



R-ACES
Energy Cooperation Platform

plates

1



Learning community format



AUTHORS: CHRISTA DE RUYTER, S-ISPT

DATE: 16-5-2022



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°892429



Technical References

Project Acronym	R-ACES
Project Title	fRamework for Actual Cooperation on Energy on Sites and Parks
Project Coordinator	ISPT – Institute for Sustainable Process Technology
Project Duration	1 June 2020 – 30 November 2020
Project Website	www.r-aces.eu

Deliverable No.	D4.2
Dissemination level ¹	PU
Type Deliverable ²	R
Work Package	4
Lead beneficiary	S-ISPT
Contributing beneficiary(ies)	Condugo, POM, ESCI, LE2C, Spinergy, Energy Cluster Denmark, EHP
Due date of deliverable	30 November 2021
Actual submission date	4 November 2021

¹ PU = Public

PP = Restricted to other programme participants (including the Commission Services)

RE = Restricted to a group specified by the consortium (including the Commission Services)

CO = Confidential, only for members of the consortium (including the Commission Services)

² R = Document, report

DEC = Websites, patent filings, video, etc.

DEM = Demonstrator, pilot, prototype

OTHER = other





Project Summary

The R-ACES project is an initiative promoted by 8 partners from 6 European countries, with the vision to support high-potential industry parks and clusters to become fully fledged eco-Regions that reduce emissions by at least 10 %. R-ACES means a step-change in the contribution of European Industry to the climate targets of the EU. The industry sector after all represents 25% of all energy demand – and 50% of the total cooling and heating demand on the continent; yet only 16% comes from renewables. By focusing on collective measures and clustering, the efficiency of industry can be drastically increased.

The focus of R-ACES therefore is to turn high-potential, high-impact industrial clusters into ecoregions that achieve at least a 10% reduction in emissions. They do so by exchanging surplus energy, making extensive use of renewables and tying everything together with smart energy management systems. An ecoregion is a geographic area where energy and information exchanges occur between various companies and actors to reduce waste and energy consumption. Ecoregion can be centred on an (eco-)industrial park or (eco-)business park, linked to its surroundings by a 4th/5th generation district heating/cooling network.

R-ACES is the capping stone, condensing the knowledge and experience gathered throughout EU and national projects into a set of three focused tools, namely a self-assessment tool, a legal tool, and a smart energy management platform for clusters. The tools are embedded in support actions built around peer-to-peer learning, more formal coursework and webinars, and serious games. Together they enable a cluster to really become an ecoregion and set up meaningful energy collaboration. The entire package of tools and support is aimed at the high-potential clusters identified in the European Thermal Roadmap. It will be validated in three ecoregions, actively deployed in another seven regions, and disseminated to identified ninety regions European wide. In addition, the tools and support methodology will be made available to third parties in a sustainable way after the end of this project.





Partners



Institute for
Sustainable
Process Technology

<https://ispt.eu/>



Condugo

<https://www.condugo.com/>



<http://www.spinergy.it/>



<https://www.energycluster.dk/>



<http://www.energycluster.it/en>



<https://www.pomantwerpen.be/>



<https://www.esci.eu>



<https://www.euroheat.org/>





Executive Summary

R-ACES aims to establish ecoregions in which different actors cooperate on energy cooperation. Energy cooperation activities are often relatively new for actors in the different regions. Therefore, they have to go through a so-called learning curve before they can participate in successful projects.

To enable the stakeholders to learn from each other, the R-ACES project establishes learning communities. These communities provide a space and a structure for participants to align around a shared goal (in this case energy cooperation) and provide a common agenda and they enable participants to share results and learn from each other.

To provide interesting content for the learning community meetings, learning community formats are developed. In this document, you will find some background information on learning communities and the learning community formats. These formats are used as content for the learning community meetings conducted during the R-ACES project. They could also serve as inspiration for others that want to form a learning community on energy cooperation.

Key Words

R-ACES keywords

Industrial Symbiosis, Energy System Integration, District Heating and Cooling, Energy Cooperation, Ecoregion, Eco-Industrial Parks

Deliverable keywords

Formats, Learning Communities

Disclaimer

This publication reflects only the author's view. The Agency and the European Commission are not responsible for any use that may be made of the information it contains.





Table of Contents

1	INTRODUCTION	7
1.1	OBJECTIVE OF WORK PACKAGE 4 "EXPAND"	7
1.2	OBJECTIVE OF THE DELIVERABLE	7
2	LEARNING COMMUNITIES	8
2.1	THEORETICAL BACKGROUND OF LEARNING COMMUNITIES	8
2.1.1	<i>Energy cooperation in the ecoregions</i>	8
2.1.2	<i>What is a learning community?</i>	8
3	LEARNING COMMUNITY TEMPLATES	9
4	CONCLUSION	10
	ANNEXES	11





1 Introduction

1.1 Objective of work package 4 “Expand”

The overall objective of the work package is to EXPAND the coordination and support action towards 10 regions in Italy, Denmark, Belgium, France and the Netherlands, which are the countries of the industrial partners of R-ACES. These regions are selected and approached during the project lead-time and R-ACES aims to trigger energy cooperation actions in the regions and to commit management of sites, DHC's, industrial parks to start or expand energy cooperation actions. The regions will benefit from the development of the tools and experience during validation in the three main ecoregions of the project (work package 3).

The main way to coordinate the expansion is through the means of learning communities (LC). A learning community within R-ACES refers to a local group of stakeholders that are (a) directly involved with the energy collaboration on a site; and (b) engaging in both organised and informal exchange of knowledge and best practices over the course of the project period. These groups are the first beneficiaries of instruments like the use case library, the R-ACES tools, and the R-ACES serious game. Learning communities from different sites in this project will eventually be brought into contact with each other to further stimulate the exchange of best practices. Learning communities are seen as important to facilitate innovations related to energy cooperation projects. So, they build innovation capacity in the ecoregions.

To reach the overall objective, the following actions will be conducted:

- **Formulate an expansion roadmap in which the actions to roll out the learning communities in the ecoregions are described**
- **Make a template for the learning community meetings**
- **Evaluate the learning communities as a way for capacity building**
- **Make a serious game that serves as potential content of the learning community meetings**
- **Set up an educational online environment that serves as potential content of the learning community meetings**

1.2 Objective of the deliverable

To provide interesting content for the learning community meetings, learning community templates are developed. In this document, you will find some background information on learning communities and the learning community templates. These templates are used as content for the learning community meetings conducted during the R-ACES project. They could also serve as inspiration for others that want to form a learning community on energy cooperation.





2 Learning communities

2.1 Theoretical background of learning communities

2.1.1 Energy cooperation in the ecoregions

The seven additional ecoregions all have their own characteristics. However, they have one thing in common: They want to create new forms of energy collaboration. Earlier in this project, research has been conducted on the actual state of such energy collaboration projects. In practice, many projects encounter legal/ economic/ spatial/ technical or social & managerial obstacles. Often local knowledge and skills are lacking to deal with these barriers¹. The development of relevant knowledge and skills can then be seen as a crucial factor to foster energy cooperation projects within an ecoregion. R-ACES aims to facilitate this by creating learning communities.

2.1.2 What is a learning community?

Learning communities provide a space and a structure for participants to align around a shared goal (in this case energy cooperation). Effective communities are both aspirational and practical. They connect people, organisations, and systems that are eager to learn and work across existing boundaries. At the same time, the communities provide a common agenda and they enable participants to share results and learn from each other, thereby improving their ability to achieve rapid yet significant progress².

The idea behind learning communities is that learning, working and innovation are ultimately connected. Thereby, the involvement of all relevant parties (key stakeholders) is important. A learning community creates opportunities to go beyond the necessary progress in building up knowledge. Through action-based learning, the development and dissemination of both knowledge and skills are efficiently promoted. The strength of learning communities lies in the fact that one learns not only individually but also as a group of colleagues (in one field or multidisciplinary groups of professionals).

In learning communities, the participants are working on a real issue and reflecting on actual behaviour. They could, for example, compare an energy cooperation approach that had previously been adopted and compare them with the norms and guidelines of others in the same field. Participants are offered the opportunity to share best practices and raise problems of practice with peers in order to illuminate potential solutions. Preferably, there is a facilitator serving as a guide to the group in terms of setting topics for discussion and organizing the time efficiently. The facilitator is supported by materials developed by R-ACES.

A successful learning community is not built in one day. Instead, it consists of the following phases, which are shortly described below.

1. **A definition phase in which the learning community is formed. Within the R-ACES project, we identified the following main actions:**
 - a. **Making a learning community format, process and reflection template**
 - b. **Setting the context for the learning community in each region**
 - c. **Selecting the relevant stakeholders for the learning community in each ecoregion**
 - d. **Plan activities of the learning community and decide on the way of facilitation for each learning community**

¹ S-PARCS, 2019; Scaler, 2017; Bush, 2016; Tempo, 2018; ProgRESsHEAT, 2015

² Harvard: <https://developingchild.harvard.edu/collective-change/key-concepts/learning-communities/>





2. **A starting phase, where the learning community kicks off. Thereby, the following actions should be conducted:**
 - a. **In each region, a learning community kick off is organized**
 - b. **Concrete challenges or topics of interest for the energy cooperation case are defined and formulated in each learning community**
 - c. **The facilitation of each learning community is further defined**
3. **An implementation phase during which the participants of the learning community are learning from each other:**
 - a. **Meetings and activities are organized that fulfil the learning ambitions of the community**
 - b. **Communication expressions are made**
4. **A closing phase during which the learnings of the community are wrapped up and reflected upon:**
 - a. **A reflection session is organized**
 - b. **An impact survey is conducted**
 - c. **An end report is written**

3 Learning community templates

The establishment of an energy cooperation project is a complex process requiring different stakeholders, skills, and knowledge in various project phases. Managing such a project is seen as a time intensive and difficult task. The R-ACES consortium would like to ease this managing task by providing tools and templates that help energy professionals with this task. Of course, there is no one-size-fits-all solution for all potential managerial issues. The management of such multi-stakeholder processes depends on very local conditions. Nevertheless, we would like to help managers to make better decisions regarding the establishment of their energy cooperation project; e.g., who to involve, what steps one should go through, how to create motivation and/or how to set up an action plan. In order to do this, we established a timeline including the general steps part of establishing an energy cooperation project (see figure 1). The timeline also includes information on the R-ACES tools and various templates that can help in a specific phase of the project.

The timeline that is depicted in this template is not a blueprint of how to organize an energy cooperation project. It depends among others on who is initiating the energy cooperation project (see template 2). However, it does give some guidance regarding what steps can be taken, and what tools and templates are relevant for in what moment of the process. The ecoregions can themselves decide which formats and tools best fit the context of their ecoregion. Also, combinations between different templates/tools are encouraged.



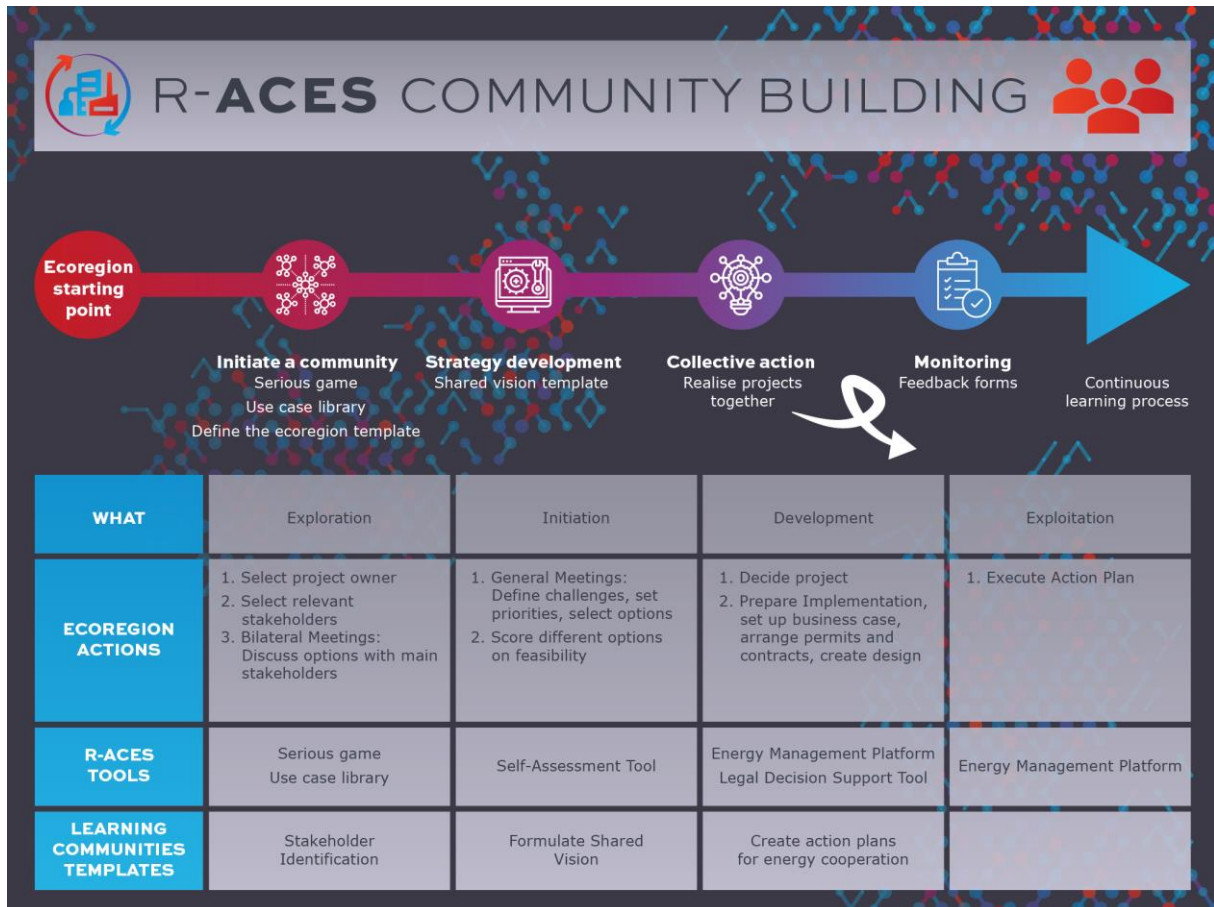


Figure 1: Process of creating energy cooperation projects

The R-ACES tools are comprehensive instruments or platforms to calculate or determine possibilities and/or obstacles for energy cooperation. They are available on the R-ACES website (see www.r-aces.eu). The templates serve as inspiration to set up concrete energy cooperation projects within a region. They describe activities, information, checklists or agreements relevant for stakeholder-management. The following templates have been developed:

1. **Template 1: Define the ecoregion**
2. **Template 2: Formulate shared vision**
3. **Template 3: Stakeholder identification**
4. **Template 4: Create action plans for energy cooperation**
5. **Template 5: The process of establishing an energy cooperation project**
6. **Template 6: Discuss the self-assessment tool**

All templates exist as a PowerPoint presentation with explanatory notes in the note section. In appendix 2, one can find the screen shots of the PowerPoint presentations. The templates are also publicly available on the R-ACES website: <https://r-aces.eu/training-material/ecoregion-development/>.

4 Conclusion

The R-ACES learning community templates are developed to help professionals with structuring their energy cooperation projects. Energy cooperation projects can encounter a lot of different obstacles. We hope the formats inspire you to overcome hurdles and to work towards the creation of your project.





Annexes

Annex 01

R-ACES definitions

Business Park: An area of land in which many office buildings are grouped together with a common infrastructure ([Wikipedia](#)). Business parks, like industrial sites, often have similarities in heating and cooling demand. Certain businesses may even have residual energy streams, for example data centers. As such, business parks may also organize as an ecosystem or eco business park (EBP) and become an important stakeholder within an ecoregion.

Eco Business Park: *"An eco-industrial park is a community of businesses located on a common property in which businesses seek to achieve enhanced environmental, economic and social performance through collaboration in managing environmental and resource issues. This is known as industrial symbiosis, which is a means by which companies can gain a competitive advantage through the physical exchange of materials, energy, water and by-products, thereby fostering inclusive and sustainable development."* ([United Nations Industrial Development Organization](#))

Communicate: professional and public coverage of the project results and achievements, benefits and potential deployment. This will be realised via the adoption of a large variety of distribution channels, including already existing platforms focusing on energy cooperation in industrial sites and business parks and energy exchange/cooperation at large.

Disseminate: exploitation of the project results to relevant stakeholders in the regions. It intends to ensure a low threshold in accessibility, usage of R-ACES tools and methods. This includes access to the tools, to the use case libraries and to the training and capacity building material and related self-explanatory instruction manuals.

DHC: Abbreviation of District Heating and Cooling. A system for distributing heating/cooling generated in a centralized location through a system of insulated pipes for residential and commercial heating requirements such as space heating/cooling and water heating/cooling.

4th generation DHCs: *"4GDH systems provide the heat supply of low-energy buildings with low grid losses in a way in which the use of low-temperature heat sources is integrated with the operation of smart thermal grids. Smart thermal grids consist of a network of pipes connecting the buildings in a neighbourhood, town centre or whole city, so that they can be served from centralised plants as well as from a number of distributed heating and cooling producing units (or decentralised units) including individual contributions from the connected buildings. The concept of smart thermal grids can be regarded as being parallel to smart electricity grids. Both concepts focus on the integration and efficient use of potential future renewable energy sources as well as the operation of a grid structure allowing for distributed generation which may involve interaction with consumers."* (adapted from Lund et al, Energy 68; 2014, p1-11).

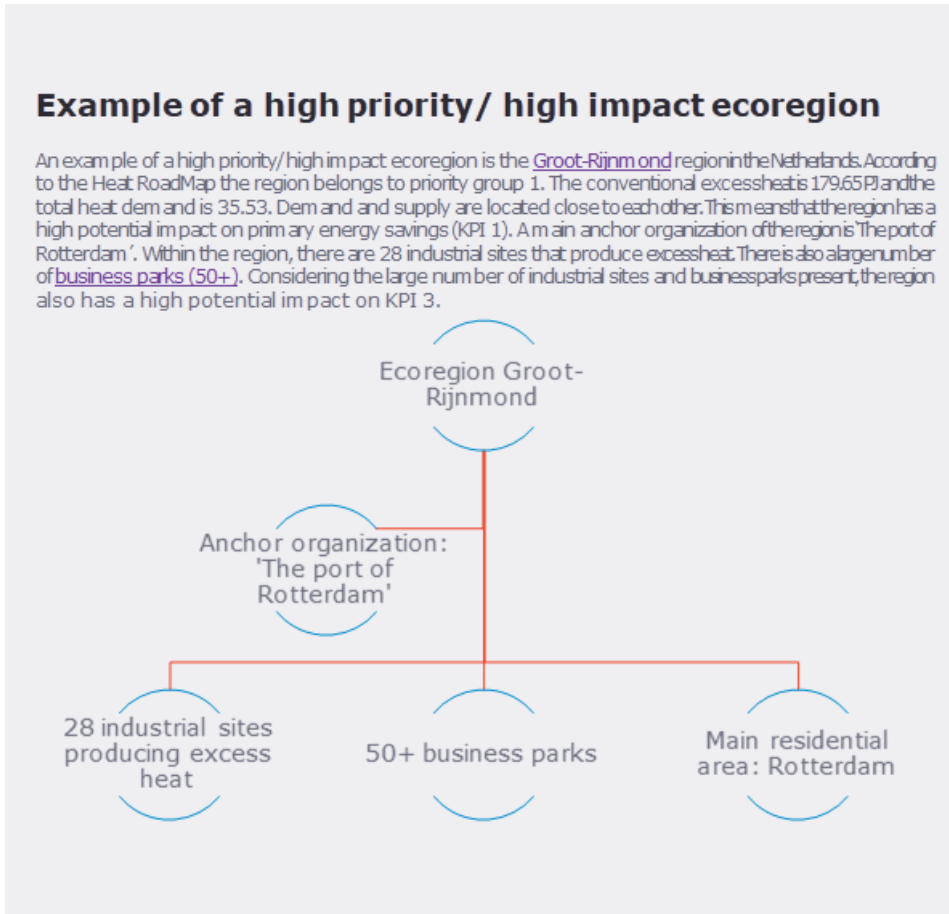
5th generation DHCs: *"5GDHC is a highly optimized, demand-driven, self-regulating, energy management system for urban areas. Its key features are: 1) ultra-low temperature grid with decentralized energy plants; 2) closed thermal energy loops ensuring hot and cold exchange within and among buildings; 3) integration of thermal and electricity grids."* ([D2grids](#), Interreg NWE)

Ecoregion: An ecoregion within the R-ACES project is a geographic area where energy and information exchanges occur between stakeholders of various types to reduce energy consumption. Geographical size does not matter (the size of an ecoregion can be as small as a business park or as large as a city). Important is that an ecoregion relies on an anchor organization responsible for managing the area (for example park management). Another aspect is the proximity of stakeholders in order to ensure interconnected energy flows (continuity of supply, quality of supply, quantity). Within an ecoregion, a wide range of assets could be involved: office parks, data centers, multimodal centers, technological centers, agro-centers, science parks, brain parks, lighthouse parks, chemical





parcs, eco-industrial parks, and cluster/business parks. For the demand of heat, also residential areas could be taken into account. As such, the term ecoregion functions as an 'umbrella term'.



High priority region: A high priority region is an Ecoregion, as defined above, that has balanced potential match of heating/cooling supply and heating/cooling demand in both quantitative (amount of heating/cooling) and qualitative (temperature, form of heat) terms. The region should be identified by heat roadmap studies (for example, the Heat RoadMap Europe or Stratego) or other research activities. In addition, the regions should have networking possibilities. The regions can include industrial sites, business parks and residential areas.

The table below gives an indication of the priorities. R-ACES will focus on priority group 1 +2.

Table 2.19. Excess heat ($E_{heat,o}$) and heat demand (Q_{tot}) characteristics for the definition of priority groups to identify heat synergy regions

Priority group	Characteristics		Priority status	Comment
	Excess heat ^a [PJ/a]	Heat demand ^b [PJ/a]		
1	$\Sigma E_{heat,o} > 10$	$Q_{tot} > 10$	Very high	High levels of both $E_{heat,o}$ and Q_{tot}
2	$1 < \Sigma E_{heat,o} < 10$	$Q_{tot} > 10$	High	Moderate levels of $E_{heat,o}$ and high Q_{tot}
3	$\Sigma E_{heat,o} > 10$	$1 < Q_{tot} < 10$	Moderate	High $E_{heat,o}$ and moderate levels of Q_{tot}
4	$1 < \Sigma E_{heat,o} < 10$	$1 < Q_{tot} < 10$	Low	Both $E_{heat,o}$ and Q_{tot} at moderate levels
0	$\Sigma E_{heat,o,max} < 2.5$	$Q_{tot,max} < 25$	No priority	Both $E_{heat,o}$ and Q_{tot} at low levels

^a Maximal theoretical levels of annually available excess heat.

^b Space heating and domestic hot water preparation in residential and service sectors.

High potential region: Within the project proposal, sometimes the term high potential ecoregion is mentioned. From now on, this term will not be used within the scope of the R-ACES project.

High impact (in R-ACES terms): Regions that have a high potential impact on the R-ACES KPIs. More specifically, regions are meant that have a high potential impact on KPI 1: Primary





energy savings, and KPI 3: Number of plant sites and number of industrial parks where businesses commit to energy cooperation.

Energy cooperation: Energy cooperation activities between industries, which include physical clustering (e.g., of buildings and processes, energy exchange, collective production) and/ or service clustering (e.g., joint contracting). Both can deliver a more stable cumulative demand, economy of scale for larger installations with higher efficiencies and smaller spatial footprint and an optimized demand response. Within R-ACES, the focus is mainly on energy cooperation through the exchange of heating and cooling.

Energy management Platform: is an ICT-tool that makes energy flows transparent; allows energy consumption and production to be allocated to specific installations, stakeholders and nodes; and identifies anomalies and opportunities. A key feature is that it is very easy to use for a wide range of stakeholders. In this way, it is possible to deploy it in a cluster and give access to the different company and cluster managers – each at their level of detail and with the information they should have access to. On the ecoregion level, there will be a dashboard that shows different energy flows.

ESCO: Abbreviation for Energy Service Company. An ESCO is a business that provides a broad range of energy solutions including designs and implementation of energy savings projects, retrofitting, energy conservation, energy infrastructure outsourcing, power generation and energy supply, and risk management.

Facilitator: someone who helps to bring about an outcome (such as learning, productivity, or communication) by providing indirect or unobtrusive assistance, guidance, or supervision. This task does not include technical expert know-how, instead facilitators are trained to facilitate interaction between multiple actors.

Industrial cluster: Within the project proposal, sometimes the term Industrial cluster is used. From now on, this term will not be used within the scope of the R-ACES project.

Industrial park: Within the project proposal, sometimes the term Industrial park is used. From now on, this term will not be used within the scope of the R-ACES project.

Industrial region: Within the project proposal, sometimes the term Industrial region is used. From now on, this term will not be used within the scope of the R-ACES project.

Industrial site: An area zoned and planned for the purpose of industrial development. An industrial site can be thought of as a more "heavyweight" version of a business park or office park, which has offices and light industry, rather than heavy industry. They may contain oil refineries, ports, warehouses, distribution centres, factories, and companies that provide manufacturing, transportation, and storage facilities, such as chemical plants, airports, and beverage manufacturers ([Wikipedia](#)).

(R-ACES) Learning community: Local group of stakeholders that are (a) directly involved with the energy collaboration on a site; and (b) engaging in both organised and informal exchange of knowledge and best practices over the course of the project period. These groups are the first beneficiaries of instruments like serious gaming. Learning communities from different sites in this project will eventually be brought into contact with each other to further stimulate the exchange of best practices.

Learning network: *"Allow for enduring relationships built on trust to develop among companies within an industrial site. In turn these relationships encourage information sharing, creative solutions, long term planning and governance among stakeholders. Social aspects increase interactions among stakeholders and strengthen collaborations and partnerships including industrial ones"* (Scaler, 2018). To establish such learning networks, the R-ACES project will use learning communities.

(R-ACES) Legal tool: A tool that supports practitioners by giving the legal decision support for joint contracts. A low threshold for usage is a critical requirement. The tool is self-explanatory, application oriented, using well-defined and clear terminology. The tool should be able to deal with a high diversity of local situations. For practical reasons, the name of the legal tool might change during the R-ACES process. In this case, the consortium will be informed.





LESTS framework: Abbreviation for Legal, Economic, Spatial, Technical and Social/Managerial. LESTS is a framework that is used in the project to categorize barriers and drivers in ecoregions. The different categories include: Legal, e.g. liabilities, regulatory requirements, third party contracts, service agreements, rules; Economic, e.g. cost savings, waste/ resource recovery value, funding mechanism, taxes & environmental considerations; Spatial, including geographical proximity, planning rules and environmental considerations; Technical, e.g. sharing and cascading resources, system stability, facilities; Social/Managerial, e.g. with regard to workers, consumers, local communities employment, community engagement, and capacity building.

Lock-in: Exchange of by-products will lead to long term reliance on an outside company, which will restrict flexibility of the involved companies and possibility for innovation, or possibility to relocate the site.

Longlist (for example longlist of regions): Exists of lists of items (rows), for example regions, that have been selected on the basis of loose selection criteria (columns). The long list is a first step in creating a short list. The long list should cover all potential subjects that might be of interest to the short list. Example:

Region	Region	Country	Source	# DHCS	# Industrial sites	# Business parks	Contact person	Contact details
1	Maasvlakt	Nederland ...						
2	Chemelot	Nederland ...						
3	Terneuzen	Nederland ...						

Long-term: Long-term impact of R-ACES is gained after the end of the R-ACES project (in KPI terms).

Peer2peer: A network of peers (R-ACES stakeholders) that perceive each other as equal. The peers interact with each other in order to learn from each other. The peer2peer learning context is a formal or informal setting, in small groups or online. Peer learning manifests aspects of self-organization. By this is meant, that there is no hierarchical structure within a peer2peer network ([Wikipedia](#)).

(R-ACES) Self-assessment tool: A tool that helps ecoregions to determine the next steps they have to take in the energy cooperation process. The tool exists of a number of questions practitioners have to answer. Based on the answers, the practitioners will get a score and some practical considerations they should take into consideration.

Serious gaming: A method for learning-through-experience that presents participants with a case study in which they have to play pre-assigned roles to each reach a pre-defined objective as quickly as possible. The interactive & competitive gaming element increases the attractiveness and the learning outcome of the case study. Serious gaming addresses cooperation elements among a large variety of practitioners and focus at creating acceptance and awareness, where the learning communities focus at sharing experiences between peers.

Shortlist (for example shortlist of regions): List of items, for example regions, that have been selected from a long list on the basis of (strict) selection criteria. Hereby, the advantages and disadvantages of each item are considered ([OpenLearn](#)). The shortlist contains items that have a high potential and likelihood to contribute to the R-ACES goal.

Short-term: Short-term impact of R-ACES is gained during the R-ACES project.

Use case: A written description of the sequence of steps performed by an ecoregion to come to fruitful energy cooperation.

Use case library: A library that contains multiple use cases.





Annex 02 Learning community templates



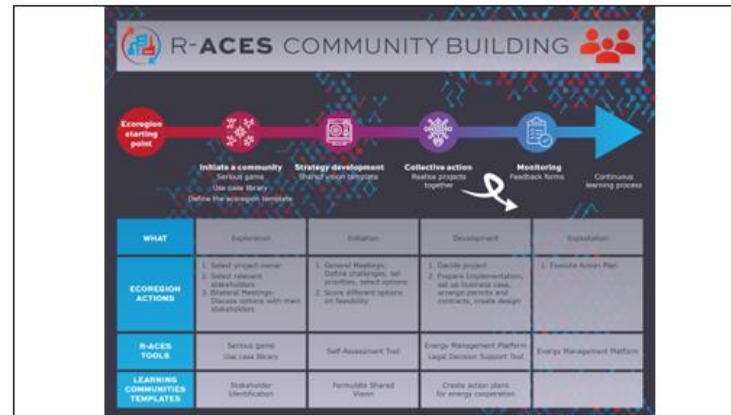
1



2



3



4





6 Templates

... help you to set up your energy cooperation project. The templates are action oriented & support ecoregions to really implement their energy cooperation projects.

- Define the ecoregion
- Formulate shared vision
- Stakeholder identification
- Create action plans for energy cooperation
- The process of establishing an energy cooperation project
- Discuss the Self-Assessment Tool

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

5

Template 1: Define the ecoregion

... and get insight in your energy cooperation potential

6

Definition Ecoregion

Multiple organisations cooperate in an ecoregion to establish energy cooperation. Regions consist of an industrial park or business park **linked to its surroundings** by energy cooperation activities.

An ecoregion relies on an anchor organisation responsible for managing the area. The proximity of stakeholders ensures the interconnected energy flows.

7


Step 1: Who is involved?

- Which organizations are interested in participating in (the) energy cooperation project(s)?
 - ...
- Who is represented?
 - Heat/energy supplier
 - Heat/energy demander
 - Governmental organization
 - Distribution network
 - Neighbourhood
 - Other ...
- What binds you together?
 - Geographical proximity
 - Formal network (f.e. park management)
 - Same ambition, being ...
 - Matching heat/energy demand & supply
 - Other...
- Who manages the contact between the different stakeholders?
 - ..

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

8





Step 2: Describe the geographic situation

1. In which area are the different organizations located?

Tip: Small has the benefit of more focus, stronger network ties. Large has the benefit of more opportunities for linkages and optimizations.

 This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429


9




Step 3: Established energy cooperation projects

1. Which previous projects have taken place between stakeholders?
2. Who was involved?
3. What has been achieved?
4. What were the lessons learned?
5. Where can more information be found?

Tip: Get inspired by reading about what other regions are doing https://r-cces.eu/use_cases/

 This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429


10




Step 4: Ambitions

1. What are your energy cooperation ambitions? Links to formal documents
2. Are there any formal documents describing these ambitions?

Tip: Examples of formal documents are vision/mission statements/ energy strategies/ and so on...

 This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

11



Congratulations! You defined your ecoregion!

12





Template 2: Formulate shared vision

... to develop a shared language between the involved stakeholders & to maintain focus on the goal

13

“What type of energy system do we want to see in place 5-10 years from now in this region”

14

Step 1: Context

It's 2030! A documentary team is coming to your region to film the progress that has been made in terms of your energy system.

1. What will you show them?
...
2. What activities will they see?
...
3. What achievements have been made?
...
4. How do the stakeholders involved in the energy system collaborate with each other?
...
5. What institutions, attitudes, paradigms have been changed?
...

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

15

Step 2: Brainstorm

- Individually, on a piece of paper list the elements of your vision, the concrete things you see in the future, and the things you dream about. Through this process do not yet talk to your neighbours.
- In pairs, agree on the 5 most important concrete elements of the vision and mark the two most important ones. Then share your ideas in plenary.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

16





Step 3: Grouping ideas

- Which ideas go together because they have the same intention, the same direction?

Tip: Use a post-it wall to group the ideas! Working online? Use the mural environment!

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

17




Step 4: Naming the vision elements

- Give a short name to each of the groups of ideas that will form the vision.
- What is the common direction, and the key element of these ideas?
- How can we name this element of the vision?

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

18



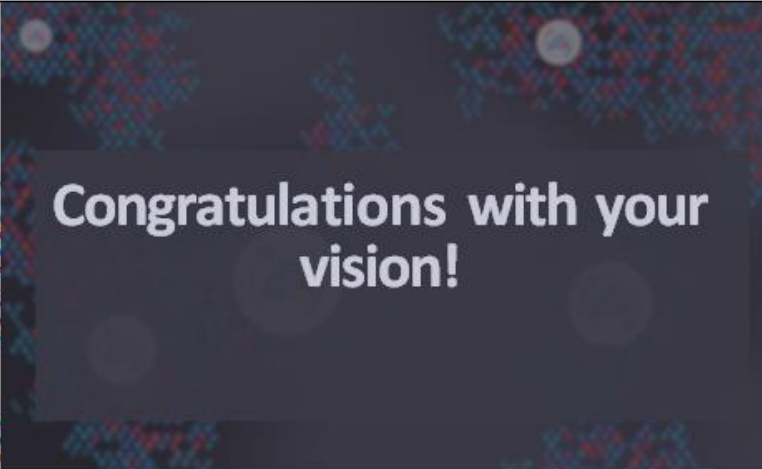
Step 5: Reflect

- How do these elements link to each other?
- Are they all important or is there a hierarchy?
- Could we come up with a one sentence vision, or could we keep these separate elements of the vision as they are?

Tip: Use a white board!

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

19



Congratulations with your vision!

20





Template 3: Stakeholder identification

...to help you make a comprehensive overview of the relevant stakeholders within your region

21

Stakeholder identification in three steps

- 0 Determine what you are working on. Set the goal of your project! (Use Template 1)
- 1 Create a **comprehensive list** of the stakeholders in your region
- 2 Mapping - create a schematic overview of the **relationships** between the different stakeholders
- 3 Categorize stakeholders according to their **power and interest** in the project

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

22

Step 1: Create a comprehensive list

23

Primary & Secondary Stakeholders

Primary stakeholders: Hold a direct interest in the energy cooperation project.

Secondary stakeholders: Don't have a direct interest, but have a reasonable influence on the energy cooperation project.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

24





Roles	Explanation	Potential interests & concerns	Stakeholder
Decision-maker/project owner	Responsible for the final decision-making within the project	Reduce concerns, legal and regulatory obstacles and promote the opportunities of an energy cooperation project	.....
Project manager	Responsible for the management of the project	Successfully complete the project using the reserved time and resources.	.....
Energy producer(s)	Industrial actor that delivers energy, can be responsible for a stable heat supply	Avoid malfunctioning of energy system, keep flexibility, generate revenue	.....
Energy user(s)	An individual (e.g. business) or collective (e.g. homeowners, housing corporation) demanding energy	Have a cheap, stable and a secure energy supply	.....
Energy distributor	Responsible for distribution and/or supply of energy	Minimize risks, generate revenue, link suppliers and demanders of energy	.....
Policy maker(s)	Play a role in promoting, initiating and/or implementing an energy cooperation project (e.g. issuing of permits, project financing etc.)	Achieve local/regional climate targets, reduce dependency on fossil fuels, improve the competitiveness of the area, create an attractive business location, create jobs, improve local air quality	.....
Permit granter	Performs the legal test for applications and through permits hands out the rights to realise and/or exploit (components of) an energy system.	Make sure the permit application obeys laws and regulations.	.....
Engineer(s)	Supply required materials and execute construction activities	Generate revenue	.....
Supplier(s)	Project financing	Continuity and stable return	.....
Investor(s)			.....

25

Roles	Explanation	Potential interests & concerns	Stakeholder
Regulator	Develop the regulatory framework and play a role in spatial planning & area development	Achieve national climate targets, reduce dependency on fossil fuels, create jobs	.....
Spatial planner(s)	Spatial planning of the area and energy planning	Promote sustainability in energy & spatial planning	.....
Environmental advocate(s)	Provide knowledge, influence the public opinion	Sustainable production process, limited pollution	.....
Knowledge producer(s) and distributor(s)	Provide technical or socio-economic knowledge about energy cooperation, influence public opinion, innovation through R&D	Develop knowledge and networks, support innovation	.....
Advocate of local stake(s)	Could be directly involved as energy users, or indirectly through purchasing products of companies involved or neighbouring construction activities	Cheap, stable and (possibly) green energy, limited nuisance during construction activities, good air quality, sustainable products	.....
Advocate(s) of business interests	Support of project work or process management	Generate revenue, improve the competitiveness of the area, create an attractive business location	.....
Other interest representative(s)	Stand for the stakes/interests of groups of people	Depends on the stakes of the interest group	.....

26

Step 2: Mapping - create a schematic overview

27

Some background information on mapping

1. Visual overview
2. Deeper understanding of underlying structures
3. Identify how to best reach a certain stakeholder

Example

Explanation video:
<https://youtu.be/eqZftP1HZw>

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

28





Map yourself

Legenda
 Red = Secondary
 Blue = Primary
 Purple = Issue at stake

29

Step 3: Categorize stakeholders

30

Some background information on stakeholder categorization – Mendelow Matrix

Use a Mendelow matrix to decide your communication strategy to each stakeholder

The Mendelow matrix has two axes, describing the level of power and the level of interest:

- The level of power a stakeholder has describes his/her capability of changing the course of events in the direction he/she desires.
- The level of interests describes to what extend a stakeholder is influenced by the project. In other words, what stake the stakeholders have in the project.

Example

Mendelow's Matrix
 Level of Interest

Power

A Minimal Effort B Keep Informed
 C Keep Satisfied D Key Players

© University of Birmingham

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

31

Mendelow Matrix

High

Power

Low


Low Interest High

Tip: Use logos to fill in the mendelow matrix.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

32





Template 4: Create action plans for energy cooperation

... to ensure focus on small tasks and decisions that are oriented toward accomplishing your bigger goals

33



What is an action plan?

An **action plan** is a list – or series of lists – that **details everything you must accomplish to complete a task.**

Many organizations formulate long-term strategies to achieve certain energy cooperation goals.

But thinking of an energy goal/ strategy and actually implementing it are not the same! Action plans help you to make your goals and strategies a reality.



 This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429.

34



How to create an action plan

1. Brainstorm and identify specific tasks


Brainstorm the tasks you will need to accomplish in order to achieve your energy cooperation goal. Make a list of them.



Tip: It helps to start with the first step and work your way toward the end. What needs to be done first? Once you finish this, what's the second step? Think about timelines and stakeholders and build in time to iterate and review.

 This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429.

35





How to create an action plan

2. Identify and list the tasks and decide on what's needed to complete them.

Drawing on the results of your brainstorm, think about how you can work more efficiently. Answer these questions:

- Have you listed a task that isn't necessary to complete your energy cooperation goal?
- Which stakeholder can do what?
- What resources are needed?



 This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429.

36





How to create an action plan

	Space	Cash	Helpers	Equipment	Materials	Expertise	Timing
Example task 1: Lunch 20 people	lunch area	500 Euro	Office manager	Plates and cutlery	lunch package from yourlunch.com	Organizational	12-14 2 November 2021

3. Use the SCHEMET method to double check your action plan

The SCHEMET method allows you to verify if you have everything you need to complete the energy cooperation plan: Space, Cash, Helpers, Equipment, Materials, Expertise, Timing

Tip: Make your action plan as concrete as possible.
Who is doing what?

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

37

How to create an action plan

4. Set deadlines and milestones

An action plan is all about action and getting things done, so it's crucial to set deadlines for each task and overall milestones. This will keep you on schedule and focused on achieving your goals. It is important to appoint someone to follow up the tasks. Make a critical path.

Tip: Appoint a project manager that oversees the achievement of the deadlines and milestones.

Tip: More information on a critical path can be found here:
https://en.wikipedia.org/wiki/Critical_path_method



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

38

Template 5: The process of establishing an energy cooperation project

...to help you in defining what type of energy cooperation trajectory is most suitable for your region

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

39

The status of your project

Which stakeholders are involved in your energy cooperation project?
...

Who is the project owner?
...

What is the status of the project?
...

Which stakeholders are (not yet) involved in the project?
...

Are there any barriers occurring at the moment?
...

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

40






Background information (1)

Energy cooperation is very complex due to its dynamic and unpredictable nature. Each project has a different trajectory. The template helps you to identify your meta trajectory and what you have to do to let your energy cooperation project succeed.

Three general trajectories:

1. Government-initiated energy cooperation projects.
2. Self-initiated energy cooperation projects.
3. Facilitated energy cooperation projects.




This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

41

Background information (2)

In the coming slides the three trajectories of energy cooperation are described from preliminary stage to project implementation.

For each trajectory, several examples of relevant stakeholders and tools are provided. This list is not exhaustive, for more resources take a look at www.r-aocs.eu.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

42

Government initiated energy cooperation project

Governments often identify energy cooperation as a suitable approach for realizing the local climate targets while boosting the business climate and increase employment. So, energy cooperation has been included in e.g. local/regional plans/strategies and the next step is materializing these goals.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

43

Government initiated energy cooperation project

	Preliminary stage	Project exploration	Project initiation	Project development	Project implementation
Project owner	Project owner	Project owner	Project owner	Project owner	Project owner, ...
Tasks - stakeholder involved	GIS exploration	<ol style="list-style-type: none"> 1. Project owner = multi-disciplinary team involving various (local) government departments (e.g. spatial planning, property, sustainability, economic development) 2. Primary stakeholders = energy producer, energy demander, energy distributor 3. Internal consultant = someone from within the government who has legal, regulative, technical expertise about energy cooperation 			
Tools	Heat mapping	Stakeholder identification Create shared vision	Self-assessment tool Energy management platform	(financial, legal, technical, regulative) contracts, procurement	Legal decision support tool

44





Self-initiated energy cooperation project

An energy cooperation project organised by companies or other organisations themselves. These actors are intrinsically motivated to participate in energy cooperation.

The government is not always directly involved (at the start).



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

45

Self-initiated energy cooperation project

	Project exploration	Project initiation	Project development	Project implementation
Task - stakeholder involved	Energy producer & energy demander: Write down project proposal	Project owner, primary stakeholders	Project owner, primary stakeholders	Project owner, primary stakeholders, engineers: Execute
Tools			tool Energy management platform	

1. Project owner = an individual or group of people who manage(s) the establishment of an energy cooperation project. This could be the energy supplying/demanding company, an energy broker, park manager, energy distributor etc.

2. Primary stakeholders = energy producer, energy demander, energy distributor, (local) government, etc.

46

Facilitated energy cooperation project

Within this approach the government functions as accelerator for the establishment of self-initiated energy cooperation projects. They provide resources and a favourable climate to let initiatives that are already present within the region sprout.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

47

Facilitated energy cooperation project

	Preliminary stage	Project exploration	Project initiation	Project development	Project implementation
Task - stakeholder involved	(Local) government: Identify stakeholder, Select area	(Local) government: Bilateral energy initiatives	(Local) government: Selected project	(Local) government: Primary stakeholders	(Local) government: Primary stakeholders, engineers: Execute
Tools		Stakeholder analysis	Self-assessment tool	(financial, legal, technical, regulative) implementation, technical design, contracts, procurement	Legal decision support tool Energy management platform

1. Project owner = an individual or group of people who manage(s) the establishment of an energy cooperation project. This could be the energy supplying/demanding company, an energy broker, park manager, energy distributor etc.

2. Primary stakeholders = energy producer, energy demander, energy distributor, (local) government, etc.

48





Your energy cooperation project

What kind of energy cooperation project do you have?

- Government initiated energy cooperation project
- Self-initiated energy cooperation project
- Facilitated energy cooperation project

In what stage are you?

Look at the table of your energy cooperation type.

Have all the critical tasks been initiated?

Are all relevant stakeholders involved?

What actions do you still have to take?

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

49

Template 6: Discuss the Self-Assessment Tool

... and determine the next steps for your ecoregion!

50

The Self-Assessment Tool

The R-ACES Self-Assessment Tool helps you to describe your ecoregion in terms of energy demand, supply, stakeholders and existing infrastructure.

By completing the self-assessment and discussing the results with the involved stakeholders, a more accurate description of the ecoregion is obtained, which will help you in identifying the next steps of your ecoregion.

51

The self-assessment consists of three parts

Part 1: Region description; An inventory of energy supply, demand, stakeholders and existing infrastructure.

Part 2: Self-assessment questions; Determine the information quality and completeness of your region description.

Company*	Energy source*	Yearly production (kWh)*
A. Andriani (District Heating)	CHP	183417931
B. Andriani (CH Heating)	Oil (thermal heat recovery)	873900000
Total		1057079311

Characteristic	Actual	Desired	Notes
Look at energy in each category on the current listing, verify a complete list of categories and additional data for the right data.	0	0	Verify the right data for each category of production or demand.
Look at right to wrong categories of the listing, verify correct or incorrect and additional data for the right data.	0	0	Verify the right data for each category of production or demand.
The current and future energy demand is based on a list of companies.	0	0	Verify the right data for each category of production or demand.
Do heating and cooling demand, the current information for the companies in the listing.	0	0	Verify the right data for each category of production or demand.
Check the current and future energy demand of the listing.	0	0	Verify the right data for each category of production or demand.
There is a gap in the listing of the demand data for the right data.	0	0	Verify the right data for each category of production or demand.
There is a gap in the listing of the demand data for the right data.	0	0	Verify the right data for each category of production or demand.
Total	0	0	0

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

52





The self-assessment consists of three parts

Part 3: Self-Assessment results; find out the next steps for your ecoregion.

Characteristic	Actual	Desired	Score
Energy demand	28	35	79%
Stakeholders	11	35	31%
Energy infrastructure	7	25	28%
TOTAL	73	148	52%

Tip: Familiarize yourself with the tool first. Visit <https://r-aces.eu/tools/self-assessment-tool/> for a download link, userguide and evaluation form.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

53

The work process of step 1

In the Self-Assessment, you will define the energy demand, energy supply, stakeholders and existing infrastructure of your ecoregion.

- Think of who will complete (parts of) the region description. Some options to consider:
 - Let each stakeholder fill in their own information and combine them together.
 - Organise a workshop and complete an inventory together simultaneously.
 - A combination of a and b: collect individual inventories and discuss the combined results in a meeting.

Tip: Sharing information of this kind requires a certain level of trust between stakeholders. Option a) may yield more results than b) as it gives stakeholders more time to consider what they can and want to share with the project team.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

54

The work process of step 2

By answering several questions, you will self-assess the information quality and completeness of your region descriptions.

- Think of who will complete (parts of) the self-assessment. Some options to consider:
 - Let each stakeholder fill in a self-assessment from their perspective and combine the results using averages.
 - Discuss each question together in a meeting and negotiate the score.

Tip: Some questions may be more relevant to your project than others. Consider that when evaluating your scores in the next steps.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

55

Evaluate the results in step 3

The final part of the self-assessment adds up the scores and provides you with advice on how to further improve your region description.

- In order to help you reflect on the results, please consider the following things:
 - The results are a moment in time and for a specific ecoregion or project in mind. Your perspective of the region may change after significant progress or when new stakeholders enter the region.
 - The questions and topics in the self-assessment are unweighted: that means that all of them contribute to the end result equally. Depending on your project and the phase it is in, this may not always represent reality.
 - As with the other parts of the tool, **consider discussing the results together with the stakeholders in a meeting.**

Tip: Did you score high in a category but are you curious what the advice would be in case of a low score? Go to the tab 'Results rationale' to read all the possible results.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

56





Learning community templates

Project

- Institute for Sustainable Process Technology
- 5 EU Countries
- LE2C Lombardy Energy Cleantech Cluster
- 7 Partners
- energy CLUSTER DENMARK
- Condugo
- Start: June 2020
- End: November 2022
- Spinergy
- EUROHEAT & POWER
- ESCI European Science Communication Institute

H2020 Coordination and Support Action

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

57

R-ACES
Energy Cooperation Platform

Follow us on :

www.r-aces.eu

Ecoregions

R-ACES creates ecoregions where multiple stakeholders engaged in energy cooperation by exchanging best-practise, investing in innovative energy solutions, or managing energy streams with the use of the R-ACES platform that is aimed at reducing CO2 emissions by at least 10%.

To establish energy cooperation projects, multiple organisations cooperate. We call this an ecoregion. Each ecoregion consists of an industrial park or business park linked to the surrounding by energy cooperation activities. Ecoregions are broader than the industrial/business clusters of their own, which have their own local base for energy cooperation.

3 pilot ecoregions representing 10 companies equipping for additional 90 high impact regions

[Learn more](#)

You're an eco-industrial or eco-business park? **Let's get in touch!**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

58

Disclaimer

The Agency is not responsible for any use that may be made of the information this project presentation contains.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 892429

59





Learning community templates





Learning community templates

