

Clean energy for EU islands **Regulatory barriers in Croatia: findings and recommendations**

ENERGY

The Clean energy for EU islands secretariat is managed by the European Commission Directorate-General for Energy

Completed in: December 2022

- Author: Clean energy for EU islands secretariat managed by the European Commission Directorate-General for energy clean-energy-islands.ec.europa.eu info@euislands.eu | European Commission | DG ENER
- Written by: Lucija Rakocevic, Elise Van Dijk, Andries De Brouwer
- Reviewers: Gabi Kaiser, Jan Cornillie
 - Special thanks to our Clean energy for EU islands Community for their input and support.
- Graphic design: Agata Smok for Clean energy for EU islands secretariat European Commission DG ENER
 - Typeface: EC Square Sans Pro

Disclaimer: © European Union, 2022

The Commission's reuse policy is implemented by Commission Decision 2011/833/ EU of 12 December 2011 on the reuse of Commission documents (OJ L 330, 14.12.2011, p. 39).

Unless otherwise noted, the reuse of this document is authorised under the Creative Commons Attribution 4.0 International (CC BY 4.0) licence. This means that reuse is allowed, provided appropriate credit is given and any changes are indicated. For any use or reproduction of elements that are not owned by the EU, permission may need to be sought directly from the respective right holders.

This document has been prepared for the European Commission however it reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein. The EU does not own copyright in relation to the following elements:

Benjamin Szabo p.5, Startae Team p.8, Linkedin Sales Solutions p.13, Cody Black p.15, Helloquence p. 17, Adrien Brun p.19, Kasra Monem p.21, Hrvoje Photography p.25.

FROM CLEAN ENERGY VISION **TO CLEAN ENERGY ACTION**

clean-energy-islands.ec.europa.eu



Executive Summary

Croatia and its island stakeholders have been very active on the European level in bringing to focus the agenda of the energy transition of the islands. In the past two years, the national legislation was improved by the creation of a framework for energy transition which include the islands. However, challenges to the implementation of energy transition still remain.

Drawing upon the **regulatory** inventory of the current legislation, the Clean energy for EU islands secretariat carried out surveys and interviews with Croatian stakeholders to identify the barriers to clean energy deployment on the islands and the solutions to overcome those. These findings were discussed with all relevant stakeholders in two focus group meetings and a national stakeholder meeting (NSM). The result of that process is described in this booklet.

The barriers identified in Croatia relate to local, regional and national energy planning, coordination and monitoring and the need for better integration of energy priorities in sectoral policies. Moreover, the need of support mechanisms tailored to islands, lengthy permitting procedures, need for involvement of island communities in energy projects and grid constrains and inflexibility came into focus as well.

These barriers can be overcome through involvement of local stakeholders in energy transition, better planning, coordination and monitoring of energy policy on local and regional level, European-wide islandsto-islands exchange of best practices and leadership by the relevant authorities. The recommendations in this booklet serve as guidance for the accelerated energy transition on the Croatian islands.

Izvršni sažetak

Hrvatska i njezini otočni dionici su vrlo aktivni na europskoj razini dovodeći fokus na energetsku tranziciju otoka. U posljednje dvije godine nacionalno zakonodavstvo poboljšano je kako bi se stvorio okvir za energetsku tranziciju, uključujući otoke. Međutim, još uvijek postoje izazovi u provedbi energetske tranzicije. Na temelju **Regulatornog popisa** važećeg zakonodavstva, Tajništvo čiste energije za otoke EU-a provelo je istraživanja i razgovore s hrvatskim dionicima kako bi identificiralo prepreke uvođenju čiste energije na otocima i rješenja za njihovo prevladavanje. O ovim nalazima raspravljalo se sa svim relevantnim dionicima na dva sastanka Fokusne skupine i Nacionalnom sastanku dionika. Rezultat tog procesa opisan je u ovoj knjižici.

Prepreke identificirane u Hrvatskoj su u vezi s lokalnim, regionalnim i nacionalnim energetskim planiranjem, koordinacijom i praćenjem, zahtijevajunjem bolje integracije energetskih prioriteta u sektorske politike, nedostatakom mehanizama potpore prilagođenih otocima, dugom procedurom izdavanja dozvola, nedostatakom uključenosti otočnih zajednica u energetske projekte, te ograničenjem i nefleksibilnosti elecktroenergetske mreže.

Te se prepreke mogu prevladati uključivanjem lokalnih dionika u energetsku tranziciju, boljim planiranjem, koordinacijom i praćenjem energetske politike na lokalnoj i regionalnoj razini, razmjenom najboljih praksi između otoka diljem Europe i pravovremenim vođstvom relevantnih tijela. Preporuke u ovoj knjižici služe kao smjernice za ubrzanu primjenu energetske tranzicije na hrvatskim otocima.

TABLE OF CONTENTS

Main Barriers to the Clean Energy Transition	8
Barrier 1: Lack of clear strategy and coordination of clean energy transition on the islands	10
Recommendations	
1.1 Set up national task force for islands' clean energy transition	
1.2. Mandate island or group of islands energy plans	
1.3 Improve regional and local energy coordination and monitoring	
Barrier 2: Need for support schemes tailored to island characteristics and capacity	12
Recommendations	
2.1 Improve planning and communication of planned funding calls	
2.2. Provide technical assistance for clean energy projects for islands	
2.3. Foster local stakeholder engagement in energy projects	
Barrier 3: Need for better integration of clean energy transition and spatial planning	14
Recommendations	
3.1 Re-assess spatial planning guidelines and restrictions for clean energy projects on the islands	
3.2. Identify go-to areas on the islands	
Barrier 4: Lengthy permitting procedures for clean energy projects	16
Recommendations	
4.1 Introduce simplified procedure and establish single permit	
4.2. Set-up regional one-stop shops	
Barrier 5: Lack of support for energy communities	18
Recommendations	
5.1 Prioritise regulatory framework and provide suitable incentives	
5.2. Use regulatory sandboxes for community energy initiatives	
5.3 Foster local awareness raising and support	
Barrier 6: Lack of secure electricity supply on islands due to seasonality	20
Recommendations	
6.1 Adapt grid development methodology from an ad-hoc approach to a future-oriented approach	
6.2. Explore framework for renumeration of energy storage systems	
Comparison to other countries (map)	22
Further Reading	24

Introduction

There are more than 2,200 inhabited islands in the EU. Despite having access to an abundant amount of renewable energy, such as wind, sun and waves, many of them depend on petrol imports for their energy supply. Through the deployment of clean energy assets, EU island communities can have access to reliable, clean, and competitive sources of energy. Given their insular nature, they can even become leaders in the clean energy transition.

While it has often become technically and financially possible to develop renewable energy projects on islands, the current legal frameworks are not always fit-for purpose. The Clean energy for EU island secretariat embarked on the mission to identify the legal, regulatory and policy barriers to clean energy deployment and provide recommendations to overcome them. This booklet contains the highlights of the more in-depth country study. It processes the insights gathered from literature review, surveys sent to 68 stakeholders, 11 interviews, two focus groups attended by ten and six participants and one national stakeholder meeting (NSM). The NSM was held in the Ministry of Regional Development and EU funds in Zagreb. From national level representatives from Ministry of Regional Development and EU funds, Ministry for Physical Planning, Construction and State Assets, Ministry for Culture and Media, Croatian Regulatory Energy Agency, Croatian Transmission System Operator (HOPS). Environmental Protection and Energy Efficiency Fund. Other stakeholders included representatives from research and academia such as, Energy Institute Hrvoje Pozar and Faculty for Mechanical Engineering and Naval Architecture; industry Renewable Energy Sources of Croatia; regional island coordinators from Zadar County Development Agency ZADAR NOVA, Regional Development Agency of the Primorje-Gorski Kotar County, RERA – Public institution for coordination and development of Split-Dalmatia county, LIRA – Public institution for development of Licko-Senjaska county and local stakeholder representatives Island development agency – OTRA and Island movement. The barriers and recommendations represent the view of the Clean energy for EU island secretariat and does not bind the stakeholders who contributed to it.

Croatia and its islands

The Croatian archipelago lies along the eastern coast of the Adriatic Sea and has 1,244 natural formations, of which 78 are islands, 524 are islets, and 642 are cliffs and reefs. Of the 78 islands, 52 are permanently inhabited, all of which are located relatively close to the mainland. The Croatian island population makes up 3.3 % of the country's total population, which corresponds to 128,508 people.

Regulatory best practice

The **Croatian Regional Development Act** establishes the regional coordinator as a regional development agency. The responsibilities are further detailed in Article 25 of the Regional Development Act. The **Croatian Islands Act** in Article 19, further identifies one person within the regional coordinator to be the island coordinator. The responsibility, among others, of the island coordinators is to organise, initiate and coordinate plans and projects important for the development of the islands in their region. The role of regional island coordinator was set up in 2021 and appointed coordinators are currently in the process of developing longer term collaboration with local governments on islands or with islands in their territory.

Main Barriers to the Clean Energy Transition

Based on the detailed assessment of the current regulatory framework and consultation with relevant Croatian stakeholders (surveys, interviews, and joint meetings), the most important regulatory barriers to a clean energy transition on Croatian islands were identified.¹ The barriers are ranked by order of priority according to the stakeholders consulted:

- 1. Lack of clear strategy and coordination of clean energy transition on the islands
- 2. Lack of support schemes tailored to island characteristics and capacity
- 3. Need for better integration of clean energy transition and spatial planning
- 4. Lengthy permitting procedures for clean energy projects
- 5. Lack of support for energy communities
- 6. Lack of security of supply on islands due to seasonality

Each of these barriers is presented, including recommendations for overcoming them, examples of best practices and connections to the **REpowerEU** policy. For the presented recommendations, the actors who should be responsible to initiate implementation are highlighted.





The content of this booklet is based on the "Regulatory barriers in Croatia: findings and recommendations" report to be found **here** | Clean energy for EU islands (europa.eu)

DID YOU KNOW?

ACTION FROM







USEFUL INFORMATION

Barrier 1: Lack of clear strategy and coordination of clean energy transition on the islands

→ The National Energy and Climate Plan (NECP) and the National Island Development Plan 2021-2027 identify an overall need for clean energy transition, and large-scale strategic energy projects. Detailed clean energy projects and actions on the islands are expected to be defined on the regional or local level. However, while there are many mandatory regional plans, including energy efficiency plans, no plan is mandated to analyse local energy needs and identify specific priorities and projects. Therefore, energy projects are typically implemented on a case-by-case basis. Moreover, there is no clear feedback loop from local to national level on the implementation of energy policy and projects. The Islands Act aims to improve multi-level government coordination with implementation of regional island coordinators. However, regional island coordinators are not mandated to specifically monitor and coordinate the clean energy transition. Coordination and communication of local island energy needs and priorities becomes more complicated as some islands have multiple municipalities while other islands can be located under one municipality which is mainly located on the mainland.

RECOMMENDATIONS

To overcome the barriers in energy planning and coordination on the islands, the secretariat recommends the creation of a national task force for the clean energy transition on Croatian islands, mandatory island energy plans and better coordination on the regional level using existing bodies as briefly explained below.

- 1.1 Set up national task force for islands' clean energy transition
- In order to assure that the national energy plans and strategies are inclusive and help set the framework for the sustainable energy transition of the islands in line with the local needs and priorities of the islands, we recommend forming a national task force for islands' clean energy transition. The task force includes representatives of relevant sectors from national, regional and local governments, national funds, energy companies, private sector, local stakeholders, academia and experts directly involved in implementation of the projects on the islands. In the short term, the task force can be formed as a working group under the Islands Council, based on the Islands Act. In the long-term, the task force for islands should become a more permanent body advising the whole national government on the policy and actions needed for accelerated and sustainable energy transition and development on the islands.

1.2. Mandate island or group of islands energy plans

- Some islands or municipalities have prepared or are in the process of preparing local energy plans in coordination with voluntary EU initiatives (Covenant of Mayors and Clean energy for EU islands secretariat). We recommend that the national government through the Energy Act mandates the local island or regional governments to prepare island or group of islands (regional) energy plans. Existing mandatory regional energy efficiency plans can be extended in scope to include all aspects of energy planning.
- 1.3 Improve regional and local energy coordination and monitoring
- We recommend that the coordination and monitoring of regional and local energy transition, and not just energy efficiency, is integrated into the responsibility of existing regional coordinators and local action groups (LAGs), through national legislation. In addition, the Energy Act should recognize the need for regional and local energy transition coordination and monitoring. The regional and local bodies should be obliged to collaborate with regional island coordinators and local governments and their mayors.



 \uparrow © Photo by Startae Team on Unsplash.



Did you know?

REPowerEU - Regions and cities are playing a leading role in developing energy saving measures tailored to their local context. They should launch awareness, information and support schemes, energy audits and energy management plans, pledging savings targets. Citizens' engagement should be ensured such as through the European Mission on climate-neutral and smart cities or the European Urban Initiative under cohesion policy.



Further action is expected from:

- ✓ Ministry of Economy and Sustainable Development, Directorate for Energy
- ✓ Ministry for Regional Development and EU Funds, Directorate for Islands
- ✓ Regional coordinators and local action groups.



- Integrated National Energy and Climate Plan for the Republic of Croatia
- Strategy for energy development of Republic of Croatian until 2030 with the view on 2050
- National Island Development Plan 2021-2027 (HR)
- Annual programme of project for Island development 2022
- 🔀 Energy cooperative of Island Krk, Croatia
- 🛯 Islands Act
- S Energy Act

Barrier 2: Need for support schemes tailored to island characteristics and capacity

⇒ While there is funding available on the national level for energy transition, the lack of prior announcement of calls for funding from the Croatian Environmental Protection and Energy Efficiency Fund, the short time for proposal submission and the expected high level of development of projects, makes it difficult for island initiatives or local stakeholders to successfully participate. In addition, lack of local energy planning (which would help identify projects) and technical know-how from the local stakeholders results in minimum resources provided for energy transition on the islands and lack of involvement of island stakeholders.

RECOMMENDATIONS

To cope with some of these barriers, implementation of support schemes and processes tailored to the islands, technical assistance provision and engagement of local stakeholders are recommended. These are briefly explained below.

- 2.1 Improve planning and communication of planned funding calls
- ➡ To minimize uncertainty for planning and allow for adequate preparation time for local governments and local stakeholders, the Croatian Environmental Protection and Energy Efficiency Fund should organize calls for projects with designated annual publication time and required documentation. Moreover, in order for the Fund to publish separate calls for support for projects from the islands, the NECP update, in preparation for 2023, should include island energy transition as one of the priorities.

2.2. Provide technical assistance for clean energy projects for islands

- The Environmental Protection and Energy Efficiency Fund should organize a call for technical assistance, through which technical assistance can be provided to the islands and local island stakeholders by the Croatian energy experts. This way, existing knowledge can be mobilized to accelerate the energy transition on the islands. For this to happen, the NECP update should identify the need for technical assistance and capacity building for clean energy transition on the regional and local (island) level.
- 2.3. Foster local stakeholder engagement in energy projects
- → The national energy policy should encourage and require local stakeholder participation in energy projects on the islands. This can be encouraged either through requirements for a share of local ownership in energy projects or via additional financial support for projects that foster local stakeholder involvement. The government should also provide a platform where local stakeholders from different islands and sectors can connect, share ideas and find common energy projects.



 \uparrow © Photo by Linkedin Sales Solutions on Unsplash.



Did you know?

REPowerEU – The lack of public acceptance of renewable energy projects is another significant barrier to their implementation in many Member States. To address this, the needs and perspectives of citizens and societal stakeholders should be taken into account at all stages of renewable projects development – from policy development to spatial planning and project development – and good practices for ensuring just distribution of the various impacts of installations among the local population should be encouraged.



Further action is expected from:

- ✓ Ministry of Economy and Sustainable Development, Directorate for Energy
- ✓ The Environmental Protection and Energy Efficiency Fund Sustainable Energy
- ✓ Regional coordinators
- ✓ Local governments



- Active calls for funding under The Environmental Protection and Energy Efficiency Fund
- Croatia National Recovery and Resilience Plan
- Local Energy Scotland developed a
 "Community and Renewable Energy Scheme (CARES) Toolkit", where a specific module deals with the "Shared Ownership" and explains how local stakeholders can get involved in energy projects.

Barrier 3: Need for better integration of clean energy transition and spatial planning

Spatial planning is a prerequisite for the implementation of clean energy projects. In spatial planning, the energy sector policy is not currently seen as one of the strategies that directly impacts the space. This seems odd as there are islands where clean energy projects are not possible due to protected areas and generalized limitations for clean energy projects which do not take into account specific island characteristics. There are no guidelines in spatial plans on priorities between sectors, hence governments of counties that include islands can have different strategies towards the clean energy development of islands. In practice, implementation of clean energy projects can be stopped or delayed for more than two years due to lack of identified conditions or locations for clean energy projects on the islands.

RECOMMENDATIONS

To cope with this spatial planning constrains, reassessment of restrictions for clean energy projects and identification of go-to areas are recommended. More details are provided below.

- 3.1 Re-assess spatial planning guidelines and restrictions for clean energy projects on the islands
- → The national spatial planning guidelines for clean energy projects should be re-assessed taking into account specifics of islands development, characteristics of clean energy technologies and the climate crisis. While such re-assessment might be needed for the whole territory of Croatia, islands should be treated with more attention as climate change disproportionately affects these areas. The guidelines should take into account cultural heritage, environmental protection etc., ensuring a holistic approach to energy transition with clear priorities of various sectors on the use of limited island resources. National guidelines can be used to improve and unify approaches towards clean energy in regional and local spatial plans.

3.2. Identify go-to areas on the islands

- We recommend identifying go-to areas specifically for one or more renewable energy sources on each of the islands, including not only areas for large-scale strategic projects. Go-to areas can be specific for certain technologies and should be identified taking into account climate change, environmental protection, cultural heritage and other restrictions. Go-to areas should be integrated into spatial plans as mentioned in the recommendation above. Authorisation procedure for projects in go-to areas should be simplified.
- → The Ministry of Economy and Sustainable development keeps a registry of renewable energy and high-efficiency cogeneration projects and plants. This online, publicly-accessible, digital registry should be re-activated and expanded with identified go-to areas from the islands as well.



↑ \bigcirc Photo by Cody Black on Unsplash.



Did you know?

REPowerEU – Member States should designate areas particularly suitable to develop renewable energy projects as renewables go-to areas, particularly distinguishing different potential technologies and specific types of renewable energy sources which are 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.



Further action is expected from:

- Ministry of Physical Planning, Construction and State Assets
- Ministry for Economy and Sustainable Development, Directorate for Energy
- ✓ Regional coordinators



- The Spatial Development Strategy of the Republic of Croatia
- Introduction to Croatian spatial planning system
- Current status of marine spatial planning in Croatia
- Registry of RES and high-efficiency cogeneration plants of Republic of Croatia

Barrier 4: Lengthy permitting procedures for clean energy projects

⇒ The permitting procedure for Renewable Energy Sources (RES) plants in Croatia includes five main steps: site selection, administrative authorisation, electricity production licence, grid connection permit and use permit. The permitting procedure involves various permitting bodies on local, regional and national level. In addition, different permits are dependent on each other, which additionally complicates the process. Aside from potential modifications of the spatial plans discussed above, lack of clarity on land ownership and cadastral information complicate the permitting and implementation process on the Croatian islands. Moreover, lengthy procedures indicate lack of human capacity at key institutions, whose approval or assessment is needed to advance the project.

Simplified procedures are possible for photovoltaic (PV) or solar thermal systems installed on the rooftops of buildings/houses, if the electricity is used for self-consumption, behind-the-meter. However, these systems are of too small capacities to be main drivers of energy transition on the islands.

RECOMMENDATIONS

To shorten and simplify permitting procedures we recommend digitalisation, single permits and one-stop shops, through two main recommendations explained below.

- 4.1 Introduce simplified procedure and establish single permit
- We recommend simplifying and harmonise the criteria across the different institutional levels (municipal, regional and national) and between sectors (energy, construction, environment, culture, tourism, agriculture etc.) for all clean energy projects. Currently, only parts of the permitting process related to site selection have been digitalised. In the future, the whole process should be digitalised, and unified into a single permit. We stress the need for capacity building regarding clean energy projects on regional and local levels.
- 4.2. Set-up regional one-stop shops
- → As the permitting procedure consists of many steps and the involvement of many parties, the government should organise regional level one-stop shops for clean energy projects where the applicant for a clean energy project provides documentation and communicates with only one authority at the regional level. A one-stop shop would make coordination (including with local stakeholders) and monitoring of clean energy projects easier. It would also help to identify bottlenecks in implementation and to understand where there is a need for additional training or improved legislation.



 $\uparrow \ensuremath{\mathbb{C}}$ Photo by Helloquence on Unsplash.



Did you know?

REPowerEU – The recommendation on permitting stipulates that Member States should ensure sufficient and adequate staffing, with relevant skills and qualifications, for their permitgranting 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 to bridge the skills gap of staff working on permit-granting procedures and on environmental assessments.



Further action is expected from:

- Ministry of Physical Planning, Construction and State Assets
- Ministry of Economy and Sustainable Development, Directorate for Energy
- ✓ Regional governments



- Solution Solution
- Ministry of Economy and Sustainable development published the Analysis with recommendations for removing barriers and simplification of administrative procedures that limit the use of renewable energy sources in June 2022.
- Digitized part of the permitting procedure
 Information system for spatial planning Geoportal.

Barrier 5: Lack of support for energy communities

Croatian local island initiatives have been active in raising awareness of the need for citizen and local stakeholder involvement in clean energy projects. The Renewable Energy Sources Act and the Electricity Market Act adopted in the last two years have transposed relevant directives that define energy communities and energy sharing. However, there is still no clarity on how this legal framework will be further implemented and how local stakeholders would benefit from participating in energy communities. This uncertainty results in lack of actions on the ground.

RECOMMENDATIONS

To accelerate local involvement through energy communities we recommend further development of regulatory framework, use of regulatory sandboxes and raising awareness of local stakeholders, as further discussed below.

5.1 Prioritise regulatory framework and provide suitable incentives

We recommend faster adoption of the regulation to provide clarity to the ecosystem in which energy communities should operate. The regulatory framework should support the implementation of energy communities involved in sustainable energy projects, through incentives for specific projects, tax benefits and technical assistance for starting an energy community. One of the important support measures include simplified procedures for energy communities to realize clean energy projects.

5.2. Use regulatory sandboxes for community energy initiatives

→ The "Methodology for defining the tariff for distribution of electricity" allows regulatory sandboxes for testing of innovative technology for DSO. However, it is recommended to also allow more freedom for regulatory sandboxes to test adapted electricity tariffs. Regulatory sandboxes can be used to test various tariffs or various ways of integration of community energy initiatives with the electricity grid. Croatian islands allow for a great opportunity for such sandboxes due to their geographical constraints.

5.3 Foster local awareness raising and support

→ We recommend creating sustainable energy offices where local stakeholders can receive information about the current regulation, possible support schemes, technical options on how they can get involved in energy transition on the islands and learn about best practice examples from other islands



↑ © Photo by Adrien Brun on Unsplash.



Did you know?

REPowerEU - 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. This facilitates permit granting in support of the deployment and system integration of renewable energy, storage, and other decarbonisation technologies, in line with Union legislation.



Further action is expected from:

- ✓ Ministry of Economy and Sustainable development, Directorate for Energy
- ✓ National Regulatory Authority (HERA)
- ✓ National electricity market operator, HROTE
- ✓ Regional island coordinators
- ✓ Local governments



- New National Policy for the Future Development and Sustainability of Communities on the Offshore Islands of Ireland
- Renewable Energy Sources Act
- **Electricity Market Act**
- Methodology for defining the tariff for distribution of electricity
- Examples of regulatory sandboxes from Austria, Germany and Netherlands

Barrier 6: Lack of secure electricity supply on islands due to seasonality

└→ Croatian islands are facing grid constraints due to the aging infrastructure that leads to the lack of security of supply during peak hours in the summer season. The Croatian National Recovery and Resilience Plan includes the strategy to develop two subsea cables relevant for the islands. Grid capacity upgrades are demand-led whereas grid upgrades are prioritized based on the cost efficiency, making islands of lower priority due to lower demand and costlier investments. When it comes to grid flexibility, the Electricity Market Act provides a good starting point for inclusion of storage technologies. However regulatory frameworks and support schemes which would significantly boost implementation are yet to be defined.

RECOMMENDATIONS

To tackle grid constrains we recommend adaptations in grid planning and supporting policies for energy storage, as explained below.

6.1 Adapt grid development methodology from an ad-hoc approach to a future-oriented approach

We recommend that long-term grid planning should take into account the planned expansion of renewable energy production capacities (as defined by the local plans, RES registry and go-to areas), and not only planned demand, as is currently the case. Grid planning based on expected RES capacities would lead to grid upgrades, flexibility and implementation of innovative technologies. Increasing flexibility of the grid provides a more secure and efficient grid.

6.2. Explore framework for renumeration of energy storage systems

⇒ We recommend, in the preparation of the regulatory framework for implementation and renumeration of energy storage systems, to keep in mind the need for storage systems to assure security of supply on the islands. Islands can be best places where innovative technologies and possible renumeration schemes can be tested using regulatory sandboxes. The full study² offers detailed examples of storage renumeration schemes from EU countries.



↑ © Photo by Kasra Monem on Unsplash.



Did you know?

REPowerEU - 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.



Further action is expected from:

- ✓ DSO (HEP-ODS)
- ✓ TSO (HOPS)
- ✓ National regulatory authority (HERA)
- ✓ Ministry of Economy and Sustainable Development, Directorate for Energy



- Methodology for calculation of costs for connection to electricity grid (2022)
- Examples for renumeration schemes for storage systems (Study)

² Read the full study **here** | Clean energy for EU islands (europa.eu)

Comparison to other countries (map)

Some of the identified legal and regulatory barriers in Croatia are also present in several of the other countries which were part of the study.



If the type of barrier is not present, the corresponding icon is faded.

Type of barrier		Croatian barriers summary	
	GRID	Lack of security of supply on islands due to seasonality	
640 (40	SYSTEM INTEGRATION		
\bigcirc	PERMITTING	Lengthy permitting procedures for clean energy projects	
Po l	SUPPORT SYSTEMS	Lack of support schemes tailored to island characteristics and capacity	
	SPATIAL PLANNING	Need for better integration of clean energy transition and spatial planning	
¢¢	COORDINATION & STRATEGY	Lack of clear strategy and coordination of clean energy transition on the islands	
8	ENERGY COMMUNITIES	Lack of support for energy communities	



Further Reading

Regulatory barriers in Croatia: findings and recommendations

Read the full study here | Clean energy for EU islands (europa.eu)

Croatian islands with a Clean Energy Transition Agenda (CETA)

- 🕅 🛛 🖓 🖓 🖓 🖓
- 🕅 Cres-Losinj
- 🕅 Hvar Island
- 🕅 Korcula Island
- 🕅 Elafiti archipelago
- 🕅 Zadar archipelago

Croatian islands that have received technical assistance

- 🕅 Cres-Losinj
- 🕅 Korcula

Regulatory Framework in Croatia

- 🗞 Croatian regulatory inventory
- 👒 Croatia's National Energy and Climate Plan
- 👒 National Island Development Plan 2021-2027 (HR)



ightarrow Croatian island \odot Photo by Hrvoje Photography on Unsplash.

GET INVOLVED – STAY IN TOUCH

Sign up for the latest news of the Clean energy for EU islands secretariat via europa.eu newsroom

Get in contact with Clean energy for EU islands secretariat via ⊠ info@euislands.eu

Follow the activities of Clean energy for EU islands secretariat via the following channels:

- 👒 clean-energy-islands.ec.europa.eu
- **S** facebook.com/CE4EUIslands
- kinkedin.com/company/CE4EUIslands



↑ On October 21-22 2022, the Clean energy for EU islands secretariat organised its second Energy Academy focusing on Croatian islands. © Photo by Clean energy for EU islands secretariat



↑ During day one of this event participants got the chance to learn about Croatia's national Energy and Climate Change Plan, Recovery Fund, and new legislation on the energy market. © Photo by Clean energy for EU islands secretariat



↑ During day two, islanders learnt about the clean energy transition agendas on the island of Cres, Losinj, and Korcula. Experts discussed financing tools and mechanisms as well as citizen engagement in the energy transition. © Photo by Clean energy for EU islands secretariat

The Clean energy for EU islands secretariat is managed by the European Commission Directorate-General for Energy