National policy roadmap for Spain

Summary

The roadmap aims to provide practical and policy recommendations for Spanish policymakers and decision-makers in the field of community bioenergy. It is based on various insights gathered through reviews of policy documents, decision-maker workshops, and insight from experts in the field. The roadmap includes an outline of the initial situation, challenges, targets, and recommendations, as well as a timeline and sequence of actions.

Energy communities with a focus on bioenergy are slowly emerging in Spain. Biomass energy has a high potential in Spain. It has the future to be a sustainable and renewable energy source for heating purposes in Spain. A funding program for energy communities is in place and consists of 3 phases, CE Aprende, CE Planifica y CE Implementa, and has been started with the implementation phase. The last phase (promotion, and implementation of energy communities) is currently active. The legislation is behind and needs updating, and the establishment of energy communities needs to be legally well-articulated. The current legislation does not always comply with the European Directive. A draft version is available with many comments from different stakeholders.

Overall, the implementation of biomass for heating purposes in Spain will require a multi-faceted approach that involves policy solutions, education, and collaboration with stakeholders. In this way, the government can help to promote the use of biomass for heating and achieve a more sustainable energy future.

The roadmap acknowledges the complexity of transitioning to bioenergy communities and emphasizes the importance of proper legislation and support for local initiatives. Tailored frameworks, financial risk mitigation, and awareness campaigns are needed to promote the growth of bioenergy communities in Europe. Engagement, clear communication, and access to information are crucial for successful implementation.

Purpose and development of the roadmap

The community bioenergy potential in Spain is untapped, despite its potential to decarbonise the economy, lower energy bills and increase energy independence.

The purpose of this policy roadmap is to provide practical and applicable policy recommendations for national policymakers, regional authorities, and bioenergy community actors based on insights and findings of the BECoop project. This roadmap outlines the opportunities of community bioenergy for Spain to meet national energy and climate targets and increase energy security and independence. Furthermore, the roadmap intends to open the policy debate around the regulatory promotion of community bioenergy in the country.

The policy roadmap has been developed based on three main methods: a policy analysis, stakeholder consultations, and an expert workshop. Firstly, key policy documents at European and national levels were reviewed to identify the policy frameworks and enabling mechanisms for bioenergy communities in Spain. We reviewed the Spanish National Energy and Climate Plan (NECP) and other policies and legislation, including directives on renewable energy, for their policy objectives and measures on bioenergy and community energy. The analysis enabled the development of draft policy recommendations to unlock the community bioenergy potential in Spain.

Secondly, we surveyed stakeholders and participants working with the BECoop network to understand the findings of other relevant policy work, both within the project and beyond, and to compile insights into the structuring of strategic templates and recommendations.

Thirdly, a national policy workshop, titled 'Hoja de ruta sobre Comunidades Bioenergéticas' was organised on the 6th of June 2023 (see Figure 7). The aim was to obtain input for a policy roadmap on how to unlock the potential of bioenergy to be presented to national policymakers. The workshops brought together 119 stakeholder representatives: 35 national, regional and local administrators, 48 biomass related companies, 14 researchers, 10 RESCoop members and 12 citizens. The workshop started with an introduction of the project, the policy roadmap and its development, followed by a discussion of the policy measures identified in the policy analysis ('What is required for busting the biomass in Energy Communities'). Missing policy measures were added and the main findings for the roadmap were identified.

Figure 7 - Participants at the BECoop national policy workshop in Spain.

The experience of regional actors who have implemented or want to implement community (bio)energy has also influenced the development of the policy roadmap. The BECOOP network also provided useful feedback on previous versions of the policy roadmaps.

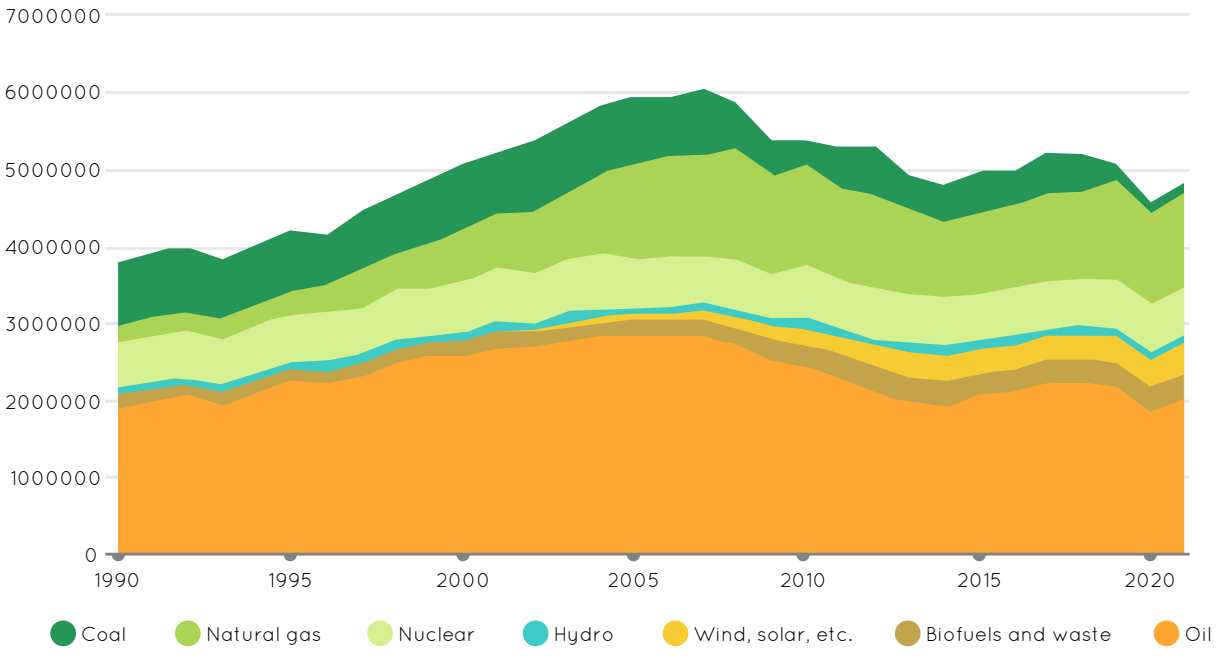
The roadmap is structured as follows: Firstly, it outlines the initial situation of community bioenergy in Spain – where we stand today. Secondly, it presents the targets and visions for(community) bioenergy in 2030, and 2050 – where we want to go. Thirdly, it draws concrete policy recommendations to unlock the community (bio)energy potential in Spain – how do we get there by 2030/2050. A timeline with concrete measures and their prioritisation and sequencing is provided. In line with stakeholder views, the timeline concerns four areas of policy development: social perception, regulatory framework development, local diffusion, and heat decarbonisation.

This roadmap has been developed based on policy analysis and experiences from regional actors that have or aim to implement community (bio)energy. In addition, we held a national policy workshop to discuss and validate the policy roadmap with key actors in the community energy field in Spain.

Community (bio)energy – current state of play

In 2021 the share of energy from renewable sources was 21%[17]. Figure 8 shows the development of the fuel mix over the years[18].

Figure 8 - Development of the Spanish fuel mix since 1990.



The European Renewable Energy Directive 2018/2001/EU came into force in 2018[19] and provides the main legal framework for the establishment of energy communities and the development of bioenergy in the European Union. In this directive, the 'renewable energy community' has been defined as a legal entity.

[17] Source: https://ec.europa.eu/eurostat/databrowser/view/NRG_IND_REN__custom_4597401/ bookmark/table?lang=en&bookmarkId=018cdfbd-739c-4d71-acdd-22c782999b37

[18] Source: https://www.iea.org/countries/spain#data-browser

[19] Source: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018L2001

The Spanish funding programme and plan

On a national level, a funding program for energy communities is administered by the IDAE (Instituto para la Diversificación y el Ahorro de la Energía, the national energy agency). This program is part of the PRTR (Plan de Recuperación, Tranformación y Resiliencia; national plan for recovery, transformation, and resilience) and financed by the Next Generation EU funds.

The program has three phases, CE Aprende, CE Planifica y CE Implementa, of which only the third one has been activated so far:

- CE Aprende is directed at empowerment and learning so that citizens can start to organize into energy communities.
- CE Planifica is geared towards initiatives in the planning stage: with objectives and members, but no clear (technical) project plan.
- CE Implementa promotes (developed) projects to produce renewable energy, energy efficiency, and sustainable mobility, including demand-side management and storage. 4 calls for projects have been executed: 2 for small projects (<1M€/project) and 2 for medium-sized to large projects (>1M€/project).

This three-phase program has been executed in reverse, starting at the end. The CE Implementa calls were directed at existing energy communities, even without a regulatory framework and a clear definition regarding energy communities and their constitution, activities, governance, etc. As a result, only established legal entities that had proclaimed themselves as energy communities and who were informed in advance had access to the funding and time to respond for the first round of calls. Very few true citizen initiatives were able to request funding in this first round. In contrast, commercial actors were sufficiently informed to prepare successful proposals. Especially in the medium-to-large scale projects, citizen initiatives were caught out. For the second round, which closed on February 13th of this year, it is expected that more citizen organisations will have participated. Most projects oriented towards photovoltaic collective self-consumption schemes, and some at e-mobility (charging infrastructure). As far as we know, no bioenergy communities were funded. It is unclear if any bioenergy community applied for funding.

The funding program has been designed as a scheme of subsidies awarded on a competitive basis. Projects that need less financial support are preferable above ones that need more support. This is a disadvantage for thermal installations in comparison with PV projects. In this scheme it is more difficult for biomass projects to receive funding.

As an accompanying measure, the CE Oficinas program, with the aim of establishing Community Transformation Offices, was initiated. These CT Offices must promote the creation of energy communities. The first call with a budget of 20M€ closed in November 2022. Project partner GoiEner was adjudicated 15000€ for helping with the constitution of 10 RECs. Some of these renewable energy communities have put local biomass as an energy resource in their exploitation plans.

At this moment, it is unknown if specific support measures for bioenergy communities, or for bioenergy installation in general, exists. However, most subsidies for RES or Energy Efficiency are also applicable to bioenergy. A specific aid program for rural villages (fewer than 5000 residents) can also be used for bioenergy infrastructure such as a district heat network.

Key barriers and challenges to community bioenergy

1. **Legislation for energy communities**
The definition of energy communities is missing in the regulation. CEC EU 944/2019 & CER EU 2001/2018 are not yet transposed to Spanish law. This uncertainty on the legislation increases the risk of investments. Several self-named "energy communities" received funding for energy communities but were not eligible according to the definition of energy communities in the EU legislation. This unclarity increases when projects relate to governance and meet geographical limits.

2. **Regional opportunities in Spain**
Spain is administratively divided into 17 Autonomous Regions. These regions can each develop their regional energy strategy and support mechanism. These regions can be more active, supportive, or strict in their rules for bioenergy and (bio) energy communities- for example, investment in bioenergy is eligible under the aid instruments from regional entities in Euskadi and in Navarre.

3. **Communication and public acceptance**
We have not noted any social or environmental pushback from pressure groups or individuals against bioenergy, in the way that it seems to exist in some other European countries. In the pilots, the sustainability and local nature of bioenergy communities in our communication has been emphasised. The effective management of the community and the responsibility for the promotion of renewable energy production is unclear or lacking. There are no signs that the involvement of the public is organized in a structured way.

4. **Is all this adequate?**
The CE programs seem to be implemented out of sequence, and a large share of the available funds have been handed over to a "privileged" target group. There are no signs that funding is an impediment in the pilot cases involved. However, the Spanish legislation for (bio)energy communities is not in place yet, as recommended in the EU Directive for energy from renewable sources. Therefore, the establishment of the (bio)energy communities take more time, causes institutional unclarity, and delays the local production of renewable energy.

Policy targets for, and visions of, community bioenergy for 2030 and 2050

For heat and electricity with biomass, it is expected that the greatest development will occur with biomass of forest or agricultural origin (in industry, in general, it is already being used). An additional 1,600 ktoe/year is required for the increase in electricity generation and an additional 411 ktoe/year for thermal uses. In the Renewable Energies Plan (PER) 2011-2020, it was conservatively estimated that the additional potential in Spain is 17,286 ktoe/year, of which 10,433 ktoe/year is sustainable agricultural or forestry waste and the difference is new woody or grassy mass[20].

Forests cover a significant percentage of the national land area, have a key role in climate change mitigation and adaptation, provide multiple ecosystem utilities, and can contribute to the development of the circular bioeconomy, particularly in inland and mountainous areas. The conservation of this valuable heritage must focus on management that protects the structural and functional diversity of forests within the framework of the Sustainable Development Goals of the UN 2030 Agenda, the European Green Deal, and the European Forestry Strategy.

Social and environmental challenges

There are several social and environmental challenges associated with the use of biomass by society. Some of these challenges include:

- Competition with food crops: The use of biomass can compete with food crops for land and other resources, leading to food insecurity and increased food prices, this mainly occurs when the biomass comes from primary dedicated resources (for instance, maize, sugar cane, etc).
- Deforestation: The use of wood and other plant materials for biomass can lead to deforestation, which can result in soil erosion, loss of biodiversity, and other environmental problems.
- Air pollution: Burning biomass can release pollutants such as carbon monoxide, particulate matter, and nitrogen oxides, which can have negative effects on human health and the environment.
- Social conflicts: The production of biomass can sometimes lead to social conflicts, particularly when local communities are not consulted or involved in decision-making processes.

[20] BECoop Analysis of Spain's National Energy and Climate Plan NECP, page 100.

Overall, while biomass has the potential to be a renewable and sustainable energy source, it is important to carefully consider and address these social and environmental challenges to ensure that its use is truly beneficial. In the particular case of Spain:

- Biomass from food crops is not commonly used.
- The rate of forest growth is increasing annually, as is the propagation of fires, and the loss of certain forests due to high forest density. There is a need for better practices to keep forests in good condition, and therefore controlled forest maintenance operations would improve forest health and additionally biomass extraction.
- Burning biomass produces emissions, therefore, it is necessary to do so with suitable equipment to minimize them. In most cases, when biomass is not used for energy purposes, the current practice in Spain is to burn it in the open air, in which case the pollution is considerably higher.
- The owners of the biomass should agree to the use of this biomass as sometimes they are private owners (and they have the power of decision), but others (and this is very typical with forest biomass) are public institutions, for instance, municipalities or regional governments which sometimes do not take into account the opinion of citizens on this type of issue.

Threats to future bioenergy community development

There are several potential threats to the development of the bioenergy community in Spain, including:

- Competition from other thermal renewable energy sources such as geothermal, solar thermal, or electricity for thermal uses from other renewable sources such as solar or wind power.
- Social acceptance: The development of bioenergy projects could also face opposition from local communities who may have concerns about the environmental or social impacts of these projects (mentioned above).
- Lack of awareness: There may be a lack of awareness or understanding of the benefits of bioenergy for thermal applications in Spain, which could limit the demand for this technology and hinder its development.
- Technical challenges: The use of bioenergy for thermal applications can be technically challenging, especially in terms of equipment and system design.
- Economic challenges: The implementation of a district heating, biogas plant, cogeneration plant, etc, requires a large investment that could be a threat when selecting this type of technology over other technologies from other sources (renewable and non-renewable).
- Financial incentives: The availability of financial incentives and support programs for bioenergy thermal projects may be limited, which could make it more difficult for companies and organisations to invest in this technology.
- Fuel quality: The quality of the fuel used for bioenergy production can impact its efficiency and emissions. If the fuel quality is not consistent or sufficient, it could limit the potential for bioenergy to be used for thermal applications.

- Guarantee of fuel supply is often another concern on the part of society. Climate change, draughts, etc could put at risk the guarantee of fuel supply in the future.
- Not drawing up plans for the sustainable management of biomasses.
- Large companies taking power in this model and people not being represented.
- Another major threat would be the depopulation of certain rural areas, which are prime candidates for bioenergy communities and are running out of people.
- Biomass projects are much more technologically complicated than self-consumption photovoltaic ones.

Bioenergy communities in the NECP and NREAP

Bioenergy communities are not specifically mentioned in the 2019 NECP and its draft revision, available in 2023 on the European Commission's website, nor in the 2010 NREAP.

In the 2019 NECP, Spain discusses the social benefits of biomass development as able to revitalise rural areas, mitigate the risk of depopulation and encourage better adaptation to the effects of climate change in some territories. In Spain's NECP, it is mentioned that self-consumption with renewables brings energy generation closer to its consumption, therefore reducing losses, increasing the involvement of consumers in the management of their energy and reducing the territorial impact of renewable production. Turning consumers into producers is a way to expand possible future sources of financing for the development of renewables. Combating energy poverty is mentioned as an application that should be highlighted in this regard. In Spain's NECP, energy communities are mentioned in the context of discussing development of own consumption using renewables and distributed generation. Collective own consumption, developed in Royal Decree 244/2019, is regarded as enabling several consumers within the same community (residents' association, a neighbourhood, an industrial park, etc.) to benefit collectively from the same nearby generation facilities, located within the community, which means that they can take advantage of the generation capacity and, therefore, of the investment. The country mentions the definition of European legislation, which defines renewable energy community (as defined in Directive 2018/2001 on the promotion of the use of energy from renewable sources) and citizen energy community (as defined in Directive 2019/944 on common rules for the internal market for electricity).

The revised NECP pays extensive attention to biomass development and energy communities alike. Measure 1.21, for example, outlines a comprehensive strategy for advancing biomass harvesting in a sustainable manner. It encompasses several key components, including the development of regulatory frameworks along the entire biomass value chain, promoting the use of pruning waste for energy in agriculture while adhering to air quality standards for both new and existing biomass facilities, and advocating for certification and proximity-to-origin principles in biomass utilisation. Additionally, the measure encourages the dissemination and adoption of efficient, low-emission local heating equipment, along with providing specific training for professionals in the biomass sector. Furthermore, economic support measures are integrated into the strategy, encompassing financial assistance for biomass logistics and processing facilities, references to taxation related to waste management to discourage landfilling, incentives for utilising biomass in public facilities, and the role of Royal Decrees 477/2001 and 1124/2021, operating within the PRTR (Recovery, Transformation, and Resilience Plan) framework, in bolstering biomass installations for thermal applications across various consumer sectors. This multifaceted approach aims to promote sustainable biomass harvesting, fostering both environmental responsibility and economic growth.

The NECP also mentions the Spanish Strategy for Advancing the Utilisation of Forest Biomass in Energy Production, focusing on promoting the use of residual forest biomass for energy purposes. It recognises that establishing a sustainable energy model, centred on conservation, efficiency, and source diversification necessitates a significant push in developing residual forest biomass as a renewable energy source. The NECP thus serves as a strategic planning tool aligned with Spain's commitments to address climate change, and its goals and measures align with the objectives set forth in the Spanish Strategy for Advancing the Utilisation of Forest Biomass in Energy Production.

Aside from Measure 1.21, The NECP presents a range of policy actions and interventions to promote the use of biomass as an energy source. This includes:

- Measure 1.10. Decarbonisation of the industrial sector.
- Measure 1.11. Framework for the development of thermal renewables.
- Measure 1.21. Specific programmes for biomass harvesting.
- Measure 1.33. Reduction of GHG emissions in waste management.
- Measure 1.35. Forest sinks.
- Measure 2.10. District heating and cooling networks (where it is pointed out that biomass can be integrated into heat and cold networks to meet the thermal needs of large urban areas).
- Measure 2.12. District heat and cooling networks in the tertiary sector.
- Measure 5.3. Complementary plans in the energy and climate sectors.
- Measure 5.4. Scientific and technical infrastructure in the energy and climate sectors.
- Measure 5.13. Technology platforms and ALINNE alliance.

The revised NECP also pays attention to biogas. It states that while biomass exhibits growth potential, it may not be sufficient to fulfil the demand for decarbonised air conditioning. Nevertheless, it is stated that these clean technologies can be seamlessly incorporated into heat and cold networks, offering flexible, environmentally friendly, and efficient solutions to meet the thermal requirements of expansive urban areas.

Additionally, self-consumption and distributed generation, demand management, the promotion of energy communities, as well as specific measures to encourage citizens' proactive involvement in decarbonisation, are anticipated by the NECP to enhance the diversity of participants and services, fostering participatory initiatives. These initiatives span activities related to the generation and storage of renewable energy, demand management, and the increased adaptability of the entire energy system. The revised NECP states that substantial advancements have already been achieved in these domains since the 2019 NECP, with expectations of further consolidation and enhancement over the ensuing decade, as outlined in this updated plan. Specifically, the plan proposes regulatory developments to empower energy communities in their ability to produce, consume, and trade renewable energy. It also advocates for a suite of administrative and economic measures while promoting the expanded use of electricity for heating.

The NECP asserts that energy communities will serve as a tool to bolster social acceptance and facilitate the implementation of citizen-driven demand management initiatives. It underscores that collective self-consumption schemes and dynamic energy management mechanisms enable public authorities or social organisations to address instances of energy poverty, not only through financial assistance but also by facilitating participation in collective self-consumption initiatives promoted by these entities, which directly alleviate the electricity expenses of at-risk energy-poverty consumers. Given their primary mission in the context of previous initiatives, energy communities will play pivotal roles in implementing effective solutions in this domain.

Specific measures to support energy communities include:

- Measure 1.23. Energy Communities. This includes a network of offices throughout the country through dissemination and training activities. Training and capacity building programmes. Among other forms of support, it is foreseen that regulatory mechanisms will be put in place to promote the diversity of actors and the existence of participatory citizen projects, to promote both social and territorial cohesion and the just transition and to seize the opportunities of the new decarbonised generation model. An accession mechanism is to be established, to allow participating projects to access a contract for the sale of their electricity at a fixed price linked to the outcome of the auctions.
- Measure 1.28. Review and simplification of administrative procedures. The measure concerns regulatory barriers or gaps that prevent local energy communities from participating in the system as well as the deployment of decentralised generation (self-consumption and energy communities).
- Measure 1.29. Knowledge generation, dissemination and awareness raising. Energy Communities as a communication tool for the energy transition.
- Measure 2.10. District heating and cooling networks – including the development of renewable energy communities linked to air-conditioning and cooling networks, including technical training at municipal level.
- Measure 4.6. Integration of the electricity market. Here, the development of energy communities (both renewable energy communities and citizens' energy communities) is seen as crucial in terms of enabling new vehicles for public participation in self-consumption activities, contributing to consumer empowerment and facilitating demand flexibility.

Biomass and energy communities are also seen as key points of synergy between the policy components of the PRTR and the measures of the NECP, as well as the NECP and the Sustainable Development Goals.

A policy scorecard was developed for Spain, based on the available data in the final and draft NECP, taking into account broader policy developments, stakeholder views, and the state of the art in bioenergy community development. The policy scorecard identified several areas for potential improvement (Table 6).

Table 6 - A policy scorecard for bioenergy community support – Spanish NECP.

Element	Spain
Overall regulatory framework and supportfor biomass development	Reasonably well-developed tools to biomass and energy communities as a whole
Economic benefits of bioenergy community development	Well-developed suite of economic measures to support biomass as a whole
Social benefits of bioenergy community development	Need for further development of measures to support the social benefits of bioenergy communities
Environmental benefits of bioenergy community development	Detailed overview of the environmental benefits of biomass use
Poverty alleviation (bioenergy communities)	Strong connection between biomass, energy communities and energy poverty development
Energy community support	Need for more specific measures to support bioenergy communities

European situation

Since the war in Ukraine, the energy supply system is experiencing increased stress. The regulatory framework presented to fight against the consequences of the Ukraine war regarding energy has aimed to lower the high energy prices produced with fossil fuels instead of looking for alternative fuels for energy production. However, a relevant increase in renewable sources demand has been recorded, and the demand for biomass increased remarkably. The usage of biomass is in its early stage, and a thorough clear decision about its use has not been made. Biomass usage has great potential to be optimised with efficient technologies.

Recommendations for key policy measures – in the NECP and beyond

We propose the following key policy areas to unlock the community bioenergy potential in Spain and to increase energy security and independence.

Increasing social awareness and building capacities

- Empower forest owners, citizens, and farmers to actively engage in community (bio)energy projects through targeted information campaigns and capacity-building programs.
- Increase the involvement of most Spanish local authorities in the development of energy cooperatives to increase knowledge among local governments and municipal officials.
- Structure the responsibility for communication with the public and make it transparent.
- Make a strategic plan for the engagement of local people.
- Increase awareness that bioenergy projects create jobs in disadvantaged environments.
- Support the creation of a Spanish community energy network that can bring different experts and interested parties together to share experiences and best practices.
- Create awareness of the need for cooperation between local communities in the energy sector. Facilitate a rebranding of 'cooperatives' into opportunities for regional economic value creation, decision-making, and financial participation.
- Assure the public that the use of biomass in Spain is carried out in accordance with strict regulations that guarantee sustainability and that what is used for energy is a by-product.
- Create awareness that in Spain there is technical capacity to build heat networks.

Regulatory measures and legislation

- Transpose of related EU directives, including the Renewable Energy Directive, into national law. This must include a clear definition and scope of activities for energy communities.
- Create a legal framework for public goods (forests, roofs, DH networks...) to award energy communities the exploitation to speed up the establishment and production of RES.
- Make local participation mandatory, (25%, 50%, 100%) for new local pilots and RES projects. Assure the public that the use of biomass in Spain is carried out in accordance with strict regulations that guarantee sustainability and that what is used for energy is a by-product.

Adjustment of financial support

- Assign financial support for the establishment of energy cooperatives in Spain. Provide simple subsidies and other forms of support (loans, grants).
- Introduce transparent and earmarked funds to support the establishment of energy cooperatives. This fund should cover costs related to the feasibility study, settling formal and legal matters, etc.
- Avoid large companies or incumbent industries which claim to develop an energy community or cooperate with energy communities.

Stimulation of low-carbon heating for energy cooperatives

- Introduce incentives for energy cooperatives to produce heat or heating fuels for their members.
- Promote district heating and integration of community (bio)energy.
- Participate in local initiatives dedicated to heat networks.

Supporting local participation and energy communities

- Facilitate the process of establishing an energy cooperative to encourage individuals to participate.
- Structure the responsibilities for communication with the public
- Appoint a local policy officer who supports the local energy community with initiatives.
- Provide information to energy communities and the public and support local initiatives.
- Participate in local energy communities (municipalities, local policy officers)
- Consider energy vectors as a possible activity of the energy communities (for example Pellets production), since energy communities should not only be focused on end-consumption.
- Stimulation of social inclusion and the fight against energy poverty.

Timeline of measures

The Spanish pilots, experiences, interviews, consultation of different stakeholders, analysis and reflection of the information leads to the following sequence of measures[21] (see Figure 3):

Immediate action:

- **Communicate** with the public about the opportunity of local renewable energy production and its benefits. **Share knowledge** about the importance of energy communities to **engage inhabitants** in the different aspects of energy transition, get their help with **raising social awareness** and local participation and mitigating local resistance.
- **Facilitate the process of establishing energy cooperatives and their operation** with clear legislation and funding schemes. **Appoint a local policy officer** who supports the local energy community with initiatives.
- Bring the legislation **in harmony with the Renewable Energy Directive**. Formulate a clear definition of energy communities/cooperatives.
- **Promote district heating** and integration of community (bio)energy. Adjust funding schemes (CE Implementa) with ear marked funding schemes for (bio) heat for energy communities.

Until 2025:

- The **Renewable Energy Directive** must be effectively transposed into national law to give energy communities **specific legal recognition and support**. This must include a **clear definition** of renewable energy communities to enable a clear understanding of eligibility requirements and encourage investment decisions.
- **Ease legal requirements and procedures for energy cooperatives**.

Until 2050:

- Set **concrete targets** for the establishment of (bio) energy cooperatives and communities in all the regions of Spain. **Disseminate the experiences** from the different regions to a set of standard approaches for bioheat networks operated by local energy communities.

[21] Vasco, E.J.- G. (2018) Elektrizitatea Ekoizteko energia Berriztagarrien Bidezko instalazioetan Inbertsioak Sustatzeari Begirako Laguntzak. 2018, Eusko Jaurlaritza. Available at: https://www.euskadi.eus/web01-tramite/eu/contenidos/ayuda_subvencion/eve_renovables_prod_elect_2018/eu_eve_re/eu_arch.html.

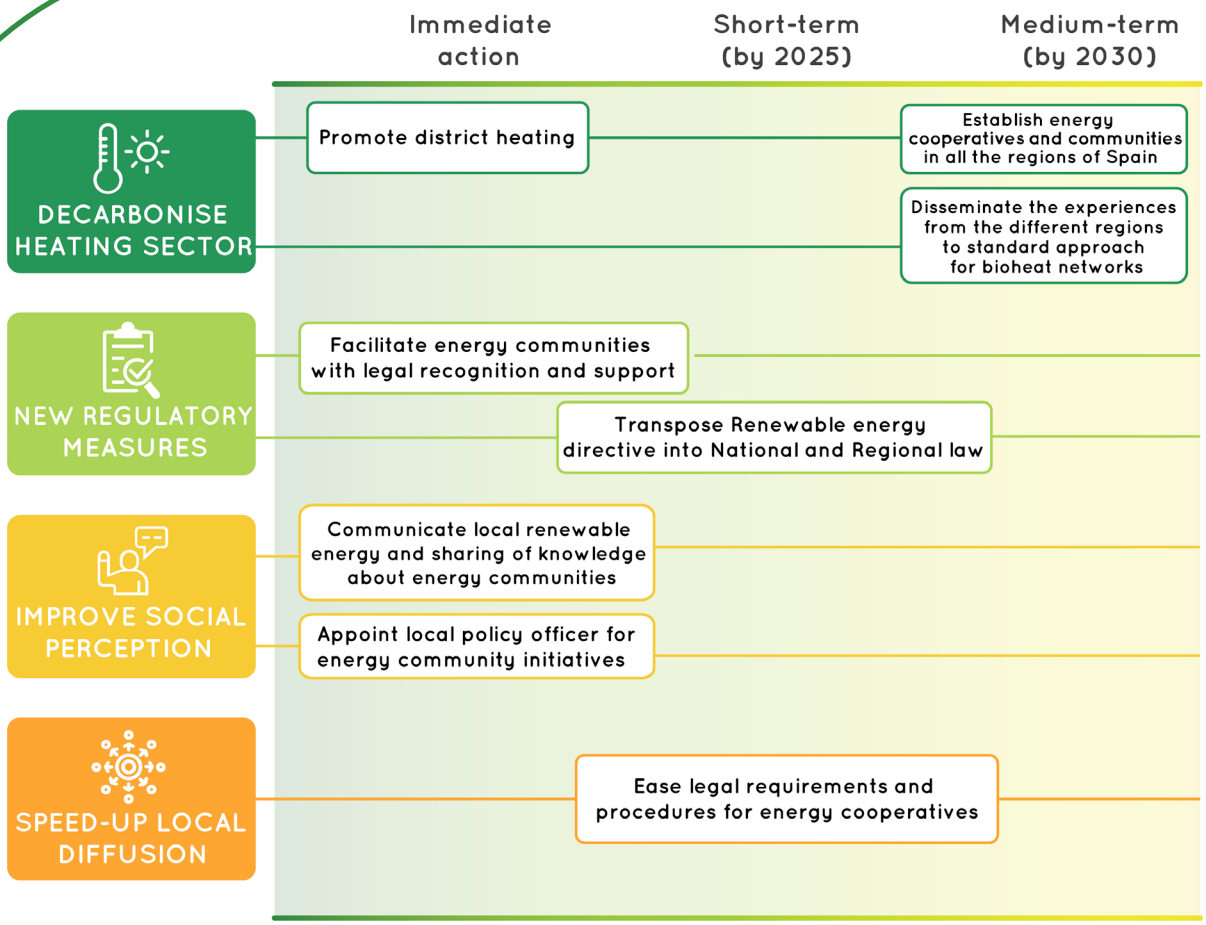
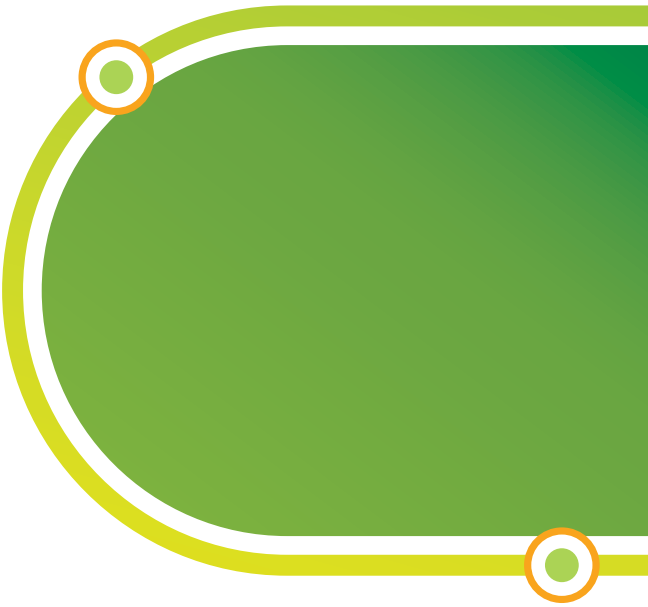


Figure 9 - Proposed policy roadmap for the acceleration of bioenergy communities in Spain.

Conclusions

The policy analyses and deliberations presented in this paper identified several areas of improvement regarding the NECP and other relevant policy documents. There is a pressing requirement for additional efforts to enhance the measures that promote the societal advantages of bioenergy communities. It is essential to provide a comprehensive framework of social merits associated with the utilisation of biomass. Consequently, there is a demand for more precisely tailored measures aimed at bolstering bioenergy communities.

In the short term, immediate actions proposed by this Roadmap involve communicating the benefits of local renewable energy production to the public and raising awareness about energy communities' vital role in the energy transition. This includes supporting the establishment of energy cooperatives through clear legislation and funding, along with the appointment of local policy officers. Harmonising legislation with the Renewable Energy Directive and defining energy communities is crucial in this context. Promoting district heating and adjusting funding schemes for (bio)heat for energy communities are also priorities. By 2025, transposing the Renewable Energy Directive into national law for specific recognition and support of energy communities is essential, with streamlined legal requirements for cooperatives. Looking ahead to 2050: the long-term vision is to set concrete targets for (bio)energy cooperatives and communities across Spain and share experiences to develop standard approaches for bioheat networks operated by local energy communities.



BECOOP

UNLOCKING THE COMMUNITY
BIOENERGY POTENTIAL