



Activation of wood energy

Wood Energy Exploitation for Entrepreneurship

Final conference – 20/02/13

Eurexpo - Lyon



European Union
European Regional Development Fund



Activation of wood energy

GENERAL PRESENTATION

Pascal MARCHAISON

Chamber of Commerce and Industry of Drôme



European Union
European Regional Development Fund



Activation of wood energy

General information

- Partners

Chamber of Commerce and Industry of Drôme, France

Chamber of Agriculture and Forestry, Slovenia

Region of Epirus, Greece

Region Piedmont, Italy

Municipality of Entracque, Italy

SARGA, Spain

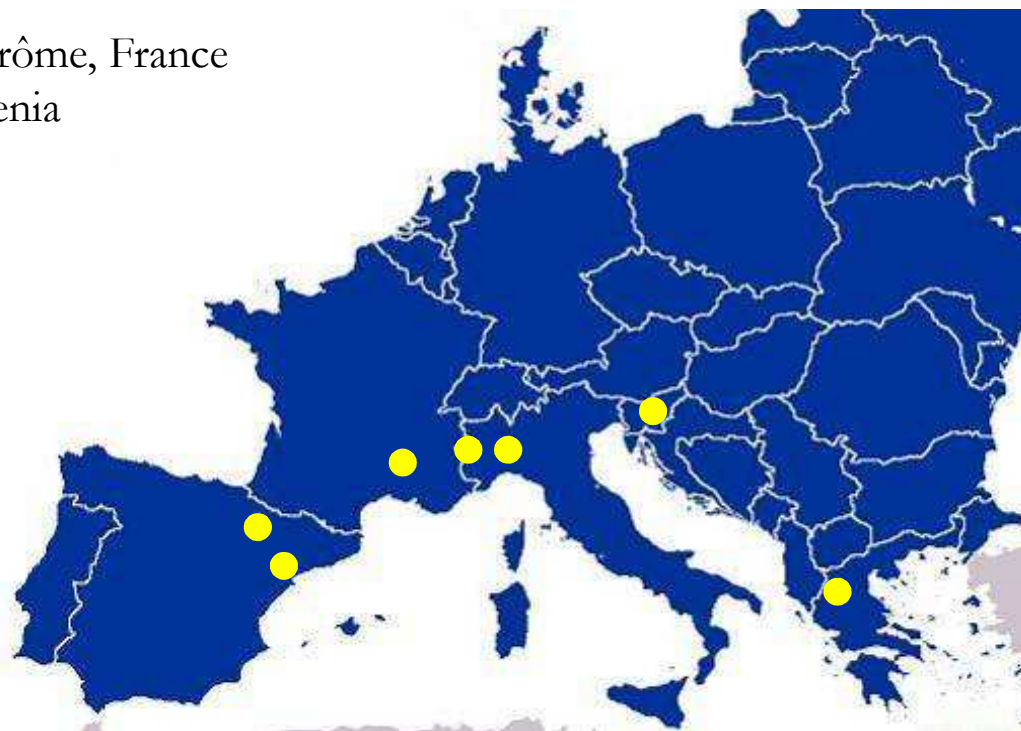
CTFC, Spain

- Budget

1,2 M€

75 % de FEDER - Programme MED

From 06/2010 to 05/2013





Activation of wood energy

Objectives

Objective 1.2: Strengthening strategic cooperation between economic development actors and public authorities.

- ➔ To ensure a sustainable development of wood energy exploitation in the Mediterranean Space
- ➔ To enhance territorial cohesion through a better coordination of the forest sector.



Activation of wood energy

Outcomes

- ➔ Create synergies between stakeholders from forest and wood energy sectors
- ➔ Gather reliable information
- ➔ Favour useful information exchange
- ➔ Better assess the impacts of projects using wood biomass
- ➔ Give recommendations for a sustainable development of wood energy



Activation of wood energy

Transversal Components

→ Communication

- Website
- Publishable materials (leaflets, posters...)
- Newsletter
- Conferences

→ Management





Activation of wood energy

Phase 1: Capitalisation, identification and exploitation of existing data

Gathering existing data on:



Technical territorial specificities

- Measure units and conversions
- Land cover, wood production
- Forest exploitation (materials, gain, costs, techniques...)
- Transportation and chipping
- Trade and consumption (transformation)





Activation of wood energy

Phase 1: Capitalisation, identification and exploitation of existing data

Gathering existing data on:

- Technical territorial specificities
 - Measure units and conversions
 - Land cover, wood production
 - Forest exploitation (materials, gain, costs, techniques...)
 - Transportation and chipping
 - Trade and consumption (transformation)



Territorial portfolio and creation of online database
Report on regional specificities
Identification of best practices



European Union
European Regional Development Fund



Activation of wood energy

Phase 1: Capitalisation, identification and exploitation of existing data

Identification of information gaps:

- ➔ Comparison between expected state of art and territorial portfolio
- ➔ Master plan to experiment new techniques of collecting information

Report on gap analysis

Experimentation plan and implementation



Activation of wood energy

Phase 2: Innovative Governance Mechanisms

Development of a common online platform :

➔ Database

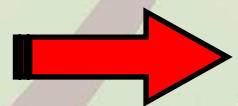
Collection of general information about the wood energy sector

➔ Territorial portfolio

➔ Impact assessment tool

➔ CO2 footprint calculation tool

➔ Methodology guidelines



Online platform





Activation of wood energy

Phase 2: Innovative Governance Mechanisms

Methodology guidelines:

- ➔ Creation of videos and guides for better use of tools
- ➔ Collection of best practice examples related to the implementation of projects using forest biomass



Guide documents



Activation of wood energy

Phase 2: Innovative Governance Mechanisms

Development of an impact assessment tool:

- ➔ Exploitation of the indicators (phase 1) ranked by pillar of the sustainable development
- ➔ Creation of a CO2 footprint calculation tool for wood exploitation and transformation

CO2 footprint calculation tool
Impact assessment tool





Activation of wood energy

Phase 3: Pilot monitoring and institutionalization

Policy recommendations based on:

- ➔ Analysis of overall project outcomes and project monitoring results
- ➔ Emphasis on institutional commitment to fulfil a sustainable wood energy development

Policy recommendations handbook
Workshops for local empowerment



Activation of wood energy

PROMOTION

Mihael Koprivnikar

**Chamber of Agriculture and Forestry of
Slovenia**



European Union

European Regional Development Fund



Activation of wood energy

Project promotion:



WEBSITE



www.wood3.eu



BROCHURES



EVENTS



European Union
European Regional Development Fund



Activation of wood energy



[Home](#) [About WoodE3](#) [News](#) [Contacts](#) [Events](#)



About Wood E3



- ▶ [About Project](#)
- ▶ [Felling](#)
- ▶ [Heating](#)
- ▶ [Business](#)
- ▶ [Transportation](#)
- ▶ [Nature Conservation](#)
- ▶ [Sustainable Development](#)

Useful links



➔ [ONLINE PLATFORM](#)

Collected laws, latest projects, examples from practice and contacts to support your business

➔ [CARBON FOOT PRINT CALCULATOR](#)

Carbon foot print calculator for your business. Calculate the amount of greenhouse gas emissions for easier optimization of your business and costs reduction on this area.

Latest News



Conférence finale WOODE3 à EUROBOIS

Conférence de clôture du projet européen WoodE3

Mercredi 20 février 2013 – 10h – Salon EUROBOIS – Lyon Eurexpo

Débuté en 2010, Le projet WoodE3 (prononcez « wood-i cube ») pour « Wood En

co2.ctfc.cat



European Union

European Regional Development Fund



Main menu

- ▶ **Home**
- ▶ **About WoodE3**
 - ▶ About Project
 - ▶ Felling
 - ▶ Heating
 - ▶ Business
 - ▶ Transport
 - ▶ Nature Conservation
 - ▶ Sustainable Development
 - ▶ Fight against Forest Fires
 - ▶ Links
- ▶ **News**
- ▶ **Contacts**
- ▶ **Events**

Felling

Save in wood mobilization and transport and discover bioma working opportunity.

Harvesting and skidding techniques have a big impact on economics of wood production.



Felling includes the following view

- Optimization of felling and skidding
- Influence of felling on the environment
- Analysis of various practical examples
- Various trainings and specialization for wood

[Read More...](#)

Tweet 0

Like 0

More...



▶ Main menu

▶ Home

▶ About WoodE3

- ▶ About Project
- ▶ Felling
- ▶ Heating
- ▶ Business
- ▶ Transport
- ▶ Nature Conservation
- ▶ Sustainable Development
- ▶ Fight against Forest Fires
- ▶ Links

▶ News

▶ Contacts

▶ Events

▶ Designing resource base

Integrated development can be achieved using the results of field projects.



Developing the wood industry's local sector favourably contribute rural development, for it increases the competitiveness of the agriculture and forestry sectors, ensures care for the environment and rural area, increases quality of life, and the diversity of the rural economy.

Rural development starts with a local approach which considers the long-term possibilities of the local region and focuses on sustainable development.

The use of biomass and acceleration of wood processing can create new long-term and safe job positions. Numerous opportunities remain concealed in this area for it is full of unused potential which will include highly-trained workforce as well as relatively low-skilled workers.

[Read More...](#)



Privacyfix by Privacychoice...



European Union

European Regional Development Fund



About Wood E3



- ▶ [About Project](#)
- ▶ [Felling](#)
- ▶ [Heating](#)
- ▶ [Business](#)
- ▶ [Transportation](#)
- ▶ [Nature Conservation](#)
- ▶ [Sustainable Development](#)
- ▶ [Fight against Forest Fires](#)
- ▶ [Links](#)

Read

Newsletter

WoodE3 is building an active communication network of stakeholders. By joining to our network you will get access to the latest information on forest based sector, transport and bioenergy. Use the mach making opportunity of the project.

▼ LAND OWNERS

- ☐ Private forest owners
- ☐ Industrial forest owners
- ☐ Public and other forest owners
- ☐ Forest and land owners associations

▶ ENERGY SECTOR

▶ FORREST BASED INDUSTRY

▶ ENVIROMENT & RECREATION

▶ RESEARCH & DEVELOPEMENT

▶ ADMINISTRATIVE

Subscribe



European Union
European Regional Development Fund



Activation of wood energy

online data



This online database is free, only you should register!!

[Not yet registered? Register now!](#)

Please contact with the project partner of your region if you have lost or forgotten your username and password

login :

Mihael

password:

Entry



2011© Centre Tecnològic Forestal de Catalunya - CTFC



Activation of wood energy

**Chamber of Agriculture and Forestry of Slovenia
Department of Forestry and Renewable Resources**

miha.koprivnikar@kgzs.si



European Union
European Regional Development Fund



Activation of wood
energy

ONLINE DATABASE

&

TERRITORIAL PORTFOLIO

**What they are, what they contains, how they work and
where they are**

Andrea Ebone



European Union
European Regional Development Fund



Activation of wood energy

ONLINE DATABASE

WP 4 - Innovative Governance Mechanisms

Collect laws, latest projects, examples from practice and contacts

It will be periodically implemented, after the end of the project

An useful tool to support business



European Union

European Regional Development Fund



ONLINE DATABASE

Elements

- Laws & Aids
- Stakeholders
- Projects and Facilities
- Bibliography



**Available for
the Region of
each
partners**



European Union
European Regional Development Fund



Activation of wood energy



Laws & Aids Stakeholders Projects and Facilities Bibliography More Information



This MED online platform was developed after the results of the data capitalisation and joint framework.

It contains both common transnational data and regional and local specificities; a comprehensive catalogue of environmental, economic and social criteria; a detailed online directory of wood energy economic operators and competent organisations; in-depth information on wood resources and mobilization techniques; a tool to calculate the carbon foot print of a wood energy supply chain; up-to-date information on the subject of sustainable wood energy exploitation.

The aim is to provide up-dated data that will positively influence the key success factors of a sustainable wood energy exploitation.



From the home page “On line platform”

You must register



European Union
European Regional Development Fund



Activation of wood energy



Laws & Aids Stakeholders Projects and Facilities Bibliography More Information

Laws & Aids

NAME :

PARTNER :
CCID-CFPF
CTFC
CAFS
SARGA
Regionie Piemonte
Entracque
Prefecture of Ioannina

COUNTRY :

TYPE LAW :
Laws

TERRITORIAL SCOPE :
Regional

YEAR : from
2008 to
2012

SECTOR OF ACTIVITY :
Energetic
Forestry
Administration
Resources

KEYWORDS :
Bioenergy
Biomass
Biomass plant
Boiler
Chipping
Costs
Economic
Energetic enterprise
Environmental
Forest

Here you can
make a query

This page may include information that is not up-to-date. If you want to suggest updating the information, please contact a partner organisation of the project.

Number of registers: 1

NAME	COUNTRY	REGION	YEAR	TERRITORIAL SCOPE	INFO
Legge Regionale n°4/2009 - Gestione e promozione economica delle foreste	Italy	Piemonte	2009	Regional	Laws



European Union

European Regional Development Fund



Activation of wood energy



Laws & Aids

NAME : Legge Regionale n°4/2009 - Gestione e promozione economica delle foreste

NUMBER : L.R. n. 4

PUBLIC JOURNAL :

ENTITY : Regione Piemonte

COUNTRY : Italy

REGION : Piemonte

YEAR : 2009

TYPE LAW : Laws

PARTNER : Regione Piemonte

TERRITORIAL SCOPE : Regional

SECTOR OF ACTIVITY : Forestry

KEYWORDS : Trees, Owner, Harvesting, Forestry management, Forest, Environmental, Economic,

LINK : <http://arianna.consiglioregionale.piemonte.it/base/coord/c2009004.html>

SHORT DESCRIPTION :

Output
specificities




European Union

European Regional Development Fund



Activation of wood energy

Stakeholders



online database

Activation of wood energy

[Laws & Aids](#)
[Stakeholders](#)
[Projects and Facilities](#)
[Bibliography](#)
[More Information](#)

Stakeholders

PARTNER:
(empty)
 CFEC
 CAFS
 SARGA
 Regione Piemonte
 Entracque
 Prefecture of Ioannina

COUNTRY:

TYPE:

SUB-TYPE:

TERRITORIAL SCOPE:

Number of registers: 43

NAME ORGANISATION	COUNTRY	TERRITORIAL SCOPE	TYPE	SUB-TYPE
Consorci Forestal de Catalunya	Spain	Regional	Land owner	Private (non-industrial) forest owners and their association
Federació Catalana de Propietaris Forestals	Spain	Regional	Land owner	Private (non-industrial) forest owners and their association
Unió de Pagesos	Spain	Regional	Land owner	Private (non-industrial) forest owners and their association
Cooperativa de Productors Forestals	Spain	Regional	Land owner	Private (non-industrial) forest owners and their association





Activation of wood energy



Leaders

NAME ORGANISATION : Consorci Forestal de Catalunya

PARTNER : CTFC

COUNTRY : Spain

REGION : Catalunya

TYPE : Land owner

SUB-TYPE : Private (non-industrial) forest owners and their association

TERRITORIAL SCOPE : Regional

EMAIL : consorci@forestal.cat

WEBSITE : <http://www.forestal.cat>

TELEPHONE : 34972842708

ADDRESS : C/Jacint Verdaguer nº3 (17430-Santa Coloma de Farners)

SHORT DESCRIPTION :

**Output
specificities**



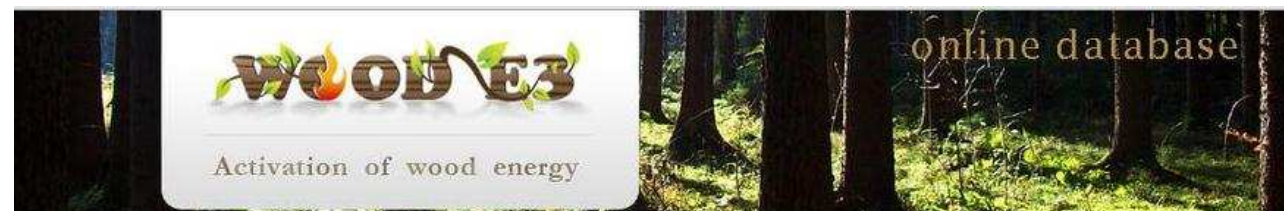
European Union

European Regional Development Fund



Activation of wood energy

Bibliography



Laws & Aids Stakeholders Projects and Facilities Bibliography More Information

Bibliography

TYPE:

TITLE:

AUTHORS:

YEAR: to

KEYWORDS:

Number of registers: 27

TITLE	AUTHORS	YEAR
Special report on Renewable energy sources and climate change mitigation	Intergovernmental Panel on Climate Change	2011
Energía de la biomasa, volumen I (Serie Energías renovables)	Sebastián, F., García, D., Rezeau, A. (coordinadores.)	2010
Energía de la biomasa, volumen II (Serie Energías renovables)	Sebastián, F., García, D., Rezeau, A. (coordinadores.)	2010
Manual técnico para el aprovechamiento y elaboración de biomasa forestal	Tolosana, E.	2009
Manual de buenas prácticas para el aprovechamiento integral de biomasa en resalvos de montes bajos de frondosas	Tolosana, E., Laina, R., Martínez-Ferrari, R., and Ambrosio, Y.	2009
Manual de buenas prácticas para el aprovechamiento integral de biomasa en claras sobre repoblaciones de Pinus Sylvestris L. y Pinus pinaster Ait.	Tolosana, E., Laina, R., Martínez-Ferrari, R., Donaire, D., Flores, S., Sánchez-Redondo, E., Valdés, L., Navas, A., and Ambrosio, Y.	2009
Manual de buenas prácticas para el aprovechamiento de biomasa forestal en las cortas de regeneración de	Tolosana, E., Martínez-Ferrari, R., Laina, R., Ambrosio, Y., Cuesta, R., Martín, M., and	2009



European Union
European Regional Development Fund



Activation of wood energy



Other projects:

TERRITORIAL
PORTFOLIO



renewable energy
statistics



European Environment Agency



EUROPEAN FOREST INSTITUTE
MEDITERRANEAN REGIONAL OFFICE - TYRRENE

AEBIOM
EUROPEAN BIOMASS ASSOCIATION



Forest Europe
growing life



ROK-FOR



proforbiomed infres



2011 © Centre Tecnològic Forestal de Catalunya - CTEC

More
informations



sarga



REGIONE
PIEMONTE



Kmetijsko gozdarska
zbornica Slovenije

ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
ΠΕΡΙΦΕΡΕΙΑ ΗΠΕΙΡΟΥ



European Union
European Regional Development Fund



Activation of wood energy

Guidelines



Guide de l'utilisateur

Base de données E3 DB WoodE3

Tâche 4.3. Directives méthodologiques



European Union
European Regional Development Fund



Activation of wood energy

TERRITORIAL PORTFOLIO

WP 4 - Innovative Governance Mechanisms

Contains territorial specificities, wood resources and exploitation, laws and aids and stakeholder reference



European Union

European Regional Development Fund



TERRITORIAL PORTFOLIO

Worksheets

:

- Forest and territorial data
- Harvesting
- Transport and chipping
- Trade and consumption
- Projects



**Available for
the Region of
each
partners**



European Union
European Regional Development Fund



Activation of wood energy

TERRITORIAL PORTFOLIO (Major issues)

Forest and Territorial data comparison among the partners

Partners	Total Area (ha)	Forest Surface (ha)	%	Woodland (ha)	%	Not woodland (Arboriculture, Shrubs) (ha)	%
REGION OF ARAGON	4.771.996	2.608.312	54,7	1.577.991	33,1	1.030.321	21,6
REGION OF CATALONIA	3.199.011	2.054.447	64,2	1.315.285	41,1	739.162	23,1
MUNICIPALITY OF ENTRACQUE	15.991	4.839	30,3	4.839	30,3		0,0
PIEMONTE REGION	2.540.200	922.866	36,3	874.660	34,4	48.206	1,9
DRÔME AND ARDÈCHE DEPARTMENTS	1.213.500	528.100	43,5	528.100	43,5		0,0
RHÔNE-ALPES REGION	4.369.800	1.483.000	33,9	1.483.000	33,9		0,0
REGION OF EPIRUS (Ioannina Province)	499.000	329.791	66,1	329.791	66,1		0,0
REPUBLIC OF SLOVENIA	2.027.300	1.186.289	58,5	1.186.289	58,5		0,0



European Union
European Regional Development Fund



Activation of wood energy

TERRITORIAL PORTFOLIO (Major issues)

Forest property - data comparison among the partners

Partners	Forest Surface (ha)	Public Property (ha)	%	Private Property (ha)	%	% of (forest) terrains with slope>25%
REGION OF ARAGON	2.608.312	1.045.955	40,1	1.562.356	59,9	35,7
REGION OF CATALONIA	2.054.447	475.260	23,1	1.579.187	76,9	62,0
MUNICIPALITY OF ENTRACQUE	4.839	4.309	89,0 %	530	11,0	n.a.
PIEMONTE REGION	874.660	241.360	27,6	633.300	72,4	45,0
DRÔME AND ARDÈCHE DEPARTMENTS	528.100	97.000	18,4	431.100	81,6	85,0
RHÔNE-ALPES REGION	1.483.000	329.226	22,2	1.153.774	77,8	66,0
REGION OF EPIRUS (Ioannina Province)	329.791	240.691	73,0	89.100	27,0	40,0
REPUBLIC OF SLOVENIA	1.186.289	300.760	25,4	885.529	74,6	70,0



European Union
European Regional Development Fund



Activation of wood energy

TERRITORIAL PORTFOLIO (Major issues)

Potential biomass availability comparison among the partners

Partners	Potential biomass	
	dry ton/year	MWh/year
REGION OF ARAGON	1.052.139	4.690.214
REGION OF CATALONIA	701.686	2.368.142
MUNICIPALITY OF ENTRACQUE	n.d.	n.d.
PIEMONTE REGION	1.586.504	6.928.945
DRÔME AND ARDÈCHE DEP.	417.201	1.526.930
RHÔNE-ALPES REGION	1.823.358	4.598.782
REGION OF EPIRUS	13.004	59.763
REPUBLIC OF SLOVENIA	2.148.000	4.356.144

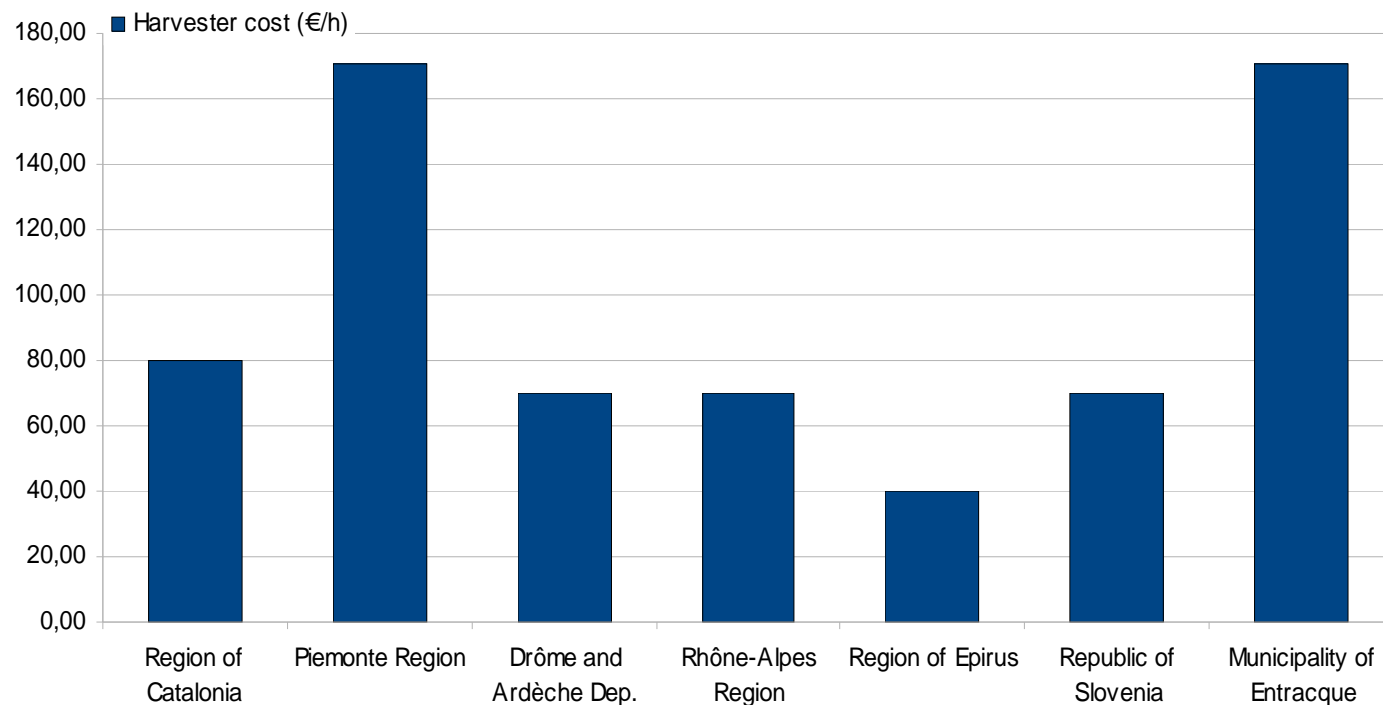




Activation of wood energy

TERRITORIAL PORTFOLIO (Major issue)

Harvest cost comparison among the partners



European Union
European Regional Development Fund



Activation of wood energy

TERRITORIAL PORTFOLIO (Major issue)

Biomass cost comparison among the partners

Average prices (€/t dry)	Wood chips		Pellets	Firewood
	From forest	From agricultural		
REGION OF ARAGON	120	50-100	160-250	80-140
REGION OF CATALONIA	65-100	>50	120-240	36-67
MUNICIPALITY OF ENTRACQUE	43,5 (w50)		210-250	135-155
PIEMONTE REGION	43,5 (w50)		210-250	135-155
DRÔME AND ARDÈCHE DEP.	106	121	210	140
RHÔNE-ALPES REGION	106	121	210	140
REGION OF EPIRUS	40		200 - 250	120
REPUBLIC OF SLOVENIA	39 – 55	33 – 48		135



European Union
European Regional Development Fund



Activation of wood energy

► TERRITORIAL PORTFOLIO (Conclusions)

There are a marked differences among the partners territories

The average prices of the wood-energy products is quite heterogeneous

In some regions there are no data on biomass potential or information about companies, heating and power generation plants and on other facilities can consume biomass

The lack of data is mainly due to: inadequate supply chain organization, a shortage of interest and investment of the

institutions and companies



European Union
European Regional Development Fund



Activation of wood energy

[Home](#) [About WoodE3](#) [News](#) [Contacts](#) [Events](#)



About Wood E3



- [About Project](#)
- [Funding](#)
- [Heat](#)
- [Business](#)
- [Transportation](#)
- [Nature Conservation](#)
- [Sustainable Development](#)
- [Fight against Forest Fires](#)
- [Links](#)

[Read More](#)

Useful links



ONLINE PLATFORM

Collection of latest projects, examples from practice and contacts to support your business.

CARBON FOOT PRINT CALCULATOR

Carbon foot print calculator for your business. Calculate the carbon footprint of your business and find easier optimization of your business and cost reduction of this area.

TERRITORIAL PORTFOLIO

Compare the biomass mobilization and market situation in partner regions.

Latest News



The funds for heat energy by biomass

The funds of Piemonte region for production plants of heat energy by biomass

At the end of year 2012, Piemonte Region announced an announcement for promotion the production of heat energy ...



[SUBSCRIBE TO OUR NEWSLETTER](#)

[Archive](#)



European Union

European Regional Development Fund



Activation of wood energy

CARBON FOOTPRINT TOOL

Maider Gómez Palmero
CIRCE Research Centre
External expert for SARGA



Les mullers
CFPF



European Union
European Regional Development Fund



Activation of wood
energy

INDEX

- ❖ Objectives
- ❖ Utility
- ❖ Design criteria
- ❖ Requirements from the user
- ❖ Limitations
- ❖ Structure
- ❖ Results and interpretation



European Union
European Regional Development Fund



Activation of wood
energy

TOOL'S OBJECTIVES

- ❖ Calculation CO₂ emissions derived from the use of mechanized means in the exploitation chain of forest biomass.
- ❖ Comparison among exploitation options.
- ❖ Simple use:
 - ❖ Friendly for non proficient users
 - ❖ Does not require complex calculations for the user



European Union
European Regional Development Fund



Activation of wood
energy

TOOL'S UTILITY

- ❖ Quantify step by step the emissions generated.
- ❖ Increase the user's sustainability awareness.
- ❖ Provide decision-makers quantified information to evaluate the project's contribution to CO₂ emissions.



European Union
European Regional Development Fund



Activation of wood
energy

DESIGN CRITERIA

- ❖ Attractive look
- ❖ Friendly interface
- ❖ Easily understood
- ❖ Corporative design
- ❖ Homogenous structure
- ❖ Work through benchmarking: project assessed-reference case



CFPF



European Union
European Regional Development Fund



Activation of wood
energy

REQUIREMENTS FROM THE USER

- ❖ Knowing the system of exploitation in detail (volume exploited, transport distance, etc.)
- ❖ Knowing the means used and being able to obtain or assign its corresponding CO₂ emission (machinery used, fuel consumption, etc.).

LIMITATIONS

- ❖ The tool assumes certain simplifications related to the CO₂ emission, establishing a standardized and systematic frame which makes the comparison with other possible systems.



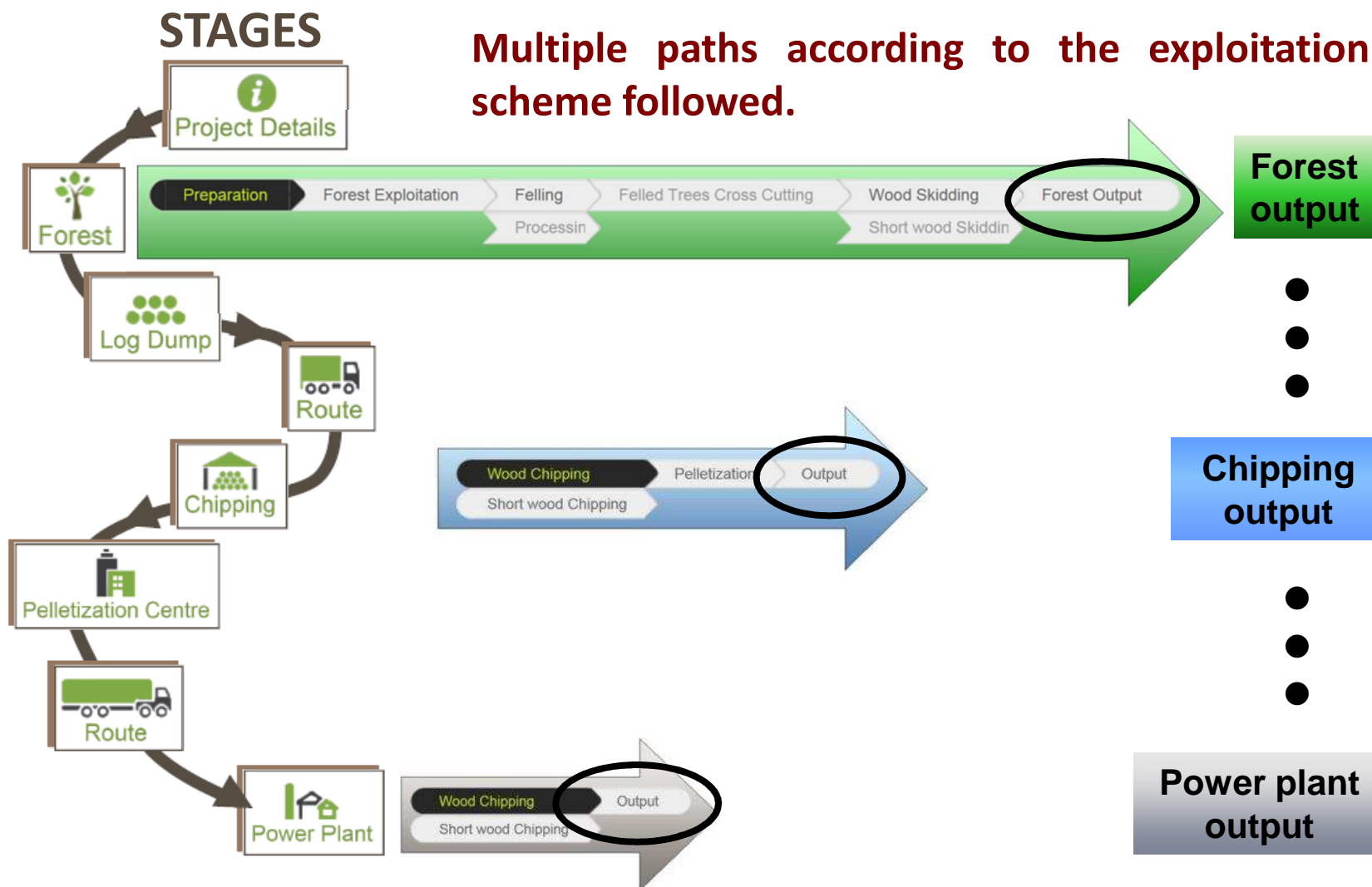
European Union
European Regional Development Fund



Activation of wood energy

TOOL STRUCTURE

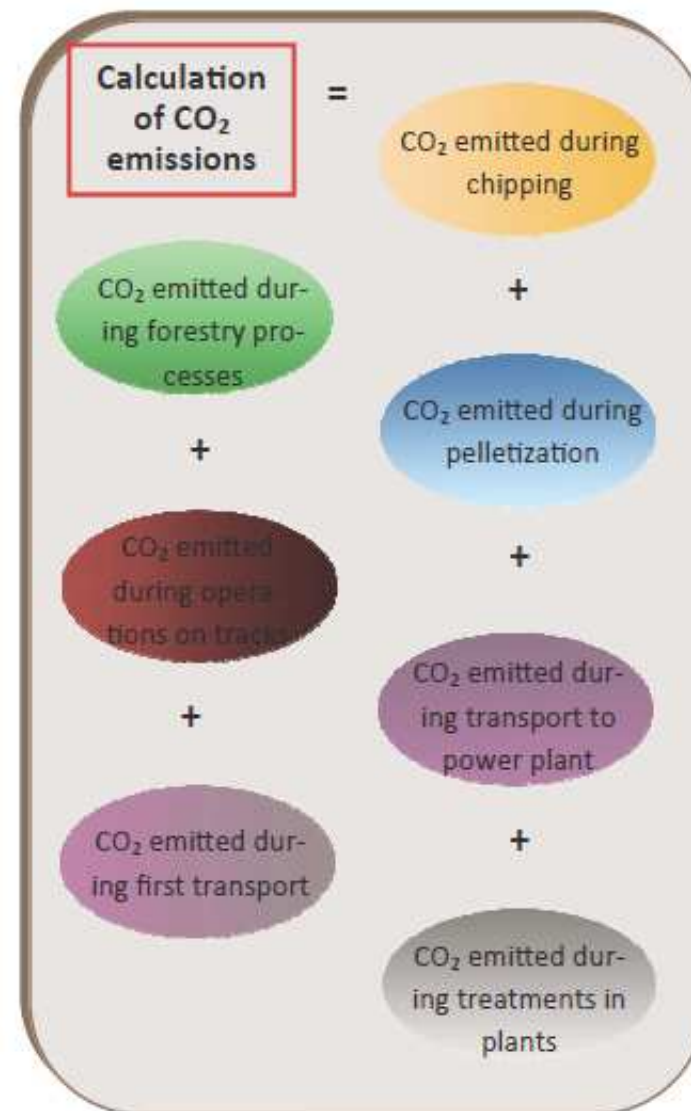
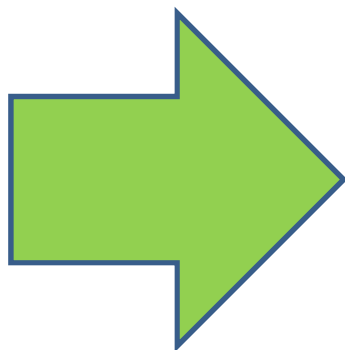
Multiple paths according to the exploitation scheme followed.





Activation of wood energy

Calculation





online database



Activation of wood energy



[Home](#) [About WoodE3](#) [News](#) [Contacts](#) [Events](#)

LINK: www.woode3.eu



sarga



REGIONE
PIEMONTE



European Union
European Regional Development Fund

About Wood E3



- [About Project](#)
- [Felling](#)
- [Heating](#)
- [Business](#)
- [Transportation](#)
- [Nature Conservation](#)
- [Sustainable Development](#)
- [Fight against Forest Fires](#)
- [Links](#)

Read More

Useful links



ONLINE PLATFORM

Collected laws, latest projects, examples from practice and contacts to support your business

CARBON FOOT PRINT CALCULATOR

Carbon foot print calculator for your business. Calculate the amount of greenhouse gas emissions for easier optimization of your business and costs reduction on this area.

TERRITORIAL PORTFOLIO

Compare the biomass mobilization and market situation in partner regions.

Latest News



Conférence finale WOODE3 à EUROBOIS

Conférence de clôture du projet européen WoodE3

Mercredi 20 février 2013 – 10h - Salon EUROBOIS – Lyon Eurexpo

Débuté en 2010, Le projet WoodE3 (prononcez « wood-i cube ») pour « Wood En



SUBSCRIBE TO OUR
NEWSLETTER

[Archive](#)



Union



Activation of wood energy

E3 CFP Calculate Carbon Footprint in Biomass Exploitations

[Home](#)
[Projects](#)
[Fuels](#)
[Machines](#)
[About](#)
[Contact Us](#)

Machines

Type of Machine

Yarding



Machines

Name	Power (HP)	Effective Working (h)	Effective Working Ur	Fuel	Unitary CO2 Emitted
Adapted agrarian tra	100	0.05	m ³	Diesel	1,330.85
Animal	0	0.25	m ³	Fake Fuel	0.00
Forwarder	130	0.1	Stere	Diesel	3,460.21
Manual	0	0.2	Stere	Fake Fuel	0.00
Skidder	130	0.05	m ³	Diesel	1,730.11
Tractor of strings/Bu	70	0.05	m ³	Diesel	931.60
Tractor of wheels wit	100	0.04	m ³	Diesel	1,064.68



Activation of wood

E3 CFP Calculate Carbon Footprint in Biomass Exploitations

[Home](#)[Projects](#)[Fuels](#)[Machines](#)[About](#)[Contact Us](#)

Projects

Follow the steps below to Calculate the Carbon footprint of a Forest Exploitation to produce biomass.

Start by defining the general project information and then follow the steps. Note that depending on your input the program will ask different information, therefore you cannot skip steps, but you can always go back to change any step already completed.

[Create](#)

Projects

Project Name	Project Description	Created At	Edited At	View Report
example1		2/7/2013	2/7/2013	Report

3 Demo projects available for the user as example.

[Users: demoEN](#)

[Password: demo2012](#)



FORESTAL/DE CATALUNYA

PIEMONTE

European Union

European Regional Development Fund

WOOD E3 online database
Activation of wood energy

E3 CFP Calcul de l'Empreinte Carbone d'une exploitation forestière dédiée à la Biomasse

Page d'accueil | Profil | Carburants | Emission | A propos de | Contactez nous

Project Wizard

Follow the steps below to Calculate the Carbon Footprint of a Forest Exploitation to produce biomass.

Start by defining the general project information and then follow the steps. Note that, depending on your input, this program will ask different information, therefore you cannot skip steps, but you can always go back to change any step already completed.

Détails de projet → Forêt → Place de dépôt → Route → Broyage → Centre de production des granulés → Route

Installation de production d'énergie boisier

Préparation → **Forest Exploitation** → Telling → Felling Trees Cross Culling → Wood Skidding → Forest Output Processing → Short wood Skidding

Forest Exploitation

Start this process from entering the required exploitation parameters.

Forest Exploitation Volume - Volume of wood with bark harvested from the forest in m³. Includes the total volume that will be exploited (roundwood and branches).

Moisture Wet Basis - Enter the wet basis moisture of the harvested species or leave the reference value.

Conversion to wood fuel - This value represents the emissions generated during the process of extracting, refining and transporting one ton of fuel to the machine (fuel source (fuel point subject), constant 2.8 kg of CO₂/l of gasoline according to AEA-Energy Technology Database, 2007).

Felling and Processing percentages - Percentages of the total wood that will be felled and processed. The amounts must sum to 100%.

Volume d'exploitation forestière (m ³)	0
Taux d'humidité de base (H% de base)	50
Densité du bois vert (tn/m ³)	0.75
Facteur de conversion MC E (Stere) en m ³	0.6
Emissions pour produire 1 litre de carburant destiné à l'exploitation (kg CO ₂ /l)	0
Net Caloric Value of Chips (kWh/Tn _{x%} wet basis at final moisture)	3500
Net Caloric Value of Pellets (kWh/Tn _{10%} wet basis)	4200
Pourcentage de volume à abattre	0
Pourcentage de volume à abattre à l'abattoir	0

Save Next Report

Activation of wood energy

User required to enter the information displayed

Forest Exploitation Volume (m³)

100

Moisture Wet Basis in %

50

Wood Density at the Current Moisture (tn/m³)

0.75

Conversion factor from Stere to m³

0.6

Emissions to provide 1 litre of fuel to the exploitation (kg CO₂/l)

0

Net Caloric Value of Chips (kWh/Tn_{x%} wet basis at final moisture)

3500

Net Caloric Value of Pellets (kWh/Tn_{10%} wet basis)

4200

E3 CFP Calculate Carbon Footprint in Biomass Exploitations

Home Projects Fuels Machines About Contact Us

Project Report

Print

Enterprise	
Name	Example Emissions
Company Details	Telephone
Contact Person	Mail
Description of forest (site, roads, slopes, requirements...)	
Description of exploitation (typology of felling, amount harvested, species, diameters...)	

Work seasons			
Previous Work			
Access of personnel	4,000.00 total km	952.00Kg CO ₂ emitted	2.94 %
Transport of machinery	700.00 total km	954.60 Kg CO ₂ emitted	5.90 %
Open Road	10,000.00 m ³ of soil	40,000.00 Kg CO ₂ emitted	89.83 %
	Previous Work	41,621.60 Kg CO ₂ emitted	91.47 %
Exploitation			
Felling (Cutting and Delimbing)	90.00 m ³	0.00 Kg CO ₂ emitted	0.00 %
Cross-cutting	100.00 m ³	0.00 Kg CO ₂ emitted	0.00 %
Processing	90.00 m ³	0.00 Kg CO ₂ emitted	0.00 %
Skidding	81.00 m ³	0.00 Kg CO ₂ emitted	0.00 %
	Exploitation	0.00 Kg CO ₂ emitted	0.00 %
Chipping	75.00 tn	503.59 Kg CO ₂ emitted	1.13 %
Transport	75.00 tn	2,405.01 Kg CO ₂ emitted	5.40 %
Pelletisation	0.00 tn	0.00 Kg CO ₂ emitted	0.00 %
	Emissions Total	44,530.20 Kg CO ₂ emitted	

Results	
Total Wood Harvested	100.00 m ³ at 50% Hch
Total Chips at Power Plant	75.00 tn at 50% Hch
Total Pellets at Power Plant	0.00 tn at 10% Hch
Fixed C in Chips	16.89 tn of C
Fixed C in Pellets	0.00 tn of C
Total Fixed C	16.89 tn of C

Fixed CO ₂	
Fixed CO ₂ in Harvested Wood	123.73 tn of fixed CO ₂
Total Emissions of CO ₂	44.53 tn of emitted CO ₂
Fixed CO ₂ - Emissions CO ₂	79.22 t of CO ₂
Energy of total processed wood	262,930.00 kWh
Emissions/Wood ratio	445.30 Kg of CO ₂ /m ³ of wood



Activation of wood energy

RESULTS AND INTERPRETATION

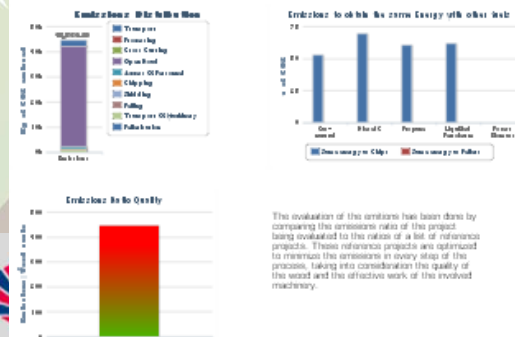
❖ REPORT:

❖ Project's general descriptive data

❖ Summary of the main activities

❖ Results

❖ Balance of carbon





Activation of wood energy

Work Emissions

Previous Work Results

Total Wood Harvested

500.00 m³ at 50% Hbh

Fixed CO₂

Fixed CO₂ in Harvested Wood

500.00 tn of fixed CO₂

Total Emissions of CO₂

10.74 tn of emitted CO₂

Fixed CO₂ - Emissions CO₂

489.26 tn of Carbon

Emissions/Wood ratio

21.48 Kg of CO₂/m³ of wood

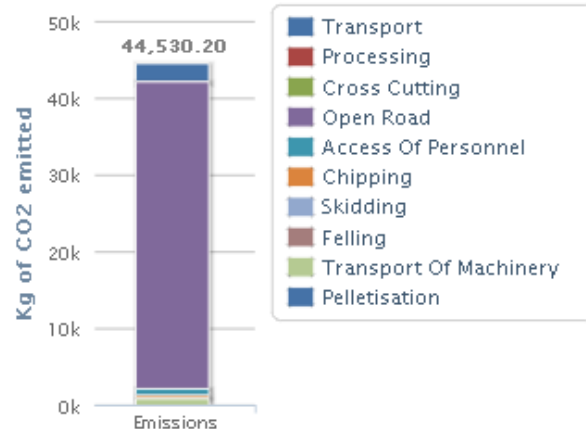
	Exploitation	1050.99 Kg CO ₂ emitted	10.15 %
Chipping	0.00 tn	1258.98 Kg CO ₂ emitted	11.72 %
Transport	583.33 tn	4411.42 Kg CO ₂ emitted	41.07 %
Pelletisation	375.00 tn	0.00 Kg CO ₂ emitted	0.00 %
Emissions Total		10740.98 Kg CO ₂ emitted	



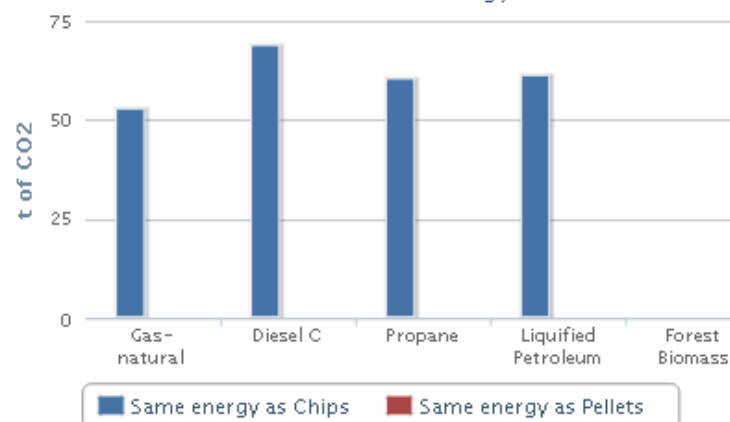
Activation of wood energy

RESULTS AND INTERPRETATION

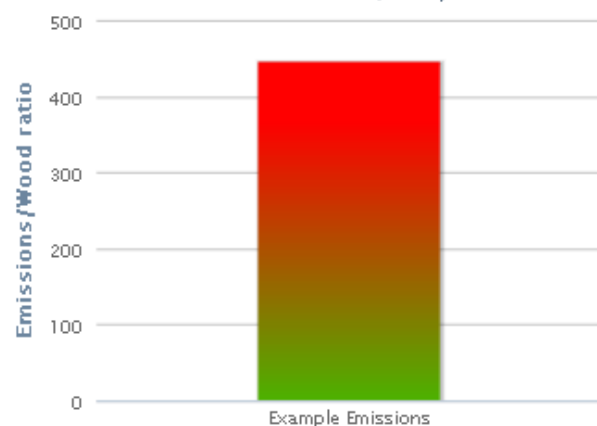
Emissions Distribution



Emissions to obtain the same Energy with other fuels



Emissions Ratio Quality



The evaluation of the emissions has been done by comparing the emissions ratio of the project being evaluated to the ratios of a list of reference projects. These reference projects are optimized to minimize the emissions in every step of the process, taking into consideration the quality of the wood and the effective work of the involved machinery.



Activation of wood
energy

Results obtained allow to:

- ❖ Identify the processes responsible for the higher contribution to CO₂ emissions.
- ❖ Evaluate different operation schemes in order to determine the best alternative.
- ❖ Evaluate the impact associated to the forest biomass extraction compared with the replaced fossil fuels.
- ❖ Environmental cost quantification in terms of CO₂ emissions related to the forest biomass extraction, useful to determine its sustainability.



European Union
European Regional Development Fund



Activation of wood energy

E3 CFP Calculate Carbon Footprint in Biomass Exploitations

[Home](#)[Projects](#)[Fuels](#)[Machines](#)[About](#)[Contact Us](#)

Projects

Follow the steps below to Calculate the Carbon footprint of a Forest Exploitation to produce biomass.

Start by defining the general project information and then follow the steps. Note that depending on your input the program will ask different information, therefore you cannot skip steps, but you can always go back to change any step already completed.

[Create](#)

Projects

Project Name	Project Description	Created At	Edited At	View Report
example1		2/7/2013	2/7/2013	Report



European Union
European Regional Development Fund



Activation of wood energy

JE VOUS REMERCIE DE VOTRE ATTENTION

Contact:

Carlos Baraza Ruiz
cbaraza@sarga.es
Tel: +34 976 07 00 03



Contact:

Pere Josep Navarro Maroto
pere.navarro@ctfc.cat
Tel: +34 973 48 17 52



Maider Gómez



European Union
European Regional Development Fund



Activation of wood energy

Impact Assessment Tool



be⁺ le rendez-vous
bâtiment | énergie | positive
LYON EUREXPO 19/22 FÉVRIER 2013



Pere Josep Navarro
Forest Sciences Center of Catalonia



European Union
European Regional Development Fund



Activation of wood energy

Aim of the tool

- The tool is a friendly application for the user to evaluate biomass projects
 - Based on four pillars:
 - Economical
 - Social
 - Environmental
 - Governance



European Union
European Regional Development Fund



Activation of wood energy

IMPACT ASSESSMENT TOOL “E3 IAT”

- The tool aims to provide decision-makers a support tool for the evaluation of the goodness of biomass utilization projects, including multiple aspects of project sustainability.
- The user must answer a series of questions that evaluate these four pillars. The result can be compared to other projects, so that the evaluator can see the benefits and shortcomings of different projects in a simple and objective.



CFPF



sarga



European Union
European Regional Development Fund



Activation of wood energy

IMPACT ASSESSMENT TOOL “E3 IAT”

- The tool is intended for users with an interest in promoting initiatives biomass use or evaluate them under common objective criteria.
- It may be of interest to developers, energy companies and energy services, particularly for government (municipalities, regional governments, etc..).



European Union
European Regional Development Fund



Activation of wood energy

IMPACT ASSESSMENT TOOL “E3 IAT”

- Analysis and evaluation of projects:
 - Sustainability
 - Multitude of criteria,
 - Various indicators,
 - Different territories and priorities,
 -



European Union
European Regional Development Fund

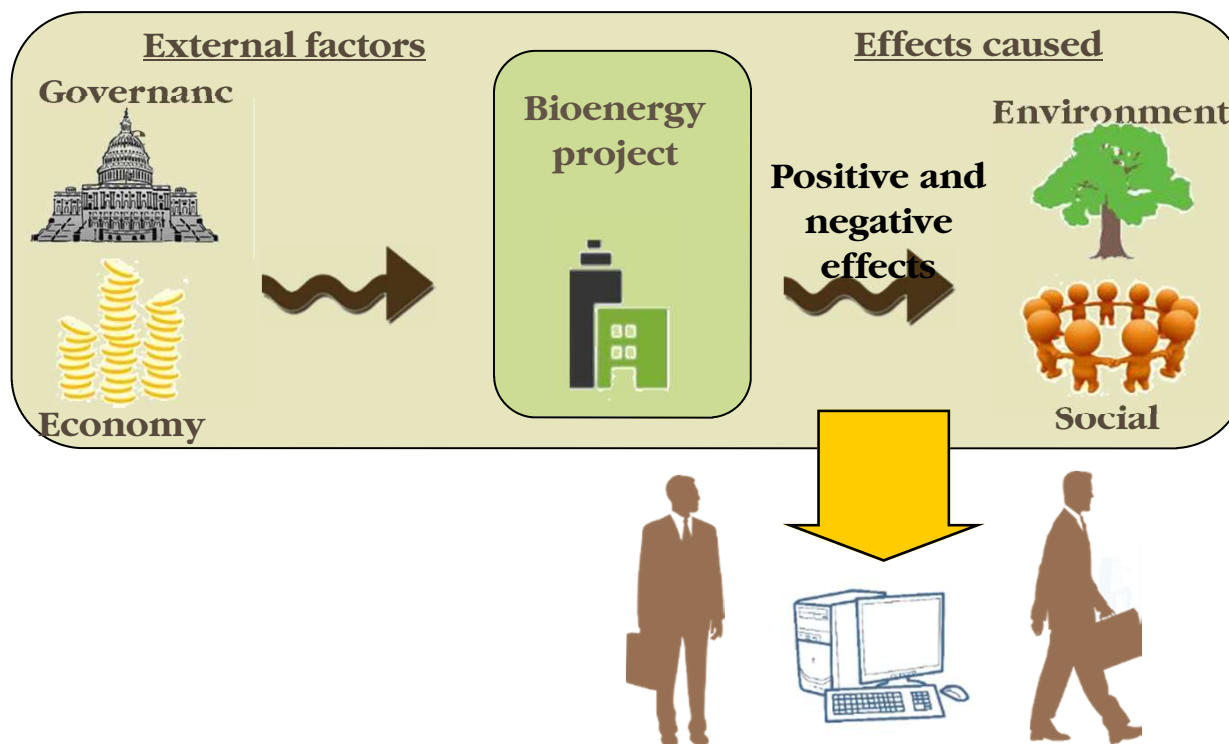


Activation of wood energy

IMPACT ASSESSMENT TOOL “E3 IAT”

The tool assesses:

- The viability of the project in terms of economic and regulatory conditions.
- Environmental and social impacts generated by the project.



European Union
European Regional Development Fund



Activation of wood energy

IMPACT ASSESSMENT TOOL “E3 IAT”

The tool E3-IAT allows a numerical rating for the project evaluated in each of the four pillars assessed: economic, social, environmental and governance. Values from 1 to 0.

Indicators

Each pillar is assessed by several indicators, which were selected after consultations by the project partners to stakeholders in their region.

Weights

The weights of each pillar has been allocated for the Analytic Hierarchy Process (AHP), structured technique for dealing with complex decisions. Based on the opinions of industry players about the relative importance of different indicators, generating a comparative matrix that calculates these weights.

Questions

WoodE3 partners have prepared the questions you will find in the E3-IAT and the scores assigned to each answer. Several questions may be needed to evaluate a single indicator.

Each partner by each region define indicators, according their stakeholders, workshops and references



Activation of wood energy

Steps to do?

- To collect the maximum information on your biomass project (all related).
- Go to online database (if you don't have user name create it, is freee!!)
- In online database there a link to Impact Assessment Tool (IAT)
- And now go to see the application....

Considerations:

Goodness of results depending on the goodness of the data / adjustment of responses made to the tool.

A good knowledge of the project to respond to all questions.



European Union
European Regional Development Fund



Activation of wood energy



E3 IAT Impact Assessment Tool

[Home](#)

[Projects](#)

[About](#)

[Contact Us](#)

[Administration](#)

[CA](#) [EL](#) [EN](#) [ES](#) [FR](#) [IT](#) [SL](#)

Create a new project to start



European Union

European Regional Development Fund



Activation of wood energy

virtual platform

Activation of wood energy

E3 IAT Impact Assessment Tool

Home

Projects

About

Contact Us

Administration

EN FR

Project

Create a new project or select multiple projects to compare them.

Create

Compare

Projects

Project Name	Project Description	Created at	Edited at	View Report
SodemasaCirce1	prueba	05/06/2012	05/06/2012	Report
Biomass mobilisation		22/05/2012	23/05/2012	Report
MIhael	Biomass mobilisation	22/05/2012	22/05/2012	Report
pere		19/04/2012	25/04/2012	Report
prova2 (jrb)		10/04/2012	16/04/2012	Report
prova	cat	03/04/2012	19/04/2012	Report
Test		28/03/2012	18/05/2012	Report



European Union
European Regional Development Fund

Project Assessment: fre

Follow the steps below to assess the qualities of the Biomass project

Activation of wood energy



Information

Select your project's environment

- ☐ Aragon
- ☒ Catalunya
- ☐ France
- ☐ Greece
- ☐ Piemonte
- ☐ Slovenia
- ☐ Entracque

Describe your project

Project Name

Project Description

Please select what better describes your project type

Domestic heating
Power 25-500
Power plant
District heating

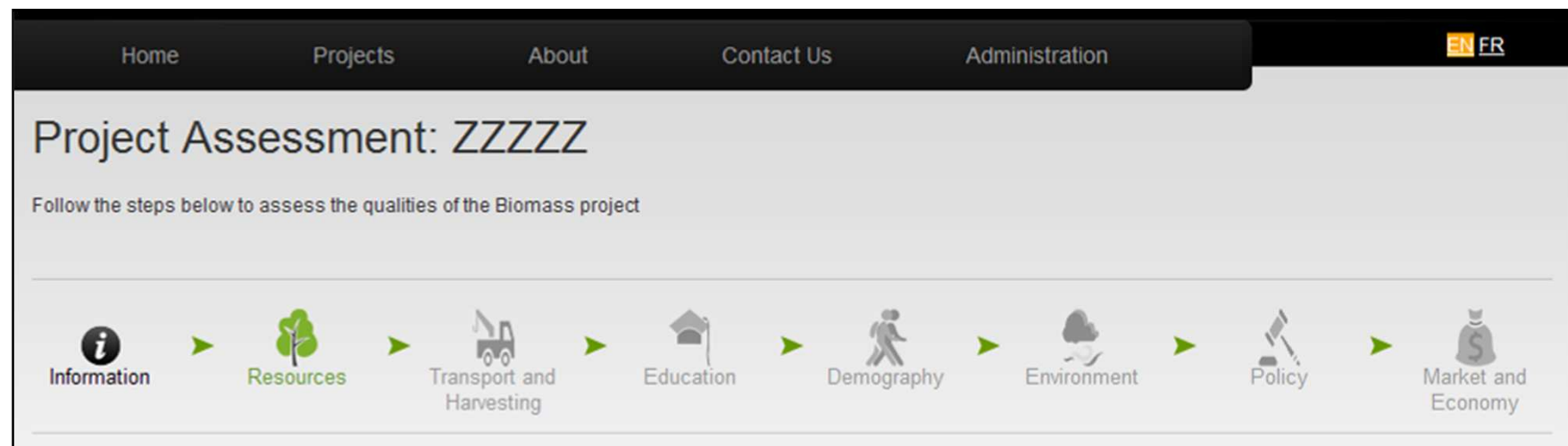
Next



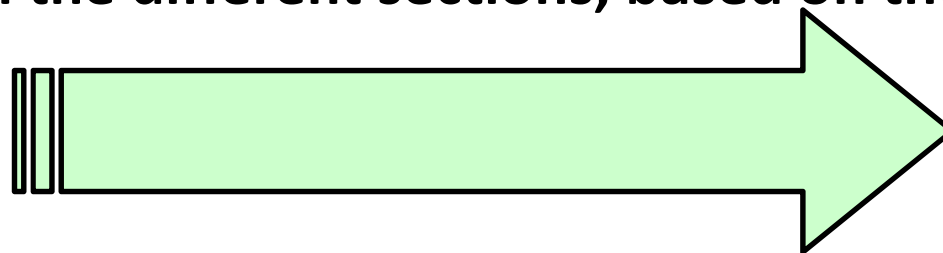
European Union
European Regional Development Fund



Activation of wood energy



Follow through the different sections, based on the four pillars



The user only should answer the questions



European Union
European Regional Development Fund

Project Assessment: SodemasaCirce1

Follow the steps below to assess the qualities of the Biomass project



Creación de empleo directo y empresas.

Creación de empleo directo y empresas.

Población local (de la región/zona)

5

Demography

Creación de empleo directo y empresas.

¿Cuál es el número de puestos de trabajo directos creados a través del proyecto?

5.00

Help

Puestos de trabajo directos son aquellos relacionados con la operación de la planta.

For each topic there are different questions

Skip

Next

Report



Project Assessment: SodemasaCirce1

Follow the steps below to assess the qualities of the Biomass project



Creación de empleo directo y empresas.

Creación de empleo directo y empresas.

Población local (de la región/zona)

Demography

Creación de empleo directo y empresas.

¿Cuál es el número de puestos de trabajo directos creados a través del proyecto?

Questions: the user response in the enable box

Help

Puestos de trabajo directos son aquellos relacionados con la operación de la planta.

Skip

Next

Report

Project Assessment: SodemasaCirce1

Follow the steps below to assess the qualities of the Biomass project



Creación de empleo indirecto y empresas

Precio de la astilla

Market and Economy

Precio de la astilla

¿Cuál es el precio de la astilla a pie de planta? (€/t)

The value must be between 0.00 and 20.00

Wrong answer, as in this case outside the set range, a warning message appears, the tool continues the evaluation process to correct the error.

Skip

Next

Report

Project Assessment: District heating

Follow the steps below to assess the qualities of the Biomass project



Dificultad de aprovechamiento

Transport and Harvesting

Dificultad de aprovechamiento

Cual es el grado de dificultad de los aprovechamientos forestales en la region debido a la densidad de pistas, orografia de los montes, climatologia, tipologias de masa forestal y tipologia de gestión aplicada.

- ☒ Muy difícil
- ☐ Díficil
- ☐ Regular
- ☐ Facil
- ☐ Muy facil

Help

Muy facil: Corresponde a zonas con topografia llana, buena red existente de pistas forestales, climatologia favorable que permite trabajar todo el año en el monte, montes productores con gestión forestal intensiva.

Muy difícil: Corresponde a zonas con topografia abrupta, casi sin pistas forestales, con meses lluvias persistentes o nieve, montes poco productivos con gestión forestal de caracter protector.

Skip

Next

Report



Activation of wood energy

virtual platform

E3 IAT Impact Assessment Tool

Home

Projects

About

Contact Us

Administration

EN ER

Project Assessment: SodemasaCirce1

Follow the steps below to assess the qualities of the Biomass project

 Information



 Resources



 Transport and
Harvesting



 Education



 Demography



 Environment



 Policy



 Market and
Economy

Creación de empleo indirecto y empresas

Precio de la astilla

Market and Economy

Creación de empleo indirecto y empresas

¿Número de puestos de trabajo indirectos creados a través del proyecto?

☒ 0 a 50

☐ 50 a 100

Once you have answered all the questions the program will display the REPORT. But also available at any time of the evaluation.

Skip

Next

Report



REPORT



European Union
European Regional Development Fund

E3 IAT Impact Assessment

Conclusions

SodemasaCirce1 is greater than Domestic Heating

SodemasaCirce1 is greater than Domestic Heating

SodemasaCirce1 is greater than Domestic Heating

SodemasaCirce1 is greater than Domestic Heating

Environmental

Governance

Project Assessment

Follow the steps below to assess your project



Information

Please select what better describes your project type

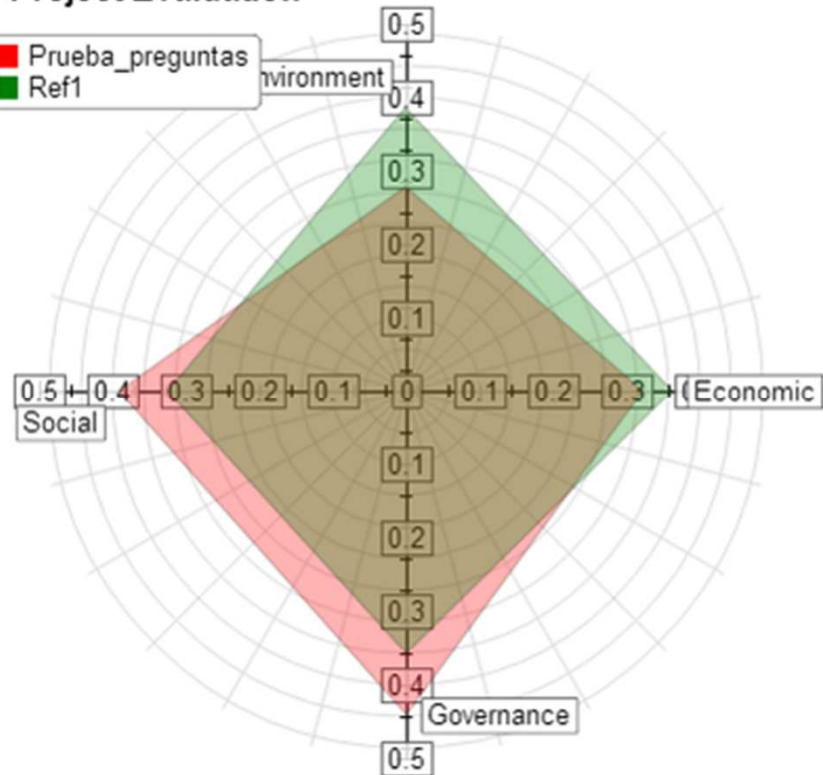
- ☐ France
- ☒ Aragon
- ☐ Catalunya
- ☐ Piemonte
- ☐ Greece
- ☐ Slovenia

Please select what better describes your project type

- ☐ Domestic Heating
- ☒ Domestic Heating
- ☐ School Heating

Project Evaluation

- ☒ Prueba_preguntas
- ☒ Ref1



Print

Next



Activation of wood energy

virtual platform

E3 IAT Impact Assessment Tool

[Home](#)

[Projects](#)

[About](#)

[Contact Us](#)

Contact Us

If you have any question or suggestion about this tool, contact us using the form below.

Name

Email

Subject

Text

Send



Activation of wood energy

IAT HANDBOOK



Methodological guideline
E3 IAT: Impact Assessment Tool
Task 4.4.

Analysis of the projects impact of bioenergy





Activation of wood energy

An example, how the tool works???



European Union
European Regional Development Fund

Which is my selection?



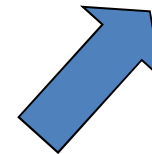
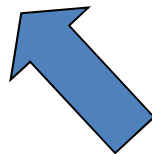
I need a tool or support to choose a biofuel!!



Firewood

Wood chips

Pellets





Activation of wood energy

- STATE THE OBJECTIVE:
 - Select a biofuel
- DEFINE THE CRITERIA:
 - Wood price, existing enterprises, existing suppliers..
others



European Union
European Regional Development Fund



Activation of wood energy

THE ANALYTIC HIERARCHY PROCESS (AHP), 1990, THOMAS L. SAATY

PAIRWISE MATRIX between different biofuels, for me which is better regarding wood price?

MATRIX 1	firewood	woodchips	Pellets
Firewood	1,00	1,50	1,75
Woodchips	0,77	1,00	1,75
Pellets	0,57	0,57	1,00

PAIRWISE MATRIX between different biofuels, for me which is better regarding Number of forest harvesting enterprises ? **MATRIX 2**

PAIRWISE MATRIX between different biofuels, for me which is better regarding Existing logistical centre to supply? **MATRIX 3**



European Union
European Regional Development Fund



Activation of wood energy

THE ANALYTIC HIERARCHY PROCESS (AHP), 1990, THOMAS L. SAATY

	<i>Objective weight</i>
Wood price	0,70
Number of forest harvesting enterprises	0,21
Existing logistical centre to supply	0,08

MATRIX 1 x 0.70 + MATRIX 2 x 0.21+ MATRIX 3 x 0.08 =

THE BEST BIOFUEL



European Union
European Regional Development Fund



Activation of wood energy

AHP CAN BE USED FOR A WIDE VARIETY OF APPLICATIONS

STRATEGIC PLANNING
RESOURCE ALLOCATION
SOURCE SELECTION
BUSINESS/PUBLIC POLICY
PROGRAM SELECTION
AND MUCH MUCH MORE...

IMPACT ASSESSMENT TOOL “E3 IAT”

A online tool to help and to target for biomass projects evaluation



European Union
European Regional Development Fund



Activation of wood energy

IMPORTANT LINKS

- www.woode3.eu
- woode3.ctfc.cat
 - co2.ctfc.cat
 - iat.ctfc.cat



European Union
European Regional Development Fund



Activation of wood energy

- **Conclusions:**
 - **Easy: intuitive user tool.**
 - **Lets compare different projects, also with reference projects.**
 - **Quantification of project sustainability points. No qualitative.**
 - **Useful for decision making.**
 - **Adaptation of the weights of the indicators according to specific local conditions, a particular interest in assessing the economic / environmental / social or governance.**

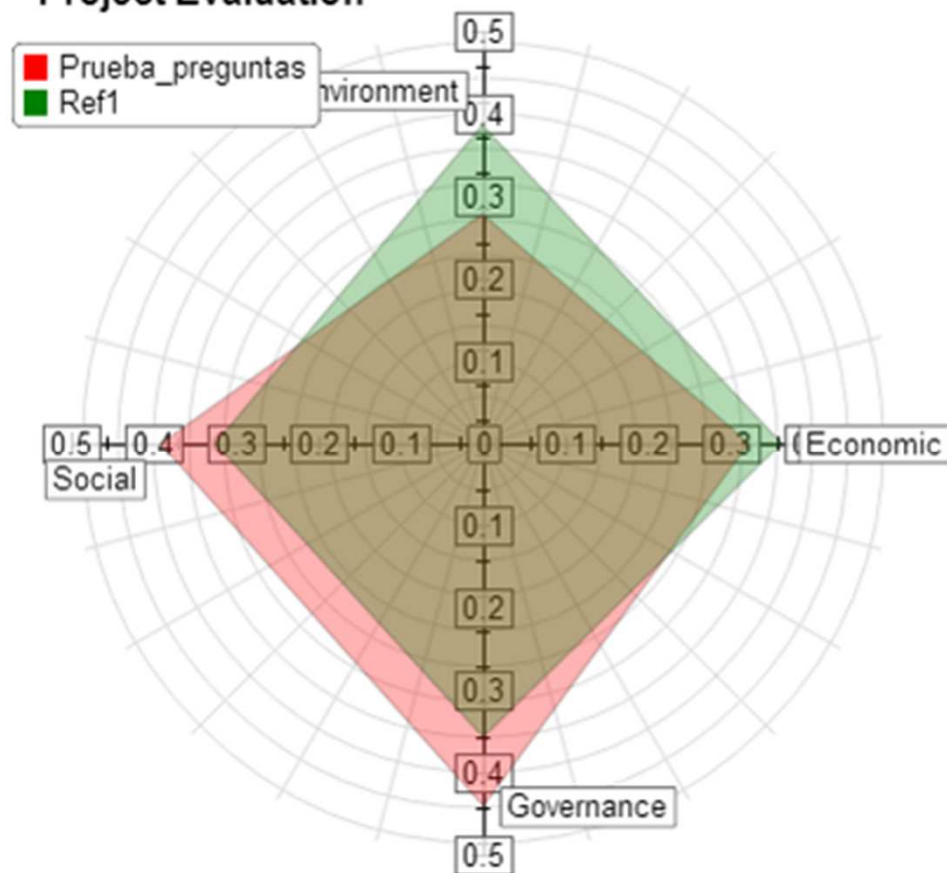


European Union
European Regional Development Fund



Activation of wood energy

Project Evaluation



CFPP



CENTRE TECNOLÒGIC
FORESTAL DE CATALUNYA

REGIONE
PIEMONTE



Kmetijsko gozdarska
zbornica Slovenije



European Union
European Regional Development Fund



Activation of wood energy

Je vous remercie de votre attention

Contact:

Carlos Baraza Ruiz
cbaraza@sarga.es
Tel: +34 976 07 00 03



Contact:

Pere Josep Navarro Maroto
pere.navarro@ctfc.cat
Tel: +34 973 48 17 52



European Union
European Regional Development Fund



Activation of wood energy

SEMINAIRE FINAL

In-situ experiments: *Chantiers d'exploitation forestière tests*

Dottore Forestale Fabio Pesce

Lyon, France
20 février 2013



European Union
European Regional Development Fund



Activation of wood energy

Task 3.2 : In situ experiments

INDEX :

The role of Municipality of Entracque in the Project

The site of the experimentation

The thesis to be tested

The programme



European Union
European Regional Development Fund



Activation of wood energy

The Municipality of Entracque provide a local geographic context and site to the test tools made available by the project and gather further field based knowledge.

In situ experimentations aim at bringing about reliable data and information about the cost of producing wood chipping according to different kind of forest and site conditions on the Mediterranean Alps region in order to inform the IAT and the CFPC.

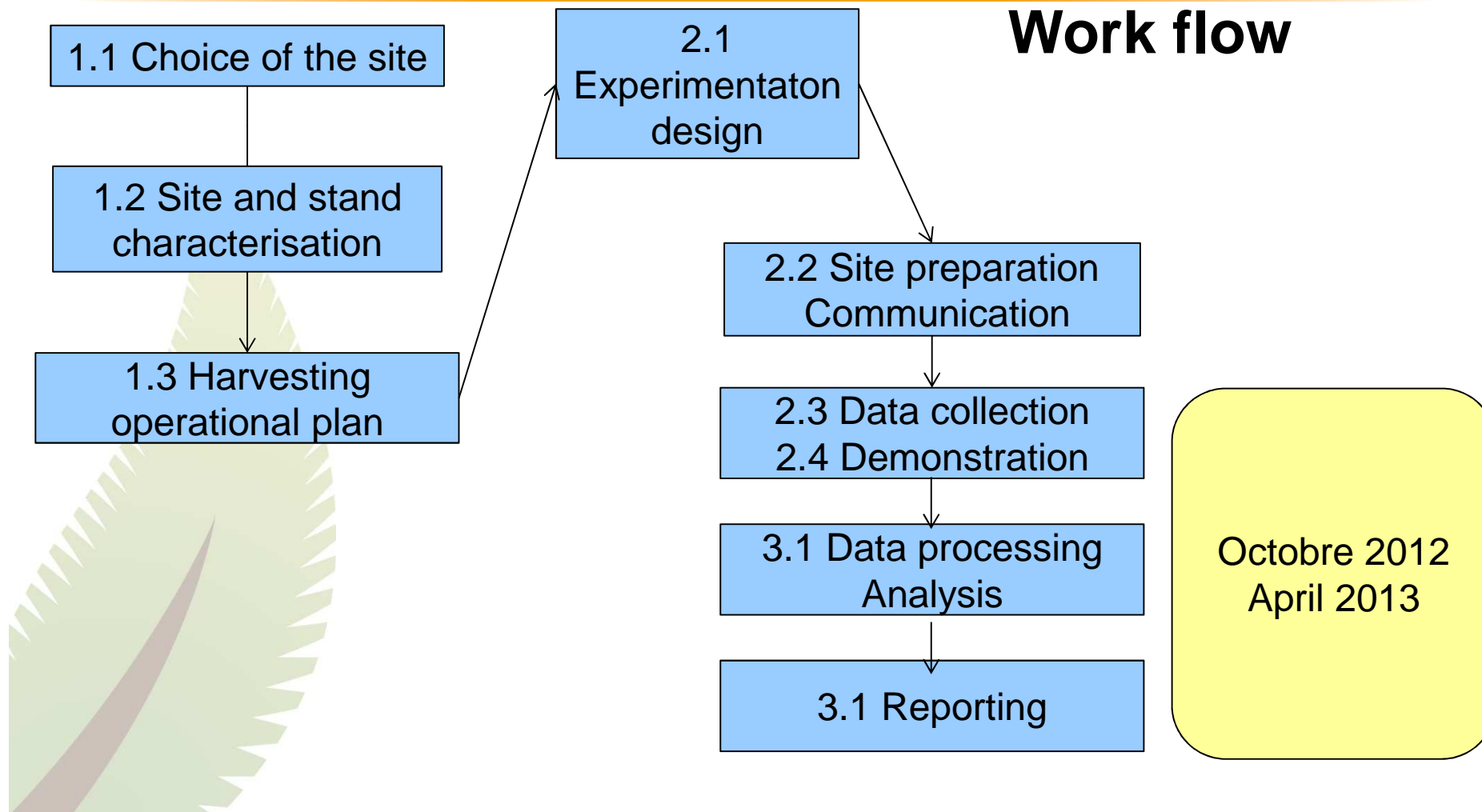


European Union
European Regional Development Fund



Activation of wood energy

Work flow



European Union
European Regional Development Fund

The experimentation site

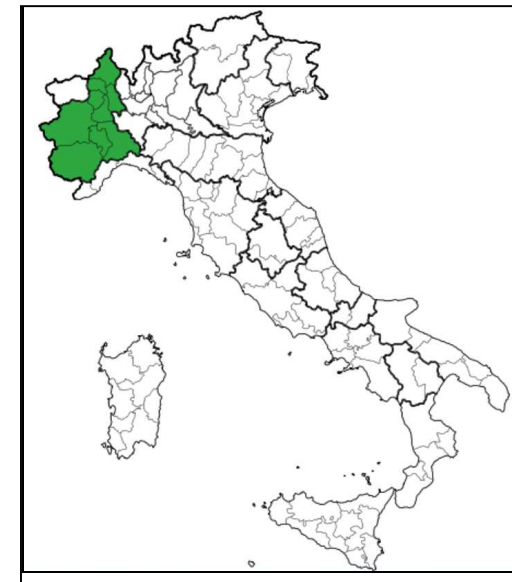
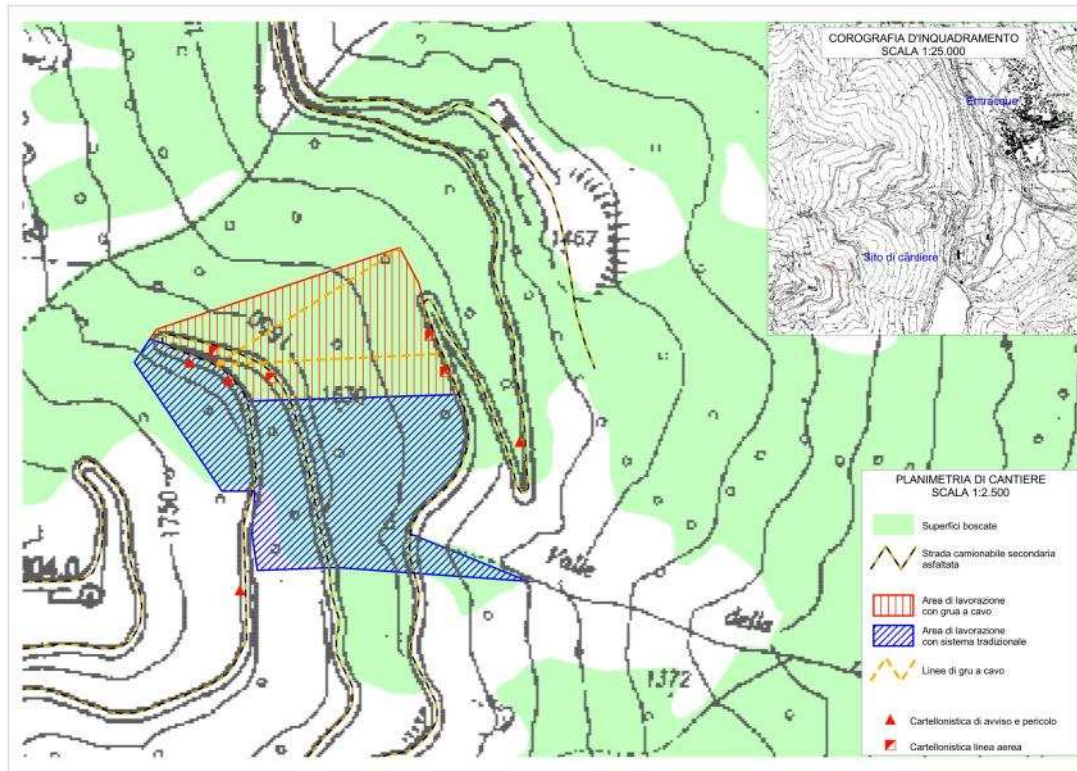




Photo made by LUIGI GALLINA

General characteristics of the works

Start date	04/09/2012
End date	30/11/2012
Contractor work	Massimo Lovera, Roaschia (CN)
Average number of workers on the ground	3
Composition of team work	1 foreman, 1 specialized forest worker, 1 forest worker
Average number of hours worked each day	8
Number of working days	20
Number of days of data collection	10
Subject detector data	Luigi Gallina, Rivalta (TO)



Activation of wood energy

1.2 & 1.3 - Harvesting methods tested

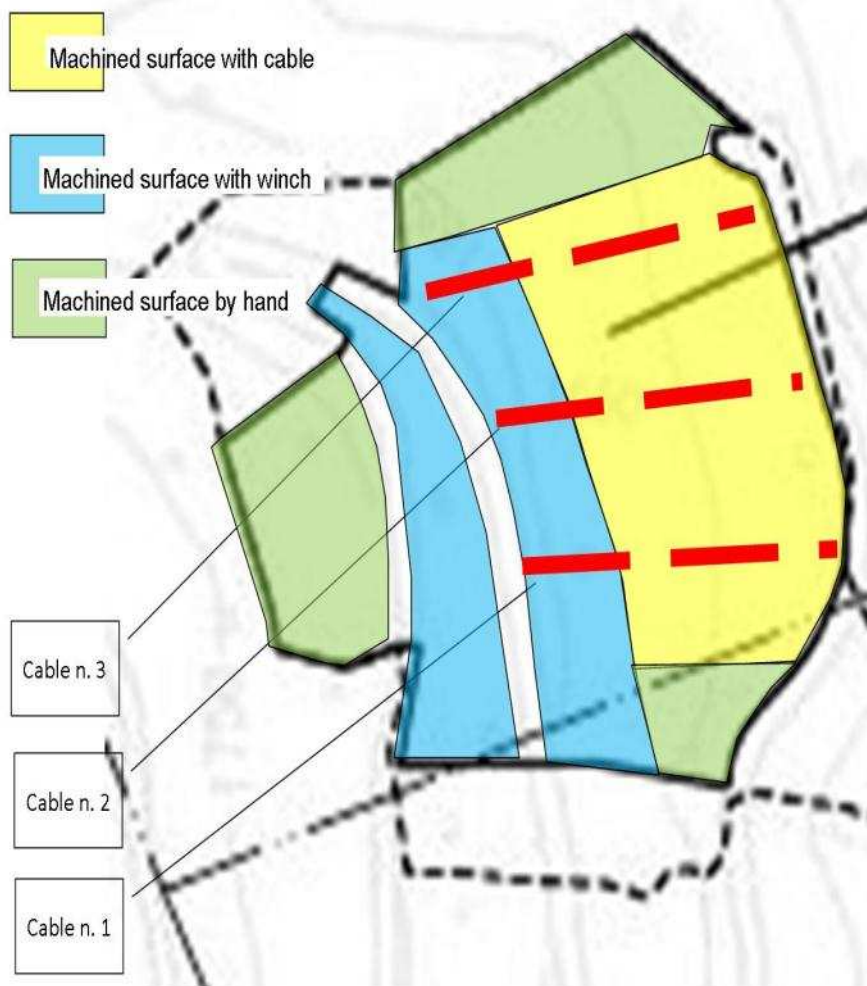
- Whole tree systems : trees felled with chainsaws, extraction by cable crane, transport by truck and chipping
- Short wood system : trees felled with chainsaws, log extraction by winch-equipped agricultural tractor, transport by truck and chipping
- Short wood system : trees felled with chainsaws, manual log extraction, transport by truck and chipping



European Union
European Regional Development Fund



Activation of wood energy



Technical characteristics of the works

Work surface	4,08 ha
Cubic meters of wood felled (estimated value of the project)	187,8
Systems yarding	Cable, manual, winch on tractor
Machined surface with winch	1,08
Machined surface with cable	2,2
Machined surface by hand	0,8
Number of working days	20
Number of days of data collection	10
Subject detector data	Luigi Gallina, Rivalta (TO)



Activation of wood energy



Equipment for yarding

Work surface

4,08 ha

Cubic meters of wood felled (estimated value of the project)

187,8 m³

Systems yarding

Cable, manual, winch on tractor

Amount of wood processed with winch

49,7 m³

Amount of wood processed with cable

101,3 m³

Amount of wood by hand

36,8 m³



Activation of wood energy

1.2 - Equipment

100 mt and 60 Hundredweight winch

Woodliner 3000 cable crane

Lamborghini 660 DT tractor

Scania 82H truck

Stationary chipper



European Union
European Regional Development Fund



Activation of wood energy

Dr. Sergio Olivero

Scientific coordinator

Mobile: +39 335 12 73 521

Email: Project.Triplee@alice.it

Dr. Fabio Pesce

Project assistant

Mobile: +33 (0)6 87 45 17 65

Email: fortea.consulting@fortea.eu

Municipality of Entracque

Piazza Giustizia e Libertà, 2

12010 Entracque (CN)

Tel +39 0171 97 81 08

Fax +39 0171 97 86 37

www.entracque.org

Dr. Luigi Gallina

Project assistant

Mobile: +39 011 5508586

Email: luigi.gallina@archifor.it



European Union
European Regional Development Fund



Activation of wood energy

WOOD E3: Handbook on Policy recommendations

Region Of Epirus

20 February 2013

EUREXPO

Lyon, France



European Union
European Regional Development Fund



WHY THIS GUIDE ?

- ➔ **To prepare the ground for an effective institutionalization of the project's aims.**
- ➔ **Provide a sound instrument to policy-makers and the impetus to revise the wood energy policy through a sustainable development.**
- ➔ **To give concrete proposals based on examples (from pilots) on the most prevalent policy issues.**
- ➔ **Make the project visible and essential to policy-making in the Commission itself.**





METHODOLOGY

- ➔ **The handbook has been based on extensive consultation and exchange of information by the project's partners.**
- ➔ **The challenge was to identify similar concerns and issues while respecting each individual region's specificities.**
- ➔ **Specific recommendations are drafted by order of importance drawn from the most common approaches of the partners on a specific pillar/issue.**
- ➔ **Information of monitoring of pilot projects using WOOD E3 tools has been injected into the handbook.**





MAIN STRUCTURE OF THE HANDBOOK

- ➔ **Part 1. GENERAL RECOMMENDATIONS (guidelines on common agreed issues)**
- ➔ **Part 2. RECOMMENDATIONS FOR ECONOMIC, GOVERNANCE, SOCIAL AND ENVIRONMENTAL PILLAR**
- ➔ **Part 3. RECOMMENDATIONS AT REGION LEVEL LINKED WITH THE IMPACT ASSESSMENT TOOL**
- ➔ **Part 4. GENERAL CONCLUSIONS, WHAT KIND OF FUTURE?**





GENERAL RECOMMENDATIONS

1) LESS ADMINISTRATIVE DIFFICULTIES FOR PLANT IMPLEMENTATION

- ➔ **Reduce bureaucracy, by creating a “unique window of management” avoiding and reducing barriers to private initiative or entrepreneurs.**
- ➔ **Address the lack of incentives for thermal energy and combined heat and power (CHP) or extend existing incentives. Support local biomass instead of fossil fuels and promote it in local communities.**
- ➔ **The above should be combined with improved measurements in the field of environment protection and environmental permissions.**





GENERAL RECOMMENDATIONS

2) PROMOTION OF FOREST BIOMASS USE (1)

- ➔ Establish a competitive grant program for sustainable forest biomass research, with a focus on ecosystem function, soils, water and biodiversity and the effectiveness of woody biomass.
- ➔ Create special “welcoming centres” where anyone can “exchange” his biomass production with final energy products (pellets, briquettes etc) in order to start dealing with biomass.
- ➔ Supporting and enhancing of local biomass chains with production of forest based added value and use of rest biomass in local biomass heating systems.





GENERAL RECOMMENDATIONS

2) PROMOTION OF FOREST BIOMASS USE (2)

- ➔ **Creating a forest biomass cluster and within that a knowledge cluster to provide the necessary information and solutions, will help to get more opportunities to attract financing, achieve greater bargaining power and share common facilities with less expenses.**
- ➔ **Promote demand-driven policies. To this end, communication and awareness campaigns should target at**
 - a) Improving the social perception on forest management.**
 - b) Help the consumers in identifying supply of quality labels**
 - c) Convey the advantages of the biomass as a renewable energy**
 - d) Informing about the social benefits related to wood biomass.**



GENERAL RECOMMENDATIONS

3) STABLE LEGISLATION FRAMEWORK

- ➔ **Necessary to stabilize the authorization procedures, the economical/fiscal incentives and the wood harvest authorization procedures.**
- ➔ **Secure coordination of each involved issue (energy, environment, forests).**
- ➔ **Introducing technical codes, mainly in construction, to facilitate the boiler's installation.**
- ➔ **Introducing standards in biofuels, as for an assurance of the quality of solid biofuels to give confidence to end users**





PART 1. GENERAL RECOMMENDATIONS

4) FISCAL INCENTIVES FOR BIOMASS SECTOR

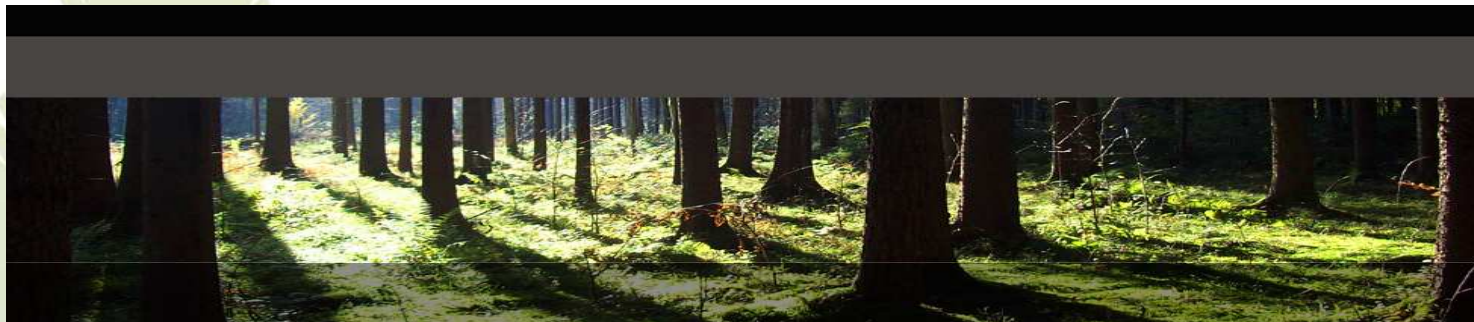
- ➔ **A tax on greenhouse gas pollutants (CO₂ emissions) would provide a major disincentive for fossil fuels compared to renewables and would drive innovation and research novel technologies, Feedstock and applications not yet invented.**
- ➔ **Imposition of a gasoline tax (or gasoline price floor) in the context of liquid transported fuels.**
- ➔ **A taxation related to property could encourage the private forest owners to engage in business logic and a better forest management.**
- ➔ **Reduction of the tax on renewable energies or the Value Added Tax (VAT) when applicable.**





Activation of wood energy

**RECOMMENDATIONS FOR THE ECONOMIC, SOCIAL, GOVERNANCE,
ENVIRONMENTAL PILLARS OF A SUSTAINABLE WOOD ENERGY CHAIN.**



European Union

European Regional Development Fund



Activation of wood energy

SOCIAL PILLAR

“ Rural and mountain areas have already the internal capability to create social cohesion and inclusion, but with the wood energy chain, this process is reinforced in significantly”



European Union
European Regional Development Fund



Social Pillar (1)

- ➔ **Qualification of manpower/training:**
Professional training for operators of energy supply-production for
 - a) *Improving the quality of biomass*
 - b) *Forge integration between the production chain*
- ➔ **Encourage associations of forest owners:**
For a better technical assistance and mobilization of biomass and wood
- ➔ **Raising public awareness :**
By promoting information and awareness during all the phases of a new project (design, construction, ex-ante, ex-post) for general public and stakeholders.





Social Pillar (2)

- ➔ **Building consensus around environmental and social issues:**
Developing shared solutions and positions between stakeholders through seminars, conferences, workshops.



- ➔ **Foster education on related issues:**
- a) *Facilities funded by public money can serve as sites for educational visits*
 - a) *Expansion of interdisciplinary perspectives of educational institutions*



- ➔ **Exemplary pilot projects :**
Construct small scale plants with pellet production, plants with wood biomass burning for energy production etc. which can be visited from the public to familiarize them with this technology.





Activation of wood energy

GOVERNANCE PILLAR

“ A process of consultation and decision-making, which involves responsible actors or people affected by sustainable development policies and action plans.

To reach decisions acceptable to the majority, to the extent possible,
and in the sense of common good ”



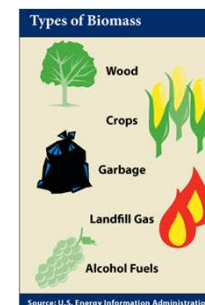
European Union

European Regional Development Fund



Governance Pillar (1)

- ➔ **Studies requirement before project approvals:**
The authorities should demand studies of the supply to avoid conflicts over raw materials and preventing damage to employment and traditional uses.
- ➔ **Foster institutional coordination:**
 - *Coordination between different levels of administration and their operational programs.*
 - *Coordination of forest policy and energy policy.*
 - *Holistic approach involving several regions.*
- ➔ **Regulation of different types of biomass :**
To mitigate the competition between them



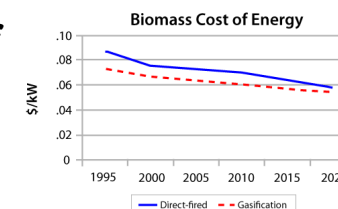
European Union
European Regional Development Fund



Governance Pillar (2)

- ➔ **Promotion of biomass in public administration:**
 - *Encourage the installation of biomass in public buildings*
 - *Forest biofuels use in public facilities*
- ➔ **Joint management between supply and production/sale of energy**

To better respond to possible changes in costs and quantities required, ensuring synergies overall larger.
- ➔ **Forest management on the following axis :**
 - *Increasing the managed area with the implementation of management tools and short term planning*
 - *Promote forest harvesting on public forests to ensure long-term supply*



European Union
European Regional Development Fund



Activation of wood energy

ECONOMIC PILLAR

“To manage impacts of economic efforts in search of the way of a sustainable development of forest biomass sector and to get these indicators as a path to sustainable energy and sustainable forest operations in biomass harvesting”





Economic Pillar (1)

- ➔ **Better knowledge of the wood energy market :**
Identification of competing uses and other users of wood, which can affect the cost and availability of biomass.
- ➔ **Forest biomass supply**
Important to know how many forest biomass suppliers are in the identified supply area.
- ➔ **Biomass contracts of supply: ensuring sustainability**
The contracts have to include specific terms about the qualitative characteristics of biomass in order to guarantee transparency, cost reduction and high quality biomass supply





Economic Pillar (2)

➔ **Investments in infrastructure to improve the economic development:**

- Proposal of a Forestry Micro- Enterprise Grant*
- For buying new machinery or equipment*
- Installing wood fuel systems*
- Infrastructure construction (i.e storage platforms, roads etc.)*



➔ **Renewable Heat Premium Payments**
Government scheme that gives money to householders to help them buy renewable heating technologies.



European Union
European Regional Development Fund



Activation of wood energy

ENVIRONMENT PILLAR

“ Only the incorporation of sustainable practices in forest exploitations the reduction of local impacts and the accomplishment of increasingly more exigent environmental regulations will ensure a global positive environment impact of forest biomass ”



European Union

European Regional Development Fund



Environmental Pillar

- ➔ **Carbon balance:** *Short supply chains for harvesting to reduce the impact of road transport on the carbon*
- ➔ **Reward low emissions :**
 - *Reward system for plants of low emissions*
 - *Creation of CO2 tax or incentive for bio energy development*
 - *Favor heating plants that can ensure a steady state operation (2200 hours)*
 - *High performance of the plants*
- ➔ **Sustainability of Forest Management:**
Certification of logged forests as a tool to guarantee that wood comes from forests managed according to the sustainability criterion.
- ➔ **Information of resource availability :** *Good mapping of the areas of forest harvesting, tonnage collected and radius of existing and predictable supply to avoid an over-exploitation.*





Activation of wood energy

WHAT KIND OF FUTURE?

➔ **The comparative analysis of each partner guidelines has shown that there is some common denominator especially in the fields of:**

- Environmental Sustainability of forest management
- Training and education
- Promotion of wood biomass on public administration
- Better knowledge of wood energy market (mainly supply)
- Reward schemes of low emissions

➔ **WOOD E3 exhibited the need for the increased used of results from comprehensive research/pilot sites to ensure that data required is applicable and can be used for policy decisions.**



European Union
European Regional Development Fund



Activation of wood energy

THANK YOU VERY MUCH FOR YOUR ATTENTION!

George Sofianos, Dr. George Ntalos

Region Of Epirus

trinithos@gmail.com

s.triantou@php.gov.gr



European Union
European Regional Development Fund



Activation of wood energy

Questions ?

Final conference – 20/02/13
Eurexpo - Lyon



European Union
European Regional Development Fund