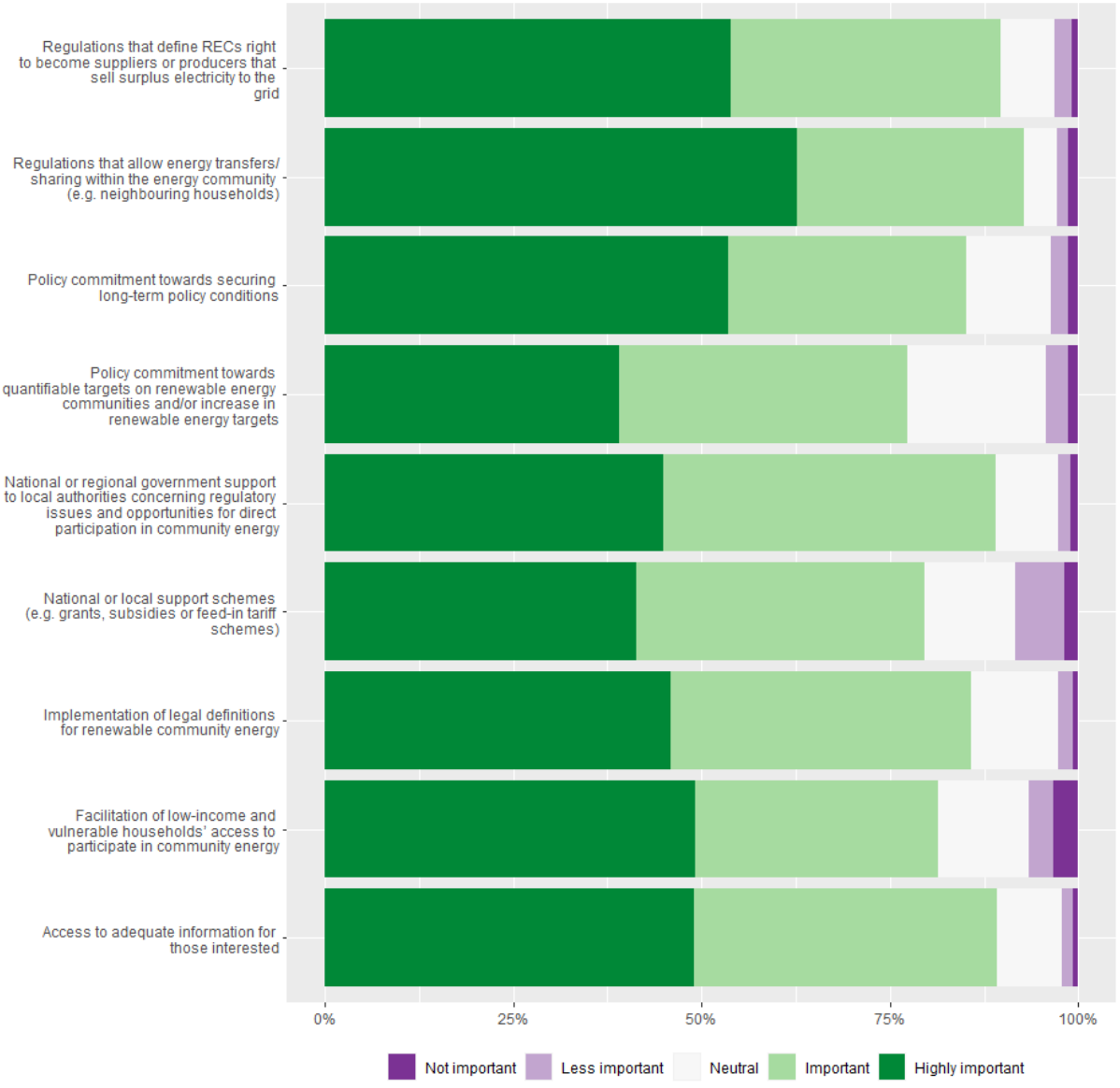



*Figure 25 - Responses to the question "What aspects do you think are most need to facilitate the development of renewable energy communities in your local area?"*

On the country level, there is little variation in the aspects that are seen as important or highly important. In Norway, facilitation of low-income households' access to participate in community energy are seen as important or highly important by 61 % of the respondents, compared to the total sample average of 81 %. This could partly be explained by the strong support of the existing centralised system and faith in market mechanism (Standal and Feenstra 2022). Also in Belgium, national or local support schemes are seen as important or highly important by 56 % of the respondents, lower than the total sample average of 80 %.

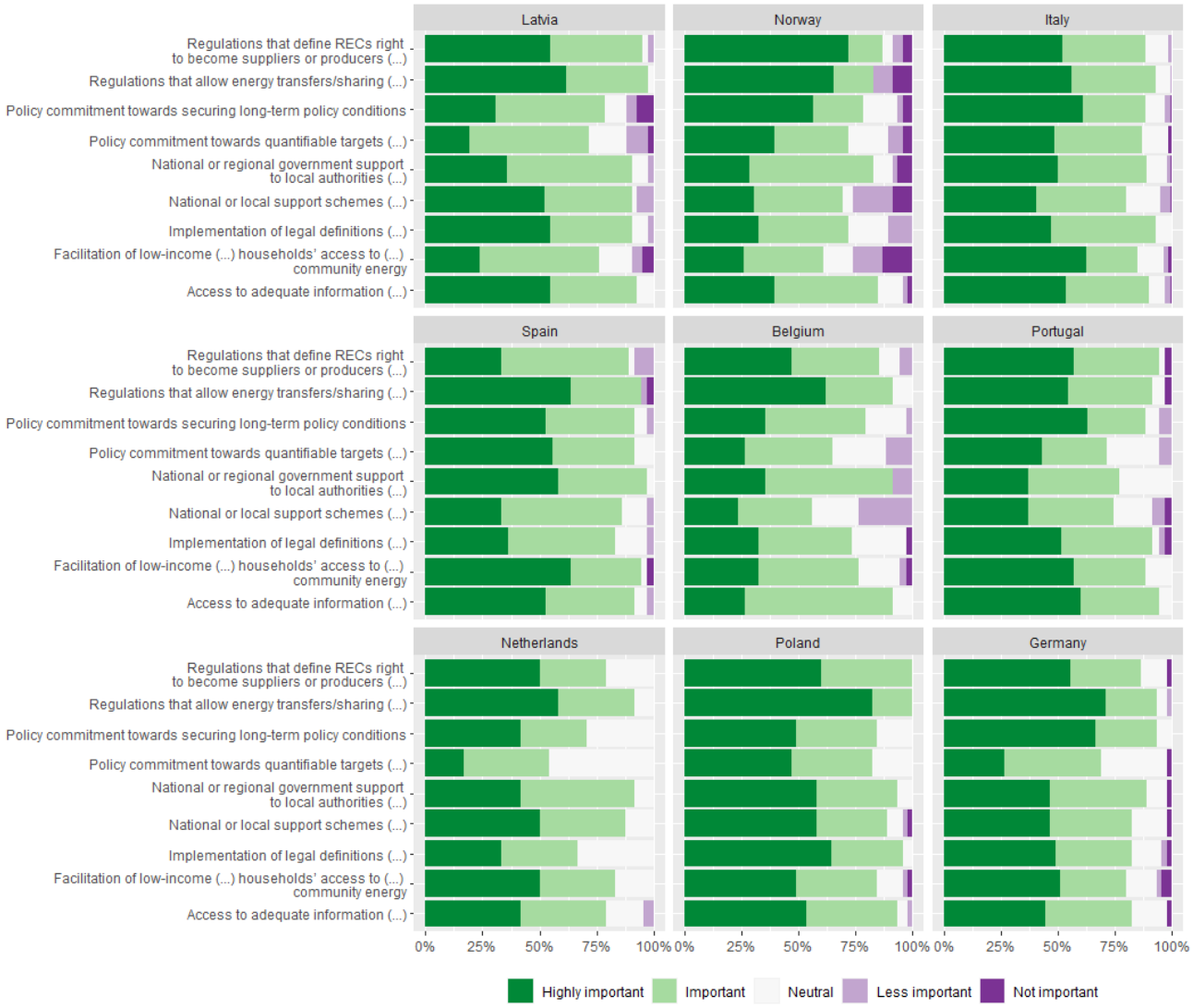



*Figure 26 - Responses to the question "What aspects do you think are most need to facilitate the development of renewable energy communities in your local area?", per country*

On the target region level, there are only slight differences from the national level.

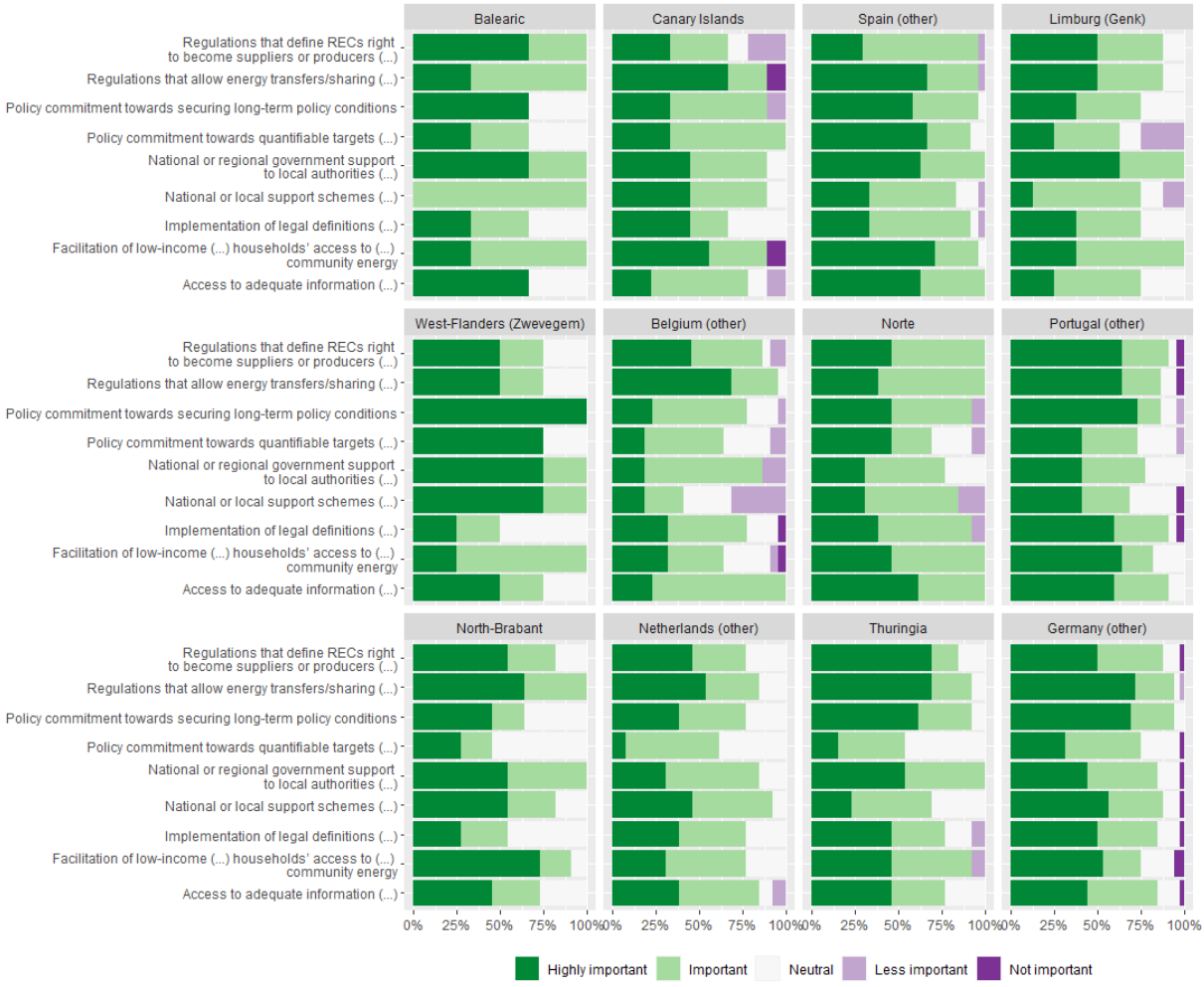



*Figure 27 - Responses to the question "What aspects do you think are most need to facilitate the development of renewable energy communities in your local area?", per target region*

On the institutional level we find that grid companies/distribution system operators and utilities/power companies (including municipal utilities companies) have a higher number of respondents that see the listed aspects as less important or not. Especially, towards national and local support schemes and quantifiable political targets. This result can be explained by the fact that a transition towards decentralised energy forms, such as community energy, will require additional work and investments for grid companies, while the income of grid companies might decrease (as prosumers pay less taxes and fees due to self-consumption).


*Figure 28 - Responses to the question "What aspects do you think are most need to facilitate the development of renewable energy communities in your local area?", per type of institution*

An overview of open-ended responses is given in the appendix of this report. Some additional aspects that were mentioned related to increasing knowledge on RECs in local authorities, reconsideration of grid tariffs as well as platforms for smart energy sharing (e.g. virtual metering), and removal of fossil fuel subsidies.

## 3.8 Support measures for REC development

In this section, we asked the respondents the following question (question 11): “What kind of support do you think is most suited for promoting renewable energy community development?” The respondents were presented with a list of support measures they could rate from highly important to not important.

Consistent with the responses to the previous question on facilitation aspects (cf. 2.9), reducing the administrative/bureaucratic burdens (e.g. simplification of administrative procedures) is generally considered highly important by the respondents (over 90 % consider it important or highly important). Auction and tenders are deemed least important (29% deem this of less or no importance). Auctions and tenders have been criticised for favouring actors in the energy system that have considerable financial and human capital (Standal et al. 2021) and thus may be seen as challenging for grassroot and local energy forms such as RECs.


*Figure 29 - Responses to the question "What kind of support do you think is most suited for promoting renewable energy community development?"*

On the country level, there is some variation, especially in the perception of the importance of feed-in tariffs or renewable certificate schemes, auctions and tenders, and access to specific funding for REC in the operational programmes under the European Structural and Investment Fund (ESIF). Compared to other regions, Poland, Spain, and Portugal have more respondents who think auctions and tenders are important. Still, auction and tenders might currently not be well-known or a viable option for RECs without adjustments that take the specifics of RECs into consideration (as directed in the enabling frameworks for RECs in REDII). Furthermore, access to funding under ESIF is generally important in most regions, but considerably less in Norway and Belgium. Norway is not an EU Member State, but only part of the EU Economic Area. The need for reducing adminstrative burdens is especially

pronounced in Germany and Spain, where 83-87 % of the respondents find this highly important. In this regard, the existence of bureaucratic hurdles and the lengthy response times of local and regional administrations to the official procedures for the creation of energy communities and particularly self-consumption installations have been frequently mentioned as a barrier to REC development in Spain (Standal et al. 2022).

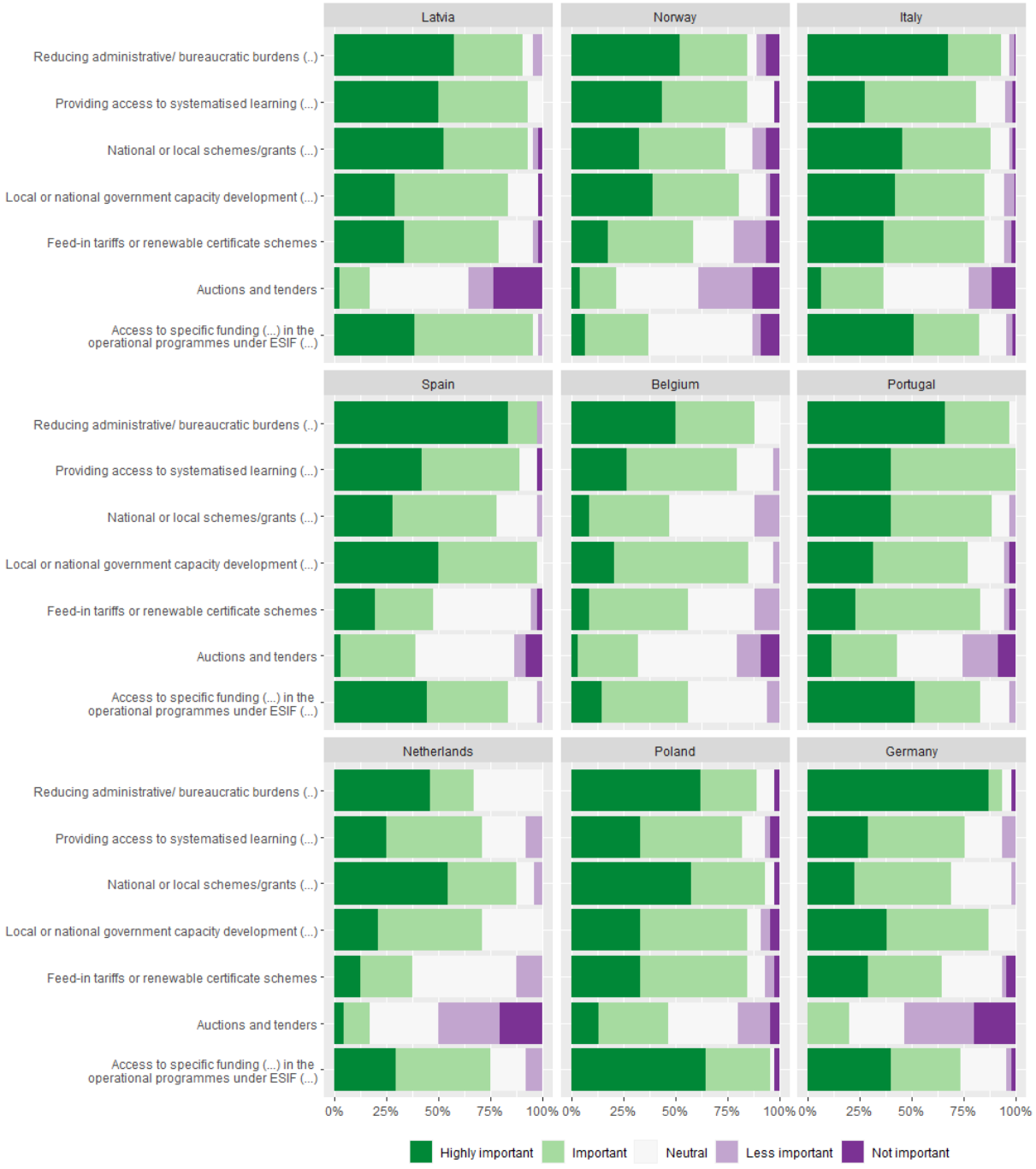



*Figure 30 - Responses to the question "What kind of support do you think is most suited for promoting renewable energy community development?", per country*

On the target region level, we find that auction and tenders are seen as less important or not important to an even higher degree than national level in the Balearic Islands (Spain) and North-Brabant

(Netherlands), while the opposite is the case in Norte (Portugal). There are also slight differences between national and target region level concerning the distribution between what is seen as important and highly important support measures. These results must be read with caution as the sample of respondents from some target regions is too low for generalisations.


*Figure 31 - Responses to the question "What kind of support do you think is most suited for promoting renewable energy community development?", per target region*

Our findings indicate that whether the respondent is affiliated with a REC or not does not affect the results.

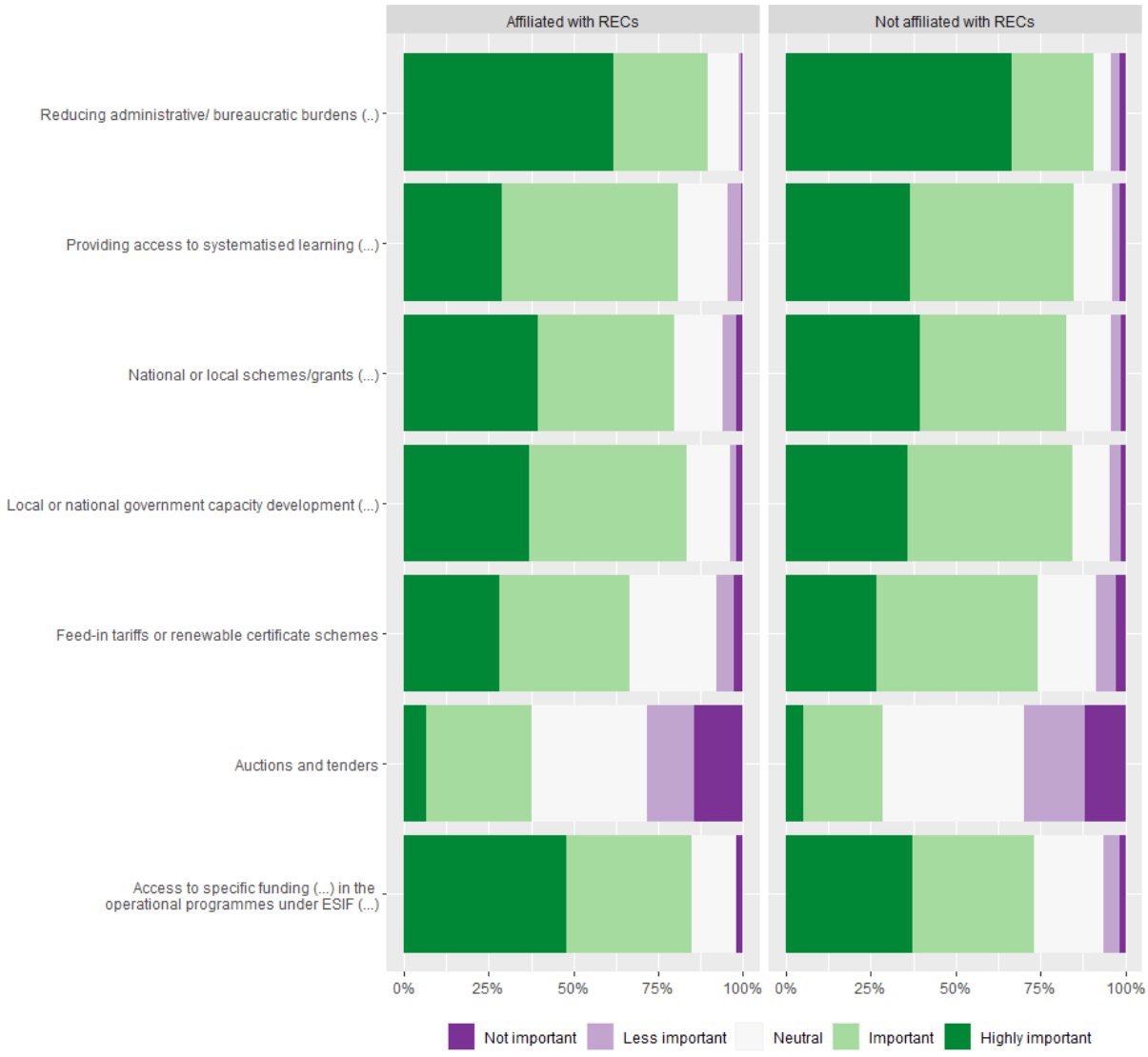



*Figure 32 - Responses to the question "What kind of support do you think is most suited for promoting renewable energy community development?", distributed between respondents affiliated with a REC or not*

An overview of open-ended responses is given in the appendix of this report.

## 3.9 Relevant measures for local authorities

In this section, we asked the respondents the following question (question 13): "What measures do you consider most relevant for local authorities (including municipalities) in order to facilitate for renewable energy community?" The respondents were given a list of measures they could rate from highly important to not important.

All four measures suggested in the survey are deemed important or highly important by more than 70% of the respondents, with local authorities taking an active role in facilitating cooperation between relevant stakeholders such as research institutions, business sector, grid companies, etc. considered as the most important. Setting policy targets and designating suitable land areas for RECs were considered as

somewhat less important. The number of respondents considering the last aspect as less or not important is also higher than for the other measures.

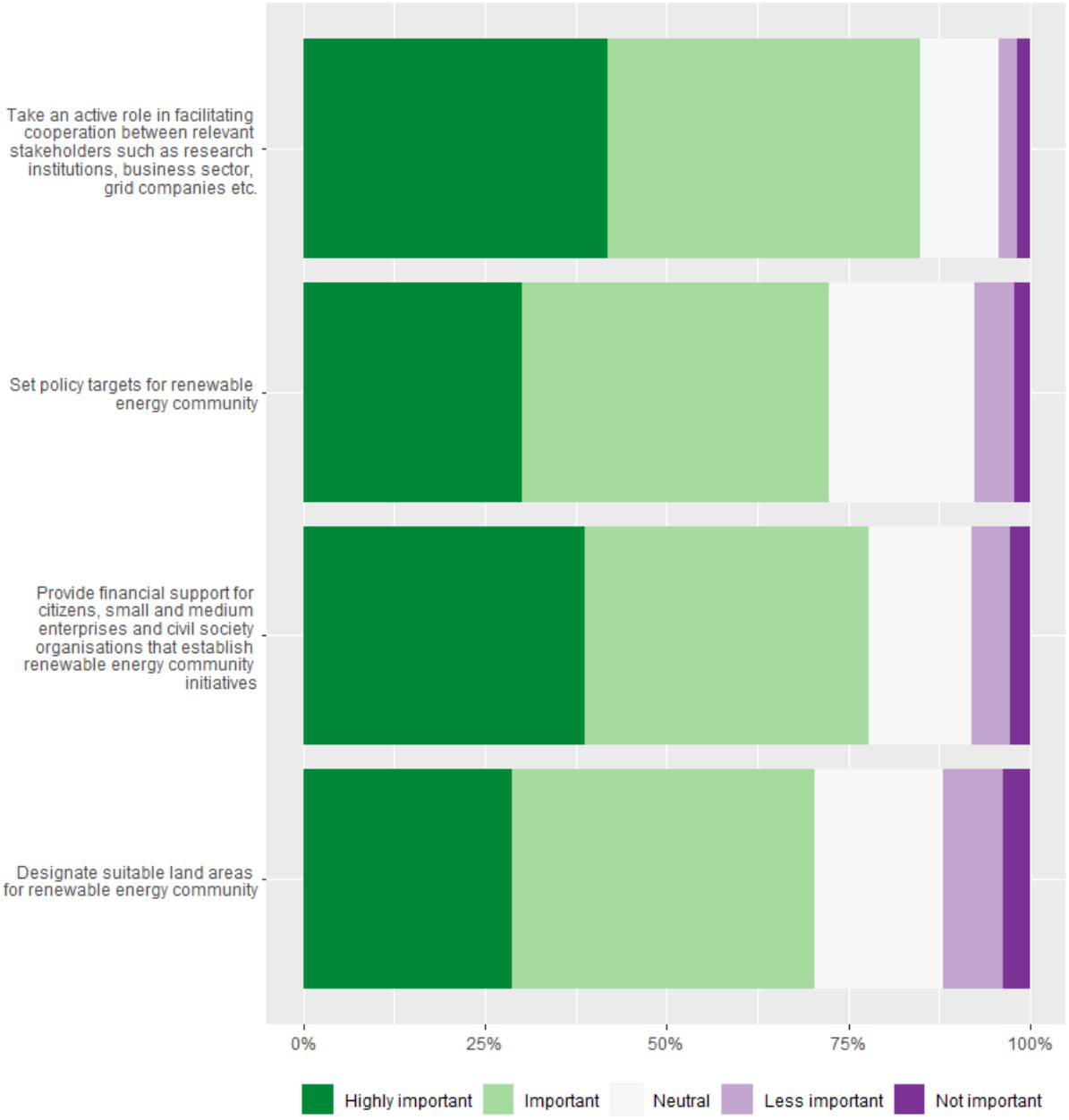



*Figure 33 - Responses to the question "What measures do you consider most relevant for local authorities (including municipalities) in order to facilitate for renewable energy community?"*

On the country level, designation of suitable land areas is considered important or highly important by more than 75 % of the respondents in Germany, Italy, Poland, and the Netherlands. In Belgium, Spain and Norway however, this seems to be less of a priority in the sense that less than 50 % deem this important or highly important. This finding is unexpected since available land area is considered a barrier to fulfil REC potential (Laes et al. 2021). Moreover, the Belgian respondents stand out as being considerably less concerned with financial support than respondents in the other countries.


*Figure 34 - Responses to the question "What measures do you consider most relevant for local authorities (including municipalities) in order to facilitate for renewable energy community?", per country*

On the target region level, it is notable that in the Balearic Islands (Spain) designation of suitable land areas is not considered important to any of the respondents, rather the majority find this to be less important. Balearic Islands and Norte (Portugal) considers that municipalities taking an active role in the facilitating cooperation between stakeholders as more important than respondents in other regions and at country level.


*Figure 35 - Responses to the question "What measures do you consider most relevant for local authorities (including municipalities) in order to facilitate for renewable energy community?", per target region*

An overview of open-ended responses is given in the appendix of this report.

## 3.10 Familiarity with REDII

In this section, we asked the respondents the following question (question 14): "Are you familiar with the recast of the EU Renewable Energy Directive (REDII) and its provisions for Renewable Energy Communities and their capacity to generate, consume, store and sell renewable energy?"

In the sample, around 65 % of respondents are familiar with the REDII. However, there are considerable differences between countries. Less than 50 % are familiar with the Directive in the Netherlands,

Norway, Poland and Portugal, whereas familiarity accounts for more than 75 % in Spain, Germany and Belgium.

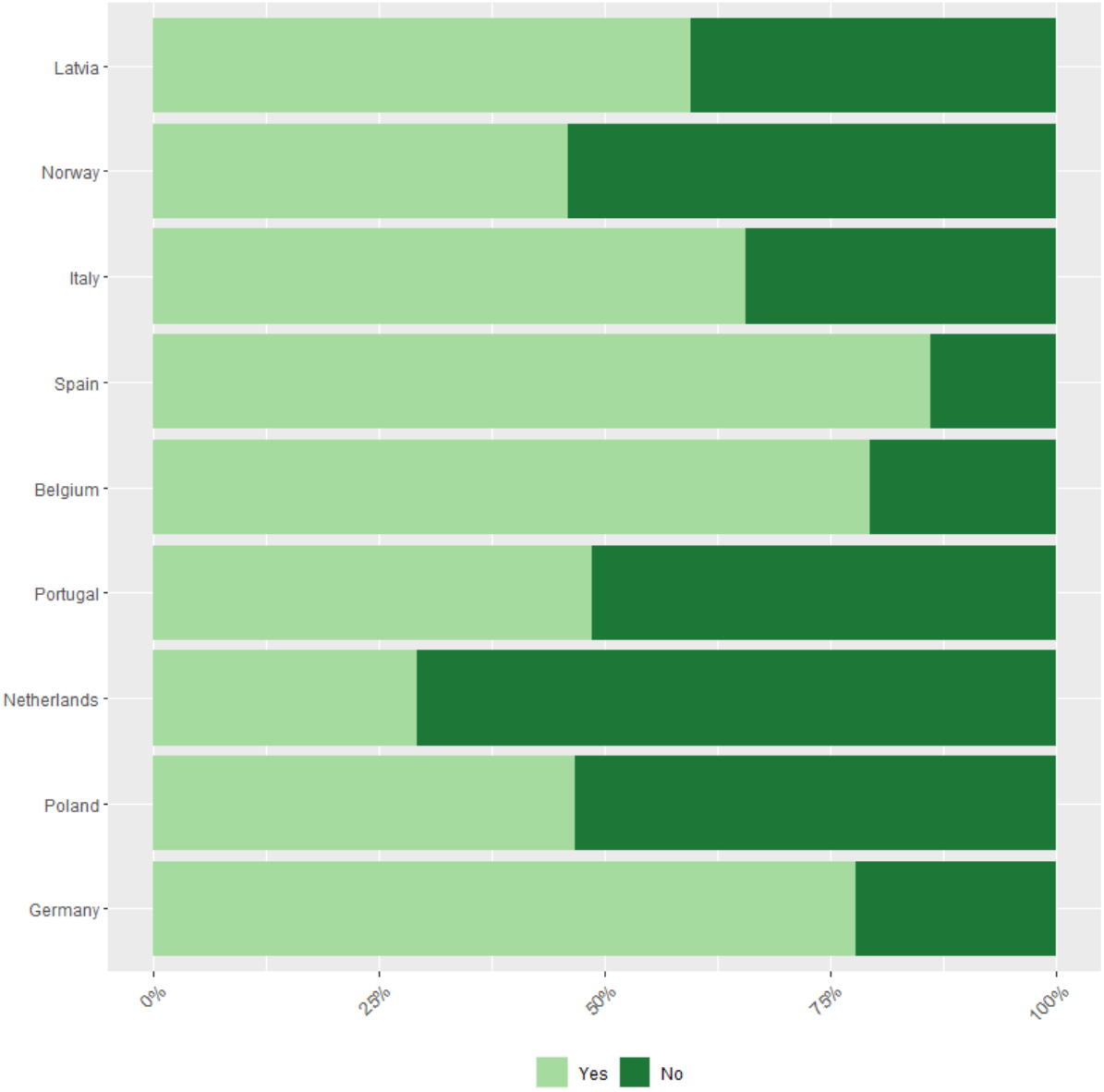



*Figure 36 - Responses to the question "Are you familiar with the EU Renewable Energy Directive (RED II) and its provisions for Renewable Energy Communities and their capacity to generate, consume, store and sell renewable energy?", per country*

Familiarity with REDII can be explained by how far countries have come in the transposition and implementation of REDII, but as shown below, familiarity with REDII also differs across respondents' institutional affiliation. Associations and groups of interest, national, regional or local authorities and the business sector working on energy and related technologies in this sample seem to have more familiarity with REDII and the provisions for RECs. On the other side of the spectrum grid companies, research organisations, NGOS/networks and the general business sector have less familiarity with REDII and provisions for RECs.

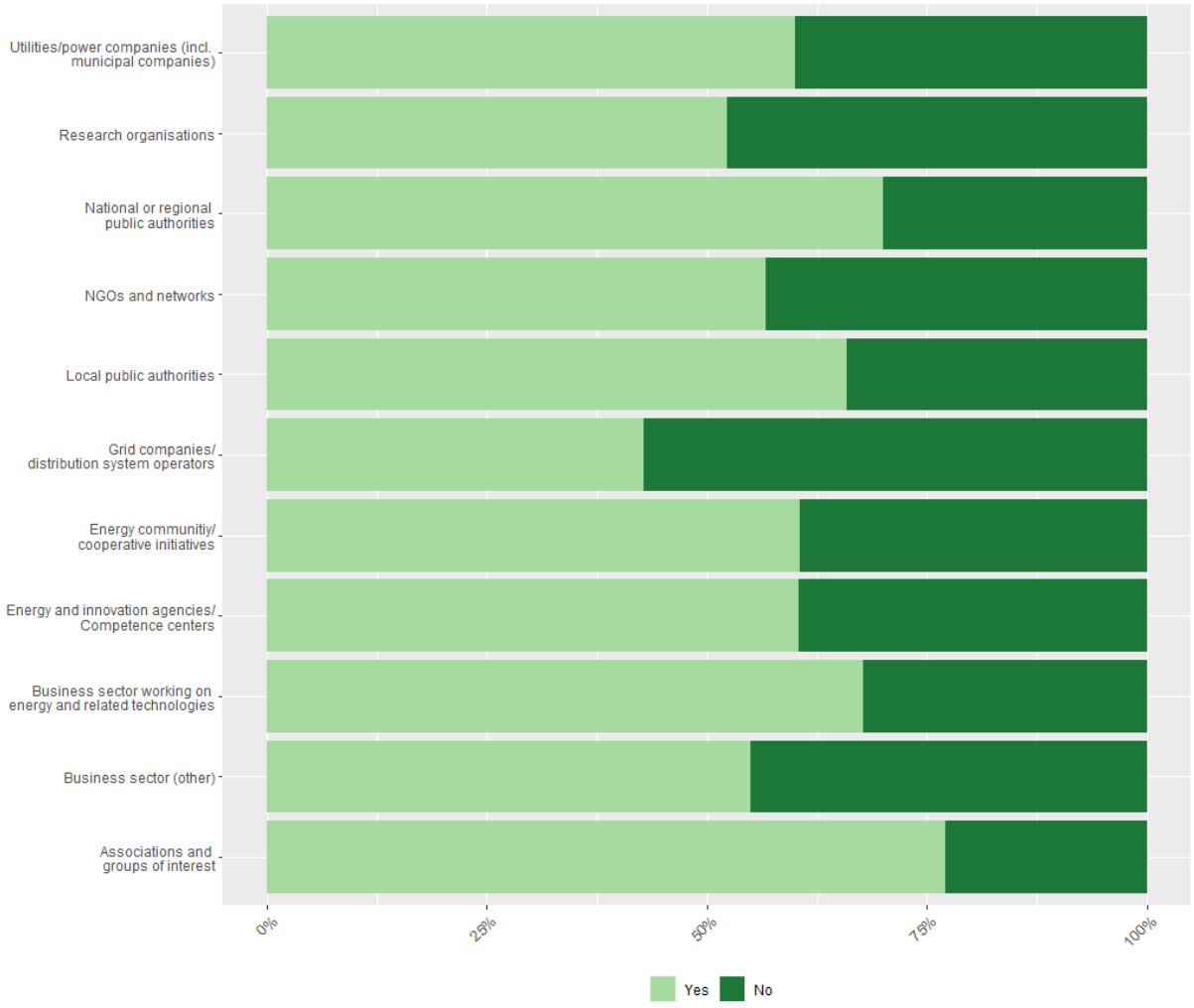



*Figure 37 - "Are you familiar with the EU Renewable Energy Directive (REDII) and its provisions for Renewable Energy Communities and their capacity to generate, consume, store and sell renewable energy?", per type of institution*

## 3.11 Pressing measures in REDII

In this section, we asked the respondents the following question: "In your opinion what measures in the REDII enabling framework are most pressing to implement to promote renewable energy communities?" The respondents were asked to rate the urgency of implementing provisions in the enabling framework for RECs given in REDII.

Unsurprisingly, 50-60 % of the respondents consider all the provisions of the enabling framework as necessary to implement with priority. According to the total sample of respondents, the most important measure in the enabling framework to be implemented with priority is the removal of unjustified legal and administrative barriers for RECs, followed by fair and equitable participation of RECs in the power system. Only a few respondents seem to consider these measures already in place, with access to information and finance more frequently mentioned as being already in place. None of the measures are deemed "already in place" by more than 14 % of the respondents.

Among those who are familiar with the REDII, around 8-10 % responded “Don’t know”. These figuresnumbers were around 20-30 % for those not familiar. These responses are not included in the chart below (excluding between 59 and 89 responses to each statement). The results are quite independent of whether the respondents are familiar with the REDII.

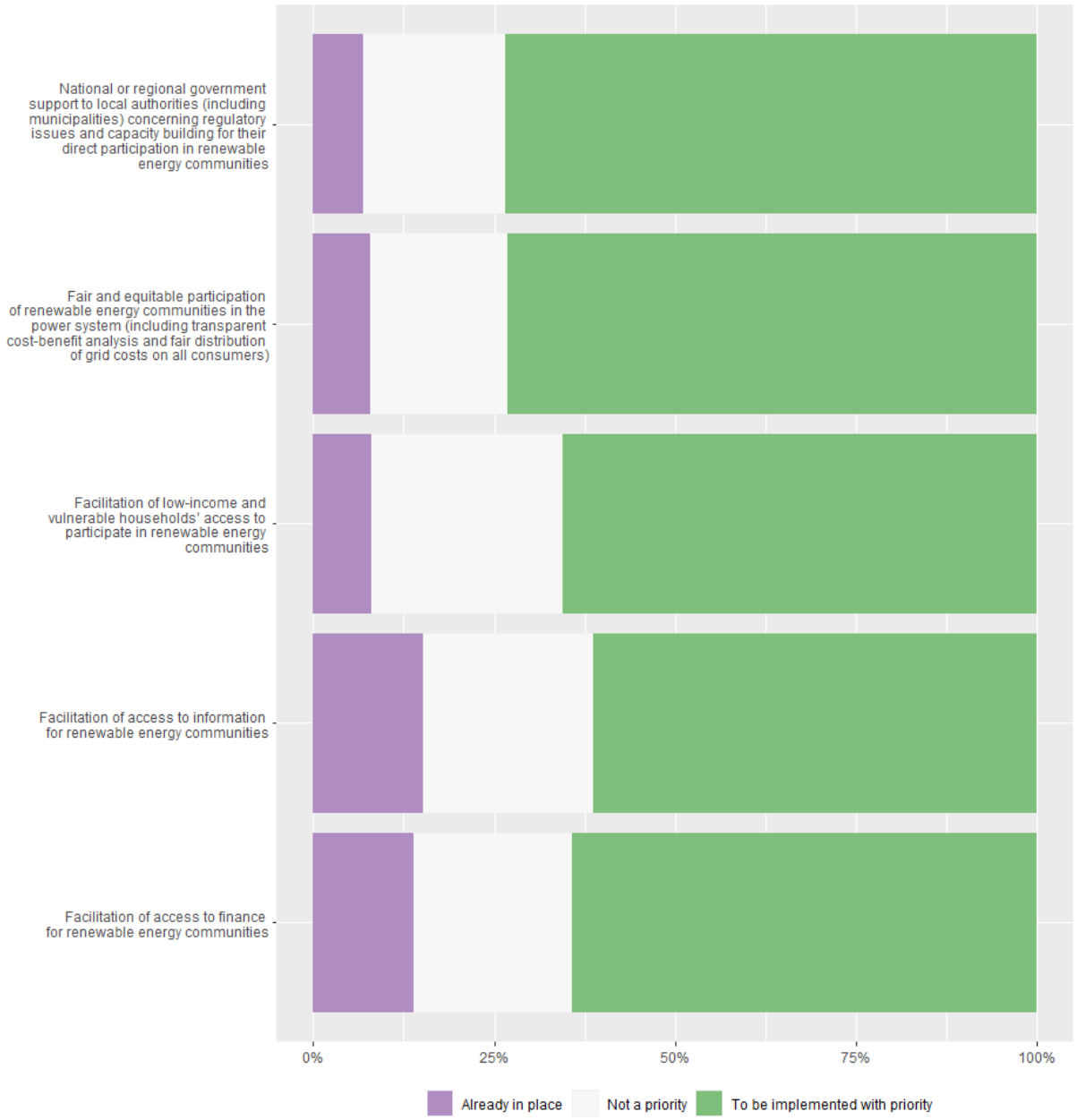



*Figure 38 - Responses to the question “In your opinion what measures in the REDII enabling framework are most pressing to implement to promote renewable energy communities?”*

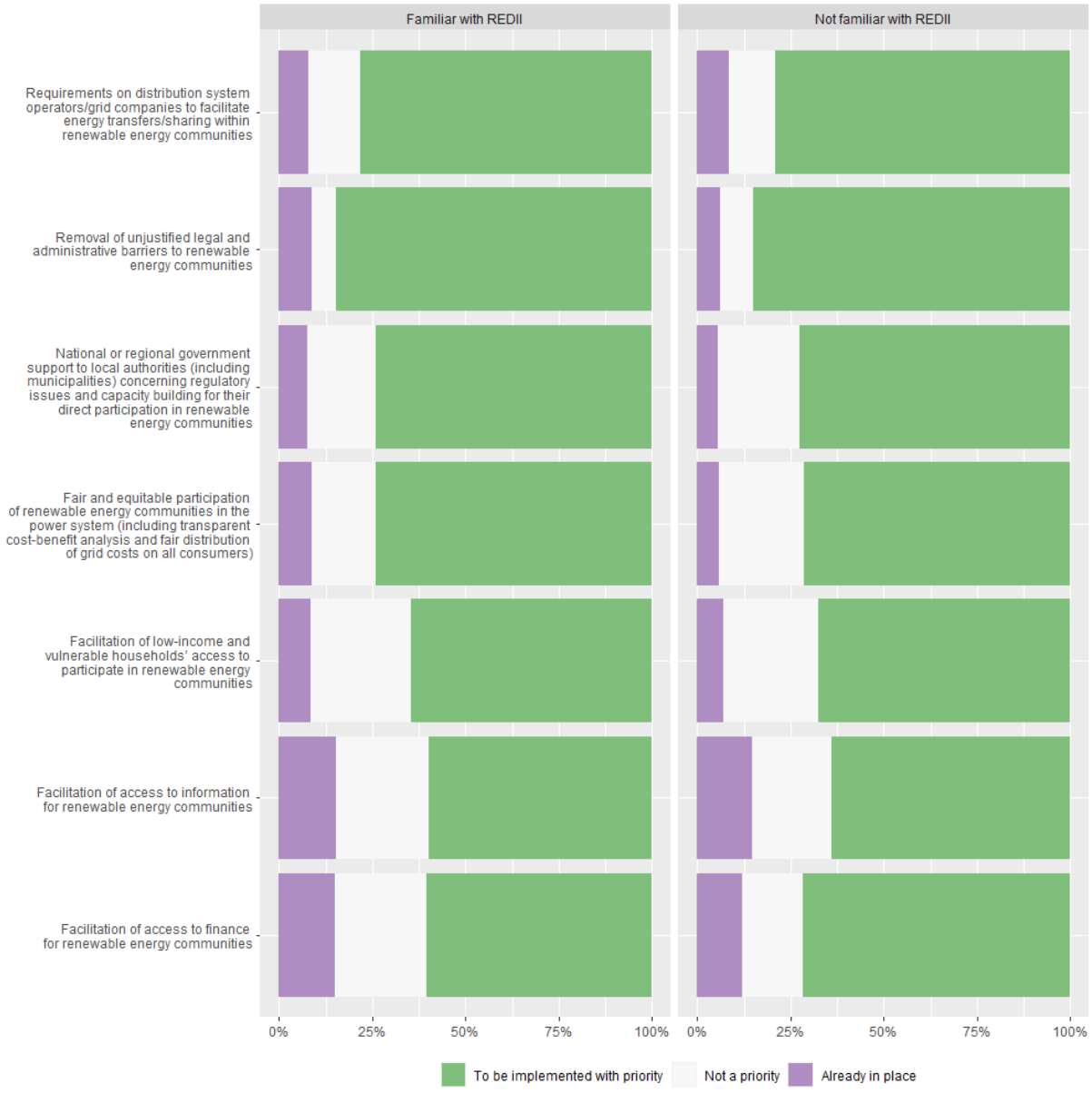



*Figure 39 - Responses to the question "In your opinion what measures in the REDII enabling framework are most pressing to implement to promote renewable energy communities?", distributed between respondents familiar with REDII or not*

On the country level, more than 70 % of the respondents in Latvia, Italy, the Netherlands, Germany and Poland consider that facilitation of access to finance for RECs should be implemented with priority, while this is less pronounced in the other countries.


*Figure 40 - Responses to the question "In your opinion what measures in the REDII enabling framework are most pressing to implement to promote renewable energy communities?", per country*


*Figure 41 - Responses to the question "In your opinion what measures in the REDII enabling framework are most pressing to implement to promote renewable energy communities?", per target region*

On the target region level there are considerable differences compared to national level. Facilitation of access to finance for RECs is considered important by all respondents in the North-Brabant (Netherlands), in contrast to the Balearic Islands (Spain) and West-Flanders (Belgium) where all or the majority of the respondents consider access to finance to already be in place. In Spain, an *ad-hoc* public mechanism for the financing of REC projects has been in place since the end of 2021, including grants and other incentives, which may influence the results from Spain and the Balearic and Canary Islands.[3]

[3] https://www.idae.es/ayudas-y-financiacion/comunidades-energeticas/programa-de-incentivos-proyectos-piloto-singulares-de

Facilitation of access to information is seen as more pressing in Limburg compared to Belgium in general and less of a priority in Thuringia than in the rest of Germany.

These results must be read with caution as the sample of respondents from some target regions is too low for generalisations and the composition of respondents can produce biased results.

## 3.12 Policies suitable for transfer between countries and target regions

In the survey we asked respondents the question “Do you know of any novel or promising policy in your country which may serve as a model for other countries to promote the development of renewable energy community?“ as well as “Do you know of any policy measures adopted in other countries or regions which may serve as a model for your region in order to facilitate the development of renewable energy community?”. The answers were given in an open-ended format, and it was optional for respondents to answer these questions. Due to the diversity of suggestions it is challenging to extract particular policies that are transferable without taking the specific contexts into consideration. In general, the suggestions address most of the measures and barriers listed in the survey. There are examples of financing funds for RECs at national and local government level, as well as tax schemes that provide incentives. Additionally, exemptions from auctions for small to medium installations (up to 18MW) as well as laws and regulations concerning RECs are suggested. Furthermore, existing well-established energy models are mentioned as suitable for transfer to other countries, such as energy cooperatives (the Netherlands) and small-scale hydropower and public owned power companies (Norway). The necessity to build on existing models when promoting RECs have also been discussed in previous Deliverable 2.1: Assessment report on technical, legal, institutional and policy conditions (Standal et al. 2021).

# 4. Summary of findings

The results of this Deliverable are intended to provide information on how stakeholders understand and evaluate RECs and measures to promote them in the energy transition on national and target region level (see also 1.1 research questions). The targeted respondents were stakeholders with valuable information and experience on RECs and not society in general. The recruited respondents are thus not only knowledgeable on different aspects of RECs and their role in the energy transition, but also more inclined to be positive towards RECs. The results need to be understood with this in mind. Furthermore, the composition and number of respondents in the different countries and target regions vary considerably, excluding statistic generalisations and comparisons. Despite these limitations the results present a basis to understand relevant stakeholders' recommendations and prioritisations across and within national and regional contexts, which are important input to REC development in the surveyed countries and target regions. A summary of the main findings is given below.

## 4.1. Perception of RECs role in the energy transition

Unsurprisingly, there is a positive attitude among the respondents towards RECs' role in the low-carbon energy transition. RECs are especially viewed as necessary to ensure public acceptance for the energy transition. Research has shown that community ownership of renewable energy projects can be a main driver for local acceptance (Cowell and Devine-Wright 2018, Leiren et al. 2020; Linnerud et al. 2018). Further, the respondents place high importance on RECs for ensuring sufficient production of renewable energy in the transition as fossil fuels are being phased out. The timing of the survey in the context of unprecedented high energy costs due to fossil fuel phase-out and the war in Ukraine makes this dimension acutely relevant.

Only a small minority of the respondents thinks that RECs will play a minor role in the energy transition. Also in countries that have little experience with RECs such as Latvia, Norway and Poland the majority sees RECs as important in the energy transition, whereas respondent in the Netherlands and Belgium are somewhat less positive. Concerning the statement that governments should focus on large scale RES energy infrastructure in the energy transition, the views of the respondents are more mixed and vary between highly agreeing to highly disagreeing, though about 50% agree or highly agree. The conclusions drawn form this is that the respondents highlight that RECs can provide benefits to society by enabling social acceptance of renewables, increasing renewable energy production, promoting flexible and smart energy systems and reducing grid costs

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## 4.2. Relevant REC legal forms and actors

The overall finding is that energy cooperatives are perceived as the most relevant legal form for RECs, with public-private partnerships, public utility companies, housing associations and associations in general as second on the list (measured by who find them very important or important). Limited partnerships and community trusts and foundations are seen as least relevant. However, legal forms need to be considered in terms of country or local contexts. Countries who have experience with energy cooperatives, such as Belgium, the Netherlands and Germany, rate this form higher. Also in Spain and Poland are energy cooperatives seen as the most relevant legal form. In Norway, Latvia, Spain and Poland more respondents also rate housing associations as very important compared to the other countries. Energy cooperative seems to be the most common legal form for RECs in Western Europe (Fouquet et al. 2022). By 2020, the estimated number of renewable energy cooperatives in the EU is about 3,500, with about half of these in Germany. However, in Eastern and Southern Europe, as well as Norway, renewable energy cooperatives are still a novel concept.

Legal forms should also be considered in the light of the actors that want to engage in RECs. The survey findings indicate that local authorities, neighbourhoods and housing associations, and civil society organisations (e.g. sports associations, citizen organisations etc.) will find it most relevant to participate in a REC. Grid companies and farmers are thought to find it least relevant, but still the majority of respondents think also these actors will find it relevant to participate in a REC. Again, there are some clear distinctions between countries. In Norway, Poland, Italy and Germany farmers are thought to find REC participation relevant by the majority of respondents. Further, a majority of respondents in Norway, Italy, Portugal, the Netherlands and Poland consider grid companies to find REC participation relevant. This is interesting as grid companies are not defined as possible REC shareholders in REDII. However, several RECs have vested interest in cooperation with grid companies regarding technical aspects and, in some cases, also operating within regulations that limit opportunities for energy sharing (Standal et al. 2022).

## 4.3. Promising fields and technologies for RECs

In general, the respondents highlight electricity generation as the most relevant or promising field for RECs (60% rate this as highly important and 30 % as important). This is consistent with the weight put on RECs to increase the share of renewables in the national electricity mix. Energy storage and flexibility are also regarded as highly important or important. The respondents also highlight commercial, residential or public buildings as a relevant and promising field, with heating generation and transport as runners up. Again the farming sector is seen as promising or relevant, though only a slight majority of respondents find this to be highly important or important. Once more there are differences between

country and target region level, most likely determined by local and national needs in the energy transition, as well as contextual resources and experiences.

PV is listed as the most relevant technology for RECs, though the Netherlands rate storage solutions higher. The respondents' view on the relevance of onshore wind is quite mixed. In several countries few respondents see this as highly relevant, though the majority finds it relevant. Germany and the target region of West-Flanders stand out as about 75% of the respondents in Germany and West-Flanders find onshore wind to be highly relevant. The reason for less enthusiasm for wind in other countries and regions can be related to wind conditions, regulatory procedures as well as investment costs for equipment. For some countries like Norway, it might also be related to a strong opposition towards onshore wind power in the public debate (Standal et al. 2021). Respondents' view on the relevance of hybrid energy systems is also quite mixed, though, apart from Latvia and the target region Limburg, the majority see this as important or highly important. Bio-energy is seen as the least relevant technology for RECs, with the exception of Poland where this is rated second highest.

## 4.4. Measures needed for scaling up REC development

There is variation concerning the respondents' view on measures needed to support REC development. The respondents list regulations that limit RECs opportunities to share self-produced electricity and lack of clear and adequate legislation on RECs as the main barriers for REC development. However all the listed barriers are seen as important or highly important by the majority of respondents. The barriers that were seen as least important were lack of acceptance for cooperative models and joint investments. There are some country and regional variations. For example, the lack of networks and knowledge exchange is seen as less of a barrier in Belgium and the Netherlands. This might be explained by historical experience and strong cooperation related to energy cooperatives.

The respondents' view on aspects needed to facilitate REC development are in line with their view on main barriers. Aspects such as regulations that allow energy transfers and define RECs rights as prosumers are seen as highly important by the majority of the respondents. However, the overall trend is that all the listed aspects are seen as highly important or very important by most respondents. There are some national and regional variations. The Norwegian respondents put less emphasis on facilitation of low-income households to participate in RECs and national and local support schemes as needed elements to facilitate RECs than the other respondents. On the institutional level there are also some variations. The general trend is that respondents representing grid companies consider the listed aspects less or not important.

When zooming in on the respondents' view on support schemes, reducing administrative /bureaucratic procedures for RECs is highlighted by the respondents. But also access to national or local financial support schemes, access to systematised learning from pilot projects, national or local capacity development and access to specific funding for RECs from the European Structural and Investment Fund (ESIF) is rated as important or highly important by the majority of respondents. In contrast, auction and tenders are only seen as important or highly important by less than 30 %, whereas more than 25%

find this as less or not important. Our findings show that whether respondents are affiliated with RECs or not, does not change their opinion on measures needed for REC development. The general trend appears to be that reducing administrative burdens is the most important measure needed while auction and tenders are least favoured by all respondents. Our survey did not include "exemption from auction and tenders", which may have been seen as important by the respondents. The EU state Climate, Energy and Environmental Aid Guidelines (CEEAG) allow Member States to exempt REC projects and SME-owned projects below 6 Megawatts (MW) of installed capacity from the competitive bidding requirement. Renewable energy communities and small and micro enterprises may also develop wind projects up to 18 MW without competitive bidding.[4]

We also explored respondents' familiarity with the provisions for REC in REDII and which aspects they see as most pressing (or already implemented) in the REDII enabling framework. About 65 % of respondents are familiar with the REDII. However, there are apparent differences between countries. Less than 50 % are familiar with the Directive in the Netherlands, Norway, Poland and Portugal, whereas familiarity is more than 75 % in Spain, Germany and Belgium. Norway is not an EU Member and the transposition of REDII has been slow in Poland, which may explain less familiarity with REDII from respondents in these countries. The familiarity with REDII might also be a reflection of the composition of the sample regionally, as respondents' familiarity varies somewhat between different sectors and institutions. The respondents' view on measures in the REDII enabling framework for RECs does not differ between those familiar with REDII or not.

On a general level, the majority of the respondents think all measures in the enabling framework should be implemented with priority and very few respondents listed measures as already being in place. There is a country level variation as respondents in the Netherlands find facilitation of access to information (47%) and finance (25%) to be in place already. In general, these two aspects are seen as already in place by more respondents.

When zooming in on measures that are considered most relevant for local authorities in order to facilitate REC development, we see that most respondents find that local authorities should take an active role in facilitating cooperation between relevant stakeholders (e.g. research institutes, business sector, grid companies etc.). Also providing financial support for citizens, SMEs and civil society organisations that establish RECs is found to be almost equally important. Setting policy targets and designating suitable land areas for RECs, are found to be somewhat less important.

## 4.5. Conclusion

The findings of this Deliverable show that among the stakeholders consulted in the survey RECs are considered to play an important role in the energy transition towards a low-carbon society, in particular with regards to enabling social acceptance and ensuring sufficient production of renewable energy in the transition as fossil fuels are being phased out. The respondents rate electricity generation and solar

[4] https://ec.europa.eu/commission/presscorner/detail/en/qanda_22_566

PV as the most relevant field and technology for RECs. The respondents also highlight RECs as an opportunity in commercial, residential, or public buildings, with heating generation and transport as runners up. The timing of the survey in the context of unprecedented high energy costs due to fossil fuel phase-out and the war in Ukraine makes this dimension acutely relevant.

In general, the survey emphasises the strong role energy cooperatives have in Western-Europe as this is seen as the most relevant model for RECs, with public-private partnerships, public utility companies, housing associations and associations in general as second on the list. Limited partnerships and community trusts and foundations are seen as least relevant. The surveyed stakeholders view local authorities, and citizen-driven organisations (e.g. neighbourhoods, sports associations, citizen organisations etc.) as groups that will find it most relevant to participate in a REC, while grid companies and farmers are thought to find it least relevant (some countries differ here). This supports the emphasis on 'grassroot' actors (citizens, SMEs and local authorities) as intended in REDII.

The findings of this Deliverable also shed light on major barriers and measures to tackle them from the point of view of the consulted stakeholders. A general conclusion is that across geography and institutional belonging, the regulatory and administrative aspect are the most challenging for RECs and that measures should be targeted towards providing clear and adequate legal frameworks and arrangements for prosumers to sell excess produced energy to the grid and to share their self-produced electricity between members, neighbourhoods and properties, as well as simplification of procedures and bureaucracy. The survey finds that setting policy targets and providing capacity for local authorities (which is included in the enabling frameworks) are important measures to promote RECs according to the stakeholders consulted, along with providing support through financial funding and information. Further, it is a clear finding that among the stakeholders consulted in the survey, few find auction and tenders to be relevant for promoting RECs.

As a reminder of keeping focus on the implementation of REDII to promote RECs this survey also reveals that a considerable share of respondents is not familiar with REDII's provisions and enabling framework for RECs. On the country and target region level we find that few stakeholders report some measures to already be in place. Still, our findings show that the vast majority of respondents see all measures in the enabling framework as pressing to implement. This finding is regardless of whether the stakeholder respondents are familiar with REDII provisions and enabling framework for RECs or not

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# Appendix

## Regional questions

The survey in Italy and Norway included country specific questions based on exploring aspects that has engaged stakeholders in the COME RES stakeholder group discussions.

The Italian respondents were asked to indicate the extent to which they agree with the following statements: “The measures adopted to date in Italy in support of RECs have defined a sufficiently clear framework (legal, financial, etc.) for their development” and “The experiences implemented so far in Italy (good practices) could be considered the starting point for prompt and effective dissemination”. Around 45 % of the Italian respondents disagree or strongly disagree that the measures adopted to date in Italy in support of RECs have defined a sufficiently clear framework for their development. Around 16 % agree, and the rest are neutral.

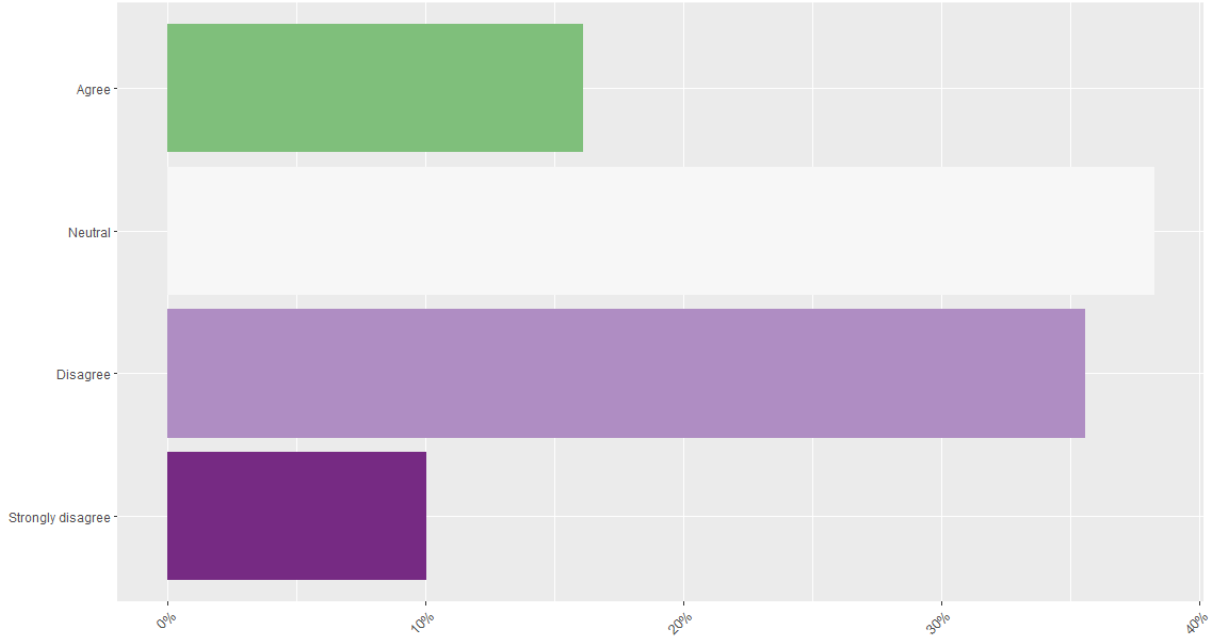


*Figure 42 - Responses to the question “The measures adopted to date in Italy in support of RECs have defined a sufficiently clear framework (legal, financial, etc.) for their development”*

Slightly less than 50 % of the Italian respondents agree or strongly agree that the experiences of implementation so far in Italy could be considered the starting point for a prompt and effective dissemination. Around 20 % disagree or strongly disagree, and the rest are neutral.

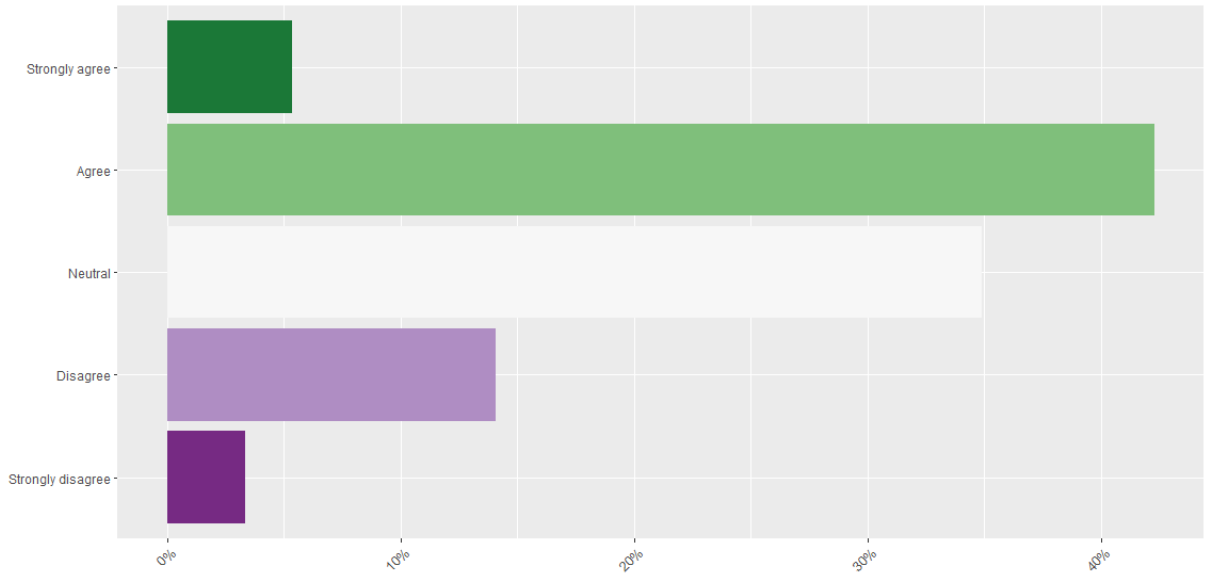


*Figure 43 - Responses to the question "The experiences implemented so far in Italy (good practices) could be considered the starting point for prompt and effective dissemination"*

The Norwegian respondents were asked whether they think "it is important that public authorities develop a roadmap for renewable energy communities in Norway to promote such energy solutions?" 85 % of survey respondents in Norway agreed or strongly agreed to this statement.

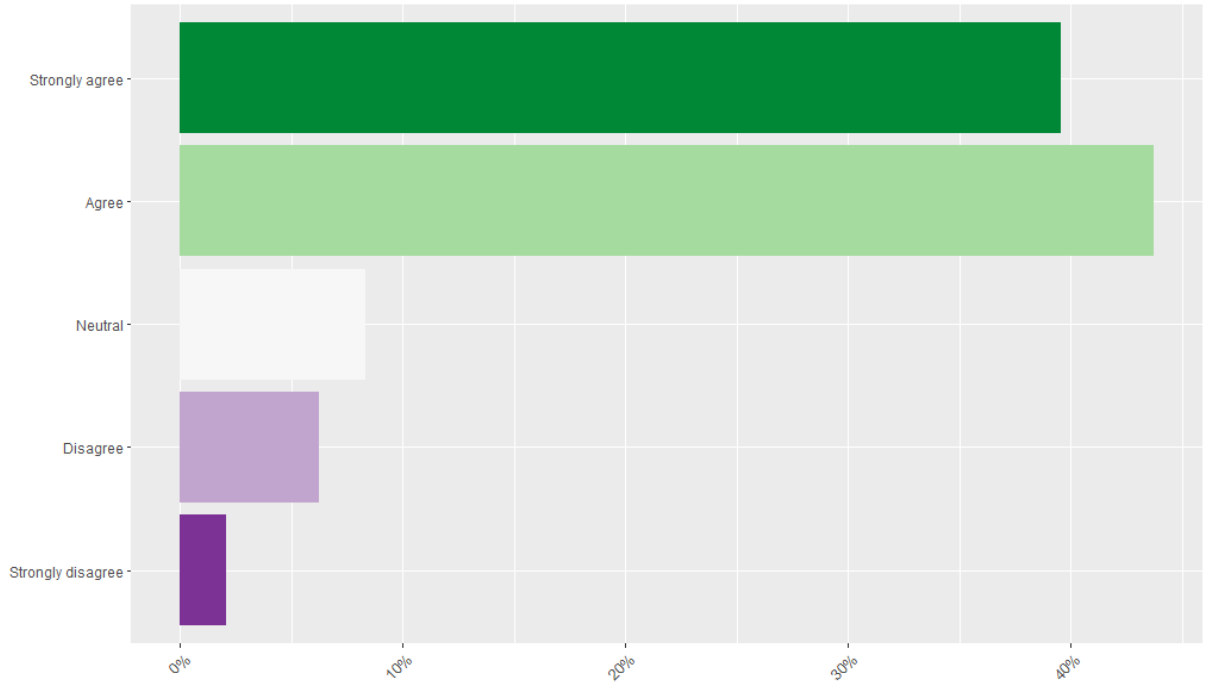


*Figure 44 - Responses to the question "Is it important that public authorities develop a roadmap for renewable energy communities in Norway to promote such energy solutions?"*

## Detailed responses to open ended questions

***Q: What legal form do you consider most relevant for renewable energy communities initiatives in your local area?***

| Region | Answer | Number |
|---|---|---|
| Balearic | Neighbourhood associations = housing associations | 1 |
| Canary Islands | Communities of property | 1 |
| Belgium (other) | not for profit, association | 1 |
| Belgium (other) | As complementarity of consumer profiles is interesting, it should be a legal form that allows for this. | 1 |
| Germany (other) | Any other 'NO Profit' Organization that allows Sharing and Defiscalisation self-produced/consumed energy by PROSUMERS | 1 |
| Germany (other) | The incorporated company | 1 |
| Germany (other) | To clarify: My assessment of the actual importance, not the potential importance. | 1 |
| Italy (other) | Participation foundation / Consortiums | 1 |
| Italy (other) | Public administrations + Citizens - non-profit | 1 |
| Italy (other) | Volunteer | 1 |
| Italy (other) | It does not matter the legal form but the vision and mission | 1 |
| Italy (other) | Small collective self-consumption groups without legal form and possibly with single meter | 1 |
| Italy (other) | In the case of activating a condominium energy community, could a condominium resolution suffice? | 1 |
| Italy (other) | Enterprise networks | 1 |
| Italy (other) | It is necessary to have a dedicated legal form created for the purpose | 1 |
| Italy (other) | Condominiums in case it is realized that they need to be provided with only one POD – Point Of Delivery to the public grid. A change to the current arrangement would be necessary. One POD with downstream meters always from the distributor for each individual utility. | 1 |
| Italy (other) | Local Authorities, City Halls | 1 |
| Italy (other) | Composite associations of citizens and businesses | 1 |
| Italy (other) | Public Entities, Association. | 1 |
| Italy (other) | Solidarity renewable energy cooperative | 1 |
| Netherlands (other) | An Energy Board comparable to a Water Board (with an open democratically elected governing board working in the public interest: sustainable and affordable energy) | 1 |

***Q: In what fields do you think renewable energy community initiatives will be most relevant or promising?***

| Region | Answer | Nb |
|---|---|---|
| Canary Islands | Industrial parks, urban tourist areas | 1 |

| | | |
|---|---|---|
| Germany (other) | Small/Medium Craft Enterprises for their competitiveness, sustainability and resilience to global markets. | 1 |
| Germany (other) | Sports, club and leisure facilities | 1 |
| Italy (other) | SMEs, particularly industrial SMEs located in city and district areas | 2 |
| Italy (other) | Impervious or deserted places | 1 |
| Italy (other) | Sport facilities and areas | 2 |
| Italy (other) | Industrial and craft sheds | 1 |
| Italy (other) | Enterprises and public administration | 1 |
| Italy (other) | Industrial Areas | 4 |
| Italy (other) | Industries that use the PV system primarily in Sustainable Energy Utility (SEU) and share surplus energy | 1 |
| Italy (other) | Remove the constraints that today effectively prevent most villages from being renewable, despite the fact that they are in fact already communities in which many goods and services are shared. | 1 |
| Italy (other) | Energy efficiency measures | 1 |
| Italy (other) | Energy saving | 1 |
| Italy (other) | Public Buildings, for example schools | 2 |
| Italy (other) | Port Sites | 1 |
| Italy (other) | B2B supply chain aggregations (fruit and vegetable markets), boat docks | 1 |
| Norte | Industrial sites (clusters) | 1 |
| Latvia | Lighting of Public Infrastructure (Public Areas) | 1 |
| Limburg (Genk) | private market development + stimulation of municipal energy companies | 1 |
| Netherlands (other) | system integration on a local/decentralized level: electricity, heat and mobility | 1 |
| Netherlands (other) | Innovation; participation | 1 |
| North-Brabant | It is precisely about a combination of heat, electricity and e.g. mobility.... In an energy community as I think it should be you cannot see these things separately from each other | 1 |
| Norway | Agriculture and commercial / public buildings | 1 |
| Norway | Electrification of industry | 1 |

***Q: Which actors do you think will find it most relevant to participate in renewable energy communities?***

| **Region** | **Answer** | **Nb** |
|---|---|---|
| Balearic | Local business associations | 1 |
| Belgium (other) | citizen cooperatives | 1 |
| Belgium (other) | members of local, citizen energy cooperatives as energy sharing becomes more attractive: on average, they are more motivated, both financially and in terms of awareness of the impact on the climate and the network | 1 |
| Belgium (other) | Citizens as most important | 1 |

| | | |
|---|---|---|
| Belgium (other) | Citizens | 1 |
| Canary Islands | Small industrial, industrial estates | 1 |
| Germany (other) | Public Institutions, Universities, Research Institutions ..etc. | 1 |
| Germany (other) | individual citizens/residents | 1 |
| Germany (other) | Private persons, e.g. single-family homeowners, who want to receive electricity from a nearby wind turbine (very important) | 1 |
| Germany (other) | Municipal and local utilities (if not identical with electricity grid operator)on | 1 |
| Italy (other) | Apartment buildings | 1 |
| Italy (other) | Unorganized citizens | 1 |
| Italy (other) | Public administrations + Citizens - nonprofit | 1 |
| Italy (other) | Volunteer | 1 |
| Italy (other) | SMEs energy-consuming | 1 |
| Italy (other) | Families/Communities | 1 |
| Italy (other) | Industries | 1 |
| Italy (other) | Individual citizens | 1 |
| Italy (other) | Schools and other public buildings | 1 |
| Italy (other) | Condominiums | 1 |
| Italy (other) | Reclamation Consortia. | 1 |
| Latvia | Natural persons, who want to become the owners of, for example, a part of a solar PV park and use electricity for their own consumption. Municipalities should primarily ensure their own energy consumption; municipalities can do it without energy communities. | 1 |
| Limburg (Genk) | local energy cooperatives, possibly even larger energy suppliers to maintain market share? I suspect that participation of grid operator will be necessary in many cases, but not necessarily most desirable | 1 |
| Netherlands (other) | system suppliers / system integrators. financiers: banks / development funds / (informal) investors | 1 |
| Netherlands (other) | Residents' groups specifically focused on energy transition/sustainability: Very important | 1 |
| Netherlands (other) | End users including inhabitants | 1 |
| Norte | Energy intensive users | 1 |
| North-Brabant | Private individuals | 1 |

***Q: What technologies do you consider most relevant for renewable energy community initiatives (electricity production and heating)?***

| **Region** | **Answer** | **Nb** |
|---|---|---|
| Belgium (other) | CHP and heating networks based on residual heat and RES | 1 |
| Belgium (other) | Wind offshore, initiative of citizen energy cooperatives in Belgium competing for the massive offshore concessions in the North Sea 2022-2030 | 1 |
| Limburg (Genk) | Collective heat/cold storage systems, residual heat applications, cascade use of energy, energy exchange | 1 |

| | | |
|---|---|---|
| Limburg (Genk) | I see storage always linked to the other, not as stand-alone, and then mainly batteries. What is included in 'integrated and hybrid systems'? | 1 |
| Germany (other) | Heat pumps for every thermal need, distribution thermal energy at low temperatures, thermal storage at the place of consumption, El. storage with SODIUM/NIKEL batteries at almost infinite cycles, large power installations and storage, energy managing with SMART GRID! | 1 |
| Germany (other) | Photosynthesis | 1 |
| Germany (other) | Heat grids with CHP as storage and peak load buffer and redundant power generation - just as sector coupling; CHP | |
| Germany (other) | Deep geothermal energy | 2 |
| Germany (other) | Solar thermal, waste heat | 1 |
| Italy (other) | biogas | 1 |
| Italy (other) | Bio-energy on the condition that the power plants are fed with "waste" materials and not as is the case today, that hectares and hectares are cultivated (taking them away from agriculture intended for food consumption) among other things with considerable expenditure of water for irrigation of crops destined to become "fuel" | 1 |
| Italy (other) | Use of streams and sea currents for energy purposes. | 1 |
| Italy (other) | Geothermal, solar | 1 |
| Italy (other) | Solar thermal | 1 |
| Italy (other) | No solar plants on green areas. Yes on built-up or already cemented areas. | 1 |
| Italy (other) | mini-hydroelectric | 2 |
| Italy (other) | Woody biomass | 1 |
| Italy (other) | Energy recovery from waste | 1 |
| Italy (other) | micro co-generation CHP | 1 |
| Italy (other) | Co-generation | 1 |
| Italy (other) | Total recovery heat pumps, co and tri generation | 1 |
| Italy (other) | District heating from renewables | 1 |
| Latvia | Technologies using geothermal energy | 1 |
| Latvia | Off-shore wind turbines | 1 |
| Netherlands (other) | sustainable local heat grids: Aqua-thermal GeoThermal. V2G; bi-directional charging infrastructure. Smartgrid | 1 |
| Netherlands (other) | System integration; flexibility | 1 |
| Netherlands (other) | Smart grid: matching demand, supply and conversion at the neighbourhood level | 1 |
| Netherlands (other) | CHP, aquathermy | 1 |
| North-Brabant | Again, it's about a combination of technologies that together form the puzzle for the energy community | 1 |

| | | |
|---|---|---|
| North-Brabant | Nuclear power | 1 |
| Norway | Hydropower (particularly medium and small scale) | 4 |
| Norway | District heating and power production based on garbage incineration (incl. plastic) | 1 |
| Norway | Norwegian water plants (both water supply and power generation) need reduction of pressure and flow, this can and should be exploited for further production of for instance hydrogen. | 1 |
| Norway | Geothermal heat / heat pumps | 2 |
| Poland (other) | Hybrid cogeneration based on Sterling engines | 1 |
| Poland (other) | Relocation of investments for the use of local waste energy and the management of waste energy of these entities | 1 |
| Poland (other) | Our RES resources in Poland are too small. Apart from biomass and biogas, other renewable energy sources are incoherent (the availability periods are inconsistent with the occurrence of periods of energy demand). | 1 |
| Portugal (other) | Solar thermal | 1 |
| Norte | Heat recovery in industrial sites / District Heating and Cooling Networks | 1 |
| Spain (other) | Residential and industrial energy storage | 1 |
| Spain (other) | Solar thermal, thermal-hydraulic storage, very important, Aerothermal-Geothermal, important | 1 |
| Spain (other) | Passive energy collection and management systems. Passive systems in architecture. | 1 |
| Spain (other) | Hydropower and building renovation | 1 |
| Canary Islands | Digitalisation | 1 |
| Canary Islands | Other types of storage systems, Electric mobility | 1 |

***Q: What aspects do you think are most needed to facilitate the development of renewable energy communities in your local area?***

| **Region** | **Answer** | **Nb** |
|---|---|---|
| Balearic | Training on RECs for civil servants of local entities (town councils and associations of municipalities) specifically related to the formulas for the transfer of public spaces and membership of the RECs of these administrations. | 1 |

| | | |
|---|---|---|
| Belgium (other) | level playing field for citizens' initiatives as Europe imposes on member states: see petition to Flemish Parliament to take similar initiative as in the Netherlands, https://www.rescoopv.be/sites/default/files/20200611-open%20windbrief%20global%20wind%20day%202020-REScoopV.pdf | 1 |
| Belgium (other) | Low-income and vulnerable households also need very good guidance and very favourable financial conditions (e.g. never pay more than social rate). | 1 |
| Belgium (other) | The current legislation in Flanders limits any advantages by not taking proximity into account when determining the distribution cost of energy for the user. Thus, high distribution costs remain the same regardless of the distance between members of the energy community which in term hampers financial incentives. Proximity is mentioned in the current Flemish legislation but is not defined nor are there any advantages given for proximity. | 1 |
| Limburg (Genk) | A bit confusing because the regulations are already in place in Belgium... Regulation is of course important, but as it is already there, I did not mark it as the most important. | 1 |
| Limburg (Genk) | Transparent cooperation with grid operators, correct tariffing that does not undermine the financing basis of the grid but at the same time rewards energy communities for services provided to the grid | 1 |
| Limburg (Genk) | specific examples in own country (i.e. under the applicable regulations) | 1 |
| West-Flanders (Zwevegem) | There must be a financial benefit (reduction in distribution tariffs, transmission, levies, etc.) for energy sharing that exceeds the cost of setting up an EC. Data platform should be made available to facilitate smart energy sharing and billing. | 1 |
| West-Flanders (Zwevegem) | contributions for green electricity certificates and CHP certificates removed from the energy bill for energy sharing!!!! | 1 |
| Germany (other) | Incentivize collective energy production, which is more efficient and centrally manageable by energy managing and has less environmental impact. | 1 |
| Germany (other) | Uniform grid charges, new structure of energy levies and taxes aligned to fluctuating generation | 1 |
| Italy (other) | I think that the regulations must be: essential and once issued, unmodifiable for years (and not as today, that we are with an absurd proliferation of rules). The "Politics" has to set in principle the lines of development, except then, remain outside, completely; if not after years to proceed to provide new directions in low to what will be the new needs. Information of CITIZENS, clear concise and in addition that THEY BE GUIDED on their way to energy communities | 1 |
| Italy (other) | Give tangible priority to low-impact energy transition | 1 |
| Italy (other) | A fast functional bureaucracy: clear and standardized procedures for activation of RECs | 1 |
| Italy (other) | Remove subsidies to fossil fuels. | 1 |
| Italy (other) | To be able to have the availability of guarantee funds to cover investment loans | 1 |
| Italy (other) | Political commitment to support installation of facilities in public areas | 1 |
| Italy (other) | Organizational formats to be tapped into | 1 |
| Italy (other) | Regulation of requirements for utilities and distribution system operators (DSOs) for RECs support with a focus on limiting their privileged role in participating in RECs | 1 |
| Italy (other) | Reduction of Electric and Thermal Energy Waste. | 1 |
| Italy (other) | National and local communication campaigns | 1 |

| | | |
|---|---|---|
| Italy (other) | Open data access to territorial perimeters of primary and secondary substations to define perimeters of civil society viability. Also open data access of currently operational and geolocated facilities | 1 |
| Latvia | The more the system is understandable and easier to implement / use it, the greater is the number of interested persons | 1 |
| Latvia | The determination of the upper level of financial support; in order to be able to distinguish the insulation of the staircase or the renovation of ventilation from the heat storage project for an apartment building | 1 |
| Latvia | Implementation of the pilot projects, financially supported by national support programs, and dissemination of their experiences which thus will confirm that REC works and is effective in Latvia! | 1 |
| Latvia | Guidelines / content points, regarding the renewable energy production sector, that should be included in community agreements with landowners and their neighbours affected by the operation of the installations. | 1 |
| Netherlands (other) | Policy framework "local ownership" at Municipalities. Position of the Heat Board in the Heat Act. Right of initiative of residents. | 1 |
| Netherlands (other) | Treat cooperatives as non-profits, don't equate them with commercial enterprises. Ensure that cooperatives are given priority in implementation. Decent compensation | 1 |
| North-Brabant | I miss the CEC instead of the REC. And also knowledge about the social preconditions to get energy communities off the ground. For example, access and control over sources and components of the energy system. E.g. not giving away charge points | 1 |
| North-Brabant | Additional funding opportunities/subsidies to enable function combinations, e.g. solar fields with recreation or nature development | 1 |
| Norway | It is important to separate whether the intent is to reduce power to avoid grid expansion or reduce energy use. If the grid will not be expanded the effect will only be on the energy side. | 1 |
| Norway | Legal clarification on area ownership and opportunity analysis requirements for renewable production for all projects under the Planning and Building Act. Moreover, a disconnection of aesthetic requirements for protected buildings. Solar panels on cultural heritage monuments/sites should be accepted for a period. | 1 |
| Poland (other) | The possibilities of financial support in relation to the needs will be marginal. Greater support will be provided by good and long-term stable legislative solutions. | 1 |
| Portugal (other) | Net metering is highly relevant as it reduces the complexity and has much more potential than RECs (which are highly bureaucratic) | 1 |
| Norte | Templates for organisational, regulatory documents; and informed regional/local entities to support and validate energy communities | 1 |
| Spain (other) | Participation of all sectors involved. | 1 |
| Canary Islands | Reducing and facilitating administrative formalities, Appropriate advice | 1 |

***Q: What kind of support do you think is most suited for promoting renewable energy community development?***

| Region | Answers | Nb |
|---|---|---|
| Belgium (other) | level playing field for citizens' initiatives as Europe imposes on member states: see petition to Flemish Parliament to take similar initiative as in the Netherlands, https://www.rescoopv.be/sites/default/files/20200611-open%20windbrief%20global%20wind%20day%202020-REScoopV.pdf | 1 |
| Limburg (Genk) | Support for citizens' initiatives that do not have the technical expertise to set up ECs | 1 |
| Limburg (Genk) | Not only capacity development in administrations, but often capacity tout court. Staff shortages are dire and tasks are still increasing | 1 |
| West-Flanders (Zwevegem) | separate tariffs for exchanging electricity with a district battery | 1 |
| Germany (other) | Facilitation to Credit with grants for medium/long-term periods. Promoting and financially supporting the training of sector-specific specialists, which is sorely lacking at present. | 1 |
| Germany (other) | Feed-in tariffs are suitable, tradable green certificates not | 1 |
| Italy (other) | volunteer | 1 |
| Italy (other) | Best practice testimonials; progress publicity (government mass media campaigns) | 1 |
| Italy (other) | Citizen information, involvement of local communities | 1 |
| Italy (other) | Activation of networks of local promoters and facilitators who can dialogue directly with potential consumers/prosumers | 1 |
| Italy (other) | Bank Credit access dedicated only to Energy Community Management. | 1 |
| Italy (other) | Training measures on community building and ecological communication (facilitated) | 1 |
| Netherlands (other) | dynamic transport tariff for grid management (for congestion management, element of Smartgrid value chain). | 1 |
| Netherlands (other) | Mishmash of measures. What do you want? | 1 |
| North-Brabant | Access and direction over sources and components of the energy system | 1 |
| Norway | There is already a demand for local energy communities, and actors who want to establish them. It is stopped by the regulations. Given the expected cost developments for batteries and solar panels, this will be profitable without financial aid. | 1 |
| Norway | It is important that information about negative findings is also shared | 1 |
| Norway | Providing knowledge to actors who do not have the capacities to obtain this on their own. | 1 |
| Poland (other) | freeing up energy prices | 1 |
| Poland (other) | Local governments should have energy advisers | 1 |
| Spain (other) | Facilitate the economic profitability of communities | 1 |
| Balearic | Public offices (physical or web-based) for specific information and procedures | 1 |

***Q: What do you see as the main barrier for renewable energy community development in your local area?***

| Region | Answers | Nb |
|---|---|---|
| Balearic | Lack of understanding of the legal framework within the local administrations themselves. Also lack of knowledge of the power of the RECs in these administrations. | 1 |
| Belgium (other) | regulatory barriers for citizens' initiatives and energy sharing in Flanders: wind energy --> windrush for scarce land (suitable locations are already put under contract by commercial developers) + solar energy (regulations geared to self consumption on the one hand [residential, schools, sports hall] and mega-projects on the other hand [industry projects >2MW], so that solar sharing by local citizens' initiatives is hindered [without grid injection energy sharing is impossible]) | 1 |
| Belgium (other) | Lack of understanding by the general public of the benefits of renewable energy communities (= potential win-win-win). | 1 |
| Belgium (other) | By the lack of economic incentives I'm referring to the distribution cost and taxes that remain the same regardless of proximity making it less attractive to invest as the profits can be reduced by up to 40% due to these costs. EG: an energy community in 1 building will have to pay the same distribution cost as an energy community spread over the entire country. | 1 |
| Germany (other) | Avoid subordination to utilities or other Big Players by emphasizing the rights of "collective prosumers" through techno-economic regulations that are interfaces of pro-actively collaborating with each other even in the shared use of existing energy infrastructure without penalties from newco. | 1 |
| Italy (other) | Remove, for example, the constraint of the territorial substation | 1 |
| Italy (other) | Sure times for the implementation and reduction of bureaucratic barriers and constraints | 1 |
| Italy (other) | Fossil industry overpowering | 1 |
| Italy (other) | All that would be needed is a simple electronic configuration coupled with a clear regulatory system that would allow each individual condominium PV system to divide the energy produced among users according to demand, even without storage | 1 |
| Italy (other) | Dispatching substation limit | 1 |
| Italy (other) | The exclusion of non-public entities from benefiting from the exchange elsewhere of energy produced | 1 |
| Italy (other) | The architectural and landscape superintendence | 1 |
| Italy (other) | Lack of clarity on storage use and flexibility services | 1 |
| Italy (other) | Almost insurmountable bureaucratic delays (italy) | 1 |
| Italy (other) | Prohibition of Participation in Terna Grid Dispatch and Renewable Storage Systems for Private Entities | 1 |
| Italy (other) | Lack of clear economic benefit: if in a year I have a benefit of a hundred euros, it is difficult to decide to spend hours of one's time setting up a REC. Moreover, there should be rewarding mechanisms for those who make REC versus the individual who makes individual self-consumption | 1 |
| Latvia | Lack of a clear definition of the perspective, potential gains and losses of the measure | 1 |
| Latvia | The word “cooperative” is still rooted in the historical opaque scheme of the system and thus in the society resonates with illegal and opaque governance. This should be replaced | 1 |
| Latvia | No possibility to produce energy in one site and consume in another site (important for city/town residents) | 1 |
| Limburg (Genk) | benefits are not quantified | 1 |

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| Limburg (Genk) | Economic feasibility of ECs, especially e.g. offering flexibility proves to be of little value | 1 |
| Limburg (Genk) | technical complexity and lack of knowledge (not just awareness), complex and unclear price mechanisms => it all takes too much effort, autonomy and freedom of choice remain too important in our society (there is no collective reflex) | 1 |
| Netherlands (other) | weak local government. inadequate knowledge, capacity and power to follow through | 1 |
| North-Brabant | Good examples and a vision on the future energy system | 1 |
| Norway | Lack of NON commercial guidance. | 1 |
| Poland (other) | Poor promotion of the prosumer as a client tied to a local monopoly-operator, e.g. PGE (Polish Energy Group) | 1 |
| Portugal (other) | The main barrier is the REC concept in itself, as it is highly bureaucratic. A net metering based solution, as the ones implemented in USA, Brazil, Germany, Denmark, Netherlands and Italy, would be more effective | 1 |
| Spain (other) | The necessary cooperation of network operators. | 1 |
| Spain (other) | The appropriation of the discourse by large energy companies, who simplify everything but focus on purely financial aspects. | 1 |

***Q: What measures do you consider most relevant for local authorities (including municipalities) on order to facilitate for renewable energy community?***

| **Region** | **Answer** | **Nb** |
|---|---|---|
| Balearic | Legal training for officials interpreting rules and regulations | 1 |
| Belgium (other) | level playing field in tenders: see solar specifications, wind specifications, heat network specifications with citizen participation and local added value creation (e.g. wind project not as an end point but as an engine for local energy transition): https://www.rescoopv.be/burgermeesterconvenant | 1 |
| Belgium (other) | Supporting information campaigns explaining the benefits of renewable energy communities and how to facilitate them | 1 |
| Belgium (other) | Giving RECs priority over large, traditional market players | 1 |
| Limburg (Genk) | I interpret this question as 'most relevant in supporting local authorities'? Because giving these tasks to local authorities will not be feasible in practice for most Flemish municipalities | 1 |
| Germany (other) | Facilitate access to 'start-up' capital for 'Non-profit' Cooperatives/Associations to become operational and, subsequently, support feasibility studies and complete projects of business plans to be financed. These are phases that currently lack total attention. | 1 |
| Italy (other) | I agree that Local Government has a primary, fundamental, aggregating and promoting role to give rise to Energy Communities. This option, who is absent today, should be open to private citizens, spread all over the territory, thus also outside Urban Centres, making membership in Energy Communities available to everyone. | 1 |
| Italy (other) | Valuing good practices with consistency | 1 |
| Italy (other) | A very large percentage of apartment buildings in our country are unable to make financial commitments to install a renewable energy source | 1 |
| Italy (other) | It would be enough to inform citizens that they can install the system on the roof of the apartment building, and the energy is automatically distributed among everyone. | 1 |

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| Italy (other) | Involve competent professional profiles | 1 |
| Italy (other) | Being a member of energy communities to accelerate their deployment and lower their own costs | 1 |
| Italy (other) | Legal support (e.g., information desk) | 1 |
| Italy (other) | Provide guarantees to cover risks, bankruptcies, etc. | 1 |
| Italy (other) | Opening Helpdesks for citizens with disseminators and facilitators available to those interested in setting up RECs and self-consumption initiatives | 1 |
| Italy (other) | Simplify bureaucracy | 1 |
| Italy (other) | Energy Analysis and Audit. For electricity and heat consumption at the local level, there is a difficulty in accessing data held by Electricity and Gas supply utilities | 1 |
| Norte | Local authorities should act as facilitators/promotors of RECs, and should provide information to the interested citizens | 1 |
| Latvia | Municipality, transforming its energy supply system into a wider use of renewable resources, creates cooperation/clusters with the energy community projects. | 1 |
| Latvia | Financial support could be provided for performing of necessary calculations and preparation of documentation | 1 |
| Netherlands (other) | Local government only has a role in Heat (transition vision heat). It has no role in electrification | 1 |
| North-Brabant | Policy incorporating and rewarding local added value as an award criterion | 1 |
| Norway | Guidance and cost estimation support from public authorities, for example by model of The Norwegian Agency for Public and Financial Management (DFØ) on climate measures | 1 |
| Norway | Informational measures - knowledge of those investing, capacity / competencies of suppliers | 1 |
| Poland (other) | Local authorities should actively communicate opportunities but should not act as intermediaries in distributing funds. | 1 |
| Poland (other) | Financial support will not cover needs. What is needed is a stable legal situation and thoughtful legislative solutions. | 1 |
| Spain (other) | Tax incentive measures. Facilitative municipal by-laws. | 1 |
| Canary Islands | Actively participating in the proposed system, with municipal buildings, by setting an example | 1 |

## Responses to policies suitable for cross country transfer

***Q: Do you know of any novel or promising policy in your country which may serve as a model for other countries to promote the development of renewable energy community***

| Region | Answer | Nb |
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| Belgium (other) | ART.714BW gives every Belgian the same right to use commons such as wind and sun: regional and local authorities give substance to this through a regulatory framework (support model): in Walloon region https://energie.wallonie.be/fr/cadre-de-reference-pour-l-implantation-d-eoliennes-en-region-wallonne.html?IDD=11176&IDC=6170, OVL & co https://www.rescoopv.be/publicaties/omgevingsenergie, public tenders https://www.rescoopv.be/burgermeesterconvenant | 1 |
| Belgium (other) | Stimulating energy cooperatives (Light project Flemish Brabant together with EcoPower and EcoLife) + projects such as Rhedcoop | 1 |
| Belgium (other) | "Energy landscape" approach of the Provinces | 1 |
| Belgium (other) | Due to the way that the legislation has been operationalised into Flemish legislation many interesting opportunities are hampered (due to proximity not being taken into account and administrative burdens). Therefore it remains to be seen whether promising cases can be developed. | 1 |
| Belgium (other) | No, I see mainly reluctance | 1 |
| Limburg (Genk) | no, most things are organised in a way that is too complex (so keep it as simple as possible) | 1 |
| Germany (other) | Yes! A multi-year program to finance Small District Heating in municipalities up to 5,000 inhabitants. | 1 |
| Germany (other) | Germany | 1 |
| Germany (other) | Citizen Energy Fund | 4 |
| Germany (other) | The original feed-in tariff system and, hopefully soon, the removal of barriers to energy sharing | 1 |
| Germany (other) | Energy agencies of the federal government and in particular the federal states, regions and municipalities providing advisory services | 1 |
| Thuringia | Energy Sharing | 1 |
| Thuringia | Servicestelle Windenergie (service center for wind energy) for neutral consulting | 1 |
| Thuringia | Citizen Energy Fund | 1 |
| Thuringia | Exemption from auctions for WTG projects up to 18MW | 1 |
| Italy (other) | Tax reduction for the cost sustained for the Energy Community. Around 50% deduction (like we have in Italy) could be an important financial benefit. | 1 |
| Italy (other) | Superbonus 110% is an available tax break on house renovations that allows installation of photovoltaic systems storage systems. It is s a good instrument | 2 |
| Italy (other) | DLGS 199/2021 | 1 |
| Italy (other) | Ènostra (Community-led renewable energy initiatives) | 1 |
| Italy (other) | We are far behind..... | 1 |
| Italy (other) | Emilia Romagna regional law on energy communities | 3 |
| Italy (other) | Decree no. 162/2019 allow citizens and other STHs to adhere to energy communities, unofficially known as "Milleproroghe" and Resolution 318/2020 / R / eel of ARERA (Italian Regulatory Authority for Energy, Networks and Environment) | 1 |

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| Italy (other) | Geco Green energy community in the district Pilastro-Roveri (bologna) - https://www.gecocommunity.it/ | 1 |
| Italy (other) | The financial support to municipalities provided by the Lombardy region for Energy Communities | 1 |
| Italy (other) | Photovoltaic District | 1 |
| Italy (other) | Yes, National Law december 2021 "Milleproroghe" and Lombardy Region, Regional legislation to support RECs | 1 |
| Italy (other) | Energy Community Legambiente Campania | 2 |
| Italy (other) | Network "Magliano&Friends" promoted by the municipality of Magliano Alpi | 1 |
| Italy (other) | Supportive renewable energy communities: vulnerable households (energy poverty) are advantaged by being able to participate in the REC with ZERO investment and benefit in reduced bills in the role of consumer as they contribute to increasing the public incentive | 1 |
| Italy (other) | transposition of the Directive RED II | 1 |
| Italy (other) | Italy is off to a good start, and I personally have developed a territorial operational program that promotes the development of Neighbourhood ERCs, including with proactive activity in the city council | 1 |
| Italy (other) | Against energy poverty comes self-consumption communities. Scandiano's Emilian experiment. https://change-makers.cloud/comunita-di-autoconsumo-collettivo-scandiano-contro-la-poverta-energetica/ | 1 |
| Italy (other) | green community | 1 |
| Latvia | Financial instruments available for households: (i) Emission Allowances Auctioning Instrument financed programme and (ii) State-owned development finance institution ALTUM managed programme (TRANSLATOR COMMENT - see the content-same answers in the rows 26 and 27 below). | 1 |
| Latvia | The District Heating utility of Salaspilts town has implemented district heating system that involves also solar heat collectors park (ground-mounted) owned by the district heating utility | 1 |
| Latvia | The initiative of Smart Villages (including the active local resident communities). | 1 |
| Latvia | The state financial support programme provided for energy efficiency improvement and purchase & installation of local electricity production technologies for households in single-family (one apartment) and two-apartment buildings | 1 |
| Latvia | The state financial support programmes provided for purchase & installation of solar PV technologies (TRANSLATOR COMMENT - see answer in the previous raw 26) | 1 |
| Latvia | Public infrastructure (for instance, roofs of municipal buildings) could be used for energy community projects. | 1 |
| Latvia | probably, the activities of Co2mmunity project can be noted | 1 |
| Latvia | As a natural person, I would like to buy shares in a renewable energy park that would match a certain amount of electricity capacity. The share price on the stock exchange can fluctuate and I would always be able to sell them | 1 |
| Netherlands (other) | https://energiesamen.nu/nieuws/1247/slim-energie-delen-goed-voor-energiecooperaties-en-voor-het-net | 1 |

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| Netherlands (other) | In Leiden, a number of neighbourhood residents receive subsidies to encourage their fellow neighbourhood residents to make their homes (and lifestyles) more sustainable. This works well because the neighbourhood residents know their neighbourhood/neighbourhood well. | 1 |
| Netherlands (other) | No policy, but some initiatives to form local energy communities, including waivers for experimentation with pricing models | 1 |
| North-Brabant | Policies created as a result of Energie Samen, including 50% local ownership for large-scale generation. https://energiesamen.nu/pagina/35/financiering | 2 |
| North-Brabant | Setting national goals | 1 |
| Norway | The Norwegian hydropower model | 1 |
| Norway | Norway has a high share of renewables and a 100 % renewable power production. Local energy communities do not make as much sense in Norway as in other countries. There should not be made suboptimal solutions when establishing local energy communities. Making the energy system as a whole renewable with more flexibility and interplay between power grid and renewable energy carriers, is more important than establishing limited local energy communities. Local sharing of electricity between buildings is often in conflict with an efficient operation of the power grid. Local energy communities must participate in the energy system and power grid on the same terms as other actors. | 1 |
| Norway | Holistic, sustainable local communities which in addition to a focus on energy embraces the whole spectrum of housing - living - working, and which can serve as a model. | 1 |
| Norway | Innovation Norway, for example the program for renewable energy | 2 |
| Norway | The new national budget seeks to facilitate electricity production and sharing among housing associations / cooperatives. | 1 |
| Norway | Locally owned power companies (production, grid, sales to end user). A big state owned power producer (Statkraft) and a big state owned grid company (Statnett). Ground rent taxation for large hydropower plants that can be regulated, which returns super profit back to the community (including host municipalities). Requirements for public ownership in large hydropower plants (which will also secure national ownership). | 1 |
| Norway | Solar in housing associations/cooperatives | 1 |

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| Norway | Political willingness to see co-use of Agriculture, nature and recreational areas and solar park in Birkenes municipality. Brattørkaia in Trondheim, co-use of shares energy from rooftops. | 1 |
| Norway | Use power for local production in order to avoid grid rent on local production | 1 |
| Norway | Hybrid cables offshore and between land | 1 |
| Poland (other) | Ireland - Most of the support to RES is channelled through energy communities. | 1 |
| Poland (other) | The dynamic change in the law and the degree of its complexity introduce a thrill, and the lack of anticipated conditions in the future promotes individuals with a highly developed tendency to gamble. | 1 |
| Portugal (other) | Several initiatives in place, as e.g. the case of the Municipality of Maia | 1 |
| Portugal (other) | REC of Agra do Amial (best-practice identified in WP5), promoted by the local authority to create a REC in social housing building blocks. It is a very specific model, without management and energy sharing issues, as the landlord is the owner of the electricity generation unit. | 1 |
| Norte | New Decree-Law on the functioning of the power sector (DL nº15/2022) - it establishes provisions for the implementation and operation of RECs, CECs and collective self-consumption and mandates the establishment of support tools (described in the template for T7.1).<br>Coopérnico (Renewable Energy Cooperative) - It is a renewable energy cooperative which invests in RES-e generation units to sell to the grid and supports individual citizens (members and non-members of the cooperative) in the investment in RES. It also participates in several R&D projects, related to RECs and other energy community initiatives | 1 |
| Spain (other) | No. See Italian and California legislation | 1 |
| Spain (other) | Crevillent REC | 1 |
| Spain (other) | The Plan for the development of energy communities in the Valencian community, developed by the regional government (https://www.coopelectricas.com/wp-content/uploads/2021/05/Plan_CEL_2030-Comunitat_Valenciana.pdf) | 1 |
| Spain (other) | Lease of public-owned rooftops to launch the first energy communities in a municipality | 1 |
| Spain (other) | The Draft Regulation of energy communities in Navarre (Spain): https://www.navarra.es/es/-/el-departamento-de-desarrollo-economico-y-empresarial-impulsa-una-normativa-pionera-para-regular-las-comunidades-energeticas | 1 |
| Spain (other) | La Palma Renovable (REC based in La Palma, Canary Islands - https://lapalmarenovable.es/) | 1 |
| Spain (other) | Municipal by-laws adapted to PV for local energy communities. Property tax and Construction, Installations and Works tax rebates for those who install PV on the roofs of residential properties for self-consumption | 1 |

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| Spain (other) | In Portugal and France, shared self-consumption is possible within a distance of 2km, whereas in Spain the limit is on 500m from the generation source | 1 |
| Spain (other) | The regulation of shared self-consumption with variable coefficients | 1 |
| Canary Islands | Unless and until the call for regulatory sandboxes is published, energy communities in Spain are limited to shared self-consumption. There is nothing innovative about that. | 1 |
| Canary Islands | The Royal Decree RD 244/2019 regulating the administrative, technical and economic conditions for the self-consumption of electricity. | 1 |
| Canary Islands | "La Gorona del Viento" hydro-wind power station (https://www.goronadelviento.es/) | 1 |
| Balearic | The Valencian Community's REC-friendly ecosystem | 1 |

***Q: Do you know of any policy measures adopted in other countries or regions which may serve as a model for your region in order to facilitate the development of renewable energy community?***

| Region | Answer | Nb |
|---|---|---|
| Belgium (other) | Climate agreement in the Netherlands in 2019 with mandatory participation plan for large-scale wind and solar projects tailored to the local community as a condition for permit application (up to 50% citizen participation) https://www.hieropgewekt.nl/kennisdossiers/klimaatakkoord-participatie-en-50-eigendom-van-lokale-omgeving, hence the petition to the Flemish parliament in 2020 to take similar initiative as in the Netherlands (a Flemish decree tailored to enforce local regulations which are now ignored by project developers), is nice interpretation of EU directives' level playing field for citizen initiatives | 1 |
| Belgium (other) | Reduction of grid costs in relation to the costs avoided by energy sharing. However, this is only possible if a geographical requirement is included in the regulation. | 1 |
| Belgium (other) | Set a 50% participation rate for RES projects | 1 |
| Limburg (Genk) | France. For many years, a clear vision and implementation. | 1 |
| Limburg (Genk) | No, but instead of rewarding renewable energy, one could also try to introduce the reverse 'default' (with an eye for social corrections): taxing the non-use of potentials (e.g. not filling up a sunny roof with PV or solar boilers, building a new housing project without storage capacity...)? | 1 |
| West-Flanders (Zwevegem) | France | 1 |
| Germany (other) | Yes!  Allocation of financial funds for revolving financing of new facilities to Cooperatives/Associations to support their SELF-EMPLOYMENT. | 1 |
| Germany (other) | Virtual Net Metering | 1 |
| Germany (other) | "Wind caretakers" are part of the wind energy initiative "Aufwind" in Bavaria. The wind caretakers advise and support selected municipalities in their projects and are coordinated by the state agency for energy and climate protection | 1 |
| Germany (other) | Implementation in Austria with the corresponding consulting services; implementation in Italy and Spain. | 1 |

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| Germany (other) | Denmark: Initially, there were tax benefits for electricity generated for own consumption via an energy cooperative. | 1 |
| Thuringia | Citizen energy fund in Schleswig-Holstein | 1 |
| Thuringia | Feed-in model in the Netherlands (electricity meter runs backwards) | 1 |
| Italy (other) | Trentino Alto Adige region | 1 |
| Italy (other) | I have not been interested in it. So much bureaucracy in Italy wastes time, too much time, and endes up to ward off citizens the responsibility, in my opinion, also lies with the EU Regulations, which are farraginous and change too often | 1 |
| Italy (other) | Yes Apulia Region | 1 |
| Italy (other) | Lastly, Switzerland has also regulated the possibility of energy exchange within small communities | 1 |
| Italy (other) | Mountain Communities | 1 |
| Italy (other) | Germany and Denmark | 1 |
| Italy (other) | Not having branch cabin limits would give more development | 1 |
| Italy (other) | Yes, in Spain | 1 |
| Italy (other) | NYSERDA - New York | 1 |
| Italy (other) | Magliano Alpi has developed a really substantial and well-conceived model | 1 |
| Latvia | Fair profit distribution model in Schleswig Holstein (Germany). | 1 |
| Latvia | Strengthening the awareness of local communities that promotes local collective initiative in general, including energy production and distribution | 1 |
| Latvia | Example in Denmark: residents energy cooperative that produces wind energy | 1 |
| Latvia | The revolving community energy fund, used in the north of Germany, which ensures the construction of real projects and their economic benefits | 1 |
| Latvia | (1) Operation (activities) of energy cooperatives; (2) Community wind parks | 1 |
| Latvia | Compensation mechanism available for local communities due to the installation of wind turbines | 1 |
| Latvia | Cooperatives | 1 |
| Latvia | The Smart Villages (including the active local resident communities) | 1 |
| Latvia | Associations of land and building owners | 1 |
| Latvia | Strengthening the role of the region and setting regional goals and assigning regional functions, as in Sweden and Denmark | 1 |
| Latvia | Legislation needs to be put in place to make it easier for communities to install renewable energy technologies. Tax rebates or other financial incentives. Willingness to interact and communicate with communities, as well as to recognize their existence and to include them in the development planning documents or otherwise highlight in political goals. | 1 |
| Latvia | Land lease model for the use of renewable energy resources that follows the example of wind farms in the Schleswig-Holstein, Germany | 1 |
| Latvia | Wind parks in Germany | 1 |
| Latvia | There is no information about all the implemented models. Latvenergo operations in Lithuania near Klaipeda, constructing and selling a solar PV park and continuing to service it, are to be supported. | 1 |

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|---|---|---|
| | There is no information about all the implemented models. Latvenergo operations in Lithuania near Klaipeda, constructing and selling a solar PV park and continuing to service it, are to be supported.<br>The example of Lithuania, which allows residents to buy shares of a solar PV park (for example) and consume the energy produced in their home (located elsewhere not next to the solar PV park). Thus, the city residents also have the opportunity to participate in renewable energy projects and consume the renewable energy produced in them | |
| Latvia | The example of Lithuania, which allows residents to buy shares of a solar PV park (for example) and consume the energy produced in their home (located elsewhere not next to the solar PV park). Thus, the city residents also have the opportunity to participate in renewable energy projects and consume the renewable energy produced in them | 1 |
| Latvia | There cannot be selected only one example. The West European countries have a range of good examples. | 1 |
| Latvia | Models used in Germany, Spain, Portugal | 1 |
| Netherlands (other) | https://www.agem.nl/home | 1 |
| North-Brabant | Danish heat model: freedom of choice of supplier | 1 |
| North-Brabant | Flanders - energy sharing | 1 |
| Norway | Local ownership rules in Germany and Denmark for wind power | 1 |
| Norway | Equivalently, initiatives and pilot projects like eco villagess, re-gen villages etc. will serve as inspiration in Norway | 1 |
| Norway | E.g. models from Austria | 1 |
| Norway | Clearly define legal organizational forms for renewable energy communities, see e.g. Genossenschaft model in Germany | 1 |
| Norway | I know Belgium and the Netherlands have developed guidelines and initiated cooperatives for solar energy from agriculture | 1 |
| Norway | Yes. The grid company owned by Nord Østerdal kraftlag (a cooperative) | 1 |
| Norway | Feed-in tariffs, the battery support scheme in Germany… | 1 |
| Norway | A couple of initiatives from the US and AUS on replacing the use of the so called "shade balls" with floating solar power systems in order to prevent evaporation of water reservoirs looks promising, given our current and future problems with water reservoir filling. | 1 |
| Norway | Sweden, Germany | 1 |
| Poland (other) | I follow local initiatives. I get to know the realities of the market of independent RES energy operators in Germany. | 1 |
| Poland (other) | Copy German solutions, i.e. the leader of RES | 1 |
| Poland (other) | high subsidies for the exchange of heat sources / GERMANY, FRANCE | 1 |
| Poland (other) | yes, in Belgium and Espania | 1 |
| Poland (other) | Building a cooperative movement in Germany | 1 |

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|---|---|---|
| Portugal (other) | "Projeto Culatra 2030 - Comunidade energética sustentável" - EU funded project, including 6 EU islands selected to serve as examples to follow. The Portuguese island is a fishing community which intends to be self-sustainable until 2030, with RES electricity generation, waste transformation, biofuels production and energy renovation/upgrade of local buildings. | 1 |
| Portugal (other) | REC implementation in Belgium, Brussels region | 1 |
| Portugal (other) | Several REC examples in Spain | 1 |
| Norte | There are several EU examples which may be used as reference | 1 |
| Spain (other) | Local Energy Community "El Rosario Solar" | 1 |
| Spain (other) | Annual net balance of self-consumption | 1 |
| Spain (other) | Obligation to create energy communities in new urban developments | 1 |
| Spain (other) | Remove the 500m limit or at least increase it to 5000m. | 2 |
| Spain (other) | The Mayor of Leuven empowers to civil organisations on energy issues | 1 |
| Spain (other) | Transposition of EU Directive 2018/2001 | 1 |
| Spain (other) | The annual energy balance for self-consumption | 1 |
| Canary Islands | Recent policy measures taken by the German government to reduce foreign energy dependence. | 1 |

# CONTACT

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# PARTNERS

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