

Pulp Mill's potential for Sustainable fuel generation

*BL2F Final Workshop
Pedro C. Branco, RAIZ & The Navigator company*



This project has received funding from the European Union Grant Number 884111

The Navigator Company – an integrated producer



R&D

Global *benchmark* in genetic improvement of *Eucalyptus globulus*

TISSUE

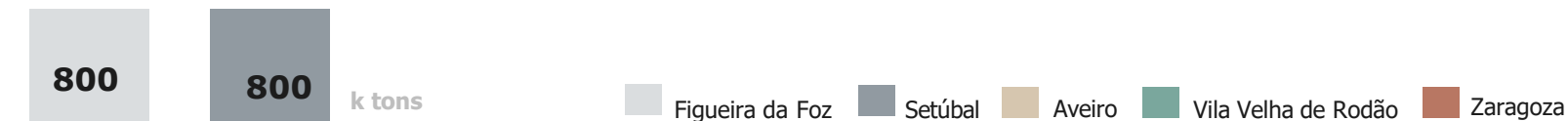
#1 Portugal, #2 Iberia
165,000 tons of reels
180,000 tons of finished product



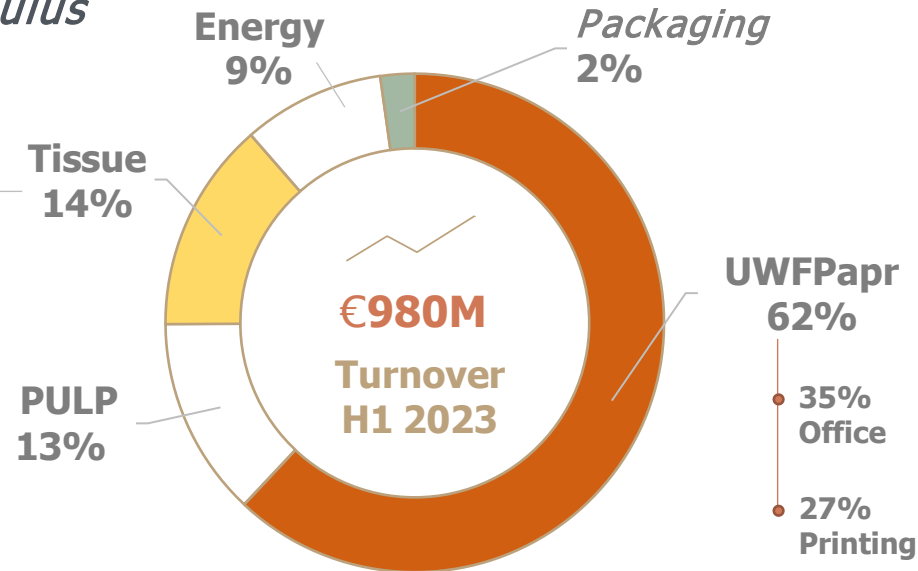
PAPER

#1 Europe, #6 World
1.6 M tons of UWF paper

Up to **250 k tons** can be dedicated to packaging



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FOREST

261,272 acres of forest
 (under management)

PULP

#1 Europe, #7 World
1.6 M tons BEKP pulp



ENERGY

1.74 TWh of electricity
 (66% renewable)



The decarbonization of the aviation and shipping sectors involves, in a first phase, the incorporation of biofuels, with an expected accelerated evolution in their demand. The Navigator Company intends to take advantage of industrial know-how and experience in operating and processing biomass to produce advanced biofuels from the by-products of pulp production.



SINERGIES WITH CURRENT MILLS

- Valorization of industrial by-products from pulp production that are currently used without significant added-value;
- Cooperation and coordination of the operations with current industrial assets;
- Knowledge and experience in logistics and handling of residual forestry biomass.

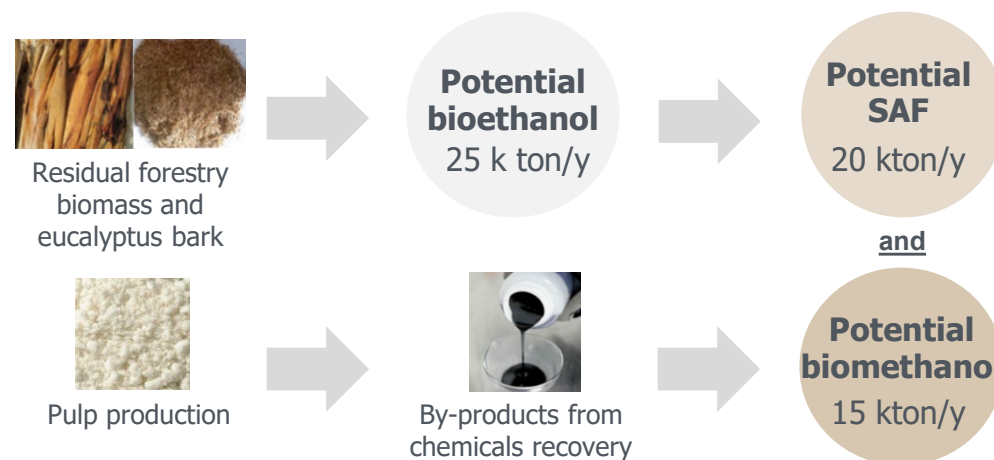


The revision of RED II (Renewable Energies Directive) aims to establish a sustainable circular bioeconomy and prioritizes the use of secondary biomass and forestry industries' byproducts for producing advanced biofuels.



Share of SAFs in aviation sector : **2% in 2025; 6% in 2030**
Reduction of CI* in shipping sector: **-6% in 2030**

*CI – Carbon intensity for the energy source use on board.



Requirements for commercial Biofuels projects include :

- Access to raw material (eucalyptus) at competitive prices and incentives for the collection of residual forestry biomass;
- Long-term satisfactory offtake commitment;
- Obtaining adequate investment incentives, promoted by the EU and the Portuguese Government.



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This new segment is a unique opportunity, with a forecast global value (2030-2050) of more than twice than the current value of the total international short fiber pulp market (20-25 billion €). However, Portugal will only be a key player in this sector as long as it has enough raw material (eucalyptus) to maintain a competitive Pulp & Paper industry.



ADVANTAGES FOR CHOOSING PORTUGAL



- **Potentially competitive renewable energy sources;**
- **Access to an important source of biogenic CO₂** generated by Navigator's mills, derived from sustainable forests (86% of the produced CO₂).



The Portuguese Government has strategies and a legal framework to promote implementing eFuels projects, in line with the main initiatives of the EU in the climate area (Green Deal, EU Hydrogen Strategy, REPowerEU).



Share of eSAFs in aviation sector: **1,2% in 2030**
Reduction of CI* in shipping sector: **-6% in 2030**

*CI – Carbon intensity for the energy source use on board.



Biogenic CO₂
> 3 Mton/y

Potential eSAF
> 0,5 Mton/y

Potential eMethanol
> 2 Mton/y

Requirements for commercial eFuels projects include:

- Competitive renewable energy availability;
- Long-term satisfactory offtake commitment;
- Obtaining adequate investment incentives, promoted by the EU and the Portuguese Government.



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BL2F Partners:



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Thank you!

Get in touch with the project:

• Coordinator: Prof. Dr. Tero Joronen, Tampere University

• Website: www.bl2f.eu



hello@bl2f.eu



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