European Commission

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

Clean energy for EU islands

Study on regulatory barriers and recommendations for clean energy transition on the islands -Spain

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Readers' Guide

This Study on legal and regulatory barriers for the clean energy transition on Spanish islands is the result of a consultative process. Based on an inventory of the current legislation and information gathered via surveys and interviews, the Clean energy for EU islands secretariat has brought together relevant stakeholders to identify barriers to the clean energy transition on Spanish islands, and formulated recommendations to overcome them.
After an introduction and explanation of the methodology, the first Chapter of this Study provides an overview of the existing policy and legislation for clean energy on Spanish islands.
The second Chapter contains the identified legal and regulatory barriers, based on the survey and the interviews (see Annex 1 for a detailed assessment), and the recommendations, based on the Focus Group Meetings and the National Stakeholder Meetings (see Annex 3 for more information).

Introduction

Small size, remoteness and climatic vulnerability lead to an unfavourable geographic condition and make islands susceptible to external factors. While islands are particularly vulnerable to climate change, they enjoy a naturally high potential of renewable energy sources to harness. Many islands have abundant renewable energy potential, which can be tapped to lead decarbonisation. While access to reliable, clean and competitive sources of energy remains a main concern of island communities in the EU, islands present unique opportunities to become leaders in clean energy transition.

While it is often technically and financially possible to develop renewable energy projects on islands, EU, national, regional and local legal frameworks are not always fit-for purpose. This study is the second deliverable of the Task Force 2 – Think Tank on legislation and regulation for islands of the Clean energy for EU islands secretariat. 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.

This **country study** identifies existing and emerging legal, regulatory and policy frameworks that foster the development of local decarbonised energy systems on Spanish islands. It aims to provide insight into whether the legislation supports or poses obstacles for islands to develop and implement their plans. It processes gathered inputs from literature review, surveys, interviews, and workshops and highlights best practices, inspiring examples, failures and their lessons learned.

Methodological approach

Different methods of information collection were used by the Think Tank to complete the information needs for the detailed inventory:

- Desk research completing the information for the selected Member States was conducted.
- In-depth surveys were created and sent to the consortium's network. Thirty-seven stakeholders were engaged, and the response rate was 30%. (See Annex 1 for more details)
- Information templates were sent to regulators, national authorities and relevant stakeholders.
- Nine semi-structured open-ended interviews with national and regional legislators, regulators and academic institutions, and relevant actors (local DSOs, citizens, authorities, businesses, and communities) of local energy initiatives were organised. These helped to clarify the rationale behind and interpretation of existing legal developments. In these interviews, we identified the key actions drivers, opportunities and obstacles for the implementation of the action plans they encountered, including possible ways to address or overcome them. (See Annex 1 for more details)
- Two online Focus-Group discussions where held; one to discuss the identified barriers and one to discuss the formulated recommendations to overcome the barriers (see Annex 3 for more details).
- A National Stakeholder Meeting was held in Gran Canaria on 21 June 2022 (See Annex 3 for more details)
- Experiences from local stakeholders, available through one-on-one contacts, articles in local newspapers or as part of communication provided by (local) advocacy groups were

integrated. The contacted actors included those that were identified during the project work from Phase I of the Secretariat and those related to the project experiences that have arisen from the technical assistance in Task Force 1.

Policy and Legislation for clean energy on Spanish Islands

Introduction to the Spanish Energy Market – Relevant Actors

Throughout the study several key stakeholders in the Spanish Energy Market will be referred to. Therefore hereunder a short overview of these actors and their role is given.

The Iberian Electricity Market – MIBEL[1] resulted from the cooperation between the Portuguese and Spanish Governments with the aim of promoting the integration of both countries' electrical systems. This market is supervised by the CNMC[2] — National Commission of Market and Competition, the Spanish independent competition regulator responsible for enforcing competition law.

Different players are active on this market. There are players that produce the energy (Producers) and others that consume energy (Consumers). Between production and consumption there are several stages, such as: the control of production and the establishment of prices (Regulators and Market Operators), the transport of energy (Transmission Operators), the distribution of energy (Distributors), and the sale of energy to the final customer (Marketers or Utilities).

OMIE[3] is the nominated electricity market operator (NEMO) for managing the Iberian Peninsula's day-ahead and intraday electricity markets.

Red Eléctrica de España (REE)[4] is the company dedicated to the transmission of electricity and the operation of the transmission electrical system (the national grid). Transport networks, as a rule, have a voltage higher than 220 kV ("High voltage"). The legislation establishes a single carrier, which is REE.

Distribution system operators have the function of distributing energy, which means that they are responsible for expanding, maintaining and operating the distribution networks, designed to transfer the energy to the final consumers. Endesa S.A.[5] is a Spanish-based multinational electric utility company, the largest in the country. This is the main distribution system operator on the islands.

The Ministry for the Ecological Transition and the Demographic Challenge (MITECO)[6] is a Department of the General Administration of the State responsible for the proposal and execution of the National Government's policy in the fight against climate change, prevention of pollution, protection of natural heritage, biodiversity, forests, the sea, water and energy for the transition to a more ecological productive and social model, as well as the preparation and development of the Government's policy in the face of the demographic challenge and territorial depopulation.

The Institute for Energy Diversification and Savings (IDAE) is a body attached to the MITECO, through the Secretary of State for Energy, to whom IDAE reports organically. It works in the areas of energy efficiency, renewable energy sources and transport. It advises the ministry on the implementation of energy policies.

[1] https://www.mibel.com/en/home_en/
[2] https://www.cnmc.es/
[3] https://www.omie.es/en
[4] https://www.ree.es/en
[5] https://www.endesa.com/
[6] https://www.miteco.gob.es/

Instituto Tecnológico de Canarias (ITC) is one of the largest technical institutes on the EU islands, with 200 people on board of which 40 dealing with renewable energy only. ITC works and collaborates (as consultants) with all local governments (local councils, responsible for SECAPs for Convent of Mayors) on the Canary Islands, the regional government and the national government. ITC is focused on strategic and technological aspects. They are responsible for preparing energy plans together with regional governments, in charge of statistics on the energy on Canary Islands and work on defining and implementation projects together with local governments[7].

The Balearic Energy Institute is the public energy company of the Balearic Islands and its mission is to promote the energy transition and the democratisation of energy. Its main actions focus on the promotion of a new energy model through the development of shared self-consumption facilities and the socialisation of renewable energy projects, the promotion of actions to reduce the electricity bill of the Government of the Balearic Islands, mainly through the self-consumption of electricity, and the stimulation of electric mobility.

Spanish islands and their governance

Spain has a total of 48 islands, 16 of which are inhabited[8]. There are two major archipelagos: the Balearic Islands with the islands of Ibiza, Formentera, Mallorca, and Menorca; and the Canary Islands with the islands of Fuerteventura, La Gomera, Gran Canaria, El Hierro, Lanzarote, La Palma, and Tenerife. The four Balearic islands cover a total of 4,992km^2. The largest island is Mallorca (3,640 km^2). The Spanish islands around peninsular Spain tend to be smaller in size (<10 km^2). The Canary Islands together cover 7,493 km^2, which corresponds to 1.9% of the total area of Spain. Tenerife is the largest island in the Canary Islands archipelago (2,034 km^2). Of the total population of Spain, 7% lives on the Balearic and Canary islands[9]. This corresponds to 3,447,717 people[10].

From the point of view of electricity regulation, Ceuta and Melilla, the two autonomous cities bordering Morocco, are considered as electrical islands as well. Therefore, the Canary Islands, Balearic Islands, Ceuta, and Melilla are defined as Non-Peninsular Territories of Spain.

The Autonomous Community of the Canary Islands has its own Parliament and President. The Canary Islands are regarded as outermost regions[11]. The islands have 14 seats in the Spanish Senate. The autonomous island status and their own tax system are both mentioned in the Spanish Constitution. Furthermore, there is special legislation set up for the autonomous regions.

General Policy

The Integrated National Energy and Climate Plan for Spain for the period 2021-2030 aims to increase the share of renewable energy in final energy consumption of electricity to 74% in 2030. In the heating and cooling sector, the target is to increase the share of renewable heating and cooling (RES-H&C) to 31% by 2030. The Spanish target for 2030 is to reach a 28% share of renewables in the final energy consumption of the transport sector.

[7] https://www.itccanarias.org/web/images/areas/ITC_Canary_Islands_Renewable_Energies_Dpt_2021.pdf
[8] Ministerio de Politica Territorial: https://www.mptfp.gob.es/dam/es/portal/politica-territorial/local/sistema_de_informacion_local_-SIL-/registro_eell/estudios/estudios_generales/parrafo/01/LASISLASENESPA-A.pdf
[9] National Statistics Institute INE: https://www.ine.es/jaxiT3/Tabla.htm?t=2910&L=0
[10] Eurostat 2019: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Demographic_balance,_2019_(thousands).png
[11] https://ec.europa.eu/regional_policy/en/policy/themes/outermost-regions/

Strategic energy transition planning on the Spanish islands has its legal foundation in Article 10 of Law 24/2013 which provides special regulations for the "Insular and Extra-peninsular Electricity Systems". This term refers to four territories composed of 10 subsystems, in terms of electrical power generation: (1) and (2) the cities of Ceuta and Melilla on the coast of Morocco; (3) the four Balearic Islands; and (4) the Canary Islands: Tenerife, Gran Canaria, El Hierro, La Palma, La Gomera, Lanzarote, and Fuerteventura (the latter two are interconnected), constituting six differentiated subsystems. Given their isolated position and small size, Insular and Extra-peninsular Electricity Systems present their own limitations and constraints affecting the electricity supply, resulting in higher investment and operating costs than a typical interconnected mainland grid system. In the same way, the electricity generation in these territories is not regulated according to the mainland model of a wholesale market. The wholesale market model would not be able to respond to the aim of guaranteeing the electrical power supply by meeting demand efficiently, in cost terms. Today's generation in Insular and Extra-peninsular Electricity Systems is through fuel-oil, or combined cycle generators, and, to a lesser extent, by wind, PV, and cogeneration facilities.[12]

Strategic planning also happens at island level. In 2019, **Menorca** published its energy transition roadmap: 'the Menorca 2030 Strategy', which includes concrete objectives to cover 85% of the island's energy demand from renewable energy by 2030 and to reduce the island's current emissions by 71%. Key actions identified to achieve this objective include the expansion and reconversion of the Milà area (currently dedicated to waste treatment), which will create a public area of renewable generation through wind, photovoltaic, and biogas hybridisation. The plan further includes a commitment to promote photovoltaic self-consumption and the installation of renewables in urban areas; the establishment of local energy markets, the introduction of smart grids and storage technologies, and the commitment to energy efficiency in buildings particularly the public sector and through synergies with the private sector (especially in business parks), as well as the tourism infrastructure. Another key element is terrestrial mobility, for which the Menorca 2030 Strategy proposes an innovative integration of electric vehicles on the island, together with a holistic approach to the reformulation of mobility on an island scale. There are similar plans in the Canary and Balearic islands.

In May 2021, Spain adopted the country's first Climate Change and Energy Transition Law, which commits the country to cutting emissions by 23% by 2030, compared with 1990 levels. This law includes the obligation of islands to define low emissions zones before 2024, and it allows islands to restrict the use of cars and vans running on fossil fuels. That is linked to the provision in the Climate Change Law of the Balearic Islands that forbids the entrance of diesel vehicles starting from 2027 and other combustion engines from 2035.

Insular systems, due to the high levels of isolation, have higher investment and operating costs which would normally be reflected on the electricity prices the consumers pay. In Spain, the Law 24/2013, introduced a system of **unified prices**, known in Spain as the 'Solidarity Tariff Principle'. According to this principle, a consumer will pay the same price regardless of its location within Spain. This avoids consumers in Non-Peninsular Territories having to pay electricity generating costs higher than in mainland. Article 10 of Law 24/2013 provides the base for the regulation of the electricity activities, which is different from the mainland, as explained further below.

[12] Uche-Soria, M.; Rodríguez-Monroy, C. Special Regulation of Isolated Power Systems: The Canary Islands, Spain. *Sustainability* 2018, *10*, 2572. https://doi.org/10.3390/su10072572

The current energy sales price in the dispatch was established by Ministerial Order TEC/1172/2018 from the price of the mainland market and affected by a coefficient that takes into account hourly changes in daily demand in Non-peninsular Territories. According to the Ministry, this system protects consumers while ensuring that the energy in the production dispatch is sold at a higher price during the hours when demand is higher in Non-Peninsular Territories. In such a way, a price signal is maintained for consumers to adapt their consumption and for generators to operate when energy is needed.

Although the market is liberalised (with Law 54/1997), Endesa is the only company responsible for thermal generation and distribution of energy on the islands. Several new developers, mainly for renewable energy, are gaining market share.

In the Spanish Islands, renewable penetration is still small compared to the mainland systems. For instance, in the Canary Islands renewable energy represented 18% of the electricity demand in 2020, far from the 47% in mainland Spain. Therefore, it is necessary to foster the deployment of renewable energy. This will require an increase of its contribution, on an annual basis, in unprecedented volumes. For instance, a decarbonised energy system for the Canary Islands by 2040 would require between 15 and 20 times the current amount of renewable capacity on these islands.

RD738/2015 establishes the dispatching procedure in Non-Peninsular Territories as well as the remuneration scheme for the production of electricity, particularly the remuneration scheme for installations from manageable sources of energy. The main goal of the Royal Decree 738/2015 is to regulate the procedures to produce and dispatch power in these island systems, with special focus on the remuneration scheme for conventional generation. In Annex 2, we provide for a detailed assessment of this system.

The regulatory framework for renewable sources has a specific legal framework with specific regulations based on the Law 24/2013, especially Royal Decree 413/2014 and other. The remuneration scheme for PV and wind installations is developed in this **RD413/2014** (explained in more detail below).

ITC has finished the Canary Islands Energy Transition Plan (PTECan) which includes eight strategies[13], such as for example for PV, E-mobility and wind energy[14].

The Monitor Deloitte Report "*Los Territorios No Peninsulares 100% descarbonizados en 2040: la vanguardia de la transición energética en España*"[15] demonstrates how the non-peninsular territories (Canary Islands, Balearic Islands and the Autonomous Cities of Ceuta and Melilla) can lead the ecological transition and implement a completely decarbonised energy system by 2040, a decade ahead of the emission reduction targets set by the European Union and Spain for 2050. The report proposes a set of measures for their decarbonisation.

[13] https://www.canariastransicionecologica.com/transicion-energetica/normas-y-planes-transicion-energetica/plan-de-transicion-energetica-de-canarias/

[14] On the website of ITC one can find any information needed regarding energy planning and statistics for Canary Islands: https://www3.gobiernodecanarias.org/ceic/energia/oecan/

[15] https://www2.deloitte.com/es/es/pages/strategy/articles/territorios-no-peninsulares-descarbonizados-2040.html

Renewable energy

Support systems

Spain supports various kinds of renewable energy technologies: PV and wind for electricity production and biogas, biomass, geothermal and solar thermal energy for heating and cooling. In the transport sector, Spain subsidises the purchase of electric vehicles (EV) and the implementation of EV charging infrastructure, as well as supports the use of biofuels.

In Spain, RD 738/2015 applies to Non-Peninsular Territories that are not integrated in the mainland system, even though they are partially connected, such as the Balearic islands. The **Royal Decree 738/2015** sets the remuneration scheme for generation and regulates the criteria and the parameters to determine the additional remuneration scheme for dispatchable sources, hydro, thermal and cogeneration groups of more than 15 MW. The additional remuneration scheme is based on regulated parameters of a standard installation managed by an efficient and well-run undertaking. If this remuneration is higher than market price (incomes from the dispatch at regulated price), the difference is compensated (50% by State General Budget and 50% through electricity charges). If the remuneration is lower than incomes from the dispatch at regulated price, generators give back the difference (for example, this is happening now, as a consequence of the higher wholesale price). Therefore, island generators receive a remuneration based on technical and economic criteria, determined to cover the cost of a well managed and efficient operator. In Annex 2, we provide a detailed assessment of this system.

The **specific remuneration scheme for renewable energy was established in RD413/2014**. This renewables remuneration scheme under RD413/2014 is an addition to the remuneration received from the sale of the energy valued at the regulated price and aims to cover the difference between the extra costs and the income. For the calculation of this compensation, the initial investment costs, the income from the sale of energy at the market price, and the operating costs for a company managing its assets efficiently are considered. Exceptionally, the specific remuneration scheme may also incorporate an extra incentive for the investment, when the installation helps to a significant reduction of the costs in the systems of non-peninsular territories. This incentive will be established based on the reduction of the costs generated and not so much of the characteristics of the type of installation. Note that contrary to the remuneration scheme under RD 738/2015, the remuneration for renewables can never be negative[16].

There are several island specific support systems for clean energy development. For example, the Institute for Diversification and Saving of Energy (IDAE), in cooperation with European Regional Development Funds (ERDF), is entitled to allocate financial support (non-repayable grants) to projects intended to generate electricity from wind power or PV, exclusively located in non-peninsular territories. Order TEC/1380/2018[17] established the regulatory bases for the award of grants for these projects. Based on this order, the IDAE has opened different programmes to grant aid. To get the grant, producers need to participate in the competitive mechanism organised per each call for proposal. Order TEC/1380/2018 states that the maximum amount of aid that may be granted to each investment project, expressed in €/MW, will be established in the corresponding call

[16] Royal Decree 413/2014, of 6 June. Annex XIII. 2.a)... In no case shall the net asset value be negative; if a negative value is obtained from the above formulation, the net asset value (VNj,a) shall be considered to be zero.
[17] Order TEC/1380/2018, of 20 December, which establishes the regulatory bases for the granting of aid for investment in electricity production facilities using wind and photovoltaic technologies located in non-peninsular territories, co-financed with ERDF Community Funds

for proposals. There have been at least five auctions that will lead to the incorporation of a significant amount of capacity (more than 750 MW).

Besides the above-mentioned support schemes, an (non-limitative) overview of the generally available support schemes is presented below:

- Grants for wind and PV projects in non-peninsular territories and grants for investment in renewable electricity and thermal projects).
- Grants for Sustainable Urban Development - DUS 5000 Programme: Grants to local authorities for clean energy projects in small municipalities, including the production of electricity from renewable energy sources for self-consumption of public buildings
- Tenders / Auctions: Economic Regime for Renewable Energies – allocation of a sliding feed-in premium and a Specific Remuneration Regime - Allocation of a sliding feed-in premium[18].
- Tax regulation mechanisms: allowance on the Real Estate Tax for solar energy systems – 50% rebate of the full amount of the tax for properties where a solar energy system for thermal or electrical use has been installed and allowance on the Tax on Constructions, Installations and Works (up to 95% rebate in favour of constructions, installations or works in which systems for the thermal or electrical use of solar energy are incorporated).
- Renewable energy in electricity building obligation: minimum generation quota from renewable energy in non-residential buildings. Buildings larger than 3,000 m^2 shall install a renewable energy generation system (between 30 kW and 100 kW).
- IDAE/ ERDF grants (EU level) for non-refundable subsidies to renewable electricity projects.
- Grants for investment in renewable electricity and thermal projects: allocation of non-refundable grants for thermal projects using renewable energy and subsidies for energy refurbishment actions in existing buildings, using renewable energy sources, regardless of their use and the legal status of their owners).
- Renewable energy for heating/cooling in building obligations: minimum renewable energy contribution to cover heating of water in buildings – minimum quota of 70% from renewables to cover total annual demand.
- Subsidies for the purchase of EVs and for the implementation of EV charging stations. The tax rates of the Special Tax on Certain Means of Transport are based on the CO_2 emissions of the vehicle.

RES projects authorisation process

When a suitable project site is found, a developer will start with requesting access and connection permits from the TSO or DSO. When those are obtained an Environmental Impact Assessment will be conducted, where different public and private stakeholders will be given the opportunity to get information and participate in the process. The authority will issue an Environmental Impact Declaration that may include requisites and conditions under which the project shall be conducted.

The project developer shall also apply for administrative authorisations. In particular, they will need a Prior Administrative Authorisation, an Administrative Authorisation for Construction, and local permits. In the cases where an easement or expropriation is needed, the project developer shall apply for a Declaration of Public Utility.

[18] The existing provisions do not foresee specific auctions for islands, so a regulatory development is additionally required in order to implement this mechanism in non-peninsular territories that are not effectively integrated with the mainland.

Permitting and authorisation procedures consist of many steps. Various actors from the national, regional, and local public administrations are involved in the permitting and authorisation process. For example, the EIA will be processed at the National level when the installation is greater than 50 electrical MW located in non-peninsular territories, when their electrical systems are effectively integrated with the peninsular system or when the installation is in located in the territorial sea (Art. 3.13.d Law 24/2013). In other cases the EIA will be processed at the Autonomous Community level (see Annex 4 for more details).

There are some exemptions and simplified procedures for certain categories. For example, rooftop PV installations for self-consumption, depending on their size and location, may benefit from a simplified and shorter procedure. Units with an installed power up to 100 kW and connected to the low-voltage distribution system, should in principle not require an Environmental Impact Assessment or a Declaration of Public Utility for example.

In the Balearic Islands small-scale projects within medium and high interest projects have fast-track procedures with little or no involvement of the environmental and the agriculture departments, whereas projects requiring an area larger than 4 hectares require positive assessment from both departments. Projects requiring an area larger than 10 hectares require specific procedures for land use permit. Simplified permitting procedures exist in the Canary Islands for self-consumption systems (particularly below 100 kW).

End of March 2022, the Spanish Ministry for the Ecological Transition and the Demographic Challenge (Miteco) approved a new package of measures, including the promotion of renewables[19]. Given the emergency caused by international energy prices, an accelerated temporary authorisation procedure is enabled,until 31 December 31 2024, to determine the environmental approval of new wind plants of less than 75 MW generation capacity and new solar parks not exceeding 150 MW in size. These plants will have to be located outside the Natura 2000 Network and in low or moderate-sensitivity areas, according to the country's environmental zoning system for renewable energy. This demonstrates that accelerated procedures are a possible measure, however this only goes for projects that depend on the national administrations

Grids

In the dispatching of generators to cover expected demand, renewable energy installations shall have priority under equal economic conditions in the market. There is one transmission operator, *Red Eléctrica de Espana*. There are 333 local distribution system operators (including five legally unbundled). The country has a smart meter penetration rate of 99.6%. The electricity supplier switching rates for household customers in 2018 was 10.4%.

The Canary islands are not electrically interconnected to the mainland. There is an interconnection between Fuerteventura and Lanzarote, two Canary Islands.

[19] Real Decreto-ley 6/2022, de 29 de marzo, por el que se adoptan medidas urgentes en el marco del Plan Nacional de respuesta a las consecuencias económicas y sociales de la guerra en Ucrania: https://www.boe.es/buscar/act.php?id=BOE-A-2022-4972 https://www.eleconomista.es/empresas-finanzas/noticias/11696876/04/22/el-gobierno-acelera-el-tramite-de-de-proyectos-renovables-en-2024.html

Supported energy efficiency measures

When it comes to improving energy efficiency, IDAE plays a key role on the administration and the granting of energy efficiency aids. Public actors on all levels (National, Autonomous Communities, and Municipalities) are committed to improving the energy efficiency of their public administrations´ buildings and in outdoor lighting installations. Among other programmes, the PAREER II programme grants subsidies and soft loans to households and other public and private actors to undertake renovation actions in buildings that improve energy efficiency standards.

Supporting policies

The Spanish RES policies encourage the development and deployment of renewable energies. Spain offers multiple vocational training opportunities and certification of professional skills and knowledge for professionals interested in working with renewable energy installations through the National System of Qualifications and Vocational Training. Thermal solar collectors and prefabricated thermal solar panels shall comply with international standards (UNE-EN and ISO).

Self-consumption and community energy

The Spanish legal system recognises the right to self-produce and self-consume renewable energy in multiple forms, which allows for flexibility in the self-consumption design. Collective self-consumption, sharing of self-produced electricity among customers connected at low voltage within a distance of 2000 m is also allowed. For collective self-consumption no grid fees are charged for the electricity exchanges within the scheme. Renewable Energy Communities are not fully regulated. RDL 23/2020 partially transposed the RED II EU Directive, since it adopted the definition of these communities and entitled them to participate in auctions.

Spatial planning

Spatial planning in Spain is the responsibility of multiple government levels[20]. The Ministry of Ecological Transition is the authority responsible for the coast and the marine environment as well as for biodiversity. The Ministry of Agriculture, Fisheries and Food is the authority responsible for fisheries. Terrestrial spatial planning is the exclusive responsibility of the autonomous regions, which exercise full powers over legislation, regulation and execution[21]. Even if the autonomous regions are exclusively responsible for Land Planning and Land Management, this responsibility has certain limitations established in the Spanish Constitution, as the Central Government can approve basic legislation, for example related to the territorial wates[22].

[20] https://www.oecd.org/regional/regional-policy/land-use-Spain.pdf
[21] Spanish spatial planning legislation was initially set up in 2007 through the Land Law 8/2007 of 28 May. However, a Legislative Royal Decree, of 30 October 2015, approving the revised text of the Land and Urban Renewal Law was recently approved. Spatial Allocation Plans for Natural Resources follow Law 42/2007
[22] https://maritime-spatial-planning.ec.europa.eu/sites/default/files/download/spain_november_2020.pdf

Identified barriers and recommendations to overcome them

The Clean energy for EU island Secretariat's Think tank has identified legal and regulatory barriers, based on the detailed assessment of the current regulatory framework and consultation with relevant Spanish stakeholders through surveys and the interviews (see Annex 1 for a detailed assessment). For each of the regulatory barriers, the Secretariat identified multiple recommendations. Those barriers and recommendations were presented and discussed within the Focus Group Meetings and the National Stakeholder Meeting (see Annex 3 for more information).

Regulatory barriers are presented in the order of their priority for the energy transition on the Spanish islands. Some of the barriers that were identified via the surveys and interviews are barriers that exist both on the islands and on the mainland. In the recommendations below, the focus lies on the concrete issues with these regulatory barriers encountered by islands.

The table below represents the list of barriers (marked in dark blue) ordered based on their priority, and the proposed recommendations (marked in white).

Barrier 1**. Grid constraints and inflexible thermal plants**

Recommendations:

1.1 Improve grid development planning

1.2 Modernise the existing thermal generation to allow flexibility

1.3 Revise the grid connection criteria

Barrier 2. **Lack of legal frameworks for system integration of renewable energy**

Recommendations:

2.1 Create a legal framework encouraging storage deployment

2.2 Create a legal framework for demand-side response

2.3 Use regulatory sandboxes to test storage and demand response on the islands

Barrier 3. **Complex and lengthy permitting and authorisation procedures**

Recommendations:

3.1 Extend the simplified procedures, accelerate and simplify procedures for renewable energy projects on the islands

3.2 Create a one-stop shop for clean energy projects on the islands

3.3 Build capacity at local level and provide permitting guidance

Barrier 4. **Confusion and misunderstandings about the price signal**

Recommendations:

4.1 Provide capacity building on the price signal and engage with island stakeholders on possible improvements

Barrier 5. **Spatial planning: Lack of long-term vision on how different land uses on islands are coordinated to assure sustainable economic development**

Recommendations:

5.1 Provide guidelines from the national level and ensure integration of the energy sector strategy with spatial planning at regional level

5.2 Develop regional unified criteria

Barrier 6. The lack of coordination of energy sector priorities between the national and regional governments

Recommendations:

6.1 Create an 'island department' at national level

6.2 Support the development and implementation of Clean Energy Transition Agendas

Barrier 7. Lack of clear regulation for energy communities

Recommendations:

7.1 Adopt a clear regulatory framework for energy communities with identified benefits

7.2 Provide capacity building and information for municipalities

Note that for several barriers and recommendations, suggestions from the Monitor Deloitte report *Los Territorios No Peninsulares 100% descarbonizados en 2040: la vanguardia de la transición energética en España*, available here, have been reproduced. This report analyses the characteristics of non-peninsular territories and provides a set of solutions to decarbonise these regions.

REPowerEU – Proposal for amendment of RED II (and EPBD & EED)[23] and Recommendation on speeding up permit-granting procedures for renewable energy projects

On 18 May 2022 the European Commission has presented the REPowerEU Plan, its response to the hardships and global energy market disruption caused by Russia's invasion of Ukraine. There is a double urgency to transform Europe's energy system: ending the EU's dependence on Russian fossil fuels, which are used as an economic and political weapon and cost European taxpayers nearly €100 billion per year, and tackling the climate crisis. There are three main axis:

- Saving energy
- Diversifying supplies and supporting our international partners
- Accelerating the rollout of renewables

A massive scaling-up and speeding-up of renewable energy in power generation, industry, buildings and transport will accelerate our independence, give a boost to the green transition, and reduce prices over time. The Commission proposes to increase the headline 2030 target for renewables from 40% to 45% under the Fit for 55 package. Setting this overall increased ambition will create the framework for other initiatives, including among others:

- A dedicated EU Solar Strategy to double solar photovoltaic capacity by 2025 and install 600 GW by 2030.
- A Solar Rooftop Initiative with a phased-in legal obligation to install solar panels on new public and commercial buildings and new residential buildings.
- A Commission Recommendation to tackle slow and complex permitting for major renewable projects, and a targeted amendment to the Renewable Energy Directive to recognise renewable energy as an overriding public interest. Dedicated 'go-to' areas for renewables should be put in place by Member States with shortened and simplified permitting processes in areas with lower environmental risks. To help quickly identify such 'go-to' areas, the Commission is making available datasets on environmentally sensitive areas as part of its digital mapping tool for geographic data related to energy, industry, and infrastructure.

These two last tools are particularly relevant for islands as renewable energy development is often hampered by spatial planning constraints and complicated permitting procedures. Where relevant, references to the these tools is made in text boxes.

On the same day the European Commission (DG ENER) published the report "Technical support for RES policy development and implementation – Simplification of permission and administrative procedures for RES installations (RES Simplify)". The aim of the report is to provide insights on the most important obstacles impeding the diffusion of renewable energy technologies in the permitting and grid connection procedures. It also discusses best practice examples deployed by the EU Member States and general best-practice recommendations which can be promoted with regard to permitting new and repowered renewable energy installations and connecting them to the grid.

[23] Proposal for Directive amending Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources, Directive 2010/31/EU on the energy performance of buildings and Directive 2012/27/EU on energy efficiency

Relevant recommendations and examples are given throughout the study where relevant.

1. Grid constraints and inflexible thermal power plants

Firstly, grid infrastructure constraints are a barrier for renewable energy developments on the islands. While some islands have managed to make significant developments, for example the Canary Islands with 20.8% renewable power capacity[24], congestion of the island's electricity networks prevents further deployment of renewables on the islands, even if most of them have so far very little penetration of PV and solar.

The modernisation plans for the transmission grids emanate from the central government conducted by Spain's General State Administration, the autonomous communities, the National Commission on Markets and Competition, Red Eléctrica de España, and all of the sector actors[25]. Demand and generation are not planned, but indicative forecasts are made to efficiently and effectively plan the transmission grid. By law, a plan has to be prepared every four years, and it must cover a six-year period. In the Electrical Plan for 2021-2026[26], according to the network operator, the Balearic and Canary Islands are the ones that are going to receive the most investment.

However, the island stakeholders do not (or only partially) see these investments happening. The grid development plans are for six years, and hence can lock in the development for that period since they do not foresee any significant grid upgrades on the islands. With the current evolution of the installation of renewables, such long planning periods are a major barrier, as they do not allow for substantial modifications to the transmission grid according to the needs of the moment. This is even worse considering that any installation of more than 0.5 MW in non-peninsular territories is considered to affect the transmission grid and therefore authorisation must be obtained from the transmission grid operator. This burdens project development.

Every year, the DSOs send the authorities (regional, central, and the CNMC) the investment plan for the distribution grid to be approved, covering the entire Spanish territory. According to the network operator, plans are being currently finalised, and the Balearic and Canary Islands are the ones that are going to receive the most investment, precisely because the network needs to be improved.

Secondly, thermal systems provide the basis for the current generation mix on the islands. While a decarbonised energy future of the islands does not allow space for the fossil fuel based generation, the transition period needs to find optimal solutions that help accelerate the clean energy transition taking into account the existing system. A significant part of the thermal fleet is beyond 25 or even 35 years of age, which renders them almost obsolete. While this could be an opportunity for the clean energy transition, as they could be replaced with renewable generation assets, the age of the thermal generation fleet on the islands has become an obstacle for renewable energy integration and security of supply.

The lack of flexibility of the current thermal fleet reduces the amount of renewable generation that can be dispatched. The high minimum loads of the engines translate to a significant thermal capacity that needs to be permanently connected. An electricity system with several generators must be prepared to withstand incidences such as the failure of one of them. This requires having some units that are providing spinning reserve, working below their available capacity, so that they

[24] https://www.ree.es/sites/default/files/07_SALA_PRENSA/Documentos/2021/20210312_PR_CanaryIslands_ENGW.pdf
[25] https://www.ree.es/en/activities/electrical-planning/new-transmission-grid-planning
[26] https://www.planificacionelectrica.es/sites/webplani/files/2022-04/REE_Plan_Desarrollo.pdf

can rapidly increase their generation to compensate a failure. Ideally, these spinning reserve units would be dispatched at zero, to minimise costs and emissions, and to leave the maximum space to renewable production. Unfortunately, this is technically impossible: these units will have to be dispatched at their technical minimum, the lowest production that they can provide. That technical minimum prevents more renewable generation from being dispatched as they "occupy" part of the available room for renewable production. Older units tend to have higher technical minima: 60% for the aged diesel engines present on the Spanish islands as opposed to for example 7% of a new gas turbine. This leads to higher emissions and costs and reduces the revenues of renewable generation (since this situation reduces their expected production). It can be considered that the lack of flexibility due to dated technology used for thermal generation is an obstacle to the development of renewable generation.

Current legislation establishes that the authorisation of new investments will be done through competitive procedures leading to a "compatibility resolution", which is required to obtain the regulated remuneration. However, the regulation of these competitive procedures has not yet been put in place. State Aid approval at European level took longer than foreseen, namely until 2020. But since this approval the legal frameworks at Spanish national level have not been worked out. This means that all investments in firm and flexible generation, be it investments in new units or refurbishments of existing units, have been paralysed since before 2013. As a result of this, the generation systems of the islands continue to rely to a very large extent on thermal generation, particularly in the Canary Islands, where all thermal generation is based on oil. Existing units are becoming old and obsolete, without the opportunity to be modernised. Therefore, risks to security of supply are increasing as well as renewable energy spill overs.

Thirdly, stringent grid connection requirements for renewable energy projects form a barrier on islands. Current regulations on access and connection to the networks are set out in Royal Decree 1183/2020, of 29 December, on access and connection to the electricity transmission and distribution networks[27], and in Circular 1/2021, of 20 January, of the National Markets and Competition Commission, which establishes the methodology and conditions for access and connection to the transmission and distribution networks of electricity production facilities[28]. Current regulation on grid connection requirements takes into account renewable energy sources that are coupled with storage or those that are used for self-consumption:

Royal Decree 1183/2020:	**CNMC Circular 1/2021:**
Article 19. Criteria applicable to competitions. 1. Tenders organised in accordance with the provisions of this chapter shall have the following characteristics: a) The asset to be awarded shall be the access capacity to evacuate electrical energy, expressed in MW. b) Participants must be interested in building storage facilities, or **electricity generation facilities that use renewable primary energy sources, which may also incorporate storage facilities**. (c) They may relate to all or part of the available access capacity of the node. Likewise, all or part of the capacity that is tendered may be exclusively for self-consumption generation facilities. Article 27. Hybridisation of electricity generation facilities with access and connection permits granted.	Article 3. Content of the request for access and connection. (...) i) Identification of the electricity generation facility, including the technology and access capacity for which the permits are requested, as well as the UTM coordinates of the polygonal line that circumscribes the facility. (ii) **in the case of hybridisation, identification of the different technologies** and the power of the corresponding electricity generation modules; and (v) In the case of **electrical energy storage elements**, a description of those elements, including their storage capacity. ANNEX I In order to determine the accessibility of an electricity generating installation to a network at a connection point, a specific study shall be carried out at that connection point. This study shall be valid for 12 months from its completion

[27] Real Decreto 1183/2020, de 29 de diciembre, de acceso y conexión a las redes de transporte y distribución de energía eléctrica.
[28] Circular 1/2021, de 20 de enero, de la Comisión Nacional de los Mercados y la Competencia, por la que se establece la metodología y condiciones del acceso y de la conexión a las redes de transporte y distribución de las instalaciones de producción de energía eléctrica.

1. In accordance with the provisions of article 33.12 of Law 24/2013, of 26 December, the owners of electricity generation facilities with access and connection permits granted and in force, who hybridise these facilities by incorporating electricity generation modules that use renewable primary energy sources **or by incorporating storage facilities**, may evacuate electricity using the same connection point and the access capacity already granted.	and may determine different **access capacities depending on the technology of the electricity generating installations applying for the permits, as well as, where appropriate, hybridisation of generating installations and storage units**. ... 5. The provisions of this Annex shall also apply to the assessment of the **access capacity of a production facility associated with a form of self-consumption** with surplus supply....,

However, there seem to be difficulties in the application of the regulation on the islands.

In some cases, when asking for permits for a hybrid system of renewable energy plus storage, the storage capacity is added to the capacity of the renewable energy production facility, and it thus effectively counts as generation capacity. In already saturated grids on the islands, this means that such projects are blocked when they would actually help relieving the grid.

Also, there are certain projects that have a very low environmental impact (for example solar PV on rooftops, or in urban areas). The administrative authorisation cannot be started though until the connection permit is available. For example, self-consumption projects of above 500 kW with surplus require a report not only from the distributor but also from the TSO (or system operator) and this substantially increases the procedures.

Some steps in the right direction have been taken. For example RD-law 6/2022 has introduced a new obligation to invest in increasing access capacity for renewable generation and self-consumption in the fourth additional provision. Additionally, there is an obligation for DSOs to include in their annual investment plans actions to increase access capacity for new renewable generation and self-consumption.

Recommendation 1.1: Improve grid development planning in line with the RE ambitions and challenges of the islands

Grid reinforcements are highly necessary to achieve the decarbonisation objectives of the islands, but as mentioned above the transmission and distribution gird development plans do not sufficiently take into account the ambitious islands plans. Therefore the preparation of these grid development plans needs to involve a wider scope of islands' stakeholders in order to address islands' plans and characteristics.

Firstly, it is necessary to strengthen cooperation between those responsible for the electricity transmission and distribution networks, political leaders, and the local island stakeholders to plan a network prepared for the challenges that arise in the medium term, taking into account the changing energy situation on the islands (and modify the already approved plans to the extent possible).

Article 4 of the Law 24/2013 establishes that the transmission network plans are an exclusive competence of the Central Government (national level). Autonomous Communities and Cities of Ceuta and Melilla, and the regulator National Markets and Competition Commission are involved in the development and investment decisions of the transmissions grid plans, but the final decision stays at National level, based on a proposal of the transmission network manager. However, as explained above, although this cooperation legally exists, island particularities are not always taken sufficiently into consideration. While there are thus provisions for Non-Peninsular Territories

involvement, a more structural cooperation could be envisaged as solution. This is key for the development of renewables so that islands can achieve a higher rate of self-sufficiency.

This structural cooperation could fall under the activities of the Spanish islands department, as recommended under recommendation 6.1. To foster the involvement of island stakeholders in national strategic long-term energy planning, funding distribution and improvement of the concreteness and effectiveness of instruments and actions at national level, we recommend creating an 'island department'.

REPowerEU – grid planning and connection
Member States should implement long-term grid planning and investment consistent with the planned expansion of renewable energy production capacities, taking into account future demand and the objective of climate neutrality.
Member States should establish simplified procedures for repowering existing renewable energy plants, including streamlined procedures for environmental assessments, and adopt a simple-notification procedure for their grid connections where no significant negative environmental or social impact is expected.
Member States should ensure that system operators (i) apply a transparent and digital procedure for grid connection applications; (ii) provide information on grid capacities; and (iii) optimise the use of grid capacity by allowing its use by power plants combining multiple complementary technologies

Secondly, we recommend classifying distribution grid development on the islands as projects of strategic interests. While a system for 'Unique Investments' ('*Inversiones singulares*') exists for transmission (art 19 of Royal Decree 1047/2013[29]), it could be envisaged to further develop this concept for Non-Peninsular Territories. It could be used for example for the deployment of new lines, substations or transformation centres in key areas. Or to increase evacuation capacity due to the concentration of renewable resources. This while speeding up their development and authorisation[30]. At the same time this existing framework 'Unique Investments' for transmission should be used to execute the most urgently needed strategic upgrades to the transmission grids on the islands.

REPowerEU – RE, grids and storage regarded as 'overriding public interest'
Article 1(10) of the proposed amendment to RED II inserts a new Article 16d to ensure that plants for the production of energy from renewable sources, their connection to the grid, the related grid itself or storage assets are presumed to be of overriding public interest for specific purposes.

> Renewable energy sources are crucial to fight climate change, reduce energy prices, decrease the Union's dependence on fossil fuels and ensure the Union's security of supply. For the purposes of the relevant Union environmental legislation, in the necessary case-by-case assessments to ascertain whether a plant for the production of energy from renewable sources, its connection to the grid, the related grid itself or storage assets is of overriding public interest in a particular case, Member States should presume these plants and their related infrastructure as being of overriding public interest and serving public health and safety, except where there is clear evidence that these projects have major adverse effects on the environment which cannot be mitigated or compensated. Considering such plants as being of overriding public interest and serving public health and safety would allow such projects to benefit from a simplified assessment.

Specifically for the Balearic islands, MITECO and Red Eléctrica de España should begin studies of the seabed in order to advance in the planning of the second Mallorca-Menorca submarine link and to ensure that construction of this link begins at the latest at the beginning of the next planning period 2027-2032.

[29] https://www.boe.es/buscar/act.php?id=BOE-A-2013-13766
[30] Monitor Deloitte report

Lastly, more agile grid planning is also required. Once the plans are made, it is difficult to deviate or revise. Certainly in light of the current high energy price context, the current planning times do not allow for islands to adapt to reality fast enough.

Actors involved:

- **MITECO, Ministry for the Ecological Transition and the Demographic Challenge**
- CNMC, *Comisión Nacional de los Mercados y la Competencia* (regulator)
- IDAE, Institute for Diversification and Saving of Energy
- **Transmission Grid Operator**
- **Distribution Grid Operators**
- Autonomous Communities
- Relevant Island stakeholders

Recommendation 1.2: Modernisation of existing thermal generation to increase flexibility and reduce reserve requirements

We recommend having a sufficient state-of-the-art balancing capacity. One option could be to relaunch the competitive procedures to modernise (a part of) the existing thermal fleet. This would require the completion of the necessary regulation for the remuneration of the costs of generation, as well as upgrading the current dispatching procedures to make possible the dispatching by the system operator of these new refurbished units, as well as other necessary technologies such as storage and demand response. As mentioned above, the modernisation of existing thermal generation could facilitate the development of RES on the islands. This would increase flexibility and reduce reserve requirements (through lower technical minimums and the hybridisation of thermal generators with batteries) allowing much greater injection of renewable energy.
Refurbishing existing units (for instance, the hybridisation with batteries, or more modern engines) would reduce the reserve requirements from thermal units. This would allow decreasing the minimum load at which they need to keep running for security reasons. Such a hybrid generation/storage unit could provide reserve without being constrained by the technical minimum. The thermal generator does not need to be running; in case of demand the battery would immediately inject energy in the system for the necessary time to start-up the generator. This way, all the capacity of a thermal generator (such as a gas turbine) would be available without requiring the unit to be spinning.

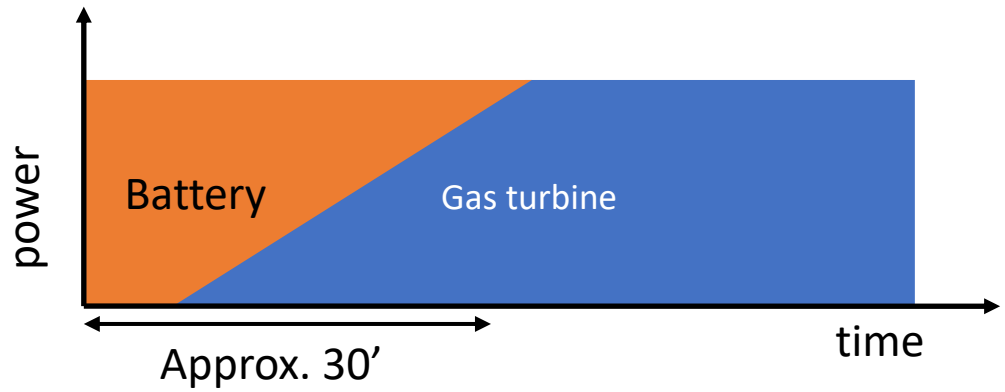

Figure 1 - visualisation of start-up time hybrid generator - Source: Endesa internal analysis

The investment required to make this possible is relatively low and can be recovered in a very short period (around one year) because of the cost savings (in fuel and emission allowances) generated by this solution. This modernization could also be partially funded by the Spanish recovery, transformation and resilience plan, which includes funding for the energy transition in the islands.

Actors involved:
- **MITECO, Ministry for the Ecological Transition and the Demographic Challenge**
- CNMC, *Comisión Nacional de los Mercados y la Competencia* (regulator)
- **Distribution Grid Operator**

Recommendation 1.3: Revise the grid connection criteria

As mentioned above, the Royal Decree 1183/2020 and Circular 1/2021 does already take into account storage and self-consumption. The Royal Decree defines access capacity '*capacidad de acceso*' as the 'maximum active capacity that can be injected in the grid':

> *Article 2. Definitions.*
> (…)
> *(k) "access capacity" shall mean the maximum active power that may be fed into the grid by an electricity generating installation or taken into the grid by a demand-side installation in accordance with the terms of the access permit and the access technician contract.*

Based on the Circular and Annex I, a specific study is to be carried out with scenarios on each specific installation to understand for what capacity the permit would need to be required. Uncertainties and complexities of this system render the development of hybrid projects complex. On the one hand we recommend that the CNMC provides comprehensible guidelines on how developers should prepare their permits for hybrid projects. On the other hand, **we recommend using the option of '*especificaciones de detalle*' (detailed specifications) foreseen in Article 13 of the CNMC circular 1/2021 to request changes to the methodology and the conditions for connection to the transmission and distribution networks.** This is to be requested by the Distribution System Operator:

> *Article 13:*
> *The Comisión Nacional de los Mercados y la Competencia shall approve by resolution any detailed specifications that may be necessary to develop the methodology and conditions for access and connection to the transmission and distribution networks established by this Circular, including those that may be necessary to adapt the criteria established in Annex I to the particularities of the distribution networks.*

Lastly, this circular foresees, in article 5, 13 and Annex 3, that in non-peninsular territories, installations of 0.5 MW or more connected to the distribution grid are considered to affect the transmission grid and therefore authorisation must be obtained from the transmission grid operator:

> *'Article 13. Procedure for approval of detailed specifications.*
> *(..)*
> *Second additional provision. Value of the parameters, percentages and ratios contained in the annexes. Without prejudice to what may be established through the resolutions provided in the annexes to this Circular, the following values are determined for these parameters, percentages and ratios, mentioned in the aforementioned annexes:*
> *(..)*
> *3. The value to be exceeded by the sum of powers to be considered to determine the influence on the transmission network of the connection to the distribution network is set at 10 MW, in accordance with the*

provisions of section 1 of annex III. In non-peninsular territories, said value will be 1 MW. However, the calculation will only be made when the installed power of the request under study is greater than 5 MW (or greater than 0.5 MW in non-peninsular territories).
4. The value to be exceeded by the sum of powers to be considered to determine the influence on a distribution network of the connection to another distribution network connected to the first, in accordance with the provisions of section 2, is set at 5 MW. .a) of annex III. In non-peninsular territories, this value will be 0.5 MW. However, the calculation will only be made when the installed power of the request under study is greater than 500 kW (or greater than 100 kW in non-peninsular territories).'

This additional requirement complicates the connection procedures for small-scale installations**. We therefore recommend revising this stipulation to expressly indicate that the 0.5 MW corresponds to the discharge power and not to the installed power, as well as to make this criterion more flexible depending on the point of access to the distribution grid,** taking into account the consumption that can dissipate the energy generated before reaching the transmission grid node.

Actors involved:
- **CNMC, *Comisión Nacional de los Mercados y la Competencia* (regulator)**
- MITECO, Ministry for the Ecological Transition and the Demographic Challenge
- **Transmission Grid Operator**
- **Distribution Grid Operators**
- Academia
- Relevant Island stakeholders

2. Lack of legal frameworks for system integration of renewable energy

The legal and regulatory frameworks (support systems, regulations and procedures) are not adapted to the island's characteristics. There is a lack of specific legislation for licensing and operation of innovative technological solutions significant for the islands' clean energy transition such as storage and demand response.

For storage, an important step has been taken already by the Spanish government with the adoption of:

- Energy Storage Strategy proposed by MITECO, which takes a specific 'line of action' (*línea de acción*) in this regard by recognising the specific need for storage and formulating specific measures[31].
- Criteria and application procedures for the application, processing and granting of access and connection permits to the electricity transmission and distribution networks for, among others, storage facilities[32].
- Provisions that regulate the application process for storage facilities, both whether they are hybrid alongside a generation facility or are stand-alone storage facilities, that are able to feed energy into the transmission and distribution networks[33]. 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.

While it is good that these strategic objectives have been defined, regulatory frameworks now need to be changed and adopted to fit the island realities. There is a need for clarity on the applicable rules; for example on how storage assets will be able to participate in the energy system.

For demand response, there is no clear definition yet in Spanish legislation[34]. While smart meters and dynamic pricing are already available for residential consumers, the Spanish market has been slow to enable consumer participation in any form of programme. There is no possibility for aggregated demand side resources to take part in the Spanish electricity market yet, since demand response is not regulated.

Recommendation 2.1: Create a legal framework encouraging storage deployment
Building further on the Energy Storage Strategy and the RD1183/2020, the government should work on a particular legal framework for the remuneration and operation of stand-alone storage systems on the islands. It would not be sufficient to complete the regulatory development of the mainland, because this mostly refers to wholesale market and system operation issues that are not applicable on the islands.

[31] '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 in island 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 development
[32] RD 1183/2020
[33] Royal Decree-law 6/2022
[34] There is only one programme allowing explicit demand response, called "the interruptible load", which is reserved for large industrial customers connected to the high voltage grid. See Ministerio de Industria, Energía y Turismo, «Orden IET/1752/2014, de 26 de septiembre, relativa al servicio de gestion de la demanda de interrumpibilidad.,» 26 September 2014

MITECO should work on developing legislation to include defined mechanisms allowing energy storage to participate in the energy markets on the islands and offer incentive to use them. Specifically for the islands, in light of the security of supply issues due to their insularity and remoteness, there is a specific need for a remuneration mechanism and operating procedures for storage. It should provide investors with clear visibility on the remuneration parameters of this technology and encourage its penetration. This need has been incorporated into the Energy Storage Strategy (Measure 1.4 'Modify the operating procedures to incorporate the involvement of the storage'[35]) and can build further on the CNMC resolution of 10 December 2020[36] (which can however not apply to non-peninsular territories as there is no ancillary services market designed, but it can serve as an example).

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 to create revenue streams to help different storage technologies to develop through capacity markets, ancillary services and other grid services.

While most countries do not have specific policies promoting energy storage, development is ongoing as demonstrated in the Regulatory Best Practice box below.

Regulatory best practice

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[37]: '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 of October 2021, the first CRM auction was organized to select capacity offers for 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 exist 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

[35] Pg 41 of the Energy Storage Strategy

[36] Resolución de 10 de diciembre de 2020, de la Comisión Nacional de los Mercados y la Competencia, por la que se aprueba la adaptación de los procedimientos de operación del sistema a las condiciones relativas al balance aprobadas por Resolución de 11 de diciembre de 2019: https://www.boe.es/diario_boe/txt.php?id=BOE-A-2020-16964

[37] Article 2.62 and 2.6 of the Electricity Act

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 for funding to install new renewable energy storage technologies in the country under the Longer Duration Energy Storage Demonstration (LODES) competition[38]. 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 a 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) grants rebates (premium) for the purchase of domestic batteries to encourage solar power self-consumption[39]. 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.
- 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 energies, such as battery storage and photovoltaic systems. With the KfW 270 development loan, you finance up to 100 percent 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 an installation of new PV system with battery energy storage system[40]. It covers 80% of 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 production and storage of electricity from renewable resources covers 25% percent of the eligible costs, up to a maximum of EUR 4,000 per system[41].
- 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 subsidized (EUR 900 per kWp). If the roof-mounted PV is combined with battery storage then an additional grant for a further 2kWp is offered (EUR 300 per kWp). Consequently, the maximum level of support reaches EUR 2,400 (ch. 2 Solar PV Scheme).
- 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 kind of projects – installations of PV systems linked to storage systems, and the deployment of standalone storage systems linked to existing solar arrays. For this second category of rebates will cover 100% of project costs.

The development of a Spanish framework for energy storage could be done in the framework of the Recovery, Transformation and Resilience Plan (*Plan de Recuperación, Transformación y Resiliencia* or 'PRTR'), however the regulation must be 'island-specific' as there is no wholesale market on the islands, and their contribution is particularly important to assure security of supply and reduce the reliance on thermal generation.

Actors involved:

- CNMC, *Comisión Nacional de los Mercados y la Competencia* (regulator)
- **MITECO, Ministry for the Ecological Transition and the Demographic Challenge**
- IDAE, Institute for Diversification and Saving of Energy
- Transmission Grid Operator
- Distribution Grid Operators
- Relevant Island stakeholders

[38] https://www.gov.uk/government/collections/longer-duration-energy-storage-demonstration-lodes-competition
[39] Decision of the Flemish Government of 28 June 2019
[40] Promotion of Renewable Energy Sources in the Domestic Sector – Grant Scheme 2021/RES; https://www.rews.org.mt/#/en/sdgr/463-2021-renewable-energy-sources-scheme
[41] PROENERGIA. DLR 14/2019/A & Ordinance 73/2019

Recommendation 2.2: Create a legal framework for demand-side response

Building further on what is determined under Measure 1.3 'Define flexibility services at distribution network level'[42] in the Energy Storage Strategy, it is envisageable to create legal frameworks for explicit demand response and aggregation, specifically taking into account the island particularities. In developing new rules for the participation of demand response in the market, Spain should consider global best practices to fast-track its deployment[43].

It is necessary to develop and improve the different demand management mechanisms, such as the figure of the demand aggregator, battery management systems for electric vehicles and interruptibility for large consumers. A system for remunerating these services and a competitive mechanism should be defined so that it is provided by the most efficient operators and agents.

The development of a Spanish framework for demand-side response could be done in the framework of the Recovery, Transformation and Resilience Plan (*Plan de Recuperación, Transformación y Resiliencia* or 'PRTR'), however the regulation must be 'island-specific' as there is no wholesale market on the islands. The contribution of both recommendations related to storage (Recommendation 2.1 and 2.2) is particularly important to assure security of supply and reduce the reliance on thermal generation.

Actors involved:

- CNMC, *Comisión Nacional de los Mercados y la Competencia* (regulator)
- MITECO, Ministry for the Ecological Transition and the Demographic Challenge
- **IDAE, Institute for Diversification and Saving of Energy**
- Transmission Grid Operator
- Distribution Grid Operators
- Relevant Island stakeholders

Recommendation 2.3: Use regulatory sandboxes to test storage and demand response frameworks on the islands

In line with what has been done in other EU Member States, Spanish islands could be put forward as innovative laboratories, via regulatory sandboxes[44]. Considering the islands have their own specificities (insularity, remoteness, consumption peak in summer), they can be used as test beds for energy transition with the implementation of new technologies, innovative operation, tariffing and business models. A Royal Decree[45] that allows sandboxing has been recently approved.

The islands could work with the regulator, DSOs, technology providers and research institutes to test the implementation and operation of storage technology in combination with RES plants, e-mobility and demand side management to provide flexibility on the existing grids. Such pilot projects would help provide testing grounds for what is possible with the island system and its

[42] The regulatory framework will be analysed to enable and incentivise distribution system operators to obtain flexibility services, as well as to define the requirements and obligations adapted to distributed storage assets, including behind the meter assets, such as storage and generation by active customers or prosumers, electric vehicles, or related to demand-side management. This framework should provide for the possibility for storage systems to provide several services simultaneously, establishing the regulation in this respect.

[43] https://www.raponline.org/wp-content/uploads/2020/07/rap-kolokathis-spain-power-system-transformation-july-2020.pdf

[44] https://www.consilium.europa.eu/en/press/press-releases/2020/11/16/regulatory-sandboxes-and-experimentation-clauses-as-tools-for-better-regulation-council-adopts-conclusions/

[45] Royal Decree 568/2022, of July 11, which establishes the general framework of the regulatory test bench for the promotion of research and innovation in the electricity sector.

particular constraints and to identify gaps in the existing practices and regulation to accelerate the energy transition on the islands. Funds could be allocated for research and innovation e.g., via tax benefits, with special focus on energy storage systems that could help provide security of supply in cases of higher integration of RES. The coordination of such testing and research activities, development of regulation, strategic plans and available funds can be a responsibility of the Spanish 'islands Department' (see recommendation 6.1).

We recommend using the regulatory sandbox approach to allow specific islands to experiment. Regulatory sandboxes are ways for authorities, tasked with implementation and enforcing of specific legislation, to test innovative approaches and technologies in real-life situations through time and geographically limited implementation of exceptions to the existing legislation. This way incentives for clean energy transition on the islands can be tested without a permanent change in legislation. It also gives room to evaluate the success of the experiment. The choice of the islands and grids within which different regulatory sandboxes should be implemented can be decided in collaboration with the Spanish islands department (see recommendation 6.1) which will assure local inputs. Based on the results from innovative projects and regulatory sandboxes in Spain, but also experiences from other EU member states, the enabling framework needs to be defined between the Energy Regulatory Dept, the Ministries involved and DSOs operating on the islands.

Regulatory sandboxes have been implemented in Italy[46], Austria, Germany and Netherlands for temporary tests of specific energy tariffs[47].

REPowerEU – Innovation and sandboxing

Article 1(3) of the proposed amendments to RED II inserts a new paragraph 2a in Article 15 requiring the Member States to promote the testing of new renewable energy technologies while applying appropriate safeguards:

> '*Member States shall promote the testing of new renewable energy technologies in pilot projects in a real-world environment, for a limited period of time, in accordance with the applicable EU legislation and accompanied by appropriate safeguards to ensure the secure operation of the electricity system and avoid disproportionate impacts on the functioning of the internal market, under the supervision of a competent authority.*'

Consideration 18 of the Recommendation highlights that barriers resulting from permit procedures might also affect the future deployment of innovative decarbonisation technologies needed for climate neutrality. Setting up regulatory sandboxes, that is to say the testing, in a real-life environment, of innovative technologies, products, services or approaches, which are not fully compliant with the existing legal and regulatory framework, could support innovation and facilitate the subsequent adaptation of the regulatory environment to accommodate them.

Member States are encouraged to put in place regulatory sandboxes to grant targeted exemptions from the national, regional or local legislative or regulatory framework for innovative technologies, products, services or approaches, to facilitate permit granting in support of the deployment and system integration of renewable energy, storage, and other decarbonisation technologies, in line with Union legislation.

Actors involved:

- CNMC, *Comisión Nacional de los Mercados y la Competencia* (regulator)
- MITECO, Ministry for the Ecological Transition and the Demographic Challenge
- **IDAE, Institute for Diversification and Saving of Energy**
- Transmission Grid Operator
- Distribution Grid Operators
- Relevant Island stakeholders

[46] https://www.iea-isgan.org/wp-content/uploads/2021/10/Regulatory-Sandbox-2.0_For-Publication.pdf
[47] https://fsr.eui.eu/regulatory-sandboxes-in-the-energy-sector-the-what-the-who-and-the-how/

3. Complex and lengthy permitting and authorisation procedures

Clean energy projects are facing complex and lengthy authorisation and permitting procedures. Renewable energy installations in Spain must obtain certain administrative authorisations and fulfil technical requirements in order to be granted the right to produce electricity and operate in the market. The participation across the different governance levels can lead to a poor coordination and lack of evenly distributed tasks, adding an extra obstacle to the permitting. The details on the permitting procedures are provided in Annex 4. The main barrier is that the procedures are too complicated and too many authorities and governments at different levels are involved.

The local governments (insular councils) are overwhelmed by the rapid increase in wind and solar projects. The shortage of skilled workforce in the governmental sector and the understaffing of authorities in charge of delivering the permits create additional burdens. In addition to bureaucratic barriers, the lack of political support of the regional and local communities can limit and slow down the permitting and authorisation process. Local authorities' staff is often unaware of or not trained on renewable energy project development and can be unwilling to engage in renewable energy project permitting.

Recommendation 3.1: Extend the simplified procedures, accelerate and simplify procedures for RE projects on the islands

Given the positive results of the simplified procedures we advise it to be extended. An accompanying impact assessment can identify implementation bottlenecks (e.g., parts of regulation which are still too complex, unnecessary requirements, etc.). The identified bottlenecks can be removed by amending regulation to further simplify the procedure or easing the permitting requirements. Stakeholders that have a role in the implementation and execution of the procedure (e.g. national governments, local governments, grid operators) should be involved in the evaluation process and preparation of the future simplified procedure. National stakeholders should provide guidance to the Autonomous Communities on how to do this.

REPowerEU – RES Simplify

The RES Simplify report contains some useful recommendations and examples for eased procedures for RES self-supply and small-scale RES

Easing and simplifying procedures for projects is a simple approach to speed up permitting. It helps planners and authorities alike and increases the speed at which projects are realised. By simply reducing the number of necessary permits for projects, developers need to prepare less documents. Authorities on the other hand receive less applications and can therefore use their resources to permit large and important projects. Eased procedures for RES self-supply and small-scale RES streamline the necessary checks and balances between project planners and authorities. This can be implemented due to the limited impact these installations are to have on the environment and energy systems.

Austria: In Upper Austria there is an exemption from the electricity generation licence for small hydropower plants with a capacity of up to 400 kW. This is seen as a simplification of the procedure.

Portugal: A new legislation aims at simplifying the licensing rules and regulatory procedures applied to production units for self-consumption (unidade de produção para autoconsumo – UPAC). For certain facilities (depending on the installed capacity), a mere notification to the Directorate-General of Energy and Geology is required in order to start operating the unit (for others not even that is required), which is a positive reinforcement for small and medium-sized photovoltaic producers as well as owners of small/mini wind turbines. Small power plants with a capacity of up to 1 MW can apply for a fast application via a web page to gain the grid connection permit.

Portugal: For certain small-medium sized power plants, it is only necessary to notify the (Portuguese) Directorate-General of Energy and Geology (DGEG) of their intention to connect the unit to the grid – and, for specific cases, not even a notification is required. Such approach provides agility to photovoltaic projects that fit in the criteria, reducing costs and optimising time efficiency of projects.

Spain: The Autonomous Community of Andalucía does not request a building permit for self-consumption units with power up to 10 kW.

Against the backdrop of the temporary accelerated authorisation procedure at national level mentioned above, it could be envisaged to extend this idea to all renewable energy projects on islands; for instance for any clean energy project on the islands or for a specific size and type of the project which is considered priority in strategic documents. This would fall under the responsibility of the Autonomous Communities. This could perhaps be done for go-to zones (see recommendation 5.1)

It is important to mention that in such small systems the compliance of projects with the technical requirements is key to ensure the stability of the grid with high RES integration even for the smallest plants.

REPowerEU – accelerated procedures.

As explained in the section below on spatial planning, the proposed amendment to the renewable energy directive foresees in the identification of go-to zones.

> In the designated renewables go-to areas, renewable energy projects that comply with the rules and measures identified in the plan or plans prepared by Member States, should benefit from a presumption of not having significant effects on the environment. Therefore, there should be an exemption from the need to carry out a specific environmental impact assessment at project level in the sense of Directive 2011/92/EU of the European Parliament and of the Council[48].
>
> The designation of renewables go-to areas should allow renewable energy plants, their grid connection as well as co-located energy storage facilities located in these areas to benefit from predictability and streamlined administrative procedures. In particular, projects located in renewable go-to areas should benefit from accelerated administrative procedures, including a tacit agreement in case of a lack of response by the competent authority on an administrative step by the established deadline, unless the specific project is subject to an environmental impact assessment. These projects should also benefit from clearly delimited deadlines and legal certainty as regards the expected outcome of the procedure.
>
> Following the application for projects in a renewables go-to area, Member States should carry out a fast screening of such applications with the aim to identify if any of such projects is likely to give rise to significant unforeseen adverse effects in view of the environmental sensitivity of the geographic area where they are located that were not identified during the environmental assessment of the plan or plans designating renewables go-to areas carried out in accordance with Directive 2001/42/EC. All projects located in renewables go-to areas should be deemed approved at the end of such screening process.

Article 1(6) of the proposed amendment replaces Articles 16 of Directive (EU) 2018/2001, extending the scope of the permit-granting process, clarifying the start of the permit-granting process and asking for the most expeditious administrative and judicial procedures available for appeals in the context of an application for a renewable energy projects. Article 1(7) inserts a new Article16a, which regulates the permit-granting process in renewables go-to areas. Member States shall ensure that the permit-granting process referred to in Article 16(1) shall not exceed one year for projects in renewables go-to areas. The permit-granting process for the repowering of plants and for new installations with an electrical capacity of less than 150 kW, co-located energy storage facilities as well as their grid connection, located in renewables go-to areas shall not exceed six months. Article 1(8) inserts a new Article 16b, which regulates the permit-granting process outside renewables go-to areas. Member States shall ensure that the permit-granting process referred to in Article 16(1) shall not exceed two years, for projects outside renewables go-to areas. Article 1(9) inserts a new Article 16c, which regulates the permit-granting process for the installation of solar energy equipment in artificial structures.

Member States should establish timeframes and lay down specific procedural rules with a view to ensuring the efficiency of the legal proceedings related to access to justice for renewable energy projects.

Member States should create a single unified application process for the entire administrative permit application and granting process. Simultaneous applications should be prioritised over sequential applications if different authorisations are required, including for related grid projects.

Member States should introduce fully digital permit-granting procedures and e-communication to substitute the use of paper. Relevant information should be made available to project developers centrally as part of an online

[48] Directive 2011/92/EU of the European parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment

manual of procedures, including templates for applications, environmental studies and data, as well as information on options for public participation and administrative charges.

Other additional recommendations for simplification of the procedures are:

- simplify and harmonise the criteria across the different institutional levels (municipal, island, regional and national).
- Digitalise the permitting process as much as possible. Implementation of standardised and digitalised authorisation procedures across all the levels of governance needs to be encouraged to reduce the administrative weight on permit granting.

REPowerEU – RES Simplify
The RES Simplify report contains some useful recommendations and examples for the use of e-communication, including a mechanism for monitoring project progress.
Digitalisation eases procedures for applicants and authorities alike. Officials can sort, store and review digital documents easily, and share them between the parties involved. This would allow applicants to see in what stage their application currently is. This accelerates the permitting process and provides transparency.

Germany: In 2010, the State of Lower Saxony introduced an electronic authorisation application form for immission protection applications (ELektronische immissionsschutzrechtliche Antragstellung - ELiA), which today is used by eight German federal states and offers an encrypted submission of application documents.

Specifically for the Canary Islands, our recommendation is to classify renewable energy projects urgent and instore minimal binding deadlines for processing. The use of the declaration of general interest for renewable projects should be reactivated. This would make it possible to reduce the necessary procedures – remaining however within the boundaries of environmental legislation, shorten deadlines, and free up restrictions on installation on certain types of land.

Actors involved:

- **Autonomous Communities**
- **MITECO, Ministry for the Ecological Transition and the Demographic Challenge** (Directorate General for Energy Policy and Mines & Directorate-General for Environmental Quality and Assessment)
- Industry and Energy Departments of the National Government Delegations
- Municipalities
- CNMC, *Comisión Nacional de los Mercados y la Competencia* (regulator)
- Transmission System Operator
- Distribution Grid Operators

Recommendation 3.2: Create a one-stop shop for clean energy projects on the islands

We recommend creating a one-stop shop at the level of each of the Autonomous Communities, based on guidelines and regulations from the national level. The one-stop shop is managed by a designated body on the regional or local level. The applicant for a clean energy project provides needed documentation and communicates with only this one authority at the regional or local level. This authority is ultimately responsible for the distribution of the documentation to the relevant bodies for approval, the follow-up with those bodies to deliver their responses in time and to coordinate between those bodies and the applicant.

REPowerEU – RES Simplify
The RES Simplify report contains some useful recommendations and examples for one Stop Shop / consolidation into one single application process.

Applicants can contact a One Stop Shop (OSS) to obtain all permissions for their project. That OSS can either provide permissions or act as a contact point to facilitate the entire process, as defined in art. 16 (1) RED II. Depending on technology and size, the OSS can be either technology specific and/or have limited regional competences. In any case, it should be clear for a project developer to know which OSS it must approach. OSS should be introduced as an option for applicants, allowing them alternatively to directly contact individual authorities. This way applicants can benefit from their own experience and personal contacts.

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 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 also provides more certainty that the project can be established, as all relevant authorities have cleared the project on the stated conditions

A one-stop shop would make coordination and monitoring of clean energy projects easier. It would also help identify bottlenecks in implementation, understanding where there is a need for additional training or improved legislation. Moreover, one-stop shops function even better when a regional or local strategic energy document indicates identified priorities for an area.

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:

- **Autonomous Communities**
- MITECO, Ministry for the Ecological Transition and the Demographic Challenge
- Municipalities

Recommendation 3.3: Build capacity at local level and provide permitting guidance

IDAE together with the Industry and Energy Departments of the National Government Delegations and other relevant stakeholder should develop guidelines for authorisation and implementation of clean energy projects taking into account their characteristics. IDAE can build further on the experience of developing a guide for the installation of self-consumption projects. The guidelines should define clear, definitive and unambiguous recommendations under which conditions clean energy projects can be implemented in restricted areas. The guidelines should be used for training and education of the local governments involved in the permit and authorisation process is needed.

REPowerEU – RES Simplify
The RES Simplify report contains some useful recommendations and examples to ensure that responsible authorities are fit for purpose.
Authorities should be put in a position that they can make robust decisions on applications within the required deadlines or even faster. Key measures include that a sufficient number of staff should be assigned to deal with applications. Furthermore, responsible staff have to be trained to have a sufficient level of expertise to evaluate permissions. This can be supported by central, possibly national, departments, for instance. These would be staffed with experts that can assist their regional or local colleagues on specific issues.

Finland: As onshore wind has expanded rapidly within the last decade in Finland, the municipal authorities' expertise with it has also increased drastically. Municipal environmental and construction authorities exchange information with each other and have begun to network country-wide. In addition, construction

permit decisions from projects all across Finland are public documents and can be consulted as examples when in doubt.

Lastly, it should also be assessed if additional staffing in the administrative authorities is required or temporary posts or technical assistance to the local governments is needed.

REPowerEU – Sufficient and adequate staffing
The recommendation on permitting stipulates that Member States should ensure sufficient and adequate staffing, with relevant skills and qualifications, for their permit-granting bodies and environmental assessment authorities. Member States should use the Union and national funding opportunities available for upskilling and reskilling, in particular at regional and local level, and consider setting up an Alliance for sectoral cooperation on skills to bridge the skills gap of staff working on permit-granting procedures and on environmental assessments.

Actors involved:

- **IDAE, Institute for Diversification and Saving of Energy**
- MITECO, Ministry for the Ecological Transition and the Demographic Challenge (Directorate General for Energy Policy and Mines & Directorate-General for Environmental Quality and Assessment)
- Ministry of Territorial Policy
- Industry and Energy Departments of the National Government Delegations[49]
- Autonomous Communities
- Municipalities

[49] https://www.mptfp.gob.es/portal/delegaciones_gobierno/servicios.html#industria

4. Confusion and misunderstandings about the price signal

As explained in the first Chapter on Policy and Legislation of the study above, and detailed in Annex 2 on the Spanish peninsula there is an hourly price signal which is the hourly price signal of the wholesale market. The RD 738/2015, according to the obligation established in Law 24/2013, defined a price signal that "modulates" the price from peninsula market taken as a reference. The price on the islands is calculated as the average price of the peninsular daily market, corrected by the aiming factor calculated on an hourly basis as the quotient of the hourly demand and the average daily forecast demand. The aim is to flatten the demand curve. Prior to the introduction of the current price system, there was a pricing system based on the cost of generation, which did not result in matching demand and supply and reducing peak demand.
Through discussion with various stakeholders, it became apparent that there is no common understanding of the current price signal and its use.

Recommendation 4.1: Provide capacity building on the price signal and engage with island stakeholders on possible improvements

Although the pricing system has been revised with the aim of fostering renewable energy generation, it is not always understood as such by island stakeholders. Therefore, it could be envisaged for the national government (and more specifically MITECO) to provide clear and comprehensible information on the functioning and advantages of this pricing signal. It should be clearly explained how this pricing system, together with the additional remuneration mechanism (see section on Support systems above) can provide for long-term certainty for the investment in renewable energy generation on the island.
Workshops and trainings could also be provided by IDAE in this regard. It is recommended to take into account the comments and different points of view of the island stakeholders on possible improvements and adaptations to the system to further foster the development of renewable energy. For example instead of flattening the demand curve, it could be shaped to shift demand to moments of high renewable generation as well as its incentivising effect for storage and demand response.

The current price signal might not be suitable as a signal for the operation of explicit demand management. Instead of providing an incentive to store energy when the marginal cost of electricity production is low, it provides an incentive to store energy when demand is low, which can occur during night-time periods of lower renewable production and higher marginal cost[50]. It could thus be assessed whether the price system needs revision in order to be better fitting demand side and demand response implementation, as well as the operation of storage – in light of the development of a clear remuneration mechanism (following our Recommendation 2.1). As an assessment of this pricing system could take some time, it would be advised to use regulatory sandboxes (see recommendation 2.3) to allow the DSO to experiment with different price signals.

Actors involved:
- CNMC, *Comisión Nacional de los Mercados y la Competencia* (regulator)
- **MITECO, Ministry for the Ecological Transition and the Demographic Challenge**
- **IDAE, Institute for Diversification and Saving of Energy**
- Distribution Grid Operators
- Relevant Island stakeholders

[50] Monitor Deloitte

5. Spatial Planning: Lack of long-term vision on how different land use on islands are coordinated to assure sustainable economic development

Access to land and land use conflicts are key challenges to the development of projects. Fostering spatial planning, multiple uses of land, and RES-integrated environmental assessments are essential for future deployment of renewable energy projects on the islands

Land-use conflicts form a major barrier, specifically on islands. Energy generation is in conflict with agriculture, tourism and secondary residency. There are also problems with landscape integration; municipalities are competent to determine it for themselves, however the regional government imposes the obligation that at least 70% of the energy consumption is met with production on the islands.

Recommendation 5.1: Provide guidelines from the national level and ensure integration of the energy sector strategy with spatial planning at regional level

In light of the division of competencies described above we recommend that the national government defines guidance for regional Master Plans for energy based on the NECP. These regional Master Plans have to be integrated with the spatial planning in coordination with the local government.

Integration of spatial planning and sectoral strategies is fundamental in identifying and accessing suitable land for renewable energy projects but is not a common practice. We recommend developing an integrated approach via the creation of a detailed Master Plan per island that investigates and approves the areas or sites for clean energy development. This Master Plan should define go-to areas specifically for one or more renewable energy sources. Consequently, projects in these zones should be subjected to fast-track and simplified permitting procedures or lightened environmental impact assessments.

REPowerEU – Renewable go-to areas

Article 1(1) adds a new definition to Article 2 of Directive (EU) 2018/2001, to define 'renewables go-to area'. Which means *a specific location, whether on land or sea, which has been designated by a Member State as particularly suitable for the installation of plants for the production of energy from renewable sources, other than biomass combustion plants*. Article 1(4) inserts a new Article 15b on the obligation for Member States to identify the land and sea areas necessary for the installation of plants for the production of energy from renewable sources in order to meet their national contributions towards the 2030 renewable energy target. Article 1(5) inserts a new Article 15c on the obligation for Member States to adopt a plan or plans designating 'renewables go-to areas', which are particularly suitable areas for the installation of production of energy from renewable sources.

A faster roll-out of renewable energy projects could be supported by strategic planning carried out by Member States. Member States should identify the land and sea areas necessary for the installation of plants for the production of energy from renewable sources in order to meet their national contributions towards the revised 2030 renewable energy target set out in Article 3(1) of Directive (EU) 2018/2001. The identification of the required land and sea areas should take into consideration the availability of the renewable energy resources and the potential offered by the different land and sea areas for renewable energy production of the different technologies, the projected energy demand overall and in the different regions of the Member State, and the availability of relevant grid infrastructure, storage and other flexibility tools bearing in mind the capacity needed to cater for the increasing amount of renewable energy.

Member States should designate as renewables go-to areas those areas that are particularly suitable to develop renewable energy projects, differentiating between technologies, and where the deployment of the specific type of renewable energy sources is not expected to have a significant environmental impact. In the designation of renewables go-to areas, Member States should avoid protected areas to the extent possible and consider restoration plans. Member States may designate renewable go-to areas specific for

one or more types of renewable energy plants and should indicate the type or types of renewable energy that are suitable to be produced in each renewable go-to area.

As islands are part of local government but also covered by the spatial and sectoral specifications of the respective regional governments, they need to be involved in the discussion.
The local government is often not included in the process of energy planning. While the energy plan might say that the planned energy projects are spatially feasible, local governments still have to approve this once the energy project goes into authorisation procedure. Therefore we recommend that the regional government (Autonomous Communities) should assure involvement of the local government (municipalities), as well as private sectors, local actors and energy experts, in preparation of local spatial plans.

The development of land databases or zoning plans, including clear identification of land qualifications (agricultural land, natural land) and land ownership, are necessary and should be coupled with regular spatial planning exercises to identify areas available for renewable energy project development.

REPowerEU – RES Simplify
The RES Simplify report contains some useful recommendations and examples for political backing of RES: Integrated planning system from national to local.
A general planning strategy can enhance local and regional involvement. Such a strategy includes breaking down national targets to the regional and local levels. Measures should be implemented to legally ensure the availability of sufficient land area for a target-compliant RES development (e.g. x% of national area is allocated to wind power). This could feature regional targets, but would leave decisions about specific locations in the hands of local actors.
Germany: The German Renewable Energy Act requires the federal states to report to the federal government on the status of renewables. This particularly includes permitted RES installations, the progress of repowering, and the area of land which is available for further wind energy deployment according to regional and urban land-use plans. If the available area is not sufficient, reasons and proposals for improvement have to be provided. Monitoring reports are assessed by a cooperation committee of the Federal Ministry of Economy and Energy and the federal states. Based on the committee's assessment, the Federal Government report on the progress of RES deployment with a view to reaching the RES targets and provides recommendations for further measures (Tagesspiegel Background 2021).

Actors involved:
- MITECO, Ministry for the Ecological Transition and the Demographic Challenge
- Ministry of Agriculture, Fisheries and Food
- Ministry of Territorial Policy
- Industry and Energy Departments of the National Government Delegations[51]
- **Autonomous Communities**
- Municipalities

Recommendation 5.2: Develop Regional unified criteria (for all Non-Peninsular Territories)

Regional requirements beyond national standards can complicate the permitting process, making projects less attractive to investors and difficult for any local initiative. We recommend developing

[51] https://www.mptfp.gob.es/portal/delegaciones_gobierno/servicios.html#industria

more unified criteria that hold for the whole region (for example Non-Peninsular Territories). Now, there is a disparity of criteria depending on the island and also depending on the entity that will finally inform the environmental permit.

We recommend drawing up land development plans, coordinated by the local councils and town councils, aimed at promoting the installation of renewable energies.

Actors involved:

- **MITECO, Ministry for the Ecological Transition and the Demographic Challenge**
- Autonomous Communities
- Municipalities
- Distribution Grid Operators

6. The lack of coordination of energy sector priorities between the national and regional governments

The barriers discussed above emanate from gaps in information sharing between different levels of government. While each level of government makes plans for the energy transition within their respective competence there seems to be a lack of coordination. While the national actors indicate that there are specific measures foreseen for islands in the NECP and funding from the Recovery and Resilience Facility will go to the islands, island stakeholders indicate that these plans not always reflect the real needs of the islands. While some steps in the right direction are taken by IDAE, the plans lack execution with concrete actions. Above that, these plans are often top-down and often priorities of local stakeholders are not taken into account in strategic planning, as explained in the previous barriers. The impact of this lack of coordination is particularly relevant for the decarbonisation of the islands, since the division of competences between the national and regional governments, the latter do not have decision making powers regarding some of the main greenhouse gas emitting activities like aviation and maritime transport, and cooperation is thus needed.

Recommendation 6.1: Create an 'island department' at national level

To foster the involvement of island stakeholders in national strategic & long-term energy planning and funding distribution while improving the concreteness and effectiveness of instruments and actions at national level, we recommend creating an 'island department'. This can either be as a sub directorate for Non-peninsular Territories in the Ministry of Ecological transition (General Directorate for Energy Policy and Mines), or this could be taken up by IDAE. A dedicated island department would allow for two-way communication and cooperation. One or more representatives from the regional level (Autonomous Communities) should be part of the department to improve the coordination between regional and national government on the topic of clean energy.
As mentioned under Recommendation 1.1, this department could also assist in the grid development planning to ensure the island realities are taken into account.

Actors involved:

- **MITECO, Ministry for the Ecological Transition and the Demographic Challenge (possibly within the Directorate General for Energy Policy)**
- **IDAE, Institute for Diversification and Saving of Energy**
- National governments Ministries
- Autonomous Communities
- Relevant Island stakeholders

Recommendation 6.2: Support the development and implementation of Island Clean Energy Transition Agendas

The above-recommended 'island department' could also provide support to islands in drawing up and implementing climate and energy plans, with clear targets for 2030, outlining solutions to achieve an energy model centred on renewable sources and addressing the challenges of proper circular management of the water and waste cycle. This support could lead to accelerated realisation of clean energy projects on islands. The involvement of key stakeholders in preparation of such island specific strategic documents should be fostered.

The support should be coupled with capacity building and technical assistance from the 'island department'. Capacity building can take the form of, for instance, workshops for municipalities,

guidelines for energy transition, and examples of roadmaps from similar municipalities or regions. Where there is not enough capacity on the islands, the taskforce can provide support through technical assistance (IDAE) to engage external support for short-term projects.

Lastly, it is needed to allocate adequate resources to the islands to develop such plans. Islands need local transition teams to develop and drive Clean Energy Transition Agendas[52]. A local transition team is the smaller team of organisations and associations that represent larger segments of the island's population. The transition team is the core team that drives the clean energy transition process and has an important facilitation and coordination role. They are the main participants in the transition dialogues and look for inputs from the broader community. Since the transition team assumes the responsibility over the island's clean energy transition, it is important that the organisations are committed with both resources and availability. They are also the ones that provide feedback and information to the regional representatives in the Island Department (recommendation 6.1).

Actors involved:

- **MITECO, Ministry for the Ecological Transition and the Demographic Challenge**
- IDAE, Institute for Diversification and Saving of Energy
- Autonomous Communities
- Relevant Island stakeholders

[52] https://clean-energy-islands.ec.europa.eu/assistance/clean-energy-transition-agenda

7. Lack of clear regulation for energy communities

While Spain has adopted some legislation on community energy and (collective) self-consumption (as can be found in Annex 5), the regulation is not clear. Although there is a decree that transposes the European Directive, there is no clear view on how to create energy communities.

A specific barrier in this regard might be the geographical limitation of self-consumption: collective self-consumption, without grid charges, is possible for communities that are in the radius of 2000 m from the generation plant and connected at low voltage. It should be 'cheaper' to consume locally produced renewable energy instead of consuming fossil fuel produced electricity over island connecting cables.

Recommendation 7.1: Adopt clear regulatory framework for energy communities with identified benefits

While regional legislation has recognised the need for involvement of local stakeholders[53], there is no clear way of how the local stakeholder can get involved in energy communities.

Therefore development of enabling regulatory framework for energy communities should be one of the priorities for clean energy transition on the Spanish islands. A possible start is providing a legal base for experiments as you move towards full legislation on communities. There is a need for clear rules on distribution tariffs, contractual relations, remuneration mechanisms etc.[54]. Several EU and national projects identify legal barriers and provide solutions and best practices such as Bridge, Lightness, Interreg prospect 2030, etc.

REPowerEU - facilitating citizen and community participation
To facilitate citizen and community participation, Member States should stimulate the participation of citizens, including from low and middle-income households, and energy communities in renewable energy projects, as well as take measures to encourage passing the benefits of the energy transition on to local communities thus enhancing public acceptance and engagement. Member States should implement simplified permit-granting procedures for renewable energy communities, including for the connection of community-owned plants to the grid and reduce to a minimum production licensing procedures and requirements, including for renewables self-consumers.
The EU Solar Strategy highlights that better information is key to enhance clarity and predictability on the benefits of selfconsumption for potential investors, citizens and SMEs. Investment costs, financial support, increase of property value, network tariffs, generation and consumption profiles and return on investment are all relevant factors impacting investments. One-stop-shops in Member States should share such information and give citizens advice on both energy efficiency measures and solar energy projects in an integrated manner, from the technical requirements to administrative steps and support measures.
Community energy projects still face significant barriers, including difficulties in securing financing, navigating licencing and permitting procedures or developing sustainable business models. In addition, as they are often initiated by a group of volunteers, they suffer from limited time and lack of access to technical expertise. Member States should establish appropriate incentives and adapt administrative requirements to the characteristics of energy communities. An integrated 3-step "learn-plan-do" programme could help energy communities build technical expertise and secure access to financing. The assessment and removal of existing barriers would level the playing field with more professionalised and established market participants.

Actors involved:
- **MITECO, Ministry for the Ecological Transition and the Demographic Challenge**
- IDAE, Institute for Diversification and Saving of Energy

[53] The Balearic Climate change and Energy Transition Law, approved in February 2019, requires the public administrations of the Balearic Islands to support participation of citizens, civil society organisations and local renewable energy communities in the deployment and management of renewable energy systems, specifically minimum 20% share for projects with installed capacity of more than 5 MW.
[54] https://elperiodicodelaenergia.com/comunidades-energeticas-ya-disponen-de-ayudas-pero-aun-carecen-de-regulacion/

Recommendation 7.2: Capacity building and information for municipalities

Lack of training of professionals was indicated as a barrier. We recommend raising awareness on the side of municipalities so that they know what energy communities are and how they can be part of it. Clear communication and capacity building targeted to municipalities about the progress of the legislation is necessary. Here also lies a role for IDAE and the Island Department.

Additionally, communication is important. Ministries should provide clear and transparent communication about what is possible. As specifically indicated by several stakeholders, there is a lack of information on the possible benefits of energy communities, communication should focus on that. This should be easy to access and written clearly in non-technical and easy-to-understand language. Awareness and clear communication can also be a task for the 'islands department' as proposed under the previous barrier.

Actors involved:

- **IDAE, Institute for Diversification and Saving of Energy**
- MITECO, Ministry for the Ecological Transition and the Demographic Challenge
- Municipalities

Conclusions

Based on an inventory of the current legislation and information gathered via surveys and interviews, the Clean energy for EU islands secretariat has brought together all relevant stakeholders in Focus Groups and a National Stakeholder Meeting to identify barriers to the clean energy transition on Spanish islands, and formulated recommendations to overcome them. This mission has gained in importance since the publication of the #REPowerEU package.

Despite important recent measures to facilitate the energy transition, several major challenges for the clean energy transition on the Spanish islands remain. These barriers relate to grid constraints, inflexible thermal power plants, lack of legal frameworks for RE system integration, complex and lengthy permitting and authorisation procedures, spatial planning issues and lack of coordination of energy sector priorities between the national and regional governments.

The good news is that they can be overcome by constructive collaboration between the relevant actors. Regular dialogues and interaction between the island stakeholders and the stakeholders at national level should be further fostered by IDAE. This will allow for the involvement of island stakeholders in national strategic & long-term energy planning and funding distribution, and it would improve the concreteness and effectiveness of instruments and actions at national level (Recommendation 6.1).

Areas where constructive collaboration could result in major breakthroughs are grid planning, the management of the thermal power capacity, supportive frameworks for storage and demand response and permitting.

Grid development planning should be improved to be in line with the renewable energy ambitions and challenges of the islands. The thermal generation infrastructure should be modernised to increase flexibility and reduce reserve requirements. Actions from MITECO and the TSO and DSO are required to implement recommendations 1.1 and 1.2. To cope with challenges of intermittent renewables and fluctuating demand, MITECO and IDEA should work on a particular legal framework for the remuneration and operation of stand-alone storage systems on the islands, rules for the participation of demand response in the market and use regulatory sandboxes to test these (and other) innovative solutions (recommendations 2.1 – 2.3).

Permitting is another area where collaboration between levels of government could lead to a stimulating environment for clean energy development. The Autonomous Communities should assess the possibilities to streamline spatial planning and accelerate permitting procedures via solutions such as go-to zones, single permits, exemptions, one-stop-shops, capacity building etc. as proposed under recommendations 3.1-3.3 and 5.1-5.2. MITECO and IDAE should provide support and guidance in this matter to the Autonomous Communities.

Energy communities and cooperatives are part of the landscape that can allow citizens to participate in the clean energy transition and share in the advantages. Therefore, we recommend further completing the legal framework to enable their development.

Lastly, the process of identifying barriers, discussing them between stakeholders and assess possible solutions in a collaborative way has shown its merit. We recommend stakeholders continue these discussions. The Spanish islands will benefit from them.

Annex 1 – Detailed analysis of the survey results & results of the interviews

The survey for Legal and Regulatory Barriers for clean energy on Spanish islands has been sent to 48 contacts, representing 37 stakeholders from national and local governments, over academia to energy associations, 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 11 responders.

The responders of the survey are representatives of eight stakeholder groups. The responders are relatively distributed among these different stakeholders with Regional Bodies representing 27% and Energy Communities/ Cooperatives representing 18%. The rest of the stakeholder groups (Local Authority, Energy Supplier, Ministry, NGO, Citizen, Network Operator) are represented with 9% of respondents each or hence 1 respondent. Note that these are stakeholder categories in which the respondents identified themselves.
Nine semi-structured open-ended interviews were held. Interviews were held with Institut Balear de l'Energia (IBE), Consell Insular de Menorca (CIME), Instituto Tecnológico de Canarias, Menorca waster and energy - wind farm, Som Energia, DSO Endesa (two interviews), MITECO and a citizen active in the energy transition.

Note that for several barriers and recommendations suggestions from the Monitor Deloitte report *Los Territorios No Peninsulares 100% descarbonizados en 2040: la vanguardia de la transición energética en España*, available here, have been reproduced. This report analyses the characteristics of non-peninsular territories and provides a set of solutions to decarbonise these regions.

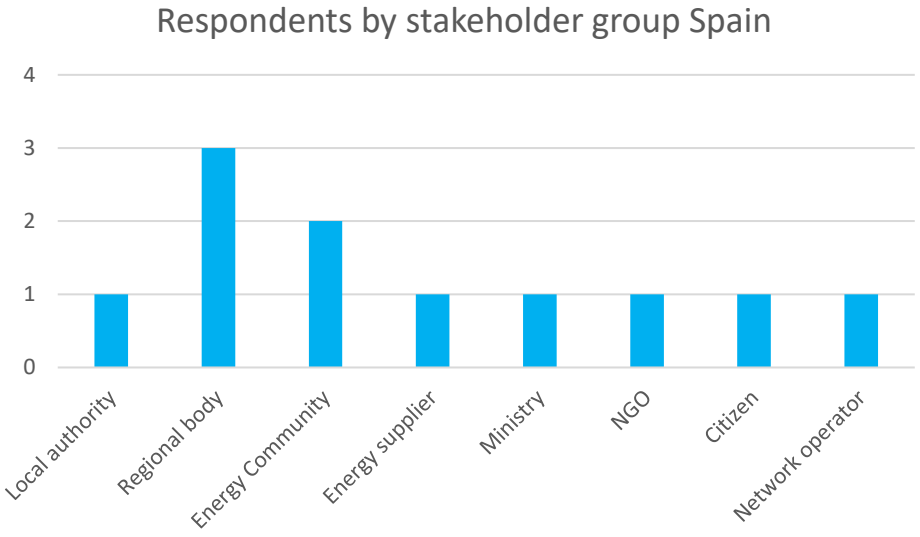

Figure 2 - Respondents by stakeholder group Spain

The most important barriers that were identified by the survey respondents were the following:

- Lack of long-term vision on the coordination of diversity inland use on islands to assure sustainable economic development.

- Grid infrastructure constraints and stringent requirements for RES on islands, which are a barrier for renewable energy developments on the islands.
- The division of competences between the national and regional governments. The latter do not have decision power regarding some of the main GHG emitting activities like aviation and maritime transport.
- Complex administrative procedures for permitting and authorisation of renewable energy projects.
- The legal and regulatory frameworks (support systems, storage, innovative technological solutions, etc.) are not adapted to the island's characteristics.

These and other barriers are elaborated upon in more detail in the sections below.

General

Survey results:
The survey has asked the respondents to give their opinion on the following three statements regarding strategic energy planning for clean energy on Spanish islands using a Likert scale. The results are presented in numerical form showing the average based on all responses. The numerical representation is from 1-5, with 1 representing strong disagreement to 5 representing strong agreement.

Statement	**Rating**
Island(s) energy plans would help align local and national regulation, spatial plans, restrictions for clean energy	3.4
National obligation for islands to develop energy action plans would lead to accelerated realisation of clean energy projects on islands	4.0
Islands should be better integrated in the National Energy and Climate Plans	3.9

We take into account only statements that rate on average above 4,0, meaning all respondents either agree or strongly agree with the statement. Based on this, only the statement that 'National obligation for islands to develop energy action plans would lead to accelerated realisation of clean energy projects on islands' was agreed upon by the respondents.

The statements 'National obligation for islands to develop energy action plans would lead to accelerated realisation of clean energy projects on islands' and 'Islands should be better integrated in the National Energy and Climate Plans' were (strongly) agreed upon by all respondents except for the respondent from the stakeholder groups Local Authority and Energy Supplier who strongly disagreed.

The statement 'Island(s) energy plans would help align local and national regulation, spatial plans, restrictions for clean energy' was (strongly) agreed upon by the respondents from the stakeholder groups Network operator, NGO, Ministry and Regional Body, while the respondents from the stakeholder groups Energy Community or Cooperative and Energy Supplier had a rather neutral stance on it. The respondents from the stakeholder groups Local Authority and Citizen (strongly) disagreed.

Interview results:

From the interviews with Spanish stakeholders, the following general barriers for clean energy development on Spanish islands have been retained:

- The Spanish government has clear goals and targets for the whole of Spain. On the mainland the strategy is clear: close coal plants, include gas and have RES generation. However, the national strategy for the islands is not clear. Due to their insularity and isolation, islands require different and stricter security of supply strategies than mainland. While the final goal in 2050 is clear, it is not clear what the specific actions to get there are and how to deal with existing (electricity) generation plants.
- It was, however, mentioned that the recent adoption of the Spanish National energy and climate plan (NECPs) includes measures and policies in the decarbonisation dimension such as "Unique projects and strategy for sustainable energy on the islands" or "Reducing dependency on petroleum and carbon on the islands". Furthermore, the NECP determines that "Specific programme for territories not on the mainland" will be set up under the title "Development of new facilities for generating electricity using renewables".
- General planning instruments (energy plans, urban and land use plans, etc.) are often not up to date and rarely reflect present-day needs.
- An interviewee indicated that it is not the islands energy plans or the lack thereof that will make or break the energy transition on the island. Often the plans are made in good spirit, but they lack execution with concrete actions. Above that, these plans are often top-down and citizens and local stakeholders are not involved (enough).

The survey has asked the respondents to give their opinion if the following two statements represent barriers for development of clean energy projects on Spanish islands using a Likert scale. The results are presented in numerical form showing the average from all responses. The numerical representation is from 1-5, with 1 representing not at strong disagreement to 5 representing strong agreement.

Barrier	Rating
Electricity price on the islands subsidised through electricity prices of the citizens on the mainland.	3.5
Islands do not make decisions regarding aviation and maritime transport.	4.3

The statement ‘Islands do not make decisions regarding aviation and maritime transport.’ was (strongly) agreed upon by all respondents to be a barrier, while the respondent from the stakeholder group Network Operator strongly disagreed.

The statement ‘Electricity price on the islands subsidised through electricity prices of the citizens on the mainland’, while not considered overall as a barrier, was (strongly) agreed to be a barrier by the respondents from the stakeholder groups Energy Supplier, Energy Community or Cooperative, NGO and Citizen, while the respondents from the stakeholder groups Regional Body and Ministry had a rather neutral stance on it. The respondent from the stakeholder group Network Operator strongly disagreed.

Interview results:
From the interviews with Spanish stakeholders, the following general barriers for clean energy development on Spanish islands have been retained:

- A major general barrier for decarbonisation of the Spanish islands is the division of competences between the national and regional governments. The latter do not have competences regarding some of the main GHG emitting activities like aviation and maritime transport; islands' governments do not have the capacity to take any decision on the number of airplanes or ships arriving at the islands. Specifically for strategic energy planning the barrier is that energy and climate matters are shared competences between the state and the regions, meaning that the islands cannot take decisions on their own.
    - On the one hand there is the island view that islands energy transition might not be the priority for the national government (which is phasing out nuclear and coal at a national level).
        - For example, some of the thermal plants on the Balearic Islands need upgrading to comply with EU environmental legislation. This needs to be organised via a national tender procedure at state level, but this is not happening.
    - On the other hand, Spain has determined that a large part of the Next Generation money is specifically allocated to islands; 700 million EURO for the Balearic Islands and the Canary Islands. For the islanders it is however unclear how the money will be distributed.

- Slow regulatory development has introduced a significant delay in the decarbonisation process and put security of supply at risk. The electricity systems in the Spanish islands have their own regulatory framework, quite different from that in the mainland because of the small size and specific characteristics of these territories.
    - Current legislation establishes that the authorisation of new investments in thermal installations will be done through competitive procedures leading to a "compatibility resolution", which is required to obtain the regulated remuneration. However, the regulation of these competitive procedures has not been approved. This means that all investments in firm and flexible generation (be it investments in new units or refurbishments of existing units) have been paralyzed since before 2013. As a result of this, the generation systems of the islands continue to rely to a very large extent on thermal generation (particularly in the Canary Islands, where all thermal generation is based on oil), existing units are becoming obsolete, and risks to security of supply are increasing. " It is important to notice that modernisation of existing thermal generation is a prerequisite for the development of RES. This would increase flexibility and reduce reserve requirements (through the hybridization of thermal generators with batteries) allowing much greater injection of renewable energy.
- Current legislation establishes the introduction of competition in the supply of fuel for thermal generation through auctions. However, this has not been implemented, even though there has been a recent decision of the Spanish Supreme Court mandating the implementation of these auctions. However, the Spanish authorities acknowledge this situation, and the new regulation would be implemented in the short term. The development of this new regulation is essential to be implemented prior to the competitive bidding procedure planned for the renovation of the thermal generation installations, in order to provide the necessary legal certainty to the participants.
- Current regulation covers only thermal and renewable generation, but does not offer a framework for storage, demand-side management or aggregation, even though different proposals have been made by market players. The regulatory development of these new

figures is also pending on the mainland. However, some aspects of the regulation of these new players on the islands must be specific (as explained above, there is no wholesale market on the islands) and their contribution is particularly important to assure security of supply and reduce the reliance on thermal generation.

It was brought forward by several island stakeholders that the remuneration system established by RD738/2015 does not give the price signal to invest in renewables, distributed generation, demand side flexibility (e.g., EVs and batteries) and energy efficiency measures. In Annex 2, we provide for a detailed assessment of this barrier, which can be summarised as follows:

- Large divergence between the hourly sale price of non-mainland systems and the hourly marginal cost of production generating distortions and inefficiencies in the system.
- Decoupling the hourly price of energy sales from the cost of generation gives the wrong signal as to when more generation is needed and leads to inefficient installation of renewables.
- The price signal is inadequate from a demand point of view, as it does not provide an incentive to shift consumption to times of higher renewable production (with lower marginal costs), resulting in higher electricity generation costs for the system and less use of renewable production.
- The price signal is not suitable as a signal for the operation of storage facilities (or for explicit demand management)

Renewable energy

General

Survey results:

The survey has asked the respondents to rate the following five general barriers to renewable energy development on Spanish islands based on their importance using Likert scale. The results are presented in numerical form showing the average from all responses. The numerical representation is from 1-5, with 1 representing not at all important to 5 representing very important.

Barrier	Rating
Lack of support schemes tailored to island regions	3.1
Lack of specific legislation regarding licensing and operation of innovative technological solutions significant for the islands' clean energy transition	4.0
Lack of long-term planning developed at regional/island level (e.g. lack of clear renewable energy targets)	3.4
Lack of awareness and/or capacity of the stakeholders for developing clean energy projects	2.2
Lack of clarity regarding financial, social or environmental benefits to islanders	2.9

If we take into account only barriers that are considered important, (with an aggregated rating of 4.0 and above) there is one barrier put forward by the respondents, namely, Lack of specific

legislation regarding licensing and operation of innovative technological solutions significant for the islands' clean energy transition

This barrier 'Lack of specific legislation regarding licensing and operation of innovative technological solutions significant for the islands' clean energy transition' has been rated as "very important" by respondents from the stakeholder groups Local Authority, regional body and energy supplier. While the respondents from the stakeholder groups Ministry and Network Operator rated it as "fairly important", the respondents from the stakeholder group Energy Community or Cooperative had a neutral stance on it.

Interview results:
From the interviews with Spanish stakeholders, the following general barriers for renewable energy development on Spanish islands have been retained:

- Throughout the interviews, it has been mentioned several times that the legal and regulatory frameworks are not adapted to the island's characteristics. This goes for renewable energy in general and specifically the permitting procedures and grid related policies. The specific issues are discussed in the relevant sections below.
- Hydrogen can help in the energy transition in the Canary Islands, and is as such recognised in the Energy Strategy of the Canary Islands 2015-2025 and the Intelligent Specialisation Strategy of the Canary Islands (2014-2020). However, until recently there were no national and/ or regional specific actions taking place to strengthen and facilitate the implementation of hydrogen[55]. Some actions have been defined in the national Recovery and Resilience Plan (component 9 to be precise) as well as a roadmap for hydrogen developed by MITECO[56].
- Because of the absence of a wholesale market, there is a need for an adequate auction scheme. It is the opinion of some stakeholders that while there are already specific renewable auctions on the islands, their timing, size and visibility are vastly insufficient for the needs of a total decarbonisation of the energy mix. Other stakeholders indicated that there have been different auctions and part of the power was not finally installed. Hence, according to them the problem does not lie with the auction system. The current price signal is given only by the hourly demand relative to the average energy demand. Regulation must therefore be adapted to provide an efficient price signal and facilitate investment decisions on renewables, storage facilities and demand side management.
- There is a lack of an adequate legal framework for storage, specifically battery energy storage, which is of high importance for the islands, and thus there are no such projects being developed or projects are being delayed. There is a lack of clarity on the applicable rules; how will storage assets be able to participate in the energy system. Pumped storage projects are being developed on the islands, utilising the existing regulatory

[55] http://www.seafuel.eu/wp-content/uploads/2020/05/Current-hydrogen-policy-frameworks.pdf
Hydrogen part of the Intelligent Specialisation Strategy of the Canary Islands (2014 -2020). Focusing in developing an intelligent touristic sector, the strategy includes hydrogen as one of the alternative fuels that can be introduced in the Canary Islands facing the opportunities and challenges in transport and sustainable mobility, being ideal for testing new technologies and new business models related to sustainable mobility: progressive implementation of the vehicle electric and supplied with other "sustainable" fuels in tourist settings, management of fleets of vehicles for hire, innovative models of car-pooling and car-sharing, development of "sustainable" tourist routes, etc.
The Energetic Strategy of the Canary Islands 2015 -2025 also includes hydrogen under its Axis 2: Transport. Reduce the oil dependence in transport, especially in the road transport sector. Action Line 2: Promotion of the use of alternative fuels (non-electric) in ground transportation. Initiative E2_2.2 Development of infrastructures to encourage the use of alternative vehicles.
[56] https://www.miteco.gob.es/es/ministerio/planes-estrategias/hidrogeno/hojarutahidrogenorenovable_tcm30-525000.PDF

framework for generators. For example the Salto de Chira pumped storage in the Canary Islands[57].

- For innovative technological solutions that are important for the clean energy transition of islands, e.g. smart micro-grids, small wind turbines, there is a lack of legislation or the legislation that exists is too restrictive. For example, to be able to participate in the electricity system with energy exchanges between individuals (energy communities), the barriers are so high that it is not possible at the moment. Note that these barriers are also valid for energy community projects on the mainland.

RES projects authorisation process (permitting and spatial planning)

Survey results:
The survey has asked the respondents to rate the following six barriers to renewable energy development regarding permitting and spatial planning on Spanish islands based on their importance using Likert scale. The results are presented in numerical form showing the average from all responses. The numerical representation is from 1-5, with 1 representing not at all important to 5 representing very important.

Barrier	Rating
Complex administrative procedure	4.3
Long (>2 years) permitting procedure	3.9
Lack of permitting exemption for small-scale systems (PV, battery, EV chargers)	3.4
Spatial planning legislation related to protected areas restrictions and RES installations not adjusted to the local island's characteristics	3.3
Renewable energy projects seen as conflicting to environmental protection of the islands/area around islands	4.0
Lack of long-term vision on how different land use on islands are coordinated to assure sustainable economic development	4.6

If we take into account only barriers that are considered important, (with an aggregated rating of 4.0 and above) there are three barriers put forward by respondents.
They include from least to most important:

- Renewable energy projects seen as conflicting to environmental protection of the islands/area around islands
- Complex administrative procedure
- Lack of long term vision on how different land use on islands are coordinated to assure sustainable economic development

The barrier "Lack of long term vision on how different land use on islands are coordinated to assure sustainable economic development" is rated as "very important" by the respondents from the

[57] https://www.ree.es/en/activities/unique-projects/salto-chira-pumped-storage-hydropower-plant: The authorised project will take advantage of the fact that there are two large inland reservoirs (the Chira and Soria dams) located on the island in order to build between them a 200-MW pumped-storage hydroelectric power station (equivalent to approximately 36% of the peak demand of the island of Gran Canaria) and an energy storage capacity of 3.5 GWh. Additionally, the project includes the construction of a seawater desalination plant and the associated marine works, as well as the necessary facilities for connection to the transmission grid.

stakeholder groups Energy Supplier, NGO, Citizen and Network Operator, while rated "fairly important" by the other respondents.

The barrier "Complex administrative procedure" is rated as "very important" by the respondents from the stakeholder groups Local Authority, Energy Supplier, NGO and Network Operator, while rated as important by respondents from the stakeholder group Energy Community or Cooperative. Respondents from the stakeholder group Ministry and Ministry had a neutral stance on it. Respondents from the stakeholder group were spilt between a neutral opinion and "fairly important".

The barrier "Renewable energy projects seen as conflicting to environmental protection of the islands/area around islands" is rated as "very important" by the respondents from the stakeholder groups Energy Supplier, Ministry, Citizen and Network Operator while rated "fairly important" by the other respondents, except for the respondent from the stakeholder group NGO who had no opinion on it.

Interview results:
From the interviews with Spanish stakeholders, the following barriers for renewable energy development, regarding permitting and spatial planning, on Spanish islands have been retained:

- Land-use conflicts form a major barrier. Energy generation is in conflict with agriculture, tourism, and secondary residency. There are also problems with landscape integration.
- A major barrier is the 'red tape' at the local administrations. Spatial planning is done on a local level (at least on the Canary Islands) while energy planning is done by ITC (as mentioned in the Policy chapter above) in collaboration with the regional government.
    - When energy planning is done it takes into account existing limitations and restrictions, the local government is often not included in the process of energy planning, this while Article 4 of Law 24/2013 mandates their involvement. An energy plan might indicate that the planned energy projects are spatially feasible, local governments still have to approve them. These local governments thus still have to assess the energy project once it enters the authorisation procedure.
    - The local governments (insular councils) are overwhelmed by the rapid increase in wind and solar projects. In many cases, they do not understand that it is their responsibility to decide the possible locations for the RES plants. This causes the slowdown in the energy transition on the Canary Islands. Insular councils have to prepare territorial planning for the energy installations.
    - The complexity of the institutional framework on the islands (with the coexistence of four levels of authority: municipal, island, regional and national) slows down the authorisation and permitting process. Regional requirements beyond national standards can further complicate the permitting process, making projects less attractive to investors and difficult for any local initiative.

- The legal and regulatory frameworks are not adapted to the island's characteristics. For example: The levels of territorial protection and respect for the landscape are much more demanding on islands than on the mainland. This hinders or blocks large-scale projects. Therefore, it is necessary to carry out smaller projects, adapted to the territorial reality, and which require a greater financial effort.

- Obtaining an environmental permit is very complicated on the islands, especially on the Balearic Islands.
    - There is a disparity of criteria depending on the island and also depending on the entity that will finally inform the environmental permit. And sometimes the body

that reports the environmental permit does not have real knowledge of the situation on each island. This causes environmental approval processes to run into bottlenecks that greatly delay the process. And there is no clear, single or common, criterion for knowing whether a project will finally receive environmental authorisation or not. Because by the time it reaches the territorial body once the report is finished, the information is lost. The fact that there is only one authorised park in the Balearic Islands is an indicator of how complicated and restrictive the processes are. There is already a spatial plan – which supposedly would help – however, the hurdles appear mostly at the end of the permitting process.
    - There is a lack of specific training on the negative and positive impacts of renewables and other energies in the administration. It would also be necessary for the proposed projects to clearly and objectively define the possible positive and negative impacts they cause.

- There is a need for (national) marine spatial planning to accommodate marine renewable energy, mainly floating offshore wind. Wave and tidal energy are currently too expensive, they are more tested then for implementation. The Canary islands are very much interested in this, given that there is not much land for the energy needed. They are urging the national government to improve marine spatial planning. Floating offshore wind is planned to be 20% of the energy mix[58]. These offshore wind farms will be smaller than the northern ones so for them to be manageable, they need special incentives on the CAPEX from national government.
    - In the meantime, the maritime spatial planning (POEM's) have been submitted for public consultation and hearing during 2021. These documents will define areas of priority use and high potential, on a national level, for the development of offshore renewable facilities. Moreover, in November 2021, the Spanish Roadmap for the Development of marine energies was published. This document includes a measure for the early development of offshore wind power in the Canary Islands, focusing mainly on the floating offshore wind technology[59].

Grids

Survey results:
The survey has asked the respondents to rate the following four grid connection barriers to renewable energy development on Spanish islands based on their importance using Likert scale. The results are presented in numerical form showing the average from all responses. The numerical representation is from 1-5, with 1 representing not at all important to 5 representing very important.

Barrier	Rating
Limited priority access for renewable energy	3.7
Insufficient capacity due to grid infrastructure constraints	4.3
Limited sustainable back-up options to assure security of supply	4.0

[58] https://www.gobiernodecanarias.org/agendacanaria2030/
[59] https://www.lamoncloa.gob.es/consejodeministros/resumenes/Documents/2021/101221-Hoja-ruta-eolica-marina.pdf

Lack of systematic approach to grid development needs for integration of RES	3.9

If we take into account only barriers that are considered important, (with an aggregated rating of 4.0 and above) there are two barriers put forward by respondents.
They include from least to most important:

- Limited sustainable back-up options to assure security of supply
- Insufficient capacity due to grid infrastructure constraints

While there is consensus among most of the respondents that the most important barrier is the insufficient grid capacity due to grid infrastructure constraints, the respondent from the stakeholder group Network Operator takes a neutral stance on it and the respondent from the stakeholder group Citizen rates it as “not important”.

While all respondents rated the barrier ‘Limited sustainable back-up options to assure security of supply’ as “fairly important” or “very important”, the respondent from the stakeholder group Energy Supplier had a neutral stance on it and the respondent from the stakeholder group Citizen rated it as “not important”.

Interview results:
From the interviews with Spanish stakeholders, the following barriers for renewable energy development, regarding the grid, on Spanish islands have been retained:

- The grid stability or security of supply requirements applied on the island territories are much higher than on the mainland territories.

- There is a mismatch between the allocated grid capacity on islands and peninsular territories compared to mainland territories. The requirements used for islands are very restrictive. Too quickly it is said that renewables would saturate the available power grid. This prevents many of the projects to emerge. The following suggestions were formulated:

    - Criteria would have to be made more flexible which would allow renewable generation to be associated with storage in order to facilitate manageability, and in this way be more flexible in granting renewable power access to the grids.
    - When small project developers ask for access to the network, they encounter as a barrier that the network is already saturated with projects planned by large companies (which are not certain to be implemented). These large companies request high capacities for very large installations, which they may not be able to implement. Small projects do not have the capacity to apply for access to the grid in advance, because it is not easy for these small companies or private individuals to have collateral to secure this implementation.
    - While network planning is approved and published by the MITECO, there are plans to upgrade the grid, but not in the short term. The issue is that developers can not start with applying for the environmental permit if there is no grid permit, but developers do not get a grid permit because the grid has no available capacity. Additionally on islands every project above 0.5 MW requires the approval of the system operator; so even the cases where projects with, for example storage with a

nominal capacity below the threshold of 0.5 MW that have peak capacity above 0.5MW require a permit.

- There is missing regulation regarding storage in Spain and hence this is a problem for islands. Storage can be there only as part of RES plant, not separately. Note that energy storage has recently been equated with power generators in the Royal Decree-law 6/2022 (urgent measures)[60].

- For electrification of transport - there is a plan to electrify transport until 2040. E-transport is not seen as much of a solution to storage but more as additional need for RES generation. Electrification of transport is both an issue for mainland and for islands, but it is a bigger issue for the islands since transport takes a larger share in the whole energy consumption. Policies and support scheme on the national level can also be used for islands.
    - Each island local government has responsibility to boost e-mobility transition and the strategy on how to implement charging infrastructure. The strategy (PECAN) for Canary islands defines how many chargers are needed and it suggest locations. However the actual roll out will depend on the local governments.

- The modernisation plans for the transmission networks come from the central government, and island stakeholders feel that the island territories are not a priority because the level of population affected is much lower than in continental areas. Modernisations have been postponed multiple times. In terms of distribution grid development, every year the distributors send the authorities (regional, central and the CNMC) the investment plan that has to be approved. Also here Island stakeholders indicated that the development of these plans go very slow and do not take fully into account the needs of the islands. Already now and until 2028 it will be impossible to add any new RE plant of more than 0,5 MW on the island. However, the national government indicates that the Canary islands and the Balearic islands are the regions that receive the highest investments.

Energy Efficiency

Survey results:
The survey has asked the respondents to rate the following five barriers to energy efficiency projects on Spanish islands based on their importance using Likert scale. The results are presented in numerical form showing the average from all responses. The numerical representation is from 1-5, with 1 representing not at all important to 5 representing very important.

Barrier	Rating

[60] 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 (RDL 6/2022), was published in Spain's Official State Journal (Boletín Oficial del Estado, or BOE) on 30 March 2022. RDL 6/2022 entered into effect on 31 March 2022. RDL 6/2022 includes a number of provisions that regulate the application process for storage facilities, both whether they are hybrid alongside a generation facility or are stand-alone storage facilities, 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.

Energy efficiency in generation/transport/use is not considered the first priority in strategic documents/regulation	3.3
Lack of clear energy efficiency targets	3.3
Insufficient energy efficiency support mechanisms organised at local level	3.8
Lack of awareness on energy efficiency programs and measures	4.1
Lack of clear regulations for energy service companies	2.5

If we take into account only barriers that are considered important, (with an aggregated rating of 4.0 and above) there is one barrier put forward by respondents, namely 'Lack of awareness on energy efficiency programs and measures'.

The barrier 'Lack of awareness on energy efficiency programs and measures' is rated as "fairly important" or "very important" by all respondents, except the respondent from the stakeholder group Citizen, which had rates it as "not important".

Interview results:
From the interviews with Spanish stakeholders, the following barriers for self-consumption and community energy on Spanish have been retained:

- The main barrier is the lack of clear regulation for energy communities (but this is also a case for the mainland). Although there is a decree that transposes the European Directive, there is no clear view on how to create energy communities. The rules lack concretisation. This also leads to a lack of examples of energy communities under the new legal framework. There is no promotion of the concept and its advantages. There is a lot of will and enthusiasm, but in order to accelerate energy transition energy communities are needed.
    - A specific barrier in this regard might be the geographical limitation of self-consumption: collective self-consumption, without grid charges, is possible for communities that are in the radius of 2000 m from the generation plant and connected at low voltage. It should be 'cheaper' to consume locally produced renewable energy instead of consuming over cables from island to island from fossil fuel plants.
    - Lack of regulation for new figures such as aggregators, storage or demand side response, which are clearly relevant for generating benefits within the energy communities.
    - There is a lack of information on the possible benefits of energy communities.

- The islands have a large potential for self-consumption, and the economic advantage provided by it is even greater than in the mainland, since the saved marginal costs are higher. However, the deployment of self-consumption is slowed down by the complex relationship between regional governments, distributors and retailers under current regulation. Proposals have been presented to simplify and streamline this (both in the mainland and the islands), but so far there has been no progress.

- There is no regional regulation for cooperatives in Canary islands therefore implementation has to be based on the Spanish national legislation which takes a really long time.
- Lack of training of professionals was indicated as a barrier. The competence for the energy transition lies with the local municipalities and energy communities/cooperatives encounter difficulties to cooperate with them.

Self-consumption and community energy

Survey results:
The survey has asked the respondents to rate the following five barriers to community energy projects and energy sharing on islands based on their importance using Likert scale. The results are presented in numerical form showing the average from all responses. The numerical representation is from 1-5, with 1 representing not at all important to 5 representing very important.

Barrier	Rating
Geographical limitation of self-consumption	3.4
Lack of political support for community/citizen involvement	2.9
Community energy initiatives have to meet the same requirements as traditional energy companies	3.6
Lack of institutionalised platforms for information exchange, awareness raising and capacity building on local or regional level	3.6
Lack of financial/funding mechanisms for collective/community involvement in clean energy projects	3.7

If we take into account only barriers that are considered important, (with an aggregated rating of 4.0 and above) there are no barriers put forward by respondents. However, while the barrier 'Geographical limitation of self-consumption' is rated as "fairly important" or "very important" by all respondents, the respondent from the stakeholder group Ministry had a neutral stance on it, the respondent from the stakeholder group Citizen gave no opinion and the respondent from the stakeholder group Network Operator rated is a "not at all important".

While the barrier 'Lack of financial/funding mechanisms for collective/community involvement in clean energy projects' is rated as "fairly important" or "very important" by all respondents, the respondents from the stakeholder groups Ministry and Citizen rated it as "less important", and the respondent from the stakeholder group NGO had a neutral stance on it. When assessing correlation between all barriers presented in the survey is highly correlated to 'Lack of awareness on energy efficiency programs and measures'. This means that rating of both barriers is positively correlated among all respondents.

Interview results:
From the interviews with Spanish stakeholders, the following barriers for self-consumption and community energy on Spanish have been retained:

- The main barrier is the lack of clear regulation for energy communities (but this is also a case for the mainland). Although there is a decree that transposes the European Directive, there is no clear view on how to create energy communities. The implementation lacks concretisation. This also leads to a lack of examples of energy communities under the new legal framework. There is no promotion of the concept and its advantages. There is a lot of will and enthusiasm, to have energy communities upporting and contribution to the energy transition.
    - A specific barrier in this regard might be the geographical limitation of self-consumption: collective self-consumption, without grid charges, is possible for communities that are in the radius of 2000 m from the generation plant and connected at low voltage. It should be 'cheaper' to consume locally produced renewable energy instead of consuming over cables from island to island from fossil fuel plants.
    - Lack of regulation for new figures such as aggregators, storage or demand side response, which are clearly relevant for generating benefits within the energy communities.
    - There is a lack of information on the possible benefits of energy communities.

- The islands have a large potential for self-consumption, and the economic advantage provided by it is even greater than in the mainland, since the saved marginal costs are higher. However, the deployment of self-consumption is slowed down by the complex relationship between regional governments, distributors and retailers under current regulation. Proposals have been presented to simplify and streamline this (both in the mainland and the islands), but so far there has been no progress.
- There is no regional regulation for cooperatives in Canary islands therefore implementation has to be based on the Spanish national legislation which takes a really long time.
- Lack of training of professionals was indicated as a barrier. The competence for the energy transition lies with the local municipalities and energy communities/cooperatives encounter difficulties to cooperate with them.

Other barriers

Socio-economic barriers or issues discussed in the interviews:

- A major barrier is the lack of capacity. While the motivation of the local stakeholders (for example the Menorca energy council) is large, there are not enough people at the local administrations working on energy (transition). For example, since its creation 1.5 years ago, the Menorca energy council has received over 400 requests from households on a variety of topics related to renewable energy and energy efficiency.
- Regarding transport on the islands, the transition to electric vehicles has started, but the main focus should lay in convincing people of getting rid of their car instead of buying a new one, even if electric.
- Social opposition to renewable projects is increasing, especially in territories where tourism is usually the most important sector for their economy.

Technical barriers or issues discussed in the interviews:

- There is not much collaboration among different Spanish islands. The Canary Islands are different as they are outermost regions, while for example the Balearic islands have different issues as they are electrically connected to the mainland.
- Regarding transport to and from the islands, certain private shipping/ferry companies are moving towards electric, or hydrogen powered boats. However, the issue is access to cheap electricity. E.g., there is one company with a hybrid ferry for which it is cheaper to charge the batteries with diesel instead of charging in the port. Another issue in this regard is that most transport on the sea is private. It is only between certain islands that transport is considered as a public service. However, the government has not yet imposed sustainability criteria on these connections.

Measures to overcome the identified barriers

Survey results:
The survey has asked the respondents to rate following ten measures for overcoming the barriers for clean energy projects on the Spanish islands based on their importance using Likert scale. The results are presented in numerical form showing the average from all responses. The numerical representation is from 1-5, with 1 representing not at all important to 5 representing very important

Measures	Rating
Compromises between environment conservation, agriculture, preservation of historical sites, tourism and sustainable and clean energy	4.3
Involvement of key stakeholders in preparation of island specific strategic document	4.2
Subsidies for fossil fuels are redirected to support clean energy projects through the avoided GHG emissions method	4.1
Islands can restrict use of cars and vans running on fossil fuels based on obligation from the Climate Change Bill	4.3
Increasing stakeholder awareness on economies of clean energy projects	3.9
Capacity building or advisory services on clean energy projects for islands	3.4
Regional/local one-stop shop for clean energy projects on the islands	3.6
Single permit for clean energy projects on the islands	4.0
Develop enabling framework (clear regulation and financial mechanisms) for operation of energy services companies	4.0
Create enabling framework for energy communities, cooperatives and other community energy initiatives	4.8

If we take into account only barriers that are considered important or very important, or equal or above rating of 4,0, there are seven very important measures considered by respondents. They include from least to most important:

- Single permit for clean energy projects on the islands.
- Develop enabling framework (clear regulation and financial mechanisms) for operation of energy services companies.
- Subsidies for fossil fuels are redirected to support clean energy projects through the avoided GHG emissions method.
- Involvement of key stakeholders in preparation of island specific strategic document
- Compromises between environment conservation, agriculture, preservation of historical .sites, tourism and sustainable and clean energy.
- Islands can restrict use of cars and vans running on fossil fuels based on obligation from the Climate Change Bill.
- Create enabling framework for energy communities, cooperatives and other community energy initiatives.

The measure 'Create enabling framework for energy communities, cooperatives and other community energy initiatives' is rated as "very important" by all respondents!

The measure 'Subsidies for fossil fuels are redirected to support clean energy projects through the avoided GHG emissions method' is rated as "fairly important" or "very important" by the respondents from most stakeholder groups, except for the respondents from the stakeholder groups Energy Community or Cooperative and Citizen who had a neutral stance on it, and the respondent from the Network Operator who rated it as "less important".

When assessing correlation between all barriers presented in the survey the barriers 'Complex administrative procedure' and 'Long (>2 years) permitting procedure' are highly positively correlated to the measure 'Single permit for clean energy projects on the islands'. This means that the importance of these barriers is correlated among all respondents.

When assessing correlation between all barriers presented in the survey the barriers 'Lack of awareness on energy efficiency programs and measures' and 'Insufficient energy efficiency support mechanisms organised at local level' are highly positively correlated to the measure 'Create enabling framework for energy communities, cooperatives and other community energy initiatives'. This means that the importance of these barriers is correlated among all respondents.

Interview results:
From the interviews with Spanish stakeholders, the following measures to overcome some of the above-mentioned barriers for clean energy development on Spanish islands have been retained:

Regarding strategic planning:

- Islands should be given a greater say in (infrastructure of) areas such as air and maritime transport.
- There is a clear need of a national and regional coordinated planning for the energy transition. Planning at all levels must boost ways of decarbonising the whole economy: electric mobility, transport modal swift towards public transportation, energy efficiency in

buildings, self-consumption, climatisation, etc. Policies have to create and introduce incentives (tax, etc.) and adapt regulation to facilitate the deployment of these solutions.

Regarding renewable energy in general:

- A long-term secured price for renewable energy would certainly boost the investment and ensure that the projects are viable. Ensure streamlined management of public funding, especially the funds that should be provided by the European recovery funds.
- Introduction of less polluting fuels on the islands. Islands are still burning oil. A ministerial order has been announced which would allow natural gas to be used on the Canary Islands and Melilla as transition fuel, as a transition fuel. Natural gas has already been in use as fuel for electricity generation in the Balearic Islands for years..
- Channel European funds towards the islands, as is underway with the specific 'Island Fund' (Fondo Islas). The total amount that would be available is known, but not yet the rules for obtaining the funding. This is very important for the islands.
- Development of renewable, storage and demand-side response whilst guaranteeing security of supply. The development of the necessary regulation and long term planning to boost renewable energy penetration, storage and demand side solutions is a must. But there is also a need to adapt the necessary thermal generation fleet to allow effective and quick reductions in emissions during the transition period. Regulation must give answers to new needs, creating effective price signals and tariffs or mitigating administrative barriers.
- Redesign of the specific renewable auctions in the islands to simplify and amplify.
- In parallel with the development of renewable energy, storage and demand side response must be introduced, to optimise the integration of renewables. This requires a design of the regulation and administrative procedures to allow for a parallel development.

Regarding spatial planning and permitting:

- To overcome some of the barriers related to spatial planning, the national government should put effort in understanding the island realities and provide for adapted legal and regulatory frameworks.
- Insular councils have to prepare territorial planning for the energy installations. Energy planning and spatial planning should be combined.
- Improve marine spatial planning to foster marine renewable energy, mainly floating offshore wind

Regarding the grid:

- As for the spatial planning and permitting issues, to overcome some of the barriers related to the electricity grid, the National Government should put effort in understanding the island realities and provide for adapted legal and regulatory frameworks.

Regarding energy efficiency:

- Specific incentives for energy efficiency in the tourism sector.

Regarding energy communities:

- Foster awareness raising on the side of municipalities so that they know what a cooperative is and that they can be part of the cooperative. Som Energia is working on

guidelines for municipalities on how to organise cooperatives and involve citizens in clean energy projects.

Examples of islands/projects as best practice or to contact:

- A good example regarding strategic planning can be found on Menorca. Although less than foreseen, Menorca has seen increases in renewable energy development in recent years. One of the main reasons is that Menorca has developed a strategic vision 'Menorca 2030'. It gave clear direction to the businesses and citizens that the direction is renewables and that they should work towards it as well. The second reason is that, also linked to having these strategic documents, the funding has flowed and continues to flow in the right direction. This also helped with permitting and spatial planning. The planification of the island had to foresee areas for renewable energy development, and how and which renewable energy could be developed. They had to indicate which are the priority areas. They had to indicate under which conditions they can do it what the projects need to do in order to develop. This did not happen 'automatically', but the strategic vision and concrete follow-up of the spatial planning department.

- A good example regarding energy efficiency can also be found on Menorca. An 'energy efficiency scan' was made and three core areas were identified: public lighting, services and households. Regarding public lighting, a new regulation on Menorca has been approved, which establishes high energy efficiency requirements[61]. Regarding households, Menorca is working with a Horizon project REGENERATE[62] to set up a one-stop-shop regarding energy efficiency. This gives support to household that want to invest in energy efficient renovations, e.g., by giving advice on how to finance the interventions.

[61] Reglamento eficiencia en alumbrados de Menorca: http://www.biosferamenorca.org/documents/documents/3921docpub.pdf
[62] https://cordis.europa.eu/project/id/101025164/es & https://www.regeneratebaleares.eu/

Annex 2 - Electricity market price signal in the Non-Peninsular Systems

This Annex has been developed on the basis of two documents:

- The last decision published concerning the State Aid Case 42270, available here
- The Monitor Deloitte report *Los Territorios No Peninsulares 100% descarbonizados en 2040: la vanguardia de la transición energética en España*, available here

Overview of the price signal

The operation of electricity production facilities in the non-peninsular systems is carried out in a different way to those located in the peninsular system. It is governed by Royal Decree 738/2015, which regulates the electricity production and the dispatch procedure in the electricity systems of non-peninsular territories.

Electricity production dispatch procedure

The dispatch of electricity consists of a programming carried out by the System Operator, according to an order of economic merit of the variable costs of the groups, taking into account the technical restrictions and the power reserve requirements. The variable cost of each production unit is made up of the following items:

- Variable fuel costs.
- Variable operating and maintenance costs.
- Regulatory band costs.
- Cost of emission allowances

Remuneration for electricity generation

There are different revenue collection models for electricity generation assets in NTPs electricity systems, depending on their typology:

- Category A (hydro, thermal and cogeneration groups of more than 15 MW): they are subject to the so-called additional remuneration regime, which ensures that they receive a regulated remuneration for their fixed and variable costs.
- Category B (renewable technologies and cogeneration of less than 15 MW): they can receive the specific remuneration regime, whereby they receive income for the energy generated multiplied by the hourly price of energy sales in each subsystem and the specific remuneration defined in Royal Decree 413/2014, which regulates the activity of electricity production from renewable energy sources, cogeneration and waste.
- The generation facilities that have not been recognised under the additional or specific remuneration regime obtain their income from the energy generated multiplied by the hourly energy sale price in each subsystem.

The hourly energy sale price in each subsystem[63] is calculated as the average price of the peninsular daily market, corrected by the aiming factor of each subsystem, using the following formula:

P subsystem sales=P peninsular daily average*A subsystem

where 'A subsystem' is the aiming factor of each subsystem, calculated on an hourly basis as the quotient of the hourly demand and the average daily forecast demand

[63] Although the energy sale price is defined in each isolated system, in fact it is calculated in each non-peninsular territory, as the aiming factor is defined in each non-peninsular territory:
https://www.boe.es/buscar/act.php?id=BOE-A-2015-8646&p=20201230&tn=1#ai

This hourly energy sale price is also the electricity purchase price for traders and direct consumers in each subsystem, so that end consumers in the Non-Peninsular Territories are not discriminated against compared to mainland consumers, as they have the same average price.

Annex 3 – Spain Stakeholder Meetings

Spain Focus Group

Spain Focus Group invited members:

- Ministry of Ecological Transition and Demographic Challenge (Miteco)
- Green Offices of the Canary Islands - Regional Ministry of Ecological Transition
- The National Commission for Markets and Competition (CNMC)
- Instituto para la Diversificación y Ahorro de la Energía (IDAE)
- Institut Balear de l'Energia (IBE)
- Instituto Tecnológico de Canarias (ITC)
- Menorca (CIME)
- Office of renewable energies - Tenerife
- Gran Canaria Municipality
- Endesa (DSO)
- Red electrica
- University Intsitute of the Baleares
- Institut Menorquí d'Estudis (IME)
- Som Energia, La Palma Renovables
- Gorona del Viento
- Menorca waster and energy - wind farm

First Spain Focus Group (ESFG1) meeting

Title	CE4EUI - Spain Focus Group - Study on regulatory barriers and recommendations for clean energy development on islands.
When	Thursday, 10th of March 2022, 09:00-11:00 CET.

List of Attendees

University Intsitute of the Baleares
Instituto para la Diversificación y Ahorro de la Energía (IDAE)
Institut Balear de l'Energia (IBE)
Menorca (CIME)
Instituto Tecnológico de Canarias.
Menorca waster and energy - wind farm
Som Energia, La Palma Renovables
DSO Endesa
Green Offices of the Canary Islands - Regional Ministry of Ecological Transition
Office of renewable energies - Tenerife
Gran Canaria
Miteco
Gran Canaria Municipality

The Spanish Focus Group Meeting 1 (ITFG1) focused on the barriers highlighted in the Report: Detailed Regulatory Analysis Spain.
Lucija Rakocevic presented (in English) the whole process from the current Report to the Study on regulatory barriers and recommendations for clean energy developments on the islands.
Marina Monterro presented (in Spanish) the main findings outlines in the report. Which barriers are found to be the most important.
The discussion was opened by presenting the main barriers resulting from the surveys and interviews:

- Lack of long-term vision on how different land use on islands are coordinated to assure sustainable economic development.
- Grid infrastructure constraints and stringent requirements for RES on islands are a barrier for renewable energy developments on the islands.
- The division of competences between the national and regional governments. The latter do not have competences regarding some of the main GHG emitting activities like aviation and maritime transport.
- Complex administrative procedures for permitting and authorisation of renewable energy projects.
- The legal and regulatory frameworks (support systems, storage, innovative technological solutions, etc.) are not adapted to the island's characteristics.

Second Spain Focus Group (ESFG2) meeting

Title	CE4EUI - Spain Focus Group - Study on regulatory barriers and recommendations for clean energy development on islands.
When	Thursday, 5 May 2022, 09:00-11:00 CET.

List of Attendees

University Intsitute of the Baleares
Instituto para la Diversificación y Ahorro de la Energía (IDAE)
Institut Balear de l'Energia (IBE)
Menorca (CIME)
Instituto Tecnológico de Canarias.
Menorca waster and energy - wind farm
Som Energia, La Palma Renovables
DSO Endesa
Green Offices of the Canary Islands - Regional Ministry of Ecological Transition
Office of renewable energies - Tenerife
Gran Canaria
Miteco
CNMC
Gorona del Viento
Institut Menorquí d'Estudis (IME)
Regional Ministry of Ecological Transition, Fight against Climate Change and Territorial Planning

The Spanish Focus Group Meeting 2 (ITFG2) focused on the recommendations for three main barriers highlighted in the Study.
Andries De Brouwer presented (in English) the whole process from the current Report to the Study on regulatory barriers and recommendations for clean energy developments on the islands.
Marina Monterro presented (in Spanish) the main findings outlines in the report.

1. Grid infrastructure constraints and stringent requirements for RES on islands
Grid development planning in line with the RE ambitions and challenges of the islands
Revision of grid connection criteria
2. Lack of legal frameworks for system integration of renewable energy
Create a legal framework encouraging storage deployment
Create a legal framework for demand-side response
Use regulatory sandboxes to test storage and demand response frameworks on the islands
3. Complex and lengthy permitting and authorisation procedures
Extension of simplified procedures and accelerated procedure for RE projects on the islands and simplification of the procedures
One-stop shop for clean energy projects on the islands
Capacity building at local level and permitting guidance

During the discussion two additional barriers and recommendations were discussed:

6.	**The lack of coordination regarding energy sector priorities between the national and regional governments**
	Create an 'island department' at national level
	Support the development and implementation of Island energy action plans
7.	**Lack of clear regulation for energy communities**
	Adopt clear regulatory framework for energy communities with identified benefits
	Capacity building and information for municipalities

National Stakeholder Meeting

Title	CE4EUI – Spain National Stakeholder Meeting- Study on regulatory barriers and recommendations for clean energy development on islands.
When	Tuesday, 21th of June 2022, 09:00-15:00.

The NSM was held in Gran Canaria with representatives from the national level such as MITECO, IDAE, REE, Endesa, as well as stakeholders from the islands such as CABILDO DE GRAN CANARIA, Oficina de las energias renovable - Tenerife, Balearic Institute for Energy, ULPGC (Universidad de Las Palmas de Gran Canaria), La Palma Renovable, Oficinas Verdes de Canarias, Consorci de Residus i Energia de Menorca - Consell Insular de Menorca, the Regional Ministry of Ecological Transition, Fight against Climate Change and Territorial Planning

During the National Stakeholder Meeting on legal and regulatory barriers and solutions to clean energy transition on Spanish Islands, a diverse group of stakeholders engaged in building consensus on some key actions to take.
The participants spoke about shaping a price signal and future oriented grid developments (and connection procedures) to accommodate for renewable energy integration. Best practices on frameworks for storage and demand response were assessed and discussed, which is particularly relevant to reduce islands dependence on gas and other fossil fuels. Lastly, permitting issues - ever more present on islands - were tackled with some of the solutions proposed by the REPowerEU.

Annex 4 – Overview of permitting and authorisation processes in Spain

Summary

Renewable energy installations in Spain must obtain certain administrative authorisations and fulfil technical requirements in order to be granted the right to produce electricity and operate in the market.
The very first step is to obtain the access and connection permits from the TSO or DSO, after which the developer will be allowed to connect to the grid and operate (after all other steps are completed). Once the project developer secured the lands, an Environmental Impact Assessment will be conducted, where different public and private stakeholders will be given the opportunity to get information and participate in the process. The authority will issue an Environmental Impact Declaration that may include requisites and conditions under which the project shall be conducted. The project developer shall also apply for administrative authorisations. In particular, they will need a Prior Administrative Authorisation, an Administrative Authorisation for Construction, and local permits. In the cases where an easement or expropriation is needed, the project developer shall apply for a Declaration of Public Utility.
Rooftop PV installations for self-consumption, depending on their size and location, may benefit from a simplified and shorter procedure. For instance, units with an installed power up to 100 kW and connected to low-voltage, in principle should not require an Environmental Impact Assessment or a Declaration of Public Utility for example.

Sequential order of process steps

1. Grid connection permit: Apply for the access and connection permits to the grid;
2. Site selection: Negotiate land contracts;
3. Administrative authorisation: Conduct an Environmental Impact Assessment (EIA) and obtain an Environmental Impact Declaration (EID). Apply for Prior Administrative Authorisation (PAA); Administrative Authorisation for Construction (AAC); and local permits. If an easement or expropriation is needed, the developer shall apply for a Declaration of Public Utility (DPU);
4. Electricity production license;
5. Corporate legal-fiscal.

Some steps can be conducted in parallel: for example, the EID, PAA, AAC, and DPU.

Competent authorities

- MITECO
- Directorate General for Energy Policy and Mines
- Directorate-General for Environmental Quality and Assessment
- Industry and Energy Departments of the National Government Delegations
- Autonomous Communities
- Municipalities
- CNMC
- TSO
- DSOs

Process steps in detail

Based on the NECP´s projected capacities to be installed by 2030, three technologies are analysed in this section: wind onshore, ground mounted PV, and PV roof top (self-consumption). Installed capacities for electricity production from these sources are expected to grow considerably by 2030. Other technologies, such as hydropower, are also relevant for the Spanish energy transition. However, the projected growth is not as steep as with solar PV and wind onshore.

Grid connection permit process

Renewable Energy installations shall apply for an access and a connection permit in order to connect the plant to a specific point in the distribution or transmission network and to have the permission to use the network (art. 33.1 Law 24/2013 and article 2 Royal Decree 1183/2020). These permits constitute the first step in the procedures to produce electricity.
Between December 2020 and January 2021, Spain introduced relevant changes in this process step through RD 1183/2020 and Circular 1/2021 CNMC.
Project developers must submit a *single* application for access and connection permits, i.e., they will be processed jointly in the same procedure. The TSO or DSO will be the only contact point with the applicant. After assessing the availability of sufficient capacity and that the technical conditions are met, the TSO or DSO will grant the permits. Temporary priority is established as the general criterion to process all requests.
RDL 23/2020 introduced expiration deadlines for access and connection permits. For instance, permits granted after RDL 23/2020 will expire in five years (provided that developers fulfil the administrative milestones defined in article 1, RDL 23/2020). Regarding rooftop PV, self-consumption units without surplus of any installed capacity do not require an access and connection contract with the DSO, provided that there is already a contract for electricity supply to the consumer. Self-consumption units with surplus (of any modality) up to 15 kW and in urban land are also exempted from access and connection permits (art. 7 Royal Decree 244/2019; art. 17 Royal Decree 1183/2020).
Besides, other self-consumption units with surplus shall apply for the access and connection permits to the DSO. Units with an installed power between 15 kW and lower than 100 kW, article 4 of RD 1699/2011 regulates a simplified procedure. Units larger than 100 kW shall follow the procedure set in RD 1955/2000.

Site selection process

There are no formal rules to follow in the process step. After obtaining the access and connection permits to the grid, the project developer should start the negotiations to select a proper location for their project, which entails land contracts.
For rooftop PV, IDAE recommends checking whether certain limitations or special urban requirements are in place in the municipality or in the part of the city where the unit will be installed (for example, restrictions in the historic centre).

Administrative authorisation process

Once the developers obtained the access and connection permits, they shall apply for administrative authorisations: Environmental Impact Assessment (EIA), Prior Administrative Authorisation (PAA), Administrative Authorisation for Construction (AAC), Local permits, and if needed a Declaration of Public Utility (DPU).
The project needs to undergo an EIA to obtain an Environmental Impact Declaration (EID), which is a prerequisite to obtain the other administrative authorisations. The EIA will be processed either at

the National level or at the Autonomous Community level, depending on the installed capacity of the project (larger than 50 MW correspond to the National level, otherwise the projects fall under the competence of the Autonomous Communities; article 3.13 Law 24/2013). For islands, the EIA would be processed at the Autonomous Community level, in most cases. It would be processed at National level for projects above 50 MW if the isolated system where the installation is located (island or group of islands electrically connected) is connected to the mainland, or in case of projects located in the territorial waters (article 3.13 Law 24/2013, and article 9 of Royal Decree 738/2015).
Along the process, developers shall elaborate an Environmental Impact Study which will be subject to public consultation and public information with public and private parties. The process culminates with the elaboration of the EID, which decides if the project can advance or not, or if it can proceed but under certain conditions. Depending on the technology, size and location of the project, Law 21/2013 differentiates between an *ordinary* EIA and a *simplified* EIA procedure (articles 33 to 48, Law 21/2013).
Afterward, the project developers shall apply for and obtain the PAA and the AAC. The PAA grants the right to develop a specific installation under certain conditions (article 53, Law 24/2013). The AAC allows the applicant to build the renewable energy project (article 53, Law 24/2013). The Directorate General for Energy Policy and Mines shall resolve the PAA and AAC requests within 3 months from the request being submitted (articles 128 and 131, RD 1955/2000 and RDL 23/2020). When the process is done at the Autonomous Community level, the corresponding local substantive body will resolve.
If the project needs an easement (right of way for example) of the expropriate private property, a DPU shall be obtained. Directorate General for Energy Policy and Mines shall resolve the DPU in 6 months since the moment it was requested.
Last, RE projects need to obtain different local permits, such as an urban licence, authorisation of exception uses on rural land, among others.
Rooftop PV units with an installed power up to 100 kW and connected to low-voltage, benefit from a shorter procedure to be installed, since they do not need an EID, PAA, AAC, and DPU. However, different requisites may apply in certain municipalities. Besides, in certain municipalities self-consumption units (rooftop PV) up to 10 kW are only requested to submit a responsible declaration or prior notification. These requirements are regulated at the local level.

Electricity production license process

When the RE installation is already built, project developers shall apply for an electricity production license, also called commissioning certificate (article 53, Law 24/2013). Without this certificate the plant cannot start feeding electricity into the grid.
The project developer shall apply for the license accompanying a certificate of completion of the work signed by a competent technician (RD 1955/2000).
According to art 53 of Law 24/2013, even when EID, PAA and AAC are nod needed, an Exploitation license always is needed.

Corporate legal-fiscal processes

Article 37 of RD 413/2014 prescribes that all new RE installations must be registered under the Administrative Register of Electricity Production Facilities. The registration is a pre requisite to operate in the electricity market (RD 1955/2000).
The RE installations shall follow a two-step procedure. First, once the project obtained all the administrative authorisations, it shall be pre-registered. Secondly, after the project developer

obtained the commissioning certificate (exploitation license) the installation shall be definitively registered in the Register. However, installations equal to or lower than 1 MW of installed capacity shall only be registered in one step (article 169, RD 1955/2000). The authority has a maximum period of one month to process the request.
Rooftop PV installations shall not be registered in the Administrative Register of Electricity Production Facilities. However, they shall be registered ex officio in the Administrative Register of Self-consumption of Electricity.

Annex 5 – Community energy legislation in Spain

Overview

Renewable Energy Communities, as well as Citizen Energy Communities, are not fully regulated. RDL 23/2020 partially transposed the RED II EU Directive, since it adopted the definition of these communities and entitled them to participate in auctions. A further regulation is required. However, there are already community-led projects to share electricity, either under a cooperative form or under the collective self-consumption regime.

Spain still did not fully complete the transposition of the EU Directive REDII (2018/2001) regarding Energy Communities. However, the RDL 23/2020 modified Law 24/2013 and introduced some first references to Renewable Energy Communities.

Renewable Energy Communities are legal entities. consisting of members located in the vicinity of renewable energy projects owned and developed by them. The primary purpose of Renewable Energy Communities is to provide environmental, economic or social benefits to their partners or members or to the local areas where they operate, rather than financial profit.

Apart from that the auctions organised to grant the support scheme (Economic Regime for Renewable Energies) can take into consideration the particularities of these communities so that they can compete on an equal footing with other participants.

Note: although Renewable Energy Communities are not yet regulated in Spain, similar projects are being conducted under the collective self-consumption regulations (RD 244/2019), since it is allowed to share electricity between buildings, i.e., using the grid.

Addressees

Partners or members of Renewable Energy Communities shall be located in the vicinity of renewable energy projects owned and developed by the communities. The partners or members are natural persons, SMEs or local authorities, including municipalities and whose primary purpose is to provide environmental, economic or social benefits to their partners or members or to the local areas where they operate, rather than financial profit.

Requirements and conditions

In the case of collective self-consumption, all the consumers associated to the same generation unit must be under the same self-consumption modality and shall communicate to the distribution company an agreement signed by all participants, which includes the distribution criteria (article 4, RD 244/2019).

Tariff structure

The energy that is self-consumed and comes from renewable sources, cogeneration or waste is exempted from all types of charges and tolls (article 9, Law 24/2013). If there is transfer of energy through the distribution grid to nearby facilities for the purposes of self-consumption, fees for this usage may be established (article 9, Law 24/2013).

Geographical limitations

In collective self-consumption, the generation units can be interconnected through the grid, which means that energy sharing between buildings is allowed, however, there are some limitations. The interconnection through the grid shall fall in one of the following options: a) the units are connected to any of the low voltage networks derived from the same transformer substation; or b) both generation and consumption are connected at low (and recently by RDlaw 29/2021, also high) voltage and at a distance of less than 2000 meters from each other; or c) both generation and consumption are located in the same cadastral reference according to their first 14 digits (article 3, RD 244/2019).

When the self-consumption is carried out between near installation through the grid, collective self-consumption may belong to any of the modalities “with surplus” (article 3, RD 244/2019).

Financial support

Not yet regulated, but RDL 23/2020 recognises the possibility of Renewable Energy Communities to participate in auctions to compete for the remuneration framework (Economic Regime for Renewable Energy).

Under the modalities of self-consumption “with surplus”, consumers can decide to sell all electricity surplus directly on the market, or they can be compensated through a simplified mechanism (Net billing), where every month the value of the energy taken from the grid is compensated with the value of the surplus generation fed into the grid. Nevertheless, the maximum amount that can be compensated is the value of the energy taken from the grid (the energy purchased by the consumer) because the result of the compensation cannot be negative and may not offset other access fees.