BIOEUPARKS Project

Exploiting the potentialities of solid biomasses in EU Parks

biomass | renewable energy

PROJECT DESCRIPTION

The BIOEUPARKS project, as part of the current debate on the sustainable exploitation of solid biomass for bioenergetic purposes, has proposed an innovative model for the establishment of short and sustainable supply chains within protected natural areas.These chains must harmonize the principles of Sustainable Forest Management and the activation of a virtuous development process based on the creation of bio-energy districts. To do this, the project launched a participated process involving the key players of the territories in order to ensure an active participation of the local communities. Social acceptance is in fact a key element for the activation of a sustainable supply chain especially in areas of value in terms of biodiversity conservation, like the protected natural areas, therefore the BIOEUPARKS Project bases its strategy on:

- short chains, meaning no more than 50 km from the collection area to the biomass use area;
- small and very small-scale biomass power plants that minimize both the greenhouse gas emissions into the atmosphere and the landscape-environmental impact;
- social responsibility of the economic players, involved in the supply chain, towards the local communities.

The project had to deal with extremely different realities and problems in the five pilot parks:

- Sila National Park (Italy)
- Rodopi Mountains National Park (Greece)
- Sölktäler National Park (Austria)
- Duna-Ipoly National Park (Hungary)
- Kozjansko Regional Park (Slovenia)

This socio-economic, juridical-institutional, territorial differentiation meant that, in each reality, the subjects involved have developed an own strategy, giving rise to a broad range of possible solutions to create sustainable solid biomass exploitation models in protected natural areas.

PROJECT PHASES

The project was articulated in 4 main phases:

1. Outreach to local population and development of methodologies to reduce risk of social conflicts;
2. Development of sustainable solid biomass supply chain in each participating Park;
3. Training and transfer of the model to subjects potentially interested in the replication;
4. Communication and dissemination activities

1. In the first phase **participatory processes were established for the activation of supply chains** that involved the local economic operators (mainly forestry and agricultural companies), Municipalities and forest area managing bodies, plant owners, potential investors, other public and private operators interested in joining a potential supply chain as end consumers, and local communities. The objective on the one hand was to introduce the issues of harmonization between sustainable exploitation of solid biomass, local development and protection of the environment and biodiversity, and on the other hand to identify the economic players that could be involved in the different stages of the supply chain. The result of this phase was the signing of an agreement between the local communities and the economic operators involved in the supply chain (ref. Phase 2) in which the latter are bound to respect the principles of environmental and social sustainability.

2. In the second phase **short solid biomass supply chains were established** to produce thermal energy in each of the Parks involved. The best solutions have been identified in terms of sustainability in all the key stages of the supply chain: production, pre-treatment, transformation and use by end consumers, considering the specificities of each individual context. **Contracts were then signed** between the different operators involved and supply chains were activated for the first production year covering the period September 2014 - May 2015. On the basis of the results of the first year, new contracts were signed and, in each of the pilot areas, new operators were involved in the supply chain, both as suppliers and as purchasers of biomass for bio-energy production, as well as end users of the produced energy during the second production year covering the period September 2015 - May 2016.

3. On the basis of the results obtained during the first production year, **training activities** were organized to diffuse and transfer different models to the key players potentially interested in the application of the tested solutions and specifically: operators and Park Managers, engineers, as well as public and private experts. The capacity building events have also represented an important moment of dialogue and comparison with different realities within the experimenting countries and highlighted from one side the interest for what has been achieved and from the other the need to have a regulatory intervention and support to the process of building sustainable supply chains for the exploitation of solid biomass.

4. The entire project was then supported by a constant **communication activity** managed through information material, website, local events and accurate press campaign. Finally, the results of the project was transferred to the main addressees, the bodies responsible for planning forestry and energy policies at regional, national and EU level. In this context, in each area, proposals have been defined to modify or supplement the current legislation supporting the processes for activating sustainable bio-energy supply chains. In parallel recommendations were drawn up on the definition of exploitation criteria of solid biomass as a contribution of the BIOEUPARKS project to the current debate activated as part of the revision of the European Directive on Renewable Energy Sources.

PROJECT RESULTS

The project based on the different characteristics of each single involved territory has shaped **differentiated paths for the activation of the supply chains of solid biomass,** creating a plurality of **models and solutions** that ensure wide transferability of the project results. For the Sila National Park the project produced a Plan for the local supply chain.

In all the involved areas the Parks, due to sustainability and efficiency considerations, focused on the production of only thermal energy, while regarding the type of supply chain, five different solutions were implemented:

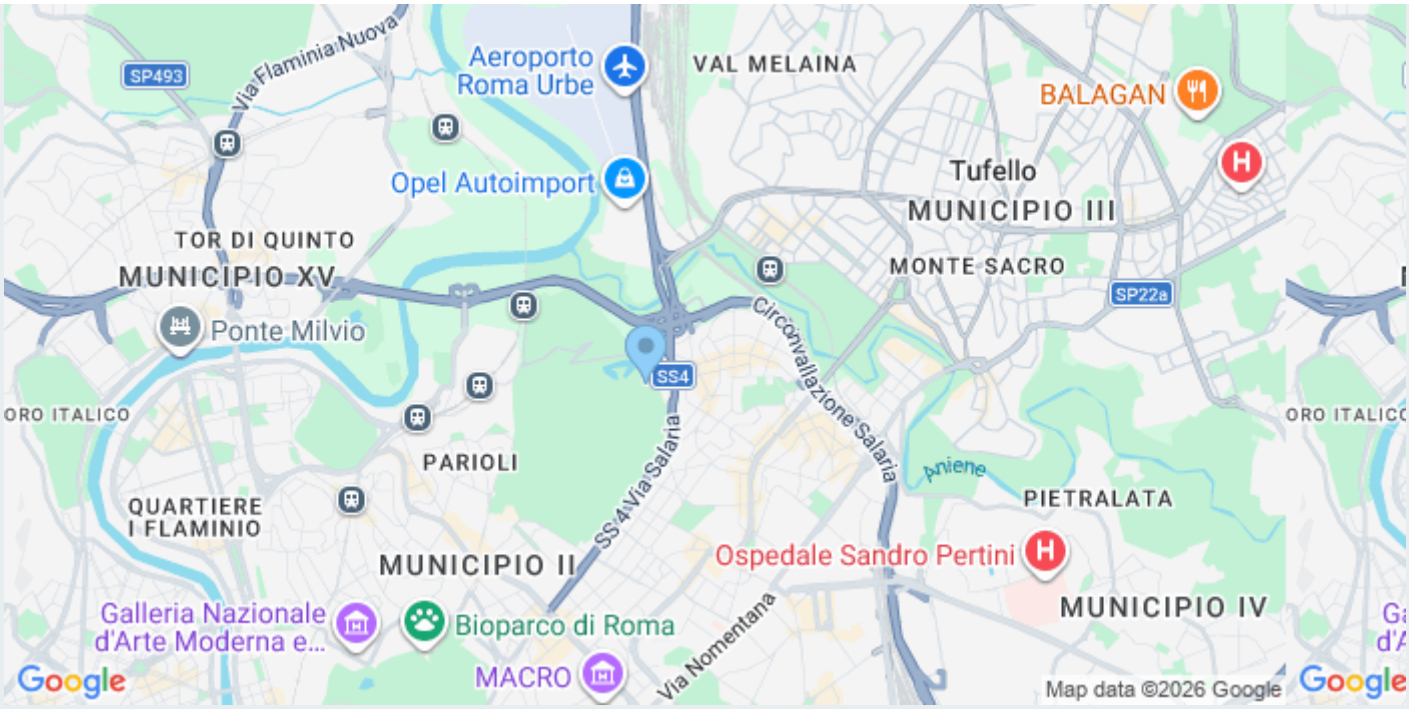
1. **Bio-energy district**. In Slovenia a supply chain, based on the use of woody biomass deriving from forest maintenance activities in the park area, has been activated for the supply of a small plant, less than 1 MW, which provides thermal energy through a district heating network.
2. **Short supply chain based on the transformation of solid biomass (woodchips and pellets) supplied directly to public and private operators in the area**. In Italy, the Sila National Park has promoted, through a green procurement, the activation of a woodchip and pellets supply chain produced in accordance with sustainability criteria identified to feed the plants of the Park itself. It therefore activated a process of involvement of private economic operators (hotels, restaurants, adventure parks, etc.) aimed at setting up a sustainable purchasing group that adheres to the activated supply chain and ensures its long-term sustainability.
3. **Short supply chain of solid biomass (woodchips) targeted at small municipalities.** In Greece, a short supply chain has been set up between forest cooperatives, small-scale biomass production plants and biomass power plants for domestic use and for serving small municipalities. The biomass plant production company has activated leasing forms addressed to local municipalities with the aim of favoring the conversion of existing heating systems and therefore procuring biomass from local producers.

4. **Short supply chain for solid biomass (woodchips and firewood) targeted at small local and private communities**. In Hungary, starting from a biodiversity conservation project based on the eradication of alien species, a two-step process was activated: in the first phase the solid biomass deriving from conservation activities is supplied directly by the Park to local communities and citizens resident in the area; in the second phase the biomass collected by the national forestation agency within the forest management activities is provided to local entrepreneurs who then supply it to end users.
For the Sila National Park the Guidelines for setting up a woody biomass supply chain was developed.
5. **Reconversion of existing short supply chains by promoting the use of local biomass deriving from landscape maintenance and preservation activities.** In Austria, where there were three pre-existing supply chains, the focus was on how to increase sustainability and efficiency by investigating alternative sources of solid biomass supply mainly related to river basin management and areas outside the forests.

The number of supply chains set up in the involved Parks with the support of the BIOEUPARKS project was:

- 1 in Slovenia for the activation of a cogeneration plant;
- 1 in Greece which supplies 8 boilers (6 in the town of Nevrokopi, 2 in the town of Paranesti);
- 1 in Italy which supplies 8 boilers in the Park area and its vicinity;
- 7 in Hungary of 3 different types;
- 3 pre-existing ones in Austria, supplied today by local biomass deriving from landscape maintenance and preservation activities.

Overall 12.803 tons of biomass was stored and 37.172 MW of thermal energy was produced.



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Acronym
BIOEUPARKS

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INTELLIGENT ENERGY EUROPE (IEE)

Beneficiary Coordinator
LEGAMBIENTE ONLUS

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999.803,25

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2012

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2013

End Year
2016

Beneficiary headquarters

Via Salaria, 403
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Italy

Region
Calabria

Description

Calabria, Grecia, Austria, Ungheria e Slovenia