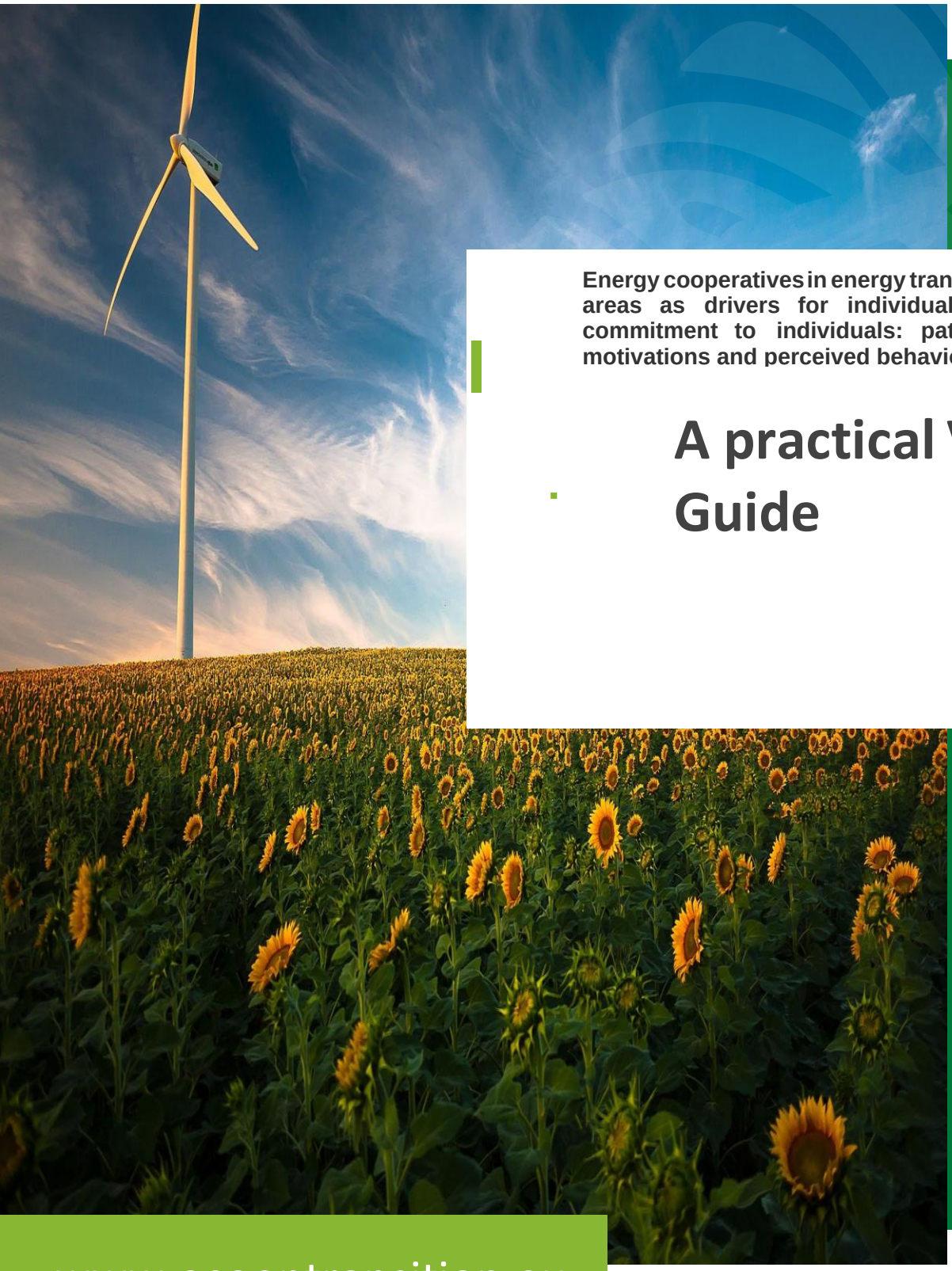
e-coop

Enabling communities to respond to energy, social and environmental needs



Energy cooperatives in energy transition processes in rural areas as drivers for individual participation in and commitment to individuals: path, their participation, motivations and perceived behavior changes

A practical VET Guide

www.ecooptransition.eu

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Table of Contents

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01 | INTRODUCTION

The E-coop project

The European Green Deals aims to make the EU economy sustainable, a goal that is achieved by turning climate and environmental challenges into opportunities in all policy areas and making the transition fair and inclusive for all. It includes an action plan aimed at: - promoting the efficient use of resources by moving towards a clean and circular economy; - restoring biodiversity and reducing pollution. The plan outlines the necessary investments and available financing instruments and explains how to ensure a fair and inclusive transition.

With the promotion and continuous expansion of the Green Deal initiatives, the renewable energies sector has become a vital factor in creating new job and income opportunities in rural areas (European Citizens' Panel, 2007, p. 5). As a result, the energy transition in European countries has redirected some of the focus of economic development to rural areas.

Since most renewable energy installations require land and space for their broad application, the question became whether the promotion of renewable energies in rural areas is also a sustainable development of rural economies. Local governments, stakeholders and networks are increasingly challenged by the fast expansion of renewable energies, which is not necessarily driven by local actors, but often by external investors and highly professionalized experts. To catch up with these developments, rural actors and institutions have to build knowledge and capacities, find new organization and communications forms and create their business models to keep the economic value in the region.

E-coop project aims to link transition activities in rural areas to energy cooperatives and to behavioural change in communities. The project, then, doesn't insist directly on energy activities as it is easy to find in the usual VET Programs. It doesn't propose tools, studies and programs about the type of energy and how to become prosumers or energy makers but, it wants to:

- Build capacity and social capital through training, advice, facilitation and assistance with group formation and establishment;
- Clarify administrative processes and procedures, including developing funding proposals;
- Identify appropriate organizational models (cooperatives) and strategy to implement them;
- Enhance an easy understanding and management of funding and resources through the RDPs and other EU and national funding sources.

In this direction, this project is the first of its kind.

From a need analysis focused on the actual situation regarding energy transition in Europe, the consortium has found that despite numerous concepts and strategies to foster sustainable development from governments and different societal actors, the global economic system is still characterized by a high and continuously increasing depletion of natural resources, further degradation and contamination of biological systems, increasing GHG emissions and a continuous decline of biodiversity. At the same time, the world population is expected to grow up to 9 billion by 2050 and inequality of wealth within and between countries worldwide is increasing. This means, that a radical change in our economy is needed to substantially reduce the resource flow, to shift societies towards a low-carbon living model and to ensure food security and well-being for all people around the world.

However, path dependencies building on existing technological, governance-, knowledge-, and power structures are reasons why non-incremental, fundamental and structural transformations are currently impeded and only occur in certain niches. Geels, 2002 argues, that these systematic failures can not be solved by governmental interventions alone, but require gradual and radical changes in subsystems of the overall socio-economic system (mainly provided by societal bottom-up transitions involving citizens, business, and civil society who become frontrunners. A solution that we propose in the e-coop project is the energy cooperatives, which have been increasingly recognized as a beneficial form of energy generation as they follow a rather community-based approach to energy development. They are, in this project, used as an entry point for communities to learn more about patterns and elements of development towards more renewable energies

in rural areas.
This said the main objective of the E-coop project is to provide key tools to gain an understanding of the role of energy cooperatives in energy transition processes in rural areas drivers for individual participation and commitment. Linked to this, the main result is - through a VET flexible and learner-centred programme to contribute to closing existing gaps in the management of energy transition processes in rural areas - to help Professionals from public organizations and Private actors involved in the development of local economies to build knowledge and capacities, find new organization and communications forms and create their business models to keep the economic value in the region.
In short, we want to involve citizens, businesses, and civil society in the process of achieving sustainability objectives in rural areas through the good practice of energy cooperatives.
Specific objectives of the project are:

- ensure that barriers are removed and that communities have access to the information and resources they need to participate in the implementation processes of energy transition and this, in the e-coop project, happens by activating the energy cooperatives.
- collect a set of case studies and a literacy review about what are the best methodologies to use with our target have a clear analysis of the competencies that need to be improved/acquired. Tangible outputs: a practical VET guide on "Energy cooperatives in energy transition processes in rural areas as drivers for individual participation in and commitment to individuals: path, their participation, motivations and perceived behaviour changes" and a course curriculum to provide insights for directions in building processes and create awareness about the potential of various national and European programmes and Measures.
- realize a platform that will include Education Resources, and multimedia open where it will be uploaded key components of strategies to develop community engagement and strategies to realize an energy cooperative. The platform will have a section 'Designing a strategy' that will provide tools for designing an energy cooperative. It's not only about training our target and sharing the results of the project but mainly about creating a virtual space where Professionals from public organizations and Private actors involved in the development of local economies from 6 different European Countries with different experiences and approaches can be in contact and share experiences/doubt/paths.
- ensure that the necessary supports are in place to assist communities in finding innovative responses to identified challenges and opportunities.
- create tools to enable communities to test out and implement strategies to realize energy cooperatives, we call it "generate actions". Generating actions essentially means the mobilisation of local humans and ideas/proposals, as well as resources.

About the VET Guide

In this introductory section of the VET (Vocational Education and Training) guide, we will explore key details about the guide itself, including why it was created, the methodology used to develop it and its overall structure.

Why the Guide

The creation of this comprehensive VET guide is driven by a strong dedication to advancing the energy transition through the utilization of energy cooperatives and an ESG (Environmental, Social, and Governance) approach. This initiative is motivated by a deep understanding of the pivotal role that community energy cooperatives play in mitigating climate change while promoting sustainable energy practices. The guide aims to raise awareness among VET educators and energy practitioners about key principles and challenges pertaining to these crucial initiatives. By providing valuable insights, it empowers individuals within Vocational Education and Training (VET) programs with essential knowledge required for embracing sustainability in their professional endeavors.

Recognizing VET's critical role in shaping future professionals within the energy sector, this guide offers educational resources designed specifically for developing skills related to implementing an ESG approach as well as effectively managing community-based renewable energy projects.

In today's global landscape, environmental conservation alongside social sustainability has become imperative. Therefore, this guide seeks to support initiatives aimed at addressing complex challenges such as transitioning towards sustainable sources of power while advocating for community-driven solutions through cooperative models.

Through practical knowledge sharing encompassing best practices, case studies illustrating successful implementations, along with a wealth of valuable resources; our aim is clear – empowering both educators and practitioners alike with actionable insights on how best apply an ESG approach within community-centric renewable projects.

Furthermore, VET educators are instrumental in raising learners' consciousness regarding social issues linked with renewable energies including equitable access rights alongside emphasizing on significance held by communal efforts like those found within Community Energy Cooperatives.Empowering learners translates into active contribution towards driving forward positive changes during The Energy Transition.

Methodology

The guide was developed using a methodology based on a combination of knowledge sources, academic research, practical experience and input from the Erasmus+ KA2 "E-COOP" project partners. The development methodology included the following steps:

- Needs Analysis: The project partners conducted a needs analysis to identify educational and training needs related to energy transition in particular in rural areas and energy cooperatives. This analysis guided the development of the content of the guidebook.
- Academic Research: Academic research and relevant publications regarding the ESG approach, energy transition and energy cooperatives were reviewed. These sources provided solid theoretical foundations for the guide.
- Practical Contributions: Project partners contributed practical experiences and best practices related to the ESG approach and community energy cooperatives. These contributions were incorporated into the guide to provide concrete examples.
- Structuring and Organisation: The guide was structured according to the main themes identified,

including environmental, social and governance factors, as well as the multistakeholder approach and community engagement.

Structure

The guide is organised in a logical structure that allows easy navigation and understanding.
It consists of the following chapters:

- Introduction: provides an overview of the e-coop project
- Energy Transition: This chapter defines the energy transition, exploring paradigm shifts and energy policies in the European Union.
- The Basis: This chapter examines the ESG approach, with a focus on environmental, social and governance factors. It also includes the multistakeholder approach and community engagement.
- Competencies List and KPIs: This chapter provides a list of key competencies and key performance indicators (KPIs) related to the energy transition and cooperatives. It also includes a reference to the European Framework and the E-Coop Curriculum.
- Conclusions and Recommendations: This chapter summarises the main conclusions of the guide and provides recommendations for VET educators, energy practitioners and other stakeholders.

Each chapter offers detailed information, practical examples and resources to support learning and training in ESG and community energy cooperative management.

Energy transition

03

Definition

The Energy Transition represents an epochal transformation process that sets itself the arduous task of radically reorienting societies towards a path of greater energy sustainability. This process is triggered by a growing awareness of the imperative to drastically reduce greenhouse gas emissions in the face of the ever-more evident threat of global climate change. The main objective of the Energy Transition is to end dependence on traditional and unsustainable energy sources, such as fossil fuels, which contribute significantly to the accumulation of carbon dioxide in the atmosphere.

In this new energy paradigm, renewable energy becomes the undisputed protagonist, a key pillar for reducing the environmental impact of human activities and ensuring a sustainable future for future generations. Renewable energy sources, such as solar, wind, hydro, and biomass, offer a dual benefit: on the one hand, they reduce carbon emissions, mitigating the effects of climate change; on the other hand, they contribute to energy independence, reducing dependence on imported energy resources.

Energy Transition is not just about changing the source of energy supply but embraces a philosophy of sustainability that extends to the entire economy. This approach embraces energy efficiency as an imperative, encouraging responsible energy production and consumption. It also promotes the adoption of advanced technologies and innovative practices to maximise energy efficiency and reduce waste.

The importance of Energy Transition goes far beyond mere substitution of energy sources. it is directly related to the United Nations Sustainable Development Goals (SDGs). It is reflected in a concrete commitment to a future where clean and sustainable energy drives economic development, contributing to the overall well-being of societies and enabling the pursuit of sustainable development goals, including poverty reduction, economic prosperity, social justice and environmental protection.

This chapter will further explore the evolution and new paradigms of Energy Transition, as well as the policies and programmes promoted by the European Union (EU) to promote this important initiative. Energy Transition is a global challenge that requires the active involvement of all, and this guide aims to prepare VET educators and energy professionals to be part of this fundamental transformation.

Evolution and new paradigms

Environmental Sustainability in the Energy Transition

Environmental sustainability is a fundamental aspect of the Energy Transition and plays a vital role in reshaping the global energy landscape. It is centered on principles aimed at preserving the environment and minimizing the adverse effects of traditional energy sources.Communities are increasingly embracing renewable energy sources, such as solar, wind, hydro, and biomass in their quest for sustainable energy solutions. These sources are sustainable because they rely on replenishable natural resources like sunlight, wind, water, and plants. Renewable energy significantly contributes to reducing greenhouse gas emissions like carbon dioxide (CO_2). Unlike fossil fuels that produce high levels of CO_2 when burned - contributing to climate change - renewables emit much lower or zero emissions. This shift helps mitigate global warming while also reducing air and water pollution to prevent environmental degradation and ecosystem destruction.
In addition to emission reduction benefits, promoting renewable energy supports local exploitation which

reduces reliance on imported fossil fuels while stabilizing energy prices. Also, it encompasses enhancing overall efficiency for reduced consumption which translates into lower costs with minimal environmental impact.

Energy Efficiency in the Energy Transition

Energy efficiency is a fundamental principle in the emerging energy landscape, driving the Energy Transition forward. This crucial concept revolves around the idea of maximizing benefits while minimizing energy consumption, creating a more sustainable and optimized use of resources.
In the context of energy efficiency in the Energy Transition, we strive to achieve a reduction in Energy Consumption. The primary goal of energy efficiency is to minimize overall energy usage while maintaining or increasing productivity levels. By reducing consumption, we can effectively decrease overall energy demand and address negative environmental impacts.To support this objective, the Energy Transition has facilitated the development and implementation of new Technologies and Practices focused on energy efficiency. These advancements encompass various aspects such as advanced building insulation systems, energy-efficient electrical devices, efficient heating and cooling systems, and LED lighting. By adopting these technologies and practices, we can take a significant step towards reducing energy consumption.
Energy efficiency also offers substantial economic Savings therefore, by adopting efficient building and energy practices, both households and businesses can curtail energy costs, thereby freeing up resources for other purposes. This not only contributes to the conservation of natural resources but also enhances economic competitiveness.

Energy efficiency in the energy transition is also closely linked to the goal of minimizing waste. In fact, by reducing energy waste, we can significantly decrease the environmental impact of our actions. When we consume less energy, we produce fewer greenhouse gas emissions and put less strain on our natural resources. This not only benefits the environment but also contributes to long-term environmental sustainability.
To promote energy efficiency, many countries have enacted laws and regulations. These policies establish certain efficiency standards that buildings, vehicles, and equipment must meet. By implementing these regulatory measures, we create incentives for the widespread adoption of energy-efficient solutions. This, in turn, helps to drive positive changes and greater energy efficiency across various sectors.

It is important to enhance the role of Research and innovation and the importance of creating awareness and training about this topic.
Actually, through technological developments, such as more efficient batteries, advanced energy control systems, and sustainable mobility solutions, we can achieve further improvements in energy efficiency. These advancements not only contribute to reducing energy waste but also pave the way for a more sustainable future. Finally, promoting energy efficiency among consumers, businesses, and institutions requires raising awareness and providing training. Organizations and educators in the vocational education and training (VET) sector play a vital role in teaching the necessary skills and creating awareness about efficient building and energy practices. By equipping individuals with the knowledge and resources needed to adopt energy-efficient solutions, we can drive positive change and achieve a more sustainable energy future.

Decarbonisation in the energy transition

Decarbonisation is a crucial goal in the Energy Transition and focuses on reducing carbon emissions related to the use of fossil fuels. This paradigm aims to significantly reduce the use of energy sources that produce greenhouse gas emissions, such as carbon dioxide (CO2), and to promote a low-carbon economy.
It aims first and foremost at reducing greenhouse gas emissions, which are one of the main causes of climate change. These emissions are mainly associated with the use of fossil fuels, such as oil, coal and natural gas. Reducing CO2 emissions is key to mitigating climate change and limiting its negative impacts.
Central to this paradigm is the use of clean, low-carbon energy sources, such as solar, wind, hydro and nuclear power. These sources produce much lower carbon emissions than fossil fuels and are considered a key solution for reducing environmental impact.
An important element of decarbonisation is the electrification of sectors previously dependent on fossil fuels, such as transport. Electric vehicles, for example, use electricity instead of traditional fuel, reducing CO2 emissions and improving air quality.
Many countries have adopted policies and regulations to promote decarbonisation. These include incentives for the use of low-emission vehicles, carbon taxes and emission reduction targets. These regulatory measures create incentives for the adoption of low-carbon solutions.
It is essential the active participation of businesses, governments, consumers and communities. Awareness of the importance of reducing carbon emissions and responsibility to adopt sustainable behaviour are key to the success of this paradigm.

Circular economy in the energy transition

VET educators play an essential role in teaching how to apply the circular economy in the energy sphere, preparing students to contribute to a sustainable Energy Transition, characterised by the efficient use of resources, reducing waste and promoting greater sustainability.
The circular economy is a key concept in the Energy Transition as it focuses on optimising resources, reducing waste and creating durable energy systems.
In the field of energy, the circular economy implies the efficient use of available resources, such as sunlight and wind, to maximise the production of energy from renewable sources. This approach is a response to the urgent need to reduce the environmental impact of energy activities, mitigate climate change and promote greater sustainability.
A key aspect of the circular economy is resource optimisation. This means making full use of renewable energy resources, and avoiding waste and inefficiency. Solar and wind energy sources, for example, represent an inexhaustible source of clean energy and can be used efficiently to meet the energy needs of communities. The use of advanced technologies to capture and store energy from these sources maximises energy efficiency while minimising waste.
Another aspect of the circular economy concerns reuse and recycling. This principle also applies to energy resources. For example, batteries used in energy storage facilities can be recycled or reused, thus reducing the need for new resources. In addition, obsolete components of energy plants can be disassembled and recycled to create new energy products, helping to reduce the overall environmental impact.
An extended life cycle is another important goal in the circular economy. Energy plants must be designed to last, requiring as little maintenance or replacement as possible. This not only increases the efficiency and lifespan of plants but also reduces waste generation and the use of additional resources.
Minimizing waste is a key objective. Reducing energy waste during production and distribution is a central

element of resource optimisation. This involves the adoption of advanced technologies that limit energy losses during the transport and distribution of energy to communities. Furthermore, sustainable energy waste management is an essential part of the circular approach. This implies the recycling of energy materials and the proper disposal of waste, avoiding environmental pollution.

ET in EU: policies and programs

The Clean Energy for All Europeans package

The Clean Energy for All Europeans package is an ambitious regulatory framework created by the European Union to address energy, environmental and climate challenges in a rapidly changing world. This package, also known as the Clean Energy Package, was adopted in 2018 and is a key pillar of European policies to promote the Energy Transition. It is based on four key pillars that contribute significantly to defining the direction of sustainable energy in Europe:

1. Ambitious Targets for Reducing Greenhouse Gas Emissions: The Clean Energy Package sets clear and ambitious targets for reducing greenhouse gas emissions by 2030. The European Union has committed to reducing greenhouse gas emissions by 55% compared to 1990 levels. This target is a direct response to the challenge of climate change and underlines the urgency of a transition to sustainable, low-carbon energy sources. To achieve these goals, the EU promotes the use of renewable energy and large-scale energy efficiency measures.

2. Legal and Regulatory Framework: The Clean Energy Package creates a solid legal and regulatory framework to guide EU member states' action towards greater energy sustainability. This framework thoroughly regulates issues related to renewable energy, energy efficiency and energy market regulation. In addition to setting specific obligations for member states, it also defines the measures needed to achieve energy and environmental targets. This framework ensures that all EU nations work together to promote energy sustainability and reduce harmful emissions.

3. Financing Programmes for Renewable Energy Projects: The Clean Energy Package includes special financing programmes to support renewable energy, energy efficiency and clean technology projects. These programmes provide financial incentives for innovative projects that contribute to cleaner and more sustainable energy production. Among the best known programmes are Horizon 2020 and the Innovation Fund, which provide funding for projects dedicated to the research and development of advanced energy technologies.

4. Promotion of Energy Efficiency in Buildings and Transport: The Clean Energy Package actively promotes energy efficiency, particularly in the building and transport sector. This includes measures to improve the insulation of buildings, the use of energy-efficient appliances and the promotion of sustainable mobility. The aim is to reduce overall energy consumption and minimise waste, while reducing the environmental impact.

This broad and ambitious regulatory framework is a decisive response to the urgent need to address Europe's energy, climate and environmental challenges. The Clean Energy Package places energy sustainability at the heart of European policies and promotes Energy Transition as a key route to the continent's energy future. The European Union is determined to lead the way towards cleaner and more sustainable energy and to become a role model for the whole world.

Making Europe Climate Neutral by 2050: An Ambitious Vision for the Future

At the heart of the European Green Deal is the ambitious goal of making Europe climate neutral by 2050. This means that the European Union is committed to balancing greenhouse gas emissions with capture and reduction measures, so as not to contribute to the net increase of greenhouse gases in the atmosphere. This vision implies a profound transformation of the entire European economy and a commitment to revolutionise the way Europe produces and consumes energy.

This goal is as ambitious as it is crucial. The international scientific community has repeatedly stressed the urgency of reducing greenhouse gas emissions to avoid the worst effects of climate change, such as global warming and rising sea levels. Climate neutrality is an essential step towards achieving these goals. It means that Europe will no longer make a net contribution to the increase in greenhouse gas concentrations in the atmosphere, which will help slow down climate change.

To achieve this climate neutrality by 2050, Europe must drastically reduce greenhouse gas emissions in all key sectors, including energy, agriculture, industry and transport. This will require a series of coordinated actions at national and European level, as well as active collaboration with international partners. In addition, it will be necessary to invest in new technologies, renew existing infrastructure and promote changes in production and consumption habits.

This climate neutrality goal is a binding commitment that will influence European politics, economy and society for decades to come. It brings with it a number of challenges, but also opportunities. To achieve this ambitious vision, Europe will have to become a pioneer in the adoption of clean and sustainable energy technologies, pushing innovation and research in the field. Moreover, this transition to climate neutrality is a key step towards ensuring a sustainable future for future generations, protecting the environment, community health and economic stability.

Initiatives to Address Climate Change and Promote Sustainability: A Multisectoral Approach

Within the European Green Deal, a series of multi-sectoral initiatives, strategies and policies have been outlined to address climate change and promote sustainability in different aspects of European society and economy. These initiatives are key to achieving the goal of climate neutrality by 2050 and contributing to a more sustainable society. Some of the key initiatives include:

1. Farm to Fork Strategy: This strategy focuses on making the European agricultural and food sector more sustainable. It promotes environmentally friendly and sustainable farming practices, reducing the use of pesticides and chemical fertilisers, improving animal welfare, reducing food waste and improving food quality. The aim is to ensure greener and healthier food production.

2. Biodiversity Strategy: This strategy aims to preserve and restore Europe's rich biodiversity. It promotes the creation of protected areas, the conservation of natural habitats, the restoration of damaged ecosystems and the promotion of biodiversity in urban areas. The protection of biodiversity is essential to ensure the resilience of ecosystems and the survival of many endangered species.

3. European Climate Act: This law establishes the legal framework for achieving climate neutrality by 2050. It imposes binding targets for reducing greenhouse gas emissions for all sectors and sets the pathway for achieving this goal. The law ensures that the European Union continues to make concrete progress in reducing emissions and combating climate change.

4. Renovation Wave: This initiative promotes the energy renovation of European buildings to make them more energy efficient. Buildings are one of the largest consumers of energy in Europe, and improving their energy efficiency is essential to reduce energy consumption and greenhouse gas emissions. The Renovation Wave aims to promote the renovation of existing buildings and the construction of new sustainable buildings.

5. European Green Deal Investment Plan: This plan provides for significant investment in innovation, research and development of clean and sustainable technologies. It offers financial incentives to projects that contribute to environmental sustainability and Energy Transition. These investments are key to accelerating the transition to a low-carbon economy.

These initiatives are just one part of the actions undertaken as part of the European Green Deal. The aim is to promote a systematic and profound transformation in all sectors of the economy and society, driving Europe towards a more sustainable and resilient future. These multi-sectoral policies reflect the European Union's commitment to addressing global environmental challenges and promoting a more sustainable way of life.

The importance of the Green Deal for the Energy Transition

The European Green Deal, promoted by the European Commission, emerges as an ambitious and transformative initiative that plays a central role in the Energy Transition. This strategic plan is designed to make Europe climate neutral by 2050 and address climate change in a comprehensive and integrated manner. The Green Deal emphasises the need for a profound transformation in the energy landscape and promotes the adoption of sustainable practices and the shift to clean and renewable energy sources.

The implications of the European Green Deal are significant for energy cooperatives, particularly in rural areas. These cooperatives play a crucial role in promoting more sustainable energy and energy independence at the local level. In a context where the Green Deal promotes the adoption of renewable energy, energy efficiency and innovation, energy cooperatives are at the centre of this transformation.

In rural areas, where decentralised energy production is often particularly beneficial, energy cooperatives can play a leading role in promoting local energy communities. These communities could benefit from Green Deal initiatives and investments that aim to improve the energy efficiency of buildings, promote the use of renewable energy sources and actively involve communities in energy management and production.

The European Green Deal provides a strategic framework and economic support for sustainable projects, offering energy cooperatives in rural areas the opportunity to expand and enhance their activities. The sustainable energy policies and regulations promoted by the Green Deal create a favourable environment for the renewable energy sector and energy cooperatives.

Role of VET Educators in Energy Transition

VET educators play a key role in training students, providing them with a clear understanding of the impact of European policies and programmes on Energy Transition. This knowledge is essential to prepare students to face the challenges and take advantage of the opportunities that emerge in this rapidly changing context.

Teaching students about the impact of European policies and programmes on the Energy Transition requires in-depth knowledge of these issues, as well as the ability to effectively communicate the implications of these policies for the energy sector and society as a whole. VET educators must be able to translate complex concepts related to energy sustainability and renewables in an accessible way, guiding students in understanding European policies and initiatives that are shaping the energy future.

Furthermore, preparing students for careers in renewable energy and energy efficiency is a key objective for VET educators. These fast-growing sectors offer significant job opportunities for young people, but require specialised skills. Educators must develop training programmes that cover a wide range of skills, including design and installation of renewable energy systems, energy management, development of sustainable energy policies and more.

To achieve this, VET educators must constantly stay informed about the latest trends and developments in the energy sector. They must also actively collaborate with companies and organisations in the sector to ensure that their training programmes are aligned with the needs of the labour market.

In conclusion, the role of VET educators in preparing students for the Energy Transition is crucial. These educators act as a bridge between European policies and the future careers of their students, providing them with the knowledge and skills needed to succeed in a growing sector, thus contributing significantly to the realisation of Europe's energy sustainability goals.

Sources:

- Clean energy for all Europeans package
- Renewable Energy Directive
- Energy and the Green Deal
- SDGS
- circular-economy-action-plan EU
- European-climate-law
- The green employment and skills transformation

The basis: ESG approach

04

Introduction

In this chapter, we will explore the fundamentals of the ESG (Environmental, Social, Governance) approach and their relevance in the context of vocational education and training (VET) for the energy transition. The ESG approach is not only a theoretical concept, but a solid basis for the preparation of future energy professionals and VET educators. These principles are fundamental to addressing the increasingly complex environmental, social and economic challenges of our time.

We will examine how environmental, social and governance factors directly influence the decisions and actions of community energy cooperatives. Furthermore, we will discuss the key role of the multistakeholder approach and community engagement in ensuring a sustainable energy transition and the active involvement of local communities.

Each aspect of the ESG approach, which will be examined in this chapter, provides a basis for training future energy leaders and educating energy professionals. Through this knowledge, VET educators can play an essential role in preparing the next generation of energy professionals and promote sustainability locally and globally.

- Regulatory Changes.

The role of governments in promoting ESG has increased over time. Many countries have introduced regulations and laws requiring ESG reporting by listed companies. This has prompted companies to consider and communicate their ESG performance more systematically.

- Growing Awareness of Environmental and Social Challenges

The growing awareness of environmental and social challenges has had a significant impact on the adoption of the ESG approach. Rising pollution levels, climate change, resource scarcity and growing inequality have become pressing issues that require a response from companies, investors and civil society. These challenges have helped propel the ESG agenda to a central position in global sustainability debates.

In this historical evolution, the ESG approach has reached a state of maturity and has become an essential parameter for assessing the sustainability of organisations and initiatives in various sectors. Its application in energy transition and energy cooperatives is of crucial importance as it encourages good practices and promotes environmental and social responsibility in communities engaged in the transition to a more sustainable energy system.

Importance for Energy Transition and Cooperative Management

The ESG (Environmental, Social, Governance) approach is a key element to ensure the success of the energy transition and to effectively manage the legal forms identified in its management, such as community enterprises/cooperatives, involved in this process.

There are several reasons why community enterprises can be an excellent starting point for the development of participatory and inclusive energy transition activities.

Social and community enterprises, unlike conventional enterprises, pursue an explicit social purpose, which is realised in the production of direct benefits for an entire community or disadvantaged individuals living in it and more generally in the development of the community in which they operate). Thanks to these purposes, which are consistent with the institutional purposes of energy communities, they can, on the one hand, provide the necessary reputational capital for a successful start-up and, on the other, represent a guarantee so that the benefits generated by the energy community are effectively shared equally among its members and remain in the territory where they were produced.

Secondly, territorial rootedness. Social enterprises, and even more so community enterprises, can be effective promoters of the energy transition because they have a close relationship with the communities in which they operate, they know their social and economic needs, and they also employ in their production processes resources contributed free of charge by the various community actors (e.g. voluntary work, unused goods, donations, funding).

That is why it is crucial to understand how the ESG approach affects the energy transition and community-based energy cooperatives:

Promotes Environmental Sustainability

The 'Environmental' aspect of the ESG approach emphasises the importance of reducing the environmental impact of energy activities. This is crucial in the energy transition, where the main objective is to switch to cleaner and more sustainable energy sources. ESG aspects emphasise the need to reduce greenhouse gas emissions, preserve biodiversity and manage natural resources responsibly. Energy cooperatives, following the ESG approach, actively contribute to this goal by promoting renewable energy and sustainable management of energy resources in rural communities.

Promoting Social Equity and Community Involvement

The 'Social' aspect of the ESG approach focuses on equity, active community participation and the creation of social value. In the energy transition, community involvement is essential to ensure that the benefits of energy production are fairly distributed and that local communities are involved in decisions. Energy cooperatives based on the ESG approach work to actively involve communities in decisions and promote local employment and economic growth in rural areas, thus contributing to reducing social inequalities.

Provides Good Governance Practices

The governance aspect of the ESG approach focuses on the internal governance of energy cooperatives, transparency and accountability. A sound governance system is essential to ensure the trust of members, investors and the community. Energy cooperatives that adopt governance principles based on the ESG approach are better positioned to effectively manage funds, make responsible decisions and maintain a transparent decision-making structure. This contributes to the stability and sustainability of energy cooperatives.

Environmental Factor in the ESG Approach

The 'Environmental Factor' in the ESG approach focuses on the analysis and management of environment-related risks and opportunities. This aspect considers the impact of an organisation's activities on the natural world and aims to promote sustainable business practices that help reduce negative impacts on the environment and preserve natural resources for future generations.

This is how the Environmental Factor is integrated into the ESG approach:

Climate Change Mitigation

The environmental aspect of ESG places special emphasis on climate change mitigation. This involves reducing greenhouse gas emissions, adopting low-carbon practices and supporting renewable energy. Organisations that embrace the environmental aspect of ESG work to reduce their climate impact and adopt sustainable solutions.

Conservation of Natural Resources

Sustainable management of natural resources is another key element of the Environmental Factor. This includes protecting biodiversity, managing water resources and recycling materials. Organisations that adopt the ESG approach strive to use resources efficiently and responsibly.

Renewable Energy and Energy Efficiency

Promoting renewable energy and energy efficiency is an integral part of the environmental aspect of ESG. Organisations seek to switch to cleaner energy sources and reduce energy consumption through efficiency measures. This contributes to the reduction of energy-related environmental impacts.

Environmental Reporting

Transparency is key in the Environmental Factor of ESG. Organisations must accurately report on their environmental performance, including data on emissions, waste management and resource use. This reporting provides a basis for monitoring and improving environmental performance.

Environmental Risk Assessment and Mitigation

The identification and management of environmental risks are an integral part of the ESG Environmental Factor. This includes assessing the potential impacts of business activities on the environment and implementing measures to mitigate these risks. Prevention of environmental accidents and responsible management of environmental crises are priorities.

Encouraging Sustainable Innovation

The environmental aspect of ESG promotes sustainable innovation. This includes the development of technologies and solutions to reduce the environmental impact of operations and contribute to long-term sustainability.

Social Factor in the ESG Approach

In the context of energy transition through community-based organisations such as cooperatives, the 'Social Factor' in the ESG approach is of paramount importance. This focuses on the social impact of business activities and decisions, with an emphasis on equity, community participation and improving the quality of life in the areas involved. This is how the Social Factor applies in this context:

Involvement of Local Communities

In the context of energy cooperatives and energy transition, the active involvement of local communities is essential. The Social Factor promotes the involvement of stakeholders, including cooperative members, local residents and other community organisations, in energy-related decisions and activities. This helps to ensure that energy initiatives are in line with community needs and expectations.

Local Employment Creation

Local employment creation is a key aspect of the Social Factor in the ESG approach when it comes to energy cooperatives involved in the energy transition. This point highlights how these organisations can have a positive impact on the local economy and employment prospects in the rural communities involved. Here are some key aspects to consider:

Local Economic Sustainability

Energy cooperatives run sustainable energy projects in rural communities, which can result in the creation of local jobs. These jobs not only contribute to the economic sustainability of the region, but also reduce the need for commuting to other areas, improving the quality of life of local residents.

Economic Diversification

Local employment through energy cooperatives can contribute to the economic diversification of rural communities. This is particularly important in areas where employment opportunities may be limited. Economic diversification can make communities more resilient to economic fluctuations and changes in traditional sectors.

Community Involvement

Local employment through energy cooperatives directly involves local residents in the energy transition. This involvement increases a sense of responsibility and community ownership, contributing to greater social cohesion and the promotion of sustainable energy as a shared goal.

Amplification of Economic Effects

Local employment in energy cooperatives can amplify positive economic effects within the community. Local workers tend to reinvest their income in local activities, thus further supporting the local economy.

Equity in energy access

The concept of equity in energy access is an essential element within the Social Factor in ESG approach, especially in contexts of energy transition driven by community cooperatives. This principle emphasises the importance of ensuring that all communities, regardless of their geographical location or socio-economic conditions, have access to sustainable energy solutions and a reliable energy supply. Here is how this is developed in detail:

Elimination of Geographical Inequalities: Equitable access to energy involves the elimination of geographical disparities in energy supply. In many rural and remote areas, access to electricity may be limited or less reliable than in urban areas. Energy cooperatives are committed to extending sustainable energy supply to these communities as well, reducing geographical inequalities in energy access.

Inclusion of Under-served Communities: Energy cooperatives work to include communities that have been historically under-served by the traditional energy system. This could include rural, indigenous or low-income communities that may not have had access to electricity or may have experienced discrimination in accessing energy resources. By promoting equity, energy cooperatives seek to ensure that no community is left behind in the transition to sustainable energy sources.

Reducing Energy Insulation: Equity in energy access also includes the reduction of energy insulation. This concept refers to the fact that communities need to be reliably connected to energy in order to access essential services such as lighting, heating, internet access and appliances. Reducing energy isolation contributes to improving the quality of life in rural and remote communities.

Promoting Accessible Energy Solutions: Energy cooperatives strive to offer affordable energy solutions. This may include competitive energy tariffs, assistance programmes for low-income members, and the promotion of energy efficiency practices to reduce energy costs for households and businesses.

Social and Community Responsibility

The ESG approach emphasises the importance of social and community responsibility of energy cooperatives. These organisations must be sensitive to the needs of the communities they serve and adopt policies and programmes that reflect these needs. This includes the involvement of communities in the planning and implementation of energy projects.

Education and Training

The Social Factor in ESG approach pushes energy cooperatives to play an active role in educating and training communities on energy issues and the importance of sustainability. This process has profound implications and contributes in several ways:

Increased Awareness: The education and training offered by energy cooperatives aims first and foremost to raise the level of awareness within communities. This includes the dissemination of clear and accessible

information about renewable energy sources, the benefits of energy sustainability and the environmental challenges at stake. Awareness is crucial because it helps people understand the energy context and recognise the importance of making informed energy choices.

Empowering People: The social aspect of ESG aims to empower people by enabling them to participate in an informed way in energy-related decisions. Empowering communities involves not only sharing knowledge, but also encouraging them to actively participate in energy projects and decision-making processes. Energy cooperatives provide communities with the tools to understand, influence and participate in decision-making, thus reducing dependence on traditional, centralised energy sources.

Long-Term Sustainability: The education and training offered by energy cooperatives contribute to the creation of a knowledge and skills base in the community. This not only encourages a more conscious participation in the energy transition, but also promotes long-term sustainability. Trained people better understand how to adopt sustainable energy practices individually and collectively. This contributes to the continued adoption of renewable energy sources, reduction of energy consumption and orientation towards a more sustainable lifestyle.

Positive Social Impact: Education and training on energy issues are key to generating positive social impact in communities. This process goes beyond mere information, as it contributes to creating a culture of responsibility and sustainability within communities. Informed individuals are more likely to support and participate in local energy initiatives, thus contributing to the overall well-being of communities and reducing environmental impact.

Governance Factor in the ESG Approach

The 'Governance Factor' in the ESG approach focuses on an organisation's internal governance structure and responsible management of operations. In the energy transition through community energy cooperatives, the Governance Factor is crucial to ensure that initiatives are driven in a transparent manner and in accordance with sustainability principles.

Here is how the Governance Factor is applied to the ESG approach in this context:

Transparent Decision-Making Structure: The Governance Factor promotes a transparent decision-making structure within energy cooperatives. This means that decision-making processes must be clearly defined and understandable for all members and stakeholders. Transparency avoids conflicts of interest and fosters trust within energy co-operatives. energy transitions in co-operative form must respect the principle of the open door, which guarantees, on the one hand, the free entry of new members and their exit at any time, and, on the other hand, that no maximum number of members can be set in the statutes. Thanks to this principle, all members of the community in which the cooperative operates are free to decide whether or not to be part of an energetic community even after its establishment.

Responsibility towards members: Energy co-operatives follow the principles of the Governance Factor to ensure accountability to members. This implies that decisions and activities must be oriented towards the benefit of people involved in the co-operatives and the achievement of the organisation's statutory objectives. Accountability is a cornerstone of community co-operatives, as they are owned and managed by the members themselves. the cooperative guarantees the active and democratic participation of the

members in defining strategies, the type of renewable source to be used (e.g. wind, solar, thermal, photovoltaic, hydropower, marine energy, biomass), the financial commitment required from each member, future development and the destination of the profits generated by the company's activities (e.g. new services for the community of a cultural, social-welfare, educational or sustainable mobility nature).

Sustainable Objectives: The Governance aspect promotes the adoption of sustainable goals within energy cooperatives. This implies the integration of environmental and social criteria into strategic and operational plans. Energy co-operatives should aim at reducing environmental impacts, promoting social equity and contributing to the energy transition towards renewable energy sources.

Risk Mitigation: Governance encourages energy cooperatives to identify and mitigate risks. This includes assessing the potential impacts of energy activities, crisis management and planning for unforeseen situations. Risk mitigation is key to ensuring the stability and resilience of energy cooperatives.

Financial Accountability: The Governance Factor requires strict financial accountability within energy cooperatives. This means prudent management of funds, accurate reporting of finances and compliance with financial and tax laws. Financial responsibility is essential to ensure the economic sustainability of energy co-operatives.

Stakeholder Participation: Energy cooperatives involve stakeholders, including members, local communities and investors, in governance and decision-making. This ensures that different voices are heard and that energy initiatives are aligned with stakeholders' needs and expectations. the cooperative model - based on the networking of its members - certainly represents a form that can foster cooperation between all the different stakeholders (public and private) operating in the same territory, thus ensuring control by the inhabitants over the management of the energy produced and a local rooting of the accumulated (economic and social) capital that remains at the disposal of the community.

| Multi – Stakeholder approach

The concepts listed above are part of the multistakeholder approach.

The Multistakeholder Approach is a key component of the ESG (Environmental, Social, Governance) approach to energy transition through community cooperatives. This approach emphasises the importance of involving a variety of interested parties or 'stakeholders' in the planning, implementation and management of sustainable energy initiatives. This inclusion of diverse voices and perspectives ensures greater legitimacy, sustainability and impact of community energy initiatives.

It, emphasises the importance of involving diverse stakeholders in community co-operative energy initiatives. These stakeholders may include cooperative members, local communities, public authorities, non-governmental organisations, investors, energy experts and other relevant stakeholders. By involving a variety of perspectives, more comprehensive challenges, opportunities and solutions can be identified. This means that decisions on energy sources, investments, operations management and other key activities involve different stakeholders. Inclusive decisions lead to more informed and accepted solutions, minimising conflicts and improving the legitimacy of initiatives.

Collaboration between members is therefore crucial for reaching agreements and compromises through

open and constructive dialogue. Collaboration between the various actors helps to overcome challenges and work together towards sustainable energy goals. For example, energy experts can provide technical information, communities can contribute to spatial planning, and local communities can offer knowledge about the culture and needs of the area. This exchange enriches energy initiatives and promotes mutual learning.

This is essential to gain community support and to ensure the long-term success of energy initiatives. A broad base of support also helps to mitigate potential opposition and conflict. But how to involve all stakeholders?

Community engagement approach

Sticking to our topic of energy transition through cooperative organisations, we present the Community Engagement approach which promotes the active involvement of the local community in energy-related decisions and activities. This involvement can include community consultations, information meetings, surveys and discussion forums. Individuals and households have the opportunity to express their energy-related opinions, concerns and needs. Community Engagement includes awareness-raising and education activities to inform the community about energy issues, sustainability and the impacts of energy initiatives. This process promotes energy awareness and education within the community.

Community Engagement includes a continuous cycle of feedback and adaptation. The community provides feedback on the performance of energy initiatives, allowing for corrections and improvements. This ensures that solutions are adapted to the evolving needs of the community.

Sources

- Energy communities: what they are and how they work
- Social Innovation, Circularity and Energy Transition for Environmental, Social and Governance (ESG) Practices—A Comprehensive Review
- Organisational models for energy communities. Reflections from the 'Community Energy Map' research
- Le cooperative di comunità come nuovi agenti di aggregazione sociale e sviluppo locale
- Community Cooperative: A New Legal Form for Enhancing Social Capital for the Development of Renewable Energy Communities in Italy
- Optimal management of multi-stakeholder distributed energy systems in low-carbon communities considering demand response resources and carbon tax
- Territory and people as resources: community cooperatives
- A closer look inside collaborative action: civic engagement and participation in community energy initiatives
- Borzaga, Fazzi, 2011; Mori, Sforzi, 2019

Setting the scenes: ESG in the energy transition, the energy cooperatives

05

Introduction

In the journey towards creating more sustainable communities, community sustainability initiatives play a key role in shaping the future. These initiatives represent a unique approach in which local communities come together to address environmental, social and economic challenges with innovative and participatory solutions. The 'Successful Key Points' we present in this chapter are extracted from five inspiring case studies across Europe: Austria, Italy, Ireland, Spain and Slovakia. These cases demonstrate how communities have addressed specific challenges, adopted innovative strategies and created a positive impact both locally and globally.

Throughout this chapter, we will examine these 'Successful Key Points', highlighting best practices and lessons learned from the experiences of the communities involved. From switching to renewable energy sources to active stakeholder involvement, these initiatives show how sustainable solutions can flourish when embraced with determination and collective involvement. Our case studies demonstrate that the transition to a more sustainable community is not only possible but can lead to exceptional results, reflecting the importance of a collaborative and innovative approach.

Join us as we explore the secrets of successful community sustainability initiatives and discover how each Successful Key Point has helped guide these communities along the path to a greener, more inclusive and responsible future.

Successful key points

Reduction of CO2 Emissions: In all 5 case studies, sustainable initiatives and energy communities contributed significantly to the reduction of CO2 emissions. This demonstrates the importance of the transition to renewable and sustainable energy sources in combating climate change. In the case of 'Templederry Renewable Energy Supply' in Ireland, the installation of the community-owned wind farm contributed significantly to the increase in renewable energy production, reducing dependence on fossil fuels and CO2 emissions.

Improved Energy Efficiency: All case studies show an increase in energy efficiency using cleaner technologies and energy solutions. This has led to less dependence on fossil fuels and greater sustainability.

Community participation: A key element in all case studies is the active participation of local communities. Communities have engaged in the decision-making and management of energy initiatives, demonstrating that involving the population is crucial to the success of such projects. In the case of the 'Energiegenossenschaft Mürztal' in Austria, the local community was actively involved in planting energy grasses and participating in the CO2 free mobile initiative. This involvement helped to create a strong sense of community and support for ecological activities.

Employment Creation: The transition to sustainable energy has had a positive impact on employment. In all case studies, new job opportunities were created and new economic sectors related to renewable energy

and energy efficiency were developed.

Improved Quality of Life: Sustainable initiatives have improved the quality of life of the people involved. Through the use of cleaner energy, energy efficiency and access to sustainable solutions, communities have experienced increased comfort and well-being. "The Crevillent CEL" in Spain resulted in savings of 15%-20% on energy bills for both households and organisations, demonstrating that renewable energy initiatives can have a positive impact on local finances.

Local and Global Sustainability: All case studies demonstrated the importance of acting locally to contribute to global sustainability goals such as the United Nations Sustainable Development Goals.

Innovation and Collaboration: Innovation and collaboration with different stakeholders were key in all case studies. These projects demonstrated how creativity, technology and collaboration can lead to sustainable solutions. The 'Cooperativa di Comunità di Biccari' in Italy represents a model of social aggregation based on sharing and creating shared responses to collective needs. This model promotes a community-based approach and involves a wide range of stakeholders.

Access to Clean Energy: In all case studies, access to clean and renewable energy became a reality for the communities involved. This has helped reduce the negative impact of traditional energy sources.

Awareness Raising and Education: The examples presented demonstrate the importance of raising awareness and educating communities on sustainable energy issues and eco-friendly practices.

Promotion of the 2030 Agenda: The sustainable initiatives in the case studies are aligned with the United Nations 2030 Agenda for Sustainable Development, demonstrating how they can contribute to achieving the goals set.

Samples for inspiration

In this series of case studies, we explore five inspiring energy transition initiatives and energy cooperatives from different parts of the world. Each case study offers a valuable learning opportunity, providing a window into the successes, challenges and best practices in adopting sustainable energy solutions. We will discover how these initiatives have addressed the challenges of the current climate crisis, reducing CO2 emissions, improving energy efficiency and promoting a sustainable lifestyle.

From a small Italian village to a Spanish city, via energy communities in Austria and Ireland and an innovative Smart City initiative in Slovakia, these case studies demonstrate that energy transition is not just a theoretical concept, but a tangible and successful reality. These projects highlight how collaboration, innovation and active community involvement can shape a cleaner and more sustainable energy future.

A common element among these case studies is alignment with global sustainability goals, in particular the United Nations Sustainable Development Goals (SDGs) and the ESG approach. These cases demonstrate how local action can contribute significantly to the broader goal of creating a more sustainable and resilient world.

The practices reported in this guide were chosen among a collection of 25 practices, 5 per country partner, collected by each consortium partner. The practices collected were analyzed from 6 key individuals, experts

in the energy transition field, in the community cooperatives and VET.. They were asked to select the most compelling story and methodology based on specific criteria:

● innovation (intensity of new and distinctive feature; what differentiates this from other stories or methodology with similar characteristics and purposes),

● suitability (how far the story and the methodology addresses the needs and challenges of the project, the capacity of transferability),

● usefulness (benefits and added value perceived by users, evidenced in terms of skills recognition, social value and / or personal development),

● accuracy (the story and the methodology are relevant for youth and youth workers and to approach the Social Entrepreneurship, it relies on real situations/ needs),

● acceptability (do youth and/or youth workers participated actively in the story and methodology; capacity of replication), expected impact (capacity of the story and methodology to produce outcomes).

Italy – Energy community of Biccari

Visit: ***coopbiccari***

Context:

The small municipality of Biccari, located in a picturesque mountainous area, faced a number of significant challenges that threatened its viability and community survival. A major concern was depopulation, a common problem in many rural and remote communities. Young people were driven to seek employment opportunities and a more affordable lifestyle elsewhere, leaving the mountain areas with a declining population and an uncertain future.

Furthermore, the Biccari area had been affected by an expansion of large-scale wind farms, establishing itself as part of the so-called 'wild wind'. These wind farms, although producing renewable energy, had little or no positive impact on the local community. On the contrary, they left a trail of environmental and social destruction, with land taken from residents and natural resources exploited for the benefit of others.

The need to restore control over its territory, promote local development and pursue energy sovereignty has become imperative for Biccari. The community set out to address these challenges and transform the situation. In this context, the Cooperativa di Comunità di Biccari (C.C.B.), an innovative social aggregation initiative, was born.

Intervention

Key points

Community Involvement and Active Participation: The Biccari Energy Community has demonstrated that actively involving the community in the generation and management of renewable energy is critical to success. The participation of residents from different age groups and with various job skills has created a solid sense of ownership and responsibility.

Social and Economic Sustainability: This case study demonstrated that renewable energy can be a tool to improve the quality of life in the community and create local employment. The Biccari Community Cooperative has contributed to the UN Sustainable Development Goal by helping to reduce pollution and improve the economic conditions of citizens.

Utilisation of Local Resources: The cooperative has successfully harnessed local resources, including the recovery of unused community assets, to create community-owned renewable energy projects. This model can be an example of how to make the most of local resources for the energy transition.

The intervention conducted by the Cooperativa di Comunità di Biccari (C.C.B.) was characterised by a series of targeted actions and the active participation of the local community. The Promoting Committee, with its central objective of creating an intra-generational and complementary pact, played a key role in this process. The Committee harnessed the skills and experience of the inhabitants of Biccari, seeking to make the most of the area's potential.

A central element of the intervention was the recovery and management of previously unused or undervalued community assets. This phase required careful analysis and mobilisation of local resources. Cooperative members worked actively to identify and catalogue these community assets, which included land, buildings and community resources. This process was essential to make available resources that would otherwise remain unused.

Once these assets were identified, the C.C.B. undertook concrete measures for their redevelopment and reuse. This involved efforts to restore abandoned buildings, improve access to natural resources and support initiatives to make these assets economically and socially productive. These actions have made it possible to transform what was previously considered 'dormant' into vital resources for the Biccari community.

A key aspect of the intervention was the active involvement of the local community in all stages of the process. The C.C.B. organised numerous meetings with residents and encouraged the direct participation of citizens in setting priorities, generating ideas and implementing projects. This participatory approach created a sense of shared ownership and ensured that the actions taken fully reflected the needs and aspirations of the community.

In addition, the Cooperative actively worked to establish alliances and partnerships with local stakeholders, including entrepreneurs, non-profit organisations and educational institutions. These collaborations helped to enhance the impact of the actions undertaken and to make the best use of available resources.

Comparison

To assess the impact and scope of the Biccari Community Cooperative initiative, it is important to consider the surrounding context and compare its results with averages or benchmarks in the field of social innovation and community aggregation.

At regional level, there are other success stories. At the local level, the C.C.B. represents a distinctive model of cooperation and active community participation especially for the rural context in which it is located. Compared to similar initiatives in other areas, the C.C.B. has reached a significantly high number of members and has demonstrated considerable intergenerational involvement. This broad and diverse participation distinguishes the C.C.B. from many other similar initiatives, which underlines its success in attracting a wide range of community members.

In terms of intergenerational involvement, the C.C.B. outperformed the average, demonstrating that its innovative approach actively engaged both younger and older generations. This comparison underlines the effectiveness of the C.C.B. approach in creating intergenerational dialogue and collaboration, which is essential for the long-term success of community initiatives.

Also from the point of view of the occupational diversity of members, the C.C.B. achieved above-average results compared to other cooperation initiatives. The participation of a wide range of professionals, workers, students, tradesmen and pensioners testifies to the broad membership of people from different occupational spheres and age levels.

These comparisons demonstrate how the Biccari Community Cooperative achieved outstanding results compared to the sectoral standards of community initiatives, helping to highlight the success and effectiveness of its social innovation model.

Results

The results obtained by the Cooperativa di Comunità di Biccari (C.C.B.) are clearly indicative of the success of the initiative and the benefits derived from its implementation.

Currently, the C.C.B. has approximately 200 members from Biccari, and this number continues to grow steadily. The community has actively embraced the cooperative concept and demonstrated a strong commitment to the promotion of sustainable development and collective participation. These members fall into different categories, including working members, supporters and users. This variety of participants represents a wide range of working people, including freelancers, blue-collar workers, students, traders and pensioners, reflecting the initiative's inclusiveness and diversity.

Importantly, the cooperative involves individuals between the ages of 18 and 90. This aspect is significant as it highlights a strong sense of intergenerational participation, with younger and older generations actively collaborating for the good of the community. This model of intergenerational involvement is essential for ensuring the durability of initiatives and for passing on knowledge, skills and experience between different generations.

The results of the C.C.B. demonstrate in a tangible way how collaboration and social innovation can successfully address community challenges. Active participation and the recovery of previously unused resources have contributed to a more resilient and self-reliant community. Furthermore, these results underline the importance of a participatory and inclusive approach in developing solutions to local challenges, demonstrating that collective action can lead
to concrete and positive results.

Spain - The CEL of Crevillent

Visit: *https://www.grupoenercoop.es/comunidad-energetica-de-crevillent-asi-es-el-pionero-autoconsumo-colectivo-que-ahorra-en-la-factura-de-la-luz/*

Context:
The problem addressed concerned the energy dependence in Spain, with 70% of energy imported. To overcome the effects of the energy crisis and achieve the Sustainable Development Goals (SDGs) of the 2030 Agenda, it was necessary to reduce energy consumption and increase energy independence. Local Energy Communities sought to produce energy using renewable sources, contributing to the reduction of greenhouse gas emissions and the adoption of clean energy.

Intervention:
The intervention included several actions:
- The installation of collective self-consumption cells on 21 community facilities in an area of 15,000 square metres.
- The financing of €300,000 by the MERLON innovation project, in cooperation with the local electricity cooperative Enercoop, to renovate the site.

Comparison*:*
At the beginning of 2023, there were 121 energy communities in Spain with a total of 6,400 kWp of installed power. This means that the average installed power per community was approximately 52.89 kWp, benefiting a total of 3,146 households and 19,201 people. The reduction in CO2 emissions was 2,071 tonnes per year, equivalent to planting 102 trees per year. Compared to the average, this community demonstrated superior results with 127% more installed power, 169% more users benefiting.

Key points

Energy Independence and Energy Savings: The CEL in Crevillent demonstrated that reducing energy dependence on fossil fuels is possible through the use of renewable energy. The switch to clean energy has led to significant energy savings, thus reducing overall energy consumption.

Community Involvement: This case study highlighted the importance of active community involvement in renewable energy initiatives. Local energy communities (LECs) are an effective means of involving citizens in the production and use of renewable energy.

Contribution to the Sustainable Development Goals (SDGs): Crevillent's CEL demonstrated how renewable energy production and use can contribute to the UN Sustainable Development Goals (SDGs). The reduction of CO2 emissions and the use of clean energy represent a significant step towards sustainability.

Results*:*
The installed system can meet the electricity needs of 70 households using 120 kW. In addition, the 200 kWh system allows citizens to store energy during the day, reducing dependence on external sources in the event of a blackout. These actions have resulted in significant savings of between 15% and 20% on the total annual bill, contributing to increased economic activity and employment in the municipality.
This case study demonstrates how the Crevillent community has successfully met the challenge of energy independence and contributed significantly to reducing CO2 emissions, while promoting energy efficiency and sustainability in the local community.

Ireland - Community Power

Visit: https://communitypower.ie/our-story/

Problem:
Irish Community Power emerged as a direct response to the growing problems with the country's energy system. Ireland was in a critical situation, with over 90% of its electricity generated from fossil fuels, contributing significantly to climate pollution. In addition, many people were burdened with high energy bills, especially in the cold seasons. In this context, Community Power undertook the objective of making the benefits of renewable energy accessible to Irish communities, addressing the need for a transition to cleaner and more sustainable energy sources.

Intervention:
Community Power's intervention took shape through the creation of the Templederry Wind Farm, the first community-owned wind farm in Ireland, located in County Tipperary. This wind farm was developed and built over a 12-year period, becoming a sustainable energy source capable of generating approximately 15 GWh of electricity per year. This amount of energy is equivalent to the energy needs of the town of Nenagh, which has a population of 8,000. Following the success of the wind farm, Community Power has expanded its efforts, collaborating with other communities in Ireland to develop additional community-owned renewable energy projects. Today, the organisation buys electricity from various small and micro hydro and wind generators spread across the country and supplies it to its customers, who use it in their homes, businesses, farms and community facilities.

Key points

Energy Communities: The creation of local energy communities, such as the Templederry Wind Farm, is key to the promotion of renewable energy and the reduction of CO2 emissions. These communities involve residents in the production and consumption of clean energy.

Energy Savings and Community Participation: The community ownership approach allows residents to actively participate and feel responsible for the energy they produce. This leads to greater involvement in the energy transition and significant savings on energy bills.

Positive Economic Impact: Community Power has demonstrated how energy communities can contribute to local economic activity and employment. Renewable energy not only reduces emissions, but can also improve the economic conditions of communities.

Comparison:
Community Power's evolution and commitment can be compared to the previous Irish energy landscape. Prior to Community Power's action, Ireland was highly dependent on fossil fuels, with a significantly high percentage of energy generated from polluting sources. The creation of the Templederry Wind Farm has contributed significantly to the increase of renewable energy production in the country. This initiative has facilitated a reduction in dependence on fossil fuels and supported the country's efforts to combat climate change.

Results:
The tangible results of Templederry Renewable Energy Supply are many and positive. The community ownership approach has empowered local communities, providing them with a sense of ownership and responsibility for their energy. This has led to greater involvement in promoting renewable energy projects. The provision of renewable electricity to communities has contributed significantly to reducing energy bills, improving people's well-being and reducing the number of cold homes. Overall, Community Power's efforts have moved Ireland towards a more sustainable energy system, contributing to a cleaner, greener future for the country.

Austria - Energiegenossenschaft Mürztal

Problem/Need/Context:
The problem to be addressed was the need to reduce climate change and carbon dioxide emissions by promoting clean and sustainable energy sources. In addition, there was the goal of promoting ethical and sustainable land use in agriculture. This challenge was in line with Austria's commitment to energy transition and sustainable agricultural practices.

Intervention:
Austria has taken several actions to address this challenge:
- Planting energy grasses and poplars, known for their rapid growth, as renewable energy sources.
- Launching an innovative initiative called 'CO2 free,' demonstrating a concrete commitment to ecological sustainability. In addition, the initiative actively involves customers.
- Allowing customers to voluntarily contribute to the initiative by planting trees, promoting group action for ecological sustainability.

Results:
The company extended its energy growing operations to other European countries, reducing CO2 emissions and contributing to the replacement of heating oil with more sustainable energy sources. Also, a voluntary contributions from customers, through their engagement with the 'CO2 free' initiative, demonstrate an increase in understanding and support for environmental activities.
The community is now actively involved in the energy and sustainable transition, demonstrating strong support for eco-friendly practices.

Key points

Ecological Sustainability: This case study highlighted the importance of investing in sustainable energy sources, such as the planting of energy grasses and the CO2 free mobile initiative. These actions demonstrate a strong commitment to ecological sustainability.

European collaboration: The expansion of energy planting operations to other European countries demonstrated how transnational collaboration can help reduce CO2 emissions and replace unsustainable energy sources.

Customer Involvement: The initiative to involve customers in reducing CO2 emissions through voluntary contributions has demonstrated a growing understanding and support for environmental activities. This customer involvement is essential for the success of sustainability initiatives.

Slovakia - Smart City Initiatives in Banská Bystrica

Context

Banská Bystrica, located in central Slovakia, has distinguished itself as an example of a local government committed to implementing smart city projects. This initiative was initiated to address urban challenges and improve the quality of life of residents, becoming a model for other cities in Slovakia. The city focused on smart urban solutions to promote sustainability.

Key points

Energy Efficiency: The use of energy efficient LED community lighting and electric buses has demonstrated how Smart City initiatives can improve energy efficiency and reduce energy consumption.

Sustainable Travel: The smart parking system has helped reduce traffic congestion and promote sustainable travel. This has led to a reduction in CO2 emissions and a more sustainable urban transport system.

Improved Quality of Life: Smart City initiatives have proven to not only contribute to sustainability, but also improve the quality of life of residents. The comfort, safety and efficiency of community services have been significantly improved.

Intervention

Banská Bystrica has taken a number of significant initiatives:

- LED Public Lighting. The city has adopted energy-efficient LED community lighting, reducing consumption and lighting costs. This transition has improved the safety and comfort of residents, allowing the city to manage lighting intelligently according to daylight conditions and street activity.
- Electric Public Transport. The introduction of environmentally friendly and quiet electric buses has helped reduce emissions and improve air quality in the city, promoting a cleaner and healthier environment for residents.
- Digitalisation of Community Services. Banská Bystrica has simplified administrative procedures for residents, allowing them to manage offices and payments online. This step has led to savings in time, transport costs and a reduction in the use of paper documents.
- Collaboration with Start-ups and Technology Companies. The city has established partnerships with start-ups and local technology companies to develop innovative solutions for urban challenges. This synergy supports the local entrepreneurial ecosystem and encourages the rapid adoption of new technologies in the city's infrastructure.
- Intelligent Parking System. A smart parking system was introduced to help motorists find parking spaces more efficiently via mobile applications, helping to reduce traffic congestion and improve the ease of parking for residents and visitors.

Comparison

Although some projects are still ongoing, it is possible to track the benefits of Banská Bystrica's Smart City initiatives:

- Reduction of CO2 Emissions. The switch to electric buses has significantly contributed to the reduction of CO2 emissions in urban transport, improving air quality in the city.
- Energy Efficiency. Intelligent community lighting has not only improved energy efficiency, but also contributed to the city's overall sustainability.
- Promotion of Sustainable Mobility. The smart parking system has reduced traffic and emissions, improving the quality of life for residents.
- Improved Quality of Life. Smart City initiatives have improved the comfort and safety of residents, simplified administrative procedures and increased the efficiency of community services.

Results

Overall, the Smart City initiatives in Banská Bystrica have had a positive impact on the transition to a more

sustainable and green city. In addition to reducing emissions, these initiatives have improved the quality of life of residents and the efficiency of community services. The city is now a model of how technology and innovation can contribute to sustainability at the local level. Although some results are still in the making, Banská Bystrica has demonstrated how a Smart City approach can create a more sustainable and better urban environment for all citizens.

Competencies list and KPIs

06

PRINCIPAL KNOWLEDGE, COMPETENCIES AND SKILLS

Key findings

Linked to the main objective of the E-coop project, "ensure that barriers are removed and that communities have access to the information and resources they need to participate in implementation processes of energy transition and this, in e-coop project, happens by activating the energy cooperatives", the consortium worked to have a real picture in six different European countries about how energy cooperatives processes have been initiated, to have the kwnoledge about the skills and competences and the strategies used by Professionals from public organizations and Private actors like citizens, business, and civil society identify the main challenges and opportunities, and to provide insights into future directions in building strategies. For this reason, since these are distinct elements with particular characteristics, it was considered appropriate to differentiate the survey questionnaires (attached to the guide). A group of 500 persons, 100 per Country with a methodology that was requiring 10 different rural villages per country and in each country:

- 2 Professionals from public organizations
- 2 Private actors
- 2 Citizens
- 2 Business
- 2 Civil society

we interviewed and allowed the consortium to have a real picture about processes of energy transition and experiences in ET and with community cooperatives or energy cooperatives.

Slovakia

In Slovakia, the majority of respondents are employees within the **public administration**, accounting for 42,9% of the total. The rest of the respondent are political authorities, Mayors 28,6% and Councillors 28,6% as well. According to the respondents, one is the most **important aspects of implementing energy co-operatives,** the active participation of all stakeholders, while environmental sustainability, energy savings, and social sustainability were at the same percentage (14,3%). While the majority of respondents claim to **be aware of the potential benefits of energy co-operatives** for public administrations in rural areas (57,1%), **their knowledge is not deep**. Concerning the reasons for **failure in the implementation of energy co-operatives**, 42,9% of users highlight the lack of citizen participation and at the same percentage the lack of public investments. The **main benefits** of energy co-operatives include greater participation of all local actors, and the fight against energy poverty. A significant majority of respondents (85,7%) express **willingness to attend seminars/courses** on energy production co-operatives in rural areas' energy transition processes. They are also open to participating in an energy co-operative if established in their municipality.

As for the **business sector**, many professionals in the corporate sector lack sufficient training in the field of energy co-operatives (50%), despite having a high level of education (University Education 83,3%). This has contributed to a lack of participation and a higher **failure** rate **in the implementation** of energy co-operatives and a hight percentage (33,3%) for active participation of all stakeholders and impact in communities as **most important aspects**. However, there is a strong willingness among 100% of those surveyed to attend seminars and courses on energy production cooperatives in rural areas, indicating a desire for improved training opportunities. Interestingly, the survey results showed that most respondents are **aware of the potential benefits of energy co-operatives in rural areas** (50%) but the 33,3% aren't aware at all. However, they do recognize the importance of reinvesting the benefits of energy co-operatives back into the municipality itself (67%). Moreover, all the respondets express their interest in joining an energy co-operative.

Inside the **civil society**, regarding the **training received** on energy co-operatives at their level of studies, the majority (60%) of respondents believe it has been insufficient. When it comes to **incorporating energy co-operatives in rural contexts**, the 100% users considerthe active participation of all the stakholders . A 60% of respondents claim to have little to no knowledge about the **potential benefits** of implementing energy co-operatives for public administrations in rural areas. Regarding the reasons for **failure** in the implementation of energy co-operatives, the lack of citizen participation or training with 60%. In terms of the **benefits** of setting up energy co-operatives, greater participation of all local actors in community life is the most frequently chosen option (80%). The 100% of respondents express their **willingness to attend**

seminars or courses on energy production co-operatives in rural areas' energy transition processes.

Italy

In Italy, the majority of respondents councillors within the **public administration**, accounting for 73,3%. According to the respondents, one is **the most important aspects of implementing energy co-operatives**, the active participation of all stakeholders (30%) and environmental sustainability (26,7%) are the most highlighted ones. While the majority of respondents claim **to be aware of the potential benefits** of energy co-operatives for public administrations in rural areas (56,7%), their knowledge is not deep. Concerning the **reasons for failure** in the implementation of energy co-operatives, 30% of users highlight the poor sense of community and lack of citizen participation and competences (23,3%) almost at the same percentage the lack of public investments (20%). The **main benefits** of energy co-operatives include Making Rural Communities at the center of the process (33,3%) and reinvestment of profits in the community (23,3%), with greater participation of all local actors (20%). A significant majority of respondents (96,7%) express willingness to attend seminars/courses on energy production co-operatives in rural areas' energy transition processes. They are also open to participating in an energy co-operative if established in their municipality.

As for the **business sector**, only the 35% of professionals in the corporate sreceived sufficient training in the field of energy co-operatives, despite having a high level of education (University Education 95%). As **failure** rate **in the implementation** of energy co-operatives there's a 40% that affirm that there's a poor sense of community and, consequently, the 40% highlight for making rural communities a flagship and greater participation of all actors (35%) as **most important aspects**. However, there is a strong willingness among 100% of those surveyed to attend seminars and courses on energy production cooperatives in rural areas, indicating a desire for improved training opportunities. Interestingly, the survey results showed that most respondents are **aware of the potential benefits of energy co-operatives in rural areas** (55%) but the 40% are not in depth. Moreover, all the respondents expressed their interest in joining an energy co-operative.

Inside the **civil society**, regarding the **training received** on energy co-operatives at their level of studies, the majority (60%) of respondents believe it has been sufficient. When it comes to **incorporating energy co-operatives in rural contexts**, users consider environmental sustainability as the most important issue (35%), followed by active participation of all stakeholders (25%). The 55% of respondents claim to know the **potential benefits** of implementing energy co-operatives for public administrations in rural areas but not in depth (40%). Regarding the reasons for **failure** in the implementation of energy co-operatives, the poor sense of community is the key factor highlighted. In terms of the **benefits** of setting up energy co-operatives, making rural areas leaders in the ecological transition (40%), and greater participation of all local actors (35%) are the most indicated ones. 100% of respondents express their **willingness to attend** seminars or courses on energy production co-operatives in rural areas' energy transition processes.

Spain

In Spain, the majority of respondents are technicians within the **public administration**, accounting for 74% of the total. Eighteen percent are administrative and service staff, while 8 percent are political authorities. According to the respondents, the three most **important aspects of implementing energy co-operatives** are environmental sustainability (62%), energy savings (59%), and active participation of all stakeholders (53%). While the majority of respondents claim to **be aware of the potential benefits of energy co-operatives** for public administrations in rural areas (59%), **their knowledge is not deep**. Concerning the reasons for **failure in the implementation of energy co-operatives**, 71% of users highlight the lack of citizen participation or training. The **main benefits** of energy co-operatives include reinvestment of profits in the municipality, greater participation of all local actors, and the fight against energy poverty. A significant majority of respondents (85%) express **willingness to attend seminars/courses** on energy production co-operatives in rural areas' energy transition processes. They are also open to participating in an energy co-operative if established in their municipality.

As for the **business sector**, many professionals in the corporate sector lack sufficient training in the field of energy co-operatives, despite having a high level of education. This has contributed to a lack of participation and a higher **failure rate in the implementation of energy co-operatives**, as reported by 55% of respondents. However, there is a strong **willingness** among 68% of those surveyed **to attend seminars and courses** on energy production cooperatives in rural areas, indicating a desire for improved training opportunities. Interestingly, the survey results showed that most respondents are **unaware of the potential benefits of energy co-operatives in rural areas**. However, they do recognize the importance of reinvesting

the **benefits** of energy co-operatives back into the municipality itself. The e-COOP project has the added advantage of **raising awareness** among all stakeholders, including public administrations, about the advantages and opportunities associated with energy co-operatives. By doing so, it can foster a collaborative approach and encourage active participation from various agents involved in setting up an energy cooperative. Moreover, 8 out of 10 expressing interest in joining an energy co-operative.

Inside the **civil society**, regarding the **training received** on energy co-operatives at their level of studies, the majority (64%) of respondents believe it has been insufficient. When it comes to **incorporating energy co-operatives in rural contexts**, users consider environmental sustainability as the most important issue (60%), followed by energy savings (48%) and active participation of all stakeholders (46%). An overwhelming 90% of respondents claim to have little to no knowledge about the **potential benefits** of implementing energy co-operatives for public administrations in rural areas. Only 10% claim to be aware of them. Regarding the reasons for **failure** in the implementation of energy co-operatives, the lack of citizen participation or training, as well as the lack of public investment, are the key factors highlighted, with 64% and 44% of respondents stating this, respectively. In terms of the **benefits** of setting up energy co-operatives, combating energy poverty is the most frequently chosen option (50%), followed by making rural areas leaders in the ecological transition (48%), and becoming an active participant in energy production and consumption (44%). A significant majority of respondents (76%) express their **willingness to attend** seminars or courses on energy production co-operatives in rural areas' energy transition processes, and 80% show interest in participating in an energy co-operative if one were to be implemented in their municipality.

Austria

In Austria, the majority of respondents are employees within the **public administration**, accounting for 90% of the total. According to the respondents, the three most **important aspects of implementing energy co-operatives** are energy savings (25,5%), and active participation of all stakeholders and impacts on communities (20%).
While the majority of respondents claim to **be aware of the potential benefits of energy co-operatives** for public administrations in rural areas (45%), there's a 25% that says that **their knowledge is not deep** and, also, there's a quite big percentage of respondent (30%) that declared to not be aware at all. Concerning the reasons for **failure in the implementation of energy co-operatives**, 71% of users highlight the low participation. The **main benefits** of energy co-operatives include fight increase solidarity. A significant majority of respondents (75%) express **willingness to attend seminars/courses** on energy production co-operatives in rural areas' energy transition processes. They are also open to participating in an energy co-operative if established in their municipality.

As for the **business sector**, many professionals in the corporate sector lack sufficient training in the field of energy co-operatives despite having a high level of education (University Education 56%) or VET education (36%). As for the higher **failure** rate **in the implementation** of energy co-operatives they highlight the lack Of Public Investmentand (40%) while a good percentage (23%) sees the active participation of all stakeholders as **most important aspects**. There is a 72% of those surveyed that want to attend seminars and courses on energy production cooperatives in rural areas, indicating a desire for improved training opportunities. The survey results showed that the 40% of respondents are **aware of the potential benefits of energy co-operatives in rural areas** but the 32% aren't aware at all.

Inside the **civil society**, regarding the **training received** on energy co-operatives at their level of studies, the 80% of respondents believe it has been received. When it comes to **incorporating energy co-operatives in rural contexts**, users consider social sustainability as the most important issue. An overwhelming 86% of respondents claim to have little to enough knowledge about the **potential benefits** of implementing energy co-operatives for public administrations in rural areas. Regarding the reasons for **failure** in the implementation of energy co-operatives, the lack of citizen participation or training was highlighted with 60%. In terms of the **benefits** of setting up energy co-operatives, combating energy poverty is the most frequently chosen option. Only 60% of respondents express their **willingness to attend** seminars or courses on energy production co-operatives in rural areas' energy transition processes.

Ireland

In Ireland, the majority of respondents are employees within the **public administration**, accounting for 71,9% of the total. According to the respondents, the three most **important aspects of implementing energy co-operatives** are

environmental sustainability (46,9%), energy savings (31,3%), and impacts on communities (28,1%). While the majority of respondents claim to **be aware of the potential benefits of energy co-operatives** for public administrations in rural areas (46,9%), **their knowledge is not deep** and, also, there's a quite big percentage of respondent (40,6%) that declared to not be aware at all. Concerning the reasons for **failure in the implementation of energy co-operatives**, 71% of users highlight the lack of citizen participation or training (31,3%) and lack of public investment (25%). The **main benefits** of energy co-operatives include fight against energy poverty. A significant majority of respondents (90,6%) express **willingness to attend seminars/courses** on energy production co-operatives in rural areas' energy transition processes. They are also open to participating in an energy co-operative if established in their municipality.

As for the **business sector**, the 32,3% of professionals in the corporate sector lack sufficient training in the field of energy co-operatives, despite having a high level of education (61,3) and attended a VET path (35,5%). Among them, the 48,4% highlight the lack of public investments as a **failure rate in the implementation of energy co-operatives**. They show is a strong **willingness** (87,1%) **to attend seminars and courses** on energy production cooperatives in rural areas, indicating a desire for improved training opportunities. Interestingly, the survey results showed that most respondents are **unaware of the potential benefits of energy co-operatives in rural areas (51,6%)**. However, they do recognize the importance of reinvesting the **benefits** of energy co-operatives back into the municipality itself, also to combat energy poverty.

Inside the **civil society**, regarding the **training received** on energy co-operatives at their level of studies, the majority of respondents believe it has been insufficient. When it comes to **incorporating energy co-operatives in rural contexts**, users consider environmental sustainability as the most important issue (48%), followed by energy savings (34,9%) and impacts on community (27,9%). An overwhelming 84% of respondents claim to have little to no knowledge about the **potential benefits** of implementing energy co-operatives for public administrations in rural areas. Only 14% claim to be aware of them. Regarding the reasons for **failure** in the implementation of energy co-operatives, the lack of citizen participation or training, as well as the lack of public investment, are the key factors highlighted, with 21,7% and 23,9% of respondents stating this, respectively. In terms of the **benefits** of setting up energy co-operatives, reivesting profits back is the most frequently chosen option. A significant majority of respondents (81,4%) express their **willingness to attend** seminars or courses on energy production co-operatives in rural areas' energy transition processes.

Conclusions

The responses to the surveys reflect a diverse range of stakeholders, encompassing public officials, businesses, citizens, and civil society. This broad involvement signals an increasing appreciation for collaborative approaches in driving the energy transition. However, there are notable gaps in awareness and understanding of energy cooperatives across all countries. While some respondents grasp their potential benefits, many lack a deep comprehension of the concept. This underscores the **pressing need for educational initiatives aimed at enhancing awareness and knowledge** among stakeholders. It's evident that there is a recurring issue concerning insufficient training – particularly among professionals in the corporate sector – despite their high levels of education. The absence of specific training in energy cooperatives poses a potential obstacle to successful implementation.
Addressing this gap requires investment in tailored training programs designed for different stakeholder groups to equip them with essential knowledge and skills. Furthermore, common challenges identified include **inadequate citizen participation, limited public investments, and an absence of community cohesion** around these initiatives and topics. These challenges emphasize the **necessity for targeted strategies that foster community engagement while securing funding to build social cohesion around energy cooperative endeavors**.

It's important to note that respondents recognize various benefits associated with energy cooperatives such as environmental sustainability gains; reduced overall expenditure on power consumption; enhanced social cohesiveness within communities; as well as addressing issues related to fuel poverty. Leveraging these perceived advantages can play a pivotal role in garnering support while encouraging broader participation across cooperative initiatives.

Recommendations

1. Create comprehensive education and training programs customized for various stakeholder groups, such as public officials, businesses, citizens, and civil society organizations. These programs should focus on deepening understanding of energy cooperatives, their benefits, and best practices for successful implementation.

2. Utilize targeted strategies to enhance community engagement and participation in energy cooperative projects. This may involve conducting awareness campaigns, organizing community meetings, and implementing participatory decision-making processes to ensure that diverse voices are heard and considered.
3. Advocate for increased public investments in energy cooperative initiatives by urging governments and policymakers to recognize the importance of providing financial support to overcome implementation barriers while facilitating the success of these projects.
4. Establish platforms that facilitate knowledge sharing among different stakeholders involved in energy cooperative initiatives. These platforms will enable stakeholders to exchange experiences, share best practices,and learn lessons from one another—enhancing collective learning while accelerating progress towards shared goals.
5. Ensure that all energy cooperative initiatives are designed with long-term sustainability in mind.This includes considerations such as financial viability,governance structures,and community resilience,to guarantee continued successand impact over time.

List of competencies

Based on the key findings we have gathered, a list of essential competencies has been identified to effectively contribute to the implementation and success of energy cooperatives.

All stakeholders expressed the need for a thorough understanding of the concept of energy cooperatives, their potential benefits, and their role in the energy transition process. To address this, the **competence of developing comprehensive education and training programs** tailored to different stakeholder groups is crucial. This involves designing curricula, delivering training sessions, and assessing the impact of educational initiatives aimed at enhancing awareness and knowledge of energy cooperatives. Furthermore, stakeholders highlighted the lack of fostering community engagement and participation in energy cooperative projects. Therefore, competencies in **Community Engagement and Participation** are needed, encompassing skills in organizing community meetings, conducting awareness campaigns, and implementing participatory decision-making processes to ensure diverse voices are heard and considered. Additionally, **Stakeholder Engagement and Collaboration** competency is essential for engaging and collaborating with various stakeholders, including public officials, businesses, citizens, and civil society organizations. This competency is crucial for building partnerships, fostering cooperation, and mobilizing support for energy cooperative projects.
We found also a need for **competence in establishing and managing platforms for knowledge sharing and collaboration** among stakeholders involved in energy cooperative initiatives. This involves creating forums, facilitating discussions, and promoting the exchange of experiences, best practices, and lessons learned. Stakeholders also emphasized the lack of **competency in strategic planning and implementation**, particularly in energy cooperatives. Therefore, the Strategic Planning and Implementation competency is necessary, involving skills in identifying key challenges and opportunities, developing targeted strategies, and overseeing the execution of action plans to achieve project objectives effectively.
Finally, the ability to design energy cooperative initiatives with long-term sustainability is crucial. This includes skills in **assessing financial viability, developing robust governance structures, and ensuring community resilience** to guarantee continued success and impact over time. These competencies are integral to addressing the challenges and meeting the needs expressed by the stakeholders in the development and management of energy cooperative projects.

COMPETENCIES FRAMEWORK

Areas	Competences
Developing comprehensive education and training programs tailored to different stakeholder groups	Active Listening Questioning Observation Market Research User Surveys and Interviews Customer Journey Mapping Data Analysis Synthesis Cultural and Contextual Awareness Customer Segmentation Customer-Centric Mindset Innovative Thinking Cross-Functional Collaboration User-Centered Design

Problem-solving	Analytical Thinking Critical Thinking Creativity and Innovation Research Systems Thinking Structured Problem-Solving Models Decision-Making Risk Assessment and Management Communication Collaborative Problem-Solving Adaptability Resource Management Negotiation and Compromise Learning from Failure Time Management Visual Thinking Informed Risk-Taking Persistence and Resilience Continuous Improvement
Community engagement	Active Listening Cultural Competence Effective Communication Relationship Building Stakeholder Mapping Collaborative Decision-Making Facilitation Empowerment and Capacity Building Needs Assessment Conflict Resolution Adaptability Community Organizing Resource Mobilization Advocacy Transparency and Accountability Sustainability Planning Data Collection and Analysis Participatory Action Research Celebration and Recognition

From idea to implementation	Strategic Thinking Project Management Action Planning Resource Allocation Stakeholder Engagement Adaptability and Flexibility Problem-Solving Communication Leadership and Motivation Risk Management Decision-Making Time Management Collaboration and Teamwork Measurement and Evaluation Negotiation and Relationship Building Quality Assurance Innovation and Creativity Ethical Considerations Reporting Continuous Learning
Planning	Strategic Thinking Goal Setting Analytical Problem-Solving Time Management Resource Allocation Decision-Making Communication Risk Management Adaptability and Flexibility Innovation and Creativity Monitoring and Evaluation Conflict Resolution Attention to Detail: Ensuring accuracy in the planning process, including data analysis and documentation. Avoiding oversight of important details. Financial Literacy Presentation Leadership and Motivation

Financial management	Financial Analysis Budgeting and Forecasting Strategic Financial Planning Cost Management Risk Management Cash Flow Management Investment Analysis Financial Modeling Strategic Cost Reduction Negotiation Tax Planning and Compliance Ethical Financial Management

CORE COMPETENCIES

Core competencies
Active Listening: Attentively listening to customers during conversations, interviews, and feedback sessions to truly understand their concerns, desires, and pain points.
Questioning: Proficiency in asking open-ended and probing questions to encourage customers to share more detailed and nuanced information about their needs.
Observation: Keenly observe customer behaviors, preferences, and interactions to gather insights about their needs without relying solely on verbal communication.
Market Research: Conducting thorough market research to gather data on customer demographics, behaviors, trends, and preferences to inform the understanding of their needs.
User Surveys and Interviews: Designing and conducting surveys and interviews to directly gather customer feedback and opinions about their needs and preferences.
Customer Journey Mapping: Proficiency in creating visual representations of the customer journey, identifying touchpoints and pain points along the way, which can reveal unmet needs.
Data Analysis: Analyze quantitative and qualitative data collected from various sources to identify patterns, trends, and emerging customer needs.
Problem-Solving: Interpreting customer feedback to identify underlying problems or challenges that need to be addressed with innovative solutions.

Communication: Effective communication is key to accurately conveying customer needs to cross-functional teams, stakeholders, and colleagues.
Cultural and Contextual Awareness: Sensitivity to cultural, social, and environmental factors that can impact customer needs and preferences across different segments.
Customer Segmentation: Proficiency in categorizing customers into distinct segments based on shared characteristics and needs, allowing for more targeted solutions.
Customer-Centric Mindset: A mindset that places the customer at the center of decision-making, ensuring that every action is aligned with meeting customer needs.
Innovative Thinking: Think creatively and explore possibilities for addressing unmet customer needs in unique and groundbreaking ways.
Cross-Functional Collaboration: Collaborating with teams from different departments (e.g., marketing, design, engineering) to gather insights and brainstorm solutions based on customer needs.
User-Centered Design: Familiarity with design principles that prioritize user needs, ensuring that products and services are developed with a focus on enhancing customer experience.
Analytics and Metrics: Using data analytics tools to track and measure the effectiveness of marketing campaigns. Interpreting metrics to make data-driven decisions and optimize marketing strategies.
Customer Relationship Management **(CRM)**: Managing customer data and using CRM tools to build and maintain relationships with customers. Personalizing marketing efforts based on customer interactions and preferences.
Budgeting and Resource Management: Allocating resources effectively to maximize the impact of marketing campaigns within budget constraints. Monitoring expenditures and adjusting strategies as needed to optimize ROI.
Strategic Planning: Developing comprehensive marketing plans that outline goals, target audience, messaging, channels, and timelines. Adapting strategies to align with changing market conditions and business goals.
Adaptability and Agility: Staying current with industry trends, technological advancements, and consumer preferences. Quickly adapting strategies to respond to unexpected changes in the market.
Project Management: Organizing and coordinating cross-functional teams to execute marketing campaigns and initiatives. Setting timelines, tracking progress, and ensuring deliverables are met on schedule.

Negotiation and Relationship Building: Building relationships with partners, influencers, and stakeholders to collaborate on joint marketing efforts. Negotiating contracts and agreements to maximize mutual benefits.
Public Relations and Media Relations: Managing relationships with media outlets and effectively communicating with journalists to secure positive press coverage. Responding to public relations crises in a timely and effective manner.
Conflict Resolution: Managing disagreements constructively and finding solutions that benefit the team. Ability to address conflicts professionally and empathetically.
Openness to Feedback: Receptiveness to both positive feedback and constructive criticism from team members. Willingness to learn and improve based on feedback received.
Time Management: Managing one's time efficiently to meet team deadlines and priorities. Coordinating tasks and responsibilities with teammates to ensure timely completion.
Delegation: Distributing tasks and responsibilities according to team members' strengths and expertise. Ensuring a fair and balanced workload among team members.
Trust-Building: Establishing trust among team members through consistent and reliable actions. Demonstrating integrity and dependability in all interactions.
Goal Orientation: Aligning individual efforts with the team's overarching goals and objectives. Maintaining focus on the team's shared purpose.
Diversity and Inclusion Awareness: Valuing and respecting diversity within the team, recognizing different backgrounds, perspectives, and strengths. Creating an inclusive environment that encourages all team members to contribute.
Remote Collaboration: Proficiency in working effectively with team members located in different geographical locations. Utilizing virtual communication tools and techniques for remote teamwork.
Accountability: Taking responsibility for individual and team commitments.Following through on tasks and meeting obligations to the team.
Ethical Leadership: Upholding strong ethical standards and modeling integrity for the team.Making ethical decisions that consider the well-being of stakeholders and the greater good.
Interpersonal: Building strong relationships and rapport with team members, colleagues, and stakeholders. Navigating diverse personalities and perspectives with empathy and respect.
Negotiation and Influence: negotiating effectively to achieve win-win outcomes. Using persuasion and influence to guide decisions and actions.

Crisis Management: Calmly and strategically managing crises or unexpected challenges while maintaining a clear focus on solutions.Leading with resilience and confidence during turbulent times.
Risk Assessment and Management: Identifying potential risks associated with different solutions and assessing their likelihood and impact. Developing strategies to mitigate or manage risks effectively.
Resource Management: Efficiently allocating resources (time, budget, manpower) to implement solutions. Maximizing the impact of available resources.
Learning from Failure: Viewing failures as learning opportunities and adapting strategies based on lessons learned. Encouraging a culture where mistakes are analyzed constructively.
Persistence and Resilience: Persevering in the face of challenges and setbacks, not giving up easily.Adapting strategies and trying different approaches when needed.
Informed Risk-Taking: Taking calculated risks based on thorough analysis and consideration of potential outcomes. Being willing to explore unconventional approaches.
Continuous Improvement: Seeking opportunities for ongoing improvement even after a problem has been solved. Reflecting on outcomes and refining processes for future problem-solving endeavors.
Values Alignment: Ensuring that decisions and actions align with personal, organizational, and societal values. Integrating ethical considerations into everyday decision-making.Long-Term Perspective:Considering the long-term consequences of actions on future generations and the environment. Balancing short-term gains with long-term sustainability.
Stakeholder Engagement: Engaging with a diverse range of stakeholders to understand their perspectives and concerns. Incorporating feedback from stakeholders into decision-making.
Sustainable Design and Innovation: Incorporating sustainability principles into product, service, or process design. Seeking innovative solutions that minimize environmental impact.
Environmental Awareness: Staying informed about environmental challenges and their implications.Making choices that contribute to the preservation of natural resources.
Lifelong Learning: Continuously updating knowledge about ethical theories, sustainability practices, and global issues.
Social Responsibility: Recognizing the responsibility to contribute positively to society and address social issues.Participating in initiatives that promote social equity and well-being.

Balancing Trade-offs: Evaluating and making informed choices when ethical and sustainability considerations conflict with other goals. Finding solutions that minimize negative impacts while achieving desired outcomes. Seeking opportunities to enhance ethical and sustainability awareness.
Advocacy and Influence: Advocating for ethical and sustainable practices within organizations and communities. Using influence to drive change at both local and broader levels.
Reflection and Self-Awareness: Regularly reflecting on personal values, biases, and the impact of decisions. Seeking to improve ethical and sustainability thinking based on self-awareness.
Stakeholder Mapping: Identifying key stakeholders and individuals within the community who play influential roles. Developing strategies to engage and involve various stakeholders.
Facilitation: Leading productive group discussions and activities to encourage participation and dialogue. Navigating diverse opinions and promoting inclusive conversations.
Empowerment and Capacity Building: Empowering community members by providing them with the knowledge, skills, and resources they need.Building their capacity to take on leadership roles and contribute effectively.
Community Organizing: Mobilizing community members around shared goals and initiatives. Organizing events, workshops, and campaigns to drive engagement.
Goal Setting: Defining specific, measurable, achievable, relevant, and time-bound (SMART) goals for the plan. Ensuring goals are realistic and aligned with the organization's vision.
Resource Mobilization: Identifying and securing resources, funding, and support to implement community-driven projects. Tapping into external partnerships and resources when needed.
Advocacy: Advocating on behalf of the community to address systemic issues and advocate for positive change. Amplifying community voices to influence policies and decisions.
Needs Assessment: Conducting assessments to understand the specific needs and priorities of the community. Identifying areas where engagement can lead to meaningful impact.
Reporting: Keeping accurate records of the implementation process, decisions made, and outcomes achieved. Providing regular updates and reports to stakeholders.
Financial Literacy: Understanding financial implications of the plan, including budgeting and cost projections. Ensuring the plan aligns with financial constraints.

Budgeting and Forecasting: Developing accurate and realistic budgets for operational expenses, projects, and initiatives. Creating financial forecasts to anticipate future income, expenses, and cash flow.
Strategic Financial Planning: Aligning financial strategies with the organization's overall goals and objectives. Developing long-term financial plans to support growth and sustainability.
Cost Management: Identifying cost-saving opportunities and implementing strategies to optimize expenses. Controlling costs while maintaining quality and efficiency.
Risk Management: Identifying financial risks and developing strategies to mitigate potential negative impacts. Monitoring and managing risks related to market fluctuations, regulatory changes, and economic conditions.
Cash Flow Management: Monitoring cash inflows and outflows to ensure liquidity and proper cash flow management. Developing strategies to manage working capital effectively.
Investment Analysis: Evaluating investment opportunities and making informed decisions about allocating funds. Balancing risk and return to achieve optimal investment outcomes.
Financial Compliance: Ensuring adherence to financial regulations, laws, and reporting requirements. Managing audits and maintaining accurate financial records.
Financial Modeling: Creating financial models to simulate different scenarios and assess potential outcomes. Using models to make informed decisions about resource allocation and financial strategies.
Strategic Cost Reduction: Identifying areas where costs can be reduced without compromising quality or performance. Implementing cost-reduction initiatives that align with organizational goals.
Tax Planning and Compliance: Developing tax strategies to minimize tax liabilities while ensuring compliance with tax regulations. Staying informed about changes in tax laws and regulations.
Ethical Financial Management: Ensuring financial decisions and practices align with ethical standards and organizational values. Avoiding unethical or fraudulent financial activities.

E-Coop Curriculum

Title
VET curriculum “E-COOP how to enable the community to jointly implement integrated packages of future-orientated actions which respond to their long- term challenges and opportunities in energy transition”.

General description

The E-COOP project seeks to investigate energy transition processes in rural areas by paying particular attention to the role of energy cooperatives in these processes. It aims to mainly uncover under which conditions energy cooperatives provide favorable structures for initializing transition processes in rural areas and involving relevant stakeholders. The Main Objective of the project is to provide key tools to gain an understanding of the role of energy cooperatives in energy transition processes in rural areas drivers for individual participation and commitment. Linked to that the Main Result is - through a VET flexible and learner-centred programme to contribute to closing existing gaps in the management of energy transition processes in rural areas - to help Professionals from public organizations and Private actors involved in the development of local economies to build knowledge and capacities, find new organization and communications forms and create their own business models to keep the economic value in the region.

Intended audience

- VET organizations to increase their training offer through a VET curriculum based on Identified appropriate organizational models (cooperatives) and strategy to implement them
- Professionals from public organizations
- Private actors
- Citizens
- Business
- Civil society

to ensure that barriers are removed and that they have access to the information and resources they need to participate in implementation processes, to create awareness about the potential of various national and European Programs and Measures and to ensure that the necessary supports are in place to assist communities in finding innovative responses to identified challenges and opportunities.

Keywords and phrases (see glossary for definitions of these terms)

Intended audience; blended learning; trainee; tailor-made course; work-based learning; online learning; coaching

Language of instruction

Language of each partners country (English, Italian, Slovak, and Spanish)

Course delivery

There will be one pilot training course in each partner's country for 10 trainees (2 Professionals from public organizations and 2 Private actors and 2 citizens, 2 business, and 2 civil society). It will have a work-based approach under blended format, and each partner may adapt it according to their countries' specifications (regulation, laws, target audience, trainers, trainees, etc.). It will also be a tailor-made course, allowing trainers, VET providers, and business advisors to adapt the training content to each trainee profile to create an individual learning path. Each partner will provide the trainers with their material.

Objectives

The training program will:

- provide participants with comprehensive knowledge and understanding of energy transition concepts, including renewable energy technologies, energy efficiency, sustainability principles, and community-based cooperative models.
- equip participants with the necessary skills and competencies to actively engage in energy transition initiatives within their communities
- enhance the capacity of participants to lead and facilitate collaborative efforts aimed at addressing long-term challenges and opportunities in energy transition.
- empower participants to take ownership of the energy transition process and become active agents of change within their communities
- stimulate innovation and creativity among participants in designing and implementing future-oriented actions that respond to the evolving challenges and opportunities in energy transition
- promote active participation and engagement of community members in energy transition initiatives, fostering a sense of ownership, collaboration, and collective decision-making

Learning outcomes

The trainees will be able to:

- Develop interpersonal, transversal, and entrepreneurial skills;
- Recognize new methods and opportunities to support and foster energy transition;
- Create a professional network;
- Learn how to use project tools;
- Implement new solutions for energy transition;
- Develop and implement a energy strategies.

Course content

Welcome meeting and introduction to the training program

1. Getting started
2. Mapping context & stakeholders
3. Communications tools
4. Engaging stakeholders:
   -Objectives: This module provides information about the multi-stakeholder approach, which is a key component of the ESG (Environmental, Social and Governance) approach of community cooperatives to facilitate the energy transition.
   -Lessons: Introduction, companies, civil society, public administration, best practices cases, conclusions and bibliography.
   –Learning outcomes: In this module the trainees will learn about the importance and benefits of carrying out a multi-stakeholder approach in the promotion of an energy community.

5. Engaging communities:
   -Objectives: This module points out the importance of promoting inclusiveness and democratic decion-making in the in the process of building energy communities. .
   -Lessons: Introduction, community engagement, social and community responsibility, education and training, example of best practices , conclusions and bibliography.
   –Learning outcomes: trainees will learn the importance of following an ESG (Environmental, Social and Governance) approach that ensures the active participation of the local community in energy decisions and promotes long-term sustainability within the process of building energy communities.

6. Designing a strategy
7. Energy Cooperatives (E-COOP) Strategy
8. Planning actions
9. Generating actions
10. Accountability

The training course will have 30 hours.

- hours in class sessions;
- hours in online (asynchronous) sessions;
- hours in work-based sessions;

Teaching and learning methods

The training course will take place in a blended learning format, using an online platform. Within the e-learning platform, the trainees will find suitable learning support materials such as articles, presentations, legislative documents, business tools, and other relevant publications. The in-class sessions will focus on trainees' needs. Thus, there will be space for sharing the learning objectives, theoretical discussions, and examples, answering questions, and other points that may be relevant. The work-based sessions will use practical examples, and learners are encouraged to share their experiences. Discussion based on the practical examples will also occur using case studies, role-plays, and other techniques. The trainees are free to adapt the teach and learning methods to their needs and motivations regarding the coaching sessions, they will take inspiration from the Guide for personalized training. The trainers will create an individual learning path for the trainees, while the trainees will reflect and evaluate their skills, knowledge, business ideas, and plans.

Assessment method

Competences self-assessment (pre and post)

Individual assignments

Group assignments and activities

References

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Code of conduct

The trainees should regularly attend sessions and arrive punctually.

Class participation is crucial to enhance the achievement of learning outcomes.

Learners must fulfil the online assignments on time as part of the agreed learning plan.