Establishing a biomass logistic platform in the Umbria region, Italy

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Project Manager
SOGESCA srl

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 646443.
Who we are

Consultancy and engineering firm active since 1986

ACTIVITIES

Environment
- EIA
- EMS ISO 14000
- LCA - EPD

Work safety
- OHSAS ISO 18001
- Working site Safety Management
- Training

Energy
- SEAPs
- EMS ISO 50001
- Diagnosis
- White Certificates

EU Projects
- Proposal
- Management
- Reporting
- Training
The Trasimeno Model Region

- Reference Partner: the Mountain Community (CM-ACT)
- 13 small municipalities 3,500-15,000 inhabitants plus City of Perugia – added member
- 120,000 inhabitants, 138,500 ha
- more than 50% under the Regional Landscape Protection Law and is composed of large areas of olive groves, vineyards, area devoted to grain production, rotation pastures, sunflower fields, grass meadows and coppice forests.

- The main objectives of CM-ACT are:
  - promotion of integrated development policies
  - economic and social development
  - Soil protection, preservation of natural assets

- Local Working Group:
  - Umbria Region (Energy department)
  - Municipalities
  - LCMW operators
  - Farmers’ association
  - Environment Protection Agency

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Shortcomings of the biomass market

• The value chain very often is not structured enough

• Market actors - especially those related to LCMW - need to identify a reference point in the supply chain in order to consolidate their commitment to the market

• Matching of supply and demand in the local biomass markets is not as consolidated as it is for fossil fuels, and it needs to be better coordinated at regional level

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Conditions for the biomass marketing

What is needed to launch a certain biomass energy product in the regional market?

- Sure energy characteristics, comparable with the market standards
- Certified quality
- Certified local origin (the producer has a name)
- Variety of offer (chips, pellets, split logs)

All these conditions are difficult to fulfil, especially for LCMW biomass

Others conditions (please suggest)?
Limits of LCMW business

- **Low quantities** compared to forest production
- **Low and variable quality** (pollution, impurities, leaves, bark, small branches)
- **Seasonality** and discontinuity of supply
- **Many actors** involved (access rights, etc.)

Complex and incomplete supply chain, low competitiveness

LCMW must be considered as a complement to the mainstream biomass supply chains

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The marketing of fuels through the biomass centre creates added value both for producers and customers, who benefit from the bundled, high quality local supply of wood fuels.
Steps for setting up a BTLC

- Stakeholders consultation
- Demand and offer analysis. Provisional plan
- Business case Analysis of BTLC functions
- Setting up of the governance structure
- Business plan
- Search for funding
- Environment Impact Assessment

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Provisional Plan

Answer the following questions:

1. Is there potential in the region?
2. Where is biomass coming from? (forests, plantation, wood processing, industries, landscape maintenance)
3. Where is biomass located? (spatial distribution or locations)
4. Who and how many are the suppliers? Where are the suppliers located?
5. Cost vs Quality

ANY OTHER QUESTIONS?
Provisional Plan – Top down

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### Provisional Plan – Bottom-up

<table>
<thead>
<tr>
<th>Surname</th>
<th>Name</th>
<th>Town</th>
<th>Seeds</th>
<th>Olive trees</th>
<th>Olive Prunings</th>
<th>Vineyard</th>
</tr>
</thead>
<tbody>
<tr>
<td>AREA 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(q.li)</td>
<td></td>
</tr>
<tr>
<td>Company 1</td>
<td>Roberta</td>
<td>Corciano</td>
<td>0,17</td>
<td>0,60</td>
<td>24,30</td>
<td>0,00</td>
</tr>
<tr>
<td>Company 2</td>
<td>Teodoro</td>
<td>Corciano</td>
<td>0,00</td>
<td>1,89</td>
<td>76,55</td>
<td>0,00</td>
</tr>
<tr>
<td>Company 3</td>
<td>Lidia</td>
<td>Corciano</td>
<td>8,48</td>
<td>10,25</td>
<td>415,13</td>
<td>0,00</td>
</tr>
</tbody>
</table>

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Provisional Plan/Cost

1. Abandoned olive plantation
2. Olive Plantation correctly maintained
3. Vineyards
4. Park
5. Roadside
6. Waterside

€/t

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Demand Analysis

Answer the following questions:

1. Are there potential customers in the region?
2. Are there biomass district heating plants, CHP-plants based on biomass?
3. Private households, business enterprises

ANY OTHER QUESTIONS?
## Demand Analysis

<table>
<thead>
<tr>
<th>NAME</th>
<th>ADDRESS</th>
<th>CITY</th>
<th>AREA</th>
<th>POWER INSTALLED (kW)</th>
<th>BIOMASS TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>Address1</td>
<td>MARSCIANO</td>
<td>MEDIA VALLE TEVERE</td>
<td>200</td>
<td>WOOD BIOMASS</td>
</tr>
<tr>
<td>NAME</td>
<td>Address2</td>
<td>MARSCIANO</td>
<td>MEDIA VALLE TEVERE</td>
<td>45</td>
<td>WOOD BIOMASS</td>
</tr>
<tr>
<td>NAME</td>
<td>Address3</td>
<td>PERUGIA</td>
<td>PERUGINO</td>
<td>50</td>
<td>WOOD BIOMASS</td>
</tr>
<tr>
<td>NAME</td>
<td>Address4</td>
<td>PERUGIA</td>
<td>PERUGINO</td>
<td>50</td>
<td>WOOD SUBPRODUCTS</td>
</tr>
<tr>
<td>NAME</td>
<td>Address5</td>
<td>PERUGIA</td>
<td>PERUGINO</td>
<td>50</td>
<td>WOOD BIOMASS</td>
</tr>
<tr>
<td>NAME</td>
<td>Address6</td>
<td>PERUGIA</td>
<td>PERUGINO</td>
<td>50</td>
<td>WOODCHIPS</td>
</tr>
<tr>
<td>NAME</td>
<td>Address7</td>
<td>MAGIONE</td>
<td>TRASIMENO</td>
<td>50</td>
<td>WOODCHIPS</td>
</tr>
<tr>
<td>NAME</td>
<td>Address8</td>
<td>CASTIGLIONE E DEL LAGO</td>
<td>TRASIMENO</td>
<td>50</td>
<td>WOOD SUBPRODUCTS</td>
</tr>
<tr>
<td>NAME</td>
<td>Address9</td>
<td>MAGIONE</td>
<td>TRASIMENO</td>
<td>50</td>
<td>WOOD SUBPRODUCTS</td>
</tr>
</tbody>
</table>

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## Sizing and services (example from forests)

<table>
<thead>
<tr>
<th>Member and Forest Area</th>
<th>Austria</th>
<th>Italy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site</td>
<td>Postal</td>
<td>Leoben</td>
</tr>
<tr>
<td>in Operation Since</td>
<td>2008</td>
<td>2010</td>
</tr>
<tr>
<td>Investment</td>
<td>0.6 M€</td>
<td>0.4 M€</td>
</tr>
<tr>
<td>New Job</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Member and Forest Area</td>
<td>13 members 3,000 hectares</td>
<td>400 members 13,000 hectares</td>
</tr>
</tbody>
</table>

### Wood Fuels

<table>
<thead>
<tr>
<th>Wood Fuels</th>
<th>Austria</th>
<th>Italy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery and blow in</td>
<td>Delivery and blow in</td>
<td>Delivery and blow in</td>
</tr>
<tr>
<td>14,000 bulk m³</td>
<td>15,000 bulk m³</td>
<td>7,000 bulk m³</td>
</tr>
<tr>
<td>800 stacked m³ of fire wood</td>
<td>400 stacked m³ of fire wood</td>
<td>400 stacked m³ of fire wood</td>
</tr>
</tbody>
</table>

### Services

<table>
<thead>
<tr>
<th>Services</th>
<th>Austria</th>
<th>Italy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public and private customers</td>
<td>Public and private customers</td>
<td>Public and private customers</td>
</tr>
</tbody>
</table>

### Target Customers

<table>
<thead>
<tr>
<th>Target Customers</th>
<th>Austria</th>
<th>Italy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public and private customers</td>
<td>Public and private customers</td>
<td>Public and private customers</td>
</tr>
</tbody>
</table>

Source: Biomass Trade Center project

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Functions: example

The complete set of functions will be available in the final document.
Potential services for customers

• Quality control
• Competent advice on all questions relating to proper use of wood fuels
• Efficient, transparent range of ready-to-use biomass fuels (like in a supermarket) “I can see what I’m buying”
• Infopoint for current and potential customers
• Customer-friendly opening times (i.e. Saturday )
• Increased convenience through additional services (web-ordering, delivery, etc.)
• Public price list for available fuels and other specific conditions (if they exists) for selling and/or buying biomass
• Energy production (i.e. district heating)
Governance

Due to the various forms a BTLC can adopt, an equivalent amount of possible business structures exists.

A centre could, for example, be operated:

- by a consortium of private shareholders and investors
- by a public authority directed by the municipality
- in a public-private partnership (PPP)
- in a combination of solutions

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Who should lead the way?

Source of the first initiative or idea to founding the organisation

- Unsure or n/a: 1
- Other(s): 1
- Previous project: 4
- Trade Association/Chamber of commerce: 2
- Public body (e.g. local authority): 29
- School/institute or university: 6
- NGO: 4
- Private person: 3
- Farmer: 5
- Forest owner: 5
- Large company (>250 employees): 2
- SME: 8

No. of respondents

Source: D2.2 Bioregions.eu
BTLC: Environmental Impacts

- CO
- NOx
- Particulate

- Noise
- Emissions
- Traffic

- Noise
- Dust
- Heat

- Rural environment

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21.11.2017

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Possible locations of the BTLC
The way forward

- Finalisation of the Business Case
- Confirmation of active stakeholders
- Lead Partner / Managing subject
- Participatory identification of location
- Environmental impact assessment
- Funding Measures
Thank you for your attention.

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Provisional Plan

TAILOR-MADE

Identify and prioritize specific criteria:
1. SHORT SUPPLY CHAIN. The required raw materials should be available within a radius of 30 km (regional and sustainable energy supply and economic incentives).
2. LANDSCAPE CONSERVATION. Restore and maintenance of not currently cultivated or abandoned former agrarian land.
3. LCMW BIOMASS. Reduction of operational costs, minimize local environmental impacts and mobilisation of unused biomass resources.
Governance: the fundamentals

joint identification of political and commercial needs and interests

public bodies, SME’s and academic institutions need to be on board right from the start

funding is primarily sourced regionally

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## GOVERNANCE of Bioenergy Networks

### Critical Success Factors

- Formulate an attractive vision engaging the stakeholders
- Strong inclusion of local stakeholders in decision making process
- Develop common targets and development mechanisms
- Motivation of all stakeholders on board
- Fast decision making
- Firm networking between organizations and companies
- Good understanding and attitudes between businesses and local PA
- Strong combination of know-how and technology
- Rely on Regional Networks for the development of a Sustainable Market for Bioenergy in Europe
- Communication of results and partial results of the project
- Public relations from the start

Source: Bioenergy D2.2
The main conclusions were the following:

- Collection costs are one of the main barriers that must be faced and municipalities should support companies in bearing this costs. A collection style such as the one used in Friesland by Mr. Memmen, the roadside field collection, is viable.
- The wood from orchards needs carefully treatment because it is often treated with chemicals.
- Control of the quality of the incoming material in the BTLC is essential.
- Regarding the collection it is better to dialogue with professionals (green maintenance companies, farmers) which are more reliable and precise in the delivery, rather than with citizens or non-professional actors.
- Municipalities should ban the burning of prunings, and contextually provide an alternative for the biomass management, that is to say, if you ban the burning you must collect the wood.
- Pelletizing is not a viable business for material of LCMW quality.
- Landscape quality is a common asset and must be maintained.
- Selling heat instead of biomass can be a good idea but a District Heating line in historical towns is very difficult to perform.