

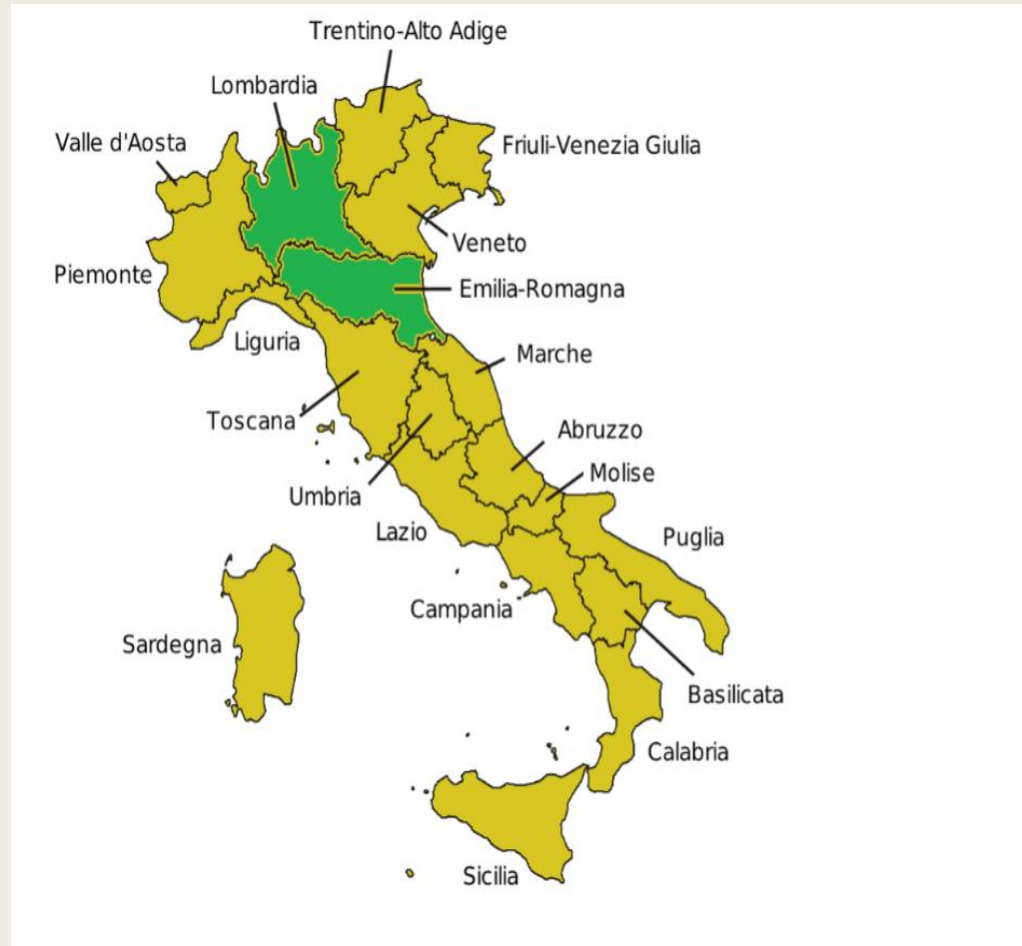


Expert Group Workshop
Identification of the good
practices in waste wood
management

MODEL REGION OF LOMBARDY



- Location





- **Legislation**
 - **Recycling of waste wood**
 - ✦ decree on recycling of non hazardous waste
 - **Recovering in energy**
 - ✦ Decree for production of electricity of 2012.
 - ✦ Subsidies for the biodegradable part of waste which decreases with the power of the plant.
 - ✦ Minor incentives for heat production .
 - **As in Flanders, Italy has set up a system of green certificates :**
 - ✦ A minimum share of renewable energy in the production of energy is imposed.
 - ✦ The producer pays a tax if the green energy rate is not high enough.
 - **Since 1 January 2012, Italy has prohibited the landfilling of combustible waste with a calorific value greater than 13 MJ / kg**
 - ✦ But wood is quite less than 13 MJ...
 - **Italy is one of the three European countries that started early on the road to the end of waste status for high-quality CSR.**
 - ✦ Italy has early also introduced a CSR standard: UNI 9903





- **Market**
 - Lombardy and Emily-Romagna which host 14 million of inhabitants form an area considered as one of the richest region of Europe.
 - Quantities of waste wood reach nearly 1 million tons (4,4 million tons for whole Italy).
 - Landfilling is still the main method of waste management for municipal waste in Italy.
 - ✦ 38 % of the total yearly municipal waste is managed trough landfilling.

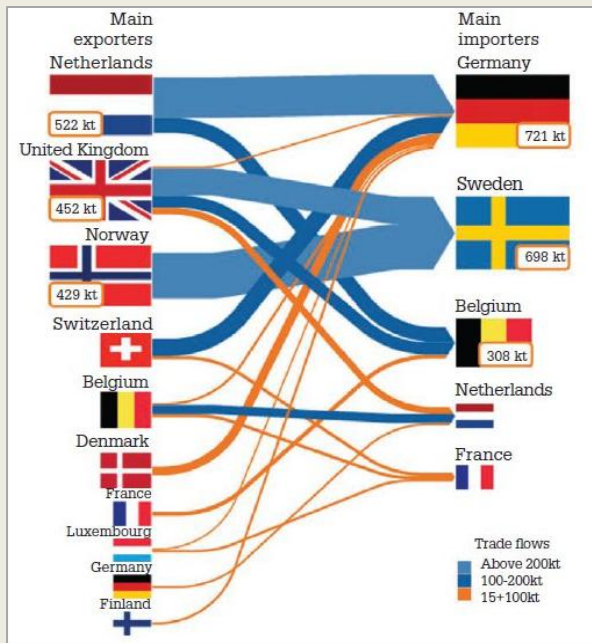




- **Market**

- Import of 500 000 t of waste wood from France and Switzerland

Energy



Panel recycling

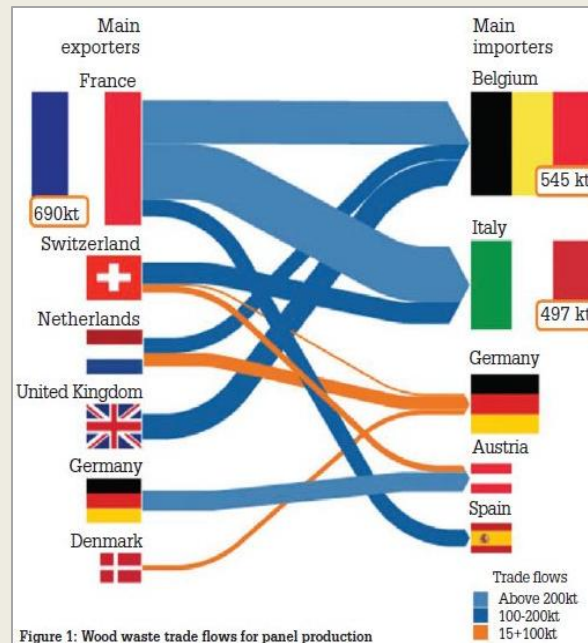


Figure 1: Wood waste trade flows for panel production



Italy context



- Market
 - Particle board : Italy has the higher rate of recycling wood

Country	Particleboard production 2013, '000m ³	Share of wood waste in raw material mix	National consumption of wood waste in panels, '000 tonnes
Germany	5,600	30%	1,400
France	3,811	22%	680
Italy	2,652	95%	2,150
United Kingdom	2,012	52%	890
Austria	1,840	35%	550
Spain	1,465	32%	390
Belgium	1,250	70%	850
Sweden	600	0%	-
Portugal	590	25%	130
Switzerland	370	0%	-
Denmark	316	67%	180

Tonnes as received with typical moisture content 20-25%





- Collecting organisation

- Rilegno is a organism in charge of the collecting of wood packaging mainly **but also wood waste**
 - ✦ This way of collecting is unique in Europe.
- Rilegno is a national consortium set up in 1998 in order to decrease landfilling
- Wood packaging marketed in Italy in 2015 amounts to 2,7 M tons.
 - ✦ Of these, over 1,8 million tons were recovered and recycled
 - ✦ Recycled wood is transformed into chipboard and semi-finished wood products for the furniture industry: According to 2015 data by Rilegno, doors and fixtures are used as new raw materials for the furniture industry.
- The collection system is quite complex and requires substantial funding.





- Collecting organisation

- This way, Rilegno provides a wood waste collection and recovery service for 4 300 Italian municipalities, covering 38.5 millions of inhabitants, 65% of the national population.
 - ✦ 700 conventions signed with private operators, municipalities, town congregations and environmental managers.
- Its role is to organize and carry out the recycling and recovery of wood packaging and other kinds of **wood waste such as doors, window frames, furniture...** from the urban environment.



Lombardy : context



- Collecting

- The collecting of waste wood is mainly taken over by RILEGNO, but others entities exist, and in particular ECOLEGNO, in Northern Italy, which collect waste wood for the industrial MAURO SAVIOLA (panel production).

- Valorisation

- Energy

- ✦ No waste to energy plant dedicated to waste wood identified in Northern Italy
- ✦ The plants which produce renewable energy are supplied with biomass, municipal waste or refuse derive fuel (RDF) from municipal waste or industrials.



Lombardy : context



- Valorisation

- Recycling

- ✦ Waste wood is mainly valorised in panel industry,
- ✦ Italy is the country in Europe which use the higher rate of waste wood in the production of its panel
- ✦ Some plants use **100 % of recycled wood in their process**. It is hence an opportunity for valorising waste wood locally.
- ✦ The main industrials involved in production of wood panel identified in the two regions, or close to, are :
 - MAURO SAVIOLA (recovery wood) / ECOLEGNO for the collection of waste wood
 - FRATI LUIGI (recovery wood) / VALORI for the collection of waste wood (4 platforms)
 - GRUPPO TROMBINI (recovery wood)
 - SAIB (recovery wood)
 - INVERNIZZI (100 % poplar hence no waste wood)
 - XYLOPAN (100 % poplar hence no waste wood)



Lombardy : case description

Eco legno + Mauro Saviola

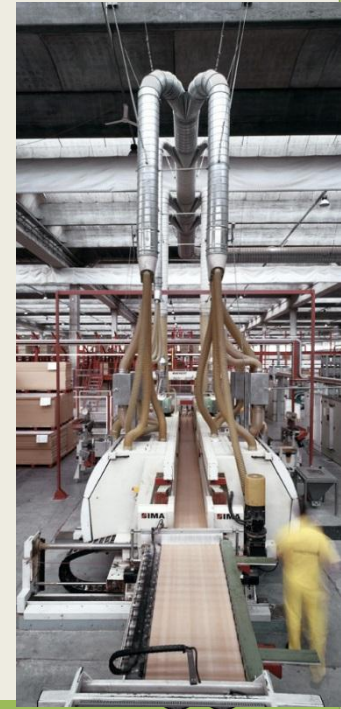
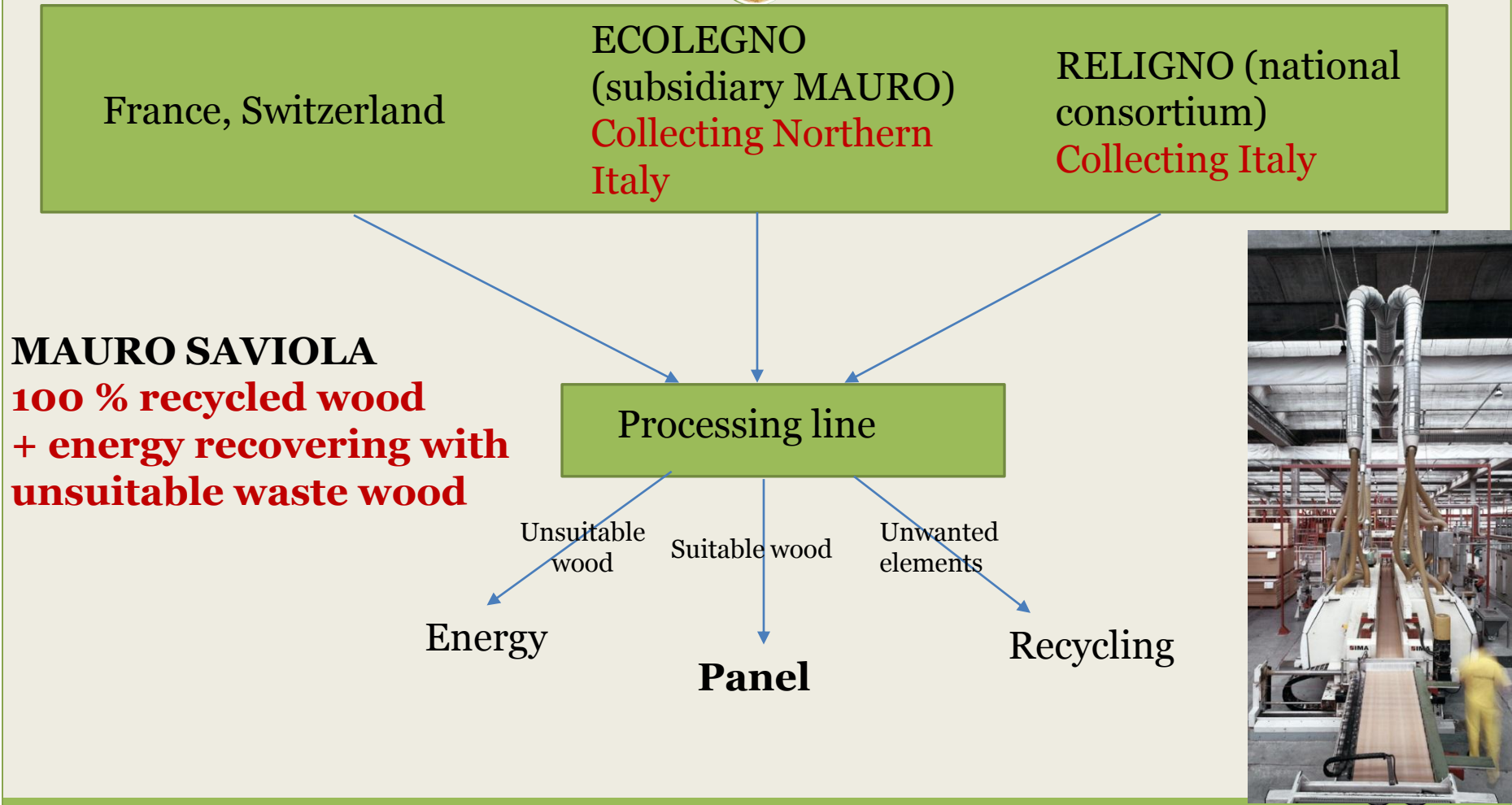


- Mauro Saviola Group collects and processes 1.5 million tons of post-consumer wood material per year
 - Service of collection of waste wood is based on collaboration with more than **1 000 municipalities**.
 - **Ecolegno** : A network of platforms (collection centers) located close to the major urban centers
 - Each collection center is equipped with means with spider and containers to be left on deposit at the company.
- Centers are mainly located in Northern Italy, and in particular in Lombardy and Emily-Romagna.
- The Saviola Group is the only one to use 100% recycled wood on the entire range of particle board.



Lombardy : case description

Eco legno + Mauro Saviola



Lombardy : case description

Eco legno + Mauro Saviola



- Transformation of waste wood in both panel and energy
 - After sorting/visual checking, waste wood pass through in a processing line
 - ✦ Process - purely mechanical - dedicated to the cleaning material.
 - The sorting equipment ("traps"), allow to separate everything that is not wood, without using chemical solvents or reagents :
 - ✦ tub to remove inert materials, such as stones,
 - ✦ magnets to attract the iron
 - ✦ Eddy current for non ferrous material
 - ✦ centrifuges that operating a gravity separation ...
 - Even the materials other than wood are destined for recycling. All production waste (iron, plastic, paper, aluminum, glass, present in the incoming wood), once separated, are then forwarded to the companies that recycle them. Recycling of iron concerns up to 20 000 tons per year.



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Eco legno + Mauro Saviola



- Transformation of waste wood in both panel and energy
 - The woody part not exploitable derived from screening and cleaning of the material is burned to power the processes.
 - It thus produces electrical and thermal energy to be used in the production cycle, so as to drastically reduce the consumption of fossil fuels.
 - The emissions from combustion are regulated by electrostatic filters capable of capturing dust and organic substances.



Lombardy : Identified success factors



- A national context quite favorable
 - Specific landfill restriction (calorific value)
 - Green certificates
 - **Wood panel industry with the higher rate of recycled woods for production of panel in Europe**
 - Specific collecting of waste wood (Rilegno but also private companies as ECOLEGNO or VALORI)

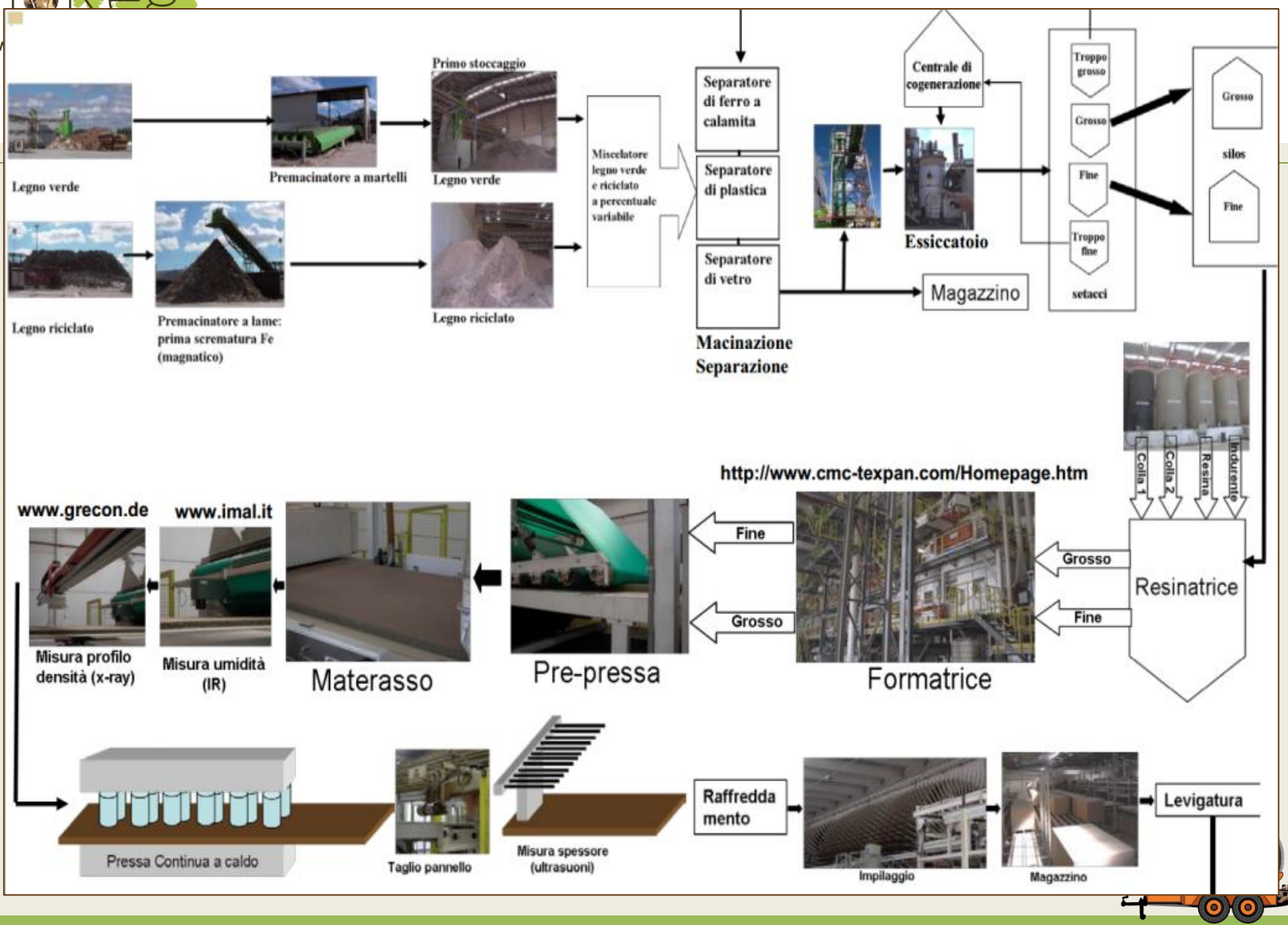


Lombardy : Identified success factors



- A regional context very favorable
 - Presence of numerous centers for collecting waste wood
 - PEAR adopted in June 2015 : instrument of strategic planning that sets out targets for energy savings and the development of renewable energy source
 - The region hosts several panel industrials of which at least 3 currently use recycled wood.
 - Northern Italy = earthenland of particle board industry
 - ✦ Closeness of France. Establishment of railway infrastructures to ensure supplying from France
 - Besides, the region hosts several associations, clusters and industrials (Assopannelli, Lombardy Energy Cluster, PAL, Texpan...) which can accompany the development of the valorisation of waste wood.





<http://www.cmc-texpan.com/Homepage.htm>