

Clean energy for
EU islands:
Legal and regulatory support to
enhance the energy transition –
Recommendations and stakeholders
for overcoming the barriers

Legal and regulatory support to enhance the energy transition - Recommendations for overcoming the barriers

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Executive Summary

The Balearic Islands are at a crucial juncture in their energy transition, as they work to reduce reliance on fossil fuels and accelerate the adoption of renewable energy technologies. However, several regulatory, administrative, and infrastructural challenges are holding progress back. This report identifies six key barriers to renewable energy deployment in the Balearic Islands and provides actionable recommendations to overcome them.

The main challenges include:

1. Complex administrative procedures for permitting on the basis of the Royal Decree 23/2020,
2. Absence of tailored regulations for energy storage systems,
3. Restrictive frameworks for collective self-consumption,
4. Inconsistent implementation of rooftop and rural PV regulations,
5. Lack of clarity regarding renewable energy and EV infrastructure deployment on public roads,
6. Rigid grid capacity management policies that limit flexibility and grid optimisation.

To tackle these challenges, the report proposes the following recommendations:

Barrier 1. Complex administrative procedures for permitting on the basis of the Royal Decree 23/2020

Recommendations:

- 1.1 Streamline administrative procedures in Royal Decree-Law 23/2020
- 1.2 Implement a unified digital and publicly accessible platform as a one-stop shop
- 1.3 Propose a bylaw to identify specific steps and timelines for permitting procedures
- 1.4 Organise public hearings to collect feedback from stakeholders

Barrier 2. Lack of specific and simplified regulations for energy storage projects

Recommendations:

- 2.1 Establish specific regulations for storage systems that allow them to charge during off-peak hours without being classified as separate plants
- 2.2 Develop a strategy for storage use for islands to identify priority implementation
- 2.3 Coordinate assessment of local needs and priorities to communicate to the regulator

Barrier 3. Collective self-consumption radius limited to 500m/2km, surplus compensation modality is limited to 100kW

Recommendations:

- 3.1 Suggest regulatory changes to allow broader distance for collective self-consumption for islands
- 3.2 Suggest regulatory changes to allow increased capacity for self-consumption

Barrier 4. The implementation of the regulation for rooftop PV and PV on rural land is not aligned

Recommendations:

- 4.1 Raise awareness of the importance of harmonising standards across local governments
- 4.2 Align local governments on the implementation of the regulation for rooftop PV and PV on rural land

Barrier 5. The implementation of RE generation or EV charging infrastructure in the public road domain is not aligned

Recommendations:

- 5.1 Provide clear guidelines to support RE generation and EV charging on public roads
- 5.2 Prioritise strategic locations for deployment

Barrier 6. Discretisation of the temporal capacity access to the grid

Recommendations:

- 6.1 Build consensus and collaboration with local energy stakeholders
- 6.2 Develop a flexible grid capacity management system

The responsibility for implementing these recommendations is shared across multiple levels of governance, reflecting the specific nature of each barrier:

- **National level:** for barriers such as regulatory changes (e.g., energy storage systems and self-consumption), the Ministry for the Ecological Transition (MITECO) and the National Commission for Markets and Competition (CNMC) play a leading role.
- **Regional level:** The Government of the Balearic Islands takes the lead in barriers requiring adaptation to the islands' specific geographic and administrative contexts, such as harmonising local permitting processes and tailoring RE regulations.
- **Local implementation:** Municipal governments are crucial for implementing localised solutions, including deploying RE and EV infrastructure and addressing public engagement challenges.

In addition, a survey has been conducted among stakeholders to collect their opinions on the main barriers and the suggested recommendations to overcome them. Survey responses collected confirm the urgency of addressing these barriers. Respondents expressed strong support for regulatory reforms across all six areas. The results show that there is a broad consensus on, inter alia, the necessity of institutional collaboration, digitalisation of permitting, and the development of island-specific strategies to accelerate the energy transition.

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1. Introduction

The Balearic Islands face pressing energy challenges, primarily due to their dependence on fossil fuels and limited interconnection to mainland grids. In light of climate goals and the European Union's energy targets, transitioning to a sustainable, clean energy system is critical for the region. However, implementing clean energy solutions in the Balearic Islands presents unique regulatory and procedural challenges that must be addressed to facilitate an effective energy transition.

This report examines the legal and regulatory barriers impeding the progress of clean energy initiatives in the Balearic Islands, focusing on six core challenges identified through stakeholder consultations and regulatory analysis. These barriers include the need for clarification of administrative procedures outlined in Royal Decree-Law 23/2020, a lack of regulations for energy storage systems, and adjustments to collective self-consumption policies to increase capacity and distance allowances. Additionally, discrepancies in local government requirements for rooftop and rural photovoltaic (PV) installations, the complexity of implementing renewable energy generation or electric vehicle (EV) infrastructure on public roads, and the rigid structure of temporal capacity access to the grid further complicate efforts to establish an efficient, region-wide clean energy system.

The aim of this report is to provide actionable recommendations to address these barriers. By examining these issues and proposing targeted solutions, this report intends to support policymakers, local authorities, and industry stakeholders in creating a resilient and sustainable energy landscape for the Balearic Islands.

This study is the second deliverable of the Clean energy for EU islands secretariat on Legal and regulatory support to enhance the energy transition of the Balearic Islands. It builds further on the Regulatory inventory of legal and regulatory information on clean energy development for 15 Member States, available online on the website of the Clean energy for EU islands secretariat.

2. Legal and Regulatory landscape in relation to the priority barriers

The energy sector in the Balearic Islands operates within a complex legal and regulatory framework shaped by both national, regional, and local (insular and municipal) policies aimed at promoting renewable energy, reducing carbon emissions, and enhancing energy efficiency.

In the previous report and in coordination with the stakeholders, the following six specific barriers have been identified as the most pressing to be addressed. The barriers have been sorted with the most important features at the top of the list. In addition, the specific legislative, regulatory, and non-normative instruments regarding the six identified barriers in the Balearic Islands have been compiled in the table below and will be discussed in more detail.

2.1. Priority Barriers identified and corresponding Regulatory Acts

| No | Type of barrier | Name of barrier | Name of Norm, Act, or Instrument |
|----------|-----------------------------|--|---|
| 1 | Permitting | Clarification of administrative procedure | Royal Decree 23/2020 |
| 2 | Electricity grid | Simplified connection procedure for storage projects | Energy Storage Strategy (MITECO) Royal Decree 1183/2020 Royal Decree 1955/2000 Royal Decree-law 6/2022 |
| 3 | Collective self-consumption | Increase capacity and distance for collective self-consumption | Royal Decree 244/2019 |
| 4 | Land use | Unified requirements for rooftop PV and PV on rural land between different local governments | |
| 5 | Land use | Implementation of RE generation or EV charging infrastructure in the public road domain | Law 5/1990 |
| 6 | Electricity grid | Discretisation of the temporal capacity access to the grid | Grid code – connection to the grid |

Table 1: Identified priority barriers in the Balearic Islands and corresponding legislative, regulatory, and non-normative instruments

2.2. Specific regulatory and non-regulatory acts related to the barriers

○ Royal Decree-Law 23/2020

The Royal Decree-Law 23/2020, which approves measures in the energy sector and other areas for economic reactivation, has been adopted, with the main aim of supporting the energy transition, jobs and post-COVID-19 economic recovery. The decree initiated the obligation for renewable energy plants to meet certain processing milestones to maintain in force the access and connection permits to the transmission and electricity grids. It is divided into four main Titles:

- (I) measures for the orderly development and promotion of renewable energy, which inter alia modify the rules for permitting, supply and distribution of energy from renewable sources;
- (II) measures to promote new business models that favour energy transition;
- (III) measures to promote energy efficiency; and
- (IV) measures aimed at ensuring balance and liquidity in the electricity system.

In particular, Article 1 of the decree establishes the requirements for maintaining access and connection to the electricity transmission and distribution grids. It does so by evaluating the technical feasibility and soundness of the projects. It is necessary to meet successive administrative milestones essential for their authorisation and implementation. The article categorises these requirements into four distinct groups of permits:

- (i) before the entry into force of the Law on the Electricity Sector 24/2013;
- (ii) from the entry into force of Law on the Electricity Sector and until 31 December 2017;
- (iii) from 1 January 2018 and until the entry into force of the RDL (i.e. 25 June 2020); and
- (iv) after the entry into force of the RDL.

Any failure to meet the requirements will result in the automatic expiration of access and connection permits, along with the immediate enforcement of the financial guarantees submitted for processing the application for grid access. However, an exception is granted if a favourable Environmental Impact Assessment is not issued due to circumstances beyond the developer's control, in which case the guarantees will not be enforced. Confirmation of milestone achievement will be documented by a statement from the authorising body, verifying that the application has been submitted and accepted. If the installation is exempt from certain procedures, this must be substantiated by a document issued by the relevant authority.

In the meantime, the Royal Decree has been amended. The Royal Decree-Law 5/2023 and the Royal Decree-Law 8/2023 of June 28, 2023, both introduce an exceptional extension of the administrative milestones set out in the Royal Decree-Law 23/2020.

○ Energy Storage Strategy

The Energy Storage strategy¹ is integral to Spain's National Integrated Energy and Climate Plan (PNIEC) 2021-2030 and the Long-Term Decarbonisation Strategy. It was proposed by MITECO and was officially approved in February 2021. The objective of the strategy is to increase energy storage

¹ Spain https://www.miteco.gob.es/content/dam/miteco/es/prensa/estrategiaalmacenamiento_tcm30-522655.pdf

capacity to approximately 22.5 GW, up from the current 8.3 GW, by 2030 and achieve a total energy storage capacity of around 30 GW by 2050.

The strategy outlines ten lines of action and 66 measures, including inter alia, the development of new business models such as the second life of batteries, the promotion of green hydrogen, the use of storage for the technological development of islands and isolated areas, as well as the removal of administrative barriers to promote projects and initiatives. It thus takes a specific line of action by recognising the particular need for storage on islands due to their isolated and low-interconnected energy systems and formulating specific measures.

It has in particular been stated that island systems have unique energy storage needs due to their energy isolation and low interconnection, so energy storage solutions are more pressing in these systems than on the mainland to allow greater integration of renewables in the electricity and thermal sectors, as envisaged in Measure 1.12 of the PNIEC, aimed at "Singular projects and strategy for sustainable energy on islands".

Measure 8.1 Generate incentive mechanisms for the deployment of energy storage on islands and isolated systems.

Measure 8.2 R&D&I in isolated and low-interconnected areas.

Measure 8.3 Using energy storage as a source of technological and industrial development².

- [Royal Decree 1183/2020](#)

This Royal Decree, adopted on December 29, 2020, establishes the principles and procedures for granting access and connection permits to electricity transmission and distribution networks, applicable to producers, consumers, storage facilities, and network operators. It aims to provide legal certainty, eliminate inefficiencies, and support the orderly deployment of renewable energy. New and modified facilities are required to obtain permits, with priority generally based on the time of application, except for cases such as hybridisation or specific access capacity contests.

The Decree introduces a single, streamlined procedure for obtaining permits, with network managers acting as the central point of contact. Simplified procedures with reduced timelines are included for small-scale consumers and generators. Exemptions are provided for certain self-consumption facilities, and specific rules are set for rejecting or denying applications, ensuring transparency and compliance.

Additionally, facility owners must sign technical access contracts with network operators, governing technical relationships, and, for consumers, access contracts with distributors, which may be combined with the technical contract for simplicity.

- [Royal Decree 1955/2000](#)

The Royal Decree 1955/2000, enacted on December 1, 2000, establishes the regulatory framework for various activities in Spain's electricity sector, including transmission, distribution, commercialisation, supply, and the authorisation procedures for electrical installations.

² Clean energy for EU islands: Study on regulatory barriers and recommendation for clean energy transition on the islands

Articles 111 and 115 of Royal Decree 1955/2000 stipulate that the construction, expansion, modification, and operation of all electricity installations require an administrative authorisation, meaning an approval of the preliminary project, which may need to be processed alongside an environmental impact study. Furthermore, it is necessary to receive the approval of the execution plan, i.e. detailed technical plans for the installation. The start-up certificate is issued after technical inspections, permitting the commencement of commercial operations.

Energy storage facilities must obtain access and connection permits to integrate with the transmission or distribution networks. Royal Decree 1955/2000 outlines the procedures for these permits, which start with the submission of the application detailing technical specifications and proposed connection points. The application is evaluated by the system operator, which will assess the availability of capacity and the technical feasibility of the connection. If the evaluation is positive, it will be granted, allowing the facility to connect to the grid.

Under this decree, storage facilities are registered and regulated similarly to generation facilities, as they are integral to the electricity system. This equivalence stems from the need for energy storage systems to interact directly with the transmission or distribution grid, which aligns them operationally and procedurally with generation plants.

- [Royal Decree-law 6/2022](#)

The Royal Decree-law 6/2022, of 29 March, which adopts urgent measures in the context of the National Plan of response to the economic and social impact of the war in Ukraine, entered into force on 31 March 2022. The Decree includes several provisions that regulate the application process for storage facilities, both hybrid and stand-alone, that are able to feed energy into the transmission and distribution networks. In essence, RD 1955/2000 is amended to establish that facilities of this kind will be given the same treatment as generation facilities, applying both to the authorisation process and their registration on the Administrative Register of Electricity Production Facilities.

- [Royal Decree-Law 244/2019](#)

The Royal Decree-Law 244/2019 regulating the administrative, technical and economic conditions of the self-consumption of electric energy derives from Law 24/2013 on the energy sector, and Royal Decree-Law 15/2018, and was enacted on 5 April 2019.

This legislative act aims at promoting the self-consumption of energy, and particularly renewable energy. It regulates the administrative, technical and economic conditions for self-consumption of electrical energy.

The decree outlines two primary modalities for self-consumption - without surplus and with surplus. In the former, installations are designed to prevent the injection of excess energy into the grid, often using anti-discharge mechanisms. In the latter, surplus energy is allowed to be fed into the grid, with options for economic compensation, which is particularly attractive for small-scale producers.

The decree enables collective self-consumption, allowing multiple consumers, such as residents of the same building or community, to share a single energy generation facility. This approach helps promote energy communities and shared renewable projects.

In addition, the decree provides for a simplified compensation mechanism, which allows consumers to receive economic benefits for surplus energy injected into the grid, significantly reducing electricity costs. Administrative procedures for registering and legalising self-consumption installations are also streamlined, particularly for small-scale systems.

The decree finally provides clear guidelines for the grid connection of self-consumption installations, ensuring safety and reliability.

○ [Law 5/1990 on roads of the Balearic Islands](#)

The Law 5/1990 on roads of the Balearic Islands, which was enacted on 24 May 1990, governs the planning, construction, maintenance, and management of roads within the Balearic Islands.

The law establishes a framework for road infrastructure development and management, defining the roles and responsibilities of the regional government, island councils and municipalities.

Under the law, roads are classified into three main categories:

- **Primary Network:** Roads of significant importance that are managed by the regional government.
- **Secondary Network:** Roads facilitating inter-municipal connections, under the jurisdiction of the island councils.
- **Local and Rural Roads:** Roads serving local traffic, maintained by the municipalities.

The conditions of use of each road coincide with the corresponding administrative assignment.

The law provides for the creation of an independent body to deal with the administration and management of roads with different ownerships. Furthermore, the law mandates the development of a sectoral road plan, which defines the primary and secondary networks, plans for the construction of new roads, and outlines improvements to existing ones. This plan integrates road development with urban planning to ensure coordinated growth. It also sets guidelines for the construction, financing, and maintenance of roads.

To manage land use effectively, the law specifies zoning regulations for areas adjacent to roads. These include public domain zones, reserve zones, and protection zones, where activities such as construction and advertising are restricted to preserve safety, functionality, and aesthetics. Environmental and safety concerns are prioritised in these zones.

Over time, amendments to Law 5/1990 have decentralised some of the responsibilities, transferring significant authority to the island councils. This shift was formalised through Law 16/2001, which granted island councils greater autonomy in managing secondary and local roads.

○ [Grid Code](#)

The Spanish Grid Code comprises a set of regulations that govern the technical and operational requirements for connecting and operating electrical installations within Spain's electricity grid. These regulations ensure the stability, security, and efficiency of the national electricity system. The components of the Spanish Grid Code include:

- Royal Decree 647/2020, of July 7, which regulates aspects necessary for the implementation of network codes concerning the connection of certain electrical installations. It aligns national regulations with European Union directives to facilitate the integration of renewable energy sources and enhance grid reliability.
- Order TED/749/2020, of July 16, which establishes the technical requirements for connecting to the grid, necessary for implementing the connection network codes. It provides detailed specifications for generators, demand facilities, and high-voltage direct current systems.

3. Energy sector – Relevant actors and governance

The Balearic Islands, as an autonomous community of Spain, consist of four main islands: Mallorca, Menorca, Ibiza, and Formentera. The governance of the Balearic Islands is characterised by a multi-tiered structure that involves coordination between national, regional and local entities.

National-level actors

National-level actors play a role in setting the overarching framework and policies for the energy transition, which regional and local stakeholders in the Balearic Islands must adapt and implement.

MITECO (Ministry for the Ecological Transition and the Demographic Challenge) plays a central role in designing and implementing national energy and climate policies. For the Balearic Islands, MITECO is responsible for coordinating strategies aligned with Spain's energy transition objectives, such as renewable energy integration, greenhouse gas reduction, and achieving energy efficiency. Under MITECO, the General Directorate for Energy Policy and Mines is a key department that focuses on energy policy development, regulation of the energy sector, and oversight of the mining sector. It regulates and enforces laws related to renewable energy integration, energy efficiency, and grid management. Its work ensures compliance with national and EU directives, directly impacting projects in the Balearic Islands.

IDAE (Institute for Energy Diversification and Saving - Instituto para la Diversificación y Ahorro de la Energía) is an entity under MITECO which plays a strategic role in the country's energy transition. Its responsibilities span technical guidance, financial support, and coordination of renewable energy and energy efficiency initiatives.

Regional-level actors

The **Balearic Islands Regional Government (Govern de les Illes Balears)** is essential in localising energy transition policies, ensuring they align with the specific needs and opportunities of the islands. It develops regional laws and frameworks to foster renewable energy, enhance energy efficiency, and support sustainable development, such as the Balearic Islands climate change and energy transition law, while at the same time collaborating with MITECO. The government also oversees institutions such as the Institut Balear de l'Energia (IBE).

Island Councils (Consells Insulars) govern at the island level (e.g., Mallorca, Menorca, Ibiza, and Formentera) and are responsible for implementing regional policies on a more localised scale. They play a role in executing energy projects, engaging local communities, and tailoring energy solutions to the specific geographic and socioeconomic conditions of each island.

Local-level actors

Local actors and operational stakeholders are directly involved in the practical implementation of energy transition projects.

Red Eléctrica de España (REE) is the operator of Spain's transmission system. REE is responsible for ensuring a stable and secure supply of electricity. In the Balearic Islands, REE's role is crucial for integrating renewable energy into the grid, maintaining grid stability, and planning the infrastructure needed to support the transition.

Local Distribution System Operators (DSOs) – Endesa, as the main DSO in the region, is responsible for maintaining and upgrading the distribution grid, managing electricity delivery, and facilitating the integration of distributed energy resources like solar PV. Endesa's collaboration with local governments and stakeholders ensures the effective delivery of energy transition initiatives at the local level.

Institut Balear de l'Energia (IBE) is a public body tasked with deploying renewable energy projects, promoting energy self-consumption, and supporting local energy communities.

Local municipalities are directly involved in permitting processes, land-use planning, and community engagement for renewable energy projects. They also support energy efficiency initiatives, the installation of rooftop solar systems, and the deployment of electric vehicle charging infrastructure.

Federació d'Entitats Locals de les Illes Balears (FELIB) is an organisation that supports the local municipalities and councils of the Balearic Islands. FELIB facilitates collaboration among municipalities, advocates for their interests at regional and national levels, and provides technical support to enhance local governance.

4. Recommendations to overcome the key barriers and actors involved

The Clean energy for EU Island secretariat has identified legal and regulatory barriers, based on the assessment of the current regulatory framework and through a discussion with the national, regional and local stakeholders. For each of the regulatory barriers, the Secretariat identified multiple recommendations.

Regulatory barriers are presented in the order of their priority, agreed upon in close cooperation with the Balearic transition team. In the recommendations below, the focus lies on the concrete issues with these regulatory barriers encountered by the island. During the period from March until May 2024, the inputs were collected from these stakeholders.

Below is the list of barriers (marked in dark blue) ordered based on their priority, as well as the proposed recommendations.

Barrier 1. The temporary administrative milestones established in Royal Decree-Law 23/2020, without an associated stepwise, clarified and transparent administrative procedure, create legal uncertainty for the administration and interested entities.

Barrier

The Royal Decree-Law 23/2020 creates several ambiguities and procedural inefficiencies that introduce legal uncertainty for the administration and interested entities.

The decree specifies that holders of access permits have up to six months from the decree's effective date to apply for a connection permit. However, if an access permit has not yet been obtained, the six-month period begins from the date the permit is granted. Failing to apply within this timeframe will result in the automatic expiration of the access permit.

The decree does not explicitly state whether access permits that had already lapsed due to failure to request a connection within six months under Articles 53.3 and 63.5 of the Royal Decree 1955/2000 can be reinstated. If such permits are reactivated, a new six-month period starting from 25 June 2020 (the date of the decree) could be granted. While this interpretation may seem possible from a literal reading of the rule, it creates potential conflicts with access permits obtained later under different conditions. Thus, extending this new six-month window to previously expired permits may be inappropriate, particularly if the original timeframe to apply for a connection permit has already lapsed without action.

Another concern is that the six-month period for requesting a connection permit may not align with the three or six-month deadlines for submitting and obtaining acceptance of the Prior Administrative Authorisation (PAA), especially for permits granted after the implementation of the Royal Decree Law 23/2020. Article 53.1 of the Electricity Sector Act states that obtaining a PAA requires holding both an access and connection permit. This means an application for a PAA cannot proceed until the connection permit is obtained, creating an issue. The Royal Decree 1955/2000 allows processing of the PAA with financial guarantees alone (without proof of connection), but this does not resolve the dependency of timelines between the two processes. The decree's lack of clarity on how to synchronise these steps complicates the process and risks procedural delays.

Finally, the moratorium on issuing new access permits (until the regulatory framework for access and connection is finalised) restricts the ability to apply for available access capacity. This applies to access capacity that becomes available through:

- Expirations of previous permits
- Voluntary relinquishments
- Other circumstances

The only allowed applications are for cases where financial guarantees were already submitted before the decree took effect. However, this creates an unclear priority mechanism for handling pending applications. Should priority be given to applications submitted now (even if they can't be processed immediately) or should priority favour applications filed after the new regulatory framework is implemented?

On top of these procedural and legal challenges, the rush to obtain permits without mature project planning adds another layer of complexity. Developers are incentivised to apply for permits to secure access and connection rights, often before their projects are sufficiently developed. This results in an influx of incomplete or poorly detailed applications, placing a heavy burden on administrative bodies with finite human resources. These overwhelmed administrative teams face significant delays in validating and processing applications, creating bottlenecks that slow progress for all projects in the pipeline.

Recommendations:

1.1 Streamlining the administrative procedures in Royal Decree Law 23/2020 for access to the electricity grid of the RE projects

To address the barriers in the administrative procedures for accessing the electricity grid for renewable energy projects, the national government, in collaboration with the Balearic regional government, must establish clear, transparent, and streamlined guidelines. These guidelines should provide a step-by-step administrative process for acquiring the necessary permits, eliminating ambiguities in timelines, interdependencies, and required documentation. The ultimate goal is to reduce implementation risks for renewable energy projects and create a more efficient permitting process.

A transparent, stepwise administrative procedure should clearly define all necessary milestones, associated timelines, interdependencies, and the consequences of failing to meet these requirements. The paperwork and documentation needed at each stage must be standardised, ensuring consistency and preventing delays caused by incomplete or unclear applications.

It should be added that during recent discussions with the national government, an alternative solution to the current “first in, first out” permitting system was proposed: the node capacity concurrency process. This method offers a more efficient approach to managing grid access and capacity allocation. Unlike ‘first in, first out’, which processes applications sequentially based on submission order, the node capacity concurrency process allows for simultaneous evaluation of multiple applications for grid capacity at specific nodes. This approach could significantly reduce delays caused by backlogs in the permitting process and ensure a fairer and more efficient allocation of grid capacity.

To implement this process, the national government would need to establish clear criteria for concurrent assessments, prioritise well-developed and mature projects, and use advanced digital tools to handle simultaneous evaluations. Clear timelines and transparent processes would help the permitting system.

We recommend that the Balearic regional government adapt these guidelines to the regional conditions, involving all local governments and stakeholders across the islands in an inclusive process. Public consultations should be conducted to gather feedback from renewable energy developers, local governments, and community organisations. This input will ensure the guidelines are practical, clear, and effective for all stakeholders. The final guidelines should outline specific milestones, responsibilities, and a standardised checklist of requirements to streamline compliance. To further reduce ambiguities, the regional government could publish legally binding interpretive documents, such as FAQs and technical clarifications, to address common concerns and ensure all stakeholders understand the requirements. These documents should provide specific guidance on overlapping processes, timelines, and technical details.

Additionally, regular training sessions for local and regional stakeholders, including administrative staff, will be critical to ensure the consistent application of the updated regulations. Training should also familiarise administrative teams with any new digital tools or procedural updates to improve the overall efficiency of the permitting process.

Actors involved

- **MITECO, Ministry for the Ecological Transition and the Demographic Challenge**
- National Commission for Markets and Competition (CNMC)
- Balearic Islands Regional Government
- Municipalities

1.2 Implement a unified digital and publicly accessible platform to follow the implementation process (one-stop shop)

To streamline the administrative process and enhance transparency, we recommend a unified digital platform, functioning as a one-stop shop, for submitting, monitoring, and managing applications related to renewable energy projects. This platform would serve as a centralised hub, providing developers, public authorities, and grid operators with a transparent and efficient system to navigate the permitting process.

The platform should outline each administrative milestone, accompanied by clear timelines, required documentation, and contact points for guidance. It will allow applicants to track the real-time status of their applications, ensuring transparency and accountability throughout the process. Additionally, the platform will facilitate direct communication between stakeholders, enabling developers to address procedural questions and interact seamlessly with public authorities and grid operators.

To ensure user-friendliness and accessibility, the platform will provide:

- Access to all required templates, regulations, and completed submissions for reference.

- Tools to share non-confidential updates on the progress of renewable energy projects.
- Reporting features to analyse application volumes, approval timelines, and procedural bottlenecks to support ongoing process improvement.

We recommend a designated body manage the one-stop shop at the regional or local level. This managing authority would act as the single point of contact for applicants, responsible for receiving documentation, distributing it to the relevant bodies for approval, following up with these bodies to ensure timely responses, and coordinating interactions between stakeholders and applicants. By centralising these responsibilities, the platform will significantly reduce administrative complexity for project developers.

To best achieve the purpose of the platform, we believe that the national government authorities should take the lead in the development and implementation of the digital platform at a national level to ensure alignment with the provisions of Royal Decree-Law 23/2020. The platform should provide a consistent framework across Spain while allowing for regional adaptations to address specific local needs.

The Balearic Islands regional government would then adapt and integrate this platform into its administrative procedures to facilitate the development of local renewable energy projects. It would be helpful if the regional permitting authorities actively update the platform with approvals, status updates, and relevant document templates to maintain its effectiveness and transparency.

REPowerEU – RES Simplify

The **RES Simplify report** offers valuable recommendations and examples for implementing a One-Stop Shop (OSS) or consolidating the application process into a single streamlined procedure. The OSS may either directly issue permits or serve as a central contact point to facilitate the entire process, as outlined in Article 16(1) of RED II.

Denmark: The Danish Energy Agency (DEA), serving as an OSS for offshore procedures, is very efficient, according to relevant stakeholders. All the permitting decisions are coordinated by the DEA with other authorities, which are responsible for different offshore interests. The resulting licenses are thus “comprehensive” in the sense that they are granted on behalf of several authorities and include conditions stipulated by all these. The mentioned licences do not completely preclude the need to obtain permits from other authorities, as seen above. The system, however, eases the process for the developer greatly and provides more certainty that the project can be established, as all relevant authorities have cleared the project on the stated conditions.

Germany: Germany currently proposes a single authorisation process to offshore substation developers, with the national maritime agency (Bundesamt für Seeschifffahrt und Hydrographie – BSH) as the competent authority. In addition, this process is preceded by another simplified step as site allocation and public subsidy selection are combined into one single process at the national regulatory agency (Bundesnetzagentur). Comparing the complexity of these two authorisation steps with the procedures required for German onshore wind parks, suggests that the authorisation design developed for offshore wind energy reflects some measures demanded for a simplification of onshore authorisation processes.

REPowerEU – One-stop-shop

The recommendation on permitting stipulates that Member States should design a one-stop-shop for granting permits for renewable energy projects required in Directive (EU) 2018/2001 in such a way as to limit the number of authorities involved to what is necessary and maximise efficiency, taking into account public resources and the benefits of concentrating technological, environmental and legal expertise.

Actors involved

- MITECO, Ministry for the Ecological Transition and the Demographic Challenge
- Balearic Islands Regional Government (Govern de les Illes Balears)
- Municipalities

1.3 Propose a bylaw to further identify specific steps and a timeline for permitting procedures

The proposed bylaw would aim to provide a detailed and structured framework for the permitting process, clearly defining each procedural step, the associated requirements, the responsible authorities, and the decision-making criteria. To ensure efficiency and clarity, the bylaw will establish firm deadlines for each stage of the permitting process. It should also outline the necessary documentation required at each step and include standardised templates to minimise ambiguity and streamline applications.

MITECO should lead the drafting of the bylaw, ensuring that it aligns with national energy transition goals. The General Directorate for Energy Policy and Mines will play an important role in providing technical input and ensuring that the bylaw is legally coherent with Royal Decree-Law 23/2020. The CNMC shall ensure legal clarity.

To adapt the bylaw to the specific needs and characteristics of the region, the Balearic Islands Regional Government should collaborate closely with the national authorities during its development. Once finalised, the regional government will be responsible for implementing the bylaw at the local level.

Finally, the Island Councils will ensure that local permitting authorities align their processes with the new bylaw, guaranteeing consistent and effective application across all administrative levels in the Balearic Islands.

Actors involved

- MITECO, Ministry for the Ecological Transition and the Demographic Challenge (General Directorate for Energy Policy and Mines)
- National Commission for Markets and Competition (CNMC)
- Balearic Islands Regional Government (Govern de les Illes Balears)
- Island Councils (Consells Insulars)

1.4 Organise a public hearing to collect feedback on the challenges in the implementation of the current procedures from relevant stakeholders

The primary objective of a public hearing is to gather direct feedback from stakeholders on the challenges they encounter during permitting and administrative processes. Such hearings should open a dialogue, creating an environment of trust and collaboration between administrative authorities and stakeholders. This exchange is essential for identifying bottlenecks and areas of improvement in current procedures.

To achieve this, it is necessary to ensure that all relevant actors, including national, regional, and local authorities, renewable energy developers, community groups, and environmental organisations, are actively involved in the reform process so that their viewpoints are fully integrated into the procedural reforms. The aim is to collect insights on procedural inefficiencies, delays, or unclear requirements. The goal will be to use the input of the stakeholders to guide the drafting of potential supplementary procedural amendments, ensuring that the reforms address real challenges and enhance the effectiveness of the permitting process.

The organisation of public hearings should take a multi-tiered approach, involving national, regional, and local authorities:

MITECO should take the lead as the primary organiser of the public hearings, ensuring national consistency in approach and objectives. These hearings should focus on broad issues affecting the permitting process across the country, including legal and regulatory barriers. MITECO should ensure that feedback collected at this level informs high-level procedural reforms and aligns with national strategies.

At the regional level, regional governments should coordinate hearings to address location-specific challenges and adapt the process to their unique administrative and geographic conditions. They would also serve as a bridge between national policies and local implementation, ensuring that reforms are adapted to regional contexts.

Finally, the Island Councils should organise hearings at the local level, focusing on engaging community stakeholders such as local permitting authorities and organisations. These hearings should focus on localised administrative challenges, such as delays in municipal permitting, community opposition, or technical capacity constraints.

Actors involved

- **MITECO, Ministry for the Ecological Transition and the Demographic Challenge**
- Balearic Islands Regional Government (Govern de les Illes Balears)
- Island Councils (Consells Insulars)
- Renewable Energy Developers

Barrier 2. Lack of specific and simplified regulation for energy storage projects

Barrier

One of the primary barriers to the development of energy storage systems is their classification as production facilities. Under current regulations, storage systems cannot charge directly from a photovoltaic (PV) plant and later discharge the stored energy at times when it is most needed. Instead, hybrid solar and storage plants are treated as two separate entities, creating regulatory and operational inefficiencies. This classification imposes administrative and operational rules that treat storage and generation as separate entities.

This distinction prevents the seamless integration of storage systems with renewable energy generation. Storage systems, particularly those that charge during off-peak hours—when energy production is low, or demand is reduced—should not be classified as separate plants from the generating facility. This reclassification would allow for greater flexibility in the operation of solar-storage systems.

Currently, several renewable energy projects in the Balearic Islands remain stalled or underutilised because they cannot function effectively under the existing regulatory framework.

Recommendations:

2.1 Establish a specific regulation for storage systems that allows them to charge during off-peak hours without being classified as separate plants

To address the regulatory gap surrounding energy storage systems, it is essential to establish a specific legal framework for storage. This framework should explicitly enable storage systems to charge from the grid during off-peak hours, taking advantage of lower electricity prices, without being classified as separate plants. Such regulation would ensure that storage systems are fully integrated into the energy value chain.

Storage systems must be recognised as both consumers, when charging, and suppliers, when discharging, without being subject to dual classification as separate plants. Additionally, the regulation should explicitly allow storage systems to charge from the grid during off-peak hours at reduced tariffs, optimising energy use, improving the economic viability of storage systems, and enhancing grid flexibility. Moreover, streamlined permitting and licensing processes are necessary to reduce administrative burdens and accelerate project timelines.

As the Balearic Islands operate within an isolated electricity system, the regulation must incorporate exceptional provisions to account for the unique characteristics of the islands' energy market. Price signals in the Balearic Islands differ significantly from those on the mainland, and any new regulation must address these differences to ensure fair and effective implementation. These specific provisions should reflect the distinct remuneration mechanisms required to support storage systems on the islands and ensure their alignment with the regional energy system's economic and technical realities. Specifically for the islands, given the security of supply issues due to their insularity and remoteness, there is a need for a clear remuneration mechanism and tailored operating procedures for storage systems. This mechanism should provide investors with visibility on remuneration parameters for storage technologies, thereby encouraging their penetration. This requirement has been incorporated into the Energy Storage Strategy under Measure 1.4 ('Modify the operating procedures to incorporate the involvement of storage') and can build further upon the CNMC resolution of 10 December 2020.

It is suggested that MITECO oversees the development of this specific regulation, ensuring that it aligns with national energy goals and EU directives. The regulation should build upon the Energy Storage Strategy and the RD1183/2020. MITECO should work with stakeholders to define the roles of storage systems within the energy market and address technical and legal aspects. The CNMC should regulate access and connection rights for storage systems, ensuring compliance with fair competition rules and overseeing the implementation of reduced tariffs for off-peak charging.

The Government of the Balearic Islands would implement the storage regulation, tailoring it to the specific needs and characteristics of the Balearic Islands' energy market, including the integration of specific retribution mechanisms. Transmission System Operators (TSOs) would manage grid access, capacity, and operations for large-scale storage projects, ensuring system reliability and stability. Finally, Distribution System Operators (DSOs) would oversee grid connections for smaller-scale and community-based storage projects, facilitating local-level integration and encouraging distributed energy storage solutions.

Regulatory best practice³

Frameworks for storage

Few countries currently provide a comprehensive regulatory framework for energy storage, with the majority of jurisdictions currently allowing storage to be defined as "generation" for the purposes of licensing and other regulatory requirements. However, some countries like the UK and Belgium have provided a more elaborate framework, mainly for revenue streams to help different storage technologies to develop, for example, capacity markets, ancillary services and other grid services.

Belgium has changed its Electricity law to have a specific definition of storage: 'Energy Storage' means, in the electricity system, the postponement of the final use of electricity until a time later than that at which the electricity was generated, or the conversion of electrical energy into a form of energy that can be stored, the storage of such energy, and the subsequent conversion of such energy into electrical energy or another energy.

'Electricity storage' means energy storage where electricity is taken from the grid via the same installation in order to be fully injected back into the grid later on, taking into account efficiency losses. Noteworthy is that the Electricity Law does not assimilate electricity storage to electricity generation, and consequently, a generation licence is not required.

A Capacity Remuneration Mechanism (CRM) was recently introduced in Belgium by the country's Transmission System Operator. Beginning in October 2021, the first CRM auction was organised to select capacity offers for the delivery period 2025-2026: a (priced) demand curve was set by Royal Decree, and prequalified capacity holders were able to submit bids to the market (for existing or new capacity). Some Battery Energy Storage Systems participated in the auction. Also, a market for ancillary services to maintain frequency and voltage at appropriate levels exists in Belgium, and Battery Energy Storage Systems can participate in it.

In the **United Kingdom**, there are at least six markets that batteries can operate in, covering wholesale, balancing, ancillary services, time-of-use, stabilisation and infrastructure. National Grid issues contracts for short-term generating capacity to cover sudden failures at power stations and other significant network calamities. These typically cover events lasting a few seconds or minutes in duration. As a result of these characteristics, the services are typically available to different classes of generators (or demand reduction technologies), each having different technical and regulatory requirements. Some of these markets include Short Term Operating Reserve (STOR), Demand Management (DM), Fast Reserve and Frequency Response. Energy storage is particularly suitable for both Fast Reserve and Frequency Response since both of these services require the rapid (second-by-second) provision of reliable power, which energy storage technologies are ideally placed to deliver.

The UK Government provides funding to install new renewable energy storage technologies in the country under the Longer Duration Energy Storage Demonstration (LODES) competition. As part of this initiative, the government has awarded £6.7m (\$9m) to 24 projects across the country under the LODES competition, which is worth £68m (\$91m) of capital funding in total.

Until recently, few countries had specific support systems for storage. Some countries, like the exemplary list below, provide support for (residential/small-scale) storage either as 'stand-alone' or combined with PV.

Since 2019, Flanders (Belgium) has granted rebates (premium) for the purchase of domestic batteries to encourage solar power self-consumption. The Flemish government has extended the premium until 2024 and released additional budgets. The rates are as follows: 0-4kWh: 225€/kWh, 4-6kWh: 187.5€/kWh, 6-9kWh: 150€/kWh, above 9kWh: no additional premium. Maximum premium per battery: 1725€, max 40% of invoice incl. VAT.

³ Clean energy for EU islands: Study on regulatory barriers and recommendation for clean energy transition on the islands Spain

In **Germany**, the KfW funding for renewable energies (Program 270) has been very successful. It is a low-interest promotional loan for (among others) the construction, expansion and acquisition of systems for the use of renewable energy, such as battery storage and photovoltaic systems. With the KfW 270 development loan, you can finance up to 100 per cent of the investment costs for an electricity storage system or the acquisition costs of a photovoltaic system in general.

In **Malta**, a subsidy is given for the installation of a new PV system with a battery energy storage system. It covers 80% of the eligible costs of the battery storage up to a maximum of €3,600 per system and €600/kWh.

In the **Azores region** of Portugal, a specific subsidy for projects on the production and storage of electricity from renewable sources covers 25% of the eligible costs, up to a maximum of €4,000 per system.

In **Ireland**, the Solar PV scheme provides subsidies for the purchase and installation of roof-mounted PV (up to 2kWp and with battery storage up to 4 kWp). The 2kWp of PV systems are subsidised (€900 per kWp). If the roof-mounted PV is combined with battery storage, then an additional grant for a further 2kWp is offered (€300 per kWp). Consequently, the maximum level of support reaches €2,400 (two Solar PV Schemes).

Austria has launched a rebate program for solar-plus-storage installations offering homeowners 250€/kW of solar rooftop generation capacity and €200/kWh of storage.

In **Italy**, rebates exist for two different kinds of projects – installations of PV systems linked to storage systems, and the deployment of standalone storage systems linked to existing solar arrays. The second category of rebates will cover 100% of project costs.

Actors involved

- **MITECO, Ministry for the Ecological Transition and the Demographic Challenge**
- National Commission for Markets and Competition (CNMC)
- Balearic Islands Regional Government (Govern de les Illes Balears)
- Red Eléctrica de España (REE)
- Local Distribution System Operators (DSOs) - Endesa

2.2 Develop a strategy on storage use for the islands to identify priority implementation

A comprehensive strategy for energy storage use in the Balearic Islands is important to identify priority areas for implementation and ensure the deployment of storage systems that best address the islands' unique energy challenges. The Balearic Islands should define their own storage priorities, based on the islands' energy needs, grid flexibility requirements, and economic optimisation.

The strategy should focus on determining the type of storage systems that best align with the islands' energy transition objectives. This includes evaluating the potential for behind-the-meter storage systems, distributed storage options such as electric vehicles (EVs), centralised storage facilities, or hybrid plants that combine renewable energy generation with integrated storage.

An example of this approach is the Menorca 2030 strategy, which prioritises storage as a component of its energy transition plan. The strategy focuses on using storage to optimise grid flexibility while ensuring economic efficiency. Similar strategic frameworks should be developed for the Balearic

Islands to establish clear guidelines for storage deployment across different scales and technologies.

The Menorca 2030 Strategy highlights energy storage as essential for achieving its renewable energy and decarbonisation goals. It proposes a total storage capacity of 400 MWh, including large-scale stationary batteries, urban-area storage, and electric vehicles integration. These systems aim to ensure grid reliability, reduce renewable energy restrictions, and enhance energy security in Menorca's isolated energy system. The strategy emphasises tailored storage solutions to address the island's challenges and support its target of 85% renewable electricity penetration by 2030.

Importantly, this strategy should fall under the autonomic prerogative of the Balearic Islands, allowing the regional government to tailor the approach to the specific needs and characteristics of the islands. The regional government should take the lead in developing the strategy in consultation with stakeholders, including Island Councils, DSOs, and community representatives.

Actors involved

- **Balearic Islands Regional Government (Govern de les Illes Balears)**
- **Island Councils (Consells Insulars)**
- **Local Distribution System Operators (DSOs) – Endesa**
- Community representatives
- RE Developers

2.3 Coordinate assessment of local needs and priorities to communicate to the regulator

To address the barrier of a lack of specific and simplified regulation for energy storage projects, we recommend coordinating a comprehensive assessment of local needs and priorities to effectively communicate them to the regulator. This coordinated effort could help expedite necessary regulatory changes, leveraging the active involvement of MITECO in this area.

The first step should include conducting detailed studies to understand the current and future energy demand of the Balearic Islands and to identify specific needs. Evaluating the feasibility and potential of various energy storage technologies is essential to ensure that the proposed solutions align with local energy requirements.

Collaboration with local stakeholders, such as municipalities, renewable energy developers, utility companies, and community groups, should be prioritised. This will help ensure that the perspectives and input from diverse stakeholders—including residential, commercial, and industrial energy users—are integrated into the assessment process.

Following this initial analysis, the development of a clear and evidence-based roadmap document will be important. This roadmap should outline local energy needs, priorities, and proposed regulatory adjustments to accommodate energy storage projects. It should also highlight the potential benefits of such regulatory changes.

The regional and local governments should lead the coordination effort, acting as the primary liaison between local stakeholders and the national regulator. They will play an important role in consolidating input and presenting a unified perspective to the regulator. The CNMC should then

analyse the feedback and recommendations provided by these local actors to inform regulatory decisions.

Renewable energy developers and energy storage technology providers should actively contribute to this process by highlighting integration challenges of energy storage within renewable projects. They can provide practical insights through case studies or pilot projects that demonstrate the viability of proposed solutions. Meanwhile, local energy communities should represent the interests of residential and community energy users.

Actors involved

- **Balearic Islands Regional Government (Govern de les Illes Balears)**
- **Island Councils (Consells Insulars)**
- CNMC (Comisión Nacional de los Mercados y la Competencia)
- RE Developers

Barrier 3. Collective self-consumption radius limited to 500m/2km, surplus compensation modality limited to 100kW

Barrier

The barrier related to collective self-consumption in the Balearic Islands stems from regulatory limitations set up in the Royal Decree 244/2019 on both the geographic radius for energy-sharing and the capacity for surplus compensation. Under current regulations, the self-consumption radius is restricted to 500 meters for land-based systems and extends to 2 km for rooftop systems. This means that consumers wishing to participate in collective self-consumption initiatives must be located within a two-kilometre radius, effectively limiting collaboration among local stakeholders. For islands like the Balearics, this restriction poses a significant challenge, particularly in rural areas where populations are dispersed, and the geographical conditions demand greater flexibility to enable collective self-consumption.

In addition to geographical constraints, the existing cap on generation capacity for self-consumption is another obstacle. The current framework limits self-consumption systems to 100 kW, and any electricity produced beyond this threshold must be fed into the grid and sold on the electricity market under the "compensación simplificada de excedentes" system. This restriction discourages larger-scale renewable energy projects designed to meet the needs of communities and restricts the ability to maximise the use of locally generated renewable energy.

For islands like the Balearics, the regulatory framework for self-consumption should account for the specific geographical size and energy needs by adapting the distance limitations for collective self-consumption and increasing flexibility in surplus energy use.

Recommendations:

3.1 Suggested regulatory changes to allow broader distance for collective self-consumption for islands

The recommendation to implement regulatory changes aims to consider the entire island as the boundary for collective self-consumption. The proposed legal framework would enable energy sharing and surplus compensation across all participants, irrespective of physical distance.

To support this regulatory shift, it would be beneficial to launch pilot projects to demonstrate the feasibility and advantages of extending the self-consumption radius. These projects could show benefits such as improved energy efficiency, cost savings, and enhanced grid stability, building a strong case for the adoption of the new framework.

At the national level, MITECO should update regulations to redefine the self-consumption radius specifically for islands. Concurrently, the regional government should advocate for the adoption of an island-wide framework, tailoring strategies to support collective self-consumption projects. This could include the introduction of financial or administrative incentives to encourage stakeholder participation and overcome initial barriers.

Municipal governments also have a role to play in enabling this transition. They should identify potential sites for renewable energy generation, streamline permitting processes for collective self-consumption projects, and actively engage the public to raise awareness of the benefits of this model.

Actors involved

- **MITECO, Ministry for the Ecological Transition and the Demographic Challenge**
- Balearic Islands Regional Government (Govern de les Illes Balears)
- Municipalities

3.2 Suggested regulatory changes to allow increased capacity for self-consumption

To address the limitations on self-consumption capacity, it is recommended to implement regulatory changes that increase or remove the current 100 kW limit for surplus energy compensation. This adjustment would enable larger renewable energy projects, such as community solar installations or cooperative wind farms, to actively participate in self-consumption schemes, thereby maximising their contribution to the local energy transition.

Additionally, the regulatory framework should redefine the approach to surplus energy compensation by treating the entire island as a unified zone. This would ensure that energy surpluses generated by larger installations could benefit all participants, regardless of their physical distance from the generation site.

To further enhance the potential of renewable energy development, it is also recommended to allow multiple installations within the island to aggregate their energy production for compensation purposes. This aggregation would provide flexibility and encourage the deployment of diverse renewable energy systems.

To address the limitations on self-consumption capacity, MITECO should take the lead in proposing and implementing regulatory changes to increase self-consumption capacity and redefine surplus energy compensation rules. The Regional Government would be responsible for adapting these regulations to the islands' specific needs and overseeing their implementation. Local municipalities and island councils would play a role in facilitating the deployment of renewable energy projects, streamlining administrative procedures, and ensuring alignment with territorial development plans. Renewal energy developers would have an active role in planning and implementing projects.

Actors involved

- **MITECO, Ministry for the Ecological Transition and the Demographic Challenge**
- Balearic Islands Regional Government (Govern de les Illes Balears)
- Municipalities
- RE Developers

Barrier 4. The implementation of the regulations for rooftop PV and PV on rural land is not aligned

Barrier

The barrier related to the misalignment in the implementation of regulations for rooftop PV systems and PV systems on rural land creates inconsistencies that also hinder the effective deployment of renewable energy projects in the Balearic Islands. Rooftop PV installations for self-consumption generally benefit from simplified and shorter procedures. For example, installations with an installed capacity of up to 100 kW and connected to the low-voltage distribution system typically do not require an Environmental Impact Assessment or a Declaration of public utility. These streamlined processes make rooftop PV systems an attractive option for small-scale self-consumption projects.

However, for PV projects on rural land, the regulatory framework is significantly more complex. In the Balearic Islands, small-scale projects that fall under medium or high-interest categories may benefit from fast-track procedures with minimal involvement from the environmental and agricultural departments. In contrast, projects requiring an area larger than 4 hectares must receive positive assessments from both departments, while those exceeding 10 hectares are subject to specific land-use permitting procedures. These additional layers of assessment and procedural requirements create significant delays and complexity, particularly for larger-scale projects on rural land.

By comparison, regions like the Canary Islands have introduced simplified permitting procedures for self-consumption systems, particularly for projects below 100 kW, which reduces administrative hurdles and accelerates project timelines. The lack of similar streamlined procedures in the Balearic Islands for rural land-based PV projects creates a regulatory misalignment that limits the scalability of renewable energy development.

Recommendations:

4.1 Raising awareness of the importance of harmonising standards across local governments

To ensure the effective deployment of rooftop PV and PV projects on rural land, raising awareness about the importance of harmonising standards across local governments is essential. At present, differences in criteria and procedures among municipalities create inconsistencies that hinder the development and scaling of renewable energy projects. Promoting the adoption of more homogeneous standards would streamline permitting and implementation processes, enabling smoother collaboration between municipal, regional, and national authorities.

Municipal governments should take an active role in adopting standardised criteria for PV implementation, aligning their processes with broader guidelines to ensure consistency across jurisdictions. FELIB, which encompasses all municipalities in the Balearic Islands, can serve as a central platform for facilitating discussions and coordination among local governments.

The regional government should lead the coordination efforts by developing and disseminating harmonised guidelines while organising awareness-raising workshops, events, and training sessions in the local language. By tailoring strategies and providing technical and financial support, the regional government can enable municipalities to effectively adopt and implement these standards.

National authorities, MITECO, should provide support by defining high-level standards and policies. These policies should align with national energy transition goals while offering financial and administrative incentives to encourage municipalities to adopt the proposed standards (IDAE).

Involving renewable energy developers and associations is also recommended for the success of this effort. These stakeholders can offer practical insights into challenges and barriers to regulatory alignment and share case studies or best practices that demonstrate the benefits of standardisation. The Institut Balear de l'Energia (IBE) should play a role in facilitating this process. IBE can serve as a technical advisor and coordinator, providing municipalities with expert guidance on standardisation efforts.

Actors involved

- **Balearic Islands Regional Government (Govern de les Illes Balears)**
- **Municipalities**
- **FELIB (Federació d'Entitats Locals de les Illes Balears)**
- MITECO, Ministry for the Ecological Transition and the Demographic Challenge
- Institut Balear de l'Energia (IBE)
- National Energy Agency (IDAE)

4.2 Aligning the local governments on the implementation of the regulation for rooftop PV and PV on rural land

The primary aim is to align local regulations with national renewable energy policies, reducing inconsistencies and streamlining the permitting and implementation processes. Thus, municipal

governments must adapt their regulatory practices to align with national guidelines, ensuring uniformity in their processes while simplifying local permitting procedures.

To achieve this, the establishment of a centralised regulatory authority or a unified digital platform is recommended. Such an authority or platform would serve as the primary body to oversee and coordinate regulations, ensuring that national policies are interpreted and implemented consistently across municipalities. It would act as a bridge between local governments, regional authorities, and national policymakers, fostering collaboration and ensuring alignment of goals.

This centralised entity would also facilitate the dissemination of guidelines, best practices, and updates to local governments, providing a standardised framework for both rooftop PV and rural land PV projects. A digital platform, in particular, could enable efficient communication, application tracking, and data sharing among stakeholders, while simplifying the administrative process for developers and municipalities.

The Municipalities should take an active role in adopting uniform regulations. FELIB can serve as a key coordination platform, facilitating communication and collaboration between municipalities across the region. At the same time, the Regional Government of the Balearic Islands should lead the initiative by developing harmonised guidelines, providing technical and financial support, and organising workshops and training sessions for municipal authorities to help them implement changes.

Actors involved

- **Balearic Islands Regional Government (Govern de les Illes Balears)**
- **Municipalities**
- **FELIB (Federació d'Entitats Locals de les Illes Balears)**

Barrier 5. The implementation of RE generation or EV charging infrastructure in the public road domain is not aligned

Barrier

The lack of clarity regarding the conditions under which permits for connecting infrastructure can be issued, as well as the ambiguity around which authority is responsible for granting such approvals, creates inefficiencies and delays in the deployment of these projects.

To address this issue, it is necessary to establish a clear and standardised regulatory framework that defines the specific conditions under which permits for connecting infrastructure can be granted. This framework should outline the technical, safety, and environmental criteria that must be met, ensuring consistency across jurisdictions. Additionally, it is essential to clearly designate the responsible authority for reviewing and approving these permits. This could involve a single coordinating body or a clear delineation of roles between local governments, regional authorities, and other stakeholders involved.

Recommendations:

5.1 Recommendation for clear guidelines to support RE generation and EV charging on public roads

To address the misalignment in the RE generation and EV charging infrastructure on public roads, it is recommended to establish clear and comprehensive guidelines. These guidelines should define the conditions for deploying such infrastructure, particularly focusing on clarifying who is responsible for the permits and the installation of cables and connection infrastructure.

A detailed analysis should be conducted to identify the specific authority responsible for EV charging infrastructure on public roads. This analysis should determine whether the responsibility lies with municipal governments, regional authorities, or national-level organisations, such as MITECO. This clarity will streamline the permitting and approval processes, avoiding delays and inefficiencies.

Islands Councils play a critical role as the local authorities managing public council roads. They should collaborate with regional governments to ensure that the guidelines are adapted to local contexts while remaining aligned with broader regional and national renewable energy policies. The regional government can serve as a coordinating body to support Islands Councils in implementing these regulations.

The national authority, MITECO, should take the lead in developing overarching policies and ensuring that the framework aligns with Spain's national energy transition goals. The national agency, IDAE, can also provide financial and technical support to facilitate the deployment of RE generation and EV charging infrastructure.

Utility companies and grid operators must also be involved. They are responsible for integrating the new infrastructure into the existing grid, ensuring its stability and reliability. Their role includes offering technical guidance on connection infrastructure and working with local and regional authorities to optimise deployment.

Private-sector actors, including EV charging network providers and renewable energy developers, should be consulted throughout the process. Their expertise can help identify practical challenges and opportunities. Examples from other countries—such as the Netherlands, where municipalities and private companies work in partnership to deploy public EV charging stations—can provide valuable lessons for collaboration between public and private stakeholders.

Dutch example: Public-Private collaboration for EV charging infrastructure

National Charging Infrastructure Knowledge Platform (NKL) ensures collaboration among stakeholders by providing guidelines, tools, and knowledge-sharing resources. Focuses on cost efficiency, interoperability, and standardisation of charging infrastructure.

National Charging Infrastructure Agenda (NAL) is a strategic initiative under the 2019 Climate Agreement that brings together the Dutch government, municipalities, private companies, and knowledge institutions. Focuses on data-driven planning and achieving wide-scale public charging coverage.

Municipal and regional concessions: Dutch municipalities collaborate within regional concessions to deploy public charging stations efficiently.

Public-Private partnerships: Municipalities provide locations and permits, while private companies handle installation, operation, and maintenance of charging stations.

Actors involved

- **MITECO, Ministry for the Ecological Transition and the Demographic Challenge**
- **National Energy Agency (IDAE)**
- Balearic Islands Regional Government (Govern de les Illes Balears)
- **Islands Councils**
- Local Distribution System Operators (DSOs) – Endesa
- Red Eléctrica de España (REE)
- EV Charging Network Providers

5.2 Prioritise strategic locations for deployment

To ensure the effective deployment of RE generation and EV charging infrastructure, prioritising strategic locations is essential. This can be achieved by conducting a detailed spatial analysis to identify key areas for deployment. Such an analysis should evaluate factors such as demand patterns, road traffic flows, and grid capacity to ensure that the selected locations maximise both accessibility and efficiency.

For renewable energy generation, strategic placement of solar canopies over parking spaces, for example, represents an opportunity to utilise existing infrastructure for dual purposes. These installations not only generate clean energy but also provide shaded parking, making them highly practical and visible examples of renewable energy integration. Similarly, for EV charging infrastructure, analysing road traffic patterns and user behaviour can help prioritise high-demand areas such as urban centres, major highways, and transit hubs.

In addition to identifying strategic locations, the development of specific spatial planning guidelines is important. These guidelines would provide a framework for municipal and regional governments to integrate RE and EV infrastructure into local planning processes effectively. They should incorporate considerations such as land availability, environmental impact, and proximity to the grid.

Local governments, in partnership with regional authorities, should take the lead in conducting spatial analyses and developing planning guidelines. National authorities can provide funding and technical support to ensure the successful execution of these plans. Additionally, utility companies and grid operators should contribute data and insights regarding grid capacity and connection feasibility, while private sector actors, such as EV charging providers and renewable energy developers, can help identify high-priority locations based on market trends and user needs.

Actors involved

- **Balearic Islands Regional Government (Govern de les Illes Balears)**
- **Municipalities**
- National Energy Agency (IDAE)
- Local Distribution System Operators (DSOs) – Endesa
- Red Eléctrica de España (REE)
- EV Charging Providers

Barrier 6. Discretisation of the temporal capacity access to the grid

Barrier

Under the current system, grid access permits assume that the maximum allowed capacity can be provided to the grid 24/7. However, in reality, peak grid usage often occurs during just 1 or 2 hours a day, leaving significant untapped capacity during off-peak hours. This creates a mismatch between actual grid utilisation and permitted capacity, resulting in underutilisation of grid resources.

To address this issue, the grid access framework should be revised to implement discrete periods of access based on the nature of the connection and the varying capacity needs throughout the day. By allowing maximum grid capacity during peak demand hours and reducing it during off-peak periods, grid operators could better optimise the use of available infrastructure. This dynamic approach would ensure that renewable energy producers can contribute more energy during periods of low grid usage, thus maximising the grid's efficiency and supporting the integration of variable renewable energy sources.

Such a modification would not only increase the flexibility and reliability of the grid but also enable more effective management of renewable energy generation. It would encourage the development of renewable energy projects that are capable of adjusting their output to align with grid needs.

Key stakeholders in this process include grid operators, who must take the lead in analysing grid usage patterns and defining the time periods for maximum and reduced capacity. Regulators and policymakers should work closely with grid operators to establish a clear framework that ensures fair and transparent access to the grid while incentivising renewable energy producers to adapt to this new model.

Recommendations:

6.1 Build consensus and collaboration with local energy stakeholders

Building consensus and collaboration with local energy stakeholders, although of secondary priority, remains an important recommendation for addressing grid constraints and optimising the integration of renewable energy.

A key step is to facilitate coordination among grid operators, renewable energy developers, policymakers, and other stakeholders. Establishing a dedicated forum where these groups can discuss and address issues related to temporal capacity access to the grid would provide a platform for open dialogue and joint problem-solving. This forum can also serve as a space to explore and test alternative access models that allow better use of grid infrastructure, such as the introduction of discretised capacity access during peak and off-peak periods.

In addition, innovative pilot projects can play a significant role in demonstrating the feasibility of new approaches. For example, the regulatory sandbox proposed by Endesa and NEMO on the island of Menorca aims to test options for demand response and local flexibility markets. Such initiatives provide a controlled environment to evaluate innovative solutions, enabling stakeholders to identify effective practices.

It is important to note that achieving progress in this area requires first checking the political will to support changes in legislation or regulation. Engaging political stakeholders early in the process ensures that proposed solutions have the necessary backing to advance from pilot stages to full-scale implementation. This includes engaging with local governments, regulatory bodies, and national authorities to build support for initiatives that address grid constraints and enhance renewable energy integration.

The major stakeholders involved include grid operators, Red Eléctrica de España (REE), and regional DSOs, who manage grid capacity and stability, as well as renewable energy developers who align their projects with grid requirements. MITECO and the CNMC ensure the legal and regulatory framework supports innovative solutions. Local governments play a key role in aligning grid strategies with regional needs, while private-sector technology providers and research institutions contribute expertise and tools to optimise grid infrastructure.

Actors involved

- **CNMC - Comisión Nacional de los Mercados y la Competencia)**
- **Red Eléctrica de España – REE**
- MITECO, Ministry for the Ecological Transition and the Demographic Challenge
- Local Distribution System Operators (DSOs) – Endesa
- Balearic Islands Regional Government (Govern de les Illes Balears)

6.2 Develop a flexible grid capacity management system

Developing a flexible grid capacity management system is essential to optimise the use of grid infrastructure and ensure the efficient integration of renewable energy projects. The current rigid, discrete temporal capacity allocations for grid access limit the ability to adapt to real-time grid demand, generation, and availability. A dynamic system, by contrast, would enable more efficient utilisation of the grid, allowing greater flexibility for renewable energy projects and improved overall grid stability.

The proposed approach involves replacing the existing rigid allocation system with a dynamic grid capacity management system that adjusts access based on real-time conditions. This can be achieved by leveraging smart grid technologies and advanced metering infrastructure to monitor and manage grid capacity dynamically. These technologies would provide real-time data on grid demand, generation, and availability, enabling operators to make informed decisions and optimise grid access for all stakeholders.

One of the key components of this system is the introduction of time-of-use pricing for capacity. By incentivising grid access during off-peak periods, time-of-use pricing encourages energy producers to adjust their operations based on grid demand patterns. This not only helps balance grid usage but also ensures that renewable energy producers can maximise their contribution without overloading the grid during peak periods.

The introduction of flexible or dynamic connections further supports this approach. Such permits would provide renewable energy developers with the ability to connect to the grid under conditions that reflect real-time grid capacity, ensuring optimal utilisation of infrastructure and facilitating the integration of more renewable energy projects.

Notably, CNMC has already initiated efforts in this direction. Building on this work, further collaboration with grid operators Red Eléctrica de España (REE) and regional DSOs, renewable energy developers, and MITECO ensures alignment with national energy transition policies.

Actors involved

- **CNMC - Comisión Nacional de los Mercados y la Competencia)**
- **Red Eléctrica de España – REE**
- Local Distribution System Operators (DSOs) – Endesa
- MITECO, Ministry for the Ecological Transition and the Demographic Challenge
- Renewable Energy Developers

5. Conclusion

The Balearic Islands face a series of well-defined regulatory and administrative challenges that impede the efficient integration of renewable energy and the transition to a sustainable energy system. The six key barriers identified in this report—ranging from inefficiencies in permitting processes and lack of tailored regulations for energy storage, to rigid grid access policies and inconsistent local implementation of renewable energy guidelines—must be systematically addressed.

To overcome these challenges, the report emphasises the importance of concrete actions such as streamlining permitting processes under Royal Decree-Law 23/2020, implementing flexible grid capacity systems, and aligning local regulations for rooftop and rural photovoltaic installations. Tailored strategies for energy storage systems, including specific regulatory frameworks and island-specific deployment priorities, will be important for ensuring energy security. Furthermore, establishing clear and consistent guidelines for the deployment of renewable energy and EV infrastructure on public roads will reduce delays and inefficiencies in project implementation.

Collaboration among key stakeholders is essential for successfully implementing these solutions. The report highlights several examples of collaboration among stakeholders, e.g. to streamline permitting processes under Royal Decree-Law 23/2020, the report proposes a collaborative effort between MITECO, the Balearic Islands Regional Government, and municipalities to develop a unified digital platform serving as a "one-stop shop" for administrative procedures. Another example is the establishment of a regulatory framework for energy storage systems. The report calls for MITECO, CNMC, and the regional government to work together with Island Councils and DSOs like Endesa to create specific rules for energy storage. The deployment of renewable energy and EV charging infrastructure on public roads also demonstrates that municipalities, as managers of public road domains, must coordinate closely with the regional government, which would act as a central coordinating body, while MITECO provides guidance and technical support. Collaboration is also important when creating a dedicated forum where key players, including grid operators (REE and Endesa), renewable energy developers, MITECO, and CNMC, can jointly develop a flexible grid capacity management system.

Annex 1 Stakeholders and their roles in overcoming the barriers

| Barrier 1 | Recommendation | Stakholder | | | | | |
|--|--|------------|------|------------------------------|----------------|-----------------|-----------------------------|
| | | MITECO | CNMC | Balearic Regional Government | Municipalities | Island Councils | Renewable Energy Developers |
| Complex administrative procedures for permitting | Streamline administrative procedures in Royal Decree-Law | x | x | x | x | | |
| | Implement a unified digital and publicly accessible platform as a one-stop shop | x | | x | x | | |
| | Propose bylaw to identify specific steps and timelines for permitting procedures | x | x | x | | x | |
| | Organize public hearings to collect feedback from stakeholders | x | | x | | x | x |

| Barrier 2 | Recommendation | Stakholder | | | | | | | |
|--|--|------------|------|------------------------------|-----------------|-----|--------|---------------------------|-----------------------------|
| | | MITECO | CNMC | Balearic Regional Government | Island Councils | REE | Endesa | Community representatives | Renewable Energy developers |
| Lack of specific and simplified regulation for the energy storage projects | Establish specific regulations for storage systems that allow them to charge during off-peak hours without being classified as separate plants | x | x | x | | x | x | | |
| | Develop a strategy for storage use for islands to identify priority implementation | | | x | x | | x | x | x |
| | Coordinate assessment of local needs and priorities to communicate to the regulator | | x | x | x | | | | x |

| Barrier 3 | Recommendation | Stakholder | | | |
|---|--|------------|------------------------------|----------------|-----------------------------|
| | | MITECO | Balearic Regional Government | Municipalities | Renewable Energy Developers |
| Collective self-consumption radius limited to 500m/2km, surplus compensation modality is limited to 100kW | Suggest regulatory changes to allow broader distance for collective self-consumption for islands | x | x | x | |
| | Suggest regulatory changes to allow increased capacity for self-consumption | x | x | x | x |

| Barrier 4 | Recommendation | Stakholder | | | | | |
|---|---|------------|------------------------------|----------------|-------|-----|------|
| | | MITECO | Balearic Regional Government | Municipalities | FELUB | IBE | IDAE |
| The implementation of the regulation for rooftop PV and PV on rural land is not aligned | Raise awareness of the importance of harmonizing standards across local governments | x | x | x | x | x | x |
| | Align local governments on the implementation of the regulation for rooftop PV and PV on rural land | | x | x | x | | |

| Barrier 5 | Recommendation | Stakholder | | | | | | | |
|--|---|------------|------|------------------------------|----------------|--------|-----|--------------|-----------------|
| | | MITECO | IDAE | Balearic Regional Government | Municipalities | Endesa | REE | EV providers | Island Councils |
| The implementation of RE generation or EV charging infrastructure on the public road domain is not aligned | Provide clear guidelines to support RE generation and EV charging on public roads | x | x | x | x | x | x | x | x |
| | Prioritize strategic locations for deployment | | x | x | x | x | x | x | |

| Barrier 6 | Recommendation | Stakholder | | | | | | |
|--|--|------------|------|------------------------------|--------|-----|-----------------------------|--|
| | | MITECO | CNMC | Balearic Regional Government | Endesa | REE | Renewable Energy Developers | |
| Discretisation of the temporal capacity access to the grid | Build consensus and collaboration with local energy stakeholders | x | x | x | x | x | | |
| | Develop a flexible grid capacity management system | x | x | | x | x | x | |

Annex 2 Analysis of the survey results

The survey for Legal and Regulatory Barriers for clean energy for the Balearic Islands has been sent to 94 contacts, representing 56 stakeholders from national and local governments, academia and energy associations, private companies and NGOs.

In addition, the survey was publicly accessible and could be forwarded to more contacts or organisations by these local stakeholders. The survey has been completed by 10 responders in March 2025.

Survey results

Barrier 1: Administrative procedures set out in Royal Decree 23/2020

The survey has asked the respondents to give their opinion on the following statements regarding the regulatory barrier in respect of the administrative procedures set out in Royal Decree 23/2020.

The survey used a Likert scale, and the results are presented in numerical form, showing the average based on all responses. The numerical representation is from 1 to 5, with 1 representing strong disagreement and 5 representing strong agreement.

| Statement | Rating |
|--|--------|
| The current administrative procedures for renewable energy projects established under Royal Decree 23/2020 are clear and efficient | 2,3 |

| Statement | Rating |
|--|--------|
| Providing a step-by-step guideline for administrative procedures under Royal Decree 23/2020 will help reduce delays in renewable energy project approvals and create a more efficient permitting process | 3,6 |

| Statement | Rating |
|--|--------|
| The node capacity concurrency process, which allows for simultaneous evaluation of multiple applications, is a more efficient approach than a 'first in, first out' system | 4,0 |

| Statement | Rating |
|---|--------|
| A unified, digital, publicly accessible platform (one-stop shop) would simplify the permitting process under Royal Decree 23/2020 | 4,2 |

| Statement | Rating |
|--|--------|
| Public hearings to gather stakeholder feedback are essential to receive feedback on the challenges in the implementation of the current procedures | 4,1 |

| Statement | Rating |
|--|--------|
| A bylaw (secondary legislation) will help further identify specific steps and a timeline for permitting procedures | 4,0 |

The results indicate a general lack of confidence in the current administrative framework. The statement that the procedures established under Royal Decree 23/2020 are clear and efficient received a low average rating of 2.3, suggesting that stakeholders consider the existing permitting processes to be overly complex or unclear.

There was strong support for the development of supportive tools and procedural improvements. The proposal to provide a step-by-step guideline for navigating administrative procedures under the Decree received an average rating of 3.6. While not unanimously endorsed, this moderately high score indicates that such practical guidance is seen as a valuable measure.

A more innovative aspect of the current system, the node capacity concurrency mechanism, which allows simultaneous evaluation of multiple grid connection applications, was viewed more favourably. This approach received a rating of 4.0, indicating broad stakeholder support for moving away from the traditional ‘first in, first out’ model.

Digitalisation was also strongly endorsed. The idea of introducing a unified, digital, publicly accessible “one-stop shop” platform to centralise and simplify permitting procedures received a rating of 4.2, confirming that digitised platforms could improve process efficiency and accessibility.

Respondents also emphasised the value of participatory approaches. The inclusion of public hearings to gather feedback on challenges in the implementation of current procedures was rated 4.1, highlighting the importance stakeholders place on consultation to inform continuous improvement of administrative processes.

Lastly, the suggestion that a bylaw (secondary legislation) would assist in clarifying the specific steps and timelines associated with permitting procedures under Royal Decree 23/2020 also received a high score of 4.0, reflecting that a procedural detail and legal clarity would help the implementation.

Barrier 2: Energy storage

The survey has asked the respondents to give their opinion on the following statements regarding the regulatory barrier in respect of energy storage.

The survey used a Likert scale, and the results are presented in numerical form, showing the average based on all responses. The numerical representation is from 1 to 5, with 1 representing strong disagreement and 5 representing strong agreement.

| Statement | Rating |
|---|--------|
| The absence of tailored regulations for energy storage projects limits renewable energy integration in the Balearic Islands | 4,1 |

| Statement | Rating |
|--|--------|
| A specific regulation that will allow energy storage systems to charge during off-peak hours would improve grid flexibility and efficiency | 3,8 |

| Statement | Rating |
|---|--------|
| Assessment of local needs and priorities to communicate to the regulator could help expedite necessary regulatory changes | 4,0 |

| Statement | Rating |
|---|--------|
| Strategies which are tailored to the specific needs of the islands and identify priority implementation for deploying energy storage solutions are necessary for a successful energy transition | 4,7 |

Respondents generally agreed that the lack of tailored regulations for energy storage is a significant barrier to renewable energy integration, with this statement receiving a high average rating of 4.1. This indicates a widespread view that the regulatory framework remains underdeveloped and fails to adequately support the deployment of storage technologies.

The idea of introducing specific rules to allow energy storage systems to charge during off-peak hours, thereby improving grid flexibility and operational efficiency, also received strong support, with an average score of 3.8. Although slightly lower than other items, this rating still reflects a broadly positive attitude toward regulatory measures that enable more dynamic use of the electricity network and incentivise efficient storage practices.

The statement suggesting that a targeted assessment of local needs and priorities would help carry recommendations to the regulator scored 4.0, indicating recognition among respondents of the importance of bottom-up and island-specific feedback to inform policy development and accelerate regulatory reform.

The strongest support was registered for the need to develop strategies tailored to the unique characteristics of the Balearic Islands, with a view to identifying priority areas for energy storage deployment. This item received the highest score in the set, i.e. 4.7, highlighting a clear call for place-based approaches to storage planning.

Barrier 3 Collective self-consumption

The survey has asked the respondents to give their opinion on the following statements regarding the regulatory barrier in respect of collective self-consumption.

The survey used a Likert scale, and the results are presented in numerical form, showing the average based on all responses. The numerical representation ranges from 1 to 5, with 1 indicating strong disagreement and 5 indicating strong agreement.

| Statement | Rating |
|--|--------|
| The current 500m/2km radius for collective self-consumption is sufficient for the Balearic Islands | 2,0 |

| Statement | Rating |
|--|--------|
| Expanding the radius for collective self-consumption would increase participation and energy-sharing opportunities | 4,4 |

| Statement | Rating |
|--|--------|
| The 100kW limit for surplus energy compensation discourages larger renewable energy projects | 4,2 |

| Statement | Rating |
|---|--------|
| Increasing the capacity limit for collective self-consumption would better support community energy initiatives | 4,5 |

| Statement | Rating |
|---|--------|
| Treating the entire island as a unified zone for collective self-consumption would enhance energy-sharing potential | 4,2 |

The results reveal a clear dissatisfaction with the existing regulatory framework. The statement that the current 500-metre or 2-kilometre radius for collective self-consumption is sufficient received an average rating of 2.0, indicating general disagreement. This suggests that stakeholders view the existing spatial restrictions as inadequate for enabling effective energy-sharing arrangements across the islands.

In contrast, the statement that expanding this radius would increase participation and energy-sharing opportunities received a strong average rating of 4.4. This shows support for more flexible distance limitations.

Further concern was raised regarding the current capacity limits. The statement that the 100 kW threshold for surplus energy compensation discourages larger renewable energy projects scored an average of 4.2. This indicates that the existing cap is perceived as a barrier to scaling up renewable installations, thus limiting their potential contribution to energy transition targets.

There is also strong support for increasing the capacity limit for collective self-consumption. This statement received the highest average score of 4.5, signalling near-unanimous agreement that greater capacity allowances would better support community-led initiatives and facilitate larger, more impactful energy projects.

Finally, respondents agreed (average score of 4.2) that treating the entire island as a unified zone for collective self-consumption would enhance energy-sharing potential. This reflects a growing interest in models that allow for greater geographical flexibility.

Barrier 4: Rooftop PV and PV on rural land

The survey has asked the respondents to give their opinion on the following statements regarding the regulatory barrier in respect of rooftop PV and PV on rural land.

The survey used a Likert scale, and the results are presented in numerical form, showing the average based on all responses. The numerical representation ranges from 1 to 5, with 1 indicating strong disagreement and 5 indicating strong agreement.

| Statement | Rating |
|---|--------|
| The permitting processes for rooftop PV installations and PV on rural land are clear and accessible | 2,2 |

| Statement | Rating |
|---|--------|
| Local actors should adopt standardised criteria for PV implementation | 4,5 |

If the answer is strongly agree/agree



| Statement | Rating |
|---|--------|
| Standardisation should be done with an implementation guidance document | 4,2 |

| Statement | Rating |
|---|--------|
| A specific plan delimiting the zones where PV projects should be developed will simplify or promote renewable energy deployment | 4,4 |

If the answer is strongly agree/agree



| Statement | Rating |
|---|--------|
| The municipalities, regional governments, and civil society need to clarify where PV projects should be implemented | 4,0 |

| Statement | Rating |
|---|--------|
| Designating specific "renewables acceleration areas," as outlined in the Directive (EU) 2023/2413, will help streamline project development and reduce administrative bottlenecks | 4,2 |

If the answer is strongly agree/agree



| Statement | Rating |
|--|--------|
| Insular Councils have the competence to designate specific "renewables acceleration areas" | 3,8 |

The statement that permitting processes for rooftop PV and PV on rural land are clear and accessible received a low average rating of 2.2, indicating widespread dissatisfaction with the current administrative landscape. This suggests that permitting procedures are perceived as complex or opaque, potentially deterring project development.

In contrast, there was strong agreement on the need for local actors to adopt standardised criteria for PV implementation, which received the highest rating of 4.5. This signals support for harmonised procedures at the local level. Among those in favour, respondents also showed strong agreement (4.2) that standardisation efforts should be accompanied by a clear implementation guidance document, reinforcing the importance of practical tools.

Support was also high (4.4) for the idea that a specific zoning plan for PV deployment would simplify procedures. Respondents recognised that a spatial planning approach could help streamline approvals and create greater investor confidence. In line with this, the need for clarification by municipalities, regional governments, and civil society on where PV projects should be implemented also received strong support, with a score of 4.0.

The introduction of "renewables acceleration areas", as provided under Directive (EU) 2023/2413, was also well received (average rating 4.2). Stakeholders clearly view these designated zones as a promising policy tool to facilitate project development. Agreement was somewhat lower (3.8) on whether Insular Councils specifically should have the competence to designate these areas.

Barrier 5: Renewable energy (RE) generation and EV infrastructure on public roads

The survey has asked the respondents to give their opinion on the following statements regarding the regulatory barrier in respect of RE generation and EV infrastructure on public roads.

The survey used a Likert scale, and the results are presented in numerical form, showing the average based on all responses. The numerical representation ranges from 1 to 5, with 1 indicating strong disagreement and 5 indicating strong agreement.

| Statement | Rating |
|---|--------|
| The lack of clarity regarding the conditions for deploying EV infrastructure on public roads creates delays | 4,1 |

| Statement | Rating |
|--|--------|
| Clear and consistent guidelines are needed to support the installation of EV charging stations on public roads | 4,4 |

| Statement | Rating |
|-----------|--------|
|-----------|--------|

| | |
|--|-----|
| Strategic placement of EV charging infrastructure would improve accessibility and efficiency | 4,6 |
|--|-----|

| Statement | Rating |
|--|--------|
| Collaboration between public authorities and private companies is essential for accelerating EV charging infrastructure deployment | 4,7 |

Respondents expressed significant concern about the lack of clarity surrounding the conditions for deploying EV infrastructure on public roads, assigning this issue a high average rating of 4.1. This suggests that unclear or inconsistent permitting rules are widely seen as a source of uncertainty for both public and private actors seeking to install charging stations.

There is an overwhelming support for the development of clear and consistent guidelines to support EV infrastructure deployment, as indicated by an average rating of 4.4. Stakeholders appear to recognise that a unified regulatory approach would eliminate bottlenecks and reduce administrative issues.

The survey also reveals that strategic placement of EV charging infrastructure is viewed as key to improving accessibility and grid efficiency. With a rating of 4.6, this was one of the highest-scoring statements, indicating that respondents not only support scaling up infrastructure but also stress the importance of optimal location planning.

Finally, the highest level of agreement (4.7) was recorded for the statement emphasising the importance of collaboration between public authorities and private companies. This reflects a strong belief that partnerships across sectors will be essential to overcoming existing challenges.

Barrier 6: Grid management

The survey has asked the respondents to give their opinion on the following statements regarding the regulatory barrier in respect of grid management.

The survey used a Likert scale, and the results are presented in numerical form, showing the average based on all responses. The numerical representation ranges from 1 to 5, with 1 indicating strong disagreement and 5 indicating strong agreement.

| Statement | Rating |
|--|--------|
| Rigid grid capacity management policies prevent optimal integration of renewable energy sources. | 4,7 |

| Statement | Rating |
|---|--------|
| A flexible grid capacity management system would allow better use of grid infrastructure during off-peak hours. | 4,8 |

| Statement | Rating |
|--|--------|
| Collaboration among grid operators, energy developers, policymakers and dedicated forums is essential for optimising grid capacity | 4,9 |

| Statement | Rating |
|---|--------|
| Innovative pilot projects (e.g., regulatory sandboxes) are necessary to test new grid capacity management solutions | 4,7 |

Respondents strongly agreed that rigid grid capacity management policies currently prevent the optimal integration of renewable energy sources, assigning this statement a significantly high average rating of 4.7. This indicates that existing regulatory frameworks are seen as a key obstacle to fully exploiting renewable energy potential.

Even higher agreement was recorded for the statement that a more flexible grid capacity management system would enable better use of infrastructure during off-peak hours, which received an average rating of 4.8. Stakeholders clearly see flexibility not only in technical terms but also in regulatory planning as essential for increasing grid utilisation.

The highest level of support in this section was given to the view that collaboration between grid operators, energy developers, and policymakers is important, with a near-unanimous rating of 4.9. This suggests that stakeholders emphasise the need for structured dialogue and coordinated action through dedicated forums or platforms to tackle capacity constraints and plan for future system needs jointly.

Finally, respondents also showed strong support (4.7) for the use of innovative pilot projects and regulatory sandboxes to test new grid management solutions.