



A deliberative event for defining CAIs' pathways in the Energy Transition

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Abbreviations and acronyms

CAI:	Collective Action Initiative
CEC:	Citizen Energy Community
REC:	Renewable Energy Community
COMETS:	Collective Action Models for Energy Transition and Social Innovation
DSO:	Distribution System Operator
GA:	Grant Agreement
NLP:	National Leading Partner
RES:	Renewable Energy Sources

Contribution history

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EXECUTIVE SUMMARY

The Deliberative Event held on 9 March 2022 represented a pivotal step within the COMETS work plan. After 2,5 years spent in building new knowledge about CAIs features, relevance, dynamics of evolution, challenges and barriers, the deliberative event provided a robust participatory reflection for the project to valorize all the knowledge produced so far in view of the definition of the EU and national guidelines. On the basis of the results of the deliberative event reported in this document, these guidelines will be further defined and described and will represent, jointly with the release of the EU wide Inventory,¹ the final output of the project.

The deliberative event, inspired by the tradition of a deliberative democracy, was organized by adopting the Electronic Town Meeting model and was structured in two main sessions:

- **Discussion session I** aimed at answering the question: *What are the guiding principles that should lead a national strategy for spreading the CAIs' model in your country?*
- **Discussion session II** aimed at answering the question: *What concrete actions can be taken to implement the national strategy according to such principles?*

Therefore, the deliberative event had a twofold objective: collecting and reprocessing the knowledge produced so far to identify the main principles to be followed in order to foster the CAIs model and identify possible concrete interventions to be implemented. In this deliverable, most of the attention is paid to the results of the first discussion, that are the guiding principles, while the actions and concrete interventions are shortly presented in their provisional definition, as they represent the basis for the future refinement that will feed the identification of the guidelines mentioned above.

The starting point of the discussion to identify both the guiding principles and actions were the challenges that the COMETS consortium that were previously identified in the past tasks of the project's case studies and the participatory activity reported in the COMETS deliverables *D4.2 - Report on the comparative Case Studies* and *D5.2 - Report on Scenarios and Roadmaps for CAIs*. These challenges were identified by the COMETS National Research Teams for each of the national contexts and varied notably from country to country. A detailed description is provided in section 3, while below is the complete list that highlights the richness and heterogeneity of the challenges CAIs face:

Country	Challenges
Belgium	professionalisation, collaboration with local authorities, collaboration among CAIs, financial support mechanisms, access to the energy market, overcoming exclusiveness
Estonia	the level of state intervention, the lack of a common definition, national support measures, grid connection issues, energy distribution
Italy	further and finer regulations, greenwashing and the italian energy market, the energy price crises, diffusion of innovative and inclusive business models, increasing the national energy literacy, new social values and prosumerism, prosumerism and smart grids for the future, technological development;

¹ See deliverable 2.3 – Wide inventory of CAIs http://www.comets-project.eu/images/deliverables/COMETS_D23_INVENTORY.pdf

The Netherlands	financial issues, expertise and experts, legislation, governmental partnerships and recognition, capacity and willingness of governments and utilities, competition or cooperation with commercial parties, cooperation among energy CAIs, CAIs and democracy, participation and ownership, recruitment of new members and supporters
Poland	cooperatives in polish culture, the energy markets, european law reception, national legislation, prosumerism, the net billing impact on RES, the global energy crisis
Spain	CAIs and the local entities' role, centralised vs distributed and individual vs collective models, competition/collaboration with traditional actors, incentives and subsidies, innovative financing instruments, technical challenges, training and energy empowerment, energy sharing and trading schemes, social inclusion and diversity

Against this heterogeneity of challenges, the deliberative event's first discussion session provided the opportunity to identify a wide list of guiding principles that should be followed at the country level in order for these challenges to be properly considered. A comparative analysis of these guiding principles contributed to finding some commonalities that refer to the following dimensions:

1. *A better regulatory framework*, allows citizens to have a full understanding of RECs, supports the creation of CAIs from the bottom, decreases the dependence of Russian gas as a source of energy, helps with upscaling the model and an augmented professionalization, highlights the differences in the regulations of autonomous regions, supports an adequate land policy.
2. *Awareness and cooperation*, promotes the empowerment of people on energy issues in order to tackle the insufficient citizens' knowledge or culture and to raise the level of education over energy needed in order to help people comprehend the technicalities of the energy sector and understand the potential of CAIs. A claim is made for moving towards a more general democratization of the energy system also through the adoption of deliberative democracy.
3. *Resources*, to be intended as both spatial and financial as a basic requirement to help CAIs thrive, which often face challenges of visibility, financial support and scale. As for the latter, hybrid funding models involving public and private funds should be pursued. While on the other hand, energy prices for RECs' should be subsidized and fixed (i.e. not bound to market prices) to reduce the unpredictability and instability of CAIs.
4. *Quality of projects*, in order to augment the level of inclusiveness, involving citizens early in the project development, to optimize CAIs position relative to the infrastructure and associated actors to cope with net congestion hampering their development and to support the connection to distribution networks.

Similarly, through the second session of discussion, it was possible to identify more concrete actions again proposed by each country that can be clustered in the following groups:

1. *Legal framework*, e.g. allowing CAIs to manage grid balancing and playing a more active role in the energy system, revision of legal frameworks concerning energy, space and land, and current taxation process, create the framework to make energy sharing profitable.
2. *Technical*, e.g. advice to use sustainable insulation materials; promote energy sharing in multi-apartment buildings; create advantage for local energy use; define network assets that the distributor would have to install in intermediate parts of the network; concrete guidelines/toolbox for citizens for different technical solutions for decarbonising individual homes, especially focusing on heating.
3. *Awareness & Knowledge*, e.g. create attention in the media, implement climate education (including a wider context: energy, food, mobility), create places where citizens can learn about

the energy transition; constant information for communities, short-training sessions for citizens, taking into account the local context.

4. *Support*, e.g. the creation of support offices for the development of projects related to the energy transition; development of procedures between distributors or commercial parties and energy communities; harmonisation of processes with the autonomous communities; practical templates and guidelines for CAIs defining different governance models; success stories advertising.
5. *Actors*, e.g. CAIs themselves should evolve towards better organisation, cooperation, capacity building and empowerment and lobbying with DSO; the need of a mediator who is involved in direct contact with residents and housing communities; energy advisor in local municipalities (LM-s are responsible for RE developments); CE expert and green energy expert.

All these actions will be further developed and integrated through a refinement process that will involve the COMETS National Research Teams and a group of selected experts and stakeholders at EU and National levels in order to build the guidelines and recommendations contained in the final deliverable *D5.3 Manual – A strategic roadmap for supporting social innovation in the energy sector* to be released by the end of April 2022.

1 Introduction

The meeting within and for COMETS

The Deliberative Event has been designed in line with the ambition of identifying possible solutions and strategies to exploit the potential of the Collection Action Initiative (CAI) models. Therefore, stakeholders and experts in the field of the energy transition and collective action have been invited **to discuss the challenges identified** by the COMETS consortium for each country through the case studies and the participatory activities carried out in the past two years. The results from those tasks are reported in the deliverable *D4.2 - Report on the comparative Case Studies*² and *D5.2 - Report on Scenarios and Roadmaps for CAIs*³. The objective of the event was to find preliminary **recommendations** for improving the start-up, steering, and up-scaling of CAIs activities at the National and European Union levels. The ambition is for these recommendations to be transferred to the actors in charge of defining the future of the wider EU energy system. To this aim, the results of the discussion represent a key step towards the final deliverable of the COMETS project *D5.3 Manual – A strategic roadmap for supporting social innovation in the energy sector* and a key component of the policy dialogue with European and National policymakers organized in the framework of the COMETS Final Conference in Brussels, 28 April 2022.

Objectives of the event

The main focus of the event was on how the national regulatory, economic, social and policy framework of European countries should evolve in order for CAIs to spread and scale-up.

Starting from the challenges that each country's partner identified and summarised (reported in section 3 of the present deliverable), the specific objectives of the event were:

- to identify the guiding principles that should lead a national strategy aimed at spreading the CAIs' model in each country;
- based on such principles, to identify the key actions to be included in the national strategy's recommendations for each country;
- to stimulate the exchange of good practices among countries.

In summary, in addition to being a priceless contribution to give robustness and relevance to COMETS results, the event represented a great opportunity for all the participants to express and share their views, to hear from others and to contribute to the definition of guidelines for inspiring future policy design on CAIs role in the energy transition.

² http://www.comets-project.eu/images/deliverables/D42_Comparative_Case_Studies.pdf

³ http://www.comets-project.eu/images/deliverables/COMETS_D52_SCENARIOS.pdf

2 Methodology

The deliberative event approach is inspired by the tradition of deliberative democracy that is mainly based on dialogue and informed debate. Moreover, "deliberation" means in-depth evaluation through discussion and comparison between different points of view.

Deliberative events, therefore, are organized in such a way to raise awareness on the event's topic through:

- the acquisition of data and information (before and during the event);
- discussion in small groups (during the event).

This deliberative event methodology was adapted from the **electronic Town Meeting** method for citizens' direct participation to local governance and policymaking. It was first used in New England, USA, and has broadly developed across the United States and Europe ever since. It is an instrument of deliberative democracy that allows big groups of people to discuss and elaborate concerted intervention strategies and actions. The contemporary declination of the Town Meeting (the electronic Town Meeting, or e-TM) conjugates the liveliness of small-scale discussion with electronics:

- it allows small working groups to have a debate and a discussion where every participant has room to share his/her opinion;
- it allows to send the outcome of each discussion to a central room where it can be elaborated and presented homogeneously right at the end of the meeting.

Due to the Covid-19 pandemic and the multi-national nature of the COMETS project, the tool has been implemented in an online-only version via the Webex platform.

The deliberative event lasted 3,5 hours and was structured with an initial plenary session, two discussion sessions and one final plenary session. During the discussion sessions, the participants were divided by country into breakout rooms, moderated by a **facilitator**, assisted by a note-keeper. In the first session, participants were invited to debate on what **principles should be adopted** to overcome the main obstacles CAIs face at a country level. The output of this session produced a **list of principles** to overcome those challenges and a direction to move forward. During the second session, participants were asked **to propose actions** based on the principles identified in the previous session. The output of this session was a footprint of the guidelines to promote a national strategy and recommendations that will be further developed in deliverable 5.3 (*Manual – A strategic roadmap for supporting social innovation in the energy sector*) to be released by the end of April 2022. During the final plenary session, participants had the opportunity to have a first overview of the outcomes emerged from the discussion in all the breakout rooms, with attention paid to both the common traits and to the countries' specificities.

Agenda of the event

At the beginning of the meeting, the event's background and objectives were clearly and extensively presented to the participants. After that, they were divided into breakout rooms with participants

coming from the same country. The alternation of moments of work in plenary and discussion in small groups enhanced the specificity of each country, but also the wider multi-national perspective of the event.

The event took place on 9 March 2022 from 1 pm to 4:30 pm CET and was subdivided into the following main phases:

- ❖ Initial greetings
- ❖ Plenary session I: introduction of the event's objectives
- ❖ Discussion sessions in national breakout rooms:
 - Discussion session I
What are the guiding principles that should lead a national strategy for spreading the CAIs' model in your country?
 - Discussion session II
What concrete actions can be taken to implement the national strategy according to such principles?
- ❖ Coffee break
- ❖ Plenary session II: presentation of the discussion's outcomes
- ❖ Final greetings

Work phases

The general question the event seeks to answer is *how the national regulatory, economic, social and policy framework of European countries should evolve for CAIs to spread.*

Plenary session I

In the initial plenary session, the project's consortium outlines the main challenges that emerged from the research conducted in the six countries during the previous phases of the COMETS project and will present the objective of the event and its work phases. The aim is to share with the invited stakeholders the information they need to guide the discussion sessions, where they have been asked to use the analysis' results to identify principles and actions for a national strategy.

The plenary session was run in English with subtitles in the respective country languages.

Discussion session I

Main question: *What are the guiding principles that should lead a national strategy for spreading the CAIs' model in your country?*

Once the participants were divided into national breakout rooms, the facilitators briefly illustrated the Discussion Guide's chapter describing the challenges that the COMETS' national partner has identified during the case studies and participatory activities carried out in previous tasks of the project (see footnotes 1 and 2). The facilitators asked the stakeholders firstly to comment on and integrate such challenges, and secondly to identify guiding principles to overcome them.

To stimulate the discussion, participants were asked to reflect on the following questions:

- *Do you think that the challenges identified at a national level so far are relevant and complete? How would you rephrase or integrate them?*
- *Which guiding principles should be adopted for overcoming such challenges?*

The discussions were run in the national language(s) and the note-keepers took notes in English and sent it to a central Theme Team who was in charge of aggregating them and producing one synthesis.

Discussion session II

Main question: *What concrete actions can be taken to implement the national strategy according to such principles?*

In the second discussion session, participants resumed the conversation by moving a step forward and identifying the key actions that should be present in the national strategy guidelines to help the CAIs' model to spread at the country-level. Participants focused on the actions that should be taken, as well as the actors that should be involved and the timeframe for implementation.

To stimulate the discussion, participants were asked to reflect on the following questions:

- *What actions should the national strategy foresee to spread the model of the CAIs?*
- *Which actors should be involved?*
- *What is the timeframe for their implementation?*

The discussions were ran in the national language(s) and the note-keepers shared a Miro board where they took notes in English. The actions identified represented the basis of the further project's activities that aimed at identifying the EU and national guidelines that will compose the final deliverable *5.3 Manual – A strategic roadmap for supporting social innovation in the energy sector*.

Final plenary

After the two discussion sessions, participants came back to the plenary where the outputs produced by each national group were presented to all the participants. The final plenary session, run in English with subtitles, focused mainly on the guiding principles resulting from the first discussion that were extensively discussed and further processed by the Theme Team. Only a short overview of the actions resulting from the second session was given, in line with the future planned project's activities.

After the event, all the participants have received a short report in English and in their national language(s).

3 The starting point: challenges by country

In this section, the main topics and challenges that emerged from the research on CAIs were reported and set a common ground for the breakout rooms discussions. These challenges summed up the main findings of the previous steps of the project for each country context, in particular concerning the regulatory status; cultural, social, and economic dynamics; geopolitical position and others.

Topics were divided by country in order to feed the discussion sessions among participants coming from the same national territories. Nevertheless, all topics were reported to stimulate the discussion with arguments that may have been relevant for other countries, as well.

Countries are reported in alphabetical order.

Belgium

In Belgium, the main topics emerged from the previous activities are:

1. Professionalisation
2. Collaboration with local authorities
3. Collaboration among CAIs
4. Financial support mechanisms
5. Access to the energy market
6. Overcoming exclusiveness

1. Professionalisation

A certain level of professionalization is needed for the kind of activities that CAIs in the energy sector are doing, i.e., prospection, development, monitoring, follow-up of RES projects, but also to facilitate the increase in the number of projects. Growth in the number of profitable projects is necessary for CAIs to be viable and sustainable in the long term and to generate a stable income flow that makes the CAIs less dependent on subsidies. However, most CAIs in the energy sector are currently voluntary based or have a limited number of full-time equivalents (FTE). Also, the personnel costs depend (partly) on subsidies and cannot be fully covered by the revenues of the RES projects. Hence, a huge challenge for CAIs is to transition from voluntary based and subsidy dependent activities to more professional and revenue-based organizations.

2. Collaboration with local authorities

Collaboration with local authorities that value citizen participation contributes to the development of CAIs in the energy sector. For example, the municipality can promote a RES project through its communication channels, or create an opportunity to invest by launching a tender for a wind turbine on their land or PV panels on the roof of their buildings. However, the support of local authorities is often ad hoc and depends on the view of the local policymaker on the specific renewable energy project and citizen participation in general. It is difficult for CAIs in the energy sector to break through the existing tendering structure and set up structural collaborations with municipalities (as, for example, inter-municipal companies can do). Thus, the challenge for scaling up is to set up a more structural collaboration with municipalities for investment opportunities and outreach.

3. Collaboration among CAIs

By collaborating, CAIs can explore new business models, (e.g. shared mobility, retrofitting, energy-efficiency, flexibility services), enlarge outreach to potential members and project partners, share

knowledge on specific topics and target groups, pool resources and experts, get access to local RES projects and financing opportunities. Although good examples of collaboration between CAIs currently exist, these collaborations are often ad hoc or project-based. More structured networking, partnerships, and knowledge creation among CAIs in the energy sector remain a challenge.

4. Financial support mechanisms

Financial support mechanisms (e.g. green certificate or PV call system; differences in taxes on electricity and gas) can have a positive impact on the business model of a local (renewable) CAI's energy project. However, they can also influence the competition between the private and collective energy markets, which can be problematic for CAIs if certain financial support mechanisms favor the private energy market. In Flanders, for example, the certificate system has been phased out and replaced by an investment subsidy for some categories of installations. Wind turbines between 10 kW and 300 kW and PV installations between 40 kW and 2 MWp can apply for an investment subsidy through a call system. The phase-out of the green certificate system has a considerable impact on the profitability of the larger, roof-top PV installations. Within a call system, everything is conditional. As such, the CAIs cannot calculate the business case for their installations at the end of the year because they do not know the return. Also, a call system will most likely benefit the larger players on the market with investments in the order of magnitude of millions of euros and not the CAIs with small scale investments. Currently, there are no financial support mechanisms in place that specifically target collective (renewable) energy investments. Also, the existing financial support mechanisms for renewable energy technologies (e.g. call system) do not consider the specificities of CAIs which often have small scale RES projects and a primary aim to share the energy produced amongst their members (and not to maximize the self-consumption of the owner of the roof). From the perspective of upscaling, there thus lies a challenge for CAIs to still find ways to benefit from financial support, and a challenge for policy-makers to find financial support mechanisms that ensure a level playing field for the collective and private markets.

5. Access to the energy market

Access to the energy market for CAIs is currently hindered by regulations (e.g. one access point per dwelling) and de facto monopolies. CAIs have to compete with large project developers/commercial companies for access to resources/knowledge/subsidies/projects," e.g. "rush for land" for wind turbines where good sites for wind turbines are already developed, and potential good sites have been put under contract by a project developer. It is difficult to set up a partnership with established market players (e.g. large developers of wind turbines, DSO) as they prefer to develop the project on their own, without citizen participation and want to have a majority in the project in case of a partnership. A stable, transparent, and adequate regulatory and enabling framework for community energy projects that promotes a level playing field for CAIs and facilitates their development is currently missing. Also, umbrella organisations, such as REScoop Flanders and REScoop Wallonia, have limited resources available to expand and professionalize the support they offer to their members to ensure that local energy communities can grow and compete with the commercial

players and get adequately supported through regional (and local) policies. The double challenge for scaling up is for CAIs to compete with established players under these difficult conditions, and for policy-makers to set up an adequate regulatory and enabling framework for community energy projects.

6. Overcoming exclusiveness

Community energy projects are expected to play a key role in tackling energy poverty while, at the same time, contributing to the engagement of diverse groups of people in the energy transition. Currently, however, there are limited activities or actions undertaken by CAIs in the energy sector to target vulnerable consumers and increase the accessibility of the initiative for citizens with different socio-economic backgrounds. A major current challenge is thus to facilitate scaling up across a variety of social groups.

Estonia

Estonia is currently integrating the topic of energy communities into national legislation and is starting to develop a national legal framework to support energy communities.

In Estonia, the main topics that emerged from the previous activities are:

1. The level of State intervention
2. The lack of a common definition
3. National support measures
4. Grid connection issues
5. Energy distribution

1. The level of State intervention

Estonia is currently transposing the recast European Renewable Energy Directive (REDII) and the European Internal Electricity Market Directive (IEMD) into national law, and energy communities will soon be officially included in the Estonian legal framework. The adoption of the EU directives comes with the obligation for all Member States to create a supporting reference framework for the development of energy communities. The Estonian Ministry of Economic Affairs and Communications has been working on this for some time and the process is evolving. Nevertheless, as this is a new field for Estonia, some fundamental issues have emerged, the discussion of which is a prerequisite for the completion of a well-functioning and effective reference framework. Thus, it is important to understand the level of intervention and measures of support at the national level, that is, to understand to what extent the State should intervene. In fact, whilst supportive action and the removal of existing barriers are needed to activate the sector, excessive intervention (for example in the case of various subsidies) may have a detrimental effect on the future competitiveness of established energy communities and lead to excessive unequal treatment compared to other market participants. That is why a well-balanced approach is needed and the dividing line should be identified.

2. The lack of a common definition

Estonian laws will define Citizen Energy Community (CEC) and a Renewable Energy Community (REC) on the basis of EU directives. However, on a daily basis, there is a more convenient term in Estonian, “energy cooperative” (energiaühistu), which creates a lot of confusion, especially for citizens and communities. Thus, a common definition and concept for energy communities is needed, both for the professional literature and for the communication with citizens and communities. In fact, the confusion can be challenging when wanting to upscale the model. The identification of a common approach on how to use terms in the future and communicate the topic to society and citizens is a relevant challenge for the future of CAIs in Estonia.

3. National support measures

Since the topic is relatively new for Estonia, as of today, no supporting measures have been established in the country specifically for energy communities. The question is thus raised on whether support measures should be developed or not, particularly with regard to the development of a reference framework.

Currently, there are no legal obstacles to the creation of energy communities. Yet, energy communities have not been actively established in Estonia so far due to citizens’ low awareness and low willingness to cooperate, as well as the lack of financial resources within the communities. Thus, there may be contextual obstacles in the establishment of CAIs and there might be a need for appropriate support measures. Nevertheless, it is important to distinguish the activities in which support may be critical and reasonable and those in which it is likely that the obstacles will be rather removed naturally in the course of the sector development. In fact, to identify relevant support measures, it is important to understand what are the main bottlenecks that emerging energy communities face, for example, whether direct financial measures (e.g. support for feasibility studies) or indirect actions (e.g. creating a panel of consultants) is preferable; if it would be important to introduce exceptions for energy cooperatives or not, and if there is a need for direct grants. While raising community awareness could be more of an intermediate organization action, the establishment of specific support measures is a national competence. Moreover, to identify the relevant support measures, it is important to highlight the main obstacles that the CAIs face in what form and by whom.

4. Grid connection issues

One of the most common and practical problems that small producers, including CAIs in Estonia, are facing is related to grid-specific issues. Many locations face a shortage of connection capacity and even where it exists, connecting to the grid is too expensive. This makes it unreasonably costly to create an energy community, and communities are giving up. It is known that the national DSO plans to create additional connection capacities can be supportive, but it is not clear if this measure will be sufficient, as it will still be very expensive for smaller energy producers, even if the connection is possible.

5. Energy distribution

The distribution and sale to other consumers of energy produced are also problematic. This is especially relevant because of the willingness of CAIs to cooperate. One theoretical option could be using a general grid for this (virtual net metering), which, nevertheless, is currently not possible in Estonia, as in a lot of other countries. Nevertheless, the alternative to installing direct lines is very costly and makes the whole project economically unprofitable. According to the IEMD, Art 16, (d), Member StTES shall provide an enabling regulatory framework for citizens' energy communities ensuring, among other things, fair compensation as assessed by the regulatory authority, as well as relevant distribution system operators cooperate with citizens' energy communities to facilitate electricity transfers within the communities. Nevertheless, no clear plan has yet been identified and the bottlenecks could be overcome as part of this activity.

Italy

In Italy, the main topics emerged from the previous activities are:

1. Further and finer regulations
2. Greenwashing and the Italian energy market
3. The energy prices crises
4. Diffusion of innovative and inclusive business models
5. Increasing the national energy literacy
6. New social values and prosumerism
7. Prosumerism and smart grids for the future
8. Technological development

1. Further and finer regulations

The national and local regulations and institutions affect the capacity of the energy market to move towards a sustainable bottom-up energy transition. In fact, the current legislation and incentive mechanisms are difficult to access for bottom-up and citizen-led REC initiatives. Finally, the lack of regulation (REC with the locality implied) are a factor limiting the wider engagement.

2. Greenwashing and the Italian energy market

The Italian energy market is characterized by a growing *greenwashing* phenomenon due to the diffusion of market proposals to convey a sustainability message rather than offering an actual low-carbon energy solution. Even though they do not contribute to increasing the national green energy supply, several traditional energy companies offer premium price 'green energy' contracts. Their green energy comes from acquiring GOs (Guarantee of Origin) certificates as their goal is to snatch more customers rather than spreading an energetic culture and engaging citizens to participate in the energy market.

3. The energy price crisis

The formation and control of the energy costs is a complex issue that has a severe financial impact on both firms' and families' budgets, affecting their business opportunities and personal wealth and

wellbeing (e.g., energy poverty). The current energy price crisis (+55% electricity, + 42% gas), the root of the causes of which are still unclear, but certainly involve financial speculation, global energy system transformation, geopolitical issues, climate crisis, is causing troubles to three major categories: 1) low-income families, 2) highly energy-consuming business and 3) energy resellers. Such a situation stresses two evident institutional gaps: the lack of a structural and clear national energy strategy and the lack or non-efficiency of energy poverty support measures.

4. Diffusion of innovative and inclusive business models

The development and diffusion of innovative and inclusive business models aimed at empowering citizens, including marginalized groups and communities, by also using collective funding schemes face serious challenges. On one hand, traditional business models in the energy market, where energy users are seen as passive consumers, are still dominant. On the other, the lack of management, administrative and technical skills within bottom-up initiatives make the expansion of new business approaches difficult. Moreover, banks are starting to include ESG (Environmental, Social and Governance) criteria to provide ethical and green bond investments considering their socio-environmental impact, but there is uncertainty about the “content of the funds” and with the restrictive, yet “greening” eligibility criteria (e.g., ESG). Finally, crowdfunding schemes to fund energy initiatives with 200-400 million Euros exchanged at the national level are relevant, yet marginal.

5. Increasing the national energy literacy

The Italian context is characterized by low levels of energy literacy among citizens, who tend to be more focused on prices and consumption issues rather than on the sources of energy production and their management. To guarantee the promotion of a truly sustainable transition, challenges in the Italian context need to be tackled. The widespread lack of information, educational and research programs about the EU, the Italian energy markets and their actors and the business opportunities connected to the energy transition urge a diffused and coordinated intervention. Moreover, the current energy price crisis represents an important opportunity to accelerate the spread of knowledge and the diffusion of innovative and collective market solutions.

6. New social values and lifestyles inspired by prosumerism

In the recent period, new shared values inspired by the principles of sustainable development have spread. These could turn into new social practices and goals for a “green energy transition”.

Nevertheless, low levels of energy literacy, along with the misleading communication strategies of several market operators on existing energy solutions, slow down the development and diffusion of new social values which tend to hinge upon the vision of energy users as passive consumers rather than active prosumers. Moreover, the possible inclusion in the EU taxonomy of gas and nuclear power as sustainable energy sources could reinforce dominant/incumbent “poorly green” energy visions and practices.

7. Prosumerism and smart grids for the future

Despite the remarkable number of individual plants and the rising number of RECs, collective energy initiatives are still a niche phenomenon, lacking visibility, coordination, and proper incentives. The main difficulties in activating RECs are due to undefined meters and unknown benefits (profitability) deriving from participants' variation. Even if the entry and exit procedures in RECs are still unregulated, their new maximum dimension favours the inclusion of industrial sites, which could scale up the RECs volumes and their reach. Also, there is a rising demand for “ready-to-implement” solutions specifically aimed at addressing sustainable energy needs in urban dwellings. Finally, AI technologies have a huge potential for the minimization of energy provision's interruptions and the monitoring of energy flows, but demand-response schemes and dynamic tariffs, as well as diffused and local smart grids, are still lacking.

8. Technological development

The Italian context is characterized by a persistent “sailing ship effect”, which is the process of improving incumbent technologies even though alternative, more innovative, and often more efficient ones are available, even if scarcely used or under-deployed. While the share of renewables is still below the average in comparison to the EU and the EURO zone levels (20.4% vs 22.1% and 20.9%) and scattered across the country, it has a high potential for expansion. It should also be noted that there are severe interregional (North-South) energy imbalances both for the production and the consumption of energy. Finally, low development and deployment of energy storage technologies and very low data accessibility and transparency on energy production and consumption represent other challenges for their further development.

The Netherlands

In the Netherlands, the main topics that emerged from the previous activities are:

1. Financial issues
2. Expertise and experts
3. Legislation
4. Governmental partnerships and recognition
5. Capacity and willingness of governments and utilities
6. Competition or cooperation with commercial parties
7. Cooperation among energy CAIs
8. CAIs and democracy
9. Participation and Ownership
10. Recruitment of new members and supporters

1. Financial issues

Energy CAIs do not have enough financial means and changing subsidy schemes will weaken options for local energy initiatives. In particular, the change of popular subsidy energy schemes and zip code area schemes (PCR) may have dire consequences. Although there are attempts to keep these schemes, additional options should be explored, particularly because in the pre-engineering stages of larger projects, energy CAIs may face serious financial problems. To overcome financial challenges, the following options have been identified: first, the creation of easily accessible energy funds, which require common criteria and a governance structure; crowdfunding; the creation of cooperative subsidiary organizations supporting financial participation in larger projects; more attractive business models, combining more and less profitable projects and playing a role in other markets; finding partners to joint ventures or co-financers. Nevertheless, all these options depend on further professionalization and sufficient expertise of energy CAIs.

2. Finding expertise

In many projects of energy CAIs, expertise turned out to be especially important. However, most energy CAIs do not have enough expertise. Taking onboard experts is crucial when it comes to large and complex projects (for instance district heating). Some energy CAIs asked external experts to make overlapping assignments to avoid dependence. This keeps them sharp whenever they need to defend their ideas. If this is not possible, energy CAIs may exchange knowledge and hire experts together. Long- and short-term cooperation with schools and knowledge institutions may help, too. However, finding and financing suitable expertise can be challenging. Developing own knowledge is also valuable as well as networking to attract people with different expertise, who can potentially check the advice of experts.

3. Legislation

In the Netherlands, current legislation hinders further growth of projects of energy CAIs, i.e., the Heat Act and Energy Act. In particular, the popular *postcoderoosregeling*, the options to experiment new divisions of responsibilities and participating options in district heating are important for energy CAIs. Two options are suggested: a strong political lobby to make these laws and rules attractive for energy CAIs or as an alternative, as energy CAIs work on or look for practical alternatives.

4. Governmental partnerships and recognition

Many governmental institutions do not look at energy CAIs as serious partners in the energy transition, especially when it comes to project development. This may be rooted in cultural beliefs and existing routines. One of the consequences is the lack of a level playing field. To overcome this problem, one option is to lay down a preferential treatment for energy CAIs in the national or regional legislation, another option is for existing CAIs to highlight their experience in designing inclusive and sustainable projects and stressing how they can provide help. If energy CAIs were able to work so, they would become irreplaceable assets, creating trust in the energy transition, charging less than market parties, and thereby having the opportunity to realise projects for lower costs. To become attractive partners to governments, energy CAIs must be able to make concrete and attractive plans

for municipal or state-owned real estate or land but likely not all energy CAIs are able to do that. Additionally, close cooperation may be risky: citizens in fact may regard energy CAIs as implementation departments of governments. In terms of public relations, energy CAIs can link a famous/well-known/familiar person to the initiative to emphasize its societal status.

5. Capacity and willingness of governments and utilities

Many local, regional, and provincial governments have neither the right skills, nor technical and financial expertise, sense of urgency, organizational structure and capacity to guide the energy transition. This is certainly true in small towns and villages. DSOs do not have much experience with participation and are restricted by law to play an innovative role. All this makes it difficult for energy CAIs to play an effective role for the energy transition. Nevertheless, they may try to convince public and governmental institutions that the energy transition asks for other roles, responsibilities and organizations and asks to become leaders and capacity builders in technical, social, economic, and integrative aspects.

6. Competition or cooperation with commercial parties

Commercial parties are dominant in the energy regime, as well as in transition projects. Currently, energy CAIs work together with commercial energy parties in almost two hundred projects. In some of these projects, commercial energy parties take the leading role of the original energy CAI-initiated project. This is a serious dilemma for energy CAIs. Are they able to play a key role in the whole value chain? If not, cooperation with commercial parties is unavoidable to make the project possible. Additionally, questions of whether or not to stop a project if democratic participation of citizens, or the energy CAIs cannot be guaranteed, should be addressed. Furthermore, decisions should be made on how to overcome this dilemma. Moreover, such cooperation can bring undesirable social, technical consequences and too strong dependence, so strict boundaries should be applied. However, such strict rules are not available. For a joint project, a subsidiary BV (besloten vennootschap) seems the best practice and averts parts of the risks in case of failure.

7. Cooperation among energy CAIs

It is often suggested that closer cooperation among energy CAIs is of utmost need. In several provinces and regions, umbrella cooperatives already exist, and they help to set up larger projects together, provide services together, strengthen their financial position, and build on a professional structure for knowledge and technology development and exchange. In some cases, this leads to integrated wind energy and storage or solar energy and mobility projects. Cooperation can also solve the old dilemma of whether to be small and very local or be larger, more spread out. Nevertheless, collaboration is most attractive to the smaller initiatives; some bigger can feel as if they do not need it. Also, it must be kept in mind that upscaling may result in the disappearance of small energy CAIs and decreasing democratic control.

8. CAIs and democracy

There have been cases where more conflicts arise between energy CAIs and other citizens and that distance between members of large energy CAIs, and the board or core group, is growing. Sometimes energy CAIs are seen as just another part of the political or economic system. Professionalization and growth make it more difficult for energy CAIs to function as democratic organizations. This leads to the dilemma of how to maintain internal democracy in alignment with sustainability with the spreading of energy CAIs: some use practical tools, i.e., serious games and virtual models to bridge the gap with citizens, but this may be time-consuming; others, include other themes, such as gardening, mobility, health, or social cohesion to anchor in villages or neighborhoods. However, focusing on energy may make energy CAIs stronger in identity, skills, knowledge, and capacity. Some suggest supporting or creating citizens' forum organizations on energy and working together with other local/regional Civil Society Organisations (CSOs). Despite all these possibilities, the challenge of how to maintain democracy with their growth needs to be tackled.

9. Participation and ownership

Currently, it is unclear how the implementation of EU guidelines for participation and 50% ownership will take place. Although the national government will take the lead, regional and local authorities have options for the implementation of such guidelines. However, it is unclear what the terms "participation" and "ownership" mean and what standards should be adhered to. Moreover, it is not evident whether energy CAIs should play a role in all kinds and stages of decision-making or not. Maybe new governmental arrangements regarding spatial and energy planning are needed for defining the role of energy CAIs compared to other actors in the field. Nevertheless, it is a challenge to carry out any of these suggestions: governmental institutions have not recognized energy CAIs yet, while energy CAIs have not developed political or societal coalitions, apart from several umbrella organizations.

10. Recruitment of new members and supporters

After a rapid growth, energy CAIs seem to be in a plateaued stage. Nevertheless, for the ambition of the CAIs' model, more members and supporters are needed, including a reflection on what kind of members and supporters energy CAIs are looking for. In fact, new members, despite their creed, values, motives, or background, will jointly contribute to the development of the energy CAI and the greater diversity, the greater the chance to have lively internal discussions. Is it better to recruit from personal and professional networks, which stimulate cohesion? Clearly, energy CAIs should know their (prospective) members.

Poland

In Poland, the main topics that emerged from the previous activities are:

1. Cooperatives in Polish culture

2. The Energy markets
3. European law reception
4. National legislation
5. Prosumerism
6. The net billing impact on RES
7. The global Energy crisis

1. Cooperatives in Polish culture

The history of cooperatives in Poland is quite long. Various cooperatives were important during the formation of the state after 1918. However, the imposed experience of socialism destroyed the ideas of cooperative activity and the experience of involuntary associations meant that Poles became reluctant to participate in collective actions. Thus, the importance of cooperatives in the energy market is still very marginal. The challenge is not only to revive cooperatives to the pre-war level, but to use its existing potential (social trust, innovation, the development of the NGO sector as well as urban movements etc.), taking advantage of the fact that currently, Poland is in an ongoing revolution related to the development of renewable energy installations.

2. The energy markets

At the end of 2019, the Polish energy mix was predominantly based on brown coal (lignite) and hard coal (70%), followed by renewable sources (20.1%) and natural gas (5.7%). The most important renewables were wind, biomass, water, and biogas. The government aims to achieve a 21% share of renewable energy in the final (gross) consumption of energy - including heating and cooling, as well as for transport purposes - by 2030. The situation in Poland though is challenging as there are five main distribution companies which, while legally unbundled, are in fact part of large parent companies with significant generation and distribution assets, as well as a significant share of the retail market. The distribution of electricity is based on a transmission grid owned and operated in Poland by a state-owned company, PSE, but the central government supports the creation and establishment of energy clusters by subsidizing and granting loans for investment into the development of grids, new renewable instantiation, and thermal efficiency improvement. Nevertheless, the influence of "big players" in the energy market and legislation has been repeatedly reported by Polish partners of the COMETS project and is indeed challenging to the CAIs. Finally, more often there are reports (only in the press) about the increasingly frequent refusals of operators (in Poland, 6 main DSOs) to connect solar farms to the power grids.

3. European Law reception

The two European Union directives supporting the development of the Collective Action Initiatives (CAIs) in energy will be fully implemented into Polish law in the next few years. At the moment, if the

energy cooperatives want to be officially registered as an Energy Cooperative, they must meet the following conditions provided by Polish law: they cannot have more than 1000 members; the total installed electrical capacity of all renewable energy installations has to cover at least 70% of its members' needs and the total capacity of electricity production of all members cannot exceed 10 MW. Moreover, energy cooperatives can be established in rural or rural-urban communes. Changes to the legal provisions that redefine an energy cooperative have already started. In the 2021 license, the Senate (upper house of the Polish parliament) proposed an amendment to the RES act.

4. Legislation

The current legislative changes may be part of the regulatory instability signalled by many COMETS project partners. Is this uncertainty a requirement for the adaptability of the legal system? The success of the "My Electricity" (Mój Prąd) subsidy program, was perceived by many COMETS project partners both as an element increasing the profitability of renewable energy investments, but also building a "prosumer culture" based on neighbourly relations. The respondents pointed to the great importance of subsidy programs for the construction of the renewable energy market in Poland. The extension of the rate of return on renewable energy investments (the net-billing system will be implemented in April 2022) will probably lower the attractiveness of such RES support programs. Even in the old billing system, financing programs for collective actions (energy clusters, cooperatives) are not developed in Poland. An example is the "Solar roofs" (Słoneczne dachy) program in Greater Poland, as part of which was not possible to find beneficiaries among housing communities. Recent legal changes may decrease the attractiveness of collective actions by postponing the economic benefits of RES installations. New financing models should take this into account.

5. Prosumerism

The COMETS project has repeatedly stressed the need for a breakthrough in energy storage (grid balancing). Both in terms of the availability of technology (e.g. utility water boilers) and implementation solutions (e.g. financing, regulatory). This area of the prosumer energy sector will develop more dynamically only when legislators will stimulate it. More generally, the impact of the legislation for the development of civic energy is also significant not only in terms of energy production but also storage. Consumer-side energy storage will not only improve the balancing of the grid, it also gives the opportunity to strengthen prosumers (individual and collective) and gives greater independence from "big players" (including DSO), as well as empowering CAIs in relation to the market regulator. It is also necessary to look at the adoption by CAIs of new legal definitions of "collective prosumer" and "virtual prosumer".

6. The net-billing impact on RES

With reference to administrative burdens, efforts are underway to amend the RES Act and include implementations resulting from the RED II directive. One advantage seems to be the exclusion of the

obligation to hold a license for the production and trade of electricity for the collective prosumer when the total installed electrical capacity of renewable energy installations in the cooperative's area does not exceed a certain level. One of the main findings in the COMETS project is that the economic factor is the main criterion for new RES investment in Poland. This applies to individual and collective prosumer actions (e.g. housing communities). Since the research activities were carried out before the amendment to the RES Act, the question thus arises if the abolition of the discount system and the introduction of net-billing (will be enforced from April 1) will reduce the interest in new investments, in particular collective actions in the field of RES development and how to cope with it. In many experts' opinion, abolition of the discount system and the introduction of net-billing may reduce the interest in new investments posing threats to the possible expansion of CAIs.

7. The global energy crises

Most of the research activities carried out in Poland for the COMETS project did not consider the period of global increases in energy commodity prices. The economic aspect was considered to be the main motivation for RES investments (individual and collective). The new situation can affect the already slow growth of CAIs in the energy sector. One of the scenarios of the developed roadmap will contribute to the dominance of "big players" and market consolidation and the current situation risks strengthening this process even more. Moreover, regulated energy prices mainly protect individual consumers and many communities contracted electricity prices on the free market, which now means price increases dramatically. Communities can therefore either accept price increases or switch to regulated tariffs or look for energy production solutions.

Spain

In Spain, the main topics that emerged from the previous activities are:

1. CAIs and the local entities' role
2. Centralised vs distributed and individual vs collective models
3. Competition/collaboration with traditional actors
4. Incentives and subsidies
5. Innovative financing instruments
6. Technical challenges
7. Training and energy empowerment
8. Energy sharing and trading schemes
9. Social inclusion and diversity

1. CAIs and the local entities' role

A general need for the involvement of local institutions in the development of CAIs in the energy sector has been identified. In fact, institutions can contribute in several ways, from supporting the

promotion of CAIs' activities to greater involvement in their founding and to further developing CAIs. Moreover, local institutions can function as disseminating actors to spread knowledge of the benefits of these initiatives. For example, creating more communities by promoting networks and transmitting the community culture could be viable options, not only focusing on the environmental aspect of the initiatives, but also on the perspective of economic savings that some people may find more appealing. Nevertheless, the level of institutional involvement greatly depends on each politician's point of view on the energy transition and on citizens' participation. Moreover, the 4-year long mandate, and the politicians' turnover, increase the instability of the undertaken decisions and the lack of the projects' continuity and consistency. Finally, the regulatory framework also makes it challenging for an institution to be involved as it lacks clarity: for example, it is not clear how to operationalise the participation of a municipality in the structure of an energy CAI, in terms of voting rights, compliance with public procurement rules, etc.

2. Centralized vs distributed and individual vs collective models

Spain does not have a clearly defined national energy model. Currently, there is a mix, and it is not clear if a centralized or a distributed approach is preferred, or either an individual or a collective one. Certainly the CAIs model needs the collective model to be favored versus the individual one. Thus, legislators and policymakers at the regional and national level must define the framework and facilitate, not only with regulations, also with incentives that support a collective model.

3. Competition/collaboration with traditional actors

CAIs face many obstacles to access the energy market, such as unstable and difficult to understand regulations, competition against big companies, and access to technology. Furthermore, CAIs with different maturity levels coexist in the market. It is also important to stress that CAIs compete with (big, medium, and small) commercial companies for access to clients, resources, knowledge, subsidies, and projects. At the same time, it is important to remember that legislation, regulations, and subsidies are set up to ensure that local energy communities can grow and compete with the commercial players and get adequately supported through national, regional, and local policies. Finally, networking among CAIs is still lacking, despite the fact that it is a key aspect for the spreading and growth of the model.

4. Incentives and subsidies

CAIs apply for subsidies at distinct levels ranging from local, regional and national to the European level. These subsidies are used to cover different expenses (i.e., startup activities, research, implement innovative technologies, etc.). Nevertheless, subsidies may turn into deterrents to investment and financial support mechanisms should be designed to facilitate the growth of the collective model. Also, currently, the legislative framework does not reward the sustainable model and the legislative framework and financial mechanisms do not include tax exemptions to cooperative/CAI members.

5. Innovative financing instruments

Growth in the number of profitable projects is necessary to be viable in the long term and to generate a stable income flow. The ability to scale up the existing services depends on the opportunities to invest and the available capacity in the energy cooperative to develop new projects. The diversification in services for their members contains risks that may endanger the viability of the CAIs.

6. Technical challenges

Technological innovation often requires high investments that are difficult for CAIs to conduct. As there is no clear model, some renewable technologies are being researched and developed for the private market rather than for collective initiatives. It will be years before they can be profitably implemented collectively. This creates a challenge for CAIs and their development, which could be mitigated with the exploration of new business models such as working with research centres and developers.

7. Training and energy empowerment

Energy management has traditionally been in the hands of the government or companies, not in the people's hands, although there are examples of cooperatives almost a century old. Moreover, there are places that are not covered by the CAIs, where there is no associationism background or common values, thereby limiting CAIs chances to grow. Overall, there is a lack of prior learning context and spaces where the knowledge developed can be passed on to those for whom it may be relevant. Training and energy empowerment targeting citizens are crucial in providing information on accessing the possibilities of forming energy communities. There is a need for pedagogy with renewables while simultaneously necessary to promote community medium projects.

8. Energy sharing and trading schemes

One of the key objectives of the new European legislation related to the energy market is citizens' access to and participation in the energy market. This higher level of access and participation of citizens in the energy market can be boosted by energy sharing and trading schemes, such as peer-to-peer platforms. Those platforms allow energy sharing and trading within a community without the binding mediation of the traditional big utilities. It is necessary to explore and develop such sharing schemes.

9. Social inclusion and diversity

CAIs are expected to play a key role in citizen engagement and participation to the energy transition and their goal is to "leave no one behind," engrafting social justice principles within their scope of action. Nevertheless, the typical prototype of CAIs participants remains a wealthy (medium-high socioeconomic level) male, with environmental concerns and previous experience in the sector. Whereas CAIs can develop tools in tackling energy poverty while contributing to the energy transition, more insights are needed on how these vulnerable consumers can be engaged and

participate in the activities of CAIs. Clearly there is a big opportunity for driving forward the energy transition. Currently, there are limited activities or actions undertaken by CAIs in the energy sector to target vulnerable consumers and increase the accessibility of the initiative for citizens with different socio-economic backgrounds. In addition, there is lower participation of women, which must be reinforced. Likewise, for vulnerable consumers, more insights are needed on how women can be engaged and actively participate in the activities of CAIs. After all, the goal is for “no one left behind.”

4 Findings

In this section the main results of the deliberative event are reported. Attention is mostly paid to section 4.1 highlighting the results of the first discussion about the identification of guiding principles that should inspire policy design that addresses the challenges for CAIs development. A first overview of the actions identified to practically deal with these challenges is shortly presented in section 4.2.

4.1 Guiding principles

In the first session of discussion, the note-keepers from the breakout rooms produced 102 comments in total, and sent them to the central Theme Team, which aggregated them by topic and elaborated a transversal synthesis highlighting key similarities and differences across countries. In addition to such transversal analysis, which was presented in the end of the event, this specific synthesis for each country is reported.

4.1.1 Transversal results

This section reports the common threads and specificities that were presented during the event.

5. A better regulatory framework
6. Awareness and cooperation
7. Resources (finance, space)
8. Quality of projects
9. Specificities

1. A better regulatory framework

- In Italy, a complete and stable **regulatory framework** must be developed in order to allow citizens to have a full understanding of RECs' (Renewable Energy Communities) potential.
- In Estonia, one challenge is **how the state should intervene** in order to promote the creation of CAIs from the bottom. This intervention should not be taken directly by the citizens.
- In Poland, a reform to the **legal framework** is needed in order to resolve the problem with the CAIs legal definition, also referring to climate goals. That is now constraining the CAIs development. Additionally, a reform of the legal framework is needed to decrease the dependence over Russian Gas as a source of energy.
- In Belgium, the **regional regulatory framework** on citizen participation should connect to the national one in order to allow access to major projects and thus lead to upscaling the model and an augmented professionalization. However, this could be difficult to underpin legally as it could lead to the resistance from commercial parties.
- In Belgium, in the highly urbanized region of Brussels, **EU directives on the regional level** should create possibilities for citizens to make use of the new framework and opportunities for energy.

- In the case of Spain, it is important to **harmonize legislation** in order to face the differences in the regulations of autonomous regions.
- In the Netherlands, not only energy law, but also **spatial law and law concerning land policy** should be adjusted to facilitate better involvement of CAIs

2. Awareness and cooperation

- In Spain, local entities should **promote the empowerment of people** on energy issues in order to tackle the insufficient citizens' knowledge or culture. More training is needed on the concepts of resilience and self-sufficiency. Actions should be taken to change the mindset of citizens in respect to energy consumption (e.g. in terms of involving vulnerable groups and citizens in risk of energy poverty).
- In Italy, **more education** over energy issues is necessary in order to help people comprehend the technicalities of the energy sector and understand the potential of CAIs.
- In Italy, a culture of democratizing the energy system **must be incentivized** in the energy market, to overcome the current framework where citizens are simply passive consumers of energy.
- In Poland, a change in the cultural perception over energy consumption is needed for overcoming the challenges created by the government cartel (centralized energy management and transmission). A change of attitude towards cooperativism and good communitarian practices should be incentivized too.
- In Poland, deliberative democracy tools are needed to **enhance citizens' participation** in the energy transition mechanisms, which is currently very weak.
- In Spain, local entities should promote the empowerment of people on energy issues in order to tackle the insufficient citizens' knowledge or culture. **More training is needed** on the concepts of resilience and self-sufficiency. Actions should be taken to change the mindset of citizens in respect to energy consumption (e.g. in terms of involving vulnerable groups and citizens in risk of energy poverty).
- In Poland, **a change in the cultural perception** over energy consumption is needed for overcoming the challenges created by the government cartel (centralized energy management and transmission). A change of attitude towards cooperativism and good communitarian practices should be incentivized too.
- In Poland, **deliberative democracy tools are needed** to enhance citizens' participation in the energy transition mechanisms, which is currently very weak.
- In the Netherlands it is suggested to improve **democratic legitimation** of CAIs, to make them more attractive for other citizens and stakeholders.

3. Resources (finance, space)

- In Italy, the private sector should collaborate in the funding, spreading and expansion of RECs (Renewable Energy Communities) to help CAIs thrive, which often face challenges of visibility, financial support and scale. Also, **hybrid funding models** should be pursued to exploit the potential of cooperatives and overcome the traditional business models, which still see citizens as passive consumers.
- In Italy, energy prices for RECs' (Renewable Energy Communities) should be **subsidized and fixed** (i.e. not bound to market prices), to reduce the unpredictability and instability of CAIs.
- In Spain, local entities should provide resources (physical space) in order to promote the development of CAIs. Furthermore, local entities should also be present in the provided physical spaces to enhance the development of CAIs.
- In Spain, additional challenges are the geopolitical situation, lack of finance and lack of pilot initiatives.
- In Belgium, **energy sharing should be augmented** through different types of financial support mechanisms to overcome contradictory situations where companies benefit more than individual consumers and cooperatives. E.g. energy in excess from well oriented roofs should receive proper remuneration from feed-in and this should also hold for schools for example, that have good roofs, but not always high self-consumption.
- In Belgium, retrofitting requirements need subsidies and support from local governments and require consideration of different segments (e.g. concerning home ownership and the access to capital) because they are normally ambitious but create a barrier as this is costly.
- In the Netherlands, the routes to attract financial resources should be made clearer and more easily accessible in order to overcome the problem of financial resources affecting CAIs. Thus, CAIs should find ways to **increase public support** and this could help to deal with structural issues such as land use and spatial aspects.
- In the Netherlands, a challenge is represented by the management of spatial components because the land use policy is overlooked as land use is a requirement behind many renewable energy technologies and this leads to resistance from local stakeholders such as farmers, entrepreneurs, citizens, municipalities.

4. Quality of projects

- In Spain actions to **facilitate energy projects** developed by CAIs should be taken to promote the development of projects by CAIs.
- In the Netherlands, **projects' criteria** (price, quality etc) should augment the level of inclusiveness, involving citizens early on in the project development to strengthen the position of CAIs as opposed to commercial competition. Currently, policy tends to consider

CAIs and commercial parties as equal but they serve distinct purposes. This should be made clearer, and integrated into the overarching supporting policy,

- In the Netherlands, there is a need to differentiate CAIs applicants between more and less promising and the **quality of their plans** could be used as an indicator of how the CAIs are treated with regard to support and infrastructure.
- In the Netherlands, **support organizations** can assist CAIs realizing their ambitions of staying on track and realizing certain goals to keep the momentum going. In fact, external factors often distract from the need to satisfy goals such as improving sustainability of the energy supply.
- In the Netherlands, CAIs should consider technical, legal, and financial aspects to optimize their position relative to the infrastructure and associated actors to cope with **net congestion** hampering their development. CAIs aiming to become grid management actors should acquire specific knowledge and expertise they often don't have.
- In Estonia, the connection to the **networks** remains a challenge.
- In Spain, a challenge is **the connection** of energy communities to distribution networks.
- In Belgium, cooperation between local governmental and CAIs should be implemented by law in order to create possibilities to **submit certain projects** exclusively in the form of cooperatives.
- In Estonia, one challenge is how to **measure the impact** of CAIs.
- In Poland, easy tools for calculating **the profitability of the RES** investments are needed to help citizens in assessing the benefits of CAIs. Information transparency must be protected to avoid the spreading of “negative” unsubstantiated news over the unprofitability of RES. **Pilot projects** should be launched to show the economic feasibility of RES which are still perceived as unprofitable.

5. Specificities

- In Belgium, men should be open to **more female involvement** and to help mitigate the problem of the lack of female membership on leadership boards. Also, in Spain, gender equality and vulnerabilities should be considered in the development of CAIs.
- In Belgium, there should be overarching planning for implementation of **onshore wind**. In Flanders, for example, RED II implementation is limited to redefining energy communities, and not creating a level playing field. The situation is different between Flanders and Wallonia, but they both face similar barriers for onshore wind, especially **social acceptance**.
- In Belgium, **incentives for photovoltaic (PV) panels** have been reduced and the PV feed-in is currently remunerated via digital meter. However, the problem is that the distribution system operation doesn't see the advantage of PV sharing as investments are made long-term,

so it is also about financial risk. Nevertheless, with recent high electricity prices, the business case for PV feed-in should be profitable.

- In Estonia, one open question for the development of energy communities refers to the need or not of following the division (into forest cooperatives) undertaken in the case of **private forestry management**.
- In Italy, **socio-environmental evaluations of private firms' activities** should be enhanced to prevent firms' lack of transparency and mitigate market power that can reduce citizens' engagement in CAIs.
- In Poland, all entities should have equal rights to join the energy market and **eliminate the existing entry barriers** (market mechanisms used by incumbent firms to prevent new players entering the market).

4.1.2 Results by country

This section reports a more detailed synthesis of the results that emerged from each country.

Belgium

In the Belgian breakout room, the need to distinguish between different main pillars has been highlighted. In fact, wind, PV, retrofits, and energy efficiency, all require different types of changes in the national framework.

Participants discussed inclusion. In fact, it has been stressed that men should be more open to more female involvement and mitigate the problem of lacking female membership in the board of directors.

It has been pointed out that, except for the offshore wind, renewable energy is a regional responsibility. Nevertheless, at the national level, there is more political awareness about community energy than at the regional level.

Participants discussed the need for financial support mechanisms to augment energy sharing. It has been said that support mechanisms could help overcome contradictory situations where companies benefit more than individual consumers and cooperatives. Moreover, according to participants, it is important to find ways to properly remunerate excess energy from feed-in from well-oriented roofs, like for example for schools that have good roofs, but not always high self-consumption. It has also been stressed that wind is currently supported by allowing feed-in, while PV support mechanisms have been reduced and PV feed-in is currently remunerated via the digital meter. PV sharing and coordination at a local level is not seen as an advantage by the DSO (Distribution System Operator) for financial risks and this represents a problem. Nevertheless, with recent high electricity prices, the business case for PV feed-in could be profitable.

The need to implement cooperation between local government and CAIs in the law of government acquisition has been underlined to create possibilities for submitting certain projects more exclusively to cooperatives. Participants have also agreed that financial support mechanisms,

subsidies and support by local governments should be destined to meet retrofit requirements. These subsidies should consider different segments e.g. concerning home ownerships and the accessibility to capital because plans are normally ambitious but create a barrier as this is costly.

Participants also highlighted the need to connect the regional regulatory framework on citizen participation to the national one in order to allow access to major projects and thus lead to upscaling the model and an augmented professionalisation. However, it has been stressed that this could be difficult to underpin legally as it could lead to resistance from commercial parties.

Concerning wind, the need to have overarching planning for the implementation of onshore wind has been discussed. In Flanders, RED II implementation is limited to redefining energy communities, and not creating a level playing field. In Flanders and Wallonia, the situation is different, but they face similar barriers for onshore wind, like social acceptance.

In Belgium, in the highly urbanised region of Brussels, EU directives should be implemented on the regional level to create possibilities for citizens to make use of the new framework and opportunities for energy.

Estonia

In the Estonian breakout room, how the state should intervene to promote the creation of CAIs with a bottom-up approach was discussed. Some participants have stressed that this intervention should not be taken directly. According to some, a state framework should be promoted aimed at contrasting the limited knowledge of citizens about the electricity system, favouring the creation of demand for energy communities that target specific groups, and building social acceptance for local RES projects. Furthermore, some participants said that in order to manage demand and generation of energy in the future, more flexibility should be promoted. Nevertheless, it was noted that the connection to the network remains a challenge.

Participants highlighted that the concept of “energy communities” should be kept as broad as possible in order to allow bottom-up initiatives to find their own place in the local system. One question remains open about the need or not of following the division undertaken in the case of private forestry management (division into forest cooperatives) for the development of CAIs.

It has also been said that case studies showcasing benefits and actions should be promoted in order to develop energy communities. Moreover, participants suggested that public awareness, a technical description of the energy community’s framework and motivational mechanisms should be promoted in order to foster citizens’ participation. Also, it has been stressed that trust between community members should be created in order to overcome the impacts of the socialist era legacy.

Italy

In the Italian breakout room, the need for the development of a complete and stable regulatory framework to allow citizens to have a full understanding of RECs' (Renewable Energy Communities) potential was widely discussed. Moreover, it was highlighted that more education over energy issues

is necessary in order to help people comprehend the technicalities of the energy world and understand the potential of CAIs.

Concerning the energy system, the need for a culture supporting the democratisation of the energy market was highlighted. This cultural shift helps to overcome the current framework where citizens are simply passive consumers of energy. In fact, it was stressed how the private sector should collaborate in the funding, spreading and expansion of RECs to help CAIs thrive, which often face challenges of visibility, financial support, and scale.

Financial mechanisms have also been discussed. According to some, energy prices for RECs' should be subsidized and fixed (i.e. not bound to market prices), to reduce the unpredictability and instability of CAIs. Others have also said that hybrid funding models should be pursued to exploit the potential of cooperatives and overcome the traditional business models, which still see citizens as passive consumers.

Finally, socio-environmental evaluations of private firms' activities should be enhanced, as highlighted by participants, to prevent firms' lack of transparency and market power as well as reducing citizens' engagement in RECs.

Poland

In the Polish breakout room, the need to reform the legal framework that currently is not favourable to the formation of CAIs was highlighted. This would allow resolving the problem with the CAIs legal definition, which constrains CAIs' development. Moreover, some participants highlighted that the reform would also help decrease the dependence on Russian gas as a source of energy. Furthermore, participants said that climate goals should be used as a reference in the RES (renewable energy sources) law in order to change the current legal framework. On the other hand, some energy saving, and energy efficiency should be the pillars for future guidelines to avoid the waste and excessive consumption produced by the current framework. Also, some have suggested adopting deliberative democracy tools to enhance citizens' participation in the energy transition mechanisms, which is currently very weak.

Concerning cultural adaptation, participants said that a change in the cultural perception over energy consumption is needed to overcome the challenges created by the government cartel (centralized energy management and transmission). Moreover, some stressed that also a change of attitude towards cooperativism and good communitarian practices should be incentivized to overcome two burdening obstacles: legal and cultural barriers. Also, the need to increase efforts to raise energy education and energy literacy to create a culture of active prosumerism in the realm of energy was discussed. Some have underlined that information transparency must be protected to avoid the spreading of "negative" unsubstantiated news over the unprofitability of RES.

Some participants highlighted that economic profitability must be considered when thinking about CAIs, because at the moment CAIs do not have the capacity to make money and attract investors/participants. Moreover, it has been pointed out that easy tools for calculating the

profitability of the RES investments are needed to help citizens in assessing the benefits of CAIs, which at the moment is an excessively complicated process. In this regard, it has also been suggested that pilot projects should be launched to show the economic feasibility of RES, which are still perceived as unprofitable.

To support communities in the creation of energy cooperatives, participants have stressed that more money at the local government level is needed to overcome the lack of direct subsidies for CAIs and the lack of expertise.

Spain

In the Spanish breakout rooms, it has been highlighted that in order to promote the energy transition there is a need to strengthen the energy citizenship and citizens' engagement. To enhance the active role of citizens in the energy transition, it has been stressed that public awareness of energy issues should be increased through taking appropriate economic signals. Also, some participants stressed that local entities should promote the empowerment of people on energy issues in order to tackle the insufficient citizens' knowledge or culture. According to some, more information, platforms, and training are needed in order to increase citizens' knowledge. In particular, participants agreed that promoting the energy transition through effective communication about CAIs is important.

It has been said that, in order to spread CAIs, their disruptive potential should be developed, also taking gender equality and other vulnerabilities into account. In particular, it has been highlighted that the traditional mindset should be broken, and social benefits of CAIs should be promoted. Moreover, the need to introduce concepts of resilience and self-sufficiency into the CAIs' framework to foster and create a suitable context for their development has been stressed.

Regarding local entities, it has been pointed out that they should provide resources (physical spaces) to promote the development of CAIs, but also be present in the physical spaces provided to enhance their development.

Concerning the regulatory framework, some underlined that it should be developed and harmonised in order to facilitate the development of CAIs. Moreover, participants suggested that, when lacking a regulatory framework, incentives should be created. In fact, it has been highlighted that the lack of financing and pilot initiatives are a real challenge and small and collective installations should be implemented for CAIs development. On the other hand, according to some, to generate local employment, local added value and respecting biodiversity, large energy facilities should be built in consultation with the territory in which they are installed (municipalities, citizens).

Moreover, participants stressed that actions consisting in the facilitation of energy projects developed by CAIs should be taken to promote the development of projects by CAIs. Finally, the need to overcome the problem of the connection of energy communities to the energy distribution network was noted as another challenge.

The Netherlands

In the Netherlands' breakout room, participants discussed the management of spatial components. The issue of land use being overlooked was highlighted. In fact, it has been stressed that land use is a requirement behind many renewable energy technologies that often leads to resistance from local inhabitants. Also, it has been emphasised that spatial components represent a problem for governmental action because municipalities' release of tenders, subsequent action and financial negotiations often lead to friction between stakeholders such as farmers, entrepreneurs, local inhabitants, municipalities. It asks for better spatial policy but also for a better land policy. It was also stressed that CAIs should find ways to increase public support, as it could help to deal with the above-mentioned spatial issues. This is most important for land and sun on land issues, but wind on sea or district heating projects ask for other changes concerning legislation.

Participants discussed the need to make routes to attract identifiable and more easily accessible financial resources in order to overcome the problem of financial resources affecting CAIs. It was underlined that governments are improving the process in which criteria for CAIs' projects are set in order to overcome the micromanagement and unique solutions approach and increase the attention on what the whole CAI community needs. Moreover, participants stressed the need to find a structural – legal - solution to favour CAIs applicants. The quality of their plans could be used as an indicator of how the CAIs are treated with regard to support and infrastructure. Also, participants suggested that support organizations could assist CAIs in realising their ambitions, staying on track, and realising certain goals and to keep the momentum going. In particular, participants emphasised that small goals are easier to fulfil and that external factors often distract CAIs from the need and desire to satisfy goals such as improving the sustainability of the energy supply. Some suggest to stimulate discussion on these external factors and regime change.

Participants also underlined the fact that CAIs should consider technical, legal, financial aspects to optimize their position relative to the infrastructure and associated actors to cope with net congestion hampering their development. Also, it has been pointed out that CAIs aiming to become grid management actors should acquire specific knowledge and expertise they often don't have. That would increase the growth potential and the legitimacy of CAIs.

Participants stressed that municipalities should clarify the authority and legitimacy of local CAIs and should play a more active role therein. Moreover, it has been emphasised that policies should pay more attention to the social role played by CAIs as they serve as a central platform for supplying information to stakeholders. Also, it has emerged that the distance between the enthusiastic key players in front and the less active people in the back should be bridged. According to some, the community sense should revolve around interests and ambitions, not only on geographical aspects. Nevertheless, the targets of CAIs can be very broad and capturing that in applicable policy is challenging.

Participants discussed the fact that distinct purposes of CAIs and commercial parties should be made clearer and more integrated into the overarching supporting policy because they serve different

purposes. It was highlighted that policy should not consider the purpose of CAIs and commercial parties as equal, as they currently do. In fact, it was pointed out that in level playing field conditions, CAIs are at risk of being pushed out or overwhelmed by larger, more powerful actors. On the other hand, it has also been discussed that CAIs and commercial parties should cooperate. Nevertheless, CAIs should have some rules of conduct about who to cooperate with and commercial parties should overcome their reluctance to work with CAIs. Also, some participants stressed that the projects' criteria (price, quality etc) should increase the level of inclusiveness, involving citizens early on in the project development to strengthen the position of CAIs relative to commercial competition.

4.2 Actions

During the Session of Discussion II, participants identified concrete actions that should be taken to implement the changes identified by each country. Overall, the participants from the six countries preliminarily identified 83 actions. For each country, an in-depth analysis and refinement of the actions identified at the national level will be carried out in the final deliverable *5.3 Manual – A strategic roadmap for supporting social innovation in the energy sector*, while during the final plenary session, an overview of the main actions were presented in clusters (reported in the following section).

COMETS - WEDNESDAY, 9th MARCH 2022

THE NETHERLANDS		BELGIUM	
<p>W1010 <i>Regio's en regio's</i></p> <p>De regio's zijn de belangrijkste actoren in de lokale economie en samenleving. Het is belangrijk dat zij een rol spelen in de realisatie van de doelstellingen van de COMETS. Dit kan worden gedaan door middel van samenwerking met andere regio's en met de overheid.</p>	<p>W1011 <i>Regio's en regio's</i></p> <p>De regio's zijn de belangrijkste actoren in de lokale economie en samenleving. Het is belangrijk dat zij een rol spelen in de realisatie van de doelstellingen van de COMETS. Dit kan worden gedaan door middel van samenwerking met andere regio's en met de overheid.</p>	<p>W1012 <i>Regio's en regio's</i></p> <p>De regio's zijn de belangrijkste actoren in de lokale economie en samenleving. Het is belangrijk dat zij een rol spelen in de realisatie van de doelstellingen van de COMETS. Dit kan worden gedaan door middel van samenwerking met andere regio's en met de overheid.</p>	<p>W1013 <i>Regio's en regio's</i></p> <p>De regio's zijn de belangrijkste actoren in de lokale economie en samenleving. Het is belangrijk dat zij een rol spelen in de realisatie van de doelstellingen van de COMETS. Dit kan worden gedaan door middel van samenwerking met andere regio's en met de overheid.</p>

Overview of the 83 actions proposed by the national breakout rooms during session II.

The actions proposed by each country can be clustered in the following groups:

1. Legal framework
2. Technical
3. Awareness & Knowledge
4. Support
5. Actors

1. Legal Framework

- Legal framework for grid access should allow CAIs to manage grid balancing. Smaller networks could/should be open to management by CAIs.
- Some CAIs express interest in playing a more active role in the energy system. Facilitation requires revision of legal frameworks concerning energy, space and land, and current taxation process.
- No subsidies - rather create the framework and tariffs to make energy sharing profitable.
- Energy generated in a certain area should be enabled/stimulated to remain in that area for local consumption. Implement discount for locally consumed energy.

2. Technical

- Energy saving is a behavioural measure to improve energy sustainability that needs extra attention. Attention could come from local/mobile advisors. Advice to use sustainable insulation materials.
- Further promote energy sharing in multi-apartment buildings, create advantage for local energy use. Place collective digital meter in MA buildings. Share PV energy across apartments with no distribution costs.
- All entities treated in an equal manner. Efficiency is also a source of energy.
- Define network assets that the distributor would have to install in intermediate parts of the network.
- Concrete guidelines/toolbox for citizens for different technical solutions for decarbonising individual homes, especially focusing on heating.
- Refinement and integration of the existing simulation online tools to provide pre-assessment of the REC (inclusion of the POD).
- To provide transparent and coordinated access to local data on production and consumption to enable pre-assessment studies.

3. Awareness and Knowledge

- Create attention in the media, example of creating 'own' electricity connection across the street to make the point.
- Implement Climate education (inc. wide context: energy, food, mobility).
- Create places where citizens can learn about the energy transition and get help in getting funding for energy transition actions.
- Constant information for communities (3 models?).
- CE Trainings for experts too (as technical expert or municipality officer).
- Short memo for EC and seminars, systematic info shearing.
- Short-training (20-30 minutes) sessions for citizens, taking into account the local context. Informing, guiding and demonstrations allowing understanding the benefits.
- A short publication including definitions, disseminate the CAIs, and instructions how to participate. To motivate and guide the citizens how to get involved.
- Related to the action above. Providing concrete support and training for households in their effort for decarbonising.

4. Support

- Creation of support offices for the development of projects related to the energy transition.
- Development of procedures between distributors or commercial parties and energy communities.
- Harmonisation of processes with the autonomous communities: establish a series of common processes with all the autonomous communities.
- Practical templates and guidelines for CAIs defining different governance models. Practical support.
- Collection of the established and rising initiatives and make their experiences and assessment studies available on an online portal.
- Success stories advertising. Making society aware of the situation of need: CAIs are a necessary instrument to be implemented in order to achieve self-sufficiency, resilience.

5. Actors

- CAIs themselves: better organisation, cooperation, capacity building and empowerment
- Lobbying with DSO.
- A person who is involved in direct contact with residents, housing communities.
- Support the creation of the prosumers union that will fight for prosumers rights.

- Individual and group (collective) prosumership.
- Energy advisor in local municipalities (LM-s are responsible for RE developments).
- CE expert and green energy expert - 2 possibilities, can be in 1?
- Community collective initiative to push municipality to work more with energy sector.