Ence – Energía y Celulosa

We grow a better world

ence
ENERGÍA & CELULOSA

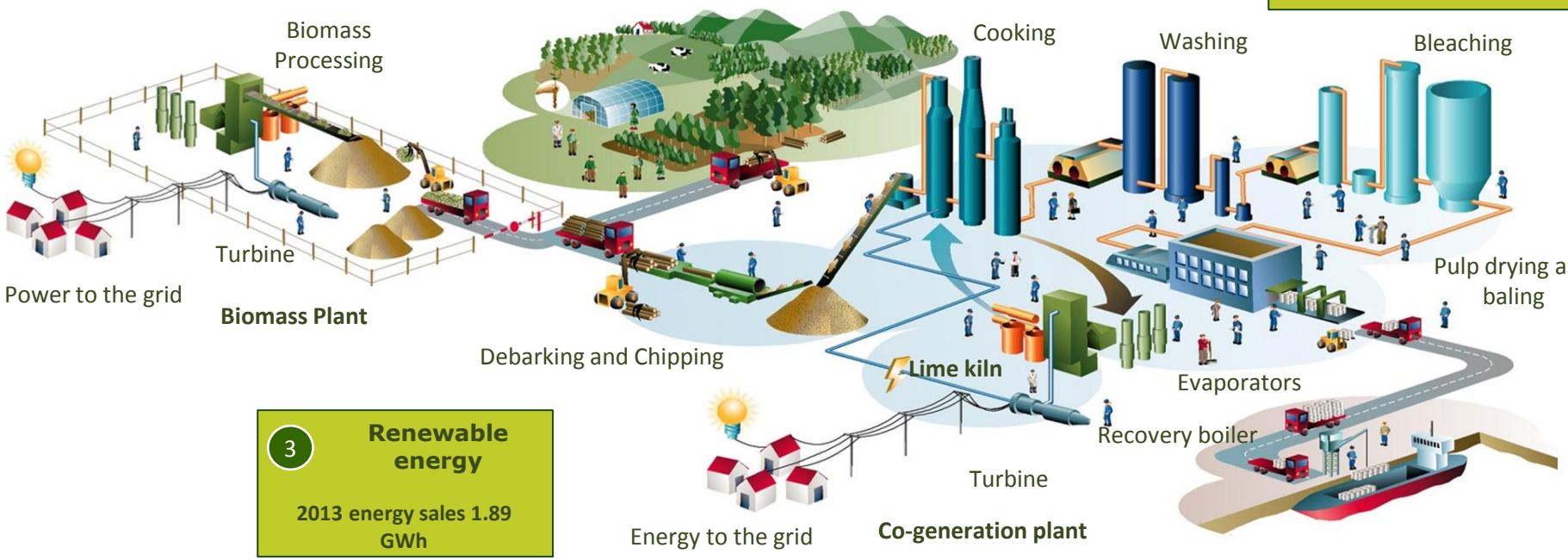
Ence's integrated manufacturing process

1 Forestry supply management

3.79 million m3 of wood traded in 2013

2 Pulp production

2013 pulp sales 1.27 million tones



3 Renewable energy

2013 energy sales 1.89 GWh

Ence is a world leader in the production of pulp and biomass energy

Ence, a integrated manufacturing process

Quality reference in pulp industry

The largest European eucalyptus pulp producer

- Ence has **two advanced pulp mills** located in Spain (Navia and Pontevedra), highly respectful of the environment.
- 2013 **pulp production** sales amounted to **1.27 million tonnes**.
- **Ence exports about 85% of its pulp production,** mainly to Europe where it is the second by sales.
- Its sales are oriented **segments with better performance** and evolution, such as **tissue, its main papermaking segment.**

- **Capacity: 500,000 t/year**
- **ECF Process**

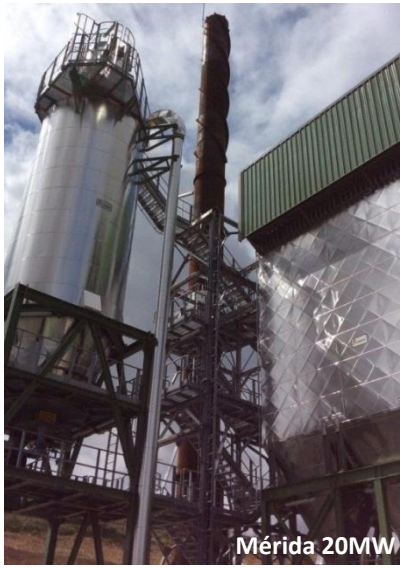
- **Capacity: 430.000 t/year**
- **Totally Chlorine Free Process (TCF)**

Ence, a integrated manufacturing process

The leading producer of biomass energy

The leading producer of renewable energy by biomass

- **Ence is the spanish largest producer** of energy by biomass with **a generating capacity of 220 MW.**
- Nearly 2,000 million kWh / year of electricty production.
- Ence has **the biggest biomass generation plant of Spain** and **one of the foremost plants in Europe**, Huelva power plant, which has 50 MW.
- **Advanced biomass generation project** in the **Canary Islands.**



High capacity and advanced technology to lead biomass generation projects anywhere in the world.

Ence, a integrated manufacturing process

Spanish first forestry manager

Model of comprehensive utilization of tree and leadership in the development of forest crops

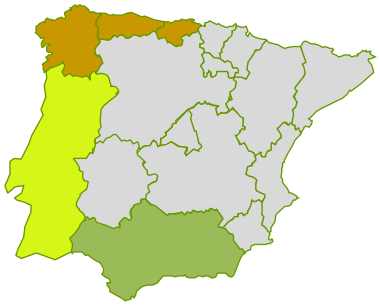
- Ence is **committed to developing a strong and sustainable forestry sector**, for which we promote forest certification and best management practices as a way of creating economic development, especially in rural areas.
- Our model allows us **to grow logging in forest biomass renewable energy**, contributing to **the fight against climate change and the improvement and environmental sustainability.**
- **We manage forest areas following the most demanding and internationally recognized criteria of sustainability and corporate responsibility**. Thus, Ence has pioneered certification undertake projects in Spain, not only of their own forests, but extending this policy to their immediate environment fostering certification surfaces partners and collaborators.
- **Ence manages holistically planting, maintenance and felling of trees to supply production processes cellulose and biomass power generation.** To do this we rely on:
  - **The direct relationship with the owners of plantations,** as a base of efficient supply base.
  - **Collaborate with plantation owners** in the management of forest assets **to ensure their sustainability**.
  - **Sharing the experience of Ence** in forest management and logistics supply.

Ence, a integrated manufacturing process

Spanish first forestry manager– Main data

Wood supply source ('000m3 and % s/totally) 2013		
Own Wood	242	6%
Imports	415	11%
Small Suppliers	1.378	36%
Big Suppliers	747	20%
Standing purchase owners	1.017	27%
Total supply timber	**3.798**	**100%**

Forestry assets (december 2013)

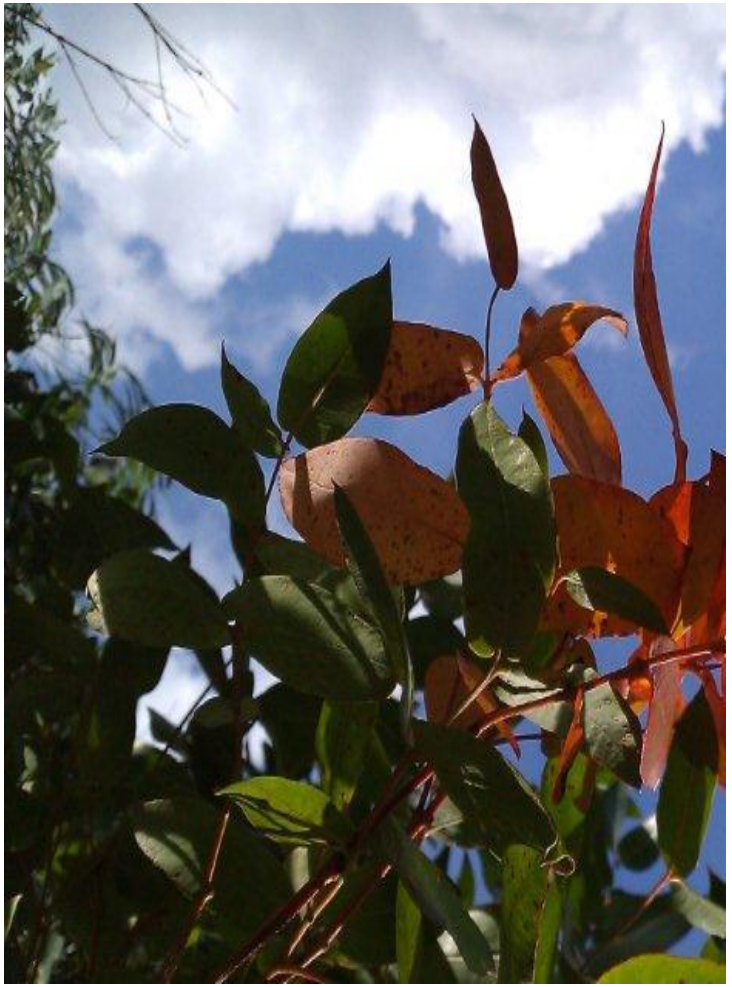


Northwestern Spain	
Managed	13.858 ha
By property	2.928 ha

Southwestern Spain	
Managed	52.096 ha
By property	37.282 ha

Portugal (*)	
Managed	4.532 ha

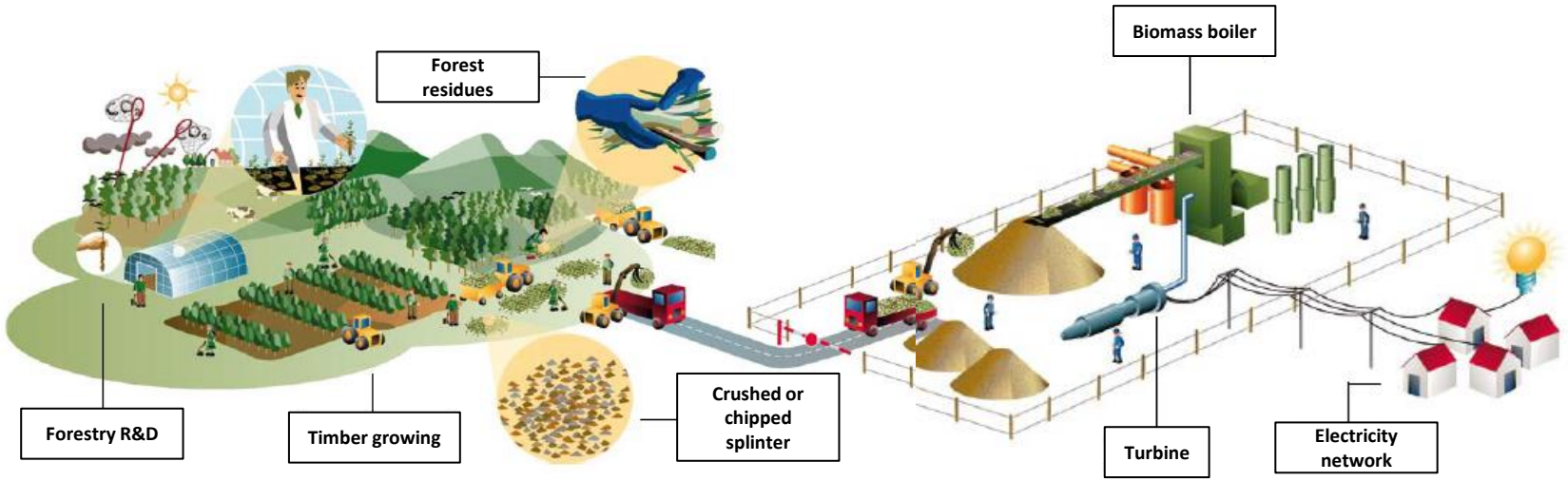
Biomass (Spain)	
Managed	17.779 ha
By property	8.852 ha



Ence, leader in biomass energy

Residual biomass

Energetic crops



Ence's experience as the first forest manager of Spain, its efforts in R&D for the promotion of forestry as well as his experience in the use of biomass, has allowed it to develop a high capacity and technology to lead projects in the field of biomass from anywhere in the world.

Ence, leader in biomass energy

We contribute to rural development

The biomass power, an excellent opportunity for job creation and rural development

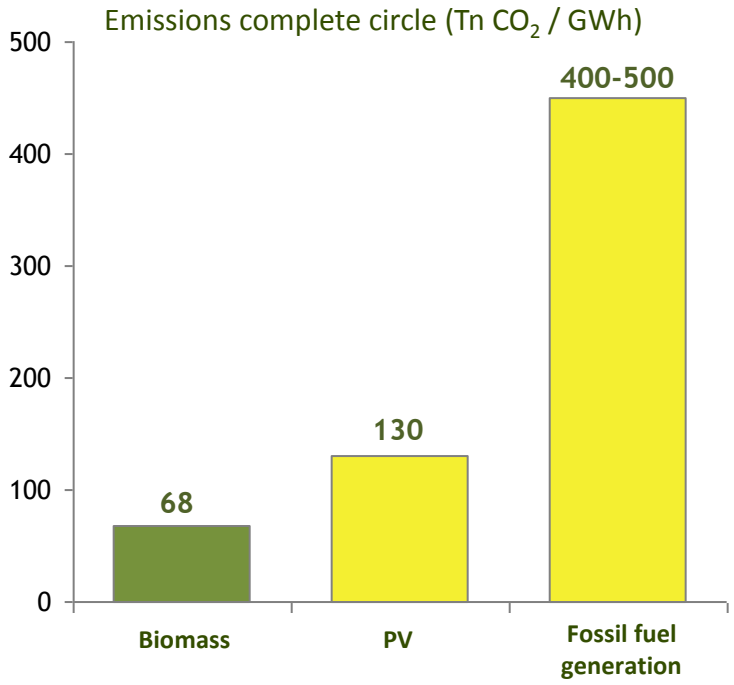
- The biomass power generation provides **a powerful structuring effect of the territory**, necessary for the creation of rents, fixing the population and prevent the abandonment of rural areas.
- **Allows the use of unused land and marginal land or agriculturally unprofitable**, do not compete with agro-food uses, creating an added effect of rural economic revitalization.
- Biomass **creates a volume of sustainable workforce far superior to other renewable energy,** since it is necessary to prepare and collect the fuel used: agricultural and forestry residues.

Economic development and sustainable rural employment

Ence, leader in biomass energy

We care about the environment

Co2 emissions significantly lower than other energy technologies



Biomass, energy that cares natural environment the most

Reducing fire risk

- Areas where biomass is picked up recorder to 70% less fire.

Sustainable waste

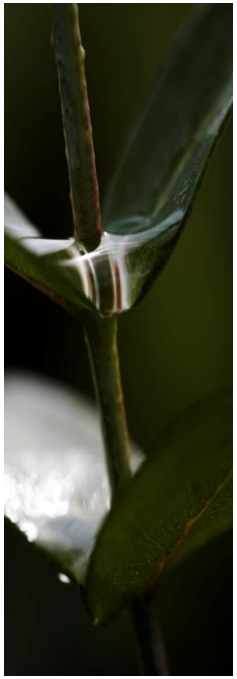
- Reduction of spills and uncontrolled burning of biomass in the field.
- Enhancement of forest through the use of waste.
- Use of waste after its transformation in the process of energy production.

Support of natural regeneration of forests

- Reduce the risk of forest pests.
- Improving the quality of trees.

Biomass energy helps to mitigate climate change

Production stability and efficient energy management



- In terms of energy management, biomass generation plants **are not subject to seasonal or atmospheric air units**, **sunlight and water** resources management for complex electrical system.
- Biomass is **the only renewable energy that can be programmed** and, therefore, it helps to improve power management system, reducing energy losses by stray programming.
- Another feature of high value to the rural area of biomass energy is owned distributed generation, **which brings production to consumption area and enhances the efficiency of the energy system** thanks to a sharp decline in transmission and distribution losses of electricity.
- It also constitutes an **ideal solution for isolated energy systems** and expensive connection to larger systems.

Biomass generation contributes to tap native energy resources, reducing imports of fossil fuels.

Ence, leader in biomass energy

Huelva 50 MW

The largest biomass plant in Spain and one of the biggest in Europe

- It features with an **installed capacity of 50 MW** and a production of 400 million kWh / year, this advanced generation plant **consumes about 400,000 tons / year of biomass.**
- The plant produces 180 tons / hour of steam at 100 bar pressure and 500 ° C.
- It has been **an improvement in the security of electricity supply** in the area and an estimated **450 permanent jobs** generation, particularly associated with **the collection and transportation of biomass.**
- **It has been built** with the Best Available Techniques recommended by the EU:
  - **Electrostatic precipitator for cleaning of flue gases leaving the boiler** (minimizes particles).
  - **Fluidized bed boiler and natural circulation** (minimizes carbon monoxide emissions, greater energy efficiency).
  - **SNCR Nitrogen Oxides System (NoX minimizes).**

Ence, leader in biomass energy

Mérida 20 MW

The most advanced technology applied to biomass generation

- The 20 MW plant Mérida **raises its annual production to 160 million kWh / year.**
- The plant **generates more than 300 jobs, mainly indirect and induced in rural areas** where **200,000 tons of biomass** annually consumes the plant are collected.
- It was built **according to the Best Available Techniques** recommended by the EU for the transport, storage and energy production from biomass.
- **Optimal environmental performance** thanks to the commitment to a reheat cycle and incorporating effective bag filter to capture flue gases leaving the boiler, among other technologies.

Thank you so much

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