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Regional Networks for the development of a Sustainable Market for  
Bioenergy in Europe



## **D5.4: Bioregions and Green Communities projects: Workshop Proceedings**

December, 19<sup>th</sup> 2012



## Acknowledgements

This report has been produced as part of the project BioRegions. The logos of the partners cooperating in this project are shown below and more information about them and the project is available on [www.bioregions.eu](http://www.bioregions.eu)



The work for this report has been performed by ELARD

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## Introduction: Bioregions within Green Communities project

In an effort to further disseminate and present the scope as well as the results of the Bioregions project to a wider audience, ELARD took the initiative of intensifying its work towards this direction through the use of its contacts and professional relations with organisations actively involved in rural development. This resulted in the agreement between ELARD and UNCEM (the Italian National Union of Mountain Municipalities and Communities - <http://www.uncem.it>) to co-organise a joint workshop in Rome, held on the 19th of December 2012, aiming at promoting and presenting the Bioregions project as well as the final results of the Green Communities project implemented by UNCEM.

In doing so ELARD aimed at fulfilling the following project's priorities:

- Encourage and support other regions to replicate the project activities
- Inspire the rural areas to follow the example of the target regions

UNCEM is a national organization - present in all the Italian regions - gathering and representing mountain municipalities and communities, as well as associating counties, associations, chambers of commerce and other entities operating in the Italian mountain areas. UNCEM existed for over fifty years and is representative of an area that corresponds to the 54% of the Italian jurisdiction and in which more than ten million inhabitants actually live. After the XV Congress of Trento held in February 2010, UNCEM has taken a "green" direction. UNCEM's new strategy and focus in fact, is increasing sustainable energy production in the mountain areas thanks to hydropower, wind power, biomass and photovoltaic.

## Green Communities project

The project "Green Communities in the Convergence objective regions" (<http://www.greencommunities.it/green-communities-home.html>) lies within the framework of the Interregional Operational Programme (IOP) "Renewable and Efficiency Energies (ERDF) 2007-2013", financed by the EU and national funds.

UNCEM, with its Mountain Manifesto and projects, is committed to support small municipalities and communities in development actions based on rating services, investment and returns of apprehended resources and on levels of subsidiarity reconsideration with the urban territories.

In accordance with the agreement signed on July 28<sup>th</sup>, 2010 with the Italian Ministry of Environment and Protection of Land and Sea - General Direction for Sustainable Development, Climate and Energy, UNCEM aims at contributing to the implementation of actions financed by IOP Energy resources and to the achievement of the European objectives set out in the "climate and energy" package.

With an integrated approach, UNCEM wants to achieve the following objectives:

- Promotion of integrated interventions aimed at increasing the production of renewable energy in areas identified for their natural and environmental value, including small systems powered by renewable sources in protected natural areas and small islands, in accordance to the participatory approach of the Sustainable Communities.
- The pursuit of energetic efficiency and adoption of new styles/models of consumption through some demonstrative interventions on buildings, public service providers and territories having an "exemplary" character.

The project focuses on:

- Feasibility studies focus on emblematic interventions of energetic efficiency;
- Establishment of a system for the management, maintenance and enhancement of forest heritage within Convergence regions for energy and climate goals;
- Dissemination activities such as promotion of studies, projects and achieved results.

The project follows four strands corresponding to: activity, territory/land, buildings and forests.

The diagnosis was based essentially on the evaluation as follows:

- Energy vocation (presence of plants for the production of renewable energy; presence of a production coalition or supply chain in the energy sector; presence of natural resources; availability of biomass)
- Functional complementary (presence of a shared management of local public services; sharing of social, educational and health services, etc.)
- Previous experience and planning (experiences in environmental and energy fields; presence of environmental certifications; environmental sustainability planning; analysis of energy requirements, etc.)
- Territorial vitality (presence and number of stakeholders; presence and vitality of associations; realisation of cultural events).

The Green Communities project is active in "Convergence Objective" Regions such as Calabria, Campania, Puglia and Sicily. Particularly, the energy/climate analysis of the municipalities and territorial systems, especially in mountain and marginal areas, object of the IOP Energy, has been carried out in the "areas of intervention" as follows:

- "Cilento mountains and the sea" Area
- "Madonie District"
- Pollino Area
- Titero and Alto Tammaro Mountain Community

## **Bioregions presentations**

ELARD along with its Bioregions partners from the Agricultural University of Athens and BAT-Regionalmanagement Achenal took actively part in the Green Communities final conference

presenting three ppt presentations on the Bioregions project (please see the Annex num 1, 2 and 3).

The Bioregions speakers were:

- Mrs Valentina Sorbi from ELARD - Belgium as moderator and interpreter of the sessions dedicated to Bioregion project;
- Mr Thanos Balafoutis from Agricultural University of Athens – Greece who introduced the Bioregions Project in general (see Annex 1) and presented the case study of “Sredna Gora” region in Bulgaria (see Annex 2);
- Mr Robert Wojcik from BAT- Regionalmanagement Achental who showed the case study of Achental in Bavaria, one of the Bioregion project best practice region (see Annex 3).

Firstly, Mrs Sorbi briefly introduced the Bioregions Project, its consortium and explained why the Bioregions project representatives have been invited at the final conference of the Green Communities project (common area of interests). Mrs Sorbi stressed on the European relevance of the Bioregions actions and their further implementation in other target areas by presenting the necessary indicators in order to achieve the “Bioregion” status (replicability). Mrs Sorbi - when requested - also intervened as interpreter from Italian to English and vice versa, as the main language of the audience was Italian. She also translated all the Italian presentations and interventions to English for the other two Bioregions partners: Mr Balafoutis and Mr Wojcik. Moreover she distributed 40 leaflets of the Bioregions project to all the participants present and encouraged them to visit the project’s website should they require further information or want to get in touch with the project partners.

Following Mrs Sorbi’s introductory note, the floor was given to Mr Thanos Balafoutis from the Agricultural University of Athens, one of the Bioregions partner and mentor of the “Sredna Gora” region in Bulgaria. Mr Balafoutis gave two detailed presentations about the Bioregions project:

- His first speech (Annex 1) took at least 15 minutes and focused on the Bioregions introduction and its general aspects such as main goals and objectives, its background, the partner consortium, the main implementing steps since almost 3 years of the project beginning and the expected results, most of them already achieved. At the end of his speech, Mr Balafoutis also showed the Bioregions video raising awareness among the audience;
- His second presentation “How to prepare an action plan for a future Bioregion?” (Annex 2) lasted nearly 30 minutes as it detailed how to develop a regional Bioenergy Action Plan and the case study of “Sredna Gora” region in Bulgaria, which became a Bioregion due to the adoption of the Bioenergy Action Plan prepared during the course of the project. Mr Balafoutis gave some general definitions to the audience on what is and how to create a bioregion; then he continued his explanation on how to adopt and implement a Bioregion Action Plan through the case of Sredna Gora region. He described the importance to refer to the European and National contexts from a legislative point of view before adopting a Bioregion Action Plan; he also defined the methodology adopted and data to be taken into account for the development of an action plan. He presented

the general characteristics of Sredna Gora region, its current energy situation, the exiting bioenergy market and potential; he focused also on the biomass supply chain process and the importance of the analysis and involvement of all stakeholders in the selected area. He gave some suggestions of concrete actions such as: information campaigns/visits of best practice within the region, training, support/guidance for feasibility studies, development of a logistics/trading centre, providing guidelines to streamline permission process, cooperatives formation of forest owners or farmers, plan for large scale co-firing in power and district heating plants, use of existing local resources like energy agencies, take into account competition with other sectors for the same resource (food, wood etc.). Mr Balafoutis defined also all criteria for the impact, assessment, monitoring and evaluation actions and he concluded with some final outcomes for the general audience, and specifically that:

- a) The Bioregions Action Plans in all 5 selected regions have been officially adopted by the authorities;
- b) Many key stakeholders have been engaged in their implementation;
- c) It is expected that this will results to various benefits for the regions in economic, social and environmental aspects;
- d) The Bioregions experience can be helpful to pave the way for making the switch in other regions.

Finally, Mr Robert Wojcik from BAT- Regionalmanagement Achental, spoke in the Bioregion dedicated afternoon session that lasted nearly two hours, about the case study of Achental in Bavaria, one of the Bioregions model areas. Mr Wojcik, in fact, presented the Achental region in Bavaria as “a story of success with bio-energy” (Annex 3): a model region that in Bioregions Project transferred its know-how to other target areas. Mr Wojcik described in detail the heat pipe-reformer in Grassau, the optimization of regional energy circuits and all lessons learnt and future perspectives such new kind of cooperation in transferring Bioregions project models. The positive experiences highlighted by Mr Wojcik can be summarised as follows:

- a) Cooperation in public private partnership is extremely important;
- b) Tourism and bioenergy are close friends;
- c) High regional value creation through bioenergy is possible;
- d) Few “conflicts” are due to the involvement of all parties;
- e) Significant strengthening of regional energy supply has been provided.

## **The involvement of the audience: procedure and reaction**

The audience was composed of 40 (forty) participants (see Annex 5) that were contacted trough e-mailing, phone calls, the Bioregions website, UNCEM special communications and ELARD’s website and social media pages. The audience was mainly represented by municipalities, mountain communities and LEADER Local Action Groups (LAGs) from the South of Italy (Calabria, Campania, Puglia and Sicily), specifically from the four Green Communities target

areas such as “Cilento mountains and the sea” Area, “Madonie District”, Pollino Area and Titero and Alto Tammaro Mountain Community. Also representative of private companies, stakeholders and consultants of the sector were present as well as Universities (Ca’ Foscari from Venice, University of Salerno, Agricultural University of Athens), Statistic experts (CENSIS), and representatives of UNCEM network at national and regional levels.

**Figure 1 The Audience at the Green Communities final conference and Bioregions dedicated session**



The conference was divided in two sessions: the morning session from 9.30 am to 1.00 pm and the afternoon session from 3.00 pm to 5.00 pm (see Annex 4 “Green Communities final conference agenda”). The morning session was focused on the final results analysis of the Green Communities project. Mr Lo Bianco, the coordinator, explained the main goals and the achieved results; whilst other experts focused on the territorial rating analysis, the energy saving in heating building, and the management and enhancement of forests as bio-resources.

An important part of the morning session was dedicated to the Green Communities final beneficiaries: representatives of those territories from rural areas particularly rich in forests and biomass energy resources, took actively part in the debate reporting their own experiences, difficulties and achieved results. Municipalities, mountain communities and other stakeholders involved in the Green Communities project were satisfied about the achieved results and declared to be interested in participating in other projects with similar aims.

After a short coffee break, the morning session continued with the session dedicated to Bioregions project (see the “Bioregions presentations” paragraph and Annex 1, 2 and 3). Following an introductory note by Mrs Valentina Sorbi, Mr Thanos Balafoutis from the Agricultural University of Athens introduced the Bioregions Project in general (Annex 1) and presented the case study of “Sredna Gora” region in Bulgaria (Annex 2). He also showed the Bioregions video raising awareness among the audience.

After his two presentations, the morning session ended with a round table on the future of the European Programme 2014-2020: some private experts, academics, and representative of public authorities discussed with the audience on further development of green policies.



The audience expressed interest in Bioregions project through a questionnaire prepared and submitted by ELARD (see Annex 6 “Bioregions Participants’ expression of interest”) at the end of the morning session. Out of a total of 40 participants, 16 participants took the questionnaire and they all answered positively to the two asked questions. All 16 participants found the Bioregions project interesting and stated their will to find out more on how to start a bioregion in their own areas. The 16 participants were representatives from public authorities, municipalities and mountain communities, LAGs, as well as academics and private sector consultants.

The afternoon session was dedicated to a round table on Bioregions project where Mr Robert Wojcik from BAT- Regionalmanagement Achenal showed the case study of Achenal in Bavaria, one of the Bioregion project best practice region (see the “Bioregions presentations” paragraph and Annex 3). UNCEM representatives, private consultants and some municipalities and other public administration representatives actively participated in the round table, asking specific questions to Mr Wojcik and Mrs Sorbi and showing their interest in understanding how to adopt a Bioregions Action Plan.

**Figure 2 The Bioregions round table in the afternoon dedicated session**





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**Contract N°:**  
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**Duration:** 05/2010 – 04/2013  
**Date:** 30/08/2012

[www.bioregions.eu](http://www.bioregions.eu)



## Project Summary

**The project will support the creation of “bio-energy regions” in rural areas of Europe.**

*A “bio-energy region” gets at least 1/3 of its heating and electricity needs from regional and sustainable bio-energy sources, with main focus on solid biomass.*

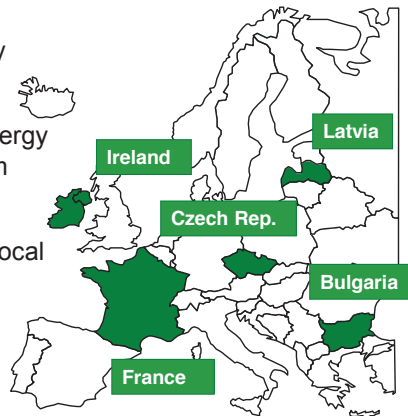
BioRegions aims to:

- Support the development of **efficient and reliable markets** for solid biomass in the five target regions.
- **Stimulate investment** into bio-energy projects and trading businesses of local Stakeholders.
- **Inspire the rural areas** from Europe to follow the example of the target regions.



## Background

- Rural areas in Europe have huge bio-energy potential
- In addition to environmental benefits, bio-energy contributes to rural development and tourism
- To realize the benefits coordinated effort is required from the supply chain players, the local authorities and end-users
- Expert support and access to up-to-date information is also necessary



## Consortium



**Michael Papapetrou**  
**WIP Renewable Energies**  
 Sylvensteinstr. 2, 81369  
 Munich Germany

Phone: +49-89-720 12 712  
 Email: [pmp@wip-munich.de](mailto:pmp@wip-munich.de)  
<http://www.wip-munich.de>



## Objectives and main steps

**The *BioRegions* is a focused project that up so far:**



1. Has identified success factors in “best practice” regions
2. Has organised networking activities in the target regions
3. Has defined Action Plans for 5 new bio-energy regions
4. Is supporting the implementation of the Action Plans
5. Is encouraging and supporting other regions to replicate these activities



## Expected Results

- i. Each region will formally adopt an Action Plan with a timetable and milestones to enhance their bio-energy to at least 1/3 of the energy demand for electricity and heating.
- ii. The first steps of the plan will be implemented
- iii. 5 specific projects will have their funding options analysed and will get support to secure full funding
- iv. At least 2MW of projects will in the pipeline by the end of BioRegions
- v. After the end of the project there will be a clear plan, political support and a critical mass of engaged local actors that will ensure the continuation of the project activities.
- vi. The network of ELARD that has access to more than 600 regions of Europe will be encouraged and supported to implement similar activities in their area





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**Date:** 14/12/2012

## How to prepare an action plan for a future Bioregion?

**Thanos Balafoutis**  
Agricultural University of Athens

[www.bioregions.eu](http://www.bioregions.eu)



## Introduction

### What is a bioregion?

A “bio-energy region” gets at least 1/3 of its heating and electricity needs from regional and sustainable bio-energy sources, with main focus on solid biomass.

### How you can create a bioregion?

- **Identify** the biomass potential for energy in the region.
- **Highlight** the environmental benefits, together with other advantages (rural development and tourism)
- The supply chain players, the local authorities and the end-users need to **realize** the benefits
- **Access** to expert support and to up-to-date information
- Support the development of **efficient and reliable markets** for solid biomass in the region.
- **Stimulate investment** into bio-energy projects and trading businesses of local Stakeholders.



# Development of the regional Bioenergy Action Plan

## The case study of “Sredna Gora” region in Bulgaria



## Introduction

### 1.1. Background (Why developing an action plan)

- European context
- National and regional context

### 1.2. Aims for the development of the action plan

Implementation of measures for the utilization of forest residues and waste biomass in the Sredna Gora region for the purposes of switching from using primitive biomass and fossil fuels to using modern biomass.

### 1.3. Methodology for the development of the action plan (short explanation of the template), including definitions.

Data derived by:

- Executive Forest Agency
- Regional plans for municipal development
- Development Strategy for the South Central Region
- Studies of Energy Agency of Plovdiv
- Surveys



## General characteristics of the region

- Geographical setting, natural conditions
- Administrative structure
- Demography and settlement pattern
- Economic situation



### “Sredna Gora” region in Bulgaria

- Total area of 5 990 km<sup>2</sup>.
- 6 municipalities.
- population of 121 440, out of which 65 700 in the main cities.
- 37% of the total area is forest.
- No gas distribution network.
- Tourism, eco-agriculture, forestry, light industry, and mining.

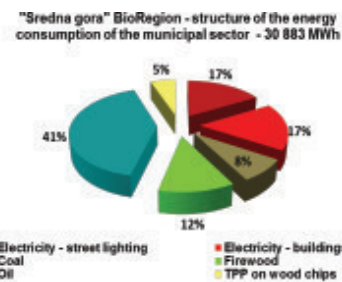
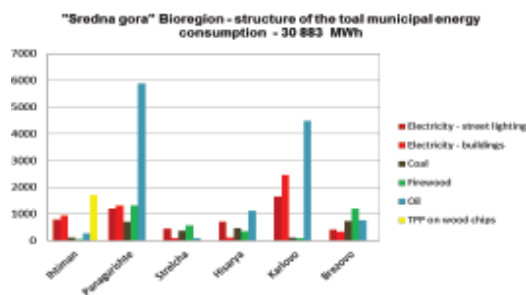


## Current energy situation

- Current energy infrastructure
- Current energy supply and consumption (per energy carrier – available data)

*including relevant infrastructure like district heating networks or coal power plants able to co-fire biomass*

*If data missing, make estimates. If not possible, describe qualitatively. Then, monitoring of progress is one of the most important activities.*



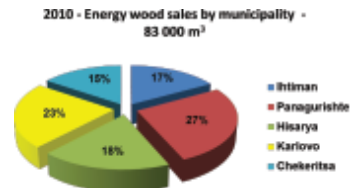
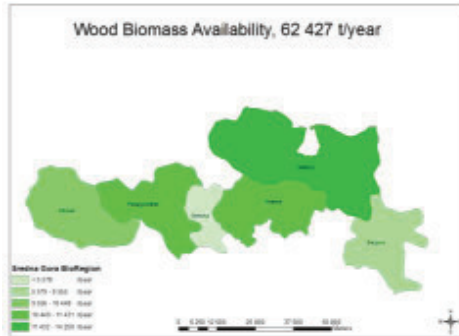
# Existing Bioenergy market

## o Bio-energy supply

Private wood cutting → FREE  
 Forest management bodies → 30 – 37 €/t  
 Dealer → 50 €/t

## o Bio-energy consumption

Self-sufficient households  
 Municipalities  
 Industries

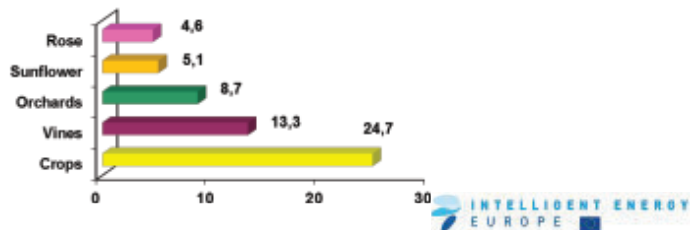


# Bioenergy potential

• Overview (table) of technical and economic potential of biomass (including also overview of biomass potential used already)

Forest administrations	Ihtiman	Panagurishte	Hisarya	Karlovo	Chekerica	Total	Energy
	m³	m³	m³	m³	m³	m³	
Total annual growth (including branches)	70 492	108 379	22 596	70 045	54 000	325 512	
Total annual use (including branches)	40 180	67 195	31 090	40 486	43 632	222 584	
Annual use to growth rate (in %)	57	62	55	57,8	80,8		287 725 MWh (1 035 TJ)

\*Sredna gora Bioregion energy potential by types of solid agricultural residues - 56 433 MWh





## Biomass Supply Chain

- **Current supply practices of biomass**

Firewood for households, partly public buildings

- **Gaps in biomass supply and logistics, meeting the potential**

- ✓ The regulatory body do not support biomass
- ✓ Biomass receives feed-in tariffs only when electricity is produced
- ✓ No legal framework for biomass household heating regulation or stimulation
- ✓ Fuel oil is used for public building heating
- ✓ Fuel oil is not charged with excise tax when sold to municipalities
- ✓ subsidies for energy efficiency measures in buildings are targeted in retrofitting

- **Determine if there is a need of a biomass trading centre**

## Stakeholders Analysis

(Here we mean stakeholders related to supply and/or demand for bioenergy and regional (administration) bodies that should adopt and be responsible for implementation of the action plan).

*Examples of relevant stakeholders:*

- ✓ *Municipalities*
- ✓ *Regional authorities*
- ✓ *National or regional energy agencies*
- ✓ *Biomass associations*
- ✓ *Manufacturers of equipment*
- ✓ *Potential suppliers of biomass (forest managers, farmers, wood processing industry, furniture industry, pulp & paper industry, food industry)*
- ✓ *District heating plants*
- ✓ *Potential project developers*
- ✓ *Other stakeholders that could take the role of manager of a logistic centre, etc.*

## SWOT analysis

### Strengths

- Rich supply of biomass
- New Forestry Act (potential of forest residues for energy purposes)
- Introduction of long term contracts for supply of woody biomass
- Preferences given to local firms for the supply of biomass
- Lack of gas distribution network
- Existing production of local biofuels
- Biomass boilers available on the market

### Weaknesses

- No feed-in tariffs for biomass heating
- Biofuels price competitiveness
- Difficulty in forest biomass harvesting
- No state policy for residential heating
- Weak internal market (60 000 tons of pellets are exported)
- No national standards for assessment and quality control of biofuels
- Lobbying in favor of liquid fuels and electricity for heating

### Opportunities

- The prices of energy sources are constantly going up, which makes biomass a cheaper alternative
- More employment opportunities
- Market for heating systems is in need for reliable producers of biofuels
- ESCO funding mechanisms for financing biofuels for public buildings

### Threats

- Biomass is used in other sectors – pulp and paper, furniture, and wood export
- Investors interested in big installations
- Decentralized heating systems lack capital
- High interest rates of loans
- Lack of balanced proportions of the different elements along the bioenergy supply chain

## Overall bioenergy vision

*This part is related to general (qualitative) targets and objectives*

- Production and use of biomass resources
- Bio-energy technologies
- Bio-energy generation and use

**Switching from traditional use of biomass to a modern one – Upgrading the traditional burning of biomass through the integration of new biofuels and technology with high COP**

- **Efficient use of available biomass**  
secure supply of biomass in the region will lead to the creation of new employment opportunities. The benefits from biomass trade will be realized in the region, which could improve the standard of living.
- **Introduction of modern technology**  
the main objective is the promotion of proven technology that will ensure the processing of biomass for energy production. Boilers for biomass gasification, automatic pellet boilers, and small co-generation plants will be promoted.
- **Optimal use of biomass resources for the production of energy**  
the objective is other sources of biomass such as agricultural waste to be used simultaneously with woody biomass.

## Targets for the next 10 years

*Here quantitative targets should be set*

- % of heat produced by biomass
- % of electricity produced by biomass

- ✓ 86% of the total energy consumption in the “Sredna Gora” region will be supplied from biomass (60 % in the base year – 2010)
- ✓ 22 % of the total energy consumption will be supplied from modern utilization of biomass
- ✓ 17% increase in energy efficiency through reduction of the use of electricity for heating water and through integration of residential furnaces with high COP (COP more than 85 %)

- **Electricity consumption in public buildings reduced by 25 %** → switch to modern biomass for heating and replacing the electrical boilers for heating water.
- **Electricity consumption in households reduced by 25 %** → integrating modern use of biomass and replacing the electrical boilers for heating water (reduction of 20500 MWh).
- **Consumption of fuels will be reduced by 40 %** → integration of modern biomass and new boilers with high COP. The projected energy savings are 42800 MWh.



## Milestones

**Year 1** – setting up of pilot infrastructure for the utilization of biomass

**Year 2** – decisions on pilot public buildings switch to use biomass

**Year 3** – recruitment of agricultural potential for production of biofuels

**Year 5** – all public buildings switch to using biomass, establishment of three logistic centers that will serve the needs of the entire region

**Year 7** – at least 10 000 households using modern heating systems on biomass



## Concrete actions

Suggestions for describing concrete actions:

- Structure by type of activity
- Then structure by time, short-term and long-term and then for each action when activity starts, when implemented

*Some examples of concrete actions:*

- *Information Campaigns/Visits of best practice within the region*
- *Training*
- *Support/Guidance for feasibility studies*
- *Development of a logistics/trading centre*
- *Providing guidelines to streamline permission process*
- *Cooperatives formation of forest owners or farmers*
- *Plan for large scale co-firing in power and district heating plants*
- *Use of existing local resources like energy agencies*
- *Take into account competition with other sectors for the same resource (food, wood etc)*

## Impact Assessment, Monitoring and Evaluation

### Impact Assessment

Possible Environmental impacts of the action plan implementation (positive like CO2 reduction) and negative impacts (such as competition for wood with other sectors)

Socio-economic impact like job creation etc.

### Progress Monitoring and Evaluation

This section should include actions related to:

- regular reporting of progress,
- data collection during the action plan time frame
- revision of targets and actions based on the actual progress
- quality control

## Final Outcome

- The Action Plans in all 5 regions have been officially adopted by the authorities
- Key stakeholders have been engaged in their implementation
- It is expected that this will result to various benefits for the regions in economic, social and environmental aspects.
- Our experience can help you to pave the way for making the switch in your region.



**Thank you for  
your attention**





# The Achantal in Bavaria: a story of success with bio-energy

Robert Wojcik, Ökomodell Achantal e.V.  
19.12.2012, UNCEM Workshop Rome



[www.biomassehof-achental.de](http://www.biomassehof-achental.de)



## Structure

1. The Achantal as a model region
2. The Heatpipe-Reformer in Grassau
3. Optimization of regional energy circuits
4. Lessons learnt and perspective

[www.biomassehof-achental.de](http://www.biomassehof-achental.de)

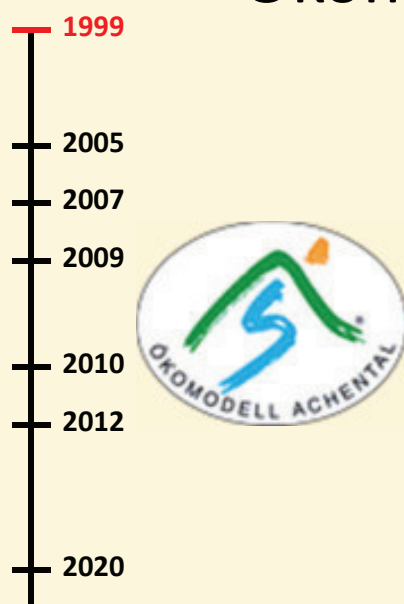


# Structure

1. **The Achental as a model region**
2. The Heatpipe-Reformer in Grassau
3. Optimization of regional energy circuits
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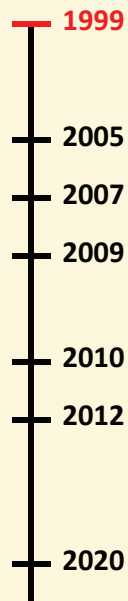


# Ökomodell Achental e.V.

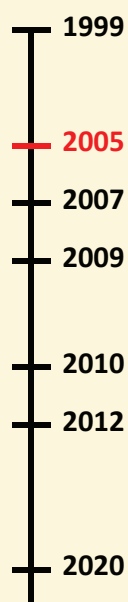




# Ökomodell Achenal e.V.



# RES-Integration



Energy source	Potential
Bioenergy	232,625 MWh/a
Hydropower	40,000 MWh/a
Solar energy	40,000 MWh/a
Others (Ground heat, Wind, ...)	10,000 MWh/a
<b>Sum (MWh / a)</b>	<b>322,625 MWh/a</b>
<i>Total load coverage</i>	<i>78%</i>

**Decisive gap: a biomass trading centre!**

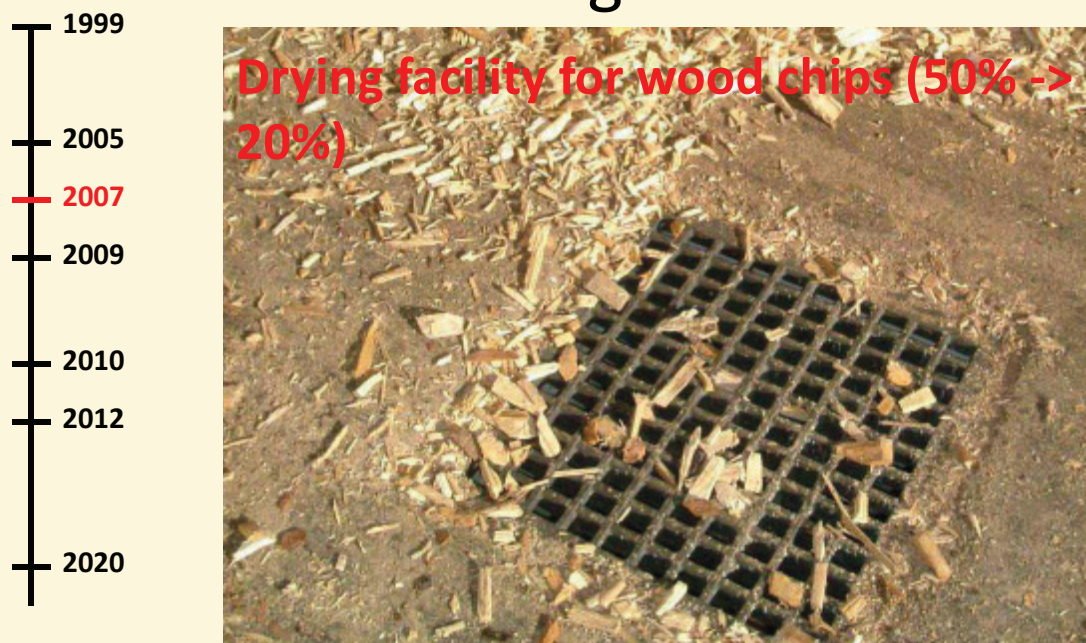




# Biomasse Trading Centre Achenal

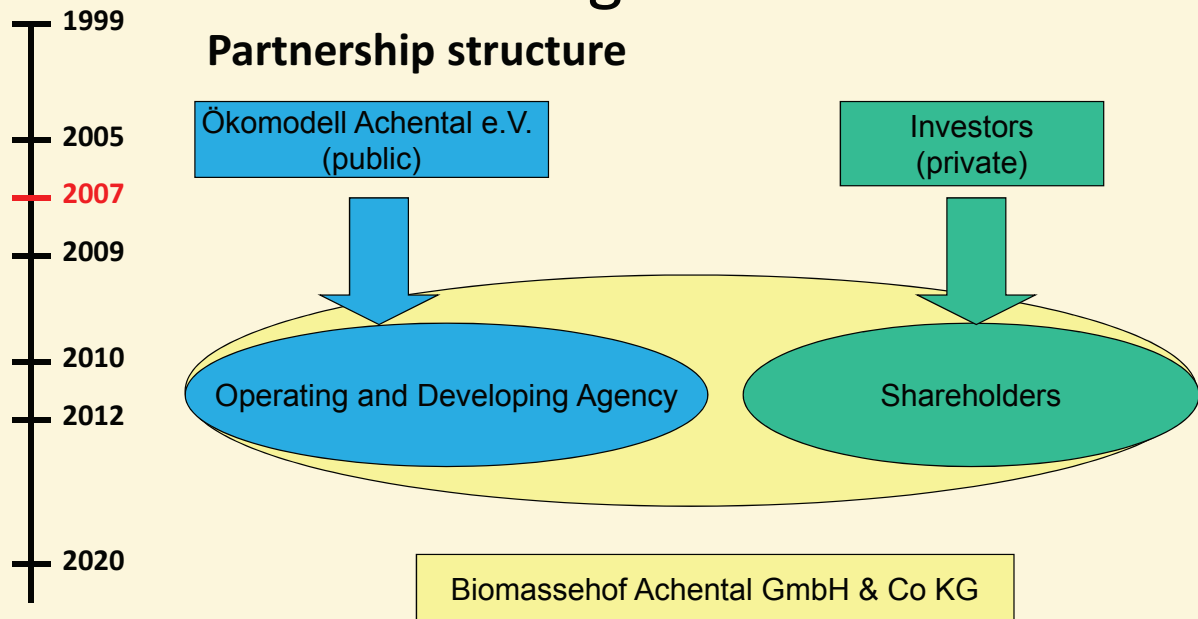


# Biomasse Trading Centre Achenal





# Biomasse Trading Centre Achenal



# Bioenergy-Region Achenal

1999

2005

2007

2009

2010

2012

2020

**BIOENERGIE REGIONEN**

- German Agricultural Ministry
- Funded from 2009 till 2012
- Aim: Building of „Summit projects“
  - Efficient
  - Climate friendly
  - Locally adapted
  - Replicable in other regions



## District heating Grassau

1999  
2005  
2007  
2009  
**2010**  
2012  
2020



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2. Biomassehof Netzwerk und Heatpipe-Reformer

## District heating Grassau

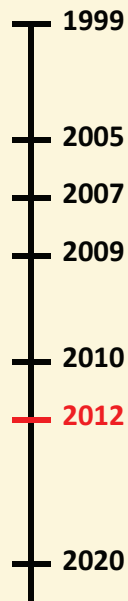
1999  
2005  
2007  
2009  
**2010**  
2012  
2020

- Fully municipally owned company in Grassau
- 3 MW wood chips boiler, 5 MW oil boiler (peak load + safety backup)
- 11 km heat pipes, > 500 households
- 12.4 GWh of heat sold in the first year
- Used 17,000 cbm forestry wood chips (low quality)
- Flue gas condenser, two-staged: reflux raising (first stage) and wood chips drying (second stage)

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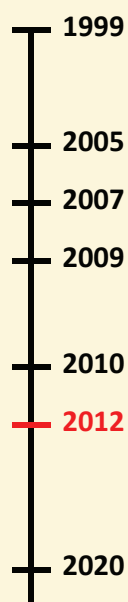
## Bioenergy-Region II and the Heatpipe-Reformer



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## Regional generation of renewable energy (2011)



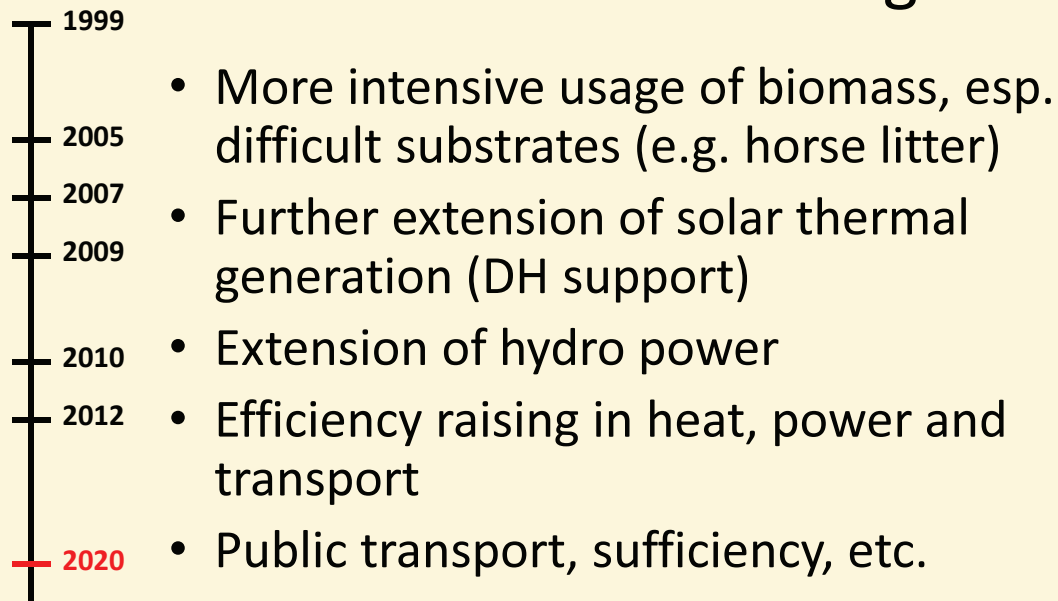
Source	Biogas	Hydro power	PV	Wind	Private CHPs	Large CHPs
<b>Power (MWh/a)</b>	3.485	10.480	5.029	<1	<1	0
<b>Share of electricity demand: 16%</b>						

Source	Biogas	Pellets & chips private	District heating (chips)	Log wood	Solar energy	Ground heat
<b>Heat (MWh/a)</b>	5.000	23.953	39.500	36.956	2.000	5.500
<b>Share of heat demand: 37%</b>						

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## Where do we want to get?





## Structure

1. The Achantal as a model region
- 2. The Heatpipe-Reformer in Grassau**
3. Optimization of regional energy circuits
4. Lessons learnt and perspective

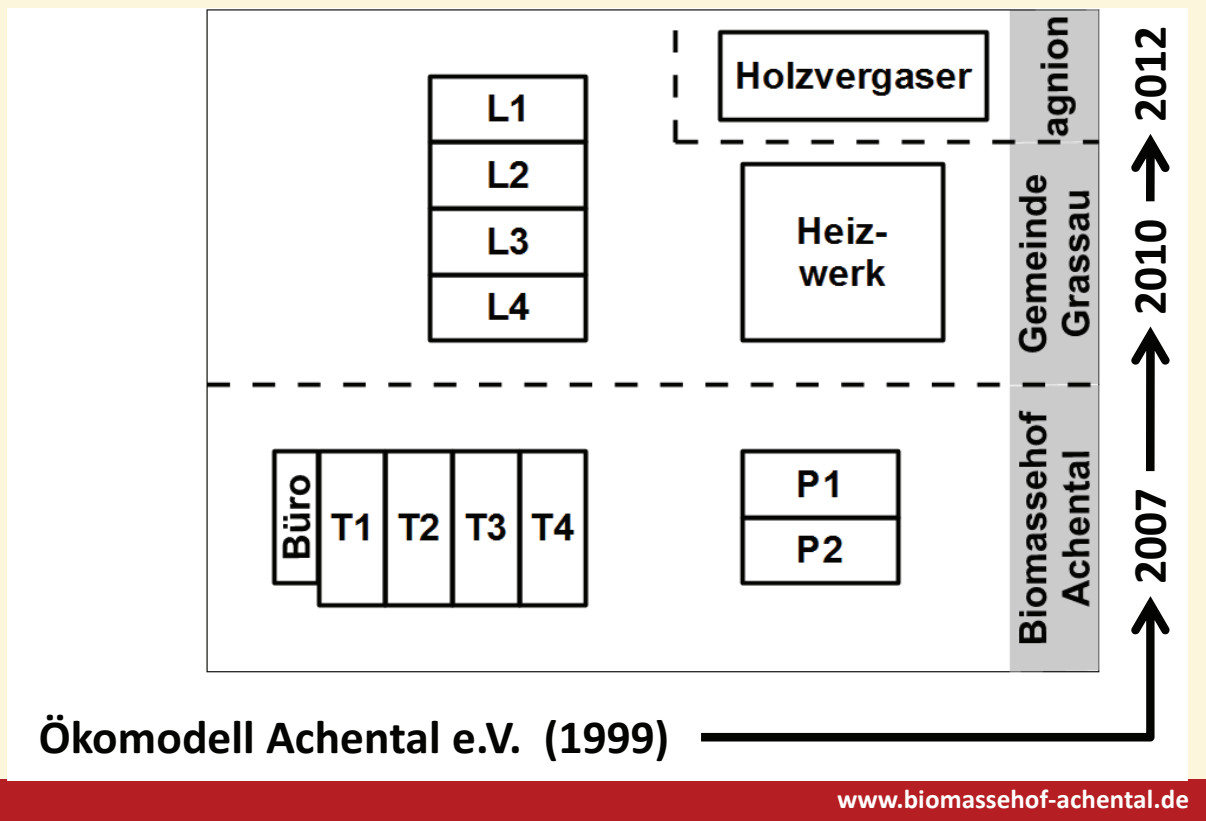
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## The Heatpipe-Reformer<sup>®</sup> of agnion



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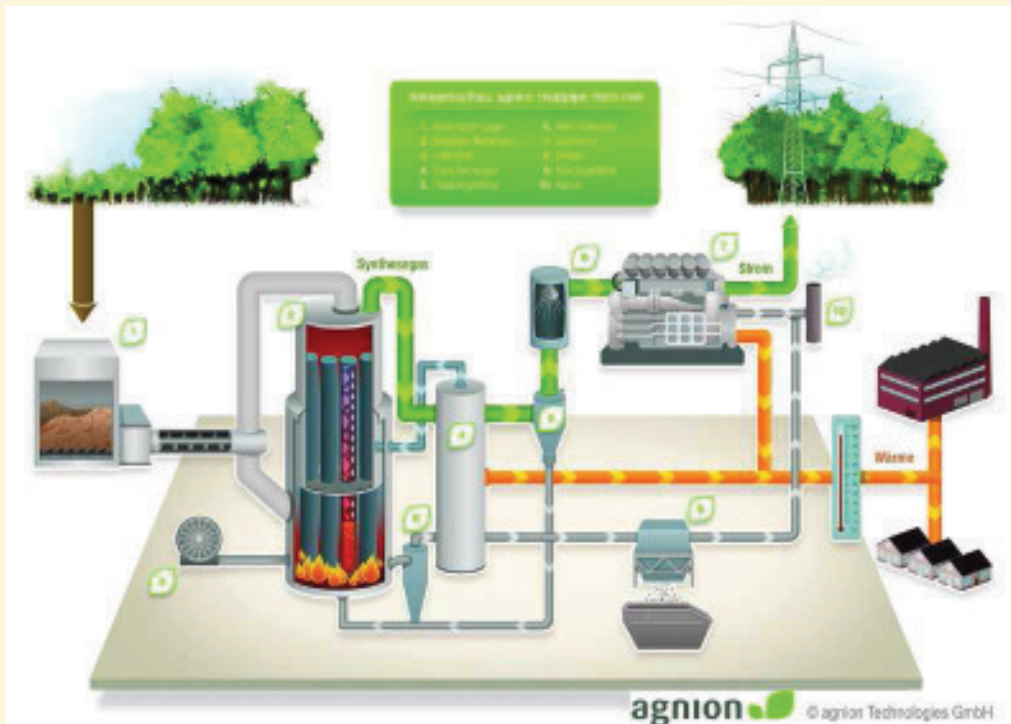
## Core data of the HPR

- Allothermal fluidized bed gasification (sand bed, fluidized by hydro vapour)
- In operation since March 2012
- Fueled with wood chips (medium quality)
- 1,28 MW furnace capacity
- 400 kW<sub>el</sub> , 630 kW<sub>th</sub>
- $\eta = 80 \%$
- minus 2.800 t CO<sub>2</sub> / a
- 7.500 h / a operation time is minimum
- Heat into the nearby DH, electricity into the grid



# Functional principle

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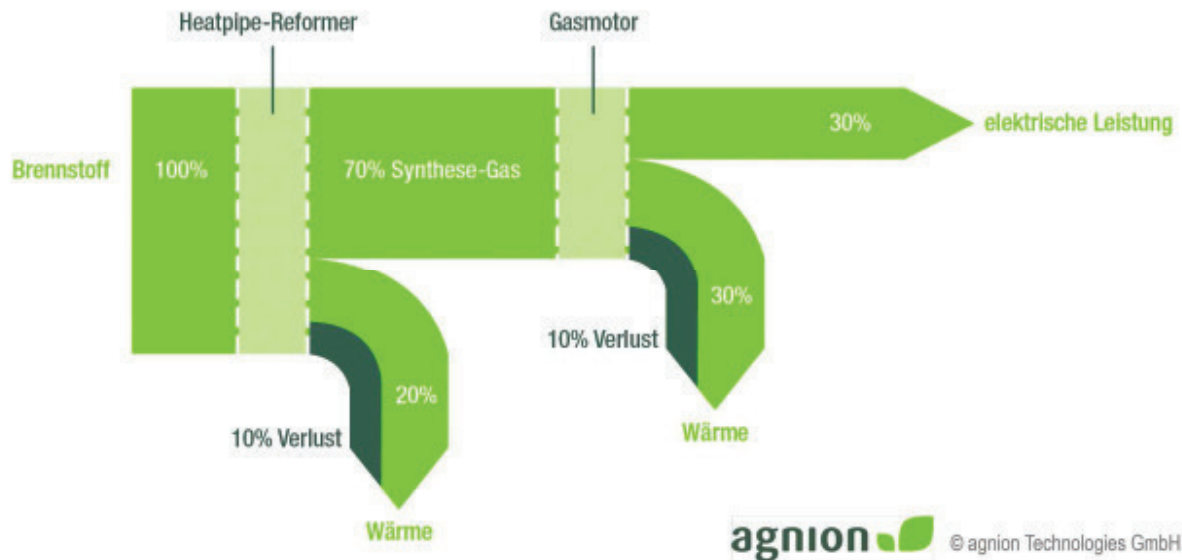


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Efficiency: 80 %



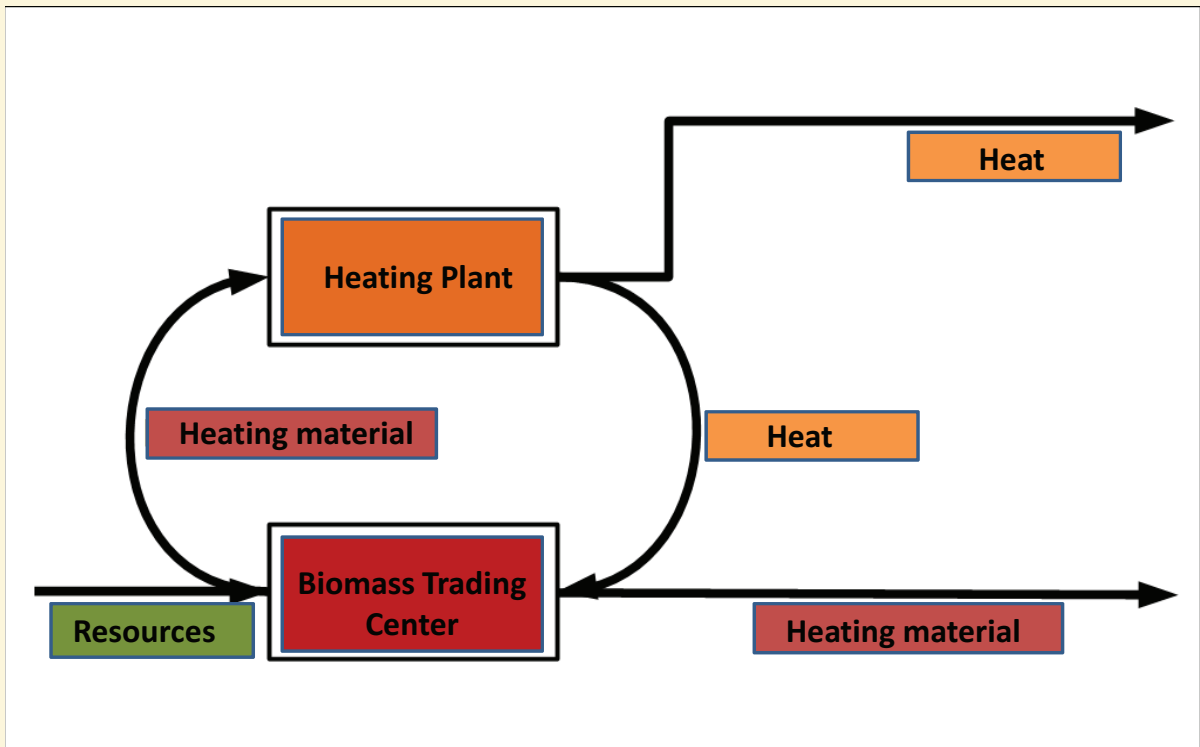
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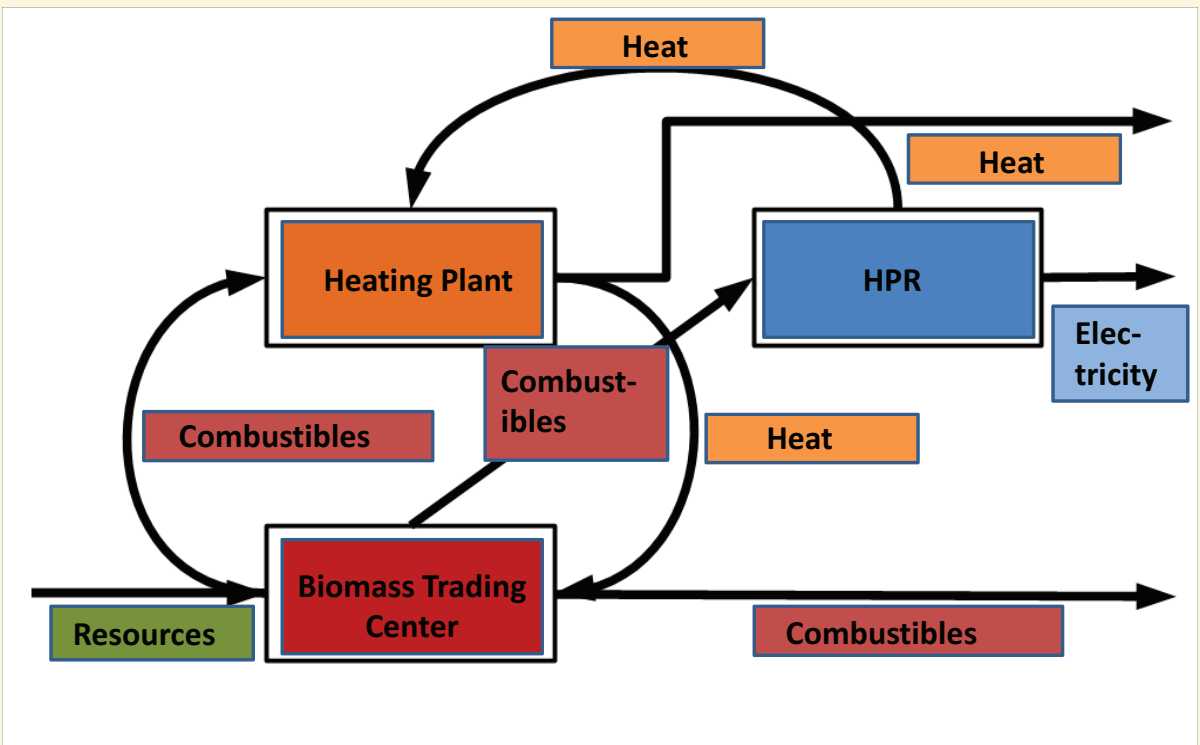
## Structure

1. The Achental as a model region
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## Targets of optimization

- Improve the treatment of combustibles
- Using almost exclusively regional residues
- Climate and nature conservation
- Security of supply in a long-term view
- Boosting regional value creation
- Increasing the profitability of all exploitations
- New idea to handle the disposal of ashes

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## Structure

1. The Achental as a model region
2. The Heatpipe-Reformer in Grassau
3. Optimization of regional energy circuits
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## Practical experience

- Biomass trading center & Heating plant
  - Stable economic basis was created
  - Error tolerance in processing biomass is very low
- Heating plant in Grassau
  - Everything is „on the middle of the road“
- Heatpipe-Reformer
  - System is running
  - Relative small furnace capacity (1,3 MW), fits well to the existing facilities
  - Applicable for decentral energy and heat supply

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## What did we learn?

- Positive experiences
  - + Cooperation in public private partnership is very good
  - + Tourism and bioenergy are close friends
  - + High regional value creation through bioenergy
  - + Only few amount of conflicts due to involvement of all parties
  - + Significant strengthening of regional energy supply
- More negative experiences
  - (High) persistence is required
  - Bioenergy shows a small amount of revenue
  - Financing through bank loans is quite difficult
  - Long-term contracts need a proper indexing

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## Outlook

- Vision of energy autarchy by 2020 is demanding
- Second period of the bioenergy region Achantal: we have a lot of new ideas
- Small and decentral power plants have to be supported
- Status of model region has the favorable effect on tourism and population

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## Invitation: Visit our model region!



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# Green Communities

## Seminario conclusivo

19 Dicembre 2012

Roma, Hotel Mediterraneo Via Cavour, 15

### Programma dei lavori:

ore 9,00 Arrivo partecipanti

ore 9,30 Apertura lavori, Luca Lo Bianco

ore 9,45 Il rating territoriale, Riccardo Hopps

ore 10,00 Efficientamento energetico degli edifici, Salvatore Leto

ore 10,15 Gestione e valorizzazione del patrimonio forestale, Isabelle Ronvaux

ore 10,30 La parola ai territori, Antonio Di Maria, Carmine Farnetano, Barbara Bruno, Mario Cicero

ore 11,10 coffee break

ore 11,30 ELARD: Bioregions project: overview on Bioenergy Regions in Europe, Valentina Sorbi

ore 11,45 How to prepare an action plan for a future Bioregion?, Thanos Balafoutis

ore 12,00 Verso la nuova programmazione comunitaria, Ugo Baldini

ore 12,15 Tavola rotonda; partecipano

Enrico Borghi, Giuseppe De Rita, Mario Zoccatelli, Antonio Strambaci

Introduce Marco Baldi

Comunità Montana Tiverno e Alto Tammaro





# *Green Communities*

## Seminario conclusivo

19 Dicembre 2012 - sessione pomeridiana

Roma, sede UNCEM Via Palestro, 30

Programma dei lavori:

ore 15,00 Apertura lavori: "The Achental in Bavaria: a story of success with bio-energy" Robert Wojcik - Bioregions Project - BAT- Regionalmanagement Achental

ore 15,15 Tavola rotonda

partecipano:

Thanos Balafoutis - Bioregions Project and Agricultural University of Athens

Ugo Baldini – CAIRE

Claudio Bordi – UNCEM

Franco D'Amore - UNCEM

Silvia D'Annibale – UNCEM

Luca Lo Bianco – UNCEM

Isabelle Ronvaux - Ecosistemi

Valentina Sorbi - Bioregions Project and ELARD

Robert Wojcik - Bioregions Project and BAT- Regionalmanagement Achental

ore 17,30 Conclusione

Comunità Montana Tiverno e Alto Tammaro





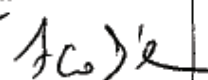

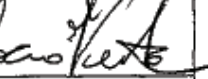
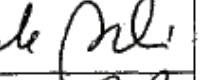

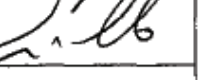
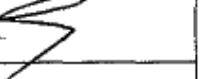
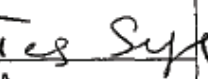
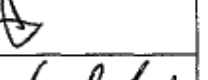
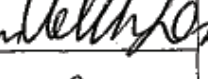
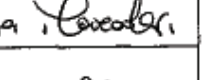
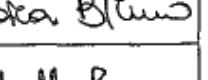
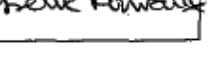
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## Seminario conclusivo

19 Dicembre 2012

Roma, Hotel Mediterraneo Via Cavour, 15

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NOME E COGNOME	ENTE	TELEFONO	MAIL	FIRMA
FRANCO D'ARONÈ	UNCER	3471179952	franco.daronè@uncer.it	
ESTER SQUILLACE	E. P. TIRABO AZIENDA SQUILLACE UNCER	3478365526	ester.squillace@uncer.it	
MARIO FESTA	COLONIA MONTANA TI TERMO UNCER	3477238514	mario.festa@uncer.it	
Claudio BORDI		0683199100	claudio.bordi@uncer.it	
Robert Wojcik	Ökomodel Achtal	+498649986655	regionalmanagement@oekomodel.de	
ANDREA CIRILLO	UNCERM	333.6008761	andrea.cirillo@uncerm.it	
FORTÈ PIETRO	GAL CASACASTRA	3332858526		
MARIA TERESA SIARVA	GAL CASACASTRA	3383458136	scarpantonio@casacastria.it	
Thanos Balafoutis	AGRICULTURAL UNIVERSITY ATHENS	+302105294046	obalafoutis@aua.gr	
VALENTINA SORBI	ELARD	3393840215	VALENTINA.SORBI@GMAIL.COM	
TERESA MARADEI	GAL POLLINO	3891546321	teresa.maradei@libero.it	
BARBARA BLUNO	GAL POLLINO	3397726591	barbara.bluno@libero.it	
ISABELLE RONVAUX	ECOSISTEMI (UNCERM)	388.0493868	I.RONVAUX@ECOSISTEMI-SEL.IT	







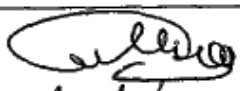
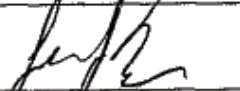
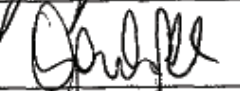
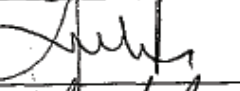




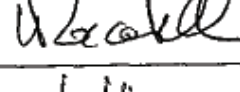
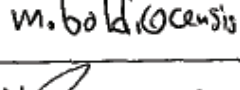
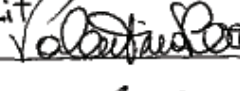
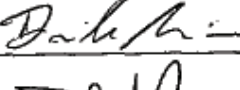
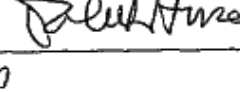
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19 Dicembre 2012

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GERARDO ANIELLO RUOCCO	FUTARI	3890105105	gerardoruocco@ GMAIL.COM	
LUCA LO BIANCO	UNCEM	3479406289	l.lobianco@ UNCEM.ORG	
CARLO PATTISI	UNCEM	3384490565	battistic@ alice.it	
ANTONIO TURINELLO	COMUNE DI CASTELLONOVATO	3204363500		
MARCO D'AMIA	COMUNE DI CASTELLONOVATO	3204363508	marco.d'amia@ alice.it	
ANTONIO CARUCCI	CASTELLONOVATO	3204363506 3339224649	antonio.carucci@ hsr.pisapia.it	
SEBASTIANO MARRA	UNCEM	3356490042	sebastiano.marra@ libero.it	
GIUSEPPE SATORIO	ARCHITETTO	3475801399	JOSEARCA SATORIO@ LIBERO.IT	
MARIO ZOCCARELLI	GRUPPO ITALIA			
MARCO BALDI	CENSIS	06/86811	marco.baldi@ censis.it	
VALENTINA GERENZA	UNCEM (COMUNE SILENO)	3337924017	vgerenza@unisa.it	
DAVIDE MINONNE	UNIVERSITA'	3391712245	dauideminonne@ gmail.com	
VALENTINA ANZOISE	GA' FOSCARI (ECL)	329/0295415	valentina.anzoise@ gmail.com	



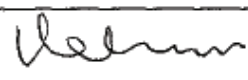
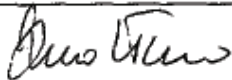
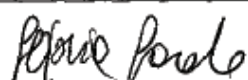


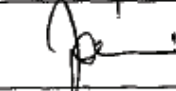

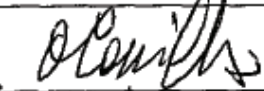
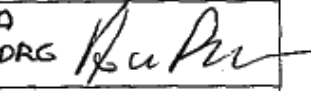
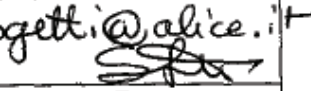

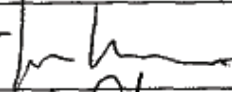
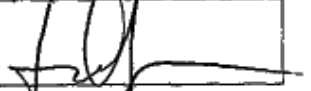
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19 Dicembre 2012

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NOME E COGNOME	ENTE	TELEFONO	MAIL	FIRMA
MARIZIO CARONVALI	SERCOMI	317 7517456	MARIZIO.SERCOMI.IT	
BRUNO TURRA		345-5277304	BRUNOTURRA@NAC.COM	
STEFANIA SARNO	UNIV. CA' FONDARI ECLT	3402745194	stefania.sarno@unive.it	
SILVANO FALCOCCO	ECOSISTEMI	06 683014 07	S.falocco@ecosistemi-arl.it	
ANTONIO DI MARA	T. MONTANA TIGERNO PAVO	328 0431267	A.DI MARA 71 @GMAIL.COM	
MARCO IANICELLI	C. REALTA TIGERNO PAVO	328 3535081	ianicelli@libero.it	
LUONG ALDO	BALCHASTRA CONV. CASCALIA	3731121369	aldo.luong@alice.it	
ANDREA CAMILLETI	GBC ITALIA	338 7031837	andrea.camilletti@alice.it	
AMALIA ROMANO	FOCUS CASADIRETTI SOCIALI	3487137859	INTERCULTURA DIRITTI SOCIALI.DRG	
SALVATORE UETO	Polliino	368/ 3710577	leonardoprogetti@alice.it	
Silvia D'Annibale	UNCEN	339/6316187	silvia.dannibale@xshoo.it	
GIAMPINO LU PARA	CASALIA	335/6841766	g.lupara@casal.it	
FRANCESCA AGOSTINI	UNCEN	3331355810	f.agostini@uncen.net	





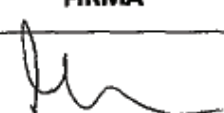
# Green Communities

## Seminario conclusivo

19 Dicembre 2012

Roma, Hotel Mediterraneo Via Cavour, 15

(5/6)

NOME E COGNOME	ENTE	TELEFONO	MAIL	FIRMA
Mario Mascia	UNCEN	329 6630383	mimascia@uncen.it	



Regional Networks for the development of a Sustainable Market for Bioenergy in Europe



bioregions.eu

Regional Networks for the development of a Sustainable Market for  
Bioenergy in Europe

Rome, 19th December 2012

Green Communities & BioRegions workshops

-----  
Questionnaire on Bioregions Project

	YES	NO
Did you find the Bioregions project interesting?	X	
Would you be interested in finding out more on how to start a bioregion in your area?	X	

Name	Surname	Organisation	e-mail
ANTONIO		COMUNE	SINDACO@

TORALIFE UO

DI CASTELBOVINO

COMUNE CASTELBOVINO  
PA. IT



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Regional Networks for the development of a Sustainable Market for Bioenergy in Europe



Regional Networks for the development of a Sustainable Market for  
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Rome, 19th December 2012

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Name	Surname	Organisation	e-mail
MARCO	BALDI	FONDAZIONE CENSIS	m.baldi@censis.it





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Name	Surname	Organisation	e-mail
ANTONIO	DI MARIA	COMUNITA' MONTANA TETERNO - TADARO	A.DIMARIA71@GMAIL. COM



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Rome, 19th December 2012

Green Communities & BioRegions workshops

-----  
Questionnaire on Bioregions Project

	YES	NO
Did you find the Bioregions project interesting?	X Very Interesting	
Would you be interested in finding out more on how to start a bioregion in your area?	X	

Name	Surname	Organisation	e-mail
RICCARDO	Hopps	OFFICINE GREEN BUILDING	r.hopps@officinegb.com



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Regional Networks for the development of a Sustainable Market for  
Bioenergy in Europe

Rome, 19th December 2012

Green Communities & BioRegions workshops

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Questionnaire on Bioregions Project

	YES	NO
Did you find the Bioregions project interesting?	X	
Would you be interested in finding out more on how to start a bioregion in your area?	X	

Name	Surname	Organisation	e-mail
VALENTINA	CERENZA	UKCEM - UNIVERSITA' DI SALERNO	vcerenza@unisa.it





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Name	Surname	Organisation	e-mail
MARIA TERESA	SGARPA	GAL CASACASIRA	INFO@GALCASACASIRA.IT



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Name	Surname	Organisation	e-mail
ISABELLE	RONVAUX	ECOSYSTEMI SRL	I.RONVAUX@ECOSYSTEMI-SRL.IT





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Name	Surname	Organisation	e-mail
ANDREA	CIRILLO	ANCI UNCEM	andreacirilloac @libero.it





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Name	Surname	Organisation	e-mail
PIETRO	FORTE	GAL CASACASTA	PIETROFORTE1@YAHOO.IT



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Name	Surname	Organisation	e-mail
BARBARA	BRUNO	GAL POLINO	barbarabruno@libero.it



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Name	Surname	Organisation	e-mail
TERESA	MARADEI	teresa.maradei@libero.it	GAR PIZZINO





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Name	Surname	Organisation	e-mail
CARLO	BATTISTI	UNCEM (consultant)	battistic@ alice.it





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Name	Surname	Organisation	e-mail
ALDO	LUONGO	BAL CASACERTA VICO PRESIDENTE CUCCELO VETRO-51 SINDACO	aldo.luongo@calcas.it





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X

Name	Surname	Organisation	e-mail
BRUNO	TURRA	UNCEM CONSULTANT	BRUNOTURRA@MAC.COM





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Name	Surname	Organisation	e-mail
GASPARD	LUPATTA	CAIRN	g.lupatelli@caice.it









- Geographical setting, natural conditions
- Administrative structure
- Demography and settlement pattern
- Economic situation

"Sredna Gora" region in Bulgaria



MUNICIPALITIES	
1	Tranovitsa
2	Tranovitsa
3	Tranovitsa
4	Tranovitsa
5	Tranovitsa



