

Bioenergy communities as a tool for the rural green transition: The example of the Energy Community of Karditsa (ESEK)





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• Setting the scene: Karditsa and ESEK

- The BECoop project: a tool for ESEK's advancement
- BECoop tools for bioenergy communities
- Why bioenergy for green rural transition? Reasons and models to follow

## **The Regional Unit of Karditsa**





#### **Plastira Lake**



#### The Karditsa plain



- Population: 113,544 inh. (2011 census)
  - 1 % of the Greek population
  - 34 % of the local population lives in the city of Karditsa
- Area: 2.636 Km<sup>2</sup>
  - Flat land: 47.7 %
  - Mountainous areas: 44 %
  - Semi-mountainous areas: 8.3 %
- Eastern part: part of the Thessaly plain
- Western part: Agrafa mountains

## The Energy Community of Karditsa – a short history









- Establishment: in 2012 as a civic cooperative, with over 400 members (citizens, municipalities, etc.) / "spinoff" of the Regional Development Agency of Karditsa (ANKA)
- Initial plan: utilize the abundant local biomass resources  $\rightarrow$  construct / operate a 1 MWe biomass power plant
- Vicious circle: no biomass supply contracts → cannot mobilize funding → plant construction does not start → suppliers not convinced and do not sign supply contracts
- Breaking the vicious circle: start activities with a biomass processing (pellet) plant and continue later with the power plant
- **First steps**: raising capital from members, purchasing land, successful application for funding through LEADER (500,000 € investment 50 % public funding, 50 % own funds)
- Wood pellet production started in October 2017, using raw material (sawdust) from local saw mills
- Transformation in "Energy Community" according to Law 4513/2018
- Ongoing process for a 1 MW photovoltaic plant to cover energy needs of the members
- Continued discussions with other potential biomass suppliers (farmers, cooperatives, municipalities, etc.)
- November 2020 → start of the H2020 BECoop project



## **BECoop: Project in a nutshell**

H2020 / GA 952930 Topic: LC-SC3-RES-28-2018-2019-2020 - Market Uptake support

- BECoop mobilises people around community bioenergy and creates a better image for such initiatives reduces the development efforts of community bioenergy heating projects
- market research, social, technical, business, knowledge transfer and policy components
- A suite of **supporting resources and tools** for community bioenergy project development
- exploration and support of **4 new bioenergy heating communities (BECoop RESCoops)**

We test the implementation of community bioenergy heating support scheme in diverse, complementary pilot cases in regions with high replication potential across EU

- We validate our results and open the policy debate on how community bioenergy at local, national and EU level can be fostered.



• We empower the community bioenergy ecosystem to scale - 🕇 additional replication cases of our concept

PL: Local Authorities to initiate a

new RESCoop



## **New ESEK activities: biomass sourcing**



## **New ESEK activities: fuels & heat sales**



### **Geographical scope of activities**



## **ESEK - roadmap and vision towards 2030**



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KNOWLEDGE EXCHANGE PLATFORM	ASSESSMENT TOOL	TOOLKIT	E-MARKET ENVIRONMENT

#### **BECOOP TOOLS**

BECoop partners will develop a set of tools to facilitate the provision of support services to bioenergy communities and foster a broad deployment of bioenergy heating technologies across Europe.

The BECoop self-assessment tool provides an evaluation methodology along with a set of indicators, metrics and definitions for preliminarily assessing the current status and future potential of a community bioenergy endeavour. https://becoop.fcirce.es/self-assessment



The BECoop e-market environment connects supply chain stakeholders in a virtual platform and supports the development and operation of community bioenergy heating projects. https://becoop.fcirce.es/emarket/





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The BECoop Knowledge Exchange Platform is an online source of information, tools and services in the field of community bioenergy heating. https://becoop-kep.eu/



TOOLKIT



#### Bioenergy Community cases

... act as an observatory/atlas of RESCoops active in the field of bioenergy as well as with potential to include bioenergy including technologies, service providers and other useful information.



The BECoop toolkit is an online repository of existing tools, developed by other projects or institutions, and can provide useful outputs to develop/initiate a bioenergy community https://becoop.fcirce.es/toolkit/

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WELCOME TO THE BECOOP TOOLKIT

WHO IS THIS TOOLBOX FOR?

WHAT CAN YOU FIND HERE

HOW CAN I USE THE TOOLKIT

ABOUT BECOOP

The project has received funding from the European Union's Harizon 2020 research and irm programme under arost operement No 962938

- Local resources (agricultural & forest residues, energy crops in marginal, abandoned and contaminated lands) for covering local energy needs
- Local job creation (supply chain, plant operation, etc.) & European technological leadership
- Cost-effective compared to fossil fuels when used for heat production
- Provides alternatives solutions for residue / waste management (e.g. avoidance of field burning)

## **Models to follow – Some examples**







## Find out more on success cases of using agrobiomass for local heat production at:

- The AgroBioHeat project website: www.agrobioheat.eu
- The Agrobiomass Observatory: www.agrobiomass-observatory.eu
- The success cases playlist on the project YouTube channel: https://youtube.com/playlist?list=PL1\_oLlJqXCaCMYnoflAdRm63Rmlob WgE-





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# **THANK YOU**



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