



## BioEUParks - Developing an efficient and sustainable biomass supply chain in 5 European Nature Parks

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Co-funded by the Intelligent Energy Europe  
Programme of the European Union

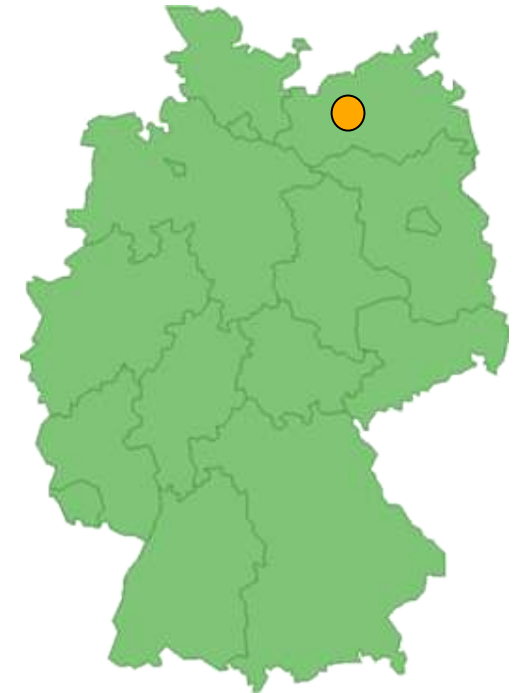
# Fachagentur Nachhaltige Rohstoffe e.V. (FNR)

**Who we are:** Central coordinating agency in the area of  
„Renewable Resources“ in Germany

**Founded:** October 1993

**Main office:** Gülzow, Mecklenburg-Western  
Pomerania

**Support:** Federal Ministry of Food and  
Agriculture (BMEL)



## FNR - Tasks

- **Support R&D**
  - BMEL-funding programme „Renewable Resources“
    - 2014: 61 m €
  - „Energy and Climate Fund“ of the Federal Government
    - 2014: 20 m €
- **Public relations activities**
- **Information / advice**
- **EU activities**





## FNR - Main fields of work

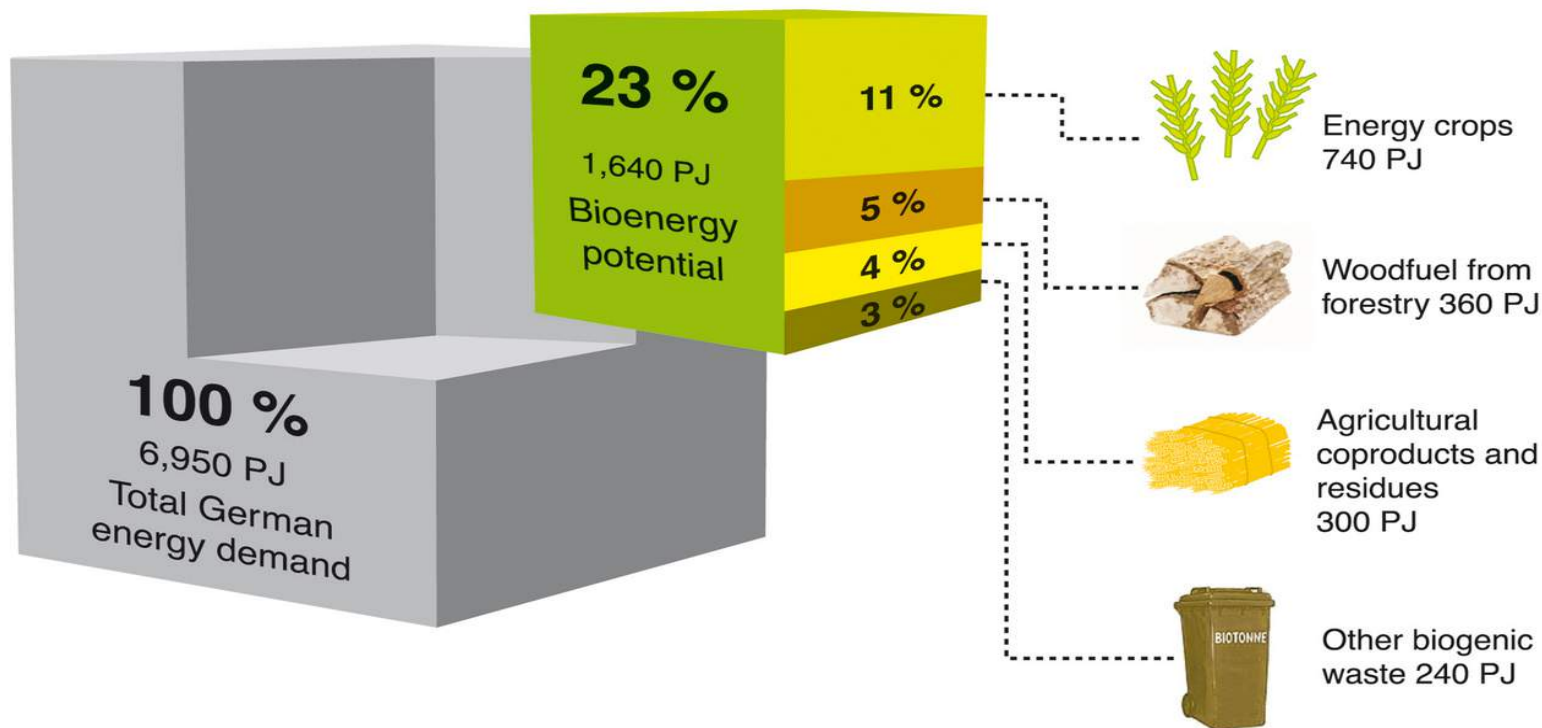
- Renewable energy from biomass
- Bio-based materials / bio-degradable materials and products from renewable resources
- Building with renewable resources
- Lubricants from plant oils
- Bio-conversion technologies
- Consumer information

**Target: Support market introduction**



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# Potential for bioenergy: Germany 2050



Source: FNR

Rounded figures



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## What is biomass?

According to EU directive 2009/28/EC biomass is «the biodegradable fraction of products, waste and residues from agriculture (including vegetal and animal substances) and forestry related industries, as well as the biodegradable fraction of industrial and municipal waste."



## Advantages of biomass use

- Fighting climate change
- Reduction of energy dependence
- Securing jobs especially in rural areas and binding the population to the agricultural and forestry sector
- Allows for the purification of harvesting areas
- Woody biomass is available 24 hours a day, contrary to other renewable energies (solar, wind)

## Disadvantages of biomass use

- The large volume and the high amount of humidity per energy unit
- Problems during harvesting and processing
- Transport and storage is more complex than with fossil fuels
- Expensive machinery and facilities need to be installed
- Large diversification and seasonal fluctuation of products



# BIOEUPARKS – Project overview

- Intelligent Energy Europe
- 1,3 M €
- 36 months (Apr 2013 – Mar 2016)
- 5 research institutions, 5 nature parks
- To develop short biomass supply chains (<50 km) and small-scale heating and CHP installations (<1 MW) in European nature parks, utilising solid biomass



# Partners – Research Institutions

- **Legambiente (LEG) , Italy – Project leader**
- **Democritus University of Thrace (DITH), Greece**
- **Slovenian Forestry Institute (SFI), Slovenia**
- **Fachagentur Nachwachsende Rohstoffe e.V. (FNR), Germany**
- **Europarc Federation (tbc)**



## Partners - Nature Parks

- **Danube-Ipoly National Park (DINP), Hungary**
- **Sila National Park (PNS), Italy**
- **Rodopi National Park (RNP), Greece**
- **Kozjansko Regional Park (KRP), Slovenia**
- **Sölktäler Nature Park (SNP), Austria**



## Project BioEUParks

- The project BIOEUPARKS is not intended to examine the classical management and traditional forms of energy production from biomass.
- The purpose of the project is in line with the EU policy 20-20-20 to explore the possibility of producing biomass, within the rules of the sustainability of national parks.
- The aim of the project is to operate a pilot supply chain.

# Policy Background – Nature Parks

- **Natura 2000: EU wide network of nature protection areas established under the 1992 Habitats Directive (92/43/EEC).**
- **EU Forestry Strategy (15 December 1998): framework for forest-related actions in support of sustainable forest management (SFM)**
  - **Review of the EU Forestry Strategy: on-going**
- **EU Forest Action Plan adopted on 15 June 2006 [COM(2006)302]**



# The actions of BIOEUPARKS

- ❖ **Improving our knowledge on utilization of solid biomass for energy production and dissemination of this**
  - in other national parks
  - in areas of productive forest
  - any person who utilizes biomass for energy production
  - In the rest of the EU

# EU sustainability criteria for biofuels (Directive 2009/28/EC)

**Land exclusion criteria** ♦  
biofuels cannot be made from  
raw material obtained from  
land with high carbon stocks  
or high biodiversity

## GHG saving target:

- Biofuels need to save at least 35% GHG emissions compared to fossil fuels increasing



# Sustainability of solid biomass and biogas

**EU recommendations to Member States to follow the sustainability criteria applying to biofuels, with some adaptations:**

- Land criteria do not apply to wastes
- GHG accounting methodology to include end-use conversion, in order to promote efficient energy uses
- Small bioenergy installations (below 1 MW) to be exempted
- Biomass origin and quality in small-scale uses (e.g. households) to be monitored

## **BIOEUPARKS - Major Outputs**

- **197.000 Tons of biomass stocked (annual production)**
- **50.000 Kwhel/year electric power**
- **450.000 KWhth/year thermal energy produced**

## Target groups

- **Nature park managers, engineers and technicians**
- **5000 citizens living in the nature parks**
- **2500 citizens living within park's boundaries**
- **1200 key actors and stakeholders at European level**





## Work packages

- **WP 1: Management**
- **WP 2: Awareness raising and development of methodologies for facing local conflicts**
- **WP 3: Development of a solid biomass supply pathway**
- **WP 4: Capacity building, capitalization of results and mainstreaming**
- **WP 5: Communication**
- **WP 6: Common dissemination activities**



## WP 2 – Awareness raising

- ❖ **Develop a transparent decision making process, grounded on scientific data, information and risks analysis, which lead to a diffused social acceptance and avoid conflicts.**
- ❖ **Overview of the planned events:**
  - 2 **Awareness Event** per Nature Park, 10 awareness events in total for the whole project
  - 4 **Round Tables** per Nature Park, 20 Round Tables for the whole project
  - 45 **Specific Meetings** for preparation of Memoranda of Understanding

## Work package 3 - Development of a solid biomass supply pathway

**WP 3 is divided into 4 tasks**

- Task 3.1 – Energy needs analysis and study on local biomasses
- Task 3.2 – Provisional plan on supply chain
- Task 3.3 – Development of pilot action
- Task 3.2 – Supply chain assessment, fine-tuning and permanent running



# Benchmarked projects - lessons learnt

- Best-practice examples are important
- Common guidelines on sustainability criteria and certification schemes need to be agreed on
- Adapt the training material for different countries and nature parks
- Assessment of bioenergy potentials and the differentiation between types of biomass
- The largest share of biomass comes from by-products and residues from the forest industry
- GHG savings need to be calculated for every different feedstock and energy use
- Drafting and signing Memorandums of Understanding is an important first step



# Sustainability criteria - selection

- Biomass production or extraction shall have neutral/positive effects on biodiversity at the landscape level
- The integrity of ecosystems and habitats for rare and endangered species shall be maintained
- Buffer zones or vegetation filters between biomass production areas and waters and wetlands shall, be used to reduce the risk for damage
- Methods that cause a net depletion (after compensatory measures) of humus, nutrients and minerals in the soil below levels necessary for the maintenance of the long-term soil production capacity shall be avoided
- Long distance transports of non-processed raw materials shall be avoided
- Use of waste heat shall be encouraged
- The production of biomass for energy shall only occur at sites where it does not threaten local/regional food supply
- Bioenergy systems should preferably have positive effects on the local economy



## Task 3.1.2 – Data assessment

- Identification of suitable biomass in nature parks
- Estimation of potential of biomass
- Identification of end-user and end-consumer in or outside of nature parks
- Data assessment using a matrix and forms

# Task 3.1.4 Supply Chain Guideline

Biomass Supply Chain

Feedstock

Harvest

Transport

Storage

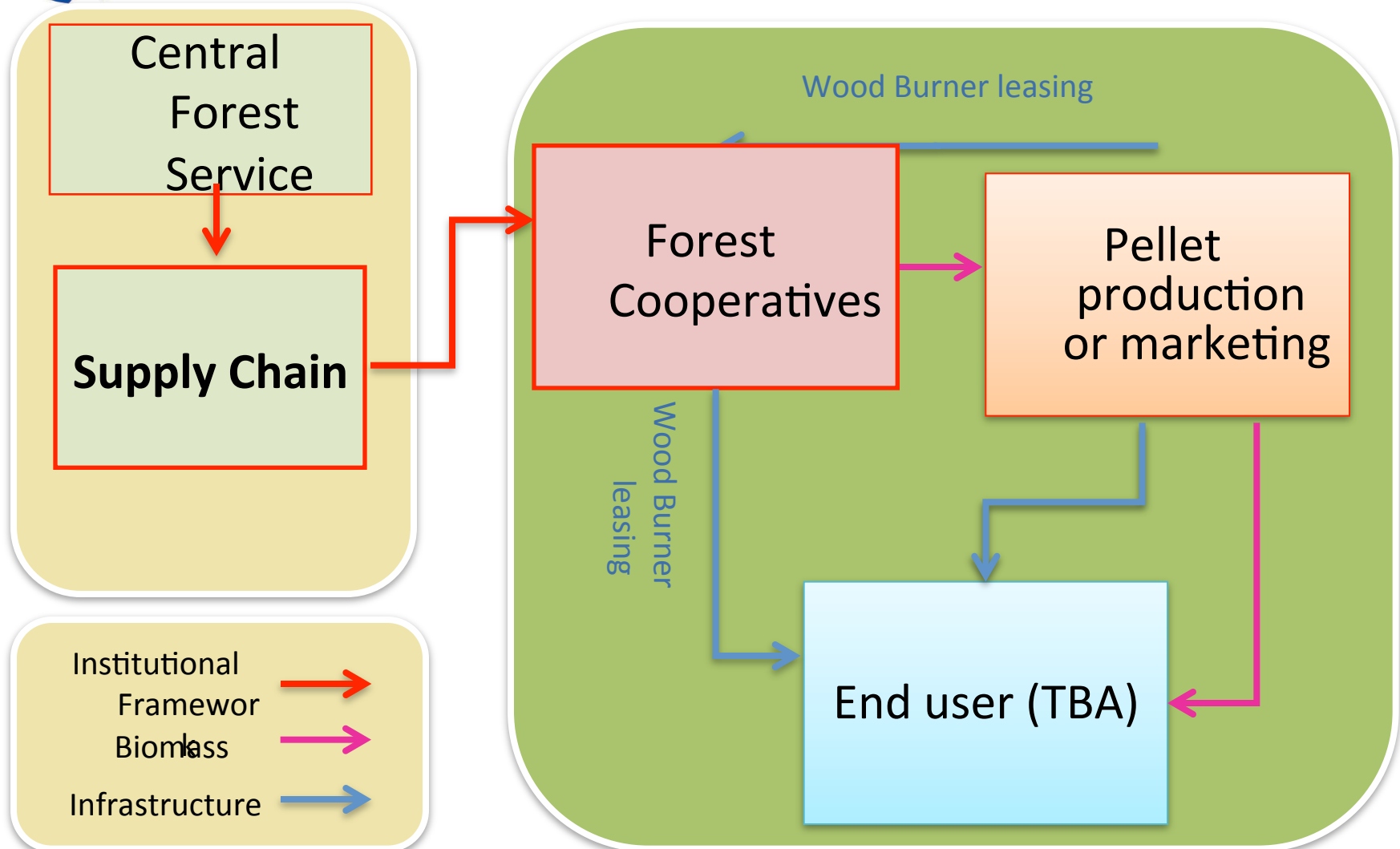
Conversion

Energy production

End-consumer

# Supply Chain

- ❖ **Key factors for the successful development of the supply chain:**
  - ✓ **Environmental sustainability: minimize the environmental impact and the impact on the lives and health of the local population**
  - ✓ **Participatory consultation and joint planning with all involved local actors, through transparent processes that transcend the contradictions.**
  - ✓ **Long-term perspective on the potential of the system to be able to maintain self-sufficient in the future in response to social, economic and environmental conditions.**
  - ✓ **Contribution income growth of local economies.**



## Technical and economic problems in creating Biomass Supply Chain

- Lack of funds from potential investors and consumers because of the economic crisis.
- Lack of interest of end users because of bureaucratic issues and time needed
- Lack of applied knowledge and experience
- Lack of experience in forestry practice in cooperative mode shapes



## WP 4 – Capacity Building

- transfer of key information to park managers, experts, and other figures interested in project outputs
- BIOEUPARKS Guidelines will be edited and diffused and an international mainstreaming conference will be organised.

# WP 5 - Communication

- Website – 5 languages
- Project flyer
- LinkedIn & Twitter



- 6 National Workshops about the project will be organised (1 for each participant country). Where possible they will be held preferably in the framework of larger events.

## Problems the parks are facing

- **Administrative hurdles**
- **Strict laws on use of biomass from nature parks in some countries**
- **Very different situations – national parks vs. nature parks**
- **Only one park is facing problems because of nature protection**

## Questions raised

- Should biomass be used as an integral part of energy production?
- Can a market for biomass be established?
- Can the forestry institutions take part of the responsibility of the biomass supply chain?
- Can a local biomass supply chain survive and be economically feasible?
- Can security of investment be secured and thereby foster the use of biomass for energy production?

## Questions raised

- Is it necessary to promote the efficient use of biomass?
- Should a new legislative framework be drawn? Are flexibility measures required?
- To what extent can the adoption of new technologies help produce biomass in a sustainable manner?
- Can biomass production be increased within the park?
- Are there local or special constraints that limit the ability to increase the production of biomass?
- Can the biomass from the park be mixed with other biomass sources?



**BIOEUPARKS**



# Thank you!

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