



European Energy Network

A voluntary network of European energy agencies

Energy Agencies and Renewable Energy Communities A new path for energy decentralization

*Comparative analysis of the current status of Renewable Energy
Communities in EⁿR member countries and the role of EⁿR energy
agencies in policy and implementation*

ANNEXES

Individual Survey Responses

Case Study Details

November 2022

TABLE OF CONTENTS

ABOUT THE STUDY	3
10. ANNEX 1.....	5
10.1. Legislation and country status - Questionnaire answers by country.....	5
10.1.1. Portugal.....	5
10.1.2. Luxembourg	14
10.1.3. Finland	22
10.1.4. Sweden	30
10.1.5. United Kingdom.....	37
10.1.6. Austria.....	45
10.1.7. France.....	63
10.1.8. Greece	71
10.1.9. Bulgaria.....	80
10.1.10. Slovakia.....	81
10.1.11. Italy.....	89
10.1.12. Spain	98
10.1.13. Netherlands	107
10.2. Comparative Analysis of Legislation and Country Status Answers	115
10.2.1. REC definition	115
10.2.2. Licensing process	121
10.2.3. Facilitating instruments for REC implementation	143
10.2.4. Barriers to REC implementation identified by country.....	155
10.2.5. Proposed solutions by EnR Agencies to overcome barriers	158
11. ANNEX 2.....	162
11.1. Case studies by country	162
11.1.1. Austria.....	162
11.1.2. Greece	164
11.1.3. Netherlands.....	167
11.1.4. Spain.....	170
11.1.5. Sweden	184
11.1.6. United Kingdom.....	193
11.1.7. Italy	198
11.1.8. Portugal.....	199
11.2. Comparative Analysis of Case Studies.....	201
11.2.1. Motivations for REC creation.....	201
11.2.2. Types of REC projects and services offered.....	204

About the Study

This publication is an EnR study produced under the 2022 Presidency by ADENE, the Portuguese Energy Agency. It aims at providing the best available knowledge based on policy implementation across EnR member countries. The expressed conclusions do not imply policy positions of individual countries. The European Energy Network (EnR) or any person acting on behalf of EnR is not responsible for the use that might be made of this publication.

Contact information: EnR Regular Member: Luís Silva, Director of Cooperation and Institutional Relations (enr.presidency@adene.pt); Manuel Casquico, Director of Programmes and Initiatives (manuel.casquico@adene.pt)

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Rapporteurs: Fernando Oliveira¹, Paulo Nogueira¹, Manuel Casquico¹

¹ADENE – Portuguese Energy Agency

Study Lead

ADENE, Portuguese Energy Agency



Steering Committee



AEA, Austrian Energy Agency



ADEME, French Agency for Ecological Transition



dena, German Energy Agency



EST, Energy Saving Trust, United Kingdom



CRES, Centre for Renewable Energy Sources and Saving, Greece



RVO, Netherlands Enterprise Agency

Surveys



Italian National Agency for New Technologies



Institute for the Diversification and Saving of Energy, Spain



National Agency for the Promotion of the Transition to Sustainable Energy, Luxembourg



Motiva, Sustainable Development Company, Finland



Slovak Innovation and Energy Agency



Swedish Energy Agency



Sustainable Energy Development Agency, Bulgaria

The following annexes are part of the EnR study on Renewable Energy Communities (Sections 10 and 11 of the report). The main document of the study can be found at

<https://enr-network.org/publications/energy-agencies-and-renewable-energy-communities-a-new-path-for-energy-decentralisation/>

Sections 10.1 and 10.2 (as well as 11.1 and 11.2) have the same information but organised either by country or by question/topic, for convenience of analysis.

10. Annex 1

10.1. Legislation and country status - Questionnaire answers by country

10.1.1. Portugal

Country: PORTUGAL	
INFORMATION REQUESTED / PROVIDED	
CONTACTED E^rR ENERGY AGENCY	ADENE – Agência para a Energia Contacts: Paulo Nogueira / Vanessa Lopes / Manuel Casquico Emails: paulo.nogueira@adene.pt ; vanessa.lopes@adene.pt ; manuel.casquico@adene.pt
LEGISLATIVE FRAMEWORK	
Q5. Is it in a EU Member State?	Yes
Q6. Being a EU-member state, is there specific legislation defining Renewable Energy Communities? Is the Renewable Energy Directive 2018/2001 transposed into national law?	Yes
Q7. How was the transposition done? Was the transposition carried out into a specific legislation and regulation guiding REC implementation? Please consider topics such as: was the legislation proposed as a stand-alone or was there an overall revision of electricity market system to include REC creation and other changes to facilitate adoption (namely grid issues)? - Specific legislation - Included in the revision of electricity market system - Other	Included in the revision of electricity market system
Q8. Legislation revision	

How many revisions of legislation have there been since the first transposition?	1
Q9. If the answer to previous question was more than "0", please briefly describe the most important differences between the previous and the current legislation.	<p>a) Installed power values of electricity production units that determine prior control procedures:</p> <ul style="list-style-type: none"> - in previous legislation, $\leq 350 \text{ W}$ / $> 350 \text{ W}$ and $\leq 30 \text{ kW}$ / $> 30 \text{ kW}$ and $\leq 1 \text{ MW}$ / $> 1 \text{ MW}$; - in current legislation, $\leq 700 \text{ W}$ / $> 700 \text{ W}$ and $\leq 30 \text{ kW}$ / $> 30 \text{ kW}$ and $\leq 1 \text{ MW}$ / $> 1 \text{ MW}$; <p>b) Definition of the distance between electricity production units and consumption points:</p> <ul style="list-style-type: none"> - in the previous legislation, defined in project by the entity that analyzed the RECs project and by the grid manager; - in the current legislation – in case of production units connected to low voltage electricity distribution grids, a maximum distance of 2 km is allowed, however if the production and consumption points are connected to the same power station and also at low voltage ($\leq 1 \text{ kV}$) there is no maximum distance; in case of connection at Medium voltage ($> 1 \text{ kV}$ and $\leq 45 \text{ kV}$) – 4 km; in case of connection at High voltage ($> 45 \text{ kV}$ and $\leq 110 \text{ kV}$) – 10 km; and, in case of connection at Very High voltage ($> 110 \text{ kV}$) – 20 km.
Q10. In what year was implemented the last legislation regarding REC? (Year of publication of the current legislation)	2022
Q11. Year of previous publication (if applicable):	2019
Q12. URL for the current legislation regarding REC:	https://files.dre.pt/1s/2022/01/01000/0000300185.pdf
Q13. Being a non-EU member state, is there specific legislation defining Renewable Energy Communities?	Not applicable
Q14. If Yes, is it specific legislation or included in another legislative package? - Specific legislation - Included in the revision of electricity market system - Other	Not applicable
Q15. When was it first published?	Not applicable
Q16. How many revisions of legislation have there been since the first publication?	Not applicable
Q17. If the answer to previous question was more than "0", please briefly describe the most important	Not applicable

differences between the previous and the current legislation.	
Q18. URL for the current legislation regarding REC:	Not applicable
DEFINITION OF RENEWABLE ENERGY COMMUNITY (REC)	
<p>Q19. What is the working definition for a REC in the current legislation?</p> <p>Please copy the definition from your national law. Consider topics such as: Can self-consumption be considered a REC? Can there be for profit activities? Are communities engaged mandatorily in generation activities or can they provide only other services?</p>	<p>According to the current Portuguese legislation (Decree-Law no. 15/2022, of 14 January), a Renewable Energy Community is a legal entity, constituted by open and voluntary adhesion of its members, partners or shareholders, which may be natural persons or organizations, of a public or private nature, including, in particular, small and medium-sized enterprises or local authorities, controlled by them and in which, cumulatively:</p> <p>a) The members or participants are located in the proximity of the renewable energy projects or carry out activities related to the renewable energy projects of the respective energy community, necessarily including a production unit;</p> <p>b) The projects have to be owned and developed by REC or by third parties, provided that it is for the benefit and at the service of the REC;</p> <p>c) The main objective of the REC is to provide environmental, economic and social benefits to the members or the locations where the community operates, rather than financial profits.</p> <p>REC may have the ability to:</p> <p>a) Produce, consume, store, buy and sell renewable energy with its members or with third parties;</p> <p>b) Share and commercialize among its members the renewable energy produced by Production Units at its service, in compliance with the other established requirements, without prejudice to the REC members, which maintain their rights and obligations as consumers;</p> <p>c) Access all energy markets, including system services, both directly and through aggregation.</p>
MEMBERS OF THE REC	
<p>Q20. Which actors can participate as members in a REC? (Please choose as many as applicable)</p> <p>- Natural persons / Local authorities / Micro-sized enterprises / Small-sized enterprises / Medium-sized enterprises / Other</p>	Natural persons; Local authorities; Micro-sized enterprises; Small-sized enterprises; and, Medium-sized enterprises.
Q21. Provide additional info here, if needed:	
MANAGEMENT OF THE REC	

<p>Q22. Is the management of the REC always internal to the community or can third parties provide management as a service?</p> <p>(Please choose as many as applicable)</p> <ul style="list-style-type: none"> - It is mandatory that management is done internally by the REC members - Management can be done internally to the REC or by a third parties as a service - Other 	<p>Management can be done internally to the REC or by a third parties as a service.</p>
<p>Q23. What services can a REC provide?</p> <p>(Please choose as many as applicable)</p> <ul style="list-style-type: none"> - Generation - Supply - Consumption and sharing - Distribution (local electricity grids, small scale heating, biogas networks, etc); - Energy Services (efficiency & savings such as building renovations, auditing, technical assessments, storage, smart grid integration, financial services, etc.) - Other activities (consultation to establish new initiatives, awareness campaigns, fuel poverty measures, etc.) 	<p>Generation; Supply; Consumption and sharing; Distribution (local electricity grids, small scale heating, biogas networks, etc); Energy Services (efficiency & savings such as building renovations, auditing, technical assessments, storage, smart grid integration, financial services, etc.).</p>
<p>Q24. Provide additional info here, if needed. Please specify here if some services are mandatory or interdependent (for example, is generation mandatory for definition as REC or can a REC only provide other services without generation?).</p>	
<p style="text-align: center;">LICENSING, OPERATION AND MANAGEMENT OF A REC</p>	
<p>Q25. Licensing authority</p> <p>What authority(ies) issues licensing and permits for REC? (Select as many as applicable)</p> <p>National government / Energy agency / Local authority / Other</p>	<p>National government</p>
<p>Q26. Provide additional info here, if needed:</p>	

<p>Q27. Please provide the name, URL and a short description of the authority(ies) role in the country:</p>	<p>General Directorate of Energy and Geology (https://www.dgeg.gov.pt/)</p> <p>The General Directorate of Energy and Geology (DGEG) is the body of the Portuguese Public Administration whose mission is to contribute to the design, promotion and evaluation of policies related to energy and geological resources, from a perspective of sustainable development and guaranteeing the safety of the environment. DGEG's mission naturally includes the need to raise awareness among citizens of the importance of those policies, within the framework of the economic and social development that is desired for the country, informing them about the instruments available for the execution of political decisions and disseminating the results of its monitoring and execution.</p>
<p>Q28. What is the role of each organization in the licensing process?</p> <p>Please consider the following topics: Is the licensing authority the only organization that promoters contact and that establishes all necessary contacts with other organizations such as grid operators? Or do promoters need to contact grid operators prior to licensing? Is there a maximum time for issuing a permit from the moment it is requested? What is the average licensing time?</p>	<p>General Directorate of Energy and Geology, DGEG (https://www.dgeg.gov.pt/)</p> <p>- Approves the operating license of REC;</p> <p>E-Redes (Portuguese DSO – Distribution system operator)</p> <p>– Informs DGEG if the REC can be connected to the grid, installs the smart meters to monitor energy consumption/production.</p>
<p>Q29. Is the EⁿR member agency involved in the process? How?</p> <p>- Not involved</p> <p>- Yes, the agency is involved</p>	<p>Yes, the agency is involved. See following answer.</p>
<p>Q30. If “yes”, describe the role of the agency:</p>	<p>ADENE is responsible for the promotion (fostering/ incentivizing) of REC and a biannual report of the progress of REC implementation.</p>
<p>Q31. Centralized registry</p> <p>Is there a centralized registry in an online platform? If yes, please provide URL. (Provide any additional info here, if needed)</p>	<p>Yes, at https://apps.dgeg.gov.pt/DGEG/</p>
<p>Q32. Is the licensing type dependent on voltage level?</p> <p>What are the voltage level intervals defined and what changes in the licensing between them? Please specify if the licensing type is the same as for self-consumption installations.</p>	<p>Yes, the licensing is exactly the same as the one considered for self-consumption installations and does not depend of the voltage level. The procedures vary solely on the basis of the value of installed power of the REC:</p> <ul style="list-style-type: none"> • If ≤ 700 W – no prior notice or license needed; • If > 700W and ≤ 30 kW – simple communication to licensing authority; • If > 30 kW and ≤ 1 MW – prior registry and request of an operating certificate;

	<ul style="list-style-type: none"> • If > 1 MW – full license for production and operation.
<p>Q33. Is new licensing needed for a voltage level increase?</p> <p>Please specify if, within each voltage level interval, an increase in the installed production capacity increase requires new licensing, or if up to a certain percentage the license covers REC growth.</p>	<p>If the installed capacity at the REC exceeds by 20% the installed capacity that was licensed, the REC manager has to request a new license.</p>
<p>Q34. What is the maximum distance allowed between production and consumption? Does it depend on installed capacity?</p>	<p>Please see previous answers.</p>
<p>Q35. Is the energy sharing coefficient fixed or dynamic? If dynamic, is the sharing management done in real time, e.g., not indexed to consumption?</p>	<p>The energy sharing coefficient can be fixed or dynamic, depending on the decision of the REC members. The REC manager and members can access the data in real time. The REC management software connects with the software of the Distribution System Operator.</p>
<p>Q36. Are there any restrictions to the equipments that can be installed? Is there a pre-approved list of equipments that can be used? Are there specific norms?</p>	<p>The installing entity must submit proof (on the electronic platform managed by DGEG) that the equipment installed at the UPAC is certified, and its certification is granted by a certification body accredited for the certification in question by the Portuguese Institute of Accreditation, I.P. (IPAC, I.P.), or by another national accreditation body, under the terms of Regulation (EC) no. 765/2008.</p> <p>Equipments must meet the requirements defined in the European standards applicable to each type of equipment, published by CEN — European Committee for Standardization and by CENELEC — European Committee for Electrotechnical Standardization.</p> <p>If European standards have not been established and published, each type of equipment must meet the requirements of international standards published by ISO/IEC — International Organization for Standardization and the International Electrotechnical Commission.</p> <p>However, whenever there are no applicable European standards, the equipment must conform to the Portuguese technical standards or specifications relating to the equipment in question, which are published by the Portuguese Quality Institute, I.P., with DGEG having a fundamental role:</p> <ul style="list-style-type: none"> a) Controls the issuance of certificates for equipment supplied by manufacturers, importers, suppliers, their representatives and installing entities; b) Creates and maintains a database of standard elements that integrate the equipment for the various UPAC solutions and management systems; c) Creates and maintains a list of certified equipment on its website.

<p>Q37. Is there a periodical monitoring/ reviewing/inspection of installations? What's the periodicity? Is there a list of specific contractors?</p>	<p>Inspection of installations must be carried out every 8 years.</p> <p>For the installation of UPAC (Production units for self-consumption), technical qualification requirements are necessary, which vary according to the power capacity of the system to be installed.</p> <p>For installations with an installed capacity greater than 700 W, the entity installing electrical installations for private services or technicians responsible for carrying out electrical installations must comply with the terms of Law No. 96/2017, of 10 August.</p> <p>It is important to note that before installing the equipment, the installing entity or the responsible technician must ensure that the equipment to be installed is certified for installation in the electrical network, otherwise the installation will not be approved to start operating.</p>
<p>Q38. Is there a mandatory insurance for REC? If yes, please detail mandatory conditions and coverage. Please consider issues like coverage of electrical and electronic equipments, civil liability, generation losses.</p>	<p>For the activities of production, storage and self-consumption, it is necessary to take out insurance for the Production Unit that guarantees the civil liability of the holder.</p> <p>The insurance contract has a mandatory minimum capital, for each annuity, regardless of the number of claims occurred and the number of victims, of an amount to be fixed by order of the member of the Government responsible for the energy area, after consultation with the Supervisory Authority for Insurances and Pension Funds, depending on their nature, size and degree of risk, automatically updated on March 31 of each year, according to the consumer price index of the previous calendar year, without housing, on the mainland, published by the National Statistics Office.</p>
BARRIERS AND BOTTLENECKS TO IMPLEMENTATION OF A REC	
<p>Q39. Licensing process bottlenecks</p> <p>Is the legislation and licensing process transparent?</p> <ul style="list-style-type: none"> - Yes, the process is clear and all the roles and responsibilities are well defined. - Not entirely, the legislation has improved but there are still doubts regarding certain steps for implementation. - Other 	<p>Not entirely, the legislation has improved but there are still doubts regarding certain steps for implementation.</p>
<p>Q40. Provide additional info here, if needed.</p>	
<p>Q41. What are the main bottlenecks for the process?</p>	<p>Some articles are transparent, others are complicated to understand how the implementation occurs.</p> <p>Example: It's not clear if REC has to pay a deposit to use the grid, it is not clear what VAT will be applied to the energy bill, and what documents have to be delivered for REC licensing process.</p>

Q42. Are there minimum technical requirements, not controlled by the REC, prior to creation of the REC? Please consider issues like type of grid connectivity, smart meters, etc.	For REC creation, all consumers need a smart meter which is installed by the DSO (Distribution System Operator), and the software that manages the REC has to connect with the DSO software, has to be compatible.
Q43. Grid connection How many DSO operators exist?	There is only one DSO in Portugal: E-REDES (https://www.e-redes.pt/pt-pt)
Q44. Are there grid connection barriers?	Yes
Q45. If “Yes”, please list the 3 most important barriers:	<ul style="list-style-type: none"> • Mobi-e – This entity manages the grid for electric vehicle charging stations, so it’s not clear how REC can offer the service of EV charging to their members; • The investments to be made by the DSO (E-REDES) may not be aligned with the investments that will be necessary to implement REC projects.
Q46. In your opinion, what should be changed to facilitate the implementation of REC?	<ol style="list-style-type: none"> 1. Streamlining the processes necessary for the creation of REC; 2. Give more autonomy to Public Administration to implement their projects within public procurement rules; 3. Reduction of the response time for the issuance of REC licenses; 4. Reduce or exempt REC from taxes (exclude grid access tariff for the first 5 years).
FACILITATING INSTRUMENTS (e.g., economic instruments (taxes, tariffs, subsidies, etc.), tools and guidelines for implementation)	
Q47. What taxes and tariffs are applied to REC operation?	Grid access tariff.
Q48. Are there tax or tariff exemptions for REC? Which ones and what is the overall % impact? Is there a time limit for the exemption?	REC are exempt from payment of the charges related to general economic interest services (CIEG, general economic interest cost) which are usually charged with the grid access tariff and represent a large portion of energy bills.
Q49. Are there other fiscal benefits for REC implementation? Which ones?	No

Q50. Are there subsidies for the implementation of REC? Which ones?	Yes. Since 14th June 2022, the Environmental Fund (FA) supports REC projects, involving existing buildings of the Residential Sector, Central Public Administration Sector and Trade and Services Sector. For more details, see Table 8 of this report.
Q51. Did public authorities produce examples of documents such as internal regulations, tender specifications, contracts, etc., to facilitate potential REC to start the implementation process?	ADENE is currently developing a support manual for the implementation of REC in Portugal. This manual will be divided in 2 parts: Legislation and Technologies. This manual will also integrate templates for internal regulations and specifications to help the different sectors of activity, public administration, citizens, industry and services.
FINAL CONSIDERATIONS	
Q52. Are there other national/local agencies or organizations that this survey should be sent to? If yes, please provide relevant contacts (or just organization URL if you don't have specific contacts)	No
Q53. Organization / Name / Email	
Q54. Organization / Name / Email	
Q55. Organization / Name / Email	
Q56. Please provide any additional information, links, contacts, which you believe are important for this study.	

10.1.2. Luxembourg

Country: LUXEMBOURG	
INFORMATION REQUESTED / PROVIDED	
CONTACTED EⁿR ENERGY AGENCY	Klima-Agence G.I.E. Contact: Gilbert Théato Email: gilbert.theato@klima-agence.lu
LEGISLATIVE FRAMEWORK	
Q5. Is it in a EU Member State?	Yes
Q6. Being a EU-member state, is there specific legislation defining Renewable Energy Communities? Is the Renewable Energy Directive 2018/2001 transposed into national law?	Yes
Q7. How was the transposition done? Was the transposition carried out into a specific legislation and regulation guiding REC implementation? Please consider topics such as: was the legislation proposed as a stand-alone or was there an overall revision of electricity market system to include REC creation and other changes to facilitate adoption (namely grid issues)? - Specific legislation - Included in the revision of electricity market system - Other	Included in the revision of electricity market system
Q8. Legislation revision How many revisions of legislation have there been since the first transposition?	0
Q9. If the answer to previous question was more than "0", please briefly describe the most important	

differences between the previous and the current legislation.	
Q10. In what year was implemented the last legislation regarding REC? (Year of publication of the current legislation)	2021
Q11. Year of previous publication (if applicable):	
Q12. URL for the current legislation regarding REC:	https://legilux.public.lu/eli/etat/leg/loi/2021/02/03/a94/jo
Q13. Being a non-EU member state, is there specific legislation defining Renewable Energy Communities?	Not applicable
Q14. If Yes, is it specific legislation or included in another legislative package? - Specific legislation - Included in the revision of electricity market system - Other	Not applicable
Q15. When was it first published?	Not applicable
Q16. How many revisions of legislation have there been since the first publication?	Not applicable
Q17. If the answer to previous question was more than "0", please briefly describe the most important differences between the previous and the current legislation.	Not applicable
Q18. URL for the current legislation regarding REC:	Not applicable
DEFINITION OF RENEWABLE ENERGY COMMUNITY (REC)	
Q19. What is the working definition for a REC in the current legislation? Please copy the definition from your national law. Consider topics such as: Can self-consumption be considered a REC?	'Renewable Energy Community' means a legal person whose members or shareholders are natural persons, SMEs or local authorities, including municipalities, and who are system users whose all injection and withdrawal points are located in the same locality downstream of high or medium voltage to low voltage electricity transformer substations operated by the distribution system operator concerned. The existence of a renewable energy community shall not prevent the distribution system operator

Can there be for profit activities? Are communities engaged mandatorily in generation activities or can they provide only other services?	from making changes to the topology of its distribution system even where such a change implies changes in the composition of the community in question. A renewable energy community is permitted to: (a) produce, consume, store and sell renewable energy produced by generation units owned by it, including through renewable power purchase agreements; (b) share, within the renewable energy community, the renewable energy produced by the generating units owned by that renewable energy community without prejudice to grid access charges, grid use charges and other charges, levies and taxes applicable to each member of the renewable energy community; (c) access to all relevant energy markets directly or by aggregation in a non-discriminatory manner.
MEMBERS OF THE REC	
Q20. Which actors can participate as members in a REC? (Please choose as many as applicable) - Natural persons / Local authorities / Micro-sized enterprises / Small-sized enterprises / Medium-sized enterprises / Other	Natural persons; Local authorities; Micro-sized enterprises; Small-sized enterprises; and, Medium-sized enterprises.
Q21. Provide additional info here, if needed:	
MANAGEMENT OF THE REC	
Q22. Is the management of the REC always internal to the community or can third parties provide management as a service? (Please choose as many as applicable) - It is mandatory that management is done internally by the REC members - Management can be done internally to the REC or by a third parties as a service - Other	Management can be done internally to the REC or by a third parties as a service.
Q23. What services can a REC provide? (Please choose as many as applicable) - Generation - Supply - Consumption and sharing - Distribution (local electricity grids, small scale heating, biogas networks, etc);	Generation; Supply; and, Consumption and sharing.

<ul style="list-style-type: none"> - Energy Services (efficiency & savings such as building renovations, auditing, technical assessments, storage, smart grid integration, financial services, etc.) - Other activities (consultation to establish new initiatives, awareness campaigns, fuel poverty measures, etc.) 	
<p>Q24. Provide additional info here, if needed. Please specify here if some services are mandatory or interdependent (for example, is generation mandatory for definition as REC or can a REC only provide other services without generation?).</p>	
LICENSING, OPERATION AND MANAGEMENT OF A REC	
<p>Q25. Licensing authority</p> <p>What authority(ies) issues licensing and permits for REC? (Select as many as applicable)</p> <p>National government / Energy agency / Local authority / Other</p>	<p>See below.</p>
<p>Q26. Provide additional info here, if needed:</p>	<p>No Authorization required, but notification to the grid operator.</p>
<p>Q27. Please provide the name, URL and a short description of the authority(ies) role in the country:</p>	<p>Grid operators:</p> <p>www.creos.net,</p> <p>www.sudstroum.lu,</p> <p>www.ettelbruck.lu/administration/services-techniques/services-industriels,</p> <p>www.electris.lu ,</p> <p>www.diekirch.lu/fr/commune-de-diekirch/trouver-un-service/energies-environnement/electricite</p>
<p>Q28. What is the role of each organization in the licensing process?</p> <p>Please consider the following topics: Is the licensing authority the only organization that promoters contact and that establishes all necessary contacts with other organizations such as grip operators? Or do promoters need to contact grid operators prior to licensing? Is there a maximum time for</p>	<p>There is no licensing process, just a notification process.</p> <p>The role of the grid operator can be to define the distribution model of the shared electricity (if this is not done by the REC). In any case, the grid operator notifies electricity consumption and production of each member to the respective energy providers.</p>

issuing a permit from the moment it is requested? What is the average licensing time?	
<p>Q29. Is the EⁿR member agency involved in the process? How?</p> <p>- Not involved</p> <p>- Yes, the agency is involved</p>	Not involved
Q30. If “yes”, describe the role of the agency:	
<p>Q31. Centralized registry</p> <p>Is there a centralized registry in an online platform? If yes, please provide URL. (Provide any additional info here, if needed)</p>	No
<p>Q32. Is the licensing type dependent on voltage level?</p> <p>What are the voltage level intervals defined and what changes in the licensing between them? Please specify if the licensing type is the same as for self-consumption installations.</p>	No
<p>Q33. Is new licensing needed for a voltage level increase?</p> <p>Please specify if, within each voltage level interval, an increase in the installed production capacity increase requires new licensing, or if up to a certain percentage the license covers REC growth.</p>	No
Q34. What is the maximum distance allowed between production and consumption? Does it depend on installed capacity?	No distance indicated, but the REC has to be in one specified locality, behind a specific transformer station and in the area of the same grid operator. (This may be subject to change in a new law project).
Q35. Is the energy sharing coefficient fixed or dynamic? If dynamic, is the sharing management done in real time, e.g., not indexed to consumption?	Energy sharing can be done on different levels: by priority, by percentage or by pro rata.
Q36. Are there any restrictions to the equipments that can be installed? Is there a pre-approved list of	Not to our knowledge.

equipments that can be used? Are there specific norms?	
Q37. Is there a periodical monitoring/reviewing/inspection of installations? What's the periodicity? Is there a list of specific contractors?	Not to our knowledge.
Q38. Is there a mandatory insurance for REC? If yes, please detail mandatory conditions and coverage. Please consider issues like coverage of electrical and electronic equipments, civil liability, generation losses.	Not to our knowledge.
BARRIERS AND BOTTLENECKS TO IMPLEMENTATION OF A REC	
Q39. Licensing process bottlenecks Is the legislation and licensing process transparent? - Yes, the process is clear and all the roles and responsibilities are well defined. - Not entirely, the legislation has improved but there are still doubts regarding certain steps for implementation. - Other	Yes, the process is clear and all the roles and responsibilities are well defined.
Q40. Provide additional info here, if needed.	
Q41. What are the main bottlenecks for the process?	Bottlenecks could be understanding of the REC principles or the lack of typical articles of association (statutes).
Q42. Are there minimum technical requirements, not controlled by the REC, prior to creation of the REC? Please consider issues like type of grid connectivity, smart meters, etc.	Not known.
Q43. Grid connection How many DSO operators exist?	Five
Q44. Are there grid connection barriers?	No

Q45. If "Yes", please list the 3 most important barriers:	
Q46. In your opinion, what should be changed to facilitate the implementation of REC?	Explanation of the REC principles and providing constitution text models (articles of association / statutes)
<p align="center">FACILITATING INSTRUMENTS</p> <p align="center">(e.g., economic instruments (taxes, tariffs, subsidies, etc.), tools and guidelines for implementation)</p>	
Q47. What taxes and tariffs are applied to REC operation?	In general the usual electricity market taxes and tariffs, see also Q39.
Q48. Are there tax or tariff exemptions for REC? Which ones and what is the overall % impact? Is there a time limit for the exemption?	<p>Tariff exemption for net usage in some cases,</p> <p>Tax exemption for "Mécanisme de compensation".</p> <p>In the case of both exemptions, electricity consumers reduce to approx. 50%.</p> <p>No time limit.</p>
Q49. Are there other fiscal benefits for REC implementation? Which ones?	No further fiscal benefits for REC implementation.
Q50. Are there subsidies for the implementation of REC? Which ones?	The usual subsidies for the installation of renewable energy installations (investment subsidy (< 30kWp for PV), feedin-tariff if chosen by investor.
Q51. Did public authorities produce examples of documents such as internal regulations, tender specifications, contracts, etc., to facilitate potential REC to start the implementation process?	<p>Grid Regulating authority produced standard contracts between REC and grid operators.</p> <p>Klima-Agence is about to prepare document models for internal regulation.</p>
<p align="center">FINAL CONSIDERATIONS</p>	
Q52. Are there other national/local agencies or organizations that this survey should be sent to? If yes, please provide relevant contacts (or just organization URL if you don't have specific contacts)	Klima-Agence
Q53. Organization / Name / Email	Klima-Agence G.I.E.

	c/o Gilbert Théato gilbert.theato@klima-agence.lu
Q54. Organization / Name / Email	
Q55. Organization / Name / Email	
Q56. Please provide any additional information, links, contacts, which you believe are important for this study.	A new version of the REC dispositions (in the electricity market law) is actually being worked out and will probably come into force in autumn 2022.

10.1.3. Finland

Country: FINLAND	
INFORMATION REQUESTED / PROVIDED	
CONTACTED EⁿR ENERGY AGENCY	Motiva Oy and the Finnish Energy Authority Contact: Lea Gynther Email: lea.gynther@motiva.fi
LEGISLATIVE FRAMEWORK	
Q5. Is it in a EU Member State?	Yes
Q6. Being a EU-member state, is there specific legislation defining Renewable Energy Communities? Is the Renewable Energy Directive 2018/2001 transposed into national law?	Yes
Q7. How was the transposition done? Was the transposition carried out into a specific legislation and regulation guiding REC implementation? Please consider topics such as: was the legislation proposed as a stand-alone or was there an overall revision of electricity market system to include REC creation and other changes to facilitate adoption (namely grid issues)? - Specific legislation - Included in the revision of electricity market system - Other	Specific legislation
Q8. Legislation revision How many revisions of legislation have there been since the first transposition?	0
Q9. If the answer to previous question was more than "0", please briefly describe the most important	

differences between the previous and the current legislation.	
Q10. In what year was implemented the last legislation regarding REC? (Year of publication of the current legislation)	2020 (Decree 1133/2020)
Q11. Year of previous publication (if applicable):	
Q12. URL for the current legislation regarding REC:	https://www.finlex.fi/fi/laki/alkup/2020/20201133 (in Finnish only)
Q13. Being a non-EU member state, is there specific legislation defining Renewable Energy Communities?	Not applicable
Q14. If Yes, is it specific legislation or included in another legislative package? - Specific legislation - Included in the revision of electricity market system - Other	Not applicable
Q15. When was it first published?	Not applicable
Q16. How many revisions of legislation have there been since the first publication?	Not applicable
Q17. If the answer to previous question was more than "0", please briefly describe the most important differences between the previous and the current legislation.	Not applicable
Q18. URL for the current legislation regarding REC:	Not applicable
DEFINITION OF RENEWABLE ENERGY COMMUNITY (REC)	
Q19. What is the working definition for a REC in the current legislation? Please copy the definition from your national law. Consider topics such as: Can self-consumption be considered a REC?	Decree 1133/2020: art. 3 concerns energy communities providing both renewable and non-renewable energy According to the Decree, a local energy community is a legal body: 1) which produces, supplies, consumes, aggregates or stores energy or provides energy services, charging services for electric cars or other energy services for its members or shareholders; 2) which is based on voluntary and open participation; 3) in which authority is used by its members or shareholders; 4) whose members

<p>Can there be for profit activities? Are communities engaged mandatorily in generation activities or can they provide only other services?</p>	<p>or shareholders are natural persons, municipalities or other local authorities or small or medium sized enterprises; 5) whose principal objective, instead of financial profits, is to produce environment, economic or social community related benefits for its members or shareholders or the area where it operates; 6) whose members' and shareholders' electricity consumption metering at the electricity accounting points is done by DSO; 7) whose members' and shareholders' electricity consumption sites are located at the real estate or a comparable group of real estates and which have been connected to the DSO's distribution network through one and the same accounting point; and 8) whose electricity generation equipment and electricity storage belong to the connection referred to under #7.</p>
<p align="center">MEMBERS OF THE REC</p>	
<p>Q20. Which actors can participate as members in a REC? (Please choose as many as applicable)</p> <ul style="list-style-type: none"> - Natural persons / Local authorities / Micro-sized enterprises / Small-sized enterprises / Medium-sized enterprises / Other 	<p>Natural persons; Local authorities; Micro-sized enterprises; Small-sized enterprises; and, Medium-sized enterprises.</p>
<p>Q21. Provide additional info here, if needed:</p>	
<p align="center">MANAGEMENT OF THE REC</p>	
<p>Q22. Is the management of the REC always internal to the community or can third parties provide management as a service?</p> <p>(Please choose as many as applicable)</p> <ul style="list-style-type: none"> - It is mandatory that management is done internally by the REC members - Management can be done internally to the REC or by a third parties as a service - Other 	<p>Management can be done internally to the REC or by a third parties as a service.</p>
<p>Q23. What services can a REC provide?</p> <p>(Please choose as many as applicable)</p> <ul style="list-style-type: none"> - Generation - Supply - Consumption and sharing - Distribution (local electricity grids, small scale heating, biogas networks, etc); 	<p>Generation; Supply; Consumption and sharing; Energy Services (efficiency & savings such as building renovations, auditing, technical assessments, storage, smart grid integration, financial services, etc.).</p>

<ul style="list-style-type: none"> - Energy Services (efficiency & savings such as building renovations, auditing, technical assessments, storage, smart grid integration, financial services, etc.) - Other activities (consultation to establish new initiatives, awareness campaigns, fuel poverty measures, etc.) 	
Q24. Provide additional info here, if needed. Please specify here if some services are mandatory or interdependent (for example, is generation mandatory for definition as REC or can a REC only provide other services without generation?).	There are no mandatory services. Various energy services (e.g., electric mobility charging services) can be provided without own generation.
LICENSING, OPERATION AND MANAGEMENT OF A REC	
Q25. Licensing authority What authority(ies) issues licensing and permits for REC? (Select as many as applicable) National government / Energy agency / Local authority / Other	No license or permit is required from the authorities. Only registration with the local electricity distribution network (DSO) is required and the DSO should give a consent to connect the system. Installation of solar power systems in buildings may be subject to action permit (lighter than building permit) requirements, but this is an exception, not the rule.
Q26. Provide additional info here, if needed:	
Q27. Please provide the name, URL and a short description of the authority(ies) role in the country:	Not applicable
Q28. What is the role of each organization in the licensing process? Please consider the following topics: Is the licensing authority the only organization that promoters contact and that establishes all necessary contacts with other organizations such as grid operators? Or do promoters need to contact grid operators prior to licensing? Is there a maximum time for issuing a permit from the moment it is requested? What is the average licensing time?	Not applicable
Q29. Is the E ⁿ R member agency involved in the process? How? - Not involved	Not involved

- Yes, the agency is involved	
Q30. If “yes”, describe the role of the agency:	
<p>Q31. Centralized registry</p> <p>Is there a centralized registry in an online platform? If yes, please provide URL. (Provide any additional info here, if needed)</p>	No
<p>Q32. Is the licensing type dependent on voltage level?</p> <p>What are the voltage level intervals defined and what changes in the licensing between them? Please specify if the licensing type is the same as for self-consumption installations.</p>	Not applicable
<p>Q33. Is new licensing needed for a voltage level increase?</p> <p>Please specify if, within each voltage level interval, an increase in the installed production capacity increase requires new licensing, or if up to a certain percentage the license covers REC growth.</p>	Not applicable
<p>Q34. What is the maximum distance allowed between production and consumption? Does it depend on installed capacity?</p>	Decree 1133/2020, art 3 makes the following limitation: the electricity accounting points of the members or shareholders shall be within a single real estate or group of real estates which are supplied by a single electric connection. Effectively, production and consumption needs to be on one site. In the forthcoming update of the Electricity Market Law, some co-operation between different real estates in the immediate vicinity may be enabled.
<p>Q35. Is the energy sharing coefficient fixed or dynamic? If dynamic, is the sharing management done in real time, e.g., not indexed to consumption?</p>	<p>Dynamic for electricity production. Produced electricity is first used as real estate electricity. Next, possible surplus electricity is distributed to dwellings participating in the balancing mechanism. Each dwelling gets a share of produced electricity based on an hourly balancing calculation where surplus is subtracted from the hourly measured consumption by the user. If after this allocation there is still surplus electricity, it will be fed to the local distribution network and the housing association gets a payment from its electricity seller.</p> <p>Datahub, the centralised information exchange system for the electricity retail market, went live on February 2022. It compiles information on all electricity accounting points into one system. When the balancing mechanism will be integrated into the Datahub in the future, all financial benefits from surplus electricity can be directly allocated to the members/ shareholders instead of the housing association. This allocation method may be chosen when the housing association establishes the energy community.</p> <p>Datahub: https://www.fingrid.fi/en/electricity-market/datahub/ (in English).</p>

Q36. Are there any restrictions to the equipments that can be installed? Is there a pre-approved list of equipments that can be used? Are there specific norms?	No but maximum capacity is 1 MVA.
Q37. Is there a periodical monitoring/reviewing/inspection of installations? What's the periodicity? Is there a list of specific contractors?	Not applicable. Recommendations exist for safe usage.
Q38. Is there a mandatory insurance for REC? If yes, please detail mandatory conditions and coverage. Please consider issues like coverage of electrical and electronic equipments, civil liability, generation losses.	No
BARRIERS AND BOTTLENECKS TO IMPLEMENTATION OF A REC	
Q39. Licensing process bottlenecks Is the legislation and licensing process transparent? - Yes, the process is clear and all the roles and responsibilities are well defined. - Not entirely, the legislation has improved but there are still doubts regarding certain steps for implementation. - Other	Yes, the process is clear and all the roles and responsibilities are well defined.
Q40. Provide additional info here, if needed.	No licensing necessary. Only registration with the DSO.
Q41. What are the main bottlenecks for the process?	Enabling the formulation of energy communities is voluntary for the DSOs at the moment, meaning that energy communities are not necessarily possible in all distribution networks.
Q42. Are there minimum technical requirements, not controlled by the REC, prior to creation of the REC? Please consider issues like type of grid connectivity, smart meters, etc.	We have had full roll-out of smart metering for years, which enables adequate measurement (hourly measurement and remote meter reading). Finnish Energy, the industry association for the energy industries, has published common technical specifications for equipment to be connected to the distribution networks.
Q43. Grid connection How many DSO operators exist?	77 DSOs. List can be found at: https://energiavirasto.fi/verkkotoiminnan-luvanvaraisuus#jakeluverkonhaltijat

Q44. Are there grid connection barriers?	No
Q45. If “Yes”, please list the 3 most important barriers:	
Q46. In your opinion, what should be changed to facilitate the implementation of REC?	Housing associations (and other potential REC operators) need a better knowledge about the cost-effectiveness of REC and the benefits of balancing mechanism for solar power production.
FACILITATING INSTRUMENTS (e.g., economic instruments (taxes, tariffs, subsidies, etc.), tools and guidelines for implementation)	
Q47. What taxes and tariffs are applied to REC operation?	None.
Q48. Are there tax or tariff exemptions for REC? Which ones and what is the overall % impact? Is there a time limit for the exemption?	<p>The housing association and dwelling owners buy less electricity through the grid. This enables them to avoid the following costs: costs of electricity procured and the corresponding electricity tax and distribution charges. There is no time limit for these benefits.</p> <p>The DSO is allowed to charge for the distribution and to take a service fee of max 0.07 c/kWh. All DSOs do not charge distribution chargers.</p>
Q49. Are there other fiscal benefits for REC implementation? Which ones?	See response to Q48.
Q50. Are there subsidies for the implementation of REC? Which ones?	<p>Business Finland provides energy aid subsidies for municipalities and companies. Housing associations may benefit of an energy subsidy from the Housing Finance and Development Centre of Finland (ARA) for energy efficiency projects; the requirement for energy efficiency improvements means, that an investment in RES alone does not necessarily provide eligibility for the subsidy.</p> <p>Business Finland - Energy aid (in English): https://www.businessfinland.fi/en/for-finnish-customers/services/funding/energy-aid</p> <p>ARA Energy Subsidy (in Finnish): https://www.ara.fi/fi-FI/Lainat_ja_avustukset/Energiaavustus</p>
Q51. Did public authorities produce examples of documents such as internal regulations, tender specifications, contracts, etc., to facilitate potential REC to start the implementation process?	<p>Installation of solar power in single-family houses as well as housing associations has been promoted by a multi-year information campaign “Aurinkosähköä kotiin”. Link to information provided to the housing associations: https://aurinkosahkoakotiin.fi/taloyhtioon/ (in Finnish)</p>

FINAL CONSIDERATIONS

Q52. Are there other national/local agencies or organizations that this survey should be sent to? If yes, please provide relevant contacts (or just organization URL if you don't have specific contacts)	The questionnaire has been filled in in co-operation with the Finnish Energy Authority. Therefore, we do not suggest further consultation with the national authorities.
Q53. Organization / Name / Email	
Q54. Organization / Name / Email	
Q55. Organization / Name / Email	
Q56. Please provide any additional information, links, contacts, which you believe are important for this study.	

10.1.4. Sweden

Country: SWEDEN	
INFORMATION REQUESTED / PROVIDED	
CONTACTED E ⁿ R ENERGY AGENCY	Swedish Energy Agency Contact: Jenny Ivner Email: jenny.ivner@energimyndigheten.se
LEGISLATIVE FRAMEWORK	
Q5. Is it in a EU Member State?	Yes
Q6. Being a EU-member state, is there specific legislation defining Renewable Energy Communities? Is the Renewable Energy Directive 2018/2001 transposed into national law?	No
Q7. How was the transposition done? Was the transposition carried out into a specific legislation and regulation guiding REC implementation? Please consider topics such as: was the legislation proposed as a stand-alone or was there an overall revision of electricity market system to include REC creation and other changes to facilitate adoption (namely grid issues)? - Specific legislation - Included in the revision of electricity market system - Other	
Q8. Legislation revision How many revisions of legislation have there been since the first transposition?	
Q9. If the answer to previous question was more than "0", please briefly describe the most important	

differences between the previous and the current legislation.	
Q10. In what year was implemented the last legislation regarding REC? (Year of publication of the current legislation)	
Q11. Year of previous publication (if applicable):	
Q12. URL for the current legislation regarding REC:	
Q13. Being a non-EU member state, is there specific legislation defining Renewable Energy Communities?	Not applicable
Q14. If Yes, is it specific legislation or included in another legislative package? - Specific legislation - Included in the revision of electricity market system - Other	Not applicable
Q15. When was it first published?	Not applicable
Q16. How many revisions of legislation have there been since the first publication?	Not applicable
Q17. If the answer to previous question was more than "0", please briefly describe the most important differences between the previous and the current legislation.	Not applicable
Q18. URL for the current legislation regarding REC:	Not applicable
DEFINITION OF RENEWABLE ENERGY COMMUNITY (REC)	
Q19. What is the working definition for a REC in the current legislation? Please copy the definition from your national law. Consider topics such as: Can self-consumption be considered a REC? Can	Not applicable

there be for profit activities? Are communities engaged mandatorily in generation activities or can they provide only other services?	
MEMBERS OF THE REC	
<p>Q20. Which actors can participate as members in a REC? (Please choose as many as applicable)</p> <ul style="list-style-type: none"> - Natural persons / Local authorities / Micro-sized enterprises / Small-sized enterprises / Medium-sized enterprises / Other 	Natural persons; Local authorities; Micro-sized enterprises; Small-sized enterprises; and, Medium-sized enterprises
Q21. Provide additional info here, if needed:	As REC as defined in RED are not specifically implemented in the legislation, ordinary regulations for economic associations apply. Thus more or less anyone may be “members” in an economic association for energy sharing (and storage) purposes.
MANAGEMENT OF THE REC	
<p>Q22. Is the management of the REC always internal to the community or can third parties provide management as a service? (Please choose as many as applicable)</p> <ul style="list-style-type: none"> - It is mandatory that management is done internally by the REC members - Management can be done internally to the REC or by a third parties as a service - Other 	There are currently no specific regulatory frameworks for REC.
<p>Q23. What services can a REC provide? (Please choose as many as applicable)</p> <ul style="list-style-type: none"> - Generation - Supply - Consumption and sharing - Distribution (local electricity grids, small scale heating, biogas networks, etc); - Energy Services (efficiency & savings such as building renovations, auditing, technical assessments, storage, smart grid integration, financial services, etc.) - Other activities (consultation to establish new initiatives, awareness campaigns, fuel poverty measures, etc.) 	Other activities (consultation to establish new initiatives, awareness campaigns, fuel poverty measures, etc.).

Q24. Provide additional info here, if needed. Please specify here if some services are mandatory or interdependent (for example, is generation mandatory for definition as REC or can a REC only provide other services without generation?).	As REC as defined in RED are not specifically implemented in the legislation, no specific services are mandatory or prohibited.
LICENSING, OPERATION AND MANAGEMENT OF A REC	
Q25. Licensing authority What authority(ies) issues licensing and permits for REC? (Select as many as applicable) National government / Energy agency / Local authority / Other	Not applicable
Q26. Provide additional info here, if needed:	As REC as defined in RED are not specifically implemented in the legislation, no specific authorities are mandated to handle licensing or permits.
Q27. Please provide the name, URL and a short description of the authority(ies) role in the country:	Not applicable
Q28. What is the role of each organization in the licensing process? Please consider the following topics: Is the licensing authority the only organization that promoters contact and that establishes all necessary contacts with other organizations such as grid operators? Or do promoters need to contact grid operators prior to licensing? Is there a maximum time for issuing a permit from the moment it is requested? What is the average licensing time?	Not applicable
Q29. Is the E ⁿ R member agency involved in the process? How? - Not involved - Yes, the agency is involved	Not involved
Q30. If "yes", describe the role of the agency:	

<p>Q31. Centralized registry</p> <p>Is there a centralized registry in an online platform? If yes, please provide URL. (Provide any additional info here, if needed)</p>	Not applicable
<p>Q32. Is the licensing type dependent on voltage level?</p> <p>What are the voltage level intervals defined and what changes in the licensing between them? Please specify if the licensing type is the same as for self-consumption installations.</p>	Not applicable
<p>Q33. Is new licensing needed for a voltage level increase?</p> <p>Please specify if, within each voltage level interval, an increase in the installed production capacity increase requires new licensing, or if up to a certain percentage the license covers REC growth.</p>	Not applicable
<p>Q34. What is the maximum distance allowed between production and consumption? Does it depend on installed capacity?</p>	Not applicable
<p>Q35. Is the energy sharing coefficient fixed or dynamic? If dynamic, is the sharing management done in real time, e.g., not indexed to consumption?</p>	Not applicable
<p>Q36. Are there any restrictions to the equipments that can be installed? Is there a pre-approved list of equipments that can be used? Are there specific norms?</p>	Not applicable
<p>Q37. Is there a periodical monitoring/reviewing/inspection of installations? What's the periodicity? Is there a list of specific contractors?</p>	Not applicable
<p>Q38. Is there a mandatory insurance for REC? If yes, please detail mandatory conditions and coverage. Please consider issues like coverage of electrical and electronic equipments, civil liability, generation losses.</p>	Not applicable

BARRIERS AND BOTTLENECKS TO IMPLEMENTATION OF A REC

<p>Q39. Licensing process bottlenecks</p> <p>Is the legislation and licensing process transparent?</p> <ul style="list-style-type: none"> - Yes, the process is clear and all the roles and responsibilities are well defined. - Not entirely, the legislation has improved but there are still doubts regarding certain steps for implementation. - Other 	Not applicable
Q40. Provide additional info here, if needed.	There are no licensing processes as the REC framework is yet to be implemented in Swedish legislation.
Q41. What are the main bottlenecks for the process?	Not applicable
<p>Q42. Are there minimum technical requirements, not controlled by the REC, prior to creation of the REC?</p> <p>Please consider issues like type of grid connectivity, smart meters, etc.</p>	Not applicable
<p>Q43. Grid connection</p> <p>How many DSO operators exist?</p>	≈160
Q44. Are there grid connection barriers?	Yes
Q45. If “Yes”, please list the 3 most important barriers:	Limited actual transmission and distribution capacity, extensive and bureaucratic permittance procedures, over-allocation by prospective users.
Q46. In your opinion, what should be changed to facilitate the implementation of REC?	No assessments of the existing barriers and potential of development of renewable energy communities in Sweden have been carried out. Such assessments are important prerequisites in order to properly design frameworks to facilitate the development.

FACILITATING INSTRUMENTS

(e.g., economic instruments (taxes, tariffs, subsidies, etc.), tools and guidelines for implementation)

Q47. What taxes and tariffs are applied to REC operation?	Not applicable
Q48. Are there tax or tariff exemptions for REC? Which ones and what is the overall % impact? Is there a time limit for the exemption?	Not applicable
Q49. Are there other fiscal benefits for REC implementation? Which ones?	Not applicable
Q50. Are there subsidies for the implementation of REC? Which ones?	Not applicable
Q51. Did public authorities produce examples of documents such as internal regulations, tender specifications, contracts, etc., to facilitate potential REC to start the implementation process?	Not applicable
FINAL CONSIDERATIONS	
Q52. Are there other national/local agencies or organizations that this survey should be sent to? If yes, please provide relevant contacts (or just organization URL if you don't have specific contacts)	No
Q53. Organization / Name / Email	Not applicable
Q54. Organization / Name / Email	Not applicable
Q55. Organization / Name / Email	Not applicable
Q56. Please provide any additional information, links, contacts, which you believe are important for this study.	Not applicable

10.1.5. United Kingdom

Country: UNITED KINGDOM	
INFORMATION REQUESTED / PROVIDED	
CONTACTED E ⁿ R ENERGY AGENCY	Energy Saving Trust Contact: Niroshini Bodinagoda Email: Niroshini.Bodinagoda@est.org.uk
LEGISLATIVE FRAMEWORK	
Q5. Is it in a EU Member State?	No
Q6. Being a EU-member state, is there specific legislation defining Renewable Energy Communities? Is the Renewable Energy Directive 2018/2001 transposed into national law?	Not applicable
Q7. How was the transposition done? Was the transposition carried out into a specific legislation and regulation guiding REC implementation? Please consider topics such as: was the legislation proposed as a stand-alone or was there an overall revision of electricity market system to include REC creation and other changes to facilitate adoption (namely grid issues)? - Specific legislation - Included in the revision of electricity market system - Other	Not applicable
Q8. Legislation revision How many revisions of legislation have there been since the first transposition?	Not applicable
Q9. If the answer to previous question was more than "0", please briefly describe the most important	Not applicable

differences between the previous and the current legislation.	
Q10. In what year was implemented the last legislation regarding REC? (Year of publication of the current legislation)	Not applicable
Q11. Year of previous publication (if applicable):	Not applicable
Q12. URL for the current legislation regarding REC:	Not applicable
Q13. Being a non-EU member state, is there specific legislation defining Renewable Energy Communities?	No
Q14. If Yes, is it specific legislation or included in another legislative package? - Specific legislation - Included in the revision of electricity market system - Other	
Q15. When was it first published?	
Q16. How many revisions of legislation have there been since the first publication?	
Q17. If the answer to previous question was more than "0", please briefly describe the most important differences between the previous and the current legislation.	
Q18. URL for the current legislation regarding REC:	
DEFINITION OF RENEWABLE ENERGY COMMUNITY (REC)	
Q19. What is the working definition for a REC in the current legislation? Please copy the definition from your national law. Consider topics such as: Can self-consumption be considered a REC? Can	The UK does not have a single definition of Renewable Energy Communities (with REC not being the preferred descriptor). Definitions are developed for specific pieces of legislation, such as the Feed-in Tariff, but there is not an agreed universal definition laid out in law.

there be for profit activities? Are communities engaged mandatorily in generation activities or can they provide only other services?	
MEMBERS OF THE REC	
<p>Q20. Which actors can participate as members in a REC? (Please choose as many as applicable)</p> <ul style="list-style-type: none"> - Natural persons / Local authorities / Micro-sized enterprises / Small-sized enterprises / Medium-sized enterprises / Other 	Natural persons; Local authorities; Micro-sized enterprises; Small-sized enterprises; and, Medium-sized enterprises
<p>Q21. Provide additional info here, if needed:</p>	Because there is not an agreed legislative basis for what constitutes a REC in the UK I have answered the previous questions based on the real world examples of projects which describe themselves as 'community energy' projects.
MANAGEMENT OF THE REC	
<p>Q22. Is the management of the REC always internal to the community or can third parties provide management as a service? (Please choose as many as applicable)</p> <ul style="list-style-type: none"> - It is mandatory that management is done internally by the REC members - Management can be done internally to the REC or by a third parties as a service - Other 	Management can be done internally to the REC or by a third parties as a service.
<p>Q23. What services can a REC provide? (Please choose as many as applicable)</p> <ul style="list-style-type: none"> - Generation - Supply - Consumption and sharing - Distribution (local electricity grids, small scale heating, biogas networks, etc); - Energy Services (efficiency & savings such as building renovations, auditing, technical assessments, storage, smart grid integration, financial services, etc.) - Other activities (consultation to establish new initiatives, awareness campaigns, fuel poverty measures, etc.) 	Generation; Distribution (local electricity grids, small scale heating, biogas networks, etc); Energy Services (efficiency & savings such as building renovations, auditing, technical assessments, storage, smart grid integration, financial services, etc.); Consumption and sharing; Other activities (consultation to establish new initiatives, awareness campaigns, fuel poverty measures, etc.).

Q24. Provide additional info here, if needed. Please specify here if some services are mandatory or interdependent (for example, is generation mandatory for definition as REC or can a REC only provide other services without generation?).	Q11 has been answered to the best of our knowledge. The community energy sector is very diverse in the UK and various groups which self-identify as community energy groups perform a range of functions. To the best of our knowledge however, small scale generators are not able to supply local households or businesses directly.
LICENSING, OPERATION AND MANAGEMENT OF A REC	
Q25. Licensing authority What authority(ies) issues licensing and permits for REC? (Select as many as applicable) National government / Energy agency / Local authority / Other	There is no official licensing process for REC.
Q26. Provide additional info here, if needed:	As stated previously, the UK has not adopted Article 22 of the RED, and as such does not have a definition of REC in UK law.
Q27. Please provide the name, URL and a short description of the authority(ies) role in the country:	Not applicable
Q28. What is the role of each organization in the licensing process? Please consider the following topics: Is the licensing authority the only organization that promoters contact and that establishes all necessary contacts with other organizations such as grip operators? Or do promoters need to contact grid operators prior to licensing? Is there a maximum time for issuing a permit from the moment it is requested? What is the average licensing time?	Not applicable
Q29. Is the E ⁿ R member agency involved in the process? How? - Not involved - Yes, the agency is involved	Not involved
Q30. If “yes”, describe the role of the agency:	

<p>Q31. Centralized registry</p> <p>Is there a centralized registry in an online platform? If yes, please provide URL. (Provide any additional info here, if needed)</p>	<p>No (see responses above). However, the third sector organisations Community Energy England, Community Energy Wales, and Community Energy Scotland (and some other organisations) do collect incomplete registers of community energy groups in their jurisdictions.</p>
<p>Q32. Is the licensing type dependent on voltage level?</p> <p>What are the voltage level intervals defined and what changes in the licensing between them? Please specify if the licensing type is the same as for self-consumption installations.</p>	<p>Not applicable</p>
<p>Q33. Is new licensing needed for a voltage level increase?</p> <p>Please specify if, within each voltage level interval, an increase in the installed production capacity increase requires new licensing, or if up to a certain percentage the license covers REC growth.</p>	<p>Not applicable</p>
<p>Q34. What is the maximum distance allowed between production and consumption? Does it depend on installed capacity?</p>	<p>Not applicable</p>
<p>Q35. Is the energy sharing coefficient fixed or dynamic? If dynamic, is the sharing management done in real time, e.g., not indexed to consumption?</p>	<p>Not applicable</p>
<p>Q36. Are there any restrictions to the equipments that can be installed? Is there a pre-approved list of equipments that can be used? Are there specific norms?</p>	<p>There are no legislative or regulatory restrictions per se though REC in the UK have traditionally focused on small to medium-scale solar PV and onshore wind. The removal of the FiT has prompted a degree of diversification in the sector and increasingly community energy groups are seeking out collaborative opportunities with local authorities or large businesses, pursuing energy service provision and EV charging and other energy-related opportunities.</p>
<p>Q37. Is there a periodical monitoring/reviewing/inspection of installations? What's the periodicity? Is there a list of specific contractors?</p>	<p>Not via central government and no legal requirement specific to REC is in place.</p>
<p>Q38. Is there a mandatory insurance for REC? If yes, please detail mandatory conditions and coverage. Please consider issues like coverage of electrical and electronic equipments, civil liability, generation losses.</p>	<p>-</p>

BARRIERS AND BOTTLENECKS TO IMPLEMENTATION OF A REC

<p>Q39. Licensing process bottlenecks</p> <p>Is the legislation and licensing process transparent?</p> <ul style="list-style-type: none"> - Yes, the process is clear and all the roles and responsibilities are well defined. - Not entirely, the legislation has improved but there are still doubts regarding certain steps for implementation. - Other 	<p>Not entirely, the legislation has improved but there are still doubts regarding certain steps for implementation.</p>
<p>Q40. Provide additional info here, if needed.</p>	
<p>Q41. What are the main bottlenecks for the process?</p>	<p>-</p>
<p>Q42. Are there minimum technical requirements, not controlled by the REC, prior to creation of the REC?</p> <p>Please consider issues like type of grid connectivity, smart meters, etc.</p>	<p>No</p>
<p>Q43. Grid connection</p> <p>How many DSO operators exist?</p>	<p>There are 14 licensed DNOs in the UK.</p>
<p>Q44. Are there grid connection barriers?</p>	<p>Yes</p>
<p>Q45. If “Yes”, please list the 3 most important barriers:</p>	<p>In some locations (e.g. mid-Wales), which often have some of the most promising renewable energy potential, the grid needs reinforcing to meet the demand that would be put on it from connecting generation assets. The cost of this work can run into the £100s of thousands (and more) when community groups receive a quote, which is clearly unviable.</p>
<p>Q46. In your opinion, what should be changed to facilitate the implementation of REC?</p>	<p>Not applicable</p>
<h3>FACILITATING INSTRUMENTS</h3> <p>(e.g., economic instruments (taxes, tariffs, subsidies, etc.), tools and guidelines for implementation)</p>	
<p>Q47. What taxes and tariffs are applied to REC operation?</p>	<p>There are no taxes or tariffs applied exclusively to REC.</p>

Q48. Are there tax or tariff exemptions for REC? Which ones and what is the overall % impact? Is there a time limit for the exemption?	There are no national tax or tariff exemptions for REC though reductions in business rates and financial support are available for specific projects in particular locations (e.g., the Welsh Government Energy Service is able to offer advice and some financial support for particular REC projects).
Q49. Are there other fiscal benefits for REC implementation? Which ones?	No
Q50. Are there subsidies for the implementation of REC? Which ones?	<p>There are no REC-specific national subsidies. After the Feed-in Tariff was scaled back and eventually cut. The Smart Export Guarantee (SEG) was implemented which offers a much lower payment rate for small scale electricity generators who sell their energy back to the grid. The SEG is open to any small generator and not just REC.</p> <p>As described above, in some locations subsidies and grants are available to support the implementation of REC. In Scotland, Local Energy Scotland and in Wales, the Welsh Government Energy Service, are funded by their respective governments to support the creation of REC which includes elements of grant and loan funding. There is no UK-wide programme of subsidy.</p>
Q51. Did public authorities produce examples of documents such as internal regulations, tender specifications, contracts, etc., to facilitate potential REC to start the implementation process?	-
FINAL CONSIDERATIONS	
Q52. Are there other national/local agencies or organizations that this survey should be sent to? If yes, please provide relevant contacts (or just organization URL if you don't have specific contacts)	-
Q53. Organization / Name / Email	
Q54. Organization / Name / Email	
Q55. Organization / Name / Email	
Q56. Please provide any additional information, links, contacts, which you believe are important for this study.	

10.1.6. Austria

Country: AUSTRIA	
INFORMATION REQUESTED / PROVIDED	
CONTACTED E ⁿ R ENERGY AGENCY	AUSTRIAN ENERGY AGENCY Contact: Kerstin Schilcher Email: Kerstin.schilcher@energyagency.at
LEGISLATIVE FRAMEWORK	
Q5. Is it in a EU Member State?	Yes
Q6. Being a EU-member state, is there specific legislation defining Renewable Energy Communities? Is the Renewable Energy Directive 2018/2001 transposed into national law?	Yes
Q7. How was the transposition done? Was the transposition carried out into a specific legislation and regulation guiding REC implementation? Please consider topics such as: was the legislation proposed as a stand-alone or was there an overall revision of electricity market system to include REC creation and other changes to facilitate adoption (namely grid issues)? - Specific legislation - Included in the revision of electricity market system - Other	Included in the revision of electricity market system; and, Other (see following details). In Austria, overall, the European legislation, i.e. the RED II and the Electricity Market Directive (EMD), has been implemented to a high degree regarding energy communities. Two types of new energy market actors, REC and CEC can be founded since end of July 2021, when the corresponding national legislation (EAG and ElWOG) entered into force. (The Austrian implementation of the legal basis for REC is regulated in Part 6 of the Renewable Energy Expansion Act (EAG) and in the Electricity Industry and Organisation Act (ElWOG) § 16c.)
Q8. Legislation revision How many revisions of legislation have there been since the first transposition?	0

Q9. If the answer to previous question was more than "0", please briefly describe the most important differences between the previous and the current legislation.	However, there are related follow-up legislations to improve economic viability.
Q10. In what year was implemented the last legislation regarding REC? (Year of publication of the current legislation)	2021 (the EAG is new; EIWOG was adapted)
Q11. Year of previous publication (if applicable):	2021 EIWOG
Q12. URL for the current legislation regarding REC:	<p>EAG</p> <p>https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20011619</p> <p>in English: https://www.ris.bka.gv.at/Dokumente/ErV/ERV_2021_1_150/ERV_2021_1_150.html</p> <p>EIWOG</p> <p>https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20007045</p> <p>Further Information on EIWOG regarding collective generation</p> <p>Already before the transposition of European legislation regarding energy communities, Austria had effective regulation on collective generation in place. The 2017 amendment to the Electricity Act introduced legal provisions concerning "collective generation plants" ("Gemeinschaftliche Erzeugungsanlage"), basically corresponding to the – in other countries also well-known – German "tenant electricity model". This regulation made it possible to use roof areas of multi-party buildings in the sense of a prosumer approach. The intention was that tenants or owners of flats in apartment buildings, but also in office buildings or shopping centres, would join forces and money to operate a PV system together. Collective generation plants have not been attractive enough because of high supplier entry and administrative costs.</p>
Q13. Being a non-EU member state, is there specific legislation defining Renewable Energy Communities?	Not applicable
Q14. If Yes, is it specific legislation or included in another legislative package? - Specific legislation - Included in the revision of electricity market system - Other	Not applicable

Q15. When was it first published?	Not applicable
Q16. How many revisions of legislation have there been since the first publication?	Not applicable
Q17. If the answer to previous question was more than "0", please briefly describe the most important differences between the previous and the current legislation.	Not applicable
Q18. URL for the current legislation regarding REC:	Not applicable
DEFINITION OF RENEWABLE ENERGY COMMUNITY (REC)	
<p>Q19. What is the working definition for a REC in the current legislation?</p> <p>Please copy the definition from your national law. Consider topics such as: Can self-consumption be considered a REC? Can there be for profit activities? Are communities engaged mandatorily in generation activities or can they provide only other services?</p>	<p>EAG:</p> <p>(in English and German: https://www.ris.bka.gv.at/Dokumente/Erv/ERV_2021_1_150/ERV_2021_1_150.html)</p> <p>"Section 79.</p> <p>(1) A renewable energy community may produce energy from renewable sources, consume such energy, store it or sell it. It may also act as an aggregator or provide other energy services. In doing so, it must comply with the rules and regulations applicable for each type of activity. The rights and obligations of the system users that participate in a renewable energy community, in particular their right to choose their supplier, remain unaffected.</p> <p>(2) The members and general partners of a renewable energy community may be natural persons, municipalities, local authorities or other legal persons governed by public law, or SMEs. Renewable energy communities must have two or more members or general partners and must be organised as bodies with legal personality, such as (but not limited to) an association, a cooperative, a partnership or a corporation. Its primary purpose may not be financial profits; this shall be explicitly laid down in its statutes, unless it is inherent in the legal format chosen. Instead, renewable energy communities aim to provide environmental, economic or social community benefits for their members or the local areas where they operate. Participation in renewable energy communities is voluntary and open; in the case of private businesses, participation in the renewable energy community may not be their primary activity.</p> <p>(3) By the end of Q1 2024, the regulatory authority shall publish a cost-benefit analysis which takes into account the evaluation under section 91 para. 3 and logically presents data to show whether renewable energy communities and citizen energy communities as provided for in section 16b Electricity Act 2010 are bearing an adequate share of the network costs. The analysis shall particularly make reference to balancing costs; if it finds inadequacies in this area, the regulatory authority shall make proposals for how they could be distributed in a cost-reflective way. The system operators, renewable energy communities, and citizen energy communities under section 16b Electricity Act 2010 shall provide the regulatory authority with all data necessary for this purpose.</p>

	<p>(4) [...]”</p> <p>The regulatory authority mentioned in the EAG is “E-Control Austria für die Regulierung der Elektrizitäts- und Erdgaswirtschaft” (E-Control).</p>
MEMBERS OF THE REC	
<p>Q20. Which actors can participate as members in a REC? (Please choose as many as applicable)</p> <p>- Natural persons / Local authorities / Micro-sized enterprises / Small-sized enterprises / Medium-sized enterprises / Other</p>	<p>Natural persons; Local authorities; Micro-sized enterprises; Small-sized enterprises; Medium-sized enterprises; and, Other (legal persons governed by public law).</p>
<p>Q21. Provide additional info here, if needed:</p>	<p>Large companies and, in general, electricity and natural gas companies within the meaning of the ElWOG and the GWG 2011 (<i>Gas Management Act, Gaswirtschaftsgesetz 2011</i>); and large commercial and industrial companies are excluded from a REC.</p>
MANAGEMENT OF THE REC	
<p>Q22. Is the management of the REC always internal to the community or can third parties provide management as a service? (Please choose as many as applicable)</p> <p>- It is mandatory that management is done internally by the REC members - Management can be done internally to the REC or by a third parties as a service - Other</p>	<p>Other: Operative tasks can be done by third parties. Legislative tasks have to be done by the legal entity of the REC.</p>
<p>Q23. What services can a REC provide? (Please choose as many as applicable)</p> <p>- Generation - Supply - Consumption and sharing - Distribution (local electricity grids, small scale heating, biogas networks, etc); - Energy Services (efficiency & savings such as building renovations, auditing, technical assessments, storage, smart grid integration, financial services, etc.) - Other activities (consultation to establish new initiatives, awareness campaigns, fuel poverty measures, etc.)</p>	<p>Generation; Supply; and, Consumption and sharing.</p> <p>Further activities are not described in detail: EAG, Section 79 “ [...] It may also act as an aggregator or provide other energy services. In doing so, it must comply with the rules and regulations applicable for each type of activity. [...]”.</p>

<p>Q24. Provide additional info here, if needed. Please specify here if some services are mandatory or interdependent (for example, is generation mandatory for definition as REC or can a REC only provide other services without generation?).</p>	<p>Answering the question on if generation is mandatory for the definition as a REC:</p> <p>Even though the EAG states a “renewable energy community may produce energy from renewable sources, consume such energy, store it or sell it...”, the general idea is that a REC has its own generation. It does not have to be a newly installed plant, pre-existing ones can be introduced as well.</p> <p>Additional info:</p> <p>As soon as an energy community wants to sell electricity to third parties that are not part of the energy community, the energy community would need an electricity supplier licence.</p>
LICENSING, OPERATION AND MANAGEMENT OF A REC	
<p>Q25. Licensing authority</p> <p>What authority(ies) issues licensing and permits for REC? (Select as many as applicable)</p> <p>National government / Energy agency / Local authority / Other</p>	<p>Other: Licensing and permits are not necessarily needed to form a REC</p> <p>(the construction and operation of generation facilities are a separate topic)</p>
<p>Q26. Provide additional info here, if needed:</p>	<p><u>REC establishment:</u></p> <p>CEC or REC are not subject to the trade regulations (Gewerbeordnung, GewO) – a trade license is not required.</p> <p>All types of energy communities have to make a contract with a licensed grid operator (§16d.6). (CEC & REC are not allowed to build, buy, own, or operate their own grids or even operate their own metering systems – since metering and metering management is responsibility and privilege of grid operators only.) The establishment of a legal entity is also a prerequisite for the registration of the energy community with the grid operator (meaning that only a legal entity can be registered as an energy community). Examples for possible legal entity choices are associations, commercial and industrial cooperatives or limited liability companies.</p> <p>The energy community must conclude a grid access contract with the DSO in charge for each generation plant. (The grid access contract of the generating plant is to be concluded either by the energy community itself or by a participating grid user owning the plant. In the case of existing grid access contracts, the energy community can enter into the contractual relationship with the DSO instead of the owner of the generation plant.)</p> <p>Further prerequisites for the operation of a REC are</p> <ul style="list-style-type: none"> • a contract between the REC and the participating grid users (containing all the necessary provisions pursuant to §§ 79 f EAG and 16c ffa ELWOG) • a defined mode (static or dynamic) for allocating the amount of energy generated among the participating network users

- all participating consumption units and the joint generation unit are in operation and equipped with a **metering device** for the required measurement on a ¼ h basis;
- the REC has ensured that the **consent** of the participating grid users or the community to the **reading and transmission of the quarter-hourly values** pursuant to section 84a ElWOG has been obtained.

An energy community is exempt from the strict requirements for electricity suppliers for the internal relations of the energy community (electricity for its own participants) [ElWOG §7 (1) Z45]. As soon as an energy community wants to **sell electricity to third parties** that are not part of the energy community, the energy community would need an **electricity supplier licence**.

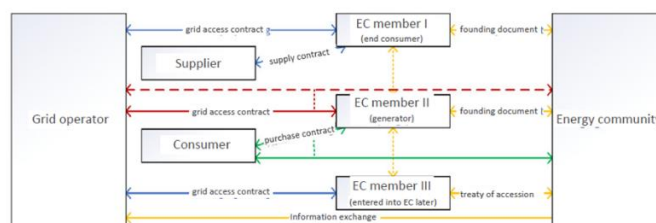


Figure 1: Contractual relations that are relevant when founding and operating an energy community.

Source: *Legal issues related to the establishment and implementation of energy communities (Rechtsfragen zur Gründung und Umsetzung von Energiegemeinschaften)*, Stephan Cejka, Kaleb Kitzmüller, Siemens AG Austria, translated by AEA

Generation plant licensing

The plant licensing is a separate matter and is independent of REC legislature. E-Control at the beginning of 2022 published a comprehensive guideline for the grid connection of power generation plants including a range of typical examples (in German). The report can be downloaded [here](#).

The **regulatory process** and the factors that are taken into account in the **decision to approve a generation project** differ according to the type of generation plant, the impact on the environment, and also the state in which authorisation is to be obtained.

Generally, under the **simplified procedure**, provided the application is complete, details of the project will be made public by **posting a notice at the local community council** and by submitting the project documentation to the municipality during a specified period. During this period, **qualified neighbours can submit justified objections**. The authority investigates by obtaining **expert opinions** and determining whether the conditions allow for approval. If necessary, approval is issued by a formal decision. Specific orders relating to the construction and operation of the plant may be issued.

(For a **regular procedure**, a **formal oral hearing** is scheduled after the application has been deemed complete. The subject matter, time and place of the hearing are **announced on the official noticeboard** of the local community council, and, where

	<p>appropriate, on the official noticeboard of neighbouring municipalities. Qualified neighbouring landowners near the site of the prospective power generation plant are personally informed. The authority makes its investigations by obtaining expert opinions to determine whether the conditions allow for approval. If necessary, the approval is issued by a formal decision. Specific orders relating to the construction and operation of the plant may be issued.</p> <p>For larger electricity generation projects, an environmental impact assessment (UVP) may become relevant.)</p> <p>The procedures and relevant info for constructing and authorizing PV plants (probably the most important energy source for REC) are summarized in this document for all nine Austrian states by the Federal Association Photovoltaic Austria:</p> <p>https://pvaustria.at/wp-content/uploads/PV_Genehmigungspflichten_AUT.pdf</p> <p>(in German only).</p>
Q27. Please provide the name, URL and a short description of the authority(ies) role in the country:	There are 122 DSOs in Austria.
<p>Q28. What is the role of each organization in the licensing process?</p> <p>Please consider the following topics: Is the licensing authority the only organization that promoters contact and that establishes all necessary contacts with other organizations such as grid operators? Or do promoters need to contact grid operators prior to licensing? Is there a maximum time for issuing a permit from the moment it is requested? What is the average licensing time?</p>	As described above.
<p>Q29. Is the EⁿR member agency involved in the process? How?</p> <p>- Not involved</p> <p>- Yes, the agency is involved</p>	Not involved
Q30. If “yes”, describe the role of the agency:	
<p>Q31. Centralized registry</p> <p>Is there a centralized registry in an online platform? If yes, please provide URL. (Provide any additional info here, if needed)</p>	<p>http://www.eutilities.at/</p> <p>Registration of the REC as a market participant at www.eutilities.at is required. Once registration is complete, the REC will receive a market partner ID (RC number). This ID is required to register the REC with the grid operator.</p>

<p>Q32. Is the licensing type dependent on voltage level?</p> <p>What are the voltage level intervals defined and what changes in the licensing between them? Please specify if the licensing type is the same as for self-consumption installations.</p>	<p>As mentioned above, plant licensing is a separate matter and is independent of REC legislature. At the beginning of 2022 E-Control published a comprehensive guideline for the grid connection of power generation plants including a range of typical examples. The report can be downloaded here (written in German).</p> <p>Voltage-level relevant info given in REC legislature:</p> <p>In Austria, the electricity grid is divided into seven grid levels (NL) based on the voltage level:</p> <ul style="list-style-type: none"> • NL 7: low voltage (400 V) • NL 6: transformer station from medium (30/10 kV) to low voltage (400 V) • NL 5: medium voltage (10 kV to 30 kV) <p>A local REC connects all members via grid level 6 or 7 low voltage line(s) to the same transformer station.</p> <p>A regional REC connects all members via grid level via low-voltage (grid level 6 and 7) and medium-voltage lines (grid level 5) to the medium-voltage side of the (grid level 4) bus bar of the same transformer substation. All (generation & consumer) installations have to be within the concession area of one DSO only.</p> <p>A REC can only be either local or regional. Mixed forms are not possible.</p>
<p>Q33. Is new licensing needed for a voltage level increase?</p> <p>Please specify if, within each voltage level interval, an increase in the installed production capacity increase requires new licensing, or if up to a certain percentage the license covers REC growth.</p>	<p>Plant licensing as described under Q25.</p> <p>Further restrictions as mentioned under question Q32.</p>
<p>Q34. What is the maximum distance allowed between production and consumption? Does it depend on installed capacity?</p>	<p>Restrictions for local and regional REC as mentioned under question Q32.</p>
<p>Q35. Is the energy sharing coefficient fixed or dynamic? If dynamic, is the sharing management done in real time, e.g., not indexed to consumption?</p>	<p>Depends on how the participating grid users agreed to allocate it.</p> <p>[EIWOG §16e (3)]</p> <p>“The grid operator shall allocate the static or dynamic share of the generated energy, agreed between the participating grid users, to allocate it (note: the self-consumption quantities thus determined) to the respective installations of the participating grid users.”</p> <p>“If dynamic shares are used, these may be reallocated between the participating grid users on a quarter-hourly basis [not real time]. The values shall be determined in accordance with the following provisions:</p> <ul style="list-style-type: none"> • the allocation shall be made per quarter hour and shall be limited to the energy consumption of the respective system of the participating network user in the respective quarter hour;

	<ul style="list-style-type: none"> the static or dynamic share of the generated energy allocated to the metering point of the participating grid user's installation shall be recorded separately and shown on the invoice."
Q36. Are there any restrictions to the equipments that can be installed? Is there a pre-approved list of equipments that can be used? Are there specific norms?	<p>Generation plant licensing is a separate matter and is independent of REC legislature. E-Control published the technical and organizational rules for network operators and users here (in German).</p> <p>(The metering device can only be provided by the grid operator)</p>
Q37. Is there a periodical monitoring/reviewing/inspection of installations? What's the periodicity? Is there a list of specific contractors?	<p>Installation inspections and further electro-technical regulations are a separate matter and is independent of REC legislature. The need for reoccurring inspections of generation plants differs for the technologies and is given whether or they are used in a REC. Relevant legislation for technical requirements to operate a generation plant are e.g. the Electrical Engineering Order (Elektrotechnikverordnung) 2020, the Act on Electrical Engineering (Elektrotechnikgesetz) 1992 or the Electrical Protection Ordinance (Elektroschutzverordnung) 2012.</p> <p>General monitoring through smart meters</p> <p>The performance of generation plants in REC are automatically monitored due to the use of smart meters (quarterly hour values).</p> <p>Workplace-relevant inspections:</p> <p>The Electrical Protection Ordinance (Elektroschutzverordnung) 2012 – ESV 2012 applies to workplaces, construction sites and external workplaces within the meaning of the ASchG. It states That electrical systems and equipment must be checked regularly. The intervals between recurring tests are generally five years. The deviating minimum test intervals are:</p> <ul style="list-style-type: none"> ten years in areas in which the systems and equipment are only exposed to very low loads, e.g. in offices or in commercial or service companies where there is no unusual load. three years in areas with a risk of explosion, one year on construction sites, in areas with a risk of explosion and additionally at least exceptional stress, and in areas of surface extraction of mineral raw materials, six months for underground works and underground mining. <p>Tests may only be carried out by qualified electricians who have knowledge of testing comparable systems and equipment. More info is provided by the Austrian Labour inspectorate here (in German) and in the ordinance itself (in German).</p> <p>Further Links:</p> <ul style="list-style-type: none"> Electrical Engineering Order (Elektrotechnikverordnung) 2020 (in German) Act on Electrical Engineering (Elektrotechnikgesetz) 1992 (in German)

Q38. Is there a mandatory insurance for REC? If yes, please detail mandatory conditions and coverage. Please consider issues like coverage of electrical and electronic equipments, civil liability, generation losses.	It is not mandatory but it is usual business practice to ensure installations to mitigate risks.
BARRIERS AND BOTTLENECKS TO IMPLEMENTATION OF A REC	
Q39. Licensing process bottlenecks Is the legislation and licensing process transparent? - Yes, the process is clear and all the roles and responsibilities are well defined. - Not entirely, the legislation has improved but there are still doubts regarding certain steps for implementation. - Other	Yes, the process is clear and all the roles and responsibilities are well defined.
Q40. Provide additional info here, if needed.	The legal and regulatory framework for energy communities in Austria has already been largely clarified. However, it is not always easy for initiators to find out which type of energy community/collective action is suitable for them, and which regulations are relevant for them. Despite the existing legal framework, initiators of collective actions are often overwhelmed or confused by the complexity of these regulations and do not know where to start . (This problem is being tackled by the H2020 project SHAREs, which is coordinated by the Austrian Energy Agency. The idea is to develop an online query tool which leads local heroes through the most important initial questions when thinking about setting up an energy community, e.g. type of generation, number of members, proximity of members, etc.)
Q41. What are the main bottlenecks for the process?	Smart meters – putting into operation (as mentioned for Question Q46) Complexity as entry barrier – How to start? (from the downloadable deliverable “D3.2 Handbook of identified barriers and enablers (pdf)” here: https://shares-project.eu/downloads (starting on page 17) Further barriers for the creation of REC in general: - PV modules: Sellers market due to high demand; i.e. bottleneck of installers availability (do to long order lists) and equipment supply (due to long delivery times) - IT processes on the DSOs side (multiple generation plants per REC) - Non-availability of professional communication material

	<ul style="list-style-type: none"> - Smart meters – Opt-in (as mentioned for Question Q46) - 50% market premium (as mentioned for Question Q46) - Ensuring competition and price transparency (as mentioned for Question Q46) - Complexity as entry barrier 2/3 – Finding your energy community - Complexity as entry barrier 3/3 – Information on network area. <p>Further information on the barriers and possible solutions can be found in the downloadable deliverable “D3.2 Handbook of identified barriers and enablers (pdf)” here: https://shares-project.eu/downloads (starting on page 17)</p>
<p>Q42. Are there minimum technical requirements, not controlled by the REC, prior to creation of the REC?</p> <p>Please consider issues like type of grid connectivity, smart meters, etc.</p>	<p>For the operation of a REC all participating consumption units and the joint generation unit are in operation and equipped with a metering device (smart meter), which is provided by the respective grid operator.</p> <p>In Austria, the local grid operator (DSO) shall, irrespective of the project plan on the roll-out of smart meters, provide end consumers with a smart meter upon request. If the installation of a smart meter is requested in connection with the establishment of an energy community, the grid operator shall install smart meters within two months (§ 16e par 1 ElWOG 2010).</p> <p>However, the ElWOG unfortunately only regulates the installation, not the putting into operation of the smart meter. The mere installation, without putting into operation, naturally has no added value for the customer and thus delays the establishment or participation in an energy community.</p> <p>---</p> <p>(Other technical requirements:</p> <p>A local REC connects all members via grid level 6 or 7 low voltage line(s) to the same transformer station.</p> <p>A regional REC connects all members via grid level via low-voltage (grid level 6 and 7) and medium-voltage lines (grid level 5) to the medium-voltage side of the (grid level 4) bus bar of the same transformer substation. All (generation & consumer) installations have to be within the concession area of one DSO only.)</p>
<p>Q43. Grid connection</p> <p>How many DSO operators exist?</p>	<p>122 DSOs</p> <p>(e-Control: https://www.e-control.at/konsumenten/netz-und-netzbetreiber-in-oesterreich)</p>
<p>Q44. Are there grid connection barriers?</p>	<p>Yes</p>

<p>Q45. If “Yes”, please list the 3 most important barriers:</p>	<p>Network operators could in some cases significantly speed up the processes. It often takes too long for applicants to receive feedback on the examination of a grid connection option. There is still some lack of transparency. In some cases, fees are also charged where there are still different legal opinions (disputes).</p> <p>Overall, the area of grid connection access is still a barrier to an accelerated expansion of green electricity. Digitalization would also improve the processes (currently via phone and forms).</p> <p>Important IT processes still have to be adapted on the grid operator side.</p> <p>Though RECs with one or more generation plants can be established and put into operation, there is currently a transitional solution for the operation of RECs with multiple generation plants. It requires that participants be assigned to one specific plant. As soon as the necessary IT processes are fully implemented, already existing RECs will automatically be transferred to the intended regular operation.</p>
<p>Q46. In your opinion, what should be changed to facilitate the implementation of REC?</p>	<p>Adaptation of Legislation: specifying smart meter operation (not only installation) by DSOs</p> <p>In Austria, the local grid operator (DSO) shall, irrespective of the project plan on the roll-out of smart meters, provide end consumers with a smart meter upon request. If the installation of a smart meter is requested in connection with the establishment of an energy community, the grid operator shall install smart meters within two months (§ 16e par 1 ElWOG 2010).</p> <p>However, the ElWOG unfortunately only regulates the installation, not the putting into operation of the smart meter. The mere installation, without putting into operation, naturally has no added value for the customer and thus delays the establishment or participation in an energy community. The ElWOG should be adapted accordingly and, in addition to the installation, should also specify a time frame for the putting into operation.</p> <p>Info-campaign on data transmission to increase acceptance</p> <p>In order to participate in an energy community, the transmission of quarter-hourly values to the network operator is a prerequisite. In Austria, this requires not only the installation of a smart meter, but also a so-called "opt-in", i.e. the active consent to the transmission of quarter-hourly values. This could possibly hamper the expansion of energy communities. Consumers could have reservations regarding the transmission of quarterly hour values (uncertainty regarding possible costs, data security, etc.). Furthermore, the necessity of a proactive action on the side of the consumer is always an additional barrier. A possible solution could be an information campaign to increase knowledge about smart meters and to reduce reservations regarding the use of smart meters.</p> <p>Restriction of the market premium to 50%</p>

	<p>Renewable-energy-sources-based electricity generation plants of REC and CEC are (partly) eligible within the market premium support framework.</p> <p>The market premium is calculated based on the amount of electricity fed into the public electricity grid. No market premium is granted for electricity allocated to the members of the energy community [EIWOG §80 (2)]. I.e. electricity quantities generated (from a generation plant eligible for a market premium) but not consumed within an energy community can be subsidized.</p> <p>However, REC and CEC, unlike all other plant operators, would not receive the market premium for 100% but only for a maximum of 50% of the energy generated (per plant) and fed to the grid.</p> <p>This restriction of the subsidy to 50% of produced green electricity not used in the energy community could hamper the set-up of energy communities. One could open up stakeholder discussions on if 100% of generated green electricity should be subsidized in the market premium scheme. If considered useful, adapt respective regulations.</p> <p>Service provider costs</p> <p>Service providers skim off possible profits generated by reduced network tariffs and other socialised cost reductions for energy communities. A possible solution could be to develop and offer a tariff calculator for energy communities to compare service providers and their costs.</p> <p>Further information on the barriers and possible solutions can be found in the downloadable deliverable “D3.2 Handbook of identified barriers and enablers (pdf)” here: https://shares-project.eu/downloads (starting on page 17)</p>
<p style="text-align: center;">FACILITATING INSTRUMENTS</p> <p style="text-align: center;">(e.g., economic instruments (taxes, tariffs, subsidies, etc.), tools and guidelines for implementation)</p>	
Q47. What taxes and tariffs are applied to REC operation?	<p>It depends on what kind of energy community was set up:</p> <p>(The following table can be found on page 42 of the downloadable deliverable “D3.1 Overview of legal and regulatory framework (pdf)” here: https://shares-project.eu/downloads)</p>

Table 8: Most reasonable types of companies eligible for energy communities and of their main characteristics.

	Association (Verein)	Commercial and Industrial Cooperatives (Erwerbs- und Wirtschaftsgenossenschaften)	Limited liability company (GmbH)
Foundation	Written Articles of association and notification to the Association authority	Written Cooperative agreement and registration in the Company Register	Articles of association and registration in the Company Register
Set-up costs	Low (from approx. € 50)	Rather high, approx. from € 2,500	Approx. from € 2,500
Member entry and exit	Members can be admitted and excluded	Members may be admitted and excluded	Transfer of a share in the business, withdrawal of a member possible
Running costs	Low	Balance sheet and audit costs	Balance sheet costs
Taxes	Depending on activity; Tax relief possible under the Federal Fiscal Code (BAO)	Corporate tax (KöSt, 25%); capital gains tax for sums distributed (KESt, 27.5%)	KöSt (25%); capital gains tax for sums distributed (KESt, 27.5%)

Source: Energy and Environment Agency of Lower Austria (EnU). Download of German version: energie-noe.at/download/?id=4849 (translated by AEA)

Grid usage charge (reduced, as mentioned under question 21, however:

Grid fees fully apply to electricity storage facilities that are installed within the defined/relevant public grid area of an energy community for both

- storing electricity produced from generation plants owned by its members or by the community itself and
- stored electricity that is fed into the grid area for self-consumption purposes of its members (e.g. for electric charging of vehicles via the public grid).

There is currently an opportunity to become **exempted from (at least parts of the) grid fees for a limited period, if** the energy community owning or operating the storage facility applies for becoming a “Regulatory Sandbox” project [EIWOG §58a 2010, GWG §78a]].

Q48. Are there tax or tariff exemptions for REC? Which ones and what is the overall % impact? Is there a time limit for the exemption?

Kept short:

- Grid usage charge reductions
- Exemption from EAG subsidy contribution

	<ul style="list-style-type: none"> - Exemption from electricity levy <p>More detailed information given below.</p> <p>Grid usage charge reductions for REC:</p> <p>According to § 5 para. 9 no. 1a of the Grid Usage Charge Ordinance, issued on 3rd November 2021, the energy price part of the grid usage charge for participating grid users of a renewable energy community (REC) in relation to that consumption which is covered by allocated fed-in energy of a generation plant pursuant to § 16c ElWOG 2010 (see above) shall be reduced</p> <ul style="list-style-type: none"> • in the local area (remark: REC on a local level) for grid levels 6 and 7 by 57%; • in the regional area (remark: REC on a regional level) <ul style="list-style-type: none"> - for grid levels 6 and 7 by 28%; - for grid levels 4 and 5 by 64% <p>(Reduction of the power price part of the grid usage charge for REC:</p> <p>The power price part of the grid usage charge will eventually decrease for the members of the REC, as self-consumption from the power supply of the REC (per 1/4h) lowers the superimposed power drawn from the public grid to the corresponding REC member. The amount of decrease is related to the reduction possibility of peak load all time heights, as those determine the power price part of the grid usage charge. The public grid, or the higher network levels, are relieved in terms of power flow to the member of the REC, however, enabling more RES-E to be distributed via or connected to the grid, respectively.)</p> <p>The EAG subsidy contribution (EAG-Förderbeitrag), previously green electricity subsidy contribution (Ökostromförderbeitrag), no longer applies to energy from generation plants allocated to members of the REC for own consumption, and the electricity levy no longer applies to electricity generated by means of photovoltaics and consumed in the REC</p>
Q49. Are there other fiscal benefits for REC implementation? Which ones?	
Q50. Are there subsidies for the implementation of REC? Which ones?	<p>There are financial support schemes for green energy generation plants:</p> <ul style="list-style-type: none"> • These support measures take the form of either up-front investment grants or • ongoing, variable market premiums for electricity production to compensate for the production costs of electricity from renewable sources and the average achievable market price for electricity. <p>Federal up-front investment grants for Solar PV</p>

- **One-off investment grants** are one-time grants for **PV and electricity storage systems**. In the case of PV systems, each individual kWp is supported with a certain subsidy rate (€/kWp), and in the case of electricity storage systems, each individual kWh is supported with a certain subsidy rate (€/kWp or €/kWh).

- Applicable for

- New PV systems/extensions up to 1,000 kWp
- Electricity storage up to 50 kWh (minimum 0.5 kWh/kWp)

Further federal investment grants for renewable energy and green gas generation plants:

One-off investment grants for

- new construction of smaller wind turbines (20 kW – 1 MW) with an annual funding volume of one million euros;
- small hydropower plants < 2 MW with an annual funding volume of five million euros;
- plants for the conversion of electricity into hydrogen or synthetic gas > 0.5 MW, provided they are powered only by renewable electricity and used only for the production of renewable gas with an annual funding volume of 40 million euros.

Provincial one-off investment grants

- It is likely that some states also in future offer one-off investment grants for PV plants, on top to the federal investment grants. More details can be found here: <https://pvaustria.at/landesfoerderungen>
- It is unclear if this will also apply to wind power plants.
- In all cases, the amount of the investment grant may not exceed 45% of the environmentally relevant additional costs.

Municipal one-off investment grants

- Some municipalities offer investment grants for private PV plants in the height of several 100 euros on top to the previous mentioned grants. More details can be found here: <https://pvaustria.at/landesfoerderungen>
- In all cases, the amount of the investment grant may not exceed 45% of the environmentally relevant additional costs.

EAG:

“Support for renewable energy communities

Section 80. [...]

(2) Electricity generated but not consumed by a renewable energy community is eligible for a **feed-in premium** in line with part 2 of title 2, if all applicable conditions are fulfilled, up to a **maximum of 50% of the total electricity generated by that community**. The feed-in premium applies to the quantity of electricity sold by the renewable energy community and fed into

	<p>the public electricity grid. No feed-in premium applies for electricity consumed by or allocated to the community's members or general partners."</p> <p>Further information can be found in the downloadable deliverable "D3.1 Overview of legal and regulatory framework (pdf)" here: https://shares-project.eu/downloads</p>
Q51. Did public authorities produce examples of documents such as internal regulations, tender specifications, contracts, etc., to facilitate potential REC to start the implementation process?	<p>In Austria there is a federal "one-stop shop" for and facilitator of uptake of energy communities named the "Austrian coordination office for energy communities".</p> <p>The main tasks of the Austrian coordination office are:</p> <ul style="list-style-type: none"> • Advice on legal form of the energy community • Develop a catalogue of typical energy communities • Development of a subsidy programme • Coordination with the Ministry of Climate (BMK), regulatory authority (E-Control) and regional governments ("Bundesländer") • Development of standard contracts • Guidelines for founding a community • Hotline • Information campaigns <p>There is a public, freely available cost-benefit tool that easily allows calculating the monetary benefits of members of energy communities for a planned energy community, compared to a situation of being not part of an energy community, i.e. being a normal electricity consumer.</p> <p>energiegemeinschaften.gv.at/tools/ [Austrian coordination office for energy communities]</p>
FINAL CONSIDERATIONS	
Q52. Are there other national/local agencies or organizations that this survey should be sent to? If yes, please provide relevant contacts (or just organization URL if you don't have specific contacts)	Yes
Q53. Organization / Name / Email	<p>Austrian coordination office for energy communities,</p> <p>energiegemeinschaften.gv.at</p>

Q54. Organization / Name / Email	e-Control, www.e-control.at
Q55. Organization / Name / Email	
Q56. Please provide any additional information, links, contacts, which you believe are important for this study.	Further information on the legal and regulatory framework can be found in the downloadable deliverables “D3.1 Overview of legal and regulatory framework (pdf)” and “D3.2 Handbook of identified barriers and enablers” here: https://shares-project.eu/downloads

10.1.7. France

Country: FRANCE	
INFORMATION REQUESTED / PROVIDED	
CONTACTED E ⁿ R ENERGY AGENCY	ADEME – Agence de la Transition Écologique Contacts: Nicolas Peraudeau Emails: nicolas.peraudeau@ademe.fr
LEGISLATIVE FRAMEWORK	
Q5. Is it in a EU Member State?	Yes
Q6. Being a EU-member state, is there specific legislation defining Renewable Energy Communities? Is the Renewable Energy Directive 2018/2001 transposed into national law?	Yes
Q7. How was the transposition done? Was the transposition carried out into a specific legislation and regulation guiding REC implementation? Please consider topics such as: was the legislation proposed as a stand-alone or was there an overall revision of electricity market system to include REC creation and other changes to facilitate adoption (namely grid issues)? - Specific legislation - Included in the revision of electricity market system - Other	Specific legislation. General definition through framing law completed by specific application decree.
Q8. Legislation revision How many revisions of legislation have there been since the first transposition?	2

Q9. If the answer to previous question was more than "0", please briefly describe the most important differences between the previous and the current legislation.	First inscription in energy & climate law 2019; later revised by government law (ordinance) 3rd March 2021 with an additional application decree (defining the precise criteria) currently under adoption (May 2022).
Q10. In what year was implemented the last legislation regarding REC? (Year of publication of the current legislation)	2021
Q11. Year of previous publication (if applicable):	2019
Q12. URL for the current legislation regarding REC:	https://www.legifrance.gouv.fr/codes/section_lc/LEGITEXT000023983208/LEGISCTA000043212447/2021-07-01/#LEGISCTA000043212490 https://www.legifrance.gouv.fr/codes/section_lc/LEGITEXT000023983208/LEGISCTA000043212431/2021-07-01/#LEGISCTA000043212516
Q13. Being a non-EU member state, is there specific legislation defining Renewable Energy Communities?	Not applicable
Q14. If Yes, is it specific legislation or included in another legislative package? - Specific legislation - Included in the revision of electricity market system - Other	Not applicable
Q15. When was it first published?	Not applicable
Q16. How many revisions of legislation have there been since the first publication?	Not applicable
Q17. If the answer to previous item was more than "0", please briefly describe the most important differences between the previous and the current legislation.	Not applicable
Q18. URL for the current legislation regarding REC:	Not applicable
DEFINITION OF RENEWABLE ENERGY COMMUNITY (REC)	

<p>Q19. What is the working definition for a REC in the current legislation?</p> <p>Please copy the definition from your national law. Consider topics such as: Can self-consumption be considered a REC? Can there be for profit activities? Are communities engaged mandatorily in generation activities or can they provide only other services?</p>	<p>The general definition is a copy-paste of the REC definition in the EU directive: a REC is an autonomous legal entity relying on open and voluntary participation. Its shareholders and members are individual persons, SME and local authorities. The REC is effectively controlled by its shareholders who are located in proximity of the RES projects. Its primary objective is to provide environmental, economic and social advantages to its members and shareholders and to the local territories where it is located. A REC can generate, consume store and sell renewable energy; it can also share among its members the renewable energy it generates. It can access all relevant energy markets, either directly or through aggregators.</p> <p>https://www.legifrance.gouv.fr/codes/section_lc/LEGITEXT000023983208/LEGISCTA000043212431/2021-07-01/#LEGISCTA000043212516</p> <p>Additional more precise elements for the definition will be implemented through the application decree awaiting validation from the State council (Conseil d'Etat).</p>
<p align="center">MEMBERS OF THE REC</p>	
<p>Q20. Which actors can participate as members in a REC? (Please choose as many as applicable)</p> <p>- Natural persons / Local authorities / Micro-sized enterprises / Small-sized enterprises / Medium-sized enterprises / Other</p>	<p>Natural persons; Local authorities; Micro-sized enterprises; Small-sized enterprises; Medium-sized enterprises; and, Other – public local companies (even though often not considered as “SME”s according to the EU definition).</p>
<p>Q21. Provide additional info here, if needed:</p>	
<p align="center">MANAGEMENT OF THE REC</p>	
<p>Q22. Is the management of the REC always internal to the community or can third parties provide management as a service?</p> <p>(Please choose as many as applicable)</p> <p>- It is mandatory that management is done internally by the REC members</p> <p>- Management can be done internally to the REC or by a third parties as a service</p> <p>- Other</p>	<p>Other: Both are possible. As long as the local shareholders keep the voting rights and effective control over the REC.</p>
<p>Q23. What services can a REC provide? (Please choose as many as applicable)</p> <p>- Generation</p> <p>- Supply</p> <p>- Consumption and sharing</p>	<p>Generation; Supply; Consumption and sharing; Energy Services (efficiency & savings such as building renovations, auditing, technical assessments, storage, smart grid integration, financial services, etc.); Electric mobility; and, Other activities (consultation to establish new initiatives, awareness campaigns, fuel poverty measures, etc.).</p>

<ul style="list-style-type: none"> - Distribution (local electricity grids, small scale heating, biogas networks, etc); - Energy Services (efficiency & savings such as building renovations, auditing, technical assessments, storage, smart grid integration, financial services, etc.) - Other activities (consultation to establish new initiatives, awareness campaigns, fuel poverty measures, etc.) 	
<p>Q24. Provide additional info here, if needed. Please specify here if some services are mandatory or interdependent (for example, is generation mandatory for definition as REC or can a REC only provide other services without generation?).</p>	<p>In theory, a REC can provide all types of energy services (including mobility, energy efficiency). In practice this remains to be seen, since no REC have been formally created in France so far.</p>
LICENSING, OPERATION AND MANAGEMENT OF A REC	
<p>Q25. Licensing authority</p> <p>What authority(ies) issues licensing and permits for REC? (Select as many as applicable)</p> <p>National government / Energy agency / Local authority / Other</p>	
<p>Q26. Provide additional info here, if needed:</p>	<p>Not clear whether there will be an actual “licensing process” or “label” for REC. This will only be the case if the REC status enables access to specific and dedicated support schemes.</p> <p>The only existing labelling initiative concerns “citizen energy projects”, as certified by the national citizen energy federation Energie Partagé, which is however not the same as the REC definition.</p>
<p>Q27. Please provide the name, URL and a short description of the authority(ies) role in the country:</p>	
<p>Q28. What is the role of each organization in the licensing process?</p> <p>Please consider the following topics: Is the licensing authority the only organization that promoters contact and that establishes all necessary contacts with other organizations such as grip operators? Or do promoters need to contact grid operators prior to licensing? Is there a maximum time for issuing a permit from the moment it is requested? What is the average licensing time?</p>	

<p>Q29. Is the EⁿR member agency involved in the process? How?</p> <ul style="list-style-type: none"> - Not involved - Yes, the agency is involved 	
<p>Q30. If “yes”, describe the role of the agency:</p>	
<p>Q31. Centralized registry</p> <p>Is there a centralized registry in an online platform? If yes, please provide URL. (Provide any additional info here, if needed)</p>	<p>Only for the existing citizen energy projects labeled by Energie Partagée (which are formally not REC): https://energie-partagee.org/decouvrir/energie-citoyenne/tous-les-projets/</p>
<p>Q32. Is the licensing type dependent on voltage level?</p> <p>What are the voltage level intervals defined and what changes in the licensing between them? Please specify if the licensing type is the same as for self-consumption installations.</p>	<p>No specific legislation for REC: the general regulatory framework for collective self-consumption applies for REC as much as for any other legal entity.</p>
<p>Q33. Is new licensing needed for a voltage level increase?</p> <p>Please specify if, within each voltage level interval, an increase in the installed production capacity increase requires new licensing, or if up to a certain percentage the license covers REC growth.</p>	<p>No specific legislation for REC: the general regulatory framework for collective self-consumption applies for REC as much as for any other legal entity.</p>
<p>Q34. What is the maximum distance allowed between production and consumption? Does it depend on installed capacity?</p>	<p>No specific legislation for REC: the general regulatory framework for collective self-consumption applies for REC as much as for any other legal entity.</p>
<p>Q35. Is the energy sharing coefficient fixed or dynamic? If dynamic, is the sharing management done in real time, e.g., not indexed to consumption?</p>	<p>No specific legislation for REC: the general regulatory framework for collective self-consumption applies for REC as much as for any other legal entity.</p>
<p>Q36. Are there any restrictions to the equipments that can be installed? Is there a pre-approved list of equipments that can be used? Are there specific norms?</p>	<p>No specific legislation for REC: the general regulatory framework for collective self-consumption applies for REC as much as for any other legal entity.</p>
<p>Q37. Is there a periodical monitoring/reviewing/inspection of installations? What’s the periodicity? Is there a list of specific contractors?</p>	<p>No specific legislation for REC: the general regulatory framework for collective self-consumption applies for REC as much as for any other legal entity.</p>

Q38. Is there a mandatory insurance for REC? If yes, please detail mandatory conditions and coverage. Please consider issues like coverage of electrical and electronic equipments, civil liability, generation losses.	No specific legislation for REC: the general regulatory framework for collective self-consumption applies for REC as much as for any other legal entity.
BARRIERS AND BOTTLENECKS TO IMPLEMENTATION OF A REC	
Q39. Licensing process bottlenecks Is the legislation and licensing process transparent? - Yes, the process is clear and all the roles and responsibilities are well defined. - Not entirely, the legislation has improved but there are still doubts regarding certain steps for implementation. - Other	Other: Not clear whether there will be a “licensing” process regarding the REC status. Otherwise: REC need to fulfill the same licensing (permitting) processes relevant for the different activities (RES generation, sharing, selling, etc.), regardless of the type of entity.
Q40. Provide additional info here, if needed.	
Q41. What are the main bottlenecks for the process?	Not known yet.
Q42. Are there minimum technical requirements, not controlled by the REC, prior to creation of the REC? Please consider issues like type of grid connectivity, smart meters, etc.	No.
Q43. Grid connection How many DSO operators exist?	State monopoly with one main operator (Enedis for electricity) + 120 smaller local DSO representing 5% of the national territory.
Q44. Are there grid connection barriers?	Yes
Q45. If “Yes”, please list the 3 most important barriers:	Grid connection costs can vary massively between different projects and regions. The process can be quite lengthy and rather complex, especially for REC managed by local citizens.
Q46. In your opinion, what should be changed to facilitate the implementation of REC?	A national action plan for “citizen energy” has been adopted by the Ministry for Ecology in Nov. 2021, including a national target (developing 1000 new projects by 2028) but needs yet to be implemented. Local facilitation and technical support for individual projects will remain key. And the uptake of the REC status will strongly depend on whether specific (and attractive)

	support mechanisms (such as exemption of national tendering schemes, additional subsidies for legal and technical studies, financing facilities, etc.) will be specifically dedicated to REC.
FACILITATING INSTRUMENTS (e.g., economic instruments (taxes, tariffs, subsidies, etc.), tools and guidelines for implementation)	
Q47. What taxes and tariffs are applied to REC operation?	Same as for any other company active in the energy market.
Q48. Are there tax or tariff exemptions for REC? Which ones and what is the overall % impact? Is there a time limit for the exemption?	No
Q49. Are there other fiscal benefits for REC implementation? Which ones?	No
Q50. Are there subsidies for the implementation of REC? Which ones?	<p>Depends. Several regions have implemented specific subsidies (investment subsidies and subsidies for technical and legal studies) initially targeted at “citizen energy projects”. Eligibility criteria are mostly relevant for REC, even though they have not been targeted explicitly so far.</p> <p>Legal uncertainty exists however considering the ability to cumulate regional support schemes with national support schemes (such as feed-in tariffs).</p>
Q51. Did public authorities produce examples of documents such as internal regulations, tender specifications, contracts, etc., to facilitate potential REC to start the implementation process?	No
FINAL CONSIDERATIONS	
Q52. Are there other national/local agencies or organizations that this survey should be sent to? If yes, please provide relevant contacts (or just organization URL if you don't have specific contacts)	
Q53. Organization / Name / Email	
Q54. Organization / Name / Email	

Q55. Organization / Name / Email	
Q56. Please provide any additional information, links, contacts, which you believe are important for this study.	

10.1.8. Greece

Country: GREECE	
INFORMATION REQUESTED / PROVIDED	
CONTACTED EⁿR ENERGY AGENCY	CRES - Centre for Renewable Energy Sources and Saving Contacts: Vasilis Kilias / Effie Korma Emails: vkilias@cres.gr ; ekorma@cres.gr
LEGISLATIVE FRAMEWORK	
Q5. Is it in a EU Member State?	Yes
Q6. Being a EU-member state, is there specific legislation defining Renewable Energy Communities? Is the Renewable Energy Directive 2018/2001 transposed into national law?	No
Q7. How was the transposition done? Was the transposition carried out into a specific legislation and regulation guiding REC implementation? Please consider topics such as: was the legislation proposed as a stand-alone or was there an overall revision of electricity market system to include REC creation and other changes to facilitate adoption (namely grid issues)? - Specific legislation - Included in the revision of electricity market system - Other	Specific legislation
Q8. Legislation revision How many revisions of legislation have there been since the first transposition?	>3
Q9. If the answer to previous question was more than "0", please briefly describe the most important	The renewable Energy Directive (RED) has been partially transposed into national law. Legal provisions for the full transposition are planned for September 2022.

differences between the previous and the current legislation.	The main piece of legislation guiding energy communities in Greece is the L4513/2018. The law defines a specific legal type called 'Energy Community' which interprets all provisions of Art 22 of RED. Since 2018 there have been some small changes / legal improvements as well as related Ministerial Decrees implementing incentives.
Q10. In what year was implemented the last legislation regarding REC? (Year of publication of the current legislation)	2018
Q11. Year of previous publication (if applicable):	n.a.
Q12. URL for the current legislation regarding REC:	https://ypen.gov.gr/energeia/ape/eidika-themata/energeiakes-koinotites/
Q13. Being a non-EU member state, is there specific legislation defining Renewable Energy Communities?	Not applicable
Q14. If Yes, is it specific legislation or included in another legislative package? - Specific legislation - Included in the revision of electricity market system - Other	Not applicable
Q15. When was it first published?	Not applicable
Q16. How many revisions of legislation have there been since the first publication?	Not applicable
Q17. If the answer to previous question was more than "0", please briefly describe the most important differences between the previous and the current legislation.	Not applicable
Q18. URL for the current legislation regarding REC:	Not applicable
DEFINITION OF RENEWABLE ENERGY COMMUNITY (REC)	
Q19. What is the working definition for a REC in the current legislation?	The Greek Law 4513/2018 published on 17.1.2018, defines the purpose and the activities of Energy Communities (EC). The law specifies the framework for the establishment and operation of EC, and provides some economic and administrative incentives.

<p>Please copy the definition from your national law. Consider topics such as: Can self-consumption be considered a REC? Can there be for profit activities? Are communities engaged mandatorily in generation activities or can they provide only other services?</p>	<p>The enacted law took into account: the Proposal for the RED II directive COM (2016)767) and the Proposal for the EMD COM (2016) 864.</p> <p>The EC is defined by the Law as a civil cooperative which performs activities exclusively in the energy sector.</p> <p>Membership:</p> <ul style="list-style-type: none"> • Individuals (physical persons) • Local authorities (Municipalities, Regions) • Legal entities governed by public law • Any legal entities under private law (enterprises of any size) <p>Locality Criterion: At least 50% + 1 member shall be ‘associated’ with the region (NUTS 2 Level) where the EC has its registered offices.</p> <ul style="list-style-type: none"> • Natural persons (members) to have full or partial ownership or usufruct in the property located within its region of the EC or be citizens of its municipality its district and • Legal entities (members) to have their registered office within the district of the registered office of EC. <p>Types: EC are generally non-profit. In case they consist of more than 15 members, the majority of whom are natural persons, they may be profit-driven (surplus distribution is allowed).</p> <p>Governance: Each member, independently of the shares that may possesses, has only one vote to the General Assembly.</p> <p>Each member can hold in addition to the single mandatory cooperative share and one or more optional cooperative shares, with a maximum participation in cooperative capital of 20%, exception is a Local Government Organisation shareholder - with a maximum 40% limit. Especially for small islands (<3100 residents), participation rates of Local Government Organisation can reach 50%.</p>
<p align="center">MEMBERS OF THE REC</p>	
<p>Q20. Which actors can participate as members in a REC? (Please choose as many as applicable)</p> <p>Natural persons / Local authorities / Micro-sized enterprises / Small-sized enterprises / Medium-sized enterprises / Other</p>	<p>Natural persons; Local authorities; Micro-sized enterprises; Small-sized enterprises; Medium-sized enterprises; and, Other – Legal entities governed by public law, and, Any legal entities under private law (enterprises of any size).</p>
<p>Q21. Provide additional info here, if needed:</p>	
<p align="center">MANAGEMENT OF THE REC</p>	

<p>Q22. Is the management of the REC always internal to the community or can third parties provide management as a service?</p> <p>(Please choose as many as applicable)</p> <ul style="list-style-type: none"> - It is mandatory that management is done internally by the REC members - Management can be done internally to the REC or by a third parties as a service - Other 	<p>It is mandatory that management is done internally by the REC members.</p>
<p>Q23. What services can a REC provide?</p> <p>(Please choose as many as applicable)</p> <ul style="list-style-type: none"> - Generation - Supply - Consumption and sharing - Distribution (local electricity grids, small scale heating, biogas networks, etc); - Energy Services (efficiency & savings such as building renovations, auditing, technical assessments, storage, smart grid integration, financial services, etc.) - Other activities (consultation to establish new initiatives, awareness campaigns, fuel poverty measures, etc.) 	<p>Generation; Supply; Consumption and sharing; Distribution (local electricity grids, small scale heating, biogas networks, etc); Energy Services (efficiency & savings such as building renovations, auditing, technical assessments, storage, smart grid integration, financial services, etc.); Electric mobility; and, Other activities (consultation to establish new initiatives, awareness campaigns, fuel poverty measures, etc.).</p>
<p>Q24. Provide additional info here, if needed. Please specify here if some services are mandatory or interdependent (for example, is generation mandatory for definition as REC or can a REC only provide other services without generation?).</p>	<p>List of mandatory Activities of the EC, of which at least one should be included in the statute:</p> <ul style="list-style-type: none"> • Production, storage, self-consumption or selling of electricity, heating and cooling from RES stations and HECHP established within the region where the headquarters of EC is located. • Management (collection, transport, processing, storage, disposal) of raw material for the production of electricity, heating and cooling from biomass or bio fuels or biogas or through energy recovery biodegradable municipal waste fraction. • Supply for members of energy efficient products, appliances, facilities, with the aim of reducing energy consumption and use of conventional fuels, as well as improving energy efficiency. • Supply for members of electric vehicles (hybrid or not) and vehicles with natural gas combustion, liquefied petroleum gas or biogas. • Distribution of electricity within the region where it is located or distribution of heating and cooling. • Supply of electricity or gas to End Users within the region where the headquarters is located of. • Demand-response management to reduce end-use electricity.

	<ul style="list-style-type: none"> • Development, management and operation of charging stations for electric vehicles and refueling points with compressed natural gas (CNG), liquefied natural gas (LNG), liquefied petroleum gas or biogas or media management sustainable transport within the region where the headquarters of EC. • Installation and operation of water desalination units using RES. • Development, management and operation of alternative fuel infrastructure or management of sustainable means of transport within the region where the headquarters of EC is located. • Provision of ESCOs Energy Services. <p>List of EC optional activities:</p> <ul style="list-style-type: none"> • Attracting capital to be invested within the district (NUTS 2 level) of its headquarters. • Managing or participating at funding programs relevant to its goals. • Provision of technical support. • Raising awareness on energy sustainability issues. • Undertaking initiatives in supporting consumers of vulnerable groups and addressing energy poverty irrespectively if the persons in need are members or non members (i.e. supply or energy offset, energy upgrading of homes or other measures that reduce energy consumption in the homes of these citizens). <p>The statute of an EC does not include activities other than those mentioned above.</p>
LICENSING, OPERATION AND MANAGEMENT OF A REC	
<p>Q25. Licensing authority</p> <p>What authority(ies) issues licensing and permits for REC? (Select as many as applicable)</p> <p>National government / Energy agency / Local authority / Other</p>	<p>National government; and, Other - Hellenic Regulatory Authority for Energy, Grid operators, Regional authorities.</p>
<p>Q26. Provide additional info here, if needed:</p>	<p>The licensing procedure for RES projects from EC is governed by the same entities regulating all RES market. The Hellenic Regulatory Authority for Energy is responsible for market permits (depending on project size), Grid operators provide access to the grid, while Regional Authorities are responsible for the environmental licensing.</p>
<p>Q27. Please provide the name, URL and a short description of the authority(ies) role in the country:</p>	<p>Hellenic Regulatory Authority https://www.rae.gr/</p>
<p>Q28. What is the role of each organization in the licensing process?</p>	<p>Licensing procedures are mainly related by project size. EC projects are small, so there is not big overhead on environmental and market permitting effort and time. Unfortunately the lack of grid infrastructure create long queues for grid connection. There is not one-stop-shop structure in Greece yet.</p>

<p>Please consider the following topics: Is the licensing authority the only organization that promoters contact and that establishes all necessary contacts with other organizations such as grid operators? Or do promoters need to contact grid operators prior to licensing? Is there a maximum time for issuing a permit from the moment it is requested? What is the average licensing time?</p>	
<p>Q29. Is the EⁿR member agency involved in the process? How?</p> <ul style="list-style-type: none"> - Not involved - Yes, the agency is involved 	<p>Not involved.</p>
<p>Q30. If “yes”, describe the role of the agency:</p>	
<p>Q31. Centralized registry</p> <p>Is there a centralized registry in an online platform? If yes, please provide URL. (Provide any additional info here, if needed)</p>	<p>Hellenic General Electronic Commercial Registry (G.E.M.I.) for all legal forms of businesses in Greece.</p> <p>https://www.businessportal.gr/</p>
<p>Q32. Is the licensing type dependent on voltage level?</p> <p>What are the voltage level intervals defined and what changes in the licensing between them? Please specify if the licensing type is the same as for self-consumption installations.</p>	<p>Depending on the voltage level, the promoter needs to apply for grid connection to different entities. For LV & MV the application is submitted to the DSO, while for HV to the TNO in the mainland. The RES projects located in the insular areas (not interconnected to the mainland’s grid) the application is submitted to the DSO for all types of voltages.</p> <p>Note that currently there is only one DSO and TNO in Greece.</p>
<p>Q33. Is new licensing needed for a voltage level increase?</p> <p>Please specify if, within each voltage level interval, an increase in the installed production capacity increase requires new licensing, or if up to a certain percentage the license covers REC growth.</p>	<p>Yes</p>
<p>Q34. What is the maximum distance allowed between production and consumption? Does it depend on installed capacity?</p>	<p>The proximity between production and consumption is defined by the locality. The RES project should be implemented in the same region (NUTS 2 level) where the EC’s headquarters are located.</p>
<p>Q35. Is the energy sharing coefficient fixed or dynamic? If dynamic, is the sharing management done in real time, e.g., not indexed to consumption?</p>	<p>The energy-sharing coefficient is fixed between the members of the EC and can be changed every 4 months by submitting the new to the DSO. The energy sharing is performed by a net-metering scheme - not in real time.</p>

Q36. Are there any restrictions to the equipments that can be installed? Is there a pre-approved list of equipments that can be used? Are there specific norms?	There are no any restrictions to the equipment- No pre-approved list of equipment exists.
Q37. Is there a periodical monitoring/reviewing/inspection of installations? What's the periodicity? Is there a list of specific contractors?	No relevant provision in the national legislation.
Q38. Is there a mandatory insurance for REC? If yes, please detail mandatory conditions and coverage. Please consider issues like coverage of electrical and electronic equipments, civil liability, generation losses.	No mandatory insurance for REC is applicable.
BARRIERS AND BOTTLENECKS TO IMPLEMENTATION OF A REC	
Q39. Licensing process bottlenecks Is the legislation and licensing process transparent? - Yes, the process is clear and all the roles and responsibilities are well defined. - Not entirely, the legislation has improved but there are still doubts regarding certain steps for implementation. - Other	Yes, the process is clear and all the roles and responsibilities are well defined.
Q40. Provide additional info here, if needed.	
Q41. What are the main bottlenecks for the process?	<ul style="list-style-type: none"> • Connection to the grid has been a main bottleneck, due to the congested local grids. This is a main barrier, since EC projects are small and cannot be connected to high voltage using own transformers. • Financing by private or public institutions becomes a barrier when self – consumption schemes are implemented. • Lack of awareness and capacity building, since EC scheme have not been effectively promoted by simple measures such as information dissemination and training, one-stop-shops, supporting structures, etc.
Q42. Are there minimum technical requirements, not controlled by the REC, prior to creation of the REC?	No minimum technical requirements exist.

Please consider issues like type of grid connectivity, smart meters, etc.	
Q43. Grid connection How many DSO operators exist?	One.
Q44. Are there grid connection barriers?	Yes
Q45. If “Yes”, please list the 3 most important barriers:	See answer Q41.
Q46. In your opinion, what should be changed to facilitate the implementation of REC?	<ul style="list-style-type: none"> • Streamlining the processes necessary for the creation of EC. • Provision of specified percentage of local grid connection capacity to EC projects. • Creation of a dedicated Energy Communities registry so as to monitor the RES projects implemented as well as the impact of the REC in terms of environmental, economic and social benefits at local level by their operation. • Creation of supporting structures such as networks, associations and one-stop shops.
FACILITATING INSTRUMENTS (e.g., economic instruments (taxes, tariffs, subsidies, etc.), tools and guidelines for implementation)	
Q47. What taxes and tariffs are applied to REC operation?	<ul style="list-style-type: none"> • Exemption or discount of administrative costs (fees, guarantee letters). • Exemption from the obligation to pay the Annual maintenance fee for production license. • Reduced amount of letters of guarantee required during licensing (50%). • Minimum capital for granting a supply license: € 60,000.
Q48. Are there tax or tariff exemptions for REC? Which ones and what is the overall % impact? Is there a time limit for the exemption?	Not applicable
Q49. Are there other fiscal benefits for REC implementation? Which ones?	Not applicable
Q50. Are there subsidies for the implementation of REC? Which ones?	Incentives to participate in the electricity supply market <ul style="list-style-type: none"> • Competitive bidding process is not required for installations below 6 MW (Wind) or 1 MW (PV) (phase out).

	<ul style="list-style-type: none"> • Possibility to install the RES stations of EC in the congested grid. • It is allowed to install RES stations for electricity generation by ECs to meet the energy needs of their shareholders with virtual energy net metering application (and for non EC members). <ul style="list-style-type: none"> o It is noted that specifically for virtual energy offset (VNM can reach 3 MWp of installation now). • Special conditions for EC operating as E - Charging Infrastructure Operators. • Special provisions for EC that can license thermal power stations for district heating. • Priority for production license, connection offer and approval of environmental conditions for power stations (if there is a territorial overlap and are submitted in the same round of applications (phase out).
Q51. Did public authorities produce examples of documents such as internal regulations, tender specifications, contracts, etc., to facilitate potential REC to start the implementation process?	<p>Not official examples of documents are available.</p> <p>CRES, within its role as a promoter of EC, has produced a step by step guide for the establishment of an EC. CRES also facilitates information exchange, transfer of experience and best practices as well as proposals for new financial supporting measures.</p>
FINAL CONSIDERATIONS	
Q52. Are there other national/local agencies or organizations that this survey should be sent to? If yes, please provide relevant contacts (or just organization URL if you don't have specific contacts)	General Division for Energy – Ministry of Energy & Climate Change.
Q53. Organization / Name / Email	
Q54. Organization / Name / Email	
Q55. Organization / Name / Email	
Q56. Please provide any additional information, links, contacts, which you believe are important for this study.	

10.1.9. Bulgaria

Bulgaria did not transpose the Directive yet, has no legislation in place and there are no REC initiatives yet. Therefore, SEDA, the Bulgarian Energy Agency was not able to answer the Questionnaire.

10.1.10. Slovakia

Country: SLOVAKIA	
INFORMATION REQUESTED / PROVIDED	
CONTACTED E ⁿ R ENERGY AGENCY	SIEA – Slovak Innovation and Energy Agency Contact: Laktis Stanislav Email: stanislav.laktis@siea.gov.sk
LEGISLATIVE FRAMEWORK	
Q5. Is it in a EU Member State?	Yes
Q6. Being a EU-member state, is there specific legislation defining Renewable Energy Communities? Is the Renewable Energy Directive 2018/2001 transposed into national law?	Yes
Q7. How was the transposition done? Was the transposition carried out into a specific legislation and regulation guiding REC implementation? Please consider topics such as: was the legislation proposed as a stand-alone or was there an overall revision of electricity market system to include REC creation and other changes to facilitate adoption (namely grid issues)? - Specific legislation - Included in the revision of electricity market system - Other	Specific legislation; and, Included in the revision of electricity market system.
Q8. Legislation revision How many revisions of legislation have there been since the first transposition?	0
Q9. If the answer to previous question was more than "0", please briefly describe the most important	

differences between the previous and the current legislation.	
Q10. In what year was implemented the last legislation regarding REC? (Year of publication of the current legislation)	
Q11. Year of previous publication (if applicable):	
Q12. URL for the current legislation regarding REC:	
Q13. Being a non-EU member state, is there specific legislation defining Renewable Energy Communities?	Not applicable
Q14. If Yes, is it specific legislation or included in another legislative package? - Specific legislation - Included in the revision of electricity market system - Other	Not applicable
Q15. When was it first published?	Not applicable
Q16. How many revisions of legislation have there been since the first publication?	Not applicable
Q17. If the answer to previous question was more than "0", please briefly describe the most important differences between the previous and the current legislation.	Not applicable
Q18. URL for the current legislation regarding REC:	Not applicable
DEFINITION OF RENEWABLE ENERGY COMMUNITY (REC)	
Q19. What is the working definition for a REC in the current legislation? Please copy the definition from your national law. Consider topics such as: Can self-consumption be considered a REC? Can	A community producing energy from renewable sources is a legal entity, a) which is established for the purpose of producing electricity from renewable energy sources or biomethane and which can simultaneously be established for the purpose of supplying electricity or gas, sharing electricity from renewable energy sources or biomethane, storing electricity from renewable energy sources, aggregation activities, electricity distribution,

<p>there be for profit activities? Are communities engaged mandatorily in generation activities or can they provide only other services?</p>	<p>operating a charging station or performing other activities or providing other services related to ensuring the energy needs of its members with the aim of realizing environmental, economic or social community benefits,</p> <p>b) which does not carry out activities according to letter a) for the purpose of achieving profit,</p> <p>c) in which it is possible to enter, acquire a share or otherwise become a member, and from which it is possible to withdraw, terminate participation or membership based on the decision of the member,</p> <p>d) whose members are only natural persons, small and medium-sized enterprises, higher territorial units or municipalities in the territorial district of the higher territorial unit in which the community producing energy from renewable sources is based, and</p> <p>e) the members of which, individually or together with other members, are authorized to carry out inspections in the community producing energy from renewable sources have permanent residence or headquarters in the territory of the higher territorial unit in which the equipment for the production of electricity from renewable energy sources or the equipment for the production of biomethane owned by the community is located generating energy from renewable sources or the majority of such facilities, if the community producing energy from renewable sources produces electricity or gas in several such facilities; if a higher territorial unit cannot be determined according to the previous sentence, it shall be determined according to the seat of the community producing energy from renewable sources.</p>
MEMBERS OF THE REC	
<p>Q20. Which actors can participate as members in a REC? (Please choose as many as applicable)</p> <p>- Natural persons / Local authorities / Micro-sized enterprises / Small-sized enterprises / Medium-sized enterprises / Other</p>	<p>Natural persons; Local authorities; Micro-sized enterprises; Small-sized enterprises; and, Medium-sized enterprises.</p>
<p>Q21. Provide additional info here, if needed:</p>	
MANAGEMENT OF THE REC	
<p>Q22. Is the management of the REC always internal to the community or can third parties provide management as a service? (Please choose as many as applicable)</p> <p>- It is mandatory that management is done internally by the REC members</p> <p>- Management can be done internally to the REC or by a third parties as a service</p> <p>- Other</p>	<p>Other: No specified in the legislation.</p>

<p>Q23. What services can a REC provide? (Please choose as many as applicable)</p> <ul style="list-style-type: none"> - Generation - Supply - Consumption and sharing - Distribution (local electricity grids, small scale heating, biogas networks, etc); - Energy Services (efficiency & savings such as building renovations, auditing, technical assessments, storage, smart grid integration, financial services, etc.) - Other activities (consultation to establish new initiatives, awareness campaigns, fuel poverty measures, etc.) 	<p>Generation; Supply; Consumption and sharing; Distribution (local electricity grids, small scale heating, biogas networks, etc); Electric mobility; and, Other activities (consultation to establish new initiatives, awareness campaigns, fuel poverty measures, etc.).</p>
<p>Q24. Provide additional info here, if needed. Please specify here if some services are mandatory or interdependent (for example, is generation mandatory for definition as REC or can a REC only provide other services without generation?).</p>	
<p align="center">LICENSING, OPERATION AND MANAGEMENT OF A REC</p>	
<p>Q25. Licensing authority What authority(ies) issues licensing and permits for REC? (Select as many as applicable)</p> <p>National government / Energy agency / Local authority / Other</p>	<p>National government</p>
<p>Q26. Provide additional info here, if needed:</p>	
<p>Q27. Please provide the name, URL and a short description of the authority(ies) role in the country:</p>	<p>The Regulatory Office for Network Industries (https://www.urso.gov.sk/about-urso/) - is a state authority which is independent from both state power and regulated entities. In carrying out its activities, the Office is not subject to any political or business groups. The Regulatory Office for Network Industries pursues its mission based on Act No. 250/2012 Coll. on Regulation in Network Industries, and in particular, by setting tariffs and terms of their application in network industries, and terms of carrying out the regulated activities:</p> <p>generation, transmission, distribution and supply of electricity and related services,</p> <p>activities of the short-term electricity market operator,</p> <p>production, transmission, distribution, storage and supply of gas and related services,</p>

	<p>production, distribution and supply of heat,</p> <p>production, distribution and supply of drinking water by public water supply system,</p> <p>wastewater (sewage) collection and treatment through public sewage system,</p> <p>collection of surface water and energy water from watercourses, utilization of the hydropower potential of watercourses.</p>
<p>Q28. What is the role of each organization in the licensing process?</p> <p>Please consider the following topics: Is the licensing authority the only organization that promoters contact and that establishes all necessary contacts with other organizations such as grid operators? Or do promoters need to contact grid operators prior to licensing? Is there a maximum time for issuing a permit from the moment it is requested? What is the average licensing time?</p>	<p>The Regulatory Office for Network Industries – Approves the operating license of REC</p> <p>DSOs – granting access to the local grid</p>
<p>Q29. Is the EⁿR member agency involved in the process? How?</p> <p>- Not involved</p> <p>- Yes, the agency is involved</p>	<p>Not involved</p>
<p>Q30. If “yes”, describe the role of the agency:</p>	
<p>Q31. Centralized registry</p> <p>Is there a centralized registry in an online platform? If yes, please provide URL. (Provide any additional info here, if needed)</p>	<p>No</p>
<p>Q32. Is the licensing type dependent on voltage level?</p> <p>What are the voltage level intervals defined and what changes in the licensing between them? Please specify if the licensing type is the same as for self-consumption installations.</p>	<p>Not yet defined</p>
<p>Q33. Is new licensing needed for a voltage level increase?</p> <p>Please specify if, within each voltage level interval, an increase in the installed production capacity increase requires new</p>	<p>Not yet defined</p>

licensing, or if up to a certain percentage the license covers REC growth.	
Q34. What is the maximum distance allowed between production and consumption? Does it depend on installed capacity?	Not yet defined
Q35. Is the energy sharing coefficient fixed or dynamic? If dynamic, is the sharing management done in real time, e.g., not indexed to consumption?	Not yet defined
Q36. Are there any restrictions to the equipments that can be installed? Is there a pre-approved list of equipments that can be used? Are there specific norms?	Not yet defined
Q37. Is there a periodical monitoring/ reviewing/ inspection of installations? What's the periodicity? Is there a list of specific contractors?	Not yet defined
Q38. Is there a mandatory insurance for REC? If yes, please detail mandatory conditions and coverage. Please consider issues like coverage of electrical and electronic equipments, civil liability, generation losses.	Not yet defined
BARRIERS AND BOTTLENECKS TO IMPLEMENTATION OF A REC	
<p>Q39. Licensing process bottlenecks</p> <p>Is the legislation and licensing process transparent?</p> <ul style="list-style-type: none"> - Yes, the process is clear and all the roles and responsibilities are well defined. - Not entirely, the legislation has improved but there are still doubts regarding certain steps for implementation. - Other 	Not entirely, the legislation has improved but there are still doubts regarding certain steps for implementation.
Q40. Provide additional info here, if needed.	
Q41. What are the main bottlenecks for the process?	No details provided by the licensing body and DSO yet.

Q42. Are there minimum technical requirements, not controlled by the REC, prior to creation of the REC? Please consider issues like type of grid connectivity, smart meters, etc.	Not yet defined
Q43. Grid connection How many DSO operators exist?	3
Q44. Are there grid connection barriers?	Yes
Q45. If "Yes", please list the 3 most important barriers:	Low capacity of the local grids, longevity of the granting process.
Q46. In your opinion, what should be changed to facilitate the implementation of REC?	Public awareness, DSOs and URSO should provide details for implementation of REC, increase capacity of grid, support for establishment of REC by local and national government (financial, technical and operational).
FACILITATING INSTRUMENTS (e.g., economic instruments (taxes, tariffs, subsidies, etc.), tools and guidelines for implementation)	
Q47. What taxes and tariffs are applied to REC operation?	N/A yet
Q48. Are there tax or tariff exemptions for REC? Which ones and what is the overall % impact? Is there a time limit for the exemption?	No
Q49. Are there other fiscal benefits for REC implementation? Which ones?	No
Q50. Are there subsidies for the implementation of REC? Which ones?	No
Q51. Did public authorities produce examples of documents such as internal regulations, tender specifications, contracts, etc., to facilitate potential REC to start the implementation process?	No, not yet.
FINAL CONSIDERATIONS	

Q52. Are there other national/local agencies or organizations that this survey should be sent to? If yes, please provide relevant contacts (or just organization URL if you don't have specific contacts)	
Q53. Organization / Name / Email	
Q54. Organization / Name / Email	
Q55. Organization / Name / Email	
Q56. Please provide any additional information, links, contacts, which you believe are important for this study.	

10.1.11. Italy

Country: ITALY	
INFORMATION REQUESTED / PROVIDED	
CONTACTED E ⁿ R ENERGY AGENCY	ENEA – Italian National Agency for New Technologies, Energy and Sustainable Economic Development Contacts: Mariagiovanna Gaglione / Mattia Ricci Emails: mariagiovanna.gaglione@enea.it ; mattia.ricci@enea.it
LEGISLATIVE FRAMEWORK	
Q5. Is it in a EU Member State?	Yes
Q6. Being a EU-member state, is there specific legislation defining Renewable Energy Communities? Is the Renewable Energy Directive 2018/2001 transposed into national law?	Yes
Q7. How was the transposition done? Was the transposition carried out into a specific legislation and regulation guiding REC implementation? Please consider topics such as: was the legislation proposed as a stand-alone or was there an overall revision of electricity market system to include REC creation and other changes to facilitate adoption (namely grid issues)? - Specific legislation - Included in the revision of electricity market system - Other	Specific legislation
Q8. Legislation revision How many revisions of legislation have there been since the first transposition?	1

Q9. If the answer to previous question was more than "0", please briefly describe the most important differences between the previous and the current legislation.	As for the REC - The possibility of receiving an incentive on shared energy through plants with power up to 1 MW and the connection of systems and utilities under the same primary substation. The enlargement of perimeter from the MV/LV transformer substations to those AT/MT allows to build larger plants which can effectively meet the energy needs of a community, not just for a few families as was the case with the constraints introduced by early transposition.
Q10. In what year was implemented the last legislation regarding REC? (Year of publication of the current legislation)	Decree nr 199, November 8th 2021.
Q11. Year of previous publication (if applicable):	Law 8/2020
Q12. URL for the current legislation regarding REC:	https://www.gazzettaufficiale.it/atto/serie_generale/caricaDettaglioAtto/originario?atto.dataPubblicazioneGazzetta=2021-11-30&atto.codiceRedazionale=21G00214
Q13. Being a non-EU member state, is there specific legislation defining Renewable Energy Communities?	Not applicable
Q14. If Yes, is it specific legislation or included in another legislative package? - Specific legislation - Included in the revision of electricity market system - Other	Not applicable
Q15. When was it first published?	Not applicable
Q16. How many revisions of legislation have there been since the first publication?	Not applicable
Q17. If the answer to previous question was more than "0", please briefly describe the most important differences between the previous and the current legislation.	Not applicable
Q18. URL for the current legislation regarding REC:	Not applicable
DEFINITION OF RENEWABLE ENERGY COMMUNITY (REC)	

<p>Q19. What is the working definition for a REC in the current legislation?</p> <p>Please copy the definition from your national law. Consider topics such as: Can self-consumption be considered a REC? Can there be for profit activities? Are communities engaged mandatorily in generation activities or can they provide only other services?</p>	<p>Art 31. <i>I clienti finali, ivi inclusi i clienti domestici, hanno il diritto di organizzarsi in comunita' energetiche rinnovabili, purché siano rispettati i seguenti requisiti</i> — REC is a legal entity based on open and voluntary participation and has the main objective of providing environmental, economic or social benefits at community level to its members or to local areas where community operates and not to make financial profits. REC can produce other forms of energy from renewable sources for members use, it may promote integrated interventions of home automation and energy efficiency, provide electric recharge services to its members' vehicles, assume the role of a retail company and offer ancillary services and flexibility. Collective self-consumption is defined when at least two prosumers of renewable energy act collectively and are located in the same building or condominium. They can produce renewable energy from plants with power up to 1 MW, they can store energy and potentially sell energy when not needed but not as main business activity.</p>
MEMBERS OF THE REC	
<p>Q20. Which actors can participate as members in a REC? (Please choose as many as applicable)</p> <ul style="list-style-type: none"> - Natural persons / Local authorities / Micro-sized enterprises / Small-sized enterprises / Medium-sized enterprises / Other 	<p>Natural persons; Local authorities; Micro-sized enterprises; Small-sized enterprises; Medium-sized enterprises; and, Other - municipalities, research and training institutions, third party sector, environmental protection as well as local administrations located in the territory of the same Municipalities where plants are located for sharing energy.</p>
<p>Q21. Provide additional info here, if needed:</p>	
MANAGEMENT OF THE REC	
<p>Q22. Is the management of the REC always internal to the community or can third parties provide management as a service?</p> <p>(Please choose as many as applicable)</p> <ul style="list-style-type: none"> - It is mandatory that management is done internally by the REC members - Management can be done internally to the REC or by a third parties as a service - Other 	<p>Management can be done internally to the REC or by a third parties as a service.</p>
<p>Q23. What services can a REC provide?</p> <p>(Please choose as many as applicable)</p> <ul style="list-style-type: none"> - Generation - Supply - Consumption and sharing 	<p>Generation; Energy Services (efficiency & savings such as building renovations, auditing, technical assessments, storage, smart grid integration, financial services, etc.); Other activities (consultation to establish new initiatives, awareness campaigns, fuel poverty measures, etc.); Consumption and sharing.</p>

<ul style="list-style-type: none"> - Distribution (local electricity grids, small scale heating, biogas networks, etc); - Energy Services (efficiency & savings such as building renovations, auditing, technical assessments, storage, smart grid integration, financial services, etc.) - Other activities (consultation to establish new initiatives, awareness campaigns, fuel poverty measures, etc.) 	
<p>Q24. Provide additional info here, if needed. Please specify here if some services are mandatory or interdependent (for example, is generation mandatory for definition as REC or can a REC only provide other services without generation?).</p>	<p>REC can provide Installation of PV plants and heat pumps, provide energy auditing for various buildings, provide district heating services, help members to monitor their consumption levels through smart meters, support the creation of EV-charging stations. Other services: Italian EC may also engage in supporting awareness programs to further inform citizens and other stakeholders about the significance of their projects, promote energy efficiency, support strategies to tackle energy poverty.</p>
LICENSING, OPERATION AND MANAGEMENT OF A REC	
<p>Q25. Licensing authority</p> <p>What authority(ies) issues licensing and permits for REC? (Select as many as applicable)</p> <p>National government / Energy agency / Local authority / Other</p>	<p>National government; Local authority; Mi Se (Ministry of Economics Development) / Arera / Gse.</p>
<p>Q26. Provide additional info here, if needed:</p>	<p>On April 2020 ARERA (authority that regulates electricity, water and heating sectors) published the Consultation Document 112/2020/R/EEL/8, containing the Authority's guidelines on the regulation of economic issues relating to electricity produced for collective self-consumption or shared within the renewable energy community.</p> <p>The document defines the characteristics needed to activate the schemes of Collective Self-consumption and Renewable Energy Communities, the regulation model to be adopted and the procedure to follow to be accredited with the GSE (Gestore Servizi Energetici is a public company, wholly owned by the Ministry of Economy and Finance, which promotes sustainable development in Italy by encouraging energy production from renewable sources).</p>
<p>Q27. Please provide the name, URL and a short description of the authority(ies) role in the country:</p>	<p>ARERA - Home page (www.arera.it/it/index.htm)</p> <p>GSE: Pagine - GSE or https://www.gse.it/en/</p>
<p>Q28. What is the role of each organization in the licensing process?</p> <p>Please consider the following topics: Is the licensing authority the only organization that promoters contact and that</p>	<p>Following the commissioning of the plants held by them (plants should be built after March 2020), the REC can apply to GSE to obtain incentives and benefits deriving from sharing energy within the community.</p> <p>Incentives will not be granted for all energy produced but only to energy shared within the community and used. The process requires one of the energy producers of the EC to submit an official request to the GSE and provides information regarding the</p>

establishes all necessary contacts with other organizations such as grid operators? Or do promoters need to contact grid operators prior to licensing? Is there a maximum time for issuing a permit from the moment it is requested? What is the average licensing time?	<p>subjects that participate to the EC, the identifying codes of the points of delivery for electric energy related to the members of the EC and the plants that generate energy.</p> <p>Due to bureaucracy burden, the average time for the uptake of REC is quite long.</p>
<p>Q29. Is the EⁿR member agency involved in the process? How?</p> <p>- Not involved</p> <p>- Yes, the agency is involved</p>	Yes, the agency is involved.
Q30. If “yes”, describe the role of the agency:	Promotion of renewable energy communities, awareness campaigns, co-design of solutions.
<p>Q31. Centralized registry</p> <p>Is there a centralized registry in an online platform? If yes, please provide URL. (Provide any additional info here, if needed)</p>	<p>Yes, GSE requires to fill data on their platform</p> <p><i>Documenti (gse.it)</i></p>
<p>Q32. Is the licensing type dependent on voltage level?</p> <p>What are the voltage level intervals defined and what changes in the licensing between them? Please specify if the licensing type is the same as for self-consumption installations.</p>	Plants for the production of electricity from renewable sources must have a total power not exceeding 1 MW and be connected to the electricity grid through the same primary cabin.
<p>Q33. Is new licensing needed for a voltage level increase?</p> <p>Please specify if, within each voltage level interval, an increase in the installed production capacity increase requires new licensing, or if up to a certain percentage the license covers REC growth.</p>	Total power must not exceed 1 MW.
Q34. What is the maximum distance allowed between production and consumption? Does it depend on installed capacity?	Boundary is PODs and systems under the same portion of the medium voltage network.

Q35. Is the energy sharing coefficient fixed or dynamic? If dynamic, is the sharing management done in real time, e.g., not indexed to consumption?	Energy Sharing is computed on hourly base; self-produced energy is used primarily for instant self-consumption on site or for sharing with members of the community; any surplus energy may be accumulated and sold also through purchase and sale agreements of renewable electricity, directly or through aggregation; the members of the community use the distribution network to share the energy produced, also by resorting to storage.
Q36. Are there any restrictions to the equipments that can be installed? Is there a pre-approved list of equipments that can be used? Are there specific norms?	No specific norms are available by now.
Q37. Is there a periodical monitoring/reviewing/inspection of installations? What's the periodicity? Is there a list of specific contractors?	<p>1. GSE monitors the evolution of the energy subject to the payment of general system charges and tariff components taking into account the possible trajectories of growth in self-consumption configurations and the evolution of total requirements of the different components;</p> <p>2. Research company on Energy System - RSE S.p.A. monitors the technical and economic effects of configurations and their interactions with the electrical system, taking into account the possible effects on the costs of dispatching and network service allocation policies;</p> <p>3. The results of the monitoring activities are transmitted and made available electronically on an annual basis to the Ministry of Ecological Transition and ARERA for adoption of the acts and measures of their respective competence and to Region and municipalities territorially competent to improve the level of knowledge of the state of realization of the configurations done.</p>
Q38. Is there a mandatory insurance for REC? If yes, please detail mandatory conditions and coverage. Please consider issues like coverage of electrical and electronic equipments, civil liability, generation losses.	There is no mandatory insurance for REC. As for Insurance Policies, specific green energy insurance products are not yet available, although policies designed from insurance companies to protect green investments are part of the category "all risks".
BARRIERS AND BOTTLENECKS TO IMPLEMENTATION OF A REC	
<p>Q39. Licensing process bottlenecks</p> <p>Is the legislation and licensing process transparent?</p> <ul style="list-style-type: none"> - Yes, the process is clear and all the roles and responsibilities are well defined. - Not entirely, the legislation has improved but there are still doubts regarding certain steps for implementation. 	Not entirely, the legislation has improved but there are still doubts regarding certain steps for implementation.

- Other	
Q40. Provide additional info here, if needed.	
Q41. What are the main bottlenecks for the process?	Bureaucratic procedures and time-consuming administrative activities hold back the uptake of REC, as well as a poor knowledge of financial benefits.
Q42. Are there minimum technical requirements, not controlled by the REC, prior to creation of the REC? Please consider issues like type of grid connectivity, smart meters, etc.	The technical requirements are: end user feedback, automated decentralized control of distributed generation and demand response, control for grid stability and islanding operation.
Q43. Grid connection How many DSO operators exist?	In Italy, the only operator of the transmission system is Terna. The distribution network is divided between 135 DSOs. The largest of them is E-distribuzione (formerly Enel Distribuzione), which covers a majority share of Italian electricity demand. The most important local operators are A2A, ACEA, IREN, DEVAL and HERA.
Q44. Are there grid connection barriers?	No
Q45. If “Yes”, please list the 3 most important barriers:	
Q46. In your opinion, what should be changed to facilitate the implementation of REC?	<p>On a technical level, a Solid ICT structure and load management logics is needed. It is suggested to adopt a unified data communication standard and a solid IT architecture.</p> <p>On the side of citizens’ engagement, awareness campaigns and information actions should be launched in order to display real benefits of REC for their energy needs.</p> <p>The turning point to facilitate the implementation of REC will be a definition of an overall regulatory framework at national level, to overcome regional provisions and reflect an equal treatment for prosumer citizens.</p>
FACILITATING INSTRUMENTS (e.g., economic instruments (taxes, tariffs, subsidies, etc.), tools and guidelines for implementation)	
Q47. What taxes and tariffs are applied to REC operation?	Tariffs applied are 100 €/MWh for collective self-consumption configurations; 110 €/MWh for renewable energy communities; 9 €/MWh compensation of tariff components and those related to the cost of energy that are not technically applicable to shared energy as instantly self-consumed energy.

	The energy shared between the members of the Energy Community in fact does not pass through the national distribution network but is self-consumed on site. Electricity not self-consumed or stored can be sold to the market.
Q48. Are there tax or tariff exemptions for REC? Which ones and what is the overall % impact? Is there a time limit for the exemption?	<p>The incentive is valid for a period of 20 years and is managed by the Energy Services Manager (GSE).</p> <p>On all the energy produced in excess by the photovoltaic systems of the energy community and fed into the national distribution network, the members of the REC will be able to benefit from the dedicated GSE withdrawal or the sale to the market. In the latter case, the price applied will be the one corresponding to the time zonal which usually stands at around 50 €/MWh.</p>
Q49. Are there other fiscal benefits for REC implementation? Which ones?	Tax deduction of 50% for the installation of a photovoltaic system even if this is intended for initiatives of collective self-consumption and energy community (ECOBONUS), it is also possible to have a maxi tax deduction of 110% (SUPERBONUS) if the plant production capacity does not exceed 20 kWp and the expenditure for realization not exceeding €96000.
Q50. Are there subsidies for the implementation of REC? Which ones?	With a fund for the loans necessary for the construction of new renewable power through the Energy Communities, the PNRR allocates an additional € 2,2 billion to municipalities with a population of less than 5000 inhabitants.
Q51. Did public authorities produce examples of documents such as internal regulations, tender specifications, contracts, etc., to facilitate potential REC to start the implementation process?	<p>In different regional contexts local regulatory tools were designed to favour the spread of energy communities. The pioneer region was Piedmont where in 2018 there was the first law on Regional energy communities, well before RED II directive.</p> <p>Following Piedmont Region example, Puglia, Sardinia, Campania, Calabria and Sicily region introduced specific regulations to promote the implementation of REC. Lately in 2022 Lombardia, Lazio, Abruzzo, Emilia Romagna introduced norms to favour the spread of REC in order to boost energy transition and tackle energy poverty.</p> <p>Scientific Institutions like ENEA has recently published guidelines to Renewable Energy Community, and GSE is helping Local municipalities to promote the implementation of REC through its consultancy services.</p>
FINAL CONSIDERATIONS	
Q52. Are there other national/local agencies or organizations that this survey should be sent to? If yes, please provide relevant contacts (or just organization URL if you don't have specific contacts)	<p>R2M Italy</p> <p>www.r2msolution.com/it/</p> <p>Omar Caboni Sara Ruffini</p>
Q53. Organization / Name / Email	
Q54. Organization / Name / Email	

Q55. Organization / Name / Email	
Q56. Please provide any additional information, links, contacts, which you believe are important for this study.	

10.1.12. Spain

Country: SPAIN	
INFORMATION REQUESTED / PROVIDED	
CONTACTED EⁿR ENERGY AGENCY	IDAE – Institute for Diversification and Saving of Energy Contact: Sara de la Serna Fernández Email: sara.delaserna@idaes.es
LEGISLATIVE FRAMEWORK	
Q5. Is it in a EU Member State?	Yes
Q6. Being a EU-member state, is there specific legislation defining Renewable Energy Communities? Is the Renewable Energy Directive 2018/2001 transposed into national law?	The Renewable Energy Directive 2018/2001 is partially transposed. Only definition of REC is included in this legislative framework.
Q7. How was the transposition done? Was the transposition carried out into a specific legislation and regulation guiding REC implementation? Please consider topics such as: was the legislation proposed as a stand-alone or was there an overall revision of electricity market system to include REC creation and other changes to facilitate adoption (namely grid issues)? <ul style="list-style-type: none"> - Specific legislation - Included in the revision of electricity market system - Other 	<p>Not included in specific legislation or in the revision of electricity market system. It was done by other way:</p> <p>The definition of Renewable Energy Community is included within the sectoral legislation, regarded as a subject to develop activities for electricity supply, in article 6.1. of Law 24/2013, on the Electricity Sector (modified by article 4 of Royal Decree Law 23/2020, of 23 of June).</p> <p>Particularities of Renewable Energy Communities are also considered within the sectoral regulation, so that they can compete for the sectoral remuneration schemes on an equal footing with other actors, within the European regulatory framework. This is foreseen, for example, in article 14.7bis of Law 24/2013, introduced by article 2 of Royal Decree Law 23/2020, and developed in articles 3.2 and 8.13 of Royal Decree 960/2020, of 3rd of November, that regulates the renewable energy economic regime applicable to electrical energy generation facilities.</p> <p>Additionally, a public consultation was conducted from November 17th to December 2nd 2020. Its objective was to collect, directly or through representative organisations, the opinion of relevant stakeholders for the development of energy communities, concerning the approach to transpose Art. 16 of Directive 2019/944 and Art. 22 of Directive 2018/2001, the identification of challenges and opportunities, as well as potential measures to overcome them. Close to 150 responses were received from a wide</p>

	range of stakeholders, from local, regional and national public authorities, through energy sector and business associations, to civil and academic stakeholders.
Q8. Legislation revision How many revisions of legislation have there been since the first transposition?	N/A (only partially transposed)
Q9. If the answer to previous item was more than "0", please briefly describe the most important differences between the previous and the current legislation.	N/A
Q10. In what year was implemented the last legislation regarding REC? (Year of publication of the current legislation)	2020
Q11. Year of previous publication (if applicable):	N/A
Q12. URL for the current legislation regarding REC:	https://www.boe.es/buscar/pdf/2020/BOE-A-2020-6621-consolidado.pdf
Q13. Being a non-EU member state, is there specific legislation defining Renewable Energy Communities?	Not applicable
Q14. If Yes, is it specific legislation or included in another legislative package? - Specific legislation - Included in the revision of electricity market system - Other	Not applicable
Q15. When was it first published?	Not applicable
Q16. How many revisions of legislation have there been since the first publication?	Not applicable
Q17. If the answer to previous item was more than "0", please briefly describe the most important differences between the previous and the current legislation.	Not applicable

Q18. URL for the current legislation regarding REC:	Not applicable
DEFINITION OF RENEWABLE ENERGY COMMUNITY (REC)	
<p>Q19. What is the working definition for a REC in the current legislation?</p> <p>Please copy the definition from your national law. Consider topics such as: Can self-consumption be considered a REC? Can there be for profit activities? Are communities engaged mandatorily in generation activities or can they provide only other services?</p>	<p>Renewable energy communities, which are legal entities based on open and voluntary participation, autonomous and effectively controlled by partners or members who are located in the vicinity of renewable energy projects owned and developed by those legal entities, whose 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 gains.</p> <p><i>(Las comunidades de energías renovables, que son entidades jurídicas basadas en la participación abierta y voluntaria, autónomas y efectivamente controladas por socios o miembros que están situados en las proximidades de los proyectos de energías renovables que sean propiedad de dichas entidades jurídicas y que estas hayan desarrollado, cuyos socios o miembros sean personas físicas, pymes o autoridades locales, incluidos los municipios y cuya finalidad primordial sea proporcionar beneficios medioambientales, económicos o sociales a sus socios o miembros o a las zonas locales donde operan, en lugar de ganancias financieras).</i></p>
MEMBERS OF THE REC	
<p>Q20. Which actors can participate as members in a REC? (Please choose as many as applicable)</p> <ul style="list-style-type: none"> - Natural persons / Local authorities / Micro-sized enterprises / Small-sized enterprises / Medium-sized enterprises / Other 	Natural persons; Local authorities; Micro-sized enterprises; Small-sized enterprises; and, Medium-sized enterprises.
Q21. Provide additional info here, if needed:	
MANAGEMENT OF THE REC	
<p>Q22. Is the management of the REC always internal to the community or can third parties provide management as a service?</p> <p>(Please choose as many as applicable)</p> <ul style="list-style-type: none"> - It is mandatory that management is done internally by the REC members - Management can be done internally to the REC or by a third parties as a service - Other 	It is mandatory that management is done internally by the REC members.
Q23. What services can a REC provide?	Not defined yet.

<p>(Please choose as many as applicable)</p> <ul style="list-style-type: none"> - Generation - Supply - Consumption and sharing - Distribution (local electricity grids, small scale heating, biogas networks, etc); - Energy Services (efficiency & savings such as building renovations, auditing, technical assessments, storage, smart grid integration, financial services, etc.) - Other activities (consultation to establish new initiatives, awareness campaigns, fuel poverty measures, etc.) 	
<p>Q24. Provide additional info here, if needed. Please specify here if some services are mandatory or interdependent (for example, is generation mandatory for definition as REC or can a REC only provide other services without generation?).</p>	<p>Not defined yet.</p>
<p align="center">LICENSING, OPERATION AND MANAGEMENT OF A REC</p>	
<p>Q25. Licensing authority</p> <p>What authority(ies) issues licensing and permits for REC? (Select as many as applicable)</p> <p>National government / Energy agency / Local authority / Other</p>	<p>Not defined yet for REC. Presumably, the same that for other actors in the market.</p>
<p>Q26. Provide additional info here, if needed:</p>	
<p>Q27. Please provide the name, URL and a short description of the authority(ies) role in the country:</p>	
<p>Q28. What is the role of each organization in the licensing process?</p> <p>Please consider the following topics: Is the licensing authority the only organization that promoters contact and that establishes all necessary contacts with other organizations such as grid operators? Or do promoters need to contact grid operators prior to licensing? Is there a maximum time for</p>	

issuing a permit from the moment it is requested? What is the average licensing time?	
<p>Q29. Is the EⁿR member agency involved in the process? How?</p> <p>- Not involved</p> <p>- Yes, the agency is involved</p>	
Q30. If “yes”, describe the role of the agency:	
<p>Q31. Centralized registry</p> <p>Is there a centralized registry in an online platform? If yes, please provide URL. (Provide any additional info here, if needed)</p>	No
<p>Q32. Is the licensing type dependent on voltage level?</p> <p>What are the voltage level intervals defined and what changes in the licensing between them? Please specify if the licensing type is the same as for self-consumption installations.</p>	Not defined yet for REC.
<p>Q33. Is new licensing needed for a voltage level increase?</p> <p>Please specify if, within each voltage level interval, an increase in the installed production capacity increase requires new licensing, or if up to a certain percentage the license covers REC growth.</p>	Not defined yet for REC.
Q34. What is the maximum distance allowed between production and consumption? Does it depend on installed capacity?	Not defined yet for REC. So far, 500 m, as per RD244/2019. (https://www.boe.es/boe/dias/2019/04/06/pdfs/BOE-A-2019-5089.pdf)
Q35. Is the energy sharing coefficient fixed or dynamic? If dynamic, is the sharing management done in real time, e.g., not indexed to consumption?	Not defined yet for REC.
Q36. Are there any restrictions to the equipments that can be installed? Is there a pre-approved list of	Not defined yet for REC.

equipments that can be used? Are there specific norms?	
Q37. Is there a periodical monitoring/ reviewing/ inspection of installations? What's the periodicity? Is there a list of specific contractors?	Not defined yet for REC.
Q38. Is there a mandatory insurance for REC? If yes, please detail mandatory conditions and coverage. Please consider issues like coverage of electrical and electronic equipments, civil liability, generation losses.	Not defined yet for REC.
BARRIERS AND BOTTLENECKS TO IMPLEMENTATION OF A REC	
<p>Q39. Licensing process bottlenecks</p> <p>Is the legislation and licensing process transparent?</p> <ul style="list-style-type: none"> - Yes, the process is clear and all the roles and responsibilities are well defined. - Not entirely, the legislation has improved but there are still doubts regarding certain steps for implementation. - Other 	Not entirely, the legislation has improved but there are still doubts regarding certain steps for implementation.
Q40. Provide additional info here, if needed.	
Q41. What are the main bottlenecks for the process?	
<p>Q42. Are there minimum technical requirements, not controlled by the REC, prior to creation of the REC?</p> <p>Please consider issues like type of grid connectivity, smart meters, etc.</p>	Access and Connection agreements – lack of capacity, long periods to get them granted.
<p>Q43. Grid connection</p> <p>How many DSO operators exist?</p>	In the order of 300, although the market is concentrated in 5.
Q44. Are there grid connection barriers?	Yes

Q45. If “Yes”, please list the 3 most important barriers:	
Q46. In your opinion, what should be changed to facilitate the implementation of REC?	<p>There was a specific question within the public consultation addressing barriers, specifically: “Which are the regulatory, social, economic or other barriers that currently hinder the development of local energy communities, from the point of view of citizens, SMEs, local authorities and other actors? Which is the most limiting barrier?”</p> <p>The most limiting barriers, as perceived by the respondents, were:</p> <ul style="list-style-type: none"> • Regulatory and legal: lack of regulatory and enabling framework definition with regards to energy communities, need of changes within the sectorial legislation to allow ECs to conduct activity within the electricity market and the range limitation of 500 m for collective self-consumption activities • Social: lack of knowledge of the energy community concept and lack of information or awareness in environmental subjects • Economic: lack of access to financing for energy communities, particularly, for those associated to new citizen initiatives • Administrative: time and complexity required to process self-consumption installations and paperwork with distribution network operations, as well as the inexistence of a one-stop-shop approach for administrative tasks. <p>Additionally, an Expression of Interest specific to energy communities to inform the development of the support lines within the Resilience and Recovery Plan framework was conducted in February 2021, receiving close to 450 responses. There were specific questions related to the barriers towards the development of the project presented, which were aligned with those found within the public consultation.</p>
<p style="text-align: center;">FACILITATING INSTRUMENTS</p> <p style="text-align: center;">(e.g., economic instruments (taxes, tariffs, subsidies, etc.), tools and guidelines for implementation)</p>	
Q47. What taxes and tariffs are applied to REC operation?	
Q48. Are there tax or tariff exemptions for REC? Which ones and what is the overall % impact? Is there a time limit for the exemption?	
Q49. Are there other fiscal benefits for REC implementation? Which ones?	
Q50. Are there subsidies for the implementation of REC? Which ones?	<p>See slides attached. Additionally, please, consult:</p> <p>https://www.idae.es/ayudas-y-financiacion/comunidades-energeticas/programa-de-incentivos-proyectos-piloto-singulares-de</p>

	<ul style="list-style-type: none"> Order TED/1446/2021, of 22nd december, by which approve the regulatory bases for the concession of helps of the program of incentives to singular pilot projects of energy communities (Program CE Implementa), in the frame of the Plan of Recovery, Transformation and Resilience (https://www.boe.es/diario_boe/txt.php?id=BOE-A-2021-21343) https://sede.idae.gob.es/lang/modulo/?idarticulo=146949&idboletin=2742&idseccion=16767 <p>Examples of projects been funded:</p> <p>https://www.idae.es/sites/default/files/documentos/ayudas_y_financiacion/Comunidades_energeticas/Presentacion_CE_Implementa-Fichas5.pdf</p>
Q51. Did public authorities produce examples of documents such as internal regulations, tender specifications, contracts, etc., to facilitate potential REC to start the implementation process?	<ul style="list-style-type: none"> IDAE, Guía para el Desarrollo de Instrumentos de Fomento de Comunidades Energéticas Locales, 2019: https://www.idae.es/publicaciones/guia-para-el-desarrollo-de-instrumentos-de-fomento-de-comunidades-energeticas-locales Diputación de Barcelona, Guía para el impulso de Comunidades energéticas con perspectiva municipal, Nov 21: https://www.diba.cat/documents/471041/361729804/Guia+Comunidades+Energe%CC%81ticas+%28ESP%29+-+Diputaci%C3%B3n+Barcelona.pdf/ad666bce-cd05-9702-e828-349ddb0bc04d?t=1640016116134 Diputación de Valencia, Guía para la promoción de comunidades energéticas (in Catalan): https://www.dival.es/medi-ambient/sites/default/files/mediambient/Models%20Comunitats%20Energe%C3%A8tiques.pdf Gobierno de Navarra, Guía rápida para constituir una Comunidad Energética (CE): http://www.navarra.es/NR/rdonlyres/3273BD73-5CE9-41C4-95B5-0A9D81534ECD/473224/GuiarapidaCE.pdf Consejo de la Comarca de Osona, Sep 22 (in Catalan): Guía práctica para la creación de comunidades energéticas: https://novaenergiaosona.cat/wp-content/uploads/2022/09/manual-com-energetiques_OK_web.pdf
FINAL CONSIDERATIONS	
Q52. Are there other national/local agencies or organizations that this survey should be sent to? If yes, please provide relevant contacts (or just organization URL if you don't have specific contacts)	
Q53. Organization / Name / Email	
Q54. Organization / Name / Email	
Q55. Organization / Name / Email	

Q56. Please provide any additional information, links, contacts, which you believe are important for this study.

10.1.13. Netherlands

Country: NETHERLANDS	
INFORMATION REQUESTED / PROVIDED	
CONTACTED EⁿR ENERGY AGENCY	RVO – Netherlands Enterprise Agency Contact: Jones, R. L. Email: rebecca.vanleeuwen@rvo.nl
LEGISLATIVE FRAMEWORK	
Q5. Is it in a EU Member State?	Yes
Q6. Being a EU-member state, is there specific legislation defining Renewable Energy Communities? Is the Renewable Energy Directive 2018/2001 transposed into national law?	No. New Energy law is in preparation and will be published soon. Announcing possibilities for consumers and companies to participate in the energy market by providing energy services. Energiewet Overheid.nl Wetgevingskalender
Q7. How was the transposition done? Was the transposition carried out into a specific legislation and regulation guiding REC implementation? Please consider topics such as: was the legislation proposed as a stand-alone or was there an overall revision of electricity market system to include REC creation and other changes to facilitate adoption (namely grid issues)? - Specific legislation - Included in the revision of electricity market system - Other	Included in the revision of electricity market system.
Q8. Legislation revision How many revisions of legislation have there been since the first transposition?	0

Q9. If the answer to previous item was more than “0”, please briefly describe the most important differences between the previous and the current legislation.	20/05/2022 – phasing out net metering has been postponed until 2025
Q10. In what year was implemented the last legislation regarding REC? (Year of publication of the current legislation)	Not implemented yet. Expected to be implemented in 2023.
Q11. Year of previous publication (if applicable):	
Q12. URL for the current legislation regarding REC:	Energy communities are not specifically mentioned in current legislation
Q13. Being a non-EU member state, is there specific legislation defining Renewable Energy Communities?	Not applicable
Q14. If Yes, is it specific legislation or included in another legislative package? - Specific legislation - Included in the revision of electricity market system - Other	Not applicable
Q15. When was it first published?	Not applicable
Q16. How many revisions of legislation have there been since the first publication?	Not applicable
Q17. If the answer to previous item was more than “0”, please briefly describe the most important differences between the previous and the current legislation.	Not applicable
Q18. URL for the current legislation regarding REC:	Not applicable
DEFINITION OF RENEWABLE ENERGY COMMUNITY (REC)	
Q19. What is the working definition for a REC in the current legislation? Please copy the definition from your national law. Consider topics such as: Can self-consumption be considered a REC?	Definition is not given in national law. Currently organised as cooperatives – allowed as a legal person. Definition will be included in the revision of the energy law. This is the working definition which will be included in the revision of the energy law (this might be subject to change):

Can there be for profit activities? Are communities engaged mandatorily in generation activities or can they provide only other services?	A REC is a legal entity which acts on behalf of its members, partners or shareholders. It carries out activities in the energy market and its main objective is to provide environmental, economic or social benefits to its members, associates, shareholders or to the local areas where it operates. It is not aimed at making a profit.
MEMBERS OF THE REC	
Q20. Which actors can participate as members in a REC? (Please choose as many as applicable) - Natural persons / Local authorities / Micro-sized enterprises / Small-sized enterprises / Medium-sized enterprises / Other	Natural persons; Local authorities; Micro-sized enterprises; Small-sized enterprises; and, Medium-sized enterprises.
Q21. Provide additional info here, if needed:	
MANAGEMENT OF THE REC	
Q22. Is the management of the REC always internal to the community or can third parties provide management as a service? (Please choose as many as applicable) - It is mandatory that management is done internally by the REC members - Management can be done internally to the REC or by a third parties as a service - Other	Management can be done internally to the REC or by a third parties as a service.
Q23. What services can a REC provide? (Please choose as many as applicable) - Generation - Supply - Consumption and sharing - Distribution (local electricity grids, small scale heating, biogas networks, etc); - Energy Services (efficiency & savings such as building renovations, auditing, technical assessments, storage, smart grid integration, financial services, etc.) - Other activities (consultation to establish new initiatives, awareness campaigns, fuel poverty measures, etc.)	Generation; Supply; Consumption and sharing; Energy Services; Electric mobility.

Q24. Provide additional info here, if needed. Please specify here if some services are mandatory or interdependent (for example, is generation mandatory for definition as REC or can a REC only provide other services without generation?).	Distribution not possible unless it is a private network e.g. district heating or a local micro grid.
LICENSING, OPERATION AND MANAGEMENT OF A REC	
Q25. Licensing authority What authority(ies) issues licensing and permits for REC? (Select as many as applicable) National government / Energy agency / Local authority / Other	National government + Local authority.
Q26. Provide additional info here, if needed:	<p>In the current (not implemented version) Energy Law there is no licensing authority for REC. Licensing is connected to performing certain services. For example, supplying electricity is subject to requirements, the REC do have an exemption for a suppliers permit.</p> <p>Registration with Regulator ACM. In the case of energy services a permit is required from the Dutch Authority for Financial Markets (AFM) or the Central Bank of the Netherlands (DNB).</p> <p>Homepage AFM Corporate AFM</p> <p>De Nederlandsche Bank (DNB) – the central bank of the Netherlands</p>
Q27. Please provide the name, URL and a short description of the authority(ies) role in the country:	<p>www.Acm.nl/en</p> <p>Netherlands Authority for Consumers and Markets</p> <p>The Netherlands Authority for Consumers and Markets (ACM) contributes to realizing a healthy economy by ensuring that markets work well for people and businesses.</p> <p>REC do not require a license or permission according to the current version of the Energy law. They do need to comply with the necessary conditions and some tasks require certificates from Tennet/GTS.</p>
Q28. What is the role of each organization in the licensing process? Please consider the following topics: Is the licensing authority the only organization that promoters contact and that	ACM NL Authority for Consumers and Markets – protects consumer interests.

establishes all necessary contacts with other organizations such as grid operators? Or do promoters need to contact grid operators prior to licensing? Is there a maximum time for issuing a permit from the moment it is requested? What is the average licensing time?	
Q29. Is the E ⁿ R member agency involved in the process? How? - Not involved - Yes, the agency is involved	Yes, the agency is involved.
Q30. If “yes”, describe the role of the agency:	Education and acceleration of roll-out and information dissemination.
Q31. Centralized registry Is there a centralized registry in an online platform? If yes, please provide URL. (Provide any additional info here, if needed)	ASM UBO register Ultimate Beneficial Owner UBO register for ultimate beneficial owner Business.gov.nl
Q32. Is the licensing type dependent on voltage level? What are the voltage level intervals defined and what changes in the licensing between them? Please specify if the licensing type is the same as for self-consumption installations.	On average 50 kW peak if you need a large connection (3 x 80 amps)
Q33. Is new licensing needed for a voltage level increase? Please specify if, within each voltage level interval, an increase in the installed production capacity increase requires new licensing, or if up to a certain percentage the license covers REC growth.	If capacity exceeds 50 kW peak then you need to apply for a larger connection with the grid operator.
Q34. What is the maximum distance allowed between production and consumption? Does it depend on installed capacity?	Due to its dense population distance is not an issue.
Q35. Is the energy sharing coefficient fixed or dynamic? If dynamic, is the sharing management done in real time, e.g., not indexed to consumption?	No info' available. Will be addressed in new legislation.

Q36. Are there any restrictions to the equipments that can be installed? Is there a pre-approved list of equipments that can be used? Are there specific norms?	Installers must be certified in accordance with CENELAC & IEC - International Electro-technical Commission.
Q37. Is there a periodical monitoring/ reviewing/ inspection of installations? What's the periodicity? Is there a list of specific contractors?	All installations need to be connected according to the technical codes "netcode". Reviewing of the inspection by the system operator is also recorded in the technical codes.
Q38. Is there a mandatory insurance for REC? If yes, please detail mandatory conditions and coverage. Please consider issues like coverage of electrical and electronic equipments, civil liability, generation losses.	Yes – 2 insurances - company liability and director's liability.
BARRIERS AND BOTTLENECKS TO IMPLEMENTATION OF A REC	
Q39. Licensing process bottlenecks Is the legislation and licensing process transparent? - Yes, the process is clear and all the roles and responsibilities are well defined. - Not entirely, the legislation has improved but there are still doubts regarding certain steps for implementation. - Other	Not entirely, the legislation has improved but there are still doubts regarding certain steps for implementation. (see answers in Q6 upcoming legislation to improve roles responsibility and user protection).
Q40. Provide additional info here, if needed.	
Q41. What are the main bottlenecks for the process?	Lack of transparency, and limited knowledge and limitations on usage of network. High energy taxes and small percentage of flexible tariffs – high cost of storage.
Q42. Are there minimum technical requirements, not controlled by the REC, prior to creation of the REC? Please consider issues like type of grid connectivity, smart meters, etc.	Consumers need a smart meter.
Q43. Grid connection How many DSO operators exist?	8 RENDONetwerken, Cogas Infra en Beheer, Liander, Stedin, Westland Infra, Enduris, Endinet Groep, Enexis.

Q44. Are there grid connection barriers?	Yes
Q45. If “Yes”, please list the 3 most important barriers:	Lack of transparency, limited knowledge and limitations on usage of network. High energy taxes and small percentage of flexible tariffs – high cost of storage. Congestion!
Q46. In your opinion, what should be changed to facilitate the implementation of REC?	Education/awareness raising in terms of technical, political and institutional building of REC members Reduce taxes and increase percentage of flexible tariffs Reduce cost of storage Congestion – shorten planning processes and provide geographical info systems and data Grid re-enforcement Encourage complementarity amongst renewable energy sources Stimulate business models for REC that include (1) sufficient elasticity to include different types of stakeholders, (2) allow for fair division of responsibilities and benefits and (3) respect for the RED II governance requirements To ensure that business models/policies allow for the full participation of disadvantaged and vulnerable communities (energy justice)
FACILITATING INSTRUMENTS (e.g., economic instruments (taxes, tariffs, subsidies, etc.), tools and guidelines for implementation)	
Q47. What taxes and tariffs are applied to REC operation?	Various taxes – renewable energy subsidy Subsidy scheme cooperative energy generation (SCE) (rvo.nl)
Q48. Are there tax or tariff exemptions for REC? Which ones and what is the overall % impact? Is there a time limit for the exemption?	VAT return for solar panels
Q49. Are there other fiscal benefits for REC implementation? Which ones?	No
Q50. Are there subsidies for the implementation of REC? Which ones?	No only for a restricted number of innovative projects (demonstration and pilot projects)

Q51. Did public authorities produce examples of documents such as internal regulations, tender specifications, contracts, etc., to facilitate potential REC to start the implementation process?	RVO has been supporting Hier opgewekt – Electricity generated here
FINAL CONSIDERATIONS	
Q52. Are there other national/local agencies or organizations that this survey should be sent to? If yes, please provide relevant contacts (or just organization URL if you don't have specific contacts)	
Q53. Organization / Name / Email	
Q54. Organization / Name / Email	
Q55. Organization / Name / Email	
Q56. Please provide any additional information, links, contacts, which you believe are important for this study.	Home GENERATED HERE (hieropgewekt.nl) Defining community-based Virtual Power Plant — Eindhoven University of Technology research portal (tue.nl) Implementing a just renewable energy transition: Policy advice for transposing the new European rules for renewable energy communities Elsevier Enhanced Reader Energiegemeenschappen' - een decentrale oplossing voor de energietransitie? - Nederlands Tijdschrift voor Energierecht - Uitgeverij Den Hollander Onderzoek van dr. L. (Lea) Diestelmeier Waar vindt u ons Zoek een medewerker Rijksuniversiteit Groningen (rug.nl)

10.2. Comparative Analysis of Legislation and Country Status Answers

10.2.1. REC definition

Table A1-1 – REC definition by country

COUNTRY	REC definition
AUSTRIA	<p>The current EAG legislation defines in its Section 79 that:</p> <p>1) A renewable energy community may produce energy from renewable sources, consume such energy, store it or sell it. It may also act as an aggregator or provide other energy services. In doing so, it must comply with the rules and regulations applicable for each type of activity. The rights and obligations of the system users that participate in a renewable energy community, in particular their right to choose their supplier, remain unaffected.</p> <p>2) The members and general partners of a renewable energy community may be natural persons, municipalities, local authorities or other legal persons governed by public law, or SME. These energy communities must have two or more members or general partners and must be organised as bodies with legal personality, such as (but not limited to) an association, a cooperative, a partnership or a corporation. Its primary purpose may not be financial profits and this shall be explicitly laid down in its statutes, unless it is inherent in the legal format chosen. Instead, renewable energy communities aim to provide environmental, economic or social community benefits for their members or the local areas where they operate. Participation in renewable energy communities is voluntary and open, but in the case of private businesses may not be their primary activity.</p> <p>3) By the end of Q1 2024, the regulatory authority shall publish a cost-benefit analysis which takes into account the evaluation under section 91 para. 3 and logically presents data to show whether renewable energy communities and citizen energy communities as provided for in section 16b Electricity Act 2010 are bearing an adequate share of the network costs.</p>

COUNTRY	REC definition
FINLAND	<p>The Decree 1133/2020, in its article 3, concerns energy communities providing both renewable and non-renewable energy. According to this Decree, a local energy community is a legal body: 1) which produces, supplies, consumes, aggregates or stores energy or provides energy services, charging services for electric cars or other energy services for its members or shareholders; 2) which is based on voluntary and open participation; 3) in which authority is used by its members or shareholders; 4) whose members or shareholders are natural persons, municipalities or other local authorities or small or medium sized enterprises; 5) whose principal objective, instead of financial profits, is to produce environment, economic or social community related benefits for its members or shareholders or the area where it operates; 6) whose members' and shareholders' electricity consumption metering at the electricity accounting points is done by DSO; 7) whose members' and shareholders' electricity consumption sites are located at the real estate or a comparable group of real estates and which have been connected to the DSO's distribution network through one and the same accounting point; and, 8) whose electricity generation equipment and electricity storage belong to the connection referred under item 7.</p>
FRANCE	<p>The general definition is a copy-paste of the REC definition in the EU directive: a REC is an autonomous legal entity relying on open and voluntary participation. Its shareholders and members are individual persons, SME and local authorities. The REC is effectively controlled by its shareholders who are located in proximity of the RES projects. Its primary objective is to provide environmental, economic and social advantages to its members and shareholders and to the local territories where it is located. A REC can generate, consume, store and sell renewable energy; it can also share among its members the renewable energy it generates. It can access all relevant energy markets, either directly or through aggregators.</p> <p>Additional more precise elements for the definition will be implemented through the application decree awaiting validation from the State Council (Conseil d'Etat).</p>

COUNTRY	REC definition
ITALY	<p>End customers, including domestic customers, have the right to organise themselves in renewable energy communities, provided that the following requirements are met:</p> <ul style="list-style-type: none"> - REC is a legal entity based on open and voluntary participation and has the main objective of providing environmental, economic or social benefits at community level to its members or to local areas where community operates and not to make financial profits. - REC can produce other forms of energy from renewable sources for members use, it may promote integrated interventions of home automation and energy efficiency, provide electric recharge services to its members' vehicles, assume the role of a retail company and offer ancillary services and flexibility. Collective self-consumption is defined when at least two prosumers of renewable energy act collectively and are located in the same building or condominium. They can produce renewable energy from plants with power up to 1 MW, they can store energy and potentially sell energy when not needed but not as main business activity.
LUXEMBOURG	<p>'Renewable Energy Community' means a legal person whose members or shareholders are natural persons, SME or local authorities, including municipalities, and who are system users whose all injection and withdrawal points are located in the same locality downstream of high or medium voltage to low voltage electricity transformer substations operated by the distribution system operator concerned.</p> <p>The existence of a renewable energy community shall not prevent the distribution system operator from making changes to the topology of its distribution system even where such a change implies changes in the composition of the community in question.</p> <p>A renewable energy community is permitted to: (i) produce, consume, store and sell renewable energy produced by generation units owned by it, including through renewable power purchase agreements; (ii) share, within the renewable energy community, the renewable energy produced by the generating units owned by that renewable energy community without prejudice to grid access charges, grid use charges and other charges, levies and taxes applicable to each member of the renewable energy community; and, (iii) access to all relevant energy markets directly or by aggregation in a non-discriminatory manner.</p>

COUNTRY	REC definition
PORTUGAL	<p>According to the actual Decree-Law no. 15/2022 of 14th January, a 'Renewable Energy Community' is a legal entity, constituted by open and voluntary adhesion of its members, partners or shareholders, which may be natural persons or organizations of public or private nature, including small and medium-sized enterprises or local authorities, controlled by them and in which, cumulatively verify the following conditions:</p> <ul style="list-style-type: none"> a) The members or participants are located in the proximity of the renewable energy projects or carry out activities related to the renewable energy projects of the respective energy community, necessarily including a production unit; b) The projects have to be owned and developed by REC or by third parties, provided that it is for the benefit and at the service of the REC; c) The main objective of the REC is to provide environmental, economic and social benefits to the members or the locations where the community operates, rather than financial profits. <p>REC may have the ability to: (i) produce, consume, store, buy and sell renewable energy with its members or with third parties; (ii) share and commercialize among its members the renewable energy produced by Production Units at its service, in compliance with the other established requirements, without prejudice to the REC members, which maintain their rights and obligations as consumers; and, (iii) access all energy markets, including system services, both directly and through aggregation.</p>

COUNTRY	REC definition
SLOVAKIA	<p>REC defined as a community producing energy from renewable sources, being a legal entity,</p> <p>a) which is established for the purpose of producing electricity from renewable energy sources or biomethane and which can simultaneously be established for the purpose of supplying electricity or gas, sharing electricity from renewable energy sources or biomethane, storing electricity from renewable energy sources, aggregation activities, electricity distribution, operating a charging station or performing other activities or providing other services related to ensuring the energy needs of its members with the aim of realizing environmental, economic or social community benefits,</p> <p>b) which does not carry out activities according to a) for the purpose of achieving profit,</p> <p>c) in which it is possible to enter, acquire a share or otherwise become a member, and from which it is possible to withdraw, terminate participation or membership based on the decision of the member,</p> <p>d) whose members are only natural persons, small and medium-sized enterprises, higher territorial units or municipalities in the territorial district of the higher territorial unit in which the community producing energy from renewable sources is based, and,</p> <p>e) the members of which, individually or together with other members, are authorized to carry out inspections in the community producing energy from renewable sources have permanent residence or headquarters in the territory of the higher territorial unit in which the equipment for the production of electricity from renewable energy sources or the equipment for the production of biomethane owned by the community is located generating energy from renewable sources or the majority of such facilities, if the community producing energy from renewable sources produces electricity or gas in several such facilities; if a higher territorial unit cannot be determined according to the previous sentence, it shall be determined according to the seat of the community producing energy from renewable sources.</p>
SPAIN	<p>Renewable energy communities are legal entities based on open and voluntary participation, autonomous and effectively controlled by partners or members who are located in the vicinity of renewable energy projects owned and developed by those legal entities, whose partners or members are natural persons, SME 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 gains.</p>

COUNTRY	REC definition
GREECE (with specific legislation on EC)	<p>The Greek Law 4513/2018, published on 17.1.2018, defines the purpose and the activities of Energy Communities (EC). The Law, that took into account the Proposal for the RED II directive COM (2016) 767 and the Proposal for the EMD COM (2016) 864, specifies the framework for the establishment and operation of EC and provides some economic and administrative incentives.</p> <p>According to this Law, the EC is defined as a civil cooperative which performs activities exclusively in the energy sector. It can include as membership individuals (physical persons), local authorities (Municipalities, Regions), legal entities governed by public law and any legal entities under private law (enterprises of any size). Regarding the Locality Criterion, at least 50% + 1 member shall be 'associated' with the region (NUTS 2 Level) where the EC has its registered offices. This includes natural persons (members) having full or partial ownership or usufruct in the property located within the region of the EC or be citizens of its municipality or district, as well as legal entities (members) having their registered office within the district of the registered office of EC.</p> <p>Regarding the types of EC permitted, they are generally non-profit, but in case they consist of more than 15 members, the majority being natural persons, they may be profit-driven (surplus distribution is allowed). The Governance of EC is assured by each member, independently of the shares that may possess, since it has only one vote to the General Assembly. Each member can hold in addition to the single mandatory cooperative share one or more optional cooperative shares, with a maximum participation in cooperative capital of 20%, exception is a Local Government Organization shareholder - with a maximum 40% limit. Especially for small islands (< 3100 residents), participation rates of Local Government Organization can reach 50%.</p>

10.2.2. Licensing process

Table A1-2 – Licensing process for REC by country

NOT CLEAR PROCESS	
COUNTRY	LICENSING PROCESS DESCRIPTION
FRANCE	<p>Not clear whether there will be an actual “licensing process” or “label” for REC. This will only be the case if the REC status enables access to specific and dedicated support schemes.</p> <p>The only existing labelling initiative concerns “citizen energy projects”, as certified by the national citizen energy federation Energie Partagé, which is however not the same as the REC definition.</p> <p>There is not any centralized registry in an online platform for the possible licensing process. Only for the existing citizen energy projects labeled by Energie Partagée (which are formally not REC), there is a centralized registry of that type: https://energie-partagee.org/decouvrir/energie-citoyenne/tous-les-projets/</p> <p>The general regulatory framework for collective-self consumption applies for REC as much as for any other legal entity.</p>
	Licensing authority:
	Other organizations involved in the process:

SIMPLIFIED PROCESS	
COUNTRY	LICENSING PROCESS DESCRIPTION
FINLAND	No license or permit is required from the authorities. Only registration with the local electricity distribution network (DSO) is required and the DSO should give a consent to connect the system.
	Installation of solar power systems in buildings may be subject to action permit (lighter than building permit) requirements, but this is an exception, not the rule.
	There isn't any centralized registry for this process.
	Licensing authority: Not applicable
LUXEMBOURG	Other organizations involved in the process: DSO
	No authorization required, only a notification to the grid operator is needed.
	So, there is no licensing process, just a notification process. The role of the grid operator in this process can be to define the distribution model of the shared electricity (if this is not done by the REC). In any case, the grid operator notifies electricity consumption and production of each member to the respective energy providers.
	There isn't any centralized registry for this process. The notification process doesn't depend on the voltage level.
LUXEMBOURG	Licensing authority: Not applicable
	Other organizations involved in the process: Grid Operator

SIMPLIFIED PROCESS	
COUNTRY	LICENSING PROCESS DESCRIPTION
NETHERLANDS	<p>For the possible implementation of cooperatives as REC, it is necessary their registration with the Regulator ACM – the Netherlands Authority for Consumers and Markets (which is the entity that contributes to realizing a healthy economy by ensuring that markets work well for people and businesses, and, therefore, in this process protects consumer interests). There is not any licensing process.</p> <p>In the case of energy services also a permit is required from the Dutch Authority for Financial Markets (AFM) or the Central Bank of the Netherlands (DNB).</p> <p>(NOTE: In the current (not implemented version) Energy Law there is no licensing authority for REC. Licensing is connected to performing certain services. For example, supplying electricity is subject to requirements, the REC do have an exemption for a supplier permit).</p>
	Licensing authority: There is not a specific entity of this type for REC, as seen above..
	Other organizations involved in the process: Not applicable

MORE COMPLEX PROCESS	
COUNTRY	LICENSING PROCESS DESCRIPTION
AUSTRIA	<p>Licensing and permits are not necessarily needed to form a REC. The construction and operation of generation facilities are a separate topic. Also REC are not subject to the trade regulations, and therefore a trade license is not required. However, other ‘acceptance conditions’ must be fulfilled, which makes the process rather complex, as explained in the following lines.</p> <p>All types of energy communities (REC and CEC) have to make a contract with a licensed grid operator. According to the existing legislation, REC are not allowed to build, buy, own, or operate their own grids or even operate their own metering systems, since metering and metering management is responsibility and privilege of grid operators only. The establishment of a legal entity is also a prerequisite for the registration of the energy community with the grid operator, meaning that only a legal entity can be registered as a REC. Examples for possible legal entity choices are associations, commercial and industrial cooperatives or limited liability companies.</p> <p>The REC must conclude a grid access contract with the DSO in charge for each generation plant. (The grid access contract of the generating plant is to be concluded either by the REC itself or by a participating grid user owning the plant. In case of existing grid access contracts, the REC can enter into the contractual relationship with the DSO instead of the owner of the generation plant).</p> <p>Further prerequisites for the operation of a REC are:</p> <ul style="list-style-type: none"> • a contract between the REC and the participating grid users; • a defined mode (static or dynamic) for allocating the amount of energy generated among the participating network users; • all participating consumption units and the joint generation unit being in operation and equipped with a metering device for the required measurement on a ¼ hour basis; • the REC has ensured that the consent of the participating grid users or the community to the reading and transmission of the quarter-hourly values pursuant to the existing legislation has been obtained.

The REC is exempt from the strict requirements for electricity suppliers for the internal relations of the energy community (electricity for its own participants). As soon as the REC wants **to sell electricity to third parties** that are not part of the energy community, **the energy community would need an electricity supplier license**.

Registration of the REC as a market participant at <http://www.eutilities.at> is required. Once registration is complete, the REC will receive a market partner ID (RC number). This ID is required to register the REC with the grid operator.

Besides the above mentioned prerequisites for the operation of the REC, also a **generation plant licensing** is needed. The plant licensing is a separate matter and is independent of REC legislature. The DSO (E-Control) at the beginning of 2022 published a comprehensive guideline for the grid connection of power generation plants, including a range of typical examples.

The regulatory process and the factors that are taken into account in the decision to approve a generation project differ according to the type of generation plant, the impact on the environment, and also the state in which authorization is to be obtained.

Generally, under the simplified procedure, provided the application is complete, details of the project will be made public by posting a notice at the local community council and by submitting the project documentation to the municipality during a specified period. During this period, qualified neighbours can submit justified objections. The authority investigates by obtaining expert opinions and determining whether the conditions allow for approval. If necessary, approval is issued by a formal decision. Specific orders relating to the construction and operation of the plant may be issued.

For a regular procedure, a formal oral hearing is scheduled after the application has been deemed complete. The subject matter, time and place of the hearing are announced on the official noticeboard of the local community council, and, where appropriate, on the official noticeboard of neighbouring municipalities. Qualified neighbouring landowners near the site of the prospective power generation plant are personally informed. The authority makes its investigations by obtaining expert opinions to determine whether the conditions allow for approval. If necessary, the approval is issued by a formal decision. Specific orders relating to the construction and operation of the plant may be issued.

For larger electricity generation projects, an **environmental impact assessment** (UVP) may become relevant.

The procedures and relevant info for constructing and authorizing PV plants (probably the most important energy source for REC) are summarized for all nine Austrian states in a document produced by the Federal Association Photovoltaic Austria.

	<p>Regarding possible changes in the whole process as a result of the voltage level operation, as mentioned above, plant licensing is a separate matter and is independent of REC legislature. At the beginning of 2022 E-Control published a comprehensive guideline for the grid connection of power generation plants including a range of typical examples. The voltage-level relevant info given in REC legislature for Austria considers the electricity grid divided into seven grid levels (NL) based on the voltage level:</p> <ul style="list-style-type: none"> • NL 7: low voltage (400 V) • NL 6: transformer station from medium (30/10 kV) to low voltage (400 V) • NL 5: medium voltage (10 kV to 30 kV) <p>A local REC connects all members via grid level 6 or 7 low voltage line(s) to the same transformer station.</p> <p>A regional REC connects all members via grid level via low-voltage (grid level 6 and 7) and medium-voltage lines (grid level 5) to the medium-voltage side of the (grid level 4) bus bar of the same transformer substation. All (generation & consumer) installations have to be within the concession area of one DSO only.</p> <p>A REC can only be either local or regional. Mixed forms are not possible.</p>
	<p>Licensing authority: Not applicable, but involvement of several entities needed until being possible the REC operation.</p>
	<p>Other organizations involved in the process: Grid Operator/DSO, participating Grid Users, Local Municipalities and Environmental Authority.</p>

MORE COMPLEX PROCESS	
COUNTRY	LICENSING PROCESS DESCRIPTION
GREECE	<p>The existing legislation in this country is for 'Energy Communities', not for REC. Therefore, the existing licensing procedures are for EC, which are the same for any RES project and governed by the same entities regulating all RES market. The Hellenic Regulatory Authority for Energy is responsible for market permits (depending on project size), Grid Operators provide access to the grid, while Regional Authorities are responsible for the environmental licensing.</p> <p>Licensing procedures are mainly related by project size. EC projects are small, so there is not big overhead on environmental and market permitting effort and time. Unfortunately, the lack of grid infrastructure create long queues for grid connection. There is not one-stop-shop structure in Greece yet.</p> <p>The whole process, as for all legal forms of businesses in Greece, requires a registry at the Hellenic General Electronic Commercial Registry: https://www.businessportal.gr/.</p> <p>Depending on the voltage level, the promoter needs to apply for grid connection to different entities. For LV & MV the application is submitted to the DSO, while for HV to the TNO in the mainland. The RES projects located in the insular areas (not interconnected to the mainland's grid) the application is submitted to the DSO for all types of voltages. Note that currently there is only one DSO and TNO in Greece.</p> <p>If the voltage level is increased, a new licensing is needed.</p>
	<p>Licensing authority: Involvement of several entities in the process - National Government, Hellenic Regulatory Authority for Energy, Grid Operators and Regional Authorities.</p>
	<p>Other organizations involved in the process:</p>

MORE COMPLEX PROCESS	
COUNTRY	LICENSING PROCESS DESCRIPTION
ITALY	<p>Not provided many details about the licensing process in Italy, but it involves several entities and seems to be a bureaucratic and time-consuming process, since this aspect was pointed as a bottleneck for the REC implementation.</p> <p>On April 2020 ARERA, the authority that regulates electricity, water and heating sectors published the Consultation Document 112/2020/R/EEL/8, containing the Authority's guidelines on the regulation of economic items relating to electricity subject to collective self-consumption or sharing within the renewable energy community. The document defines the characteristics needed to activate the schemes of Collective Self-consumption and Renewable Energy Communities, the regulation model to be adopted and the procedure to follow to be accredited with other entity – GSE.</p> <p>The commissioning of the plants (built after March 2020) is held by these entities. After this stage, the REC can apply to GSE to obtain incentives and benefits deriving from sharing energy within the community.</p> <p>Incentives will not be granted for all energy produced but only to energy shared within the community and used. The process requires one of the energy producers of the REC to submit an official request to GSE and provides information regarding the subjects that participate to the REC, the identifying codes of the points of delivery for electric energy related to the members of the EC and the plants that generate energy.</p> <p>Due to bureaucracy burden, the average time for the uptake of REC is quite long.</p> <p>The plants for the production of electricity from renewable sources that constitute the REC must have a total power not exceeding 1 MW and be connected to the electricity grid through the same primary cabin.</p> <p>Licensing authority: Involvement of several entities in the process - National Government, Local Authority, and Other - Ministry of Economics Development (Mi Se), ARERA and GSE.</p> <p>ARERA is the Regulatory Authority for Energy, Networks and Environment and carries out regulation and control activities in the sectors of electricity, natural gas, water services, the waste cycle and <i>telecalore</i>. It is an independent administrative authority working to ensure the promotion of competition and efficiency in utilities and to protect the interests of users and consumers. Its functions are carried out by harmonizing the economic and financial objectives of the subjects operating the services with the general objectives of a social nature, environmental protection and efficient use of resources.</p>

	<p>It also carries out advisory and reporting activities to the Government and Parliament in matters within its competence, for the purpose of defining, transposing and implementing Community legislation. The resources for its operation do not come from the State budget but from a contribution on the revenues of regulated operators.</p> <p>GSE - <i>Gestore Servizi Energetici</i> is a public company, wholly owned by the Ministry of Economy and Finance, which promotes sustainable development in Italy by encouraging energy production from renewable sources.</p> <p>Other organizations involved in the process:</p>
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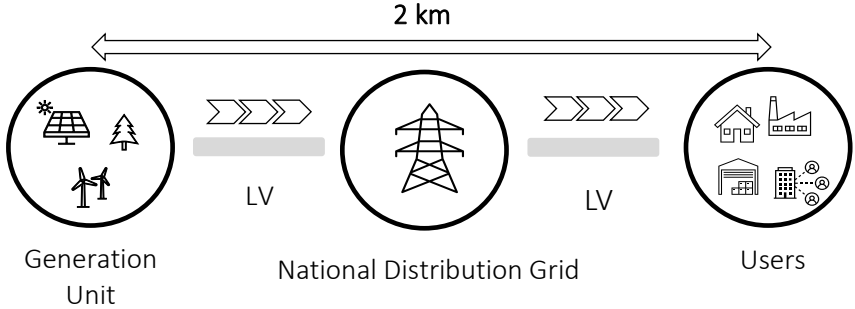
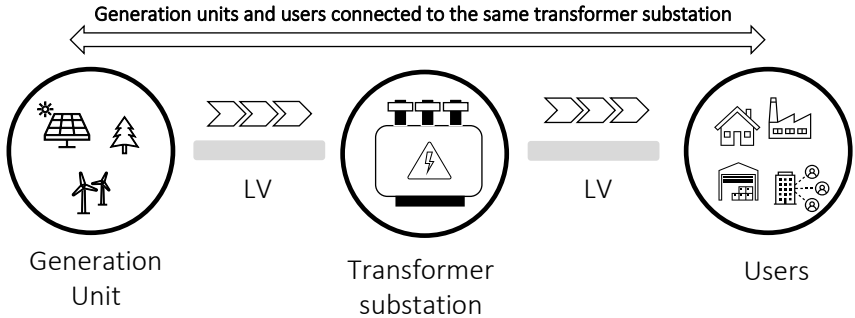
MORE COMPLEX PROCESS	
COUNTRY	LICENSING PROCESS DESCRIPTION
PORTUGAL	<p>The General Directorate of Energy and Geology (DGEG) is the authority that approves the operating license of a REC. The licensing procedures (referred in the Portuguese legislation as prior control procedures) vary according to the value of the installed power of the REC:</p> <ul style="list-style-type: none"> • If ≤ 700 W – no need of a prior notice or license, and therefore not issued any licensing or permit title. This is valid if it is not foreseen any injection of the exceeding energy in the public electric grid; • If > 700 W and ≤ 30 kW – simple communication to the licensing authority, that results in an issued title, that proves the presentation of the prior communication; • If > 30 kW and ≤ 1 MW – prior registry and request of an operating certificate, resulting in the issue of a proof of the presented registry and the mentioned certificate. The issue of this certificate also implies the carrying out of an inspection to all plant by an entity inspector of electrical installations to verify the facility's compliance with applicable legal and regulatory standards; • If > 1 MW – a production license (that defines the approved installed power and the maximum power that can be injected in the public electric grid, as well as some restrictions for the injection capacity) and an operating license (that stipulates the starting of operation of the energy generation plant, and that implies an inspection by DGEG or a certified entity through request of the licensing authority, to attest to the conformity of the installation with the terms of the production license, as well as with the applicable legal and regulatory standards. The whole procedure results in the issue of the two allowances. <p>The last 3 procedures are carried out through an electronic platform, managed by DGEG, and imply the presentation of several documents/information by the REC candidate (particularly for plants with an installed power > 1 MW), like the fulfillment of a DGEG's form, the identification of the applicant and his declaration of a regulated situation in terms of fiscal and Social Security obligations (no debts), the title of capacity reserve for energy injection in the public grid (if applicable), the main characteristics of the energy generation units (and/or energy storing facilities), identification of all members of the REC / users of the energy that will be generated, indication of the injection point in the grid and maximum power to be injected in the grid, the code of the reception point of the energy users installations associated to the generation unit(s), description of the works of REC building (including grid interconnections), tariffs applied, time schedule for the starting of operation of the energy</p>

	<p>generation unit(s), information concerning the owning or rental of the place in which will be installed the generation plant, the environmental title (with all decisions applicable to the project and their approval) or a favourable information issued by the local municipality when the project is not subject to an assessment of environmental impact, etc..</p> <p>In this licensing process, the DSO informs DGEG if the REC can be connected to the grid and installs the smart meters to monitor energy consumption/production.</p> <p>All licensing procedures are carried out through a centralized registry in an online platform (at https://apps.dgeg.gov.pt/DGEG/), managed by DGEG. These procedures are exactly the same as for self-consumption installations and do not depend on the voltage level, depending only on the installed power of the REC, as seen before. If the installed capacity at the REC exceeds by 20% the installed capacity that was licensed, the REC manager has to request a new license.</p>
	<p>Licensing authority: National Government, through DGEG – Directorate General for Energy and Geology (https://www.dgeg.gov.pt/).</p>
	<p>Other organizations involved in the process: The Portuguese DSO (E-Redes)</p>

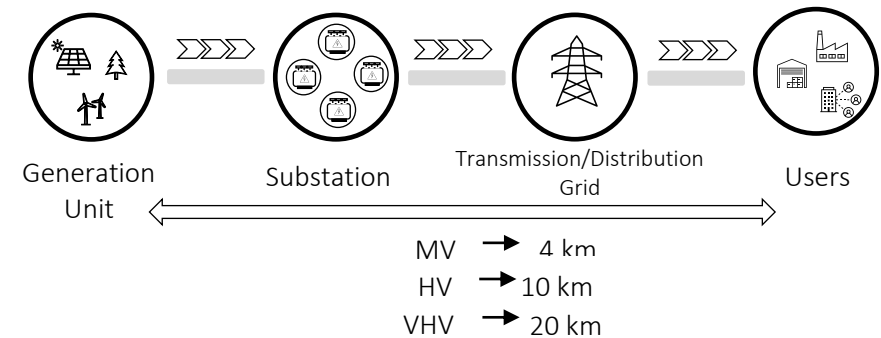
MORE COMPLEX PROCESS	
COUNTRY	LICENSING PROCESS DESCRIPTION
SLOVAKIA	In the licensing process are involved the following actors: - The Regulatory Office for Network Industries, which approves the operating license of REC; and, the DSOs, that grant access to the local grid.
	There is not any centralized registry in an online platform for this licensing process. Also not yet defined any details about possible dependence (or not) of this process on the voltage level or other parameters.
	Licensing authority: National Government, through the Regulatory Office for Network Industries (https://www.urso.gov.sk/about-urso/).
	Other organizations involved in the process: DSOs

Table A1-2.1 – Maximum distance allowed between energy generation unit(s) and energy users' installations

COUNTRY	GENERATION-CONSUMPTION DISTANCE CRITERIA
AUSTRIA	There are only restrictions for local and regional REC as mentioned in Annex 1 - Table A1-2 regarding the license process.
FINLAND	According to the current legislation (Decree 1133/2020, in its article 3), there is a limitation: the electricity accounting locations of the members or shareholders of REC shall be within a single real estate or group of real estates which are supplied by a single electric connection. In fact, production and consumption need to be in the same location. In the forthcoming update of the Electricity Market Law, some cooperation between different real estate developments in the immediate vicinity may be enabled.
FRANCE	Due to no specific legislation for REC (in spite of existing legislation that foresees the possibility of implementing this type of energy community), the general regulatory framework for collective self-consumption applies for REC. Additional more precise elements for the REC definition and implementation, that is expected that will be included in the new decree awaiting validation by the State Council, will help to clarify this aspect.
GREECE	The proximity between energy production and energy consumption is defined by the locality. The RES project should be implemented in the same region (NUTS 2 level) where the headquarters of the 'energy community' are located.
ITALY	The current legislation stipulates that boundary is PODs and systems under the same portion of the medium voltage network (having POD the meaning of Point of Delivery Point for interconnection on the Transmission Provider's System where capacity and/or energy are made available to the end user).
LUXEMBOURG	No distance indicated in the existing legislation, but the REC has to be in one specified locality, behind a specific transformer station and in the area of the same grid operator. This may be subject to change in a new law project.

COUNTRY	GENERATION-CONSUMPTION DISTANCE CRITERIA
PORTUGAL	<p>There are requisites of proximity between the energy generation unit(s) of the REC (UPAC) and the installations that will consume the produced energy (IU). It must be verified one of the following conditions:</p> <p>a) Where, in the case of UPAC connected to the electricity distribution networks in low-voltage level (LV), the UI and UPAC do not distance themselves more than 2 km geographically</p>  <p>or, alternatively, are connected in low-voltage level to the same processing station (PT).</p> 

b) They are connected in the same substation, in the case of UPAC linked to RND (National Distribution Grid) and RNT (National Transmission Grid), provided that the geographical distance between the UPAC and the IU of 4 km is not exceeded in the case of connection in MV (medium-voltage), 10 km on the connections in HV (high-voltage) and 20 km on the connections in VHV (very high-voltage).



Besides the mentioned cases, the proximity relationship can also be measured on a case-by-case basis by the licensing authority (DGEG), taking into account relevant technical elements and energy optimisation criteria, in the context of the provision of essential public services or the development of territorial strategies at the municipal or regional level.

COUNTRY	GENERATION-CONSUMPTION DISTANCE CRITERIA
SLOVAKIA	Not yet defined.
SPAIN	Not yet defined for REC. So far, a distance of 500 m, as per Royal Decree 244/199 stipulated for the self-consumption activities should be verified.
SWEDEN	Not applicable, by the same reasons already mentioned concerning the licensing process.
UNITED KINGDOM	Not applicable, by the same reasons already mentioned concerning the licensing process.
NETHERLANDS	In spite of this country not having specific legislation on REC, due to its dense population distance is not an issue.

Table A1-2.2 - Energy sharing with members of the REC

COUNTRY	ENERGY SHARING
AUSTRIA	<p>The type of energy sharing depends on how the participating grid users agreed to allocate it. According to the existing legislation [EIWOG §16e (3)], “the grid operator shall allocate the static or dynamic share of the generated energy, agreed between the participating grid users, to allocate it (note: the self-consumption quantities thus determined) to the respective installations of the participating grid users”. It also says that “If dynamic shares are used, these may be reallocated between the participating grid users on a quarter-hourly basis [not real time]. The values shall be determined in accordance with the following provisions:</p> <ul style="list-style-type: none"> the allocation shall be made per quarter hour and shall be limited to the energy consumption of the respective system of the participating network user in the respective quarter hour; the static or dynamic share of the generated energy allocated to the metering point of the participating grid user's installation shall be recorded separately and shown on the invoice”.
FINLAND	<p>It is used a dynamic energy sharing coefficient for electricity production. Produced electricity is first used as real estate electricity. Next, possible surplus electricity is distributed to dwellings participating in the balancing mechanism. Each dwelling gets a share of produced electricity based on an hourly balancing calculation where surplus is subtracted from the hourly measured consumption by the user. If after this allocation there is still surplus electricity, it will be fed to the local distribution network and the housing association gets a payment from its electricity seller.</p> <p>Datahub, the centralised information exchange system for the electricity retail market (https://www.fingrid.fi/en/electricity-market/datahub/ (in English)), went live on February 2022. It compiles information on all electricity accounting points into one system. When the balancing mechanism will be integrated into the Datahub in the future, all financial benefits from surplus electricity can be directly allocated to the members / shareholders instead of the housing association. This allocation method may be chosen when the housing association establishes the energy community.</p>
FRANCE	<p>For the moment, the current legislation has not this type of details. The general regulatory framework for collective self-consumption applies for REC. Additional more precise elements for REC, that is expected that will be included in the new decree awaiting validation by the State Council, will help to clarify this aspect.</p>
GREECE	<p>The energy-sharing coefficient is fixed between the members of the EC and can be changed every 4 months by submitting the new to the DSO. The energy sharing is performed by a net-metering scheme - not in real time.</p>

COUNTRY	ENERGY SHARING
ITALY	Energy sharing is computed on hourly base. The self-produced energy is used primarily for instant self-consumption on site or for sharing with members of the community. Any surplus energy may be accumulated and sold also through purchase and sale agreements of renewable electricity, directly or through aggregation. The members of the community use the distribution network to share the energy produced, and also by resorting to storage.
LUXEMBOURG	Energy sharing can be done on different levels: by priority, by percentage or by pro rata.
PORTUGAL	The energy sharing coefficient can be fixed or dynamic, depending on the decision of the REC members. The REC manager and members can access the data in real time. The REC management software connects with the software of the Distribution System Operator.
SLOVAKIA	These details are not yet defined in the existing legislation.
SPAIN	Not yet defined for REC in the existing legislation.
SWEDEN	Not applicable.
UNITED KINGDOM	Not applicable.
NETHERLANDS	No information available. It will be addressed in new legislation.

Table A1-2.3 - Other relevant aspects like equipment restrictions, monitoring/inspections and mandatory insurances

COUNTRY	OTHER RELEVANT ASPECTS (equipment restrictions, monitoring/inspections and insurances)
AUSTRIA	<p>As already explained, generation plant licensing is a separate matter and is independent of REC legislature. E-Control published technical and organizational rules for network operators and users, but the metering device can only be provided by the grid operator.</p> <p>Regarding installation inspections and further electro-technical regulations are also a separate matter and independent of REC legislature. The need for reoccurring inspections of generation plants differs for the technologies and is given whether or they are used in a REC. Relevant legislation for technical requirements to operate a generation plant are e.g. the Electrical Engineering Order (Elektrotechnikverordnung) 2020, the Act on Electrical Engineering (Elektrotechnikgesetz) 1992 or the Electrical Protection Ordinance (Elektroschutzverordnung) 2012.</p> <p>General monitoring through smart meters: The performance of generation plants in REC are automatically monitored due to the use of smart meters (quarterly hour values).</p> <p>Workplace-relevant inspections: The Electrical Protection Ordinance (Elektroschutzverordnung) 2012 – ESV 2012 applies to workplaces, construction sites and external workplaces within the meaning of the ASchG. It states that electrical systems and equipment must be checked regularly. The intervals between recurring tests are generally five years. The deviating minimum test intervals are:</p> <ul style="list-style-type: none"> • ten years in areas in which the systems and equipment are only exposed to very low loads, e.g. in offices or in commercial or service companies where there is no unusual load; • three years in areas with a risk of explosion; • one year on construction sites, in areas with a risk of explosion and additionally at least exceptional stress, and in areas of surface extraction of mineral raw materials; • six months for underground works and underground mining. <p>Tests may only be carried out by qualified electricians who have knowledge of testing comparable systems and equipment. More info is provided by the Austrian Labour inspectorate and in the ordinance itself.</p> <p>In Austria it is not mandatory an insurance for REC, but it is usual business practice to ensure installations to mitigate risks.</p>

COUNTRY	OTHER RELEVANT ASPECTS (equipment restrictions, monitoring/inspections and insurances)
FINLAND	<p>It were not pointed any restrictions to the equipment that can be installed in a REC, besides that the maximum allowed capacity is 1 MVA. It should be emphasized that this country has a full roll-out of smart metering since many years ago, which enables adequate measurement (hourly measurement and remote meter reading). Also, the Finnish Energy - the industry association for the energy industries, has published common technical specifications for equipment to be connected to the distribution networks.</p> <p>Concerning possible monitoring/reviewing/inspection of the REC installations, this is not applicable for Finland. Recommendations only exist for safe usage.</p> <p>It is also not mandatory an insurance for REC.</p>
FRANCE	<p>No details in the current legislation concerning these aspects. Additional more precise elements for REC, that is expected that will be included in the new decree awaiting validation by the State Council, will help to clarify these aspects.</p>
GREECE	<p>There are not any restrictions to the equipment. No pre-approved list of equipment exists. Concerning possible monitoring/reviewing/inspection of the installations, no relevant provision about this aspect was included in the national legislation. Also, no mandatory insurance is applicable here.</p>
ITALY	<p>No specific norms on restrictions to the equipment that can be installed in a REC are available by now. Regarding the monitoring/inspection matters, the control is carried out through the following steps:</p> <ul style="list-style-type: none"> - GSE monitors the evolution of the energy subject to the payment of general system charges and tariff components taking into account the possible trajectories of growth in self-consumption configurations and the evolution of total requirements of the different components; - Research company on Energy System - RSE S.p.A. monitors the technical and economic effects of configurations and their interactions with the electrical system, taking into account the possible effects on the costs of dispatching and network service allocation policies; - The results of the monitoring activities are transmitted and made available electronically on an annual basis to the Ministry of Ecological Transition and ARERA for adoption of the acts and measures of their respective competence and to Region and municipalities territorially competent to improve the level of knowledge of the state of realization of the configurations done. <p>There is no mandatory insurance for REC. As for Insurance Policies, specific green energy insurance products are not yet available although policies designed from insurance companies to protect green investments are part of the category "all risks".</p>

COUNTRY	OTHER RELEVANT ASPECTS (equipment restrictions, monitoring/inspections and insurances)
LUXEMBOURG	<p>None of the analysed aspects are known that exist or be taken into consideration. Therefore, no restrictions to equipment or need of monitoring/reviewing/inspection of installations apply, as well as it is not mandatory an insurance for this type of projects/plants.</p>
PORTUGAL	<p>The installing entity must submit proof (on the electronic platform managed by DGEG) that the equipment installed at the UPAC (energy production unit for self-consumption) is certified, and its certification is granted by a certification body accredited for the certification in question by the Portuguese Institute of Accreditation, I.P. (IPAC, I.P.), or by another national accreditation body, under the terms of Regulation (EC) no. 765/2008.</p> <p>Equipment must meet the requirements defined in the European standards applicable to each type of equipment, published by CEN - European Committee for Standardization and by CENELEC - European Committee for Electrotechnical Standardization. If European standards have not been established and published, each type of equipment must meet the requirements of international standards published by ISO/IEC - International Organization for Standardization and the International Electrotechnical Commission.</p> <p>However, whenever there are no applicable European standards, the equipment must conform to the Portuguese technical standards or specifications relating to the equipment in question, which are published by the Portuguese Quality Institute, I.P, with DGEG having a fundamental role in this verification: a) controlling the issuance of certificates for equipment supplied by manufacturers, importers, suppliers, their representatives and installing entities; b) creating and maintaining a database of standard elements that integrate the equipment for the various UPAC solutions and management systems; and, c) creating and maintaining a list of certified equipment on its website.</p> <p>The current legislation foresees an inspection of the REC installations every 8 years.</p> <p>For the installation of UPAC, technical qualification requirements are necessary, which vary according to the power capacity of the system to be installed. For installations with an installed capacity greater than 700 W, the entity installing electrical installations for private services or technicians responsible for carrying out electrical installations must comply with the terms of Law No. 96/2017, of 10 August.</p> <p>As already mentioned, before installing the equipment the installing entity or the responsible technician must ensure that the equipment to be installed is certified for installation in the electrical network, otherwise the installation will not be approved to start operating.</p> <p>The current legislation obliges to the installation of some meters as explained in Table 7. When the self-consumer has not adequate metering devices in each IU, the grid operator proceeds with its installation until 4 months after request and with an agreed cost.</p>

	<p>The Portuguese legislation also obliges that for the activities of production, storage and self-consumption, it is necessary to take out insurance for the Production Unit that guarantees the civil liability of the holder. Therefore, this insurance is mandatory for REC.</p> <p>The insurance contract has a mandatory minimum capital, for each annuity, regardless of the number of claims occurred and the number of victims, of an amount to be fixed by order of the member of the Government responsible for the energy area, after consultation with the Supervisory Authority for Insurances and Pension Funds, depending on their nature, size and degree of risk automatically updated on March 31 of each year, according to the consumer price index of the previous calendar year, without housing on the mainland, published by the National Statistics Office.</p>
SLOVAKIA	These details are not yet defined in the existing legislation.
SPAIN	Not yet defined for REC in the existing legislation.
SWEDEN	Not applicable.
UNITED KINGDOM	<p>There are no legislative or regulatory restrictions “per si” imposed to equipment though RES projects in the UK have traditionally focused on small to medium-scale solar PV and onshore wind. The removal of the FiT has prompted a degree of diversification in the sector and increasingly community energy groups are seeking out collaborative opportunities with local authorities or large businesses, pursuing energy service provision and EV charging and other energy-related opportunities.</p> <p>Concerning possible monitoring/reviewing/inspection of the installations involved, it is not known any control of this type via central government and no legal requirement specific to REC/EC is in place. Also, no need of mandatory insurance for these projects.</p>
NETHERLANDS	<p>If needed a large connection to the grid (3 x 80 A) this implies on average a capacity of 50 kW peak for the REC plant; if capacity exceeds 50 kW peak it is necessary to apply for a larger connection with the grid operator.</p> <p>Also the installers of the needed equipment for REC must be certified in accordance with CENELAC & IEC - International Electro technical Commission. All installations need to be connected according to the technical codes “netcode”. Reviewing of the inspection by the system operator is also recorded in the technical codes.</p> <p>It is mandatory 2 insurances - company liability and director’s liability.</p>

10.2.3. Facilitating instruments for REC implementation

Table A1-3 – Existing facilitating instruments by country

COUNTRY	TYPE OF INSTRUMENTS	DESCRIPTION
AUSTRIA	ECONOMIC	<p>The taxes and tariffs that are applied to REC operation depend on the type of energy community set up (association, commercial or industrial cooperative, or limited liability company (GmbH)), but in general, it is foreseen that these ones will be kept short for REC through:</p> <ul style="list-style-type: none"> • Grid usage charge reductions; • Exemption from EAG subsidy contribution; • Exemption from electricity levy; • Possible exemption from (at least parts of the) grid for a limited period. <p>For these facilitating instruments, please see the following details:</p> <p>Grid usage charge reductions for REC: According to the Grid Usage Charge Ordinance, issued on 3rd November 2021, the energy price part of the grid usage charge for participating grid users of a REC in relation to that consumption which is covered by allocated fed-in energy of a generation plant shall be reduced: (i) in the local area (remark: REC on a local level), for grid levels 6 and 7, by 57%; (ii) in the regional area (remark: REC on a regional level), for grid levels 6 and 7, by 28%, and for grid levels 4 and 5, by 64%. Eventually this will also imply a decrease of the power price part of the grid usage charge for the members of the REC, as self-consumption from the power supply of the REC (per ¼ h) lowers the superimposed power drawn from the public grid to the corresponding REC member.</p> <p>The EAG subsidy contribution (EAG-Förderbeitrag), previously green electricity subsidy contribution (Ökostromförderbeitrag), no longer applies to energy from generation plants allocated to members of the REC for own consumption, and the electricity levy no longer applies to electricity generated by means of photovoltaics and consumed in the REC.</p>

		<p>Grid fees fully apply to electricity storage facilities that are installed within the defined/relevant public grid area of an energy community for both “storing electricity produced from generation plants owned by its members or by the community itself” and “stored electricity that is fed into the grid area for self-consumption purposes of its members (e.g. for electric charging of vehicles via the public grid). There is currently an opportunity to become exempted from (at least parts of the) grid fees for a limited period, if the REC owing or operating the storage facility applies for becoming a “Regulatory Sandbox” project [EIWOG §58a 2010, GWG §78a].</p> <p>Other fiscal benefits: Not foreseen.</p> <p>Financial support schemes:</p> <p>There are financial support schemes for green energy generation plants:</p> <ul style="list-style-type: none"> • As up-front investment grants, or • As ongoing, variable market premiums for electricity production to compensate for the production costs of electricity from renewable sources and the average achievable market price for electricity. <p>In the 1st category of support, it must be included the following ones:</p> <p>Federal up-front investment grants for Solar PV</p> <ul style="list-style-type: none"> • One-off investment grants, which are one-time grants for PV and electricity storage systems. In the case of PV systems, each individual kWp is supported with a certain subsidy rate (€/kWp), and in the case of electricity storage systems, each individual kWh is supported with a certain subsidy rate (€/kWp or €/kWh). They are applicable for new PV systems/extensions up to 1,000 kWp and for electricity storage up to 50 kWh (minimum 0.5 kWh/kWp). <p>Further federal investment grants for renewable energy and green gas generation plants:</p> <p>One-off investment grants for</p> <ul style="list-style-type: none"> • new construction of smaller wind turbines (20 kW – 1 MW) with an annual funding volume of one million euros; • small hydropower plants < 2 MW with an annual funding volume of five million euros; • plants for the conversion of electricity into hydrogen or synthetic gas > 0.5 MW, provided they are powered only by renewable electricity and used only for the production of renewable gas with an annual funding volume of 40 million euros.
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		<p>Provincial one-off investment grants</p> <ul style="list-style-type: none"> It is likely that some states also in future offer one-off investment grants for PV plants, on top to the federal investment grants. More details can be found in https://pvaustria.at/landesfoerderungen It is unclear if this will also apply to wind power plants. <p>In all cases, the amount of the investment grant may not exceed 45% of the environmentally relevant additional costs.</p> <p>Municipal one-off investment grants</p> <ul style="list-style-type: none"> Some municipalities offer investment grants for private PV plants in the height of several 100 euros on top to the previous mentioned grants. More details in https://pvaustria.at/landesfoerderungen <p>In all cases, the amount of the investment grant may not exceed 45% of the environmentally relevant additional costs.</p> <p>Regarding the 2nd category of support, in the EAG legislation it is stipulated that “electricity generated but not consumed by a renewable energy community is eligible for a feed-in premium, if all applicable conditions are fulfilled, up to a maximum of 50% of the total electricity generated by that community. The feed-in premium applies to the quantity of electricity sold by the renewable energy community and fed into the public electricity grid. No feed-in premium applies for electricity consumed by or allocated to the community's members or general partners.”</p>
	<p>TECHNICAL SUPPORT</p>	<p>Existing support means:</p> <ul style="list-style-type: none"> There is a federal “one-stop shop” for and facilitator of uptake of energy communities named the “Austrian coordination office for energy communities”, and that has the following tasks: <ul style="list-style-type: none"> To produce advice on the legal form of the energy community To develop a catalogue of typical energy communities To develop a subsidy programme To carry out its work in coordination with the Ministry of Climate (BMK), the regulatory authority (E-Control) and the regional governments To develop standard contracts To produce guidelines for founding a community To be responsible for a Hotline To develop information campaigns.

		<ul style="list-style-type: none"> A freely cost-benefit tool, produced by the “Austrian coordination office for energy communities”, is also available for calculation of the monetary benefits for members of a possible/planned REC, comparatively to the situation in which they are not part of an energy community.
FINLAND	ECONOMIC	<p>No taxes or tariffs apply to REC operation.</p> <p>The housing association and dwelling owners buy less electricity through the grid. This enables them to avoid the following costs: costs of electricity procured and the corresponding electricity tax and distribution charges. There is no time limit for these benefits.</p> <p>The DSO is allowed to charge for the distribution and to take a service fee of maximum 0.07 c/kWh. All DSOs do not charge distribution chargers.</p>
		<p>Other fiscal benefits: Not foreseen.</p>
		<p>Financial support schemes:</p> <p>Business Finland provides energy aid subsidies for municipalities and companies. This funding (Energy aid) can be granted for investment and investigation audit projects that promote the production and use of renewable energy, energy saving, more efficient production or utilization of energy, or otherwise contribute to a low-carbon energy system in the long term. The aid must have a significant impact on launching the project.</p> <p>Energy aid is funding that is paid to organizations based on the reported actual costs. The investment cost of the project must be at least EUR 10,000, and there is no upper limit on the size of the project. The funding is provided as an aid and does not need to be repaid. Aid is not granted for projects launched before the aid decision is made. The aid can be granted to cover costs arising as of the date of the financing decision at the earliest. It requires that the organizations that apply to this financing scheme should verify the following conditions: (i) a renewable energy production, energy saving, or energy audit project that has not yet been launched; (ii) the size of the organization does not matter; (iii) the organization is a community or company that is not a farm, is not active within the framework of fisheries or aquaculture products, is not a housing company or residential property, and does not receive funding from the state budget.</p>

		Housing associations may benefit of other energy subsidy from the Housing Finance and Development Centre of Finland (ARA) for energy efficiency projects. However, the requirement for energy efficiency improvements means, that an investment in RES alone does not necessarily provide eligibility for the subsidy.
	TECHNICAL SUPPORT	<p>It was not reported any specific action for REC promotion.</p> <p>Only referred that the installation of solar power in single-family houses as well as housing associations has been promoted by a multi-year information campaign “Aurinkosähköä kotiin”, but this is not specific of REC.</p>
FRANCE	ECONOMIC	The taxes and tariffs that are applied to REC operation are the same as for any other company active in the market. Therefore, there is not any reduction or exemption of these taxes and tariffs for REC.
		Other fiscal benefits: Not foreseen.
		<p>Financial support schemes:</p> <p>Possible subsidies for the implementation of REC in France depend on the region in which the energy community will be located. Several regions have implemented specific subsidies (investment subsidies and subsidies for technical and legal studies) initially targeted at “citizen energy projects”. Eligibility criteria are mostly relevant for REC, even though they have not been targeted explicitly so far.</p> <p>Legal uncertainty exists however considering the ability to cumulate regional support schemes with national support schemes (such as feed-in tariffs).</p> <p>No details about these financial support schemes were given.</p>
	TECHNICAL SUPPORT	Not reported the carrying out of any activity of this type , namely the production of documents such as internal regulations, tender specifications, contracts, guides, etc., to facilitate to start the implementation of REC.

GREECE	ECONOMIC	<p>There are some costs reductions associated to ‘energy communities’ implementation:</p> <ul style="list-style-type: none"> • Exemption or discount of administrative costs (fees, guarantee letters). • Exemption from the obligation to pay the annual maintenance fee for production license. • Reduction (of 50%) in the amount of letters of guarantee required during licensing. • Minimum capital for granting a supply license: € 60,000. <p>There are also incentives for EC participation in the electricity supply market:</p> <ul style="list-style-type: none"> • Competitive bidding process is not required for installations below 6 MW (Wind) or 1 MW (PV) (phase out). • Possibility to install the RES stations of EC in the congested grid. • It is allowed to install RES stations for electricity generation by EC to meet the energy needs of their shareholders with virtual energy net metering application (and for non-EC members). Specifically for virtual energy offset, VNM can reach 3 MWp of installation now. • Special conditions for EC operating as E-Charging Infrastructure Operators. • Special provisions for EC that can license thermal power stations for district heating. • Priority for production license, connection offer and approval of environmental conditions for power stations (if there is a territorial overlap and are submitted in the same round of applications (phase out)).
		<p>Other fiscal benefits: Not foreseen.</p>
		<p>Financial support schemes: Not reported.</p>
	TECHNICAL SUPPORT	<p>Not official templates of documents are available.</p>

		<p>CRES, within its role as a promoter of ECs, has produced a step-by-step guide for the establishment of an EC. CRES also facilitates information exchange, transfer of experience and best practices as well as proposals for new financial supporting measures</p>
ITALY	ECONOMIC	<p>Tariffs applied are 100 €/MWh for collective self-consumption configurations, 110 €/MWh for renewable energy communities, 9 €/MWh compensation of tariff components and those related to the cost of energy that are not technically applicable to shared energy as instantly self-consumed energy.</p> <p>The energy shared between the members of the Energy Community in fact does not pass through the national distribution network but is self-consumed on site. Electricity not self-consumed or stored can be sold to the market.</p> <p>The incentive for REC is valid for a period of 20 years and is managed by the Energy Services Manager (GSE). On all the energy produced in excess by the photovoltaic systems of the energy community and fed into the national distribution network, the members of the REC will be able to benefit from the dedicated GSE withdrawal or the sale to the market. In the latter case, the price applied will be the one corresponding to the time zonal which usually stands at around 50 €/MWh</p>
		<p>Other fiscal benefits:</p> <p>Tax deduction of 50% for the installation of a photovoltaic system even if this is intended for initiatives of collective self-consumption and energy community (ECOBONUS), it is also possible to have a maxi tax deduction of 110% (SUPERBONUS) if the plant production capacity does not exceed 20 kWp and the expenditure for realization not exceeding € 96,000.</p>
		<p>Financial support schemes:</p> <p>With a fund for the loans necessary for the construction of new renewable power through the Energy Communities, the PNRR allocates an additional € 2.2 billion to municipalities with a population of less than 5,000 inhabitants.</p>

	TECHNICAL SUPPORT	<p>In different regional contexts local regulatory tools were designed to favour the spread of energy communities. The pioneer region was Piedmont where in 2018 there was the first law on Regional energy communities, well before RED II directive.</p> <p>Following Piedmont Region example, Puglia, Sardinia, Campania, Calabria and Sicily region introduced specific regulations to promote the implementation of REC. Lately in 2022, Lombardia, Lazio, Abruzzo, Emilia Romagna introduced norms to favour the spread of REC in order to boost energy transition and tackle energy poverty.</p> <p>Scientific Institutions like ENEA has recently published guidelines to Renewable Energy Community, and GSE is helping Local municipalities to promote the implementation of REC through its consultancy services.</p>
LUXEMBOURG	ECONOMIC	<p>In general, the usual electricity market taxes and tariffs apply to REC operation. However, tariff exemption for net usage in some cases are foreseen, as well as tax exemption for "Mécanisme de compensation". In the case of both exemptions, electricity consumers reduce to approximately 50% of the costs associated to the mentioned tariff and tax. These exemptions have no time limit.</p>
		<p>Other fiscal benefits: Not foreseen.</p>
	TECHNICAL SUPPORT	<p>The Grid Regulating authority produced standard contracts between REC and grid operators.</p> <p>Klima-Agence is about to prepare document models for internal regulation.</p>
NETHERLANDS	ECONOMIC	<p>Various taxes apply to REC operation, but there is a renewable energy subsidy: Subsidy scheme cooperative energy generation (SCE) (rvo.nl)</p>

		It is also possible the VAT return for solar panels .
		Other fiscal benefits: Not foreseen.
		Financial support schemes: There are not specific subsidies for the implementation of REC, existing only support for a restricted number of innovative projects (demonstration and pilot projects).
	TECHNICAL SUPPORT	RVO has been supporting the publication “Hier opgewekt – Electricity generated here”.
PORTUGAL	ECONOMIC	Grid access tariffs apply to REC operation.
		REC are exempt from payment of the charges related to general economic interest services (CIEG, general economic interest cost) which are usually charged with the grid access tariff and represent a large portion of energy bills.
		Other fiscal benefits: Not foreseen.
		Financial support schemes: <p>Within the frame of the Portuguese Recovery and Resilience Plan (PRR), the operationalization of any supporting initiatives is carried out through the Environmental Fund (FA), that aims to support environmental policies that foster sustainable development, contributing to the achievement of national and international objectives and commitments, including those relating to climate changes, water resources, air quality, wastes and nature and biodiversity conservation. Such support is given through financing to entities, activities or projects that, among others, help in mitigating climate changes, by actions that contribute to the decarbonisation of the economy and, thus, to the achievement of targets, namely in the field of decarbonisation, renewable energy sources and energy efficiency.</p> <p>Since 14th June of this year and until the end of October 2022 (and probably this limit date will be extended), the FA supports the financing of measures that promote the electricity production based on renewable energy sources on a system of collective self-consumption (CSC) or Renewable Energy Communities (REC). The measures/actions to be supported should lead on</p>

		<p>average to at least 30% reduction in primary energy consumption in the buildings benefited and contribute to strengthening capacity in self-consumption and/or REC in the residential, central public administration and services sectors by at least 93 MW (35 MW + 28 MW + 30 MW, respectively).</p> <p>They can apply to this Call, natural persons and collective legal entities that be promoters of CSC and/or REC constituted accordingly to the Decree-Law 15/2022 of 14th January, as well as self-consumption management entities (EGAC) that may represent the CER and the CSC. Therefore, it is intended to support existing Residential Buildings (single-family or multi-family dwelling buildings or their autonomous fractions) in which are implemented the CSC or REC, Buildings of Central Public Administration and Trade and Services Buildings. They are included in the mentioned intervention typologies the expenditure costs related to studies and/or consultancy and the acquisition of software and/or smart platforms. The installation of the renewable energy production units may be carried out in the buildings where are located the consumption points, and/or in locations that verify the proximity condition expressed in item 3.6 of this report.</p> <p>The foreseen grants are 10 M€ (in total) for each typology (Residential / Central Public Administration / Trade and Services Buildings), being the co-funding percentage of 70%, 100% and 50%, respectively, with a maximum limit of support of 500,000 € per CSC and REC (and a maximum limit of support per generation unit, including energy storage, of 200,000 €). The total of expenditure costs related to studies and/or consultancy cannot be more than 10% of the total eligible investment, the total of expenditure costs related to software or smart management platforms cannot be more than 25% of the total eligible investment, and the projects must be implemented in a time schedule of 12 months in maximum (for Residential and Trade and Services buildings) and 24 months in maximum (for Central Public Administration buildings).</p>
	TECHNICAL SUPPORT	The technical support to REC projects is given by ADENE and DGEG , in the terms described in item 3.7 of this report.
SLOVAKIA	ECONOMIC	No reported cost reductions (taxes, tariffs or other) associated to REC implementation.
		Other fiscal benefits: No.
		Financial support schemes: No.

	TECHNICAL SUPPORT	No actions reported.
SPAIN	ECONOMIC	No reported cost reductions (taxes, tariffs or other) associated to REC implementation.
		Other fiscal benefits: No.
		<p>Financial support schemes:</p> <p>As a result of the publication of the Order TED/1446/2021, of 22nd december, it was approved in Spain the regulatory bases for the concession of helps through a support program to singular pilot projects of energy communities (Program CE Implementa), in the frame of its Recovery, Transformation and Resilience Plan. According to this Plan, a €100M budget is foreseen to promote EC development.</p> <p>ECs will access funds within the rest of the Plan (cross-cutting approach). Specifically for the “CE Implementa” Program, there is a 40 M€ grant package for pilot applications, that are already being assessed (10 M€ for projects of small size (< 1 M€) + 30 M€ for bigger projects (> 1 M€)). This program is managed by IDAE.</p> <p>The pilot projects supported by this Program should involve energy communities that encourage the participation in the energy sector of actors not traditionally involved in it and include one or more of the following actions: electrical renewable energy, thermal renewable energy, energy efficiency, sustainable mobility and demand side management.</p> <p>Besides the mentioned multi-component character of the ECs, the projects are also evaluated by their cross-cutting aspects (capability building or promotion, apart project implementation) and other aspects like type of organizations and sectors involved, level of innovation, etc.. They should also promote aspects like social innovation, inclusion of vulnerable consumers, type of participants, employment, use of the value chain, social and gender impact and development in Municipalities of demographic challenge and fair transition.</p> <p>The conceded grant or non-repayable subsidy for each of these projects may be in maximum 1 M€ per project.</p> <p>It should be emphasized that until now and as a result of the first of two calls were submitted to this “CE-Implementa” Program 60 projects and selected a total of 45, involving more than 2,600 participants (individuals, SME and local entities) and a total investment</p>

		of 15 M€, being 51% multi-component projects, more than 53% located in Municipalities of demographic challenge, 16% reaching to address the energy poverty subject through the inclusion of vulnerable consumers among its partners, almost 42% with gender equality plans as part of its governance, and in general with a strong link to the territory (in terms of fixing population, proximity distances, local employment and benefits for the environment).
	TECHNICAL SUPPORT	Several Guides for promotion of REC and how to give the first steps for their creation were produced by different entities (IDAE, Provincial Council of Barcelona, Provincial Council of Valencia, Regional Government of Navarra and Council of the Region of Osona).
UNITED KINGDOM	ECONOMIC	There are no taxes or tariffs applied exclusively to REC and therefore there are no national tax or tariff exemptions for REC though reductions in business rates and financial support are available for specific projects in particular locations (e.g., the Welsh Government Energy Service is able to offer advice and some financial support for particular REC projects).
		Other fiscal benefits: No.
		Financial support schemes: There are no REC-specific national subsidies . After the Feed-in Tariff was scaled back and eventually cut. The Smart Export Guarantee (SEG) was implemented which offers a much lower payment rate for small scale electricity generators who sell their energy back to the grid . The SEG is open to any small generator and not just REC . As described above, in some locations subsidies and grants are available to support the implementation of REC . In Scotland , Local Energy Scotland and in Wales , the Welsh Government Energy Service, are funded by their respective governments to support the creation of REC which includes elements of grant and loan funding . There is no UK-wide programme of subsidy.
	TECHNICAL SUPPORT	No actions reported.

10.2.4. Barriers to REC implementation identified by country

Table A1-4 – Barriers to REC implementation

Country	Countries <u>with</u> REC Legislation TYPE OF BARRIER
AUSTRIA	<ul style="list-style-type: none"> • Smart meters – putting into operation / “opt-in” (active consent to the transmission of quarter-hourly values). • Complexity as entry barrier – How to start? (Which type of energy community/collective action is suitable? Which regulations are relevant? Despite the existing legal framework, initiators of collective actions are often overwhelmed or confused by the complexity of these regulations and do not know where to start). • Creation of REC in general: <ul style="list-style-type: none"> - PV modules: Sellers market, due to high demand - installers availability (due to long order lists) and equipment supply (due to long delivery times); - IT processes on the DSOs side (multiple generation plants per REC); - Non-availability of professional communication material; - 50% market premium or subsidy (REC is penalized in comparison to other green electricity generation, in which the subsidy is 100% of the energy generated and fed to the grid); - Ensuring competition and price transparency; - Complexity as entry barrier 2/3 – Finding your energy community; - Complexity as entry barrier 3/3 – Information on network area. • Specific grid connection barriers: <ul style="list-style-type: none"> - Need of network operators to speed up the processes, as it often takes too long for applicants to receive feedback on the examination of a grid connection option / Some lack of transparency and fees which are also charged where there are still different legal opinions (disputes); - Grid connection access as a barrier to an accelerated expansion of green electricity, also due to used communication ways (currently via phone and forms), instead of digital options; - Important IT processes still have to be adapted on the grid operator side: Though REC with one or more generation plants can be established and put into operation, there is currently a transitional solution for the operation of REC with multiple generation plants. It requires that participants be assigned to one specific plant. As soon as the necessary IT processes are fully implemented, already existing REC will automatically be transferred to the intended regular operation.

FINLAND	<ul style="list-style-type: none"> Enabling the formulation of energy communities is voluntary for the DSOs at the moment, meaning that energy communities are not necessarily possible in all distribution networks.
FRANCE	<ul style="list-style-type: none"> Not clear whether there will be a “licensing” process regarding the REC status (in spite of being not known yet the main bottlenecks). Otherwise, REC need to fulfill the same licensing (permitting) processes relevant for the different activities (RES generation, sharing, selling, etc.), regardless of the type of entity. Grid connection barriers - grid connection costs can vary massively between different projects and regions, and, the process can be quite lengthy and rather complex, especially for REC managed by local citizens.
ITALY	<ul style="list-style-type: none"> Bureaucratic procedures and time-consuming administrative activities, that hold back the uptake of REC. A poor knowledge of financial benefits associated to REC.
LUXEMBOURG	<ul style="list-style-type: none"> Understanding of the REC principles. Lack of typical articles of association (statutes).
PORTUGAL	<ul style="list-style-type: none"> Some articles of the existing legislation are transparent, but others are complicated to understand how the implementation occurs. (For instance, it is not clear if REC has to pay a deposit to use the grid or what VAT will be applied to the energy bill, and what documents have to be delivered for REC licensing process). Grid connection barriers: <ul style="list-style-type: none"> Mobi-e – This entity manages the grid for electric vehicle charging stations, so it is not clear how REC can offer the service of EV charging to their members; The investments to be made by the DSO (E-REDES) may not be aligned with the investments that will be necessary to implement REC projects.
SLOVAKIA	<ul style="list-style-type: none"> No details provided by the licensing body and DSO yet. Grid connection barriers – Low capacity of the local grids and longevity of the granting process.
SPAIN	<p>As a result of the public consultation referred concerning the production of legislation on REC in Spain, were pointed by the respondents several barriers, being the most relevant the following ones:</p> <ul style="list-style-type: none"> Regulatory and legal: lack of regulatory and enabling framework definition with regards to energy communities, need of changes within the sectorial legislation to allow ECs to conduct activity within the electricity market and the range limitation of 500 m for collective self-consumption activities; Social: lack of knowledge of the energy community concept and lack of information or awareness in environmental subjects; Economic: lack of access to financing for energy communities, particularly, for those associated to new citizen initiatives;

	<ul style="list-style-type: none"> • Administrative: time and complexity required to process self-consumption installations and paperwork with distribution network operations, as well as the inexistence of a one-stop-shop approach for administrative tasks.
Country	Countries <u>without</u> REC Legislation TYPE OF BARRIER
GREECE	<ul style="list-style-type: none"> • Connection to the grid has been a main bottleneck, due to the congested local grids. This is a main barrier, since EC projects are small and cannot be connected to high voltage using own transformers. • Financing by private or public institutions becomes a barrier when self- consumption schemes are implemented. • Lack of awareness and capacity building, since EC scheme have not been effectively promoted by simple measures such as information dissemination and training, one-stop-shops, supporting structures, etc.
NETHERLANDS	<ul style="list-style-type: none"> • Lack of transparency. • Limited knowledge. • Limitations on usage of network / congestion of the grid. • High energy taxes and small percentage of flexible tariffs – high cost of storage.
SWEDEN	<ul style="list-style-type: none"> • Grid connection barriers - Limited actual transmission and distribution capacity, extensive and bureaucratic permittance procedures, over-allocation by prospective users.
UNITED KINGDOM	<ul style="list-style-type: none"> • Grid connection barriers - In some locations (e.g. mid-Wales), which often have some of the most promising renewable energy potential, the grid needs reinforcing to meet the demand that would be put on it from connecting generation assets. The cost of this work can run into the £100s of thousands (and more) when community groups receive a quote, which is clearly unviable).

10.2.5. Proposed solutions by EnR Agencies to overcome barriers

Table A1-5 – Possible solutions to overcome barriers to REC implementation

Country	Countries <u>without</u> REC Legislation SUGGESTED SOLUTIONS TO OVERCOME BARRIERS
AUSTRIA	<ul style="list-style-type: none"> • Adaptation of legislation, specifying smart meter operation (not only installation) by DSOs, and, within a well established time frame (because in this country, the actual legislative framework only regulates the installation, not the putting into operation of the smart meters, and the mere installation, naturally has no added value for the customer and thus delays the establishment of an energy community). • Info-campaign on data transmission to increase acceptance (because in this country, in order to participate in an energy community, the transmission of quarter-hourly values to the network operator is a prerequisite, and this requires not only the installation of a smart meter, but also a so-called "opt-in", i.e. the active consent to the transmission of quarter-hourly values, which may hamper the expansion of energy communities. Consumers could have reservations regarding the transmission of quarterly hour values (uncertainty regarding possible costs, data security, etc.). Furthermore, the necessity of a proactive action on the side of the consumer is always an additional barrier. A possible solution could be an information campaign to increase knowledge about smart meters and to reduce reservations regarding the use of smart meters). • Change of the actual market premium (subsidy to 50%) to 100% (because RES-based electricity generation plants for REC and CEC are (partly) eligible within the Austrian market premium support framework. This premium is calculated based on the amount of electricity fed into the public electricity grid, and no market premium is granted for electricity allocated to the members of an energy community. Electricity quantities generated (from a generation plant eligible for a market premium) but not consumed within an energy community can be subsidized at 100%, and REC and CEC, unlike all other plant operators, would not receive the market premium for 100%, but only for a maximum of 50% of the energy generated (per plant) and fed to the grid. This restriction of the subsidy to 50% of produced green electricity not used in the energy community could hamper the set-up of energy communities. Therefore, it should be discussed a possible change of this market premium scheme, from 50% to 100%, and, if considered useful, the respective regulations). • Development of a tariff calculator to compare costs (Service providers skim off possible profits generated by reduced network tariffs and other socialised cost reductions for energy communities. A possible solution could be to develop and offer a tool of the above mentioned type for energy communities to compare service providers and their costs). • Implementation process of IT solutions closely monitored by political decision-makers (to face barrier of IT processes on the DSOs side, concerning multiple generation plants per REC). • Development of target group specific communication strategies and white-label materials for free (to face barrier of non-availability of professional communication material to engage more consumers to take part in REC once they are established). • Development of an online query tool that may answer the most important initial questions when thinking about setting a REC (type of generation, number of members, proximity of members, etc.) and help to identify the optimal type of energy community/collective actions for their specific conditions (to face barrier of complexity as entry barrier 1/3 – How to start?).

	<ul style="list-style-type: none"> An easy-to-use tool that may show all possible energy communities based on postcode (or address) or metering point number. The DSOs could establish online tools, which show potential REC members in real-time, via entering their metering point number, to which 400 V low voltage side of a certain/clearly defined transformer station and to which 1 kV to 36 kV medium voltage side of a certain/clearly defined transformer substation, and which bus bar of this last substation the metering point is allocated to. Furthermore, all already existing local or regional REC and contact possibilities relevant for that metering point should be shown automatically too when thinking about setting a REC (type of generation, number of members, proximity of members, etc.) and help to identify the optimal type of energy community/collective actions for their specific conditions (to face barrier of complexity as entry barrier 2/3 – Finding your energy community). An online tool giving details on the part of the distribution network where generation or consumption installation is located; this tool could also give information on existing energy communities by regional or local area. In spite of these tools already exist for some network areas, overall solution should be looked for (to face barrier of complexity as entry barrier 3/3 – Information on network area). Counteracting the shortage of skilled workers (especially PV module mounters) with appropriate measures, like the “Elektropraktiker” training program (to face barrier of PV modules – lack of qualified stuff, long delivery times). <p>NOTE: Some of these solutions are not clearly indicated in the answer to questionnaire but are implicit in the invitation to consult the conclusions of the “SHAREs” EU project, in which AEA is the Coordinator.</p>
FINLAND	<ul style="list-style-type: none"> Housing associations (and other potential REC operators) need a better knowledge about the cost-effectiveness of REC and the benefits of balancing mechanism for solar power production.
FRANCE	<ul style="list-style-type: none"> A national action plan for “citizen energy” has been adopted by the Ministry for Ecology in Nov. 2021, including a national target (developing 1000 new projects by 2028), but needs yet to be implemented. Local facilitation and technical support for individual projects. Specific (and attractive) support mechanisms (such as exemption of national tendering schemes, additional subsidies for legal and technical studies, financing facilities, etc.) dedicated to REC.
ITALY	<ul style="list-style-type: none"> On a technical level – need of a solid ICT structure and load management logics. It should be adopted a unified data communication standard and a solid IT architecture. On the side of citizens’ engagement – launch of awareness campaigns and information actions, in order to display real benefits of CER for their energy needs. A definition of an overall regulatory framework at national level, to overcome regional provisions and reflect an equal treatment for prosumer citizens.

LUXEMBOURG	<ul style="list-style-type: none"> • Explanation of the REC principles and providing constitution text models (articles of association / statutes).
PORTUGAL	<ul style="list-style-type: none"> • Streamlining the processes necessary for the creation of REC. • More autonomy for Public Administration to implement their projects within public procurement rules. • Reduction of the response time for the issuance of REC licenses. • Reduce or exempt REC from taxes (e.g. excluding grid access tariff for the first 5 years).
SLOVAKIA	<ul style="list-style-type: none"> • Public awareness. • DSOs and URSO (the Regulatory Office for Network Industries) should provide details for REC implementation. • Increase capacity of grid. • Support for establishment of REC by local and national government (financial, technical and operational).
SPAIN	<ul style="list-style-type: none"> • Need of changes within the sectorial legislation to allow ECs to conduct activity within the electricity market and the range limitation of 500 m for collective self-consumption activities. • More information and awareness campaigns (implicit from the barriers that were identified). • Easier access to financing for REC (implicit from the barriers that were identified). • Easier and less consuming time for administrative tasks, mainly related with DSOs, and that could justify the existence of a one-stop-shop approach for these tasks (implicit from the barriers that were identified).
Country	Countries <u>without</u> REC Legislation SUGGESTED SOLUTIONS TO OVERCOME BARRIERS
GREECE	<ul style="list-style-type: none"> • Streamlining the processes necessary for the creation of EC. • Provision of specified percentage of local grid connection capacity to EC projects. • Creation of a dedicated Energy Communities registry so as to monitor the RES projects implemented as well as the impact of the REC in terms of environmental, economic and social benefits at local level by their operation. • Creation of supporting structures such as networks, associations and one-stop shops.
NETHERLANDS	<ul style="list-style-type: none"> • Education / awareness raising in terms of technical, political and institutional building of REC members. • Reduce taxes and increase percentage of flexible tariffs. • Reduce cost of storage.

	<ul style="list-style-type: none"> • Congestion – shorten planning processes and provide geographical info systems and data. • Grid re-enforcement. • Encourage complementarity amongst renewable energy sources. • Stimulate business models for REC that include (1) sufficient elasticity to include different types of stakeholders, (2) allow for fair division of responsibilities and benefits and (3) respect for the RED II governance requirements. • To ensure that business models/policies allow for the full participation of disadvantaged and vulnerable communities (energy justice).
SWEDEN	<ul style="list-style-type: none"> • No assessments of the existing barriers and potential of development of renewable energy communities in Sweden have been carried out. Such assessments are important prerequisites in order to properly design frameworks to facilitate the development.

11. Annex 2

11.1. Case studies by country

This annex provides a review of 36 case studies of renewable energy communities from 8 European countries (Austria, Greece, Italy, Netherlands, Spain, Sweden, United Kingdom), through the presentation of the correspondent **Fact Sheets of Individual REC Projects**. These projects, that were identified by some EⁿR Energy Agencies in their countries, are examples of implementation and good practices of these energy communities (already implemented or in preparation). It is also identified in this information the role (if applicable) of the Agencies in these projects, in terms of intervention in the licensing process, management, technical or administrative support, production of guidelines, etc.

11.1.1. Austria

Case study no. 1 - OurPower Energiegenossenschaft SCE mbH (presented by Austrian Energy Agency)

Project Name	OurPower Energiegenossenschaft SCE mbH
Website	https://ourpower.coop
Country and location	Austria, Vienna
Year of implementation	2018
Number of members	600
Organisation type	Cooperative
Services provided by the REC	Peer to peer platform for renewable energy (matching platform, marketplace)
Technology / Energy	PV, wind, hydro, biogas
Description of the project	The OurPower Energiegenossenschaft SCE mbH is an emerging energy cooperative in Austria operating a countrywide peer-to-peer marketplace for RES electricity generated by its members. The marketplace enables customers to purchase electricity directly from power plants in their region since August 2019. This turns the purchase of electricity into a relationship.

	<p>OurPower handles the online matching services as well as the whole process of electricity supply and billing. OurPower's portfolio of generators will comprise of all kinds of embedded RES generators from small rooftop solar PV, a small wind farm and several small hydropower plants to biomass plants.</p> <p>In addition, OurPower is involved in developing citizen energy projects and accompanies pilots in the establishment of their own energy communities. Community building reinforcement is the main approach. Therefore, OurPower closely cooperates with communities and with energy and climate model regions.</p> <p>Back story: Ulfert Höhne, one of the three board members of OurPower, came up with the idea behind OurPower more than five years ago: a marketplace that turns the buying of electricity into a relationship. To create a marketplace where people can sell the electricity from their own roof to their neighbours. If someone lives next to a wind farm, they should be able to buy electricity directly from that wind farm and know that the money is actually going there, staying in the region, and thus bringing dynamism to the energy transition.</p> <p>In October 2018, OurPower was finally founded by the 19 founders, as one thing was clear: to realize their idea, they needed the power of the many. Today, over 200 renewable energy producers sell their electricity to over 1000 electricity customers</p> <p>Special characteristic: As a common good-oriented electricity cooperative, Our Power are the first citizen energy community in Austria and are powerfully and collectively committed to their mission of achieving the goal of 100 % renewable energy in the electricity sector by 2030 in Austria. To achieve the energy transition, they see the need to radically rethink the energy market. At the heart of this is the democratization of the electricity market - away from corporate interests, towards the interests of the citizens.</p> <p>OurPower gives citizens the opportunity to handle the energy transition themselves. It is no longer necessary to buy electricity anonymously from big power suppliers. Instead, new ways are needed to fight climate change. OurPower builds a new basis for this - a marketplace where people can buy and sell electricity directly, can invest in power plants and invest together in the energy future.</p> <p>Video: https://www.youtube.com/watch?v=IRP8rfd_BvY</p>
Objectives	Empowering consumers to actively participate on the energy markets
Renewable energy generation (or capacity)	/
The role of the Agency and added value to the project for this participation	Cooperation in the H2020 project SHARES

11.1.2. Greece

Case study no. 2 – Minoan Energy Community (presented by CRES – Centre for Renewable Energy Sources and Saving)

Project Name	Minoan Energy Community
Website	https://minoanenergy.com/
Country and location	Greece, Crete
Year of implementation	Year of Energy Community establishment: 2020 Year of project implementation: 2022 (connected to grid)
Number of members	Total number of members of the Energy Community: 405
Organisation type	Energy Cooperative
Services provided by the REC	<ul style="list-style-type: none"> • Production, storage, self-consumption or selling of electricity, heating and cooling from RES stations and HECHP. • Management (collection, transport, processing, storage, disposal) of raw material for the production of electricity, heating and cooling from biomass or biofuels or biogas or through energy recovery biodegradable municipal waste fraction. • Supply for members of energy efficient products, appliances, facilities, with the aim of reducing energy consumption and use of conventional fuels, as well as improving energy efficiency. • Distribution of electricity within the region where it is located or distribution of heating and cooling. • Supply of electricity or gas to End Users. • Demand-response management to reduce end-use electricity. • Installation and operation of water desalination units using RES. • Development, management and operation of alternative fuel infrastructure or management of sustainable means of transport. • Provision of ESCOs Energy Services.
Technology / Energy	Solar PV installation: 405 kW Solar PV installation (under construction): 1 MW
Description of the project	<p>PV installation utilizing the Virtual Net Metering scheme for offsetting the electricity consumption of the Energy Communities members.</p> <ul style="list-style-type: none"> • Number of members connected to the project: 103 of which <ul style="list-style-type: none"> ○ 86 natural persons (households) ○ 15 SMEs

	<ul style="list-style-type: none"> ○ 2 agribusiness.
Objectives	<ul style="list-style-type: none"> • Produce local, clean and renewable energy for the citizens. • Next project of the energy community under construction PV station of 1 MW installed capacity. This project will produce electricity for 300 households of which 10% will be vulnerable, utilizing the Virtual Net metering scheme.
Renewable energy generation (or capacity)	<ul style="list-style-type: none"> • 405 kW • 1 MW under construction
The role of the Agency and added value to the project for this participation	<p>CRES is not actively involved in the development of specific projects of Energy Communities. Based on its mandate supports the promotion and implementation of energy communities' scheme at national level.</p>

Case study no. 3 – Energy Cooperative of Karditsa (presented by CRES – Centre for Renewable Energy Sources and Saving)

Project Name	Energy Cooperative of Karditsa
Website	https://www.facebook.com/esekarditsas
Country and location	Greece, Karditsa
Year of implementation	<p>Year of Energy Community establishment: 2010</p> <p>Year of project implementation: 2017</p>
Number of members	476
Organisation type	Energy Cooperative
Services provided by the REC	Management (collection, transport, processing, storage, disposal) of raw material for the production of electricity, heating and cooling from biomass or bio fuels or biogas
Technology / Energy	Biomass / agro-biomass
Description of the project	Production of pellets / wood chips
Objectives	<ul style="list-style-type: none"> • To help utilise the existing biomass in the local area, from forestry and post-harvest residues. • To create added value at local level. • To create new jobs.

	<ul style="list-style-type: none"> To support the creation of local cooperative ecosystem.
Renewable energy generation (or capacity)	Production of high quality (EN PlusA1) of pellet: 1,100 tonnes per year
The role of the Agency and added value to the project for this participation	CRES is not actively involved in the development of specific projects of Energy Communities. Based on its mandate supports the promotion and implementation of energy communities scheme at national level.

11.1.3. Netherlands

Case study no. 4 – Groene Mient (presented by RVO – Netherlands Enterprise Agency)

Project Name	Groene Mient
Website	Groene Mient Urban green-blue grids (www.urbangreenbluegrids.com)
Country and location	The Hague, the Netherlands
Year of implementation	2017
Number of members	33 homes
Organisation type	Energy cooperative
Services provided by the REC	Generation and supply of renewable electricity, energy sharing. In the future voluntary curtailment and education for other initiatives.
Technology / Energy	Solar PV, Battery storage, heat pumps, solar heating
Description of the project	<p>Groene Mient is a social ecological housing project that consists of 33 (private) sustainable homes on a 7600 m² according to the wishes of the individual households. The houses are surrounded by a shared ecological garden, in the Vruchtenbuurt in the Hague. This is in a green environment and close to the sea.</p> <p>The common social and ecological values of the Groene Mient Association are the guiding principles of the communal housing project. The housing project is designed according to a joint architectural design, but within it each home differs, also includes a communal building as a meeting space.</p>
Objectives	<p>Energy autonomy, replacing natural gas for heating and cooking plus implementation renewables.</p> <p>Experimenting with energy law and regulation.</p>
Renewable energy generation (or capacity)	400 solar panels installed x 250 Wp = 100 kWp amounts to 90 MWh/year
The role of the Agency and added value to the project for this participation	Dispensation energy law for a private grid for 20 years

Case study no. 5 – College park Zwijzen (presented by RVO – Netherlands Enterprise Agency)

Project Name	College park Zwijzen
Website	Collegepark Zwijzen
Country and location	Veghel, the Netherlands
Year of implementation	2017
Number of members	115 apartments
Organisation type	Residential complex – 115 apartments, non-profit
Services provided by the REC	Rent apartments with no energy bill, Grid connected PV
Technology / Energy	Solar PV, heat pumps, solar boilers, battery storage
Description of the project	A renovation and re-development of a former school into 115 apartments, located in Veghel (NL). A private grid is being explored enabling smart supply of central solar PV and solar thermal production for apartment heating and warm water supply.
Objectives	To build an energy community with zero energy costs (no energy bill), roll out renewables.
Renewable energy generation (or capacity)	2000 solar panels installed x 250 Wp = 500 kWp amounts to 450 MWh/year
The role of the Agency and added value to the project for this participation	Dispensation from the energy law for 20 years for a private grid

Case study no. 6 – Lombok (presented by RVO – Netherlands Enterprise Agency)

Project Name	Lombok
Website	https://youtu.be/W5p5H8HbOVg
Country and location	Utrecht, the Netherlands
Year of implementation	
Number of members	
Organisation type	
Services provided by the REC	Generate and supply renewable electricity, electro-mobility – bio-directional charging
Technology / Energy	Solar PV
Description of the project	
Objectives	
Renewable energy generation (or capacity)	
The role of the Agency and added value to the project for this participation	

11.1.4. Spain

Case study no. 7 – NEO BALENYA (BALENYA SOSTENIBLE SCCL) (presented by IDAE – Institute for Diversification and Saving of Energy)

Project Name	NEO BALENYA
Website	https://www.balenyasostenible.cat/
Country and location	Balenyà, Barcelona, Catalonia (SPAIN)
Year of implementation	Project to be developed in 2023.
Number of members	109
Organisation type	Cooperative
Services provided by the REC	<ol style="list-style-type: none"> 1. Generation of renewable electricity and self-consumption 2. Sustainable mobility 3. Energy demand management system
Technology / Energy	Solar PV, electric vehicles, charging points
Description of the project	The cooperative was born with the objective of making progress on the energy transition in the municipality of Balenyà. They want to evolve from a town where most of the energy consumption comes from unsustainable sources to another one that gets closer to 100% sustainable energy, whilst working on protecting of the most vulnerable families.
Objectives	In turn, the current Plan is set within, the NEO (Osona New Energies), which plans the actions needed to achieve a 40% reduction on CO ₂ emissions associated with final consumption of energy, in the region of Osona.
Renewable energy generation (or capacity)	-
The role of the Agency and added value to the project for this participation	<ol style="list-style-type: none"> 1. Funding of the project through grant allocation (CE IMPLEMENTA) 2. Technical and administrative support.

Case study no. 8 – ENERGÍAS RENOVABLES ELÉCTRICAS Y MOVILIDAD SOSTENIBLE PARA COMUNIDAD ENERGÉTICA ECOHORTÍCOLA (presented by IDAE – Institute for Diversification and Saving of Energy)

Project Name	ENERGÍAS RENOVABLES ELÉCTRICAS Y MOVILIDAD SOSTENIBLE PARA COMUNIDAD ENERGÉTICA ECOHORTÍCOLA (Electrical renewable energies and sustainable mobility for an eco-horticulture energy community)
Website	N/A
Country and location	Andalusia (SPAIN)
Year of implementation	Project to be developed in 2023.
Number of members	5
Organisation type	Limited Society
Services provided by the REC	1. Generation of renewable electricity and self-consumption, 2. Sustainable mobility
Technology / Energy	Solar PV, electric vehicles.
Description of the project	1. Development of a solar PV installation on land capable to generate electric energy from solar radiation. 2. Purchase of electric vehicles for the members of the energy community ECOHORTÍCOLA.
Objectives	To reduce the consumption from the electrical network of the partnered companies of the ECOHORTÍCOLA, S.L. energy community.
Renewable energy generation (or capacity)	-
The role of the Agency and added value to the project for this participation	1. Funding of the project through grant allocation (CE IMPLEMENTA) 2. Technical and administrative support.

Case study no. 9 – COMUNIDAD ENERGÉTICA INSULAR ENERGÍA BONITA (ENERGÍA BONITA S. COOP.)

(presented by IDAE – Institute for Diversification and Saving of Energy)

Project Name	Comunidad Energética Insular Energía Bonita (Insular Energy Community “Energía Bonita”)
Website	www.energiabonita.es
Country and location	La Palma Island, Canary Islands, (SPAIN)
Year of implementation	Project to be developed in 2023.
Number of members	18
Organisation type	Cooperative
Services provided by the REC	<ol style="list-style-type: none"> 1. Generation of renewable electricity and self-consumption 2. Sustainable mobility 3. Energy demand management system
Technology / Energy	Solar PV, electric vehicles
Description of the project	Renewable energies community covering the island of La Palma
Objectives	Renewable energies community covering the island of La Palma
Renewable energy generation (or capacity)	-
The role of the Agency and added value to the project for this participation	<ol style="list-style-type: none"> 1. Funding of the project through grant allocation (CE IMPLEMENTA) 2. Technical and administrative support.

Case study no. 10 – COMUNIDAD ENERGETICA LOCAL DE ABENOJAR (CEL ABENOJAR, S.COOP. DE C-LM)

(presented by IDAE – Institute for Diversification and Saving of Energy)

Project Name	Comunidad energética local de Abenojar (Abenojar local energy community)
Website	N/A
Country and location	Abenojar, Ciudad Real, Castile-La Mancha (SPAIN)
Year of implementation	Project to be developed in 2023.
Number of members	84
Organisation type	Cooperative society
Services provided by the REC	<ol style="list-style-type: none"> 1. Energy efficiency 2. Generation of renewable electricity and self-consumption 3. Energy demand management system
Technology / Energy	Solar PV, thermal insulation
Description of the project	The project involves the implementation of renewable energies projects (Solar PV) and improving energy efficiency of the thermal envelope of buildings.
Objectives	The project covers the development of a local energy community in the town of Abenojar (Ciudad Real province), municipality that falls into the demographic challenge category.
Renewable energy generation (or capacity)	-
The role of the Agency and added value to the project for this participation	<ol style="list-style-type: none"> 1. Funding of the project through grant allocation (CE IMPLEMENTA) 2. Technical and administrative support.

Case study no. 11 – INICIATIVA PILOTO COMUNIDAD ENERGÉTICA GARESBIDE

(presented by IDAE – Institute for Diversification and Saving of Energy)

Project Name	Iniciativa piloto comunidad energética Garesbide (Garesbide energy community pilot initiative)
Website	N/A
Country and location	Gares, Navarre (SPAIN)
Year of implementation	Project to be developed in 2023.
Number of members	18
Organisation type	Cooperative
Services provided by the REC	<ol style="list-style-type: none"> 1. Generation of renewable electricity and self-consumption 2. Sustainable mobility 3. Energy demand management system
Technology / Energy	Solar PV, battery storage, electric vehicles charging points
Description of the project	<ol style="list-style-type: none"> 1. One self-consumption PV solar installation. It will be located on the roof of a council-owned building, which will be leased for free by the local authority to the EC in exchange of allowing a municipal social household to join the Energy Community's electricity network. 2. One battery storage system. 3. Two charging poles (two charging points per pole). 4. An energy management platform that will allow optimal performance of the energy community.
Objectives	The project is the first social initiative, with a local focus, of the new Garesbide Energy Community. The activities, which involve renewable energies generation, electric mobility, and energy demand management, will have positive social, environmental and economic impacts and the different projects will achieve a very important demonstrative effect.
Renewable energy generation (or capacity)	-
The role of the Agency and added value to the project for this participation	<ol style="list-style-type: none"> 1. Funding of the project through grant allocation (CE IMPLEMENTA) 2. Technical and administrative support.

Case study no. 12 – COMUNIDAD ENERGETICA GEA SOCIEDAD COOPERATIVA

(presented by IDAE – Institute for Diversification and Saving of Energy)

Project Name	Comunidad energética Gea sociedad cooperativa (Gea energy community cooperative society)
Website	N/A
Country and location	Gea de Albarracín, Aragón (SPAIN)
Year of implementation	Project to be developed in 2023.
Number of members	73
Organisation type	Cooperative
Services provided by the REC	<ol style="list-style-type: none"> 1. Generation of renewable electricity and self-consumption 2. Sustainable mobility
Technology / Energy	Solar PV, electric vehicles charging points
Description of the project	<ol style="list-style-type: none"> 1. Construction of a solar PV farm 2. Installation of two charging points of electric vehicles
Objectives	The installation of the latter two technologies will allow for shared community self-consumption of energy in the town of Gea de Albarracín
Renewable energy generation (or capacity)	-
The role of the Agency and added value to the project for this participation	<ol style="list-style-type: none"> 1. Funding of the project through grant allocation (CE IMPLEMENTA) 2. Technical and administrative support.

Case study no. 13 – CEL - ENERGIA LOCAL SANTULLAN (ASOCIACION CEL - ENERGIA LOCAL SANTULLAN)

(presented by IDAE – Institute for Diversification and Saving of Energy)

Project Name	CEL - Energía local Santullán (Local Energy Community – Local Energy Santullan)
Website	N/A
Country and location	Santullán, Cantabria (SPAIN)
Year of implementation	Project to be developed in 2023.
Number of members	8
Organisation type	Non-profit association
Services provided by the REC	<ol style="list-style-type: none"> 1. Generation of renewable electricity and self-consumption 2. Sustainable mobility 3. Energy demand management system
Technology / Energy	-
Description of the project	Advanced energy solutions in generation distribution and electric vehicle charging.
Objectives	Citizen participation on energy matters
Renewable energy generation (or capacity)	-
The role of the Agency and added value to the project for this participation	<ol style="list-style-type: none"> 1. Funding of the project through grant allocation (CE IMPLEMENTA) 2. Technical and administrative support.

Case study no. 14 – ACTUACIONES DE EFICIENCIA ENERGÉTICA Y APROVECHAMIENTO DE ENERGÍAS RENOVABLES PARA AUTOCONSUMO COLECTIVO RURAL EN GUZMÁN, BURGOS (GUZMÁN RENOVBABLE)

(presented by IDAE – Institute for Diversification and Saving of Energy)

Project Name	Actuaciones de eficiencia energética y aprovechamiento de energías renovables para autoconsumo colectivo rural en Guzmán, Burgos (Energy efficiency actions and renewable energy use for rural collective self-consumption in Guzmán, Burgos)
Website	N/A
Country and location	Guzmán, Burgos, Castile and Leon (SPAIN)
Year of implementation	Project to be developed in 2023.
Number of members	21
Organisation type	Association
Services provided by the REC	<ol style="list-style-type: none"> 1. Generation of renewable electricity and self-consumption 2. Energy demand management system
Technology / Energy	Solar PV
Description of the project	<ol style="list-style-type: none"> 1. Creation of a rural community and self-consumption solar PV farm servicing fifteen supply points (households, council properties and small businesses) 2. Optimization of the PV production surplus through the following activities: <ol style="list-style-type: none"> a. Real-time monitoring of production and consumption per supply point b. Use of regulation systems through hydraulic and thermal storage c. Provide advice to users and organizations which form part of the project 3. Workshops aimed at empowering local women on energy efficiency matters and to provide advice on energy efficiency for local residents.
Objectives	Creation of a rural community solar PV farm
Renewable energy generation (or capacity)	-
The role of the Agency and added value to the project for this participation	<ol style="list-style-type: none"> 1. Funding of the project through grant allocation (CE IMPLEMENTA) 2. Technical and administrative support.

Case study no. 15 – CTM SENERGY I (COMUNIDAD ENERGETICA CTM, S.L.)

(presented by IDAE – Institute for Diversification and Saving of Energy)

Project Name	CTM SEnergy I
Website	N/A
Country and location	CTM Industrial Estate, Madrid (SPAIN)
Year of implementation	Project to be developed in 2023.
Number of members	5
Organisation type	Cooperative
Services provided by the REC	<ol style="list-style-type: none"> 1. Generation of renewable electricity and self-consumption 2. Sustainable mobility
Technology / Energy	Solar PV
Description of the project	<ol style="list-style-type: none"> 1. Construction of a 720 kW Solar PV scheme located on top of warehouse rooftops. 2. Installation of three electric vehicle charging points (50 kW), in addition to existing low-speed charging points located in the transportation center.
Objectives	Shared self-consumption, selling surplus energy to the “pool” in an industrial estate. Setup initially with three businesses joining, but open to future members.
Renewable energy generation (or capacity)	720 kW of PV solar
The role of the Agency and added value to the project for this participation	<ol style="list-style-type: none"> 1. Funding of the project through grant allocation (CE IMPLEMENTA) 2. Technical and administrative support.

Case study no. 16 – COMUNIDAD ENERGÉTICA VILLALONGA (COOP AGRÍCOLA NUESTRA SEÑORA DE LA FUENTE COOP VALENCIANA) (presented by IDAE – Institute for Diversification and Saving of Energy)

Project Name	Comunidad Energética Villalonga (Villalonga Energy community)
Website	http://www.fontcoop.com/
Country and location	Vilallonga, Valencia (SPAIN)
Year of implementation	Project to be developed in 2023.
Number of members	186
Organisation type	Cooperative
Services provided by the REC	<ol style="list-style-type: none"> 1. Energy efficiency 2. Generation of renewable electricity and self-consumption
Technology / Energy	Solar PV
Description of the project	Development and execution of a whole Energy Community project for the Vilallonga town
Objectives	Development and execution of a whole Energy Community project for the Vilallonga town
Renewable energy generation (or capacity)	-
The role of the Agency and added value to the project for this participation	<ol style="list-style-type: none"> 1. Funding of the project through grant allocation (CE IMPLEMENTA) 2. Technical and administrative support.

Case study no. 17 – COMUNIDAD ENERGETICA LOCAL VALDELACALZADA 2022 SOLEADAS

(presented by IDAE – Institute for Diversification and Saving of Energy)

Project Name	Comunidad energética local Valdelacalzada 2022 soleadas (Valdecalzada local energy community)
Website	N/A
Country and location	Valdecalzada, Extremadura (SPAIN)
Year of implementation	Project to be developed in 2023.
Number of members	53
Organisation type	Cooperative
Services provided by the REC	Generation of renewable electricity and self-consumption
Technology / Energy	Solar PV
Description of the project	Creation of five solar PV installations
Objectives	To supply electricity to facilities and households of the Energy Community members
Renewable energy generation (or capacity)	-
The role of the Agency and added value to the project for this participation	<ol style="list-style-type: none"> 1. Funding of the project through grant allocation (CE IMPLEMENTA) 2. Technical and administrative support.

Case study no. 18 – MARELUZ 1 (ASOCIACIÓN AROUSA EN TRANSICIÓN)

(presented by IDAE – Institute for Diversification and Saving of Energy)

Project Name	Mareluz 1
Website	https://arousaentransicion.gal/
Country and location	Arousa, Galicia (SPAIN)
Year of implementation	Project to be developed in 2023.
Number of members	31
Organisation type	Non-profit association
Services provided by the REC	<ol style="list-style-type: none"> 1. Generation of renewable electricity and self-consumption 2. Sustainable mobility 3. Energy demand management system
Technology / Energy	Solar PV
Description of the project	<ol style="list-style-type: none"> 1. Generation of renewable energy and shared self-consumption 2. Energy management 3. One electric vehicle public charging point
Objectives	Creation of a cell of shared self-consumption through the existing network of the Energy Community “Asociación Arousa en Transición”.
Renewable energy generation (or capacity)	-
The role of the Agency and added value to the project for this participation	<ol style="list-style-type: none"> 1. Funding of the project through grant allocation (CE IMPLEMENTA) 2. Technical and administrative support.

Case study no. 19 – SOM SERVEIS ENERGÈTICS (presented by IDAE – Institute for Diversification and Saving of Energy)

Project Name	SOM serveis energètics (SOM energy services)
Website	https://www.somserveisenergetics.coop/
Country and location	Balearic Islands (SPAIN)
Year of implementation	Project to be developed in 2023.
Number of members	103
Organisation type	Cooperative
Services provided by the REC	<ol style="list-style-type: none"> 1. Generation of renewable electricity and self-consumption 2. Energy demand management system
Technology / Energy	Solar PV, energy demand management software
Description of the project	<ol style="list-style-type: none"> 1. Three electrical renewable energy installations 2. Development of an energy demand management system software, to optimize self-consumption quotas.
Objectives	To supply electricity to the community on a collective self-consumption basis
Renewable energy generation (or capacity)	-
The role of the Agency and added value to the project for this participation	<ol style="list-style-type: none"> 1. Funding of the project through grant allocation (CE IMPLEMENTA) 2. Technical and administrative support.

Case study no. 20 – TEK BERIO (ASOCIACIÓN BERIOKO TOKIKO ENERGIA KOMUNITATEA - TEK BERIO) (presented by IDAE – Institute for Diversification and Saving of Energy)

Project Name	TEK Berio
Website	N/A
Country and location	San Sebastián, Gipuzkoa, Basque Country (SPAIN)
Year of implementation	Project to be developed in 2023.
Number of members	7
Organisation type	Non-profit association
Services provided by the REC	<ol style="list-style-type: none"> 1. Generation of renewable electricity and self-consumption 2. Sustainable mobility 3. Energy demand management system
Technology / Energy	Solar PV
Description of the project	<ol style="list-style-type: none"> 1. Distributed generation of renewable energy 2. Electric vehicles charging 3. Energy demand management
Objectives	To create a pilot project to allow citizens participation on advanced distributed generation of electricity.
Renewable energy generation (or capacity)	-
The role of the Agency and added value to the project for this participation	<ol style="list-style-type: none"> 1. Funding of the project through grant allocation (CE IMPLEMENTA) 2. Technical and administrative support.

11.1.5. Sweden

Case study no. 21 – FED – fossil free energy district. Johanneberg Chalmers (presented by SEA – Swedish Energy Agency)

Project Name	FED – fossil free energy district. Johanneberg Chalmers
Website	https://www.johannebergsciencepark.com/testbadd-hallbara-lokala-energisystem
Country and location	Sweden, Gothenburg
Year of implementation	2016-2019
Number of members	9
Organisation type	Demonstration project
Services provided by the REC	Local digital market place for electricity, heating and cooling
Technology / Energy	PVs, heat pumps and energy storages
Description of the project	Campus area with local energy networks
Objectives	Demonstrate co-existence of a local energy network in the large-scale energy system (electricity grid and municipal district heating) in a joint energy market. Serve as a testbed.
Renewable energy generation (or capacity)	1,000 kW electricity, 15,725 kW heating, 1,740 kW cooling
The role of the Agency and added value to the project for this participation	Co-funding of Horizon project

Case study no. 22 – Eksta bostads AB (presented by SEA – Swedish Energy Agency)

Project Name	Eksta bostads AB
Website	https://www.bebostad.se/projekt/teknikutvecklingsprojekt/optimering-av-solelnytta-genom-smart-mikronat-och-brukare
Country and location	Sweden, Fjärås
Year of implementation	2016-2019
Number of members	2 (property owner and technology provider)
Organisation type	
Services provided by the REC	Supply renewable electricity
Technology / Energy	PV, DC Microgrid, battery storage
Description of the project	4 apartment buildings
Objectives	To perform an optimization on the usage of self-produced solar electricity by transferring the solar electricity surplus between buildings in a microgrid
Renewable energy generation (or capacity)	22,000 kWh annual production
The role of the Agency and added value to the project for this participation	Financed by the Swedish energy agency research programme on solar electricity

Case study no. 23 – Solkvarteret Hyllie (presented by SEA – Swedish Energy Agency)

Project Name	Solkvarteret Hyllie, a demo site in the CLUE-project
Website	https://eranet-smartenergysystems.eu/global/images/cms/Content/Fact%20Sheets/ERANetSES_ProjectFactSheet_RegSys2018_CLUE.pdf https://project-clue.eu/
Country and location	Sweden, Malmö
Year of implementation	Forthcoming
Number of members	
Organisation type	REC
Services provided by the REC	No information yet
Technology / Energy	PV (TBD)
Description of the project	New residential building block
Objectives	Provide tenants the opportunity to be part of a REC
Renewable energy generation (or capacity)	
The role of the Agency and added value to the project for this participation	Co-funding of the Swedish demo sites

Case study no. 24 – Biogas Brålanda (presented by SEA – Swedish Energy Agency)

Project Name	Biogas Brålanda
Website	
Country and location	Sweden, Dalsland county
Year of implementation	2010
Number of members	3 farms (formerly also the local ESCO was part)
Organisation type	
Services provided by the REC	Biogas production and distribution, upgrading to biomethane
Technology / Energy	Anaerobic digestion of manure
Description of the project	Farmers with small scale (farm based) AD of manure cooperate in gas distribution, upgrading to biomethane and filling stations
Objectives	Scale up to make upgrading to biomethane as vehicle fuel feasible
Renewable energy generation (or capacity)	16 GWh annually
The role of the Agency and added value to the project for this participation	None

Case study no. 25 – Simris energy system (presented by SEA – Swedish Energy Agency)

Project Name	Simris energy system
Website	Lokal energiproduktion Vi förnyar Simris - eon.se
Country and location	Sweden, Simrishamn
Year of implementation	No information available
Number of members	No information available
Organisation type	Ordinary ESCO
Services provided by the REC	Solar and wind energy, storage
Technology / Energy	Wind, Solar PV, battery storage, back-up biofueled power plant
Description of the project	No information available
Objectives	No information available
Renewable energy generation (or capacity)	No information available
The role of the Agency and added value to the project for this participation	No

Case study no. 26 – Tamarinden (presented by SEA – Swedish Energy Agency)

Project Name	Tamarinden
Website	Tamarinden - Sveriges smartaste stadsdel - ÖBO (obo.se) Tamarinden - Bygg Örebro (orebro.se)
Country and location	Sweden, Örebro
Year of implementation	Forthcoming
Number of members	Planned for 180 residents
Organisation type	Not decided yet
Services provided by the REC	Energy-sharing: solar, storage and charging infrastructure
Technology / Energy	PV
Description of the project	I pilot residential area initialised by the municipality and the municipal housing company.
Objectives	Become an energy-smart neighbourhood
Renewable energy generation (or capacity)	Unknown
The role of the Agency and added value to the project for this participation	Partly funded by the Swedish Energy Agency

Case study no. 27 – Vasakronans likströmsnät (presented by SEA – Swedish Energy Agency)

Project Name	Vasakronans likströmsnät
Website	Vasakronans likströmsnät (framtidenssystem.se)
Country and location	Sweden, Uppsala
Year of implementation	2017
Number of members	Unknown
Organisation type	Property owner
Services provided by the REC	Energy and power distribution between buildings
Technology / Energy	Solar power, DC micro grid
Description of the project	Four buildings forming Uppsala science park are connected with a micro grid (760 V DC)
Objectives	Share energy between buildings
Renewable energy generation (or capacity)	225 kW
The role of the Agency and added value to the project for this participation	Funded from the Swedish Energy Agency

Case study no. 28 – ElectriCITY (presented by SEA – Swedish Energy Agency)

Project Name	ElectriCITY
Website	Hammarby Sjöstad 2.0 - ElectriCITY Innovation
Country and location	Sweden, Stockholm, Hammarby sjöstad
Year of implementation	No information
Number of members	No information
Organisation type	Swedish credit union
Services provided by the REC	Micro grid, charging, heating
Technology / Energy	solar PV, heat pumps, geothermal heat, waste heat
Description of the project	Engaging residents using a bottom-up perspective and a holistic view of climate issues that integrates housing with e-mobility, circular economy and urban farming.
Objectives	To conduct a number of test beds in energy, transport, circular economy and digital urban development. The goal is to become a climate-neutral district by 2030.
Renewable energy generation (or capacity)	No information
The role of the Agency and added value to the project for this participation	No

Case study no. 29 – Embassy of sharing (presented by SEA – Swedish Energy Agency)

Project Name	Embassy of sharing
Website	https://www.granitor.se/properties/stadsdelsutveckling/embassy-of-sharing
Country and location	Sweden, Malmö
Year of implementation	Forthcoming
Number of members	No information yet
Organisation type	No information yet
Services provided by the REC	No information yet
Technology / Energy	No information yet
Description of the project	Several buildings near a station area are planned to share resources
Objectives	Shared services and innovation for shared economy
Renewable energy generation (or capacity)	No information yet
The role of the Agency and added value to the project for this participation	No

11.1.6. United Kingdom

Case study no. 30 – Inch Park Community Sports Club (presented by EST - Energy Saving Trust)

Project Name	Inch Park Community Sports Club
Website	http://www.inchpark.org/
Country and location	Scotland, Edinburgh
Year of implementation	2022
Number of members	Combines three Community Sports Clubs (Lismore Rugby Club, Edinburgh South Football Club and Edinburgh South Cricket Club) providing sports activities, schools and youth initiatives and other activities and services to over 6000 young people and adults and over 1000 local people of all ages and abilities per year.
Organisation type	Community Sports Centre
Services provided by the REC	Energy savings and lower running costs across the Community Sports Club. Longer term benefit to the wider community as lower running costs would enable the Centre to reduce the hire rates for community groups.
Technology / Energy	Solar PV panels and upgrading of lighting systems to LED lighting throughout the Centre.
Description of the project	The Board of Inch Park Community Spots Club contacted Zero Waste Scotland's Energy Efficiency Business Support Service (now Business Energy Scotland provided by Energy Saving Trust) for advice. After conducting an energy audit and receiving recommendations, Inch Park Community Sports Club applied for a capital Grant through the 'Let's Do Net Zero Community Buildings Fund, part of the Scottish Government's Community Renewable Energy Scheme (CARES) to implement the energy audit recommendations – specifically to install a solar photovoltaic (PV) array and LED lighting throughout the Centre.
Objectives	Reduce running costs and improve sustainability of community hub To reduce the overall running costs and energy use of the clubhouse and work towards achieving a more sustainable business model.
Renewable energy generation (or capacity)	Solar PV: 8,763 kWh and 1.9 tonnes CO ₂ annually LED lighting: 11,750 kWh and 2.5 tonnes CO ₂ annually
The role of the Agency and added value to the project for this participation	The 'Let's Do Net Zero Community Builds Fund' is administrated by Energy Saving Trust and forms part of the Scottish Government's Community Renewable Energy Scheme (CARES) which is also managed by Energy Saving Trust on behalf of Scottish Government. Earlier this year (2022) Energy Saving Trust took over the management of the Energy Efficiency Support Service, now called Business Energy Scotland, on behalf of Scottish Government, Business Energy Scotland provides free impartial support and access to funding to help businesses save energy, money and carbon.

Case study no. 31 – Machrihanish Airbase Community Company (presented by EST - Energy Saving Trust)

Project Name	Machrihanish Airbase Community Company (MACC)
Website	http://www.machrihanish.org/
Country and location	Scotland, Argyll and Bute
Year of implementation	2018
Number of members	MACC, a community owned company works with many local groups, charities and other organisations in the surrounding area, offering their site's assets to facilitate training and events, storage facilities and also make charitable donations through the foundation.
Organisation type	Company Limited by guarantee with charitable status
Services provided by the REC	Energy savings, generation and supply of renewable energy, energy and consumption. On a much broader scale, the site properties and assets are being developed to stimulate local socio-economic growth in the area by position the site to attract investment from new and diverse industries, thereby bringing much wider services and benefits to the local community.
Technology / Energy	Onsite solar PV farm
Description of the project	<p>The MACC purchased a former airbase with the overall vision of building a prosperous and sustainable future for the local community, using the properties and assets of the site, to stimulate socio-economic growth in the area.</p> <p>MACC applied for funding through the Scottish Government's Community Renewable Energy Scheme in order to carry out detailed feasibility work so they could look at the costs of installing a large, ground mounted solar PV system and designing a smart energy management system for onsite use and for electricity exportation when needed. The MACC requirements were that the project would demonstrate a return on investment to ensure funds for future replacements, and also be appropriately sized to ensure generation of enough energy to offset the sites consumption.</p> <p>The feasibility study suggested a size of PV array where electricity could be generated on site without exportation. A 250 kW ground mounted solar PV array was installed in 2018.</p>
Objectives	<p>To reduce the site's electricity consumption as much as possible by generating its own energy from an on-site solar PV farm.</p> <p>To generate all its electricity and heating requirements from renewable sources by 2030.</p> <p>Demonstrate a return on investment within a reasonable timeframe so sufficient funds would be available to replace the infrastructure in the future, without the need for external fundraising.</p>
Renewable energy generation (or capacity)	250 kW solar PV. Planning permission has been obtained for 1MW solar farm on site
The role of the Agency and added value to the project for this participation	The feasibility study and a start-up grant was provided through the Scottish Government's Community Energy Renewables Scheme (CARES) which is managed by Energy Saving Trust.

Case study no. 32 – Solar Connected Communities (presented by EST - Energy Saving Trust)

Project Name	Solar Connected Communities
Website	www.localenergy.scot/casestudy/solar-connected-communities/
Country and location	Scotland, various
Year of implementation	2020
Number of members	35 community groups across Scotland covering schools, leisure centres, sports clubs, community halls and centres, community trust buildings and heritage centres, Men's Sheds and a resilience centre totalling 78 building in all.
Organisation type	Various – Community Interest Companies, Community Benefit Societies, and Registered Charities
Services provided by the REC	<p>Generation of renewable electricity and sale of surplus electricity through FITs whereby over the next 20 (from 2020) years will be reinvested into work which contributes to a wider positive impact across the areas.</p> <p>Where host buildings are owned by others such as councils and local businesses, benefits include low-carbon credentials and affordable electricity, freeing up funds for services and enhancing competitiveness.</p> <p>Communities will increase their energy awareness through the delivery and management of their projects. These communities can mentor and also act as demonstrators for others as market conditions improve through price reductions and as the Smart Export Guarantee is established.</p> <p>The Solar Connected Communities project as a whole has also increased activity for solar PV installers across Scotland during a period when the market is in transition.</p>
Technology / Energy	Solar PV
Description of the project	<p>The Feed-in Tariff (FIT) scheme closed to new applications in March 2019. However, Ofgem (The Office of Gas and Electricity Markets, the UK Government regulator for the electricity and downstream natural gas markets in Great Britain) offered community organisations a 12 months extension whereby communities interested in small solar PV projects (50 kW or less) could pre-register buildings with Ofgem and then have 12 months to get their project up and running but still receive Feed-in-Tariff payments at the January 2019 rate. These payments were guaranteed for 20 years.</p> <p>Through Local Energy Scotland the project supported 35 community groups to make use of this offer Ofgem offer by supporting them to apply for pre-registration for 78 buildings and has continued to support the communities since.</p> <p>The vision is that these projects will have a lasting environmental, economic and social benefit on their communities. Many of these communities have not previously been involved in any renewable energy projects and may not have progressed their solar projects if it were not for this opportunity. The projects will also support community involvement and partnership working in local energy systems which may encourage new installations of locally owned renewable energy in the future.</p>
Objectives	To enable communities to make the most of the opportunity offered by Ofgem by

	<ul style="list-style-type: none"> Supporting communities to complete the pre-registration process for a 12-month extension of the UK's Feed-in Tariff Supporting the development of solar projects Funding new Energy Performance Certificates.
Renewable energy generation (or capacity)	Capacity of 541.83 kW across 29 buildings
The role of the Agency and added value to the project for this participation	<ul style="list-style-type: none"> Through Local Energy Scotland communities supported to pre-register for the Ofgem offer and extension process. Funding for the EPC provided through the Scottish Government's Community Energy Renewables Scheme (CARES) managed by Energy Saving Trust. Local Energy Scotland is continuing to provide ongoing support to these communities as required.

Case study no. 33 – Bro Dyfi Solar Farm (presented by EST - Energy Saving Trust)

Project Name	Bro Dyfi Solar Farm
Website	https://bdcf.org.uk/
Country and location	Mid-Wales
Year of implementation	2020/in-planning
Number of members	Bro Dyfi Community Renewables have just over 200 members and 7 directors
Organisation type	Bro Dyfi Community Renewables (BDCR) is a community owned renewable energy company. They generate clean electricity to the local distribution network. Bro Dyfi Community Renewables came about through the shared interest of local people in and around the town of Machynlleth in mid Wales in creating a local renewable energy ownership scheme. BDCM deliver their projects through grant funding, ethical investors and committed individuals. And the bonus on top of carbon free and renewable generation in the locality is that as a community they can also benefit from its financial returns, both as individual investors and through the contribution annually to local regeneration organisation ecodyfi.
Services provided by the REC	Generation and supply of renewable energy to the grid and local private wire connection
Technology / Energy	Solar PV
Description of the project	Installation of a 300 kW solar array adjacent to existing 500 kW wind turbine. This solution shares and optimises use of the existing grid connection. Part (270 kW) of the solar array will connect to the 11 kV network, and the remainder (30 kW) to a private wire connection to the Centre for Alternative Technology nearby. In times of excess generation relative to grid capacity, control systems will curtail generation or direct.
Objectives	The funds will enable the early delivery of a clean energy scheme that will build local resilience in the face of the climate emergency by strengthening the local grid, decarbonising power requirements in the distributed area, and enabling sustainable economic returns for investors in an area.
Renewable energy generation (or capacity)	300 kW
The role of the Agency and added value to the project for this participation	Energy Saving Trust delivers the Welsh Government Energy Service as a consortium with the Carbon Trust. Our role in this project was to provide technical support to the group with scheme design, planning and grid connections and support with development finance via our preparatory grant fund. Project support was delivered via one-to-one support with our team of Development Managers. We also supported a successful application for capital funding to the Local Energy Loan Fund, administered by the Development Bank of Wales.

11.1.7. Italy

Case study no. 34 – Cagliari Smart Condominium (presented by ENEA - Italian National Agency for New Technologies, Energy and Sustainable Economic Development)

Project Name	Cagliari Smart Condominium (a pilot site included in the European Union funded project Market uptake of citizen energy communities enabling a high penetration of renewable energy sources – LIGHTNESS , in which participate 5 countries with case studies – Poland, The Netherlands, France, Italy and Spain)
Website	https://www.lightness-project.eu/
Country and location	Italy, Cagliari
Year of implementation	2020-2023
Number of members	13
Organisation type	Energy collective project
Services provided by the REC	Community based energy sharing
Technology / Energy	Solar PV
Description of the project	<p>The Lightness project aims to empower citizens to generate, share and sell renewable energy and thereby contribute to making the European energy sector more sustainable and democratic. The case study “Cagliari Smart Condominium” may be described as follows: The Via Bolzano 4 condominium was built in 1966 and has eight, four-room, 85 m² apartments. It has an energy rating of G (the lowest possible). There is no central heating, only individual heating units with no energy monitoring or control systems. The building currently has envelope water/air leakage and a maintenance/retrofit is scheduled by R2M Energy independently of the Lightness Project. Given this planned renovation, there is the opportunity to retrofit and showcase a “smart condo” concept consisting of interventions like:</p> <ul style="list-style-type: none"> • Formation of a Citizen Energy Community at the building-level. • Installation of 20 kWp solar system on a rooftop. • Change of energy supply contract to AXPO with new contractual options and flexibility. • Blockchain-enabled energy management. • Real-time analytics and data available to prosumers. <p>An ENER2CROWD crowdfunding campaign was conducted in December 2021 to finance the retrofit of the Smart Condo. 151.010 € were raised within few hours from the campaign opening. This project will involve 8 apartments and 32 private end users.</p>
Objectives	To promote democratic access to energy, to implement technological solutions, to assess environmental, social and economic impacts, to develop guidelines and political roadmaps, to create new partnerships and business models, to spread the word about this new energy culture.
Renewable energy generation (or capacity)	20 kWp
The role of the Agency and added value to the project for this participation	Partner in the above-mentioned research project in charge of energy simulations

11.1.8. Portugal

Case study no. 35 – Condomínio da Torre – Malha 15.3 (presented by ADENE – Portuguese Energy Agency)

Project Name	Condomínio da Torre – Malha 15.3
Website	Not available
Country and location	Portugal, Lisbon
Year of implementation	2018
Number of members	150 tenant owned apartments
Organisation type	Collective self-consumption
Services provided by the REC	Generation renewable electricity and consumption
Technology / Energy	Solar PV
Description of the project	The Condomínio da Torre – Malha 15.3 already is located in Lisbon and it is formed by 8 buildings that host around 150 apartments and 8 small shops. In 2019, the condominium already had 8 individual self-consumption systems (solar photovoltaic installations) feeding the buildings' common areas. Coopérnico has worked in close collaboration with its tenants to expand the current solar photovoltaic installations to create a system that could directly feed each apartment of the multi-building condominium, therefore initiating a collective self-consumption initiative. The goal is to expand up to 52 kWp.
Objectives	Renewable energy community based on collective self-consumption and collective ownership.
Renewable energy generation (or capacity)	26,66 kWp (40,000 kWh/year)
The role of the Agency and added value to the project for this participation	No participation of ADENE in this project. The information of this case study was provided by Coopérnico, a cooperative created with the aim of bringing together citizens and organizations that share the will to be active agents in promoting an energy and social model based on the principles of sustainability.

Case study no. 36 – Civil Parish Vila Boa do Bispo (presented by ADENE – Portuguese Energy Agency)

Project Name	Civil Parish Vila Boa do Bispo
Website	Not available
Country and location	Portugal, Marco de Canaveses Municipality
Year of implementation	2021
Number of members	Vila Boa do Bispo: located in Oporto region, is a rural village with 11.71 km² and 3,240 inhabitants
Organisation type	Renewable Energy Community
Services provided by the REC	Generation renewable electricity and consumption
Technology / Energy	Solar PV
Description of the project	Vila Boa do Bispo parish is settling an energy community (REC). The community will be initially formed including several public buildings such as: the offices of the civil parish of Vila Boa do Bispo, a gymnasium, and a fire brigade station. In the future, the goal is to include other local stakeholders such as condominiums and small local businesses.
Objectives	Renewable energy community based on collective self-consumption and collective ownership.
Renewable energy generation (or capacity)	Not available
The role of the Agency and added value to the project for this participation	No participation of ADENE in this project. The information of this case study was provided by Coopérnico, a cooperative created with the aim of bringing together citizens and organizations that share the will to be active agents in promoting an energy and social model based on the principles of sustainability.

11.2. Comparative Analysis of Case Studies

11.2.1. Motivations for REC creation

Table A2-1 – Objectives pointed for the REC creation in the sample of case studies presented

Country	Objectives	
AUSTRIA	CS#1: <ul style="list-style-type: none"> Empowering consumers to actively participate on the energy markets. 	
GREECE	CS#2: <ul style="list-style-type: none"> To produce local, clean and renewable energy for the citizens, covering a few hundreds of households. 10% of the electricity production for vulnerable citizens. 	CS#3: <ul style="list-style-type: none"> To help utilize the existing biomass in the local area, from forestry and post-harvest residues. To create added value at local level. To create new jobs. To support the creation of local cooperative ecosystem.
NETHERLANDS	CS#4: <ul style="list-style-type: none"> To assure energy autonomy, replacing natural gas for heating and cooking plus implementation of renewables. To experiment with energy law and regulation. 	CS#5: <ul style="list-style-type: none"> To build an energy community with zero energy costs (no energy bill), roll out renewables.
SPAIN	CS#7: <ul style="list-style-type: none"> To achieve a 40% reduction on CO₂ emissions associated with final consumption of energy in the region where will be located the REC. 	CS#8: <ul style="list-style-type: none"> To reduce the consumption from the electrical network of the partnered companies involved in the energy community.
	CS#9: <ul style="list-style-type: none"> To implement a renewable energy community covering the island of La Palma. 	CS#10: <ul style="list-style-type: none"> To develop a local energy community in the town of Abenojar (Ciudad Real province), municipality that falls into the demographic challenge category.
	CS#11: <ul style="list-style-type: none"> To be the first social initiative, with a local focus. The activities of this REC, that include renewable energies generation, electric mobility & energy demand management, should have positive social, environmental and economic impacts. The different projects should achieve a very important demonstrative effect. 	CS#12: <ul style="list-style-type: none"> To construct a solar PV farm and to install two charging points of electric vehicles, and to allow with these technologies for shared community self-consumption of energy in the town of Gea de Albarracin.
	CS#13: <ul style="list-style-type: none"> To allow citizen participation on energy matters. 	CS#14: <ul style="list-style-type: none"> To create a rural community solar PV farm.

	CS#15: <ul style="list-style-type: none"> To share self-consumption and to sell surplus energy to the “pool” in an industrial estate. Setup initially with 3 businesses joining, but open to future members. 	CS#16: <ul style="list-style-type: none"> To develop and execute a whole Energy Community project for a town.
	CS#17: <ul style="list-style-type: none"> To supply electricity to facilities and households of the Energy Community members. 	CS#18: <ul style="list-style-type: none"> To create a cell of shared self-consumption through the existing network of the Energy Community.
	CS#19: <ul style="list-style-type: none"> To supply electricity to the community on a collective self-consumption basis. 	CS#20: <ul style="list-style-type: none"> To create a pilot project to allow citizens participation on advanced distributed generation of electricity.
SWEDEN	CS#21: <ul style="list-style-type: none"> To demonstrate co-existence of a local energy network in the large-scale energy system (electricity grid and municipal district heating) in a joint energy market. (This should serve as a testbed). 	CS#22: <ul style="list-style-type: none"> To perform an optimization on the usage of self-produced solar electricity by transferring the solar electricity surplus between buildings in a microgrid.
	CS#23: <ul style="list-style-type: none"> To provide tenants of a residential building block the opportunity to be part of a REC. 	CS#24: <ul style="list-style-type: none"> Being a project on a small scale (farm based) anaerobic digestion of manure for production and distribution of biogas, with the aim to upgrade to biomethane – To scale up to make upgrading to biomethane as vehicle fuel feasible.
	CS#26: <ul style="list-style-type: none"> For a pilot residential area - To become an energy-smart neighbourhood. 	CS#27: <ul style="list-style-type: none"> To share energy between buildings.
	CS#28: <ul style="list-style-type: none"> To conduct a number of test beds in energy, transport, circular economy and digital urban development. The goal is to become a climate-neutral district by 2030. 	CS#29: <ul style="list-style-type: none"> To share services and innovation for shared economy.
UNITED KINGDOM	CS#30: <ul style="list-style-type: none"> To reduce the overall running costs and energy use of the community hub (clubhouse) and work towards achieving a more sustainable business model. 	CS#31: <ul style="list-style-type: none"> To reduce the site's electricity consumption as much as possible by generating its own energy from an on-site solar PV farm. To generate all its electricity and heating requirements from renewable sources by 2030. To demonstrate a return on investment within a reasonable timeframe so sufficient funds would be available to replace the infrastructure in the future, without the need for external fundraising.
	CS#32: <ul style="list-style-type: none"> To enable the involved communities to make the most of the opportunity offered by the local electricity and natural gas markets regulator by: 	CS#33:

	<ul style="list-style-type: none"> ➤ Supporting communities to complete the pre-registration process for a 12-month extension of the UK's Feed-in Tariff; ➤ Supporting the development of solar projects; ➤ Funding new Energy Performance Certificates. 	<ul style="list-style-type: none"> • To enable the early delivery of a clean energy scheme that will build local resilience in the face of the climate emergency by strengthening the local grid, decarbonising power requirements in the distributed area; • To enable sustainable economic returns for investors in an area.
ITALY	CS#34: <ul style="list-style-type: none"> • To promote democratic access to energy and to implement technological solutions; • To assess environmental, social and economic impacts; • To develop guidelines and political roadmaps; • To create new partnerships and business models and to spread the word about this new energy culture. 	
PORTUGAL	CS#35: <ul style="list-style-type: none"> • To implement a renewable energy community for collective self-consumption and collective ownership. 	CS#36: <ul style="list-style-type: none"> • To implement a renewable energy community for collective self-consumption and collective ownership.

11.2.2. Types of REC projects and services offered

Table A2-2 – Nature of REC projects presented

Country	Main characteristics of the REC	Sectors involved	Perceived socio-economic benefits	Services provided by the REC
AUSTRIA (CS no. 1)	<ul style="list-style-type: none"> - Electricity generation, through multiple technologies and energy sources (solar PV, wind farm, hydropower plants and biomass plants). - Creation of a market place for people selling electricity generated by their own to their neighbours - Online matching services and process of electricity supply and billing. - Development of citizens energy projects and cooperation with other communities for new REC. 	<ul style="list-style-type: none"> - Residential. - Others. 	<ul style="list-style-type: none"> - Participation/ownership. - Democratization of the electricity market (away from corporate interests, towards the interests of citizens). - Generation of financial returns for the community. 	<p>Peer to peer platform for renewable energy (matching platform, market place) with:</p> <ul style="list-style-type: none"> - Electricity generation - Electricity supply and selling - Electricity sharing & consumption
GREECE (CS no. 2-3)	<ul style="list-style-type: none"> - CS 2: Production of energy for citizens, based on a solar PV installation and other technologies and energy sources (biomass, biofuels, biogas, municipal wastes and CHP). 	<ul style="list-style-type: none"> - Local & regional Authorities / Municipalities. - Residential. - Others, including Industry. 	<ul style="list-style-type: none"> - Participation/ownership. - Low-cost energy bills. - Generation of other financial returns for the community. - Local value - Education and mobilization of citizens. - Social cohesion. 	<ul style="list-style-type: none"> - Production, storage, self-consumption or selling of electricity, heating and cooling from RES stations and HECHP. - Management of raw material for the production of electricity, heating and cooling from biomass or biofuels or biogas or through energy recovery biodegradable municipal waste fraction. - Supply for members of energy efficient products, appliances and facilities, aiming the reduction of energy consumption and use of conventional fuels, and the improvement of energy efficiency. - Distribution of electricity within the region where EC is located or distribution of heating and cooling. - Supply of electricity or gas to end users. - Demand-response management to reduce end-use electricity. - Installation and operation of water desalination units using RES. - Development, management and operation of alternative fuel infrastructure or management of sustainable means of transport. - Provision of ESCOs Energy Services.

	<ul style="list-style-type: none"> - CS 3: Production of pellets / wood chips. 	<ul style="list-style-type: none"> - Local & regional Authorities / Municipalities - Residential. - Others. 	<ul style="list-style-type: none"> - Participation/ownership. - Local value, including job creation. - Social cohesion. 	<ul style="list-style-type: none"> - Management (collection, transport, processing, storage, disposal) of raw material for the production of electricity, heating and cooling from biomass or biofuels or biogas.
NETHERLANDS (CS no. 4-6)	<ul style="list-style-type: none"> - CS 4: Electricity generation, based on solar PV (100 kWp) and battery storage, for a social ecological housing project consisting of 33 (private) sustainable homes on a 7600 m² space area. - Also solar heating and heat pumps involved, with the purpose to replace natural gas consumption. 	<ul style="list-style-type: none"> - Residential. 	<ul style="list-style-type: none"> - Participation/ownership. - Lifestyle. - Low-cost energy bills. - Energy autonomy. - Education. 	<ul style="list-style-type: none"> - Generation and supply of renewable electricity and heat. - Energy sharing. - Other activities foreseen.
	<ul style="list-style-type: none"> - CS 5: Building of an energy community with zero energy costs - Electricity generation, based on solar PV (500 kWp) and battery storage, for a renovated building with 115 apartments and a private grid. - Solar thermal production for apartments heating and warm water supply, through solar boilers and heat pumps. 	<ul style="list-style-type: none"> - Residential. 	<ul style="list-style-type: none"> - Participation/ownership. - Low-cost energy bills. - Energy autonomy. 	<ul style="list-style-type: none"> - Rent apartments with no energy bill / Generation and supply of renewable electricity and heat. - Grid connected PV.
	<ul style="list-style-type: none"> - CS 6: Generation and supply of electricity for a town, based on solar PV technology, connected to electro-mobility and charging points. 	<ul style="list-style-type: none"> - Municipalities 	<ul style="list-style-type: none"> - Local value. - Acceptance and awareness. - Lifestyle. 	<ul style="list-style-type: none"> - Generation and supply of renewable electricity. - Electro-mobility – bio-directional charging.
SPAIN (CS no. 7-20)	<ul style="list-style-type: none"> - CS 7: With the purpose of making progress on the energy transition in a municipality, so that may occur the evolution from a town where most of the energy consumption comes from unsustainable sources to another one that gets closer to 100% sustainable energy, and also aiming to protect the most vulnerable families: - Generation of renewable electricity (based on solar PV) for self-consumption and sustainable mobility. 	<ul style="list-style-type: none"> - Municipalities. - Residential. - Others. 	<ul style="list-style-type: none"> - Participation/ownership. - Local value. - Acceptance and awareness. - Lifestyle. - Low-cost energy bills. - Tackling energy poverty. - Social cohesion. 	<ul style="list-style-type: none"> - Generation of renewable electricity and self-consumption. - Sustainable mobility. - Energy demand management system.
	<ul style="list-style-type: none"> - CS 8: With the purpose of reduction of the consumption from the electrical network of the companies that are members of the REC: - Generation of electricity (based on solar PV) for self-consumption and sustainable mobility. - Purchase of electric vehicles for those companies. 	<ul style="list-style-type: none"> - Services and Industry. 	<ul style="list-style-type: none"> - Participation/ownership. - Acceptance and awareness. - Low-cost energy bills. 	<ul style="list-style-type: none"> - Generation of renewable electricity and self-consumption. - Sustainable mobility.
	<ul style="list-style-type: none"> - CS 9: Renewable energy community covering an island, based on solar PV and electric vehicles. 	<ul style="list-style-type: none"> - Insular municipalities. 	<ul style="list-style-type: none"> - Participation/ownership. 	<ul style="list-style-type: none"> - Generation of renewable electricity and self-consumption.

		<ul style="list-style-type: none"> - Residential. - Others 	<ul style="list-style-type: none"> - Energy autonomy. - Acceptance and awareness. - Social cohesion. 	<ul style="list-style-type: none"> - Sustainable mobility. - Energy demand management system.
	<ul style="list-style-type: none"> - CS 10: Implementation of renewable energy projects (solar PV) and improvement of energy efficiency of the thermal envelope of buildings in a town. 	<ul style="list-style-type: none"> - Municipalities. - Residential. - Others. 	<ul style="list-style-type: none"> - Participation/ownership. - Local value. - Lifestyle. - Acceptance and awareness. - Low-cost energy bills. - Tackling energy poverty. - Social cohesion. 	<ul style="list-style-type: none"> - Generation of renewable electricity and self-consumption. - Energy efficiency. - Energy demand management system.
	<ul style="list-style-type: none"> - CS 11: Project with social purposes and a local focus, and expected positive social, environmental and economic impacts. It will involve one self-consumption PV solar installation, located on the roof of a council-owned building, which will be leased for free by the local authority to the EC in exchange of allowing a municipal social household to join the Energy Community's electricity network. - It will also include a battery storage system and two charging poles and an energy management platform that will allow optimal performance of the energy community. 	<ul style="list-style-type: none"> - Municipalities. - Residential. - Others. 	<ul style="list-style-type: none"> - Participation/ownership. - Low-cost energy bills. - Local value. - Lifestyle. - Acceptance and awareness. - Tackling energy poverty. - Social cohesion. 	<ul style="list-style-type: none"> - Generation of renewable electricity and self-consumption. - Sustainable mobility. - Energy demand management system.
	<ul style="list-style-type: none"> - CS 12: Construction of a solar PV farm for a town and installation of two charging points for electric vehicles. 	<ul style="list-style-type: none"> - Municipalities. - Residential. - Others. 	<ul style="list-style-type: none"> - Participation/ownership. - Low-cost energy bills. - Local value. - Acceptance and awareness. - Social cohesion. 	<ul style="list-style-type: none"> - Generation of renewable electricity and self-consumption. - Sustainable mobility.
	<ul style="list-style-type: none"> - CS 13: Advanced energy solutions in decentralized electricity production (based on solar PV) and electric vehicle charging. 	<ul style="list-style-type: none"> - Municipalities. - Residential. - Others. 	<ul style="list-style-type: none"> - Participation/ownership. - Low-cost energy bills. - Local value. - Lifestyle. - Acceptance and awareness. - Social cohesion. 	<ul style="list-style-type: none"> - Generation of renewable electricity and self-consumption. - Sustainable mobility. - Energy demand management system.

	<ul style="list-style-type: none"> - CS 14: Creation of a rural community and self-consumption solar PV farm servicing 15 supply points (households, council properties and small businesses). - Optimization of the PV production surplus through: <ul style="list-style-type: none"> a. Real-time monitoring of production and consumption per supply point; b. Use of regulation systems through hydraulic and thermal storage; c. Providing advice to users and organizations of the project. - Carrying out of workshops to empower local women on energy efficiency matters and to provide advice on energy efficiency for local residents 	<ul style="list-style-type: none"> - Municipalities - Rural communities. - Residential. - Others. 	<ul style="list-style-type: none"> - Participation/ownership. - Low-cost energy bills. - Local value. - Lifestyle. - Acceptance and awareness. - Education. - Social cohesion. 	<ul style="list-style-type: none"> - Generation of renewable electricity and self-consumption. - Sustainable mobility. - Energy demand management system.
	<ul style="list-style-type: none"> - CS 15: Construction of a 720 kW solar PV scheme located in the roofs of industrial installations of companies of an industrial park, for shared self-consumption of the generated electricity in those companies and sale of surpluses of produced electricity to a "pool". - Installation of three electric vehicle charging points (50 kW), in addition to existing low-speed charging points located in the transportation center. 	<ul style="list-style-type: none"> - Industry. 	<ul style="list-style-type: none"> - Participation/ownership. - Low-cost energy bills. - Generation of other financial returns for the community. - Acceptance and awareness. 	<ul style="list-style-type: none"> - Generation of renewable electricity and self-consumption. - Sustainable mobility.
	<ul style="list-style-type: none"> - CS 16: Development and execution of a whole Energy Community project with 186 members for a town, based on electricity generation by solar PV. - Also foreseen energy efficiency actions. 	<ul style="list-style-type: none"> - Municipalities. - Residential. - Others. 	<ul style="list-style-type: none"> - Participation/ownership. - Low-cost energy bills. - Local value. - Acceptance and awareness. - Education. - Social cohesion. 	<ul style="list-style-type: none"> - Generation of renewable electricity and self-consumption. - Energy efficiency.
	<ul style="list-style-type: none"> - CS 17: With the aim of supplying electricity to facilities and households of the Energy Community members: - Creation of 5 solar PV installations. 	<ul style="list-style-type: none"> - Municipalities. - Residential. 	<ul style="list-style-type: none"> - Participation/ownership. - Low-cost energy bills. - Local value. - Acceptance and awareness. 	<ul style="list-style-type: none"> - Generation of renewable electricity and self-consumption.
	<ul style="list-style-type: none"> - CS 18: Creation of a cell of shared self-consumption through the existing network of the Energy Community. The project will include: Generation of renewable energy, based on solar PV, and shared self-consumption; Energy management; and, One electric vehicle public charging point. 	<ul style="list-style-type: none"> - Municipalities. - Residential. - Others. 	<ul style="list-style-type: none"> - Participation/ownership. - Low-cost energy bills. - Local value. - Acceptance and awareness. - Social cohesion. 	<ul style="list-style-type: none"> - Generation of renewable electricity and self-consumption. - Sustainable mobility. - Energy demand management system.

	<ul style="list-style-type: none"> - CS 19: With the aim of supplying electricity to the community on a collective self-consumption basis, the project will include 3 electrical renewable energy installations (solar PV), and it will be developed an energy demand management system software, to optimize self-consumption quotas. 	<ul style="list-style-type: none"> - Municipalities. - Residential. - Others. 	<ul style="list-style-type: none"> - Participation/ownership. - Low-cost energy bills. - Local value. - Acceptance and awareness. - Social cohesion. 	<ul style="list-style-type: none"> - Generation of renewable electricity and self-consumption. - Energy demand management system.
	<ul style="list-style-type: none"> - CS 20: A pilot project to allow citizens participation on advanced decentralized generation of electricity. It will include the distributed generation of electricity, based on solar PV, and the self-consumption by its 7 members, electric vehicles charging points and an energy demand management system. 	<ul style="list-style-type: none"> - Municipalities - Residential. - Others. 	<ul style="list-style-type: none"> - Participation/ownership. - Low-cost energy bills. - Local value. - Lifestyle. - Acceptance and awareness. 	<ul style="list-style-type: none"> - Generation of renewable electricity and self-consumption. - Sustainable mobility. - Energy demand management system.
SWEDEN (CS no. 21-29)	<ul style="list-style-type: none"> - CS 21: With the purpose of demonstrating the possible co-existence of a local energy network in the large-scale energy system (electricity grid and municipal district heating) in a joint energy market (and serving as a testbed) – Development of a campus area with local energy networks (EC with 9 members), involving several technologies (solar PV, heat pumps and energy storage). - Renewable energy capacity: 1,000 kW electricity, 15,725 kW heating and 1,740 kW cooling. 	<ul style="list-style-type: none"> - Municipalities. - Residential. - Others. 	<ul style="list-style-type: none"> - Participation/ownership. - Democratization of the energy market (away from corporate interests, towards the interests of citizens). - Generation of financial returns for the community, including low-cost energy bills. 	<ul style="list-style-type: none"> - Local digital market place for electricity, heating and cooling: <ul style="list-style-type: none"> - Electricity generation - Electricity storage - Electricity consumption - Electricity supply - Electricity selling
	<ul style="list-style-type: none"> - CS 22: Optimization on the usage of self-produced solar electricity by transferring the solar electricity surplus between buildings in a microgrid. 4 apartment buildings involved, EC with 2 members. - Technologies: Solar PV, DC Microgrid, battery storage. - Renewable energy generation: 22 MWh/year. 	<ul style="list-style-type: none"> - Municipalities. - Residential. 	<ul style="list-style-type: none"> - Participation/ownership. - Low-cost energy bills. - Local value. - Acceptance and awareness. 	<ul style="list-style-type: none"> - Supply of renewable electricity.
	<ul style="list-style-type: none"> - CS 24: Farmers with small scale (farm based) anaerobic digestion of manure cooperate in gas distribution, upgrading to biomethane and filling stations. The project aims to scale up the biomethane production to be used as vehicle fuel feasible. - Renewable energy generation: 16 GWh/year. 	<ul style="list-style-type: none"> - Rural communities. - Others. 	<ul style="list-style-type: none"> - Participation/ownership. - Local value. - Acceptance and awareness. 	<ul style="list-style-type: none"> - Biogas production and distribution, upgrading to biomethane.
	<ul style="list-style-type: none"> - CS 26: The project involves a pilot residential area initialized by the municipality and the municipal housing company. The objective is to become an energy-smart neighbourhood, with the generation of electricity through a solar PV system and sharing of this energy between the members of the EC (180 residents). It also includes a charging infrastructure. 	<ul style="list-style-type: none"> - Municipalities. - Residential. 	<ul style="list-style-type: none"> - Participation/ownership. - Low-cost energy bills. - Local value. - Acceptance and awareness. 	<ul style="list-style-type: none"> - Electricity generation and storage. - Electricity supply. - Electricity sharing and consumption. - Electric vehicles charging infrastructure.
	<ul style="list-style-type: none"> - CS 27: With the purpose of sharing energy between buildings, the project involves 4 buildings that form a science park and that are connected with a 	<ul style="list-style-type: none"> - Municipalities. 	<ul style="list-style-type: none"> - Participation/ownership. 	<ul style="list-style-type: none"> - Electricity generation and storage.

	<p>micro grid (760 V DC). The electricity generation will be assured by a solar PV system, with 225 kW of capacity.</p>	<p>- Services.</p>	<p>- Low-cost energy bills</p> <p>- Local value.</p> <p>- Acceptance and awareness.</p>	<p>- Electricity supply.</p> <p>- Electricity sharing and consumption.</p> <p>- Electric vehicles charging infrastructure.</p>
	<p>- CS 28: Hammarby Sjöstad is Stockholm's biggest urban development project for many years. The city district will offer a natural expansion of Stockholm's inner city – a factor that has influenced the structure, infrastructure, layout and construction design. The project aims to conduct a number of test beds in energy, transport, circular economy and digital urban development.</p> <p>- With this project should be engaged residents using a bottom-up perspective and a holistic view of climate issues that integrates housing with e-mobility, circular economy and urban farming. The goal is to become a climate-neutral district by 2030.</p> <p>- Several technologies and energy sources will be integrated in the project, namely solar PV, heat pumps, geothermal heat and waste heat.</p>	<p>- Municipalities.</p> <p>- Residential.</p> <p>- Others.</p>	<p>- Local value.</p> <p>- Acceptance and awareness.</p> <p>- Lifestyle.</p> <p>- Education.</p> <p>- Generation of financial returns for the community.</p> <p>- Social cohesion.</p>	<p>- Microgrid, charging, heating.</p>
UNITED KINGDOM (CS no. 30-33)	<p>- CS 30: The EC combines 3 Community Sports Clubs providing sports activities, schools and youth initiatives and other activities and services to over 6000 young people and adults and over 1000 local people of all ages and abilities per year. The objective is to reduce the overall running costs and energy use of the clubhouse and work towards achieving a more sustainable business model.</p> <p>- After conducting an energy audit and receiving recommendations, the Community Sports Centre applied for a capital Grant through the 'Let's Do Net Zero Community Buildings Fund', part of the Scottish Government's Community Renewable Energy Scheme (CARES) to implement the energy audit recommendations – specifically to install a solar photovoltaic (PV) array and to upgrade the lighting systems to LED lighting throughout the Centres.</p>	<p>- Municipalities.</p> <p>- Services.</p>	<p>- Low-cost energy bills.</p> <p>- Generation of other financial returns for the community.</p> <p>- Acceptance and awareness.</p> <p>- Well-being & health.</p>	<p>- Energy savings and lower running costs across the Community Sports Club.</p> <p>- Longer term benefit: to reduce the hire rates for community groups.</p>
	<p>- CS 31: A community owned company that works with many local groups, charities and other organizations in the surrounding area, offering their site's assets to facilitate training and events, storage facilities and also to make charitable donations through the foundation. This community purchased a former airbase with the overall vision of building a prosperous and sustainable future for the local community, using the properties and assets of the site, to stimulate socio-economic growth in the area.</p> <p>- It applied for funding through the Scottish Government's Community Renewable Energy Scheme in order to carry out detailed feasibility work so they could look at the costs of installing a large, ground mounted solar PV system and designing a smart energy management system for onsite use and for electricity exportation when needed. The requirements were that the project should demonstrate a return on investment to ensure funds for future replacements, and also to be appropriately sized to ensure generation of enough energy to offset the sites consumption.</p>	<p>- Services.</p>	<p>- Participation/ownership.</p> <p>- Low-cost energy bills.</p> <p>- Generation of other financial returns for the community.</p> <p>- Local value.</p> <p>- Acceptance and awareness.</p>	<p>- Energy savings, generation and supply of renewable energy, energy consumption.</p> <p>- On a much broader scale, the site properties and assets are being developed to stimulate local socio-economic growth in the area by positioning the site to attract investment from new and diverse industries, thereby bringing much wider services and benefits to the local community.</p>

<ul style="list-style-type: none"> - The feasibility study suggested a size of PV array where electricity could be generated on site without exportation. A 250 kW ground mounted solar PV array was installed, and is already planned to increase this capacity until 1 MW. 				
<ul style="list-style-type: none"> - CS 32: A total of 35 community groups is involved, covering schools, leisure centres, sports clubs, community halls and centres, community trust buildings and heritage centres, and a resilience centre totalling 78 building in all. - The Feed-in Tariff (FIT) scheme closed to new applications in March 2019. However, Ofgem (The Office of Gas and Electricity Markets, the UK Government regulator for the electricity and downstream natural gas markets in Great Britain) offered community organizations a 12 months extension whereby communities interested in small solar PV projects (50 kW or less) could pre-register buildings with Ofgem and then have 12 months to get their project up and running but still receive Feed-in-Tariff payments at the January 2019 rate. These payments were guaranteed for 20 years. - Through Local Energy Scotland the project supported 35 community groups to make use of this offer Ofgem offer by supporting them to apply for pre-registration for 78 buildings and has continued to support the communities since. The vision is that these projects will have a lasting environmental, economic and social benefit on their communities. Many of these communities have not previously been involved in any renewable energy projects and may not have progressed their solar projects if it were not for this opportunity. The projects will also support community involvement and partnership working in local energy systems which may encourage new installations of locally owned renewable energy in the future. 	<ul style="list-style-type: none"> - Municipalities. - Services. - Others. 	<ul style="list-style-type: none"> - Participation/ownership. - Generation of financial returns for the community. - Local value. - Acceptance and awareness. - Education. 	<ul style="list-style-type: none"> - Generation of renewable electricity and sale of surplus electricity through FITs whereby over the next 20 years (from 2020) will be reinvested into work which contributes to a wider positive impact across the areas. - Where host buildings are owned by others such as councils and local businesses, benefits include low-carbon credentials and affordable electricity, freeing up funds for services and enhancing competitiveness. - Communities will increase their energy awareness through the delivery and management of their projects. These communities can mentor and also act as demonstrators for others as market conditions improve through price reductions and as the Smart Export Guarantee is established. - This project as a whole has also increased activity for solar PV installers across Scotland during a period when the market is in transition. 	
<ul style="list-style-type: none"> - CS 33: It involves a community (with 200 members) owned by a renewable energy company, that generates clean electricity to the local distribution network. This community came about through the shared interest of local people in and around the town of Machynlleth in mid Wales in creating a local renewable energy ownership scheme. Their projects are delivered through grant funding, ethical investors and committed individuals. And the bonus on top of carbon free and renewable generation in the locality is that as a community they can also benefit from its financial returns, both as individual investors and through the contribution annually to local regeneration organization. - The project comprises the installation of a 300 kW solar array adjacent to an existing 500 kW wind turbine. This solution shares and optimizes the use of the existing grid connection. Part (270 kW) of the solar array will connect to the 11 kV network, and the remainder (30 kW) to a private wire connection to the Centre for Alternative Technology nearby. In times of excess generation relative to grid capacity, control systems will curtail generation or direct. Therefore, the project apart enabling the early delivery of a clean energy scheme that will build local resilience in the face of the climate emergency by strengthening the local grid, also contributes for 	<ul style="list-style-type: none"> - Municipalities. - Residential. - Services. - Others. 	<ul style="list-style-type: none"> - Participation/ownership. - Generation of financial returns for the community. - Local value. - Acceptance and awareness. 	<ul style="list-style-type: none"> - Generation and supply of renewable energy to the grid and local private wire connection. 	

	decarbonizing power requirements in the distributed area, and in this way for sustainable economic returns for investors in an area.			
ITALY (CS no. 34)	<ul style="list-style-type: none"> - CS 34: This Community project, with 13 members, aims to empower citizens to generate, share and sell renewable energy and thereby to contribute to making the European energy sector more sustainable and democratic. It involves a condominium that was built in 1966 and has 8 four-room, 85 m² apartments, with 32 private end users. It has an energy rating of G (the lowest possible) and there is no central heating, only individual heating units with no energy monitoring or control systems. The building currently has envelope water/air leakage and a maintenance/retrofit is scheduled. Given this planned renovation, there is the opportunity to retrofit and showcase a “smart condo” concept consisting of interventions like: <ul style="list-style-type: none"> • Formation of a Citizen Energy Community at the building-level. • Installation of 20 kWp solar system on a rooftop. • Change of energy supply contract to AXPO with new contractual options and flexibility. • Blockchain-enabled energy management. • Real-time analytics and data available to prosumers. 	<ul style="list-style-type: none"> - Municipalities. - Residential. 	<ul style="list-style-type: none"> - Participation/ownership. - Democratic access to energy. - Low-cost energy bills. - Generation of other financial returns for the community. - Local value. - Acceptance and awareness. - Education. 	<ul style="list-style-type: none"> - Generation of renewable electricity. - Sharing and self-consumption of energy generated. - Supply and selling of the surpluses of energy generated to the public grid.
PORTUGAL (CS no. 35-36)	<ul style="list-style-type: none"> - CS 35: The project “Condominio da Torre – Malha 15.3” involves 8 buildings that host around 150 apartments and 8 small shops. In 2019, the condominium already had 8 individual self-consumption systems (solar photovoltaic installations) feeding the buildings’ common areas. It is foreseen to expand the current solar photovoltaic installations with a capacity of 26.66 kWp to create a system that could directly feed each apartment of the multi-building condominium, therefore initiating a collective self-consumption initiative. The goal is to expand up to 52 kWp. 	<ul style="list-style-type: none"> - Residential. - Trade and Services. 	<ul style="list-style-type: none"> - Participation/ownership. - Acceptance and awareness. 	<ul style="list-style-type: none"> - Generation of renewable electricity and self-consumption.
	<ul style="list-style-type: none"> - CS 36: The project consists in the implementation of a REC in a civil parish of a municipality of the North of Portugal. The community will be initially formed including several public buildings such as: the offices of the civil parish of Vila Boa do Bispo, a gymnasium, and a fire brigade station. In the future, the goal is to include other local stakeholders such as condominiums and small local businesses. - The generation of renewable electricity for self-consumption of those REC members will be based on the solar PV technology. 	<ul style="list-style-type: none"> - Local Public Administration/ Municipalities. - Services - Others 	<ul style="list-style-type: none"> - Participation/ownership. - Acceptance and awareness. 	<ul style="list-style-type: none"> - Generation of renewable electricity and self-consumption.