

European Public Local Authorities' Network for  
driving the Energy Transition



## D6.6 - Policy recommendations at EU level

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## Executive Summary

ePLANET project is a Coordination and Support Action cofunded by the European Commission through Horizon 2020 program. ePLANET aims to deploy a new clustering governance for energy transition based on a digital framework to share harmonised information, facilitating the adoption of coordinated energy transition actions by the European public sector.

The document gives an overview of the current policies and regulations for energy transition in the EU and provides 4 key recommendations to improve it at EU level. These recommendations have been meticulously developed based on the extensive experience and insights gained throughout the project execution. This process involved close cooperation with technicians and experts working on Energy Transition (ET) initiatives across Europe. By leveraging the practical knowledge and firsthand observations of these professionals, we have been able to identify key areas for improvement and propose actionable strategies to enhance policy frameworks. The goal is to create more effective, cohesive, and forward-looking policies that support and accelerate the Energy Transition across all member states.

Finally, the report presents an overview of a survey to pilot and regional partners, offering their perspectives on the management of energy transition plans, the role of regional technicians, the significance of data governance and sharing tools, and the specific needs for reducing emissions as part of the EU policy recommendations.



## Abbreviations and acronyms

ABBREVIATION OR ACRONYM	DESCRIPTION
API	Application Programming Interface
CoM	Covenant of Mayors
CRES	ePLANET project partner: Centre for Renewable Energy Source
DDGI	ePLANET project partner: Diputació de Girona
EAZK	ePLANET project partner: Energetická Agentura Zlínského Kraje
EEA	European Environment Agency
EED	Energy Efficiency Directive
EPBD	Energy Performance of Buildings Directive
EPC	Energy Performance Certificate
EPCI	Etablissement Public de Coopération Intercommunale
ET	Energy transition
EU	European Union
GHG	Greenhouse Gas
ICAEN	ePLANET project partner: Institut Català de l'Energia
LNG	Liquefied Natural Gas
NECP	National Energy and Climate Plan
RDFC	ePLANET project partner: Regional Development Fund of Crete
RED	Renewable Energy Directive
RES	Renewable Energy Sources
RRF	Recovery and Resilience Facility
SCF	Social Climate Fund
SECAP	Sustainable Energy and Climate Action Plan



STEP

Strategic Technologies for Europe Platform



# 1 Introduction: EU Policies for Energy Transition

In the face of mounting global challenges such as climate change, energy security and the imperative to promote sustainable development, the European Union (EU) has undertaken a comprehensive energy transition strategy in the recent years, aiming to be climate-neutral by 2050. This strategy represents a fundamental shift in the way energy is produced, consumed, and regulated within the EU, aiming to ensure a resilient, low-carbon and affordable energy system for both current and future generations.

The EU energy transition strategy is guided by ambitious targets set through several number of policies and the EU's own long-term decarbonisation objectives. These targets include a significant reduction in greenhouse gas emissions, a substantial increase in the share of renewable energy sources in the energy mix, and improvements in energy efficiency across all sectors. It also fosters sustainable transport, energy labelling of products, and clean technologies.

The following sub-chapters summarise the current policies and regulations to bring the Energy Transition in the EU based on the article Energy transition in the EU<sup>1</sup> addressed to the Members and staff of the European Parliament.

## 1.1 European Green Deal

The [EU Green Deal](#), introduced in 2019, is a comprehensive strategy aimed at steering the European Union towards climate neutrality by 2050. Central to this initiative is the [European Climate Law](#) in 2021, which opened the ambitious goal of achieving net-zero greenhouse gas emissions by 2050 and set an interim target of reducing net emissions by 55% by 2030 compared to 1990 levels. To catalyse this transition, the European Green Deal encompasses a series of legislative proposals, primarily focusing on energy-related policies. Notably, the '[fit for 55](#)' package, unveiled by the Commission in July and December 2021, underscores the commitment to attaining a 55% emissions reduction by 2030. These proposals entail revising existing energy legislation, such as the [Renewable Energy Directive](#) (RED), the [Energy Efficiency Directive](#) (EED), the [Energy Performance of Buildings Directive](#) (EPBD), the Energy Taxation Directive, and the gas and hydrogen package, to align them with the new climate objectives. Additionally, innovative initiatives like the Social Climate Fund (SCF) Regulation have been introduced to provide support for the transition. While significant progress has been made, including the adoption of key legislative acts like the RED, the EED, and the SCF in 2023, ongoing efforts persist as the EU advances towards a sustainable and carbon-neutral future.

## 1.2 REPowerEU

The [REPowerEU plan](#) on May 2022 marks a decisive step towards phasing out fossil fuels and expediting the transition to clean energy within the EU. Designed to reduce reliance on Russian

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<sup>1</sup> Agnieszka Widuto, *Energy transition in the EU*, European Parliamentary Research Service (EPRS), November 2023  
[https://www.europarl.europa.eu/RegData/etudes/BRIE/2023/754623/EPRS\\_BRI\(2023\)754623\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2023/754623/EPRS_BRI(2023)754623_EN.pdf)





energy, the legislation emphasises energy conservation, diversification of energy sources, and the promotion of renewable energy adoption. The plan amended three key energy directives—[RED, EED, and EPBD](#)—to establish more ambitious targets for renewable energy consumption and energy efficiency. Additionally, it seeks to facilitate the installation of solar panels on buildings and streamline the permit process for renewable energy projects. Another significant component of the plan entails amending the [Recovery and Resilience Facility](#) (RRF) Regulation to incorporate a dedicated REPowerEU chapter in national recovery and resilience plans, outlining investments aimed at achieving REPowerEU objectives. Furthermore, REPowerEU introduces a range of strategic initiatives, including the solar energy strategy, the EU save energy plan, EU external energy engagement strategy, the biomethane action plan, the hydrogen accelerator, and the establishment of an EU energy platform to facilitate voluntary collective purchases of gas, liquefied natural gas (LNG), and hydrogen. Together, these legislative measures and strategic initiatives form a comprehensive framework to drive the EU towards a sustainable and resilient energy future.

### 1.3 Renewable Energy Directive

The [Renewable Energy Directive](#) (RED III), updated in 2023, is a pivotal component of the EU's energy transition strategy aiming to increase the contribution of renewable energy sources (RES) to the overall energy consumption. With renewables comprising 21.8% of EU energy consumption in 2021 and a projected increase to 22.5% in 2022, the directive targets a robust 42.5% share by 2030. While some member states like Sweden, Finland, and Latvia already exceed this target, the majority trail significantly behind.

RED III outlines specific targets for sectors like transport, industry, heating and cooling, and buildings. In transport, member states can choose between a GHG intensity reduction or ensuring renewables share of at least 29% by 2030. Industry is mandated to increase its RES share annually by 1.6%, with additional targets for renewable hydrogen. Similarly, heating and cooling sectors face binding annual targets for RES share increases, while the buildings sector is set an indicative target of 49% by 2030.

Complementary initiatives like the Solar Energy Strategy and the European Wind Power Package further underscore the EU's commitment to renewable energy. These initiatives set ambitious targets for solar and wind energy capacities by 2030, supported by various measures aimed at facilitating their achievement, including streamlining permitting processes, enhancing skills development, and ensuring stable supply chains. Overall, RED III and associated efforts reflect the EU's dedication to accelerating the adoption of renewable energy sources for a more sustainable future.

### 1.4 Energy Efficiency Directive

Reduce energy consumption is another key pillar of the energy transition in the EU. The Energy Efficiency Directive (EED) underscores the imperative of using energy more judiciously, aligning with the “energy efficiency first” principle in EU policy.

The revised [Energy Efficiency Directive](#) was adopted in September 2023, and defines a binding EU target for reducing final energy consumption by 11.7% by 2030, compared to a 2020 baseline scenario. This directive also outlines an indicative target for primary energy consumption, encompassing energy used in energy production. EU Member States are mandated to achieve



an average annual energy savings rate of 1.5% by 2030, with specific interim targets: a 1.3% reduction by the conclusion of 2025, followed by 1.5% by 2027, and 1.9% by 2030.

Moreover, the public sector is entrusted with a higher target, necessitating a 1.9% annual reduction in final energy consumption. Additionally, public entities are obligated to renovate a minimum of 3% of their total building floor area, converting them into nearly zero-energy or zero-emission structures, further advancing the directive's objectives.

## 1.5 Energy Performance of Buildings Directive

The [Energy Performance of Buildings Directive](#) addresses the significant energy consumption and greenhouse gas emissions attributed to buildings, which constitute around 40% of the EU's energy usage and generate approximately 36% of energy-related greenhouse gas emissions. Key energy-consuming areas in buildings include heating and cooling, electricity, and domestic hot water. A substantial portion of the EU's building stock is outdated and lacks energy efficiency, with roughly 35% of buildings exceeding 50 years in age and nearly 75% classified as not energy-efficient.

To tackle this issue, the proposed revision of the directive aims to renovate buildings and reduce the carbon footprint of the EU's building stock. The proposed measures include ambitious targets such as ensuring all new buildings in the EU are zero-emission by 2030 (with public buildings achieving this by 2027). Additionally, minimum energy performance standards would be established at the EU level, with a focus on accelerating the upgrade of energy performance certificates (EPC) from the lowest class (G) to higher classes (F or E) within specified timelines.

Furthermore, member states would be required to develop national building renovation plans with the goal of decarbonising their building stocks by 2050. These plans would include indicative milestones for 2030, 2040, and 2050, to track progress and ensure alignment with overall decarbonisation objectives.

## 1.6 Eco-design and energy labelling regulations

The success of the energy transition pivot not only on technological advancements but also on fostering consumer behaviour conducive to energy efficiency and providing incentives for producers to manufacture sustainable products. The [proposed eco-design regulation](#), currently undergoing negotiations, aims to establish a comprehensive framework for defining eco-design requirements for products geared towards sustainability. This regulation is set to supersede the existing 2009 Eco-design Directive, which mandates producers to curtail energy consumption across the life cycle of their products. The forthcoming directive will embed sustainability considerations into product characteristics and processes spanning the entire value chain. Key focal points include enhancing durability, reliability, reusability, reparability, and optimising energy and resource efficiency. By expanding the scope of eco-design requirements to encompass a broader range of products, the new law aims to enhance transparency regarding their environmental impact.

In tandem with the eco-design regulation, the EU [Energy Labelling Regulation](#) of July 2017 supplements efforts by providing a framework for labelling energy-related products. This framework assigns products a label rating from A to G, facilitating informed consumer decision-making by offering clear insights into their energy efficiency. Together, these regulatory



measures aim to drive the adoption of sustainable practices and products across the European Union.

## 1.7 Governance of energy union and climate action

The [Governance of the Energy Union and Climate Action](#) Regulation of December 2018 establishes standardised protocols for monitoring and reporting the advancement of both the Energy Union and EU climate targets. Originating in 2015, the Energy Union initiative has five dimensions: 1) energy security, 2) integrated internal energy market, 3) energy efficiency, 4) decarbonisation, and 5) research, innovation, and competitiveness. Progress across these dimensions is annually assessed and consolidated into the State of the Energy Union report.

The [latest report 2023](#) highlights a consistent decline in EU greenhouse gas (GHG) emissions, amounting to a 31% reduction compared to 1990 levels, as per data from the European Environment Agency (EEA). Concurrently, renewable energy sources are on the rise, and strides are made in enhancing energy efficiency. Nonetheless, the report underscores the imperative for expediting the implementation of initiatives outlined in the European Green Deal.

As part of the implementation of the Governance Regulation, each Member State is mandated to develop a 10-year [National Energy and Climate Plan](#) (NECP). The process of revising these plans is ongoing, with the final updated NECPs slated for submission by June 30, 2024. In October 2023, the Commission issued an evaluation of progress towards Energy Union and climate action objectives, drawing upon Member States' progress reports on NECP implementation submitted in March 2023.

Anticipated for early 2024 is a revision of the Governance Regulation, aimed at aligning with the goals of the Fit for 55 package and the REPowerEU plan. This revision underscores the EU's commitment to advancing its energy and climate agenda in response to evolving challenges and opportunities.

## 1.8 Gas, hydrogen and electricity

The journey towards the energy transition involves a change in the energy paradigm of the last decades based on fossil fuels, bringing renewable electricity as the first energy source, the incorporation of hydrogen and the controversial increase of gas.

Electrification takes centre stage in the energy transition narrative. Its pivotal role extends across industrial processes, transport (electric vehicles), and buildings (embracing heat pumps). Forecasts predict a significant surge in electricity demand, with its share in final energy consumption projected to escalate from the current 23% to around 30% by 2030, and ambitiously towards 50% by 2050. A proposed [electricity market reform](#) in 2023 aims to expedite investments in renewables and enhance consumer accessibility to renewable and low-carbon energy sources, underscoring the paramount importance of electricity in shaping the EU's sustainable energy landscape.

Hydrogen emerges as a pivotal player in the quest for a net-zero energy system. The 2020 [hydrogen strategy](#) outlines strategic objectives for production and delineates key actions across investment, production, demand, supportive frameworks, research, and international cooperation. Under the ambit of the REPowerEU initiative, targets for renewable hydrogen production and imports have been revised upwards, with the establishment of the European



Hydrogen Bank in 2023 poised to boost both domestic market creation and international imports.

Gas has a stepping stone, given its lower CO<sub>2</sub> emissions compared to other fossil fuels. However, recent years have witnessed a fervent push towards renewable and low-carbon alternatives, with a particular spotlight on electricity. The EU's strides towards sustainability include a robust framework to integrate renewable and low-carbon gases into existing networks, break down barriers for cross-border hydrogen infrastructure, and pave the way for a more cost-effective transition, as outlined in the [hydrogen and decarbonised gas market package](#) on 2021 fit for 55 set of proposals.

## 1.9 Industry

The [Green Deal industrial plan](#) introduced in February 2023 is strategically positioned to enhance the EU's leadership in net-zero technologies while fostering a resilient domestic manufacturing base. Legislative acts such as the net-zero industry act and the critical raw materials act, currently undergoing procedures, aim to streamline regulatory frameworks, diminish import dependencies, and promote circular economy practices. A comprehensive analysis outlined in the 2023 progress report on the competitiveness of clean energy technologies scrutinises opportunities and challenges within the EU, emphasising strategic net-zero technologies like solar photovoltaics (PV), wind, ocean energy, batteries, and hydrogen. Additionally, initiatives like the [Strategic Technologies for Europe Platform](#) (STEP) prioritise innovation and competitiveness, focusing on clean energy technologies such as renewable energy, electricity and heat storage; heat pumps; electricity grids; renewable fuels of non-biological origin; sustainable alternative fuels; electrolyzers and fuel cells; carbon capture, utilisation and storage; energy efficiency; and hydrogen.



## 2 The ePLANET Background

ePLANET project has been working for almost 3 years in analysing the Energy Transition in three regions of the EU: the Zlín region in Czech Republic, the island of Crete in Greece and the province of Girona in Spain. The user centered requirements performed gathered the real needs, obstacles and pains of Public Authorities and stakeholders, this work is collected for the three pilots in the reports D2.1 User requirements for energy transition at public level<sup>2</sup> and D2.2 Existing governance structures and list of available tools for the monitoring of energy transition projects<sup>3</sup> and for the follower regions in the report D5.7 Follower Regions Evaluation Questionnaire<sup>4</sup>. The reports unveiled major differences among the pilots on how municipalities are facing the energy transition, and revealed a great need to support municipalities, especially small towns without technical staff, in terms of governance, support tools and finance.

Under these needs, ePLANET has worked to analyse the ET governance, developing tools to support municipalities in the ET and providing seminars and capacity building activities to technicians in order to boost the transition to a clean energy model. Therefore, considering all the experience gained in all these three pilot regions and stakeholders around Europe are developed a series of policy recommendations at EU level to help boosting the ET.

In this context, the municipalities have a significant role as the energy transition pushes Europe to a decentralised and local energy generation framework. On one side, municipalities have a role to play in taking exemplary action to reduce energy consumption in their buildings. On the other side, to lead Europe towards climate neutrality, it's essential to make efforts at the local level, taking into account each region's specific characteristics and challenges. Therefore, municipalities have a key role in the European energy transition.

The following discussion on sections of this chapter compile information and conclusions from ePLANET, some of which are also included in the Open Access Government journal *Energy transition plans: How municipalities face the energy transition*<sup>5</sup>.

### 2.1 Local Energy Transition Initiatives in Europe

Numerous initiatives exist to catalyse the energy transition at the municipal level. These initiatives encourage the creation of energy transition plans that assess local energy consumption and power supply while evaluating the implementation of various measures for transitioning to cleaner and more sustainable energy sources. Country-level programs support some of these initiatives, for instance, in France, inter-municipal entities known as

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<sup>2</sup> J.M. Granollers, B. Grillone, & J. Cipriano. (2022). *D2.1 Report on user needs and requirements for energy transition at public level*. Zenodo. <https://doi.org/10.5281/zenodo.6574003>

<sup>3</sup> E. Chatzigeorgiou, K. Sfakianaki, & M. Damasiotis. (2022). *D2.2 – Report on existing governance structures and list of available tools for the monitoring of energy transition projects*. Zenodo. <https://doi.org/10.5281/zenodo.6683924>

<sup>4</sup> N. Seguel. (2023). *D5.7 – Follower Regions Evaluation Questionnaire*. Zenodo. <https://doi.org/10.5281/zenodo.7965809>

<sup>5</sup> G. Laguna, J. Mayos, M. Sellart and J. Cipriano, *Energy transition plans: How municipalities face the energy transition*, Open Access Government, <https://doi.org/10.56367/OAG-041-11159>



“Etablissement Public de Coopération Intercommunale (EPCI)”, which stand as the second smallest administrative units just above municipalities, are required to create Territorial Air, Climate, and Energy Plans when they serve a population exceeding 20,000 residents.

At the European level, the Covenant of Mayors for Climate and Energy (CoM) is a voluntary movement promoting the development and implementation of sustainable energy and climate policies in local authorities. This European initiative aims for the local authorities to pledge a CO<sub>2</sub> emissions reduction of over 40%, adapt to the climate change hazards and address issues related to energy poverty. This commitment is embodied in the Sustainable Energy and Climate Action Plan (SECAP). The SECAP is developed based on the baseline GHG emission inventory results and assessments of risks and vulnerabilities. It utilises data from all the local energy-consuming sectors and a deep understanding of the region to formulate an energy transition plan consisting of multiple actions aimed at mitigating and adapting to climate change at the municipal level.

## 2.2 Municipal Energy Transition barriers

The municipal energy transition strategies and their linked governance around Europe are quite heterogeneous. There are differences between countries and even between regions in the same country. The capacity for energy transition efforts can generally vary between cities and smaller towns or municipalities. Smaller municipalities, with their lower populations, typically have fewer resources than larger cities. Many municipalities need more technical personnel because their resources are insufficient to cover hiring costs. Consequently, they do not have the capability to analyse municipal energy consumption and emissions, leaving them without a comprehensive perspective to evaluate their energy transition. This deficiency results in the municipality's lack of specific energy transition actions.

Fortunately, many institutions from different regional and national levels are working on the energy transition. Nevertheless, in many cases, these institutions do not have any joint space or communication link to collaborate, neither from the same level nor with institutions from different regional levels. This communication lack leads to incoordination between institutions that could benefit from joining efforts.

Moreover, even when a technician is available, the task of collecting the necessary data for analysing municipal energy consumption and GHG emissions is quite labour-intensive. Typically, these data cannot be solely obtained by the municipality itself and rely on multiple databases from various sources such as energy distribution system operators or even from non-digital format like energy bills. Consequently, this data collection process becomes a tedious and time-consuming undertaking.

The coincidence of both, the shortage of technical resources and the challenges associated with reliably gathering required data, results in the non-evaluation of the applied plans. Many plans are developed and executed, but the usual practice is not to evaluate the implementation outcomes.

## 2.3 Digitalisation and data sharing to overcome the energy transition barriers

The ePLANET project has developed tools to overcome these barriers. Within the project framework, impediments associated with data collection and processing are addressed through



standardised data harmonisation methodologies. These methodologies serve to gather and harmonise the necessary data for comprehending the status of municipal energy transition. Additionally, the project focuses on digitalising energy transition plans and subsequently presents them through a user-friendly platform, facilitating seamless access and efficient sharing of information.

The main advantages inherent in the ePLANET approach are manifold. Firstly, this approach streamlines the contextualisation of municipal energy transition, thereby necessitating fewer technical resources. This not only diminishes the workload for technicians but also facilitates resource-sharing among the municipalities. This cooperative approach proves highly efficient for the simplification of the reporting bureaucracy and for the action repository with its assessment made available to the involved stakeholders.

Secondly, ePLANET empowers regional or county-level authorities with a centralised system, allowing them to comprehensively analyse and provide more efficient support to municipalities in their energy transition efforts. This centralised access to the energy transition plans enhances regional and local coordination and overall governance.

Lastly, to enhance the deployment of energy transition initiatives, the information-sharing platform permits seamless exchange of fundamental data, best practices and insights among municipalities. This collaborative data-sharing fosters a more holistic and cooperative approach to pursuing a decarbonised energy transition.



### 3 Policy recommendations for Energy Transition at EU level

Given the context and barriers outlined in Chapter 2, The ePLANET Background, it becomes evident that despite the EU's commendable initiatives overviewed in Chapter 1, Introduction: EU Policies for Energy Transition, significant disparities exist in the energy transition across countries and regions. A flexible approach is not just a necessity but a strategic move that can empower each country to implement tools and environments that will effectively guide regions towards achieving the EU's energy and emissions targets.

#### 3.1 Enhance Energy Transition Governance

The ePLANET Project recommends the European Commission to:

##### **Enhancing Energy Transition Governance: Empowering Local Municipalities Through Regional ET Agents and Strengthened Multi-Level Communication**

Despite the effort to implement Multi-Level Governance on climate action in the European Union<sup>6</sup>, significant work must be done to accelerate the energy transition, especially with regard to the differences between countries and the particularities of regions, and by empowering small municipalities with few resources to implement and report energy transition plans.

In that context, energy policies are critical tools for governments to address the challenges of transitioning to a sustainable energy system. Effective energy policies can incentivise investment in renewable energy, promote energy efficiency, and drive innovation in low-carbon technologies. However, energy policies must be carefully designed and implemented to be effective. They must be based on sound scientific and economic principles and consider the needs and perspectives of stakeholders from across society.

Each country has its systems and ways to elaborate and deploy the ET plans, which are pretty tedious in the case of small towns to obtain all energy-related data because municipalities do not have direct access to global energy consumption to report the yearly evolution of municipal emissions and energy consumption to the upper administration. Moreover, small municipalities do not have technicians to follow up or deploy energy transition plans, which requires assistance from the upper administration. Some regions are taking this approach, like Girona Province, which takes into account the county council structures to place a technician to assist the small municipalities with energy-related topics. Still, this assistance approach has not been widely implemented across Europe, even though this figure helps deploy the ET plans and track the municipal energy consumption trend of municipalities without resources to do so by themselves.

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<sup>6</sup> Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the [Governance of the Energy Union and Climate Action](#), amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council (Text with EEA relevance.)





This new actor implementation should be followed by an increase in communication between administrations. The technicians from the same region should have an environment where they can share their developments to find synergies between municipalities. Also, having this intermediate administration helps in the communication from the upper to the local administration. For this reason, the implementation of this new figure increases vertical and horizontal governance, improving territorial balance, as larger municipalities have more facilities to deploy energy efficiency and decarbonisation measures, helping small municipalities through best practices and information sharing.

The Energy Transition agents covering an aggragation of municipalities are one of the instruments that must contribute to the territorial boost of Energy Transition, through participation and co-responsibility to the regional deployment of renewable energies and elaborating a territorial plan for renewable energies, and establish conditions to favour small and medium-sized renewable energy projects and also to encourage the participation of the public.

### 3.2 Improved ET and SECAPs management

The ePLANET Project recommends the European Commission to:

#### **Establishing a Unified Data Management platform to enhance Energy Transition plans management and communication among administrations**

In the era of digitisation, the ability to efficiently collect, share, and report data is crucial. The data management not only facilitates transparency but also ensures that all stakeholders are informed and able to contribute to sustainable development goals. To this end, upper administration should play a pivotal role by providing a standard environment for data management. Creating a common data-sharing environment is fundamental to fostering collaboration among different administrative levels. Upper administration should lead by establishing a unified platform to which environmental and energy plans data can be easily collected, stored, and accessed. This common environment will enable as a central repository that allows for seamless data exchange, thus reducing redundancies and improving the accuracy of information. Moreover, by providing this data it will promote and reduce the effort needed to make the follow-up report so this could be done yearly with even less effort than the actual bi-annual report. In this paradigm, for the upper administration it should be easier to develop the National Energy and Climate Plans (NECPs) by adopting a bottom up approach and considering all the municipal level plans, the national plan can be more in line with the territory needs.

This data exchange should incorporate the ability to upload SECAP data to the CoM portal using standardised spreadsheet templates or APIs. These upload capabilities will reduce the effort done in reporting the data already collected and presented as a work plan or a follow-up report.

In addition, recognising the complexities involved in calculating certain types of data, such as transport energy consumption and emissions at municipal level, there should be a degree of flexibility in reporting requirements. Energy and emissions data in the transport sector can be highly variable and dependent on the methodologies used to assess it. Thus, administrations should provide the most accurate data possible without being penalised for inherent uncertainties by allowing some flexibility in how complete these reports need to be.



A major benefit of a unified data environment is the enhancement of collaboration between different administrative bodies. Sharing data seamlessly across administrations can lead to several improvements, such as reduced bureaucracy, improved ET plan development and tracking and informed decision-making. A unified shared platform minimises the need for repeated data entry and redundant reporting processes, streamlining administrative workflows. Administrations can more easily track the progress of their ET plans, identify areas needing attention, and share best practices. This collective approach can accelerate the development and implementation of effective environmental strategies. This data access to a comprehensive and up-to-date data repository enables better-informed decision-making at all administrative levels, promoting data-driven and targeted policies. Hence, administrations can make informed decisions that accelerate progress by evaluating which measures are working and which are not. This iterative process of assessment and adjustment is crucial for maintaining momentum in the energy transition.

### 3.3 EU Taxonomy and Standardisation of data models

The ePLANET Project recommends the European Commission to:

#### **European Taxonomy Compliance for Interoperable Energy Transition Data and Enhanced Governance**

All countries and regions reporting Energy Transition data must adhere to the European Taxonomy for a full integration of the system. Moreover, to communicate all the ET actions, the use of the European Taxonomy should be imposed to guarantee the interoperability of the data. This commitment to data interoperability is not just a recommendation but a necessity. The European Taxonomy sets the standard for environmental data, ensuring that it is comparable and consistent across different jurisdictions. By adhering to these standards, we significantly enhance the EU's ability to evaluate the full extent of its energy transition.

Data interoperability will make the urgency and necessity of this transition more apparent to all stakeholders, driving home the point that a coordinated effort is essential. Without this common framework, the full potential of the energy transition may not be realised, as disparate data sets can lead to misinformed decisions and inefficient strategies.

To enhance the energy transition, evaluating actions and measures implemented to promote and boost effective ones is essential. Proper data governance, which considers each country's unique characteristics, is critical in this regard. Without it, the energy transition will not reach its full potential. Data governance ensures that data is not only accurate and reliable but also actionable.

### 3.4 Financing the ET through the ET Plans

The ePLANET Project recommends the European Commission to:

#### **Encourage Regional, National, and European Institutions to Finance the ET Actions Linked to the ET Plans**



To accelerate the ET development, it is imperative that regional, national, and European institutions actively promote financing initiatives for the ET measures. In the paradigm described in the previous recommendations, it should be available a large database of measures deployed, energy consumption reductions and emissions avoided. This well-structured knowledge is a great source of information for promoting inversion in ET from many different actors. On the one hand, these actors could be administrations opening specific calls to fulfil the financing needs of municipalities in deploying specific actions planned in their ET Plans. On the other hand, with the SECAPs' actions digitalisation and harmonisation, the private investors can evaluate the economic profitability of many actions, develop business models and bring private money into the European ET development. A certainty that the investment could be profitable is needed to mobilise private investment. For this, it is essential to have all the information well collected and classified, highlighting the importance of municipalities developing and updating these ET Plans to attract these public and private inversions.



## 4 Policy recommendations for Energy Transition at regional and National level

This chapter provides a comprehensive summary of policy recommendations for Energy transition at regional and national level based on the experience and knowledge achieved during the ePLANET project in the three pilot sites. The following recommendations are extracted from a survey performed to pilot and regional ePLANET partners: DDGI and ICAEN in Catalonia (ES), EAZK in Zlín Region (CZ), and RDFC and CRES in Crete Island (GR). The literal answers can be found in Annex 1 of this document.

There is a general shared recognition of improvements in energy transition plan management across Catalonia, the Zlín Region, and Greece. However, significant challenges remain, particularly in terms of resources, technical capacity, and governance structures. Enhanced support from higher levels of government, clear responsibilities, standardised processes, and robust data governance tools are generally seen as necessary steps to further improve and implement effective energy transition plans. Collaboration with stakeholders and ensuring political commitment will be crucial to meet ambitious emission reduction targets by 2030.

### 4.1 Girona province

#### Improvement

In Girona province, the deployment of Energy Transition Offices has significantly driven the implementation of energy transition plans, indicating an improvement.

In Catalonia, the management of energy transition plans varies by municipality, with some showing improvements depending on their level of interest and effort.

#### Need for improvement

Both Girona and Catalonia highlight the need for clear responsibilities, improved monitoring and control, and standardised processes. A supra-municipal entity could help oversee and enhance these efforts.

There is a consensus that having a regional technician would significantly help small municipalities lacking technical services. This technician should be well-trained, knowledgeable, and empowered to influence decision-making.

#### Data governance and sharing tool

Both regions agree that tools for data governance and sharing are crucial. These tools would facilitate decision-making, improve governance, and streamline energy transition efforts across different government levels.

#### Aspects to Improve for Policy Development

Girona needs to complete the deployment of Energy Transition Offices, establish a consensus on the importance of energy transition, and provide services from higher administrations.

Catalonia emphasises increasing awareness among municipal managers, modifying regulations to incentivise or penalise actions, and ensuring political commitment to the energy transition.



### **Reducing Emissions by 55% by 2030**

Both regions stress the importance of vision, conviction, and prioritising key aspects like mobility and energy efficiency of buildings. Investments in renewable energy and self-sufficiency projects are essential.

## **4.2 Zlín Region**

### **Improvement**

Awareness about the need for energy transition plans has increased significantly. EAZK plays a crucial role in planning and implementing these measures.

### **Need for improvement**

Many municipalities lack financial resources and personnel. Tailored support from higher levels of government is necessary to encourage small municipalities to develop and implement energy transition plans.

Supervision by independent regional technicians is seen as essential. These technicians should not be affiliated with any energy-related companies to ensure unbiased guidance.

### **Data Governance and Sharing Tools**

Tools for data governance are deemed essential for the effective planning and implementation of energy transition plans. Data-sharing tools also play a significant role in promoting and processing these plans by showcasing best practices and fostering competition among municipalities.

### **Aspects to Improve for Policy Development**

Small municipalities need more user-friendly support from higher levels of government to manage and develop energy transition plans. Reducing the complexity and cost of these plans would also be beneficial.

### **Reducing Emissions by 55% by 2030**

Cooperation with citizens and the private sector, along with leading by example through best practices, is critical. Developing common projects like local energy communities can help achieve these ambitious goals.

## **4.3 Greece (General)**

### **Improvement**

Significant progress has been made in planning and monitoring energy transition plans, leveraging experience from initiatives like the Covenant of Mayors.

### **Need for improvement**

There are challenges, such as the lack of technical staff and a coherent governance structure. Building technical capacity and establishing an integrated approach across governance levels are necessary.



Supervision can empower local authorities by building their capacity to plan and monitor energy transition measures. A train-the-trainer model could be effective for scaling expertise.

#### **Data Governance and Sharing Tools**

Such tools are crucial for effective decision-making and collaboration among different governance levels. They support the digitalisation of energy transition data and facilitate the integrated implementation of plans.

#### **Aspects to Improve for Policy Development**

Improving coordination between local and regional authorities, engaging stakeholders, ensuring political commitment, and building technical staff capacity are vital. Efficient allocation of responsibilities and matching measures with budget lines are also important.

#### **Reducing Emissions by 55% by 2030**

Local and regional authorities need to manage extensive energy and environmental data to prioritise measures effectively. Engaging in projects that focus on renewable energy, energy self-sufficiency, and cooperation with the private sector and citizens is essential.



## 5 Conclusions

To effectively advance the Energy Transition, there is a pressing need for improvement in several key areas. First, enhancing administrative coordination through the development of multi-level governance is crucial. This approach ensures that all governmental levels work harmoniously, leading to more efficient and cohesive energy policies. Second, there is a need to improve data management in developing and implementing Sustainable Energy and Climate Action Plans (SECAPs). Effective data handling is vital for accurate planning and tracking progress. Third, the rigour in applying the EU Taxonomy must be heightened to ensure data interoperability, which is essential for consistent and comparable information across different regions and sectors.

Addressing these needs can lead to a new paradigm where administrations are better equipped to focus resources on fulfilling specific municipal needs. This targeted approach allows for more tailored and impactful interventions. Moreover, documenting and organising existing experiences can serve as a valuable resource to incentivise private investment, further driving the achievement of European Energy Transition targets. By streamlining coordination, data management, and applying EU standards, we can create a more efficient and attractive environment for public and private stakeholders to contribute to a sustainable energy future.



## Annex I: Pilot and regional partners' survey

Pilot and regional ePLANET partners were surveyed based on the experience gained in the project and their role at territorial level. The literal answers are presented below:

### Do you think that the management of energy transition plans has improved in recent years? Would it need any improvement?

DDGI: Certainly, the deployment of the Energy Transition Offices in Girona has been a driver of the actions of the plans and more than will be. Plans are WHAT, but it is necessary to define WHO is responsible for ensuring that things can be done, informing, accompanying and helping in decision-making, transferring technical knowledge and monitoring actions.

EAZK: The Zlín Region consists of more than 300 municipalities, from which the vast majority don't develop their energy transition plan out of various reasons. The most common ones are lack of financial sources and personal capacities to do so. In spite of this, we must admit the awareness on the needs to plan energy transition measures has increased considerably. EAZK is playing the leading role in this due to its day to day addressed approach to municipalities in planning and implementing their energy transition measures so that they were aligned to the goals in energy transition plans on both national and regional level.

ICAEN: Based on the work carried out to find out the methodology currently carried out by municipalities in Catalonia to develop Energy Transition Plans (SECAPS), improvements depend on the interest of each municipality to improve the process in each of its phases: Carrying out the SECAPS, Implementation and Monitoring/control. The critical point is the monitoring and control phase, which is decisive for the updating of SECAPS. The improvements to be introduced would consist of standardising the processes and monitoring by a supra-municipal entity.

CRES: In this sense, local and regional authorities consist important pillars for these targets' achievement. During the recent years, significant progress has been made in the planning and monitoring of their Energy Transition Plans, however they still have a long way to EU targets. Having the previous experience of Sustainable Energy and Climate Action Plans (SECAPs) from the Covenant of Mayors initiative, they develop and monitor Energy Transition Plans, following a more integrated approach. However, there are several challenges that they are facing and at the same time needs that need to be covered. The lack of technical staff capacities in a wide range of subjects (i.e. renewable energy systems, energy efficiency, buildings, transport) is an important barrier. At the same time, there is not a governance structure enabling the coordination between local authorities and regional governments in order to optimise the decision-making process as well as the coherence in the implementation of energy transition measures in towns and cities. The technical staff of local and regional authorities needs to be provided with capacity, approaches and structures to successfully deliver and implement transition plans. In this framework could take the advantage to build on the existing previous experience and know-how of European Cities that have best practice examples of energy transition projects. In parallel, an integrated approach in horizontal and vertical level is needed for the alignment of strategies, plans and policies. The ET plans should be homogeneous among the authorities in order to share information as well as to build on a common basis for the European energy transition goals.





RDFC: At regional level, certainly there is some progress, ie. a Regional Climate Adaptation Plan has been adopted after public consultation and several initiatives have been initiated by utilising European and National funding programs. Municipalities voluntarily engage into energy efficiency projects for public buildings, while a success story with the Minoan Energy Community is currently implementing a broad awareness raising campaign on Energy Transition in the island of Crete, funded by the Regional Government. Moreover, local municipalities can have access to the funds of the Regional Operational Plan if they comply with a set of specific on-off criteria directly connected to existence or not of SECAPs and the adoption of an Energy Transition Strategy.

### Do you think that the supervision of a regional technician could help improve the development of energy transition plans in small municipalities?

DDGI: As we have said before, that is the case. Small municipalities that do not have technical services often do not have someone who informs them of issues that go beyond ordinary functioning and, if they have them, they may not have the resources to follow them up.

EAZK: Definitely yes. The key thing is such a supervisor was independent on any company trading with energy related goods and services, therefore, the regions or their organisations should take this role.

ICAEN: Indeed, as long as this technician has the appropriate training and knowledge to encourage the development of plans and can influence in a decision-making way (he must have some granted power).

CRES: The supervision of the authorities' technical staff could improve the development of energy transition plans, as it can empower and build their capacity to plan and monitor the energy transition measures in their territory. In parallel, there is a huge range of best practices and through the supervision, there is the opportunity to build on the previous experience. An option is to increase the capacity building of a specific group of technicians and then this group become the trainer for the rest of the staff of municipalities (train the trainer model).

RDFC: A very important step is necessary before providing supervision. In most municipalities, the decision on the synthesis of the Municipal Energy Teams, which were engaged for the initial elaboration of the municipal SECAPs, should be revised and enhanced with new roles and additional members having the expertise. This not only means that new employees are necessary but also that those existing need to be well trained in Energy Transition policies and projects management. This will facilitate ownership of any relevant project and engagement in relevant activities. A regional help-desk providing regular everyday technical assistance and training can support the Municipal Energy Teams afterwards.

### Do you think having a tool that helps with data governance and sharing is necessary?

DDGI: ¡Very necessary! Consensus decisions must be made and this is given by the creation of a project governance structure and, at the same time, to be able to objectivise energy information through numerical analysis.



EAZK: Yes, it is necessary, although we still need to distinguish data governance from data sharing. To have a data governance tool is absolutely necessary and without such a tool in these days it is unimaginable to plan, implement or assess any energy transition plans or even energy transition measures effectively. A data sharing tool is also important, it helps to promote and process implementation of energy transition plans and measures in many ways including inspiring some municipalities by showcasing the experience and results from other areas, benchmarking which can initiate a healthy competition among municipalities etc. Some GDPR related issues are necessary to take into consideration just like anonymisation of data etc. The important thing related to the work with data sharing tools is also the ability of users to understand all the presented data correctly, which should be also the role of the regional technicians mentioned in the answer on previous question.

ICAEN: A tool with all the data makes it very easy to carry out time-limited governance. If this tool is not there, it will have to be done by all the technician in charge, which would be a dispersion of jobs that would make the deployment of the energy transition very difficult.

CRES: It is crucial to facilitate the dialogue and collaboration among governance levels and stakeholders as well as to consider synergies between them. A tool that digitalises the energy transition data, it supports decision making on the energy transition measures while it ensures the effective exchange among different government levels. It is actually a technical structure that is needed to develop, test and roll out the integrated implementation of Energy Transition plans.

RDFC: Of course! A data governance tool is absolutely necessary as it seems to be the only way to define SMART goals and applicable measures towards these goals. Data sharing should be certainly explored more if it is essential but sharing experiences and best practices on a voluntary but regular basis can be very beneficial for all local authorities.

## What aspects should be improved to encourage the development of energy transition policies and plans in your region?

DDGI: Finish the deployment of the Energy Transition Offices. Be able to establish a state of opinion in the territory on the importance of ET and actions. Provision of some services from higher administrations (mobility, energy efficiency of buildings...).

EAZK: Majority of municipalities in our region are small municipalities with a critical lack of experienced stuff to be able to administrate and follow up all the necessary procedures which must be followed for example when applying to CoM initiative. If they decide to submit, they need to hire external company anyway to develop required plans and tables which, at the end of the days, seem for them to be too costly and demanding to deal with it. So, definitely, a tailored and user-friendly support from higher level should be improved for small municipalities to feel more encouraged to develop complex transition policies within their areas.

ICAEN: Awareness and involvement of municipal managers in the urgency of the deployment of the energy transition. Inciding /modifying environmental and energy regulations to subsidise or penalise actions carried out by municipalities.

CRES: Improve the coordination between local authorities and regional governments in order to enforce binding energy and climate EU policy in local level. More engagement of public and private stakeholders including citizens or communities. Ensure political commitment / maintaining a common vision for each Municipality. Building capacity of the technical staff to



plan and monitor ET plans. Efficient allocation of responsibilities in the technical staff and the staff of financial services. Identification of appropriate resources and financing/ Matching ET measures with local and regional budget lines (mean what authorities want to do).

RDFC: Regional and local governments need to be recognised for their efforts and particularities by upper levels of administration both national and European. As the Energy Transition strategy is not possible to be implemented with the same ways in all the different regions. Considering the case of Mediterranean countries such as Greece, with the privilege of island landscapes and long coastlines which among others consist the habitat for many protected species and valuable ecosystems and their services, effort and funding of Energy Transition should have a different roadmap than the one in continental Europe.

### What do you think municipalities need to reduce emissions by 55% by 2030?

DDGI: vision, conviction, initiative, prioritisation, focus on key aspects (mobility, energy efficiency of buildings...), assess medium-term gains and not only short-term spending.

EAZK: A close cooperation with citizens as well as with private sector within the area of the municipalities seems to be a critical point to achieve such ambitious goals. Besides leading by examples (best practices), which need to be not only environmentally friendly but also economically sustainable, the municipalities will need to increase the effort in developing common project with citizens and private sector, for example local multilateral energy communities.

ICAEN: Carrying out projects (investment) to improve energy and renewable efficiency focused on energy sovereignty: self-generation with RES, energy self-management and collective self-consumption (energy self-sufficiency).

CRES: Local and regional authorities need to manage a wide range of energy and environmental data to shape the current situation and then prioritise energy transition measures to achieve the highly ambitious targets set by the European Union.

RDFC: Appropriately addressed European and national funding towards energy efficiency projects of public buildings and transport, but firstly and most importantly towards the energy upgrading of water pumping sector which is the most energy intensive sector, quite often responsible for more than 40% of all the energy consumed at municipal level.

