



Recyclage des fibres de bois : Background et challenges- Résultats du projet FLEXIBI et perspectives du projet EcoReFibre

Xylodating 2022

Mark IRLE



**ÉCOLE
SUPÉRIEURE
DU BOIS**
Sciences et
technologies
des matériaux
biosourcés

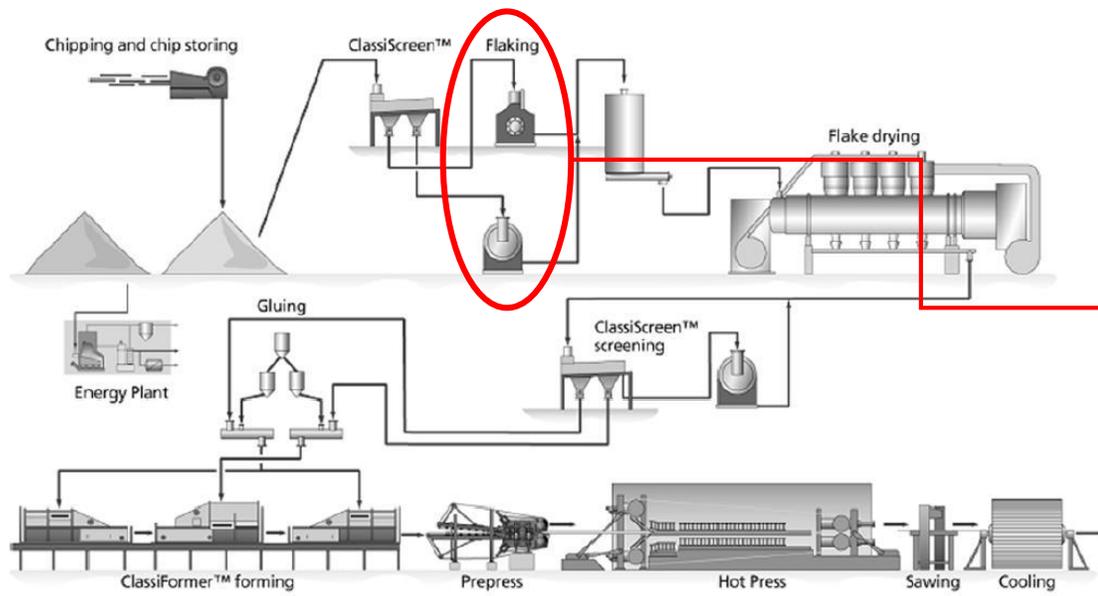


Source: enva.com

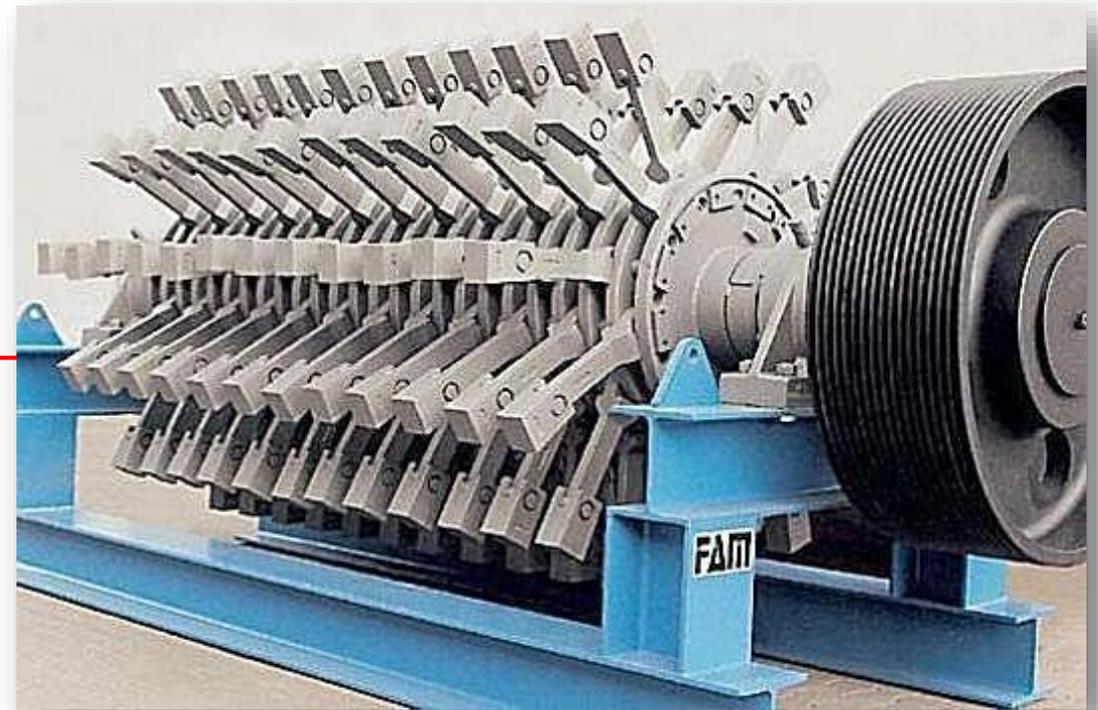
Source: greensolutionsandmore.com







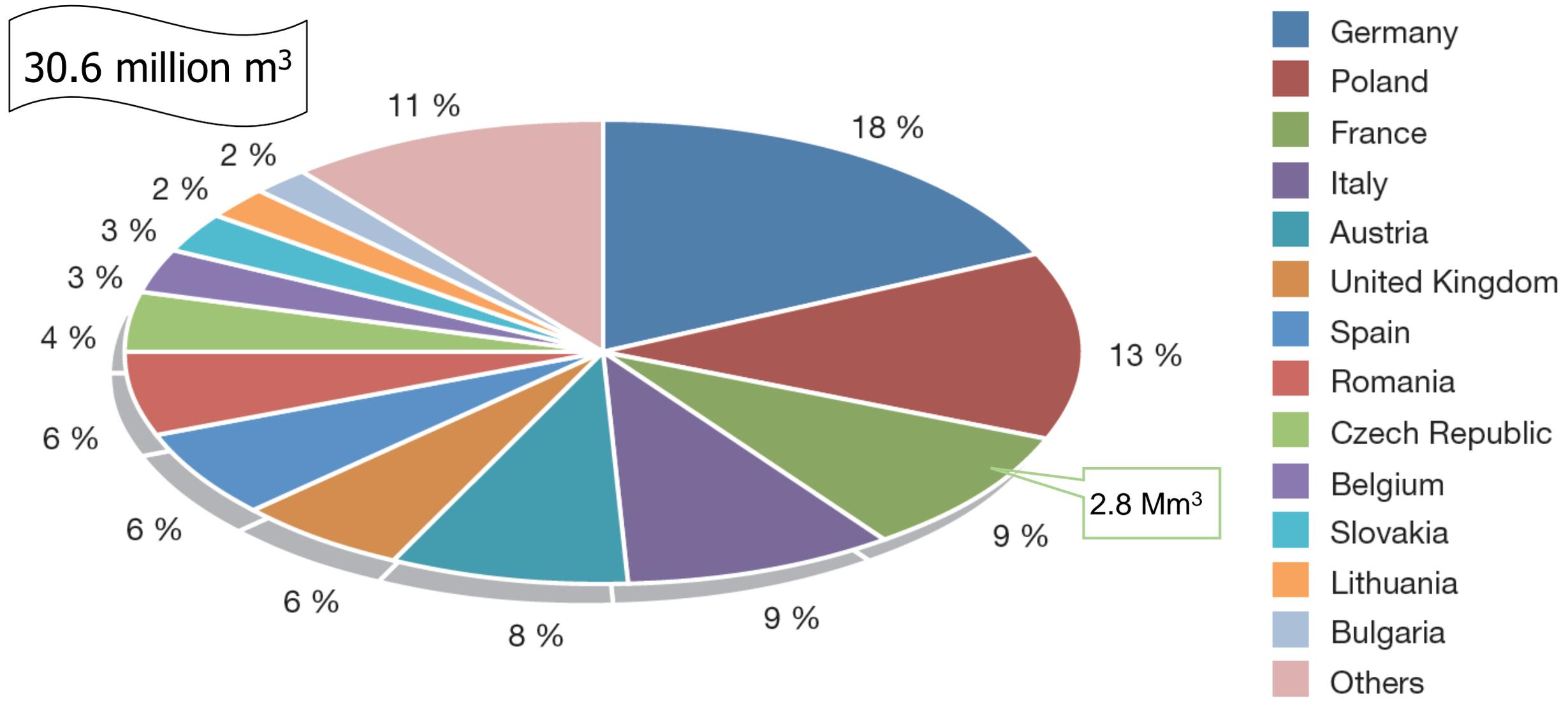
Source: ISBN 978-1-902316-82-6



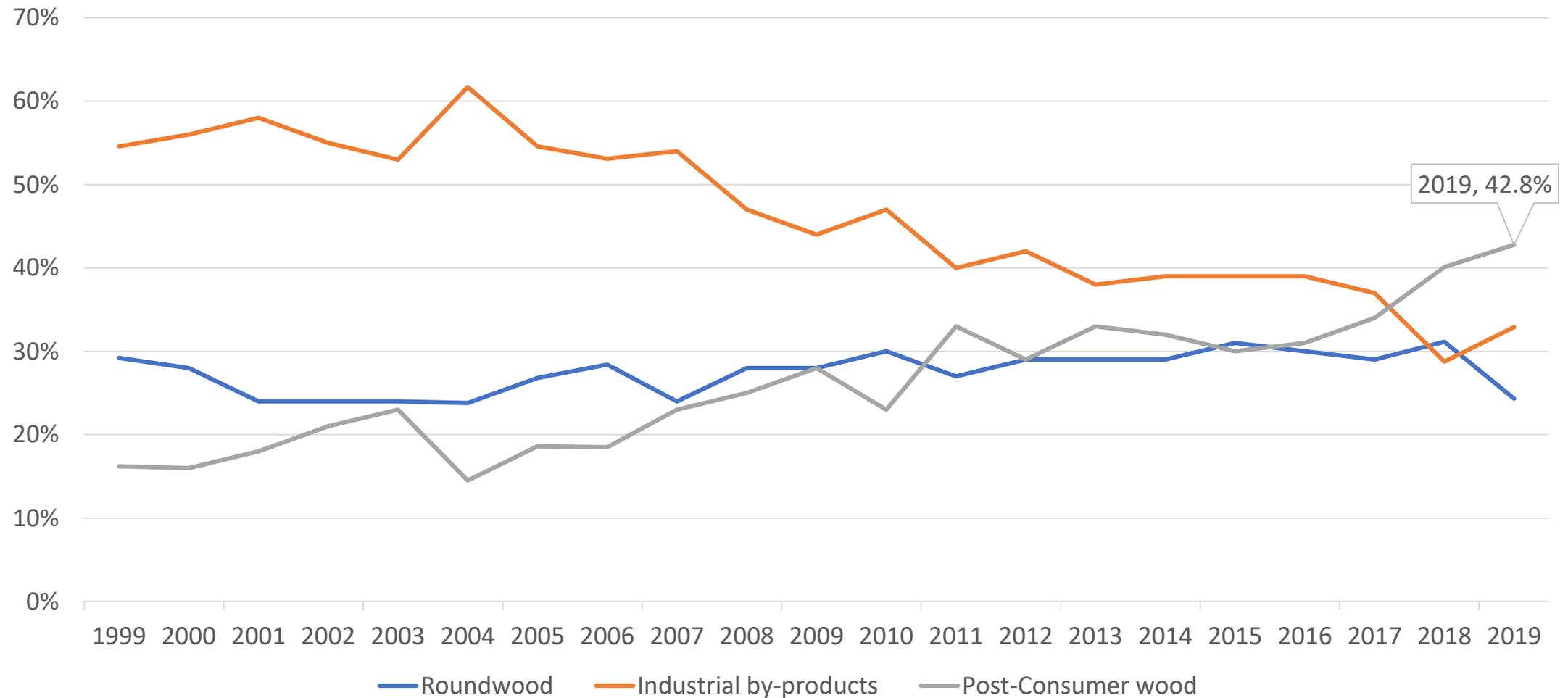
Source: www.hammer-mills.com



Figure II.2: Breakdown of the particleboard production by country – 2020

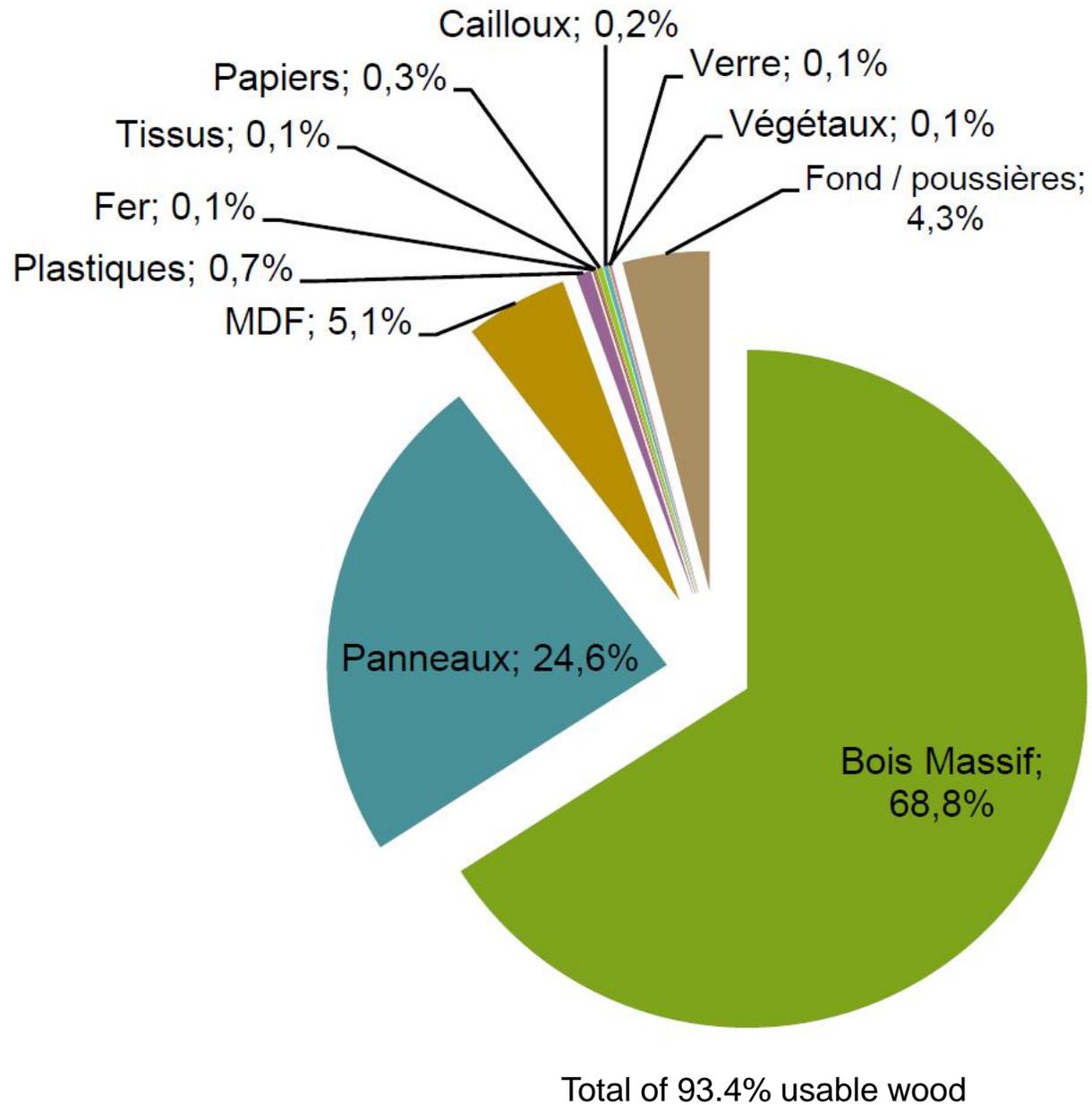


Wood demand in the EU Particleboard industry



Source: EPF Annual Report 2019-20

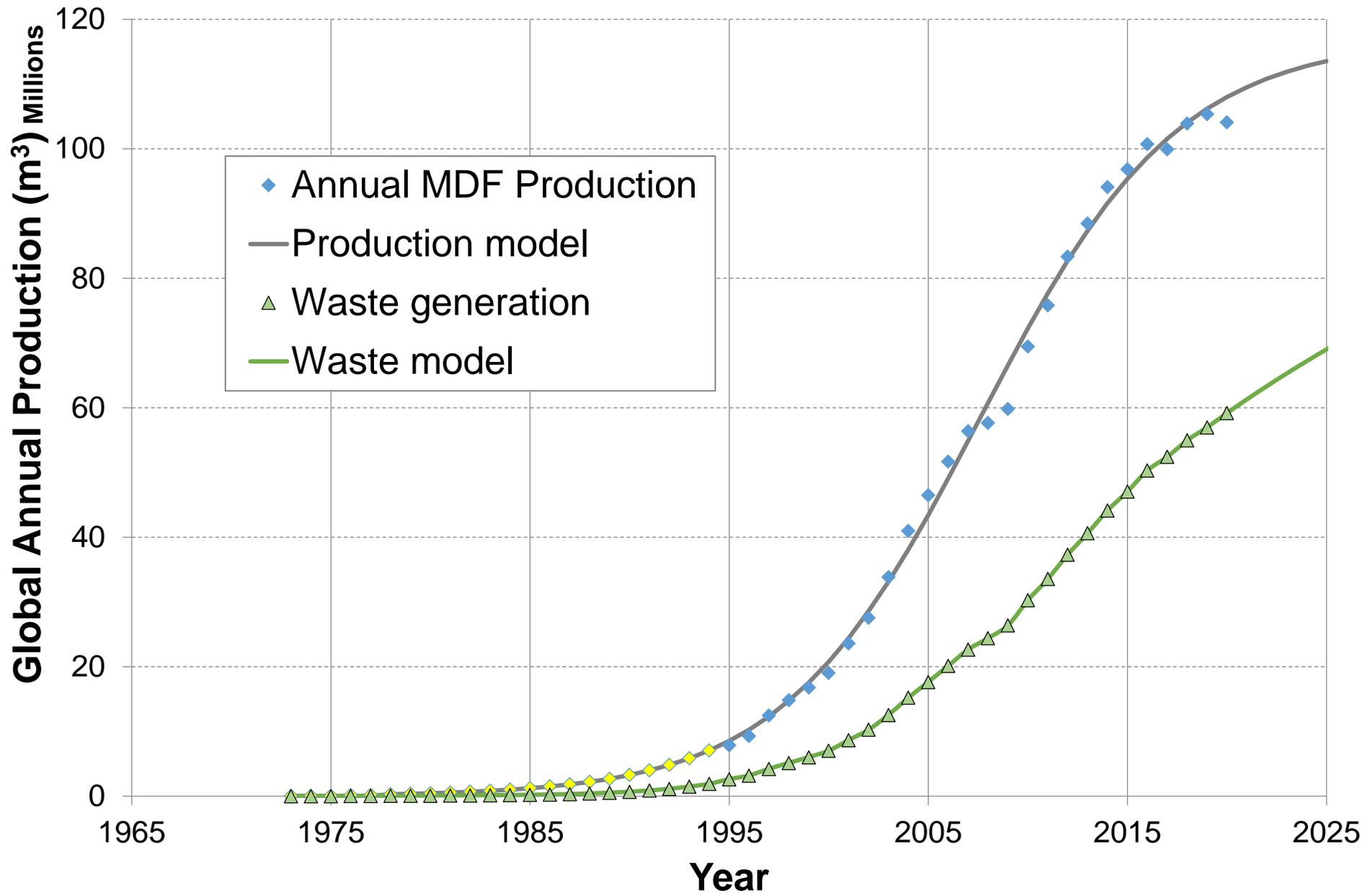
La caractérisation du bois recyclé



Data collected in 2017







Challenges

1. Enlever les panneaux de fibres des déchets de bois
2. Valoriser les panneaux de fibres séparés



RECYCLING WASTE FIBREBOARD

The FLEXIBI project

ERA-NET FACCE SURPLUS (ANR-17-FASU-0002)

October 2019

Mark Irlle, Guillermo Velez, Christophe Belloncle,
Estelle Bonnin and Marc Lahaye



esb

FLEXIBI

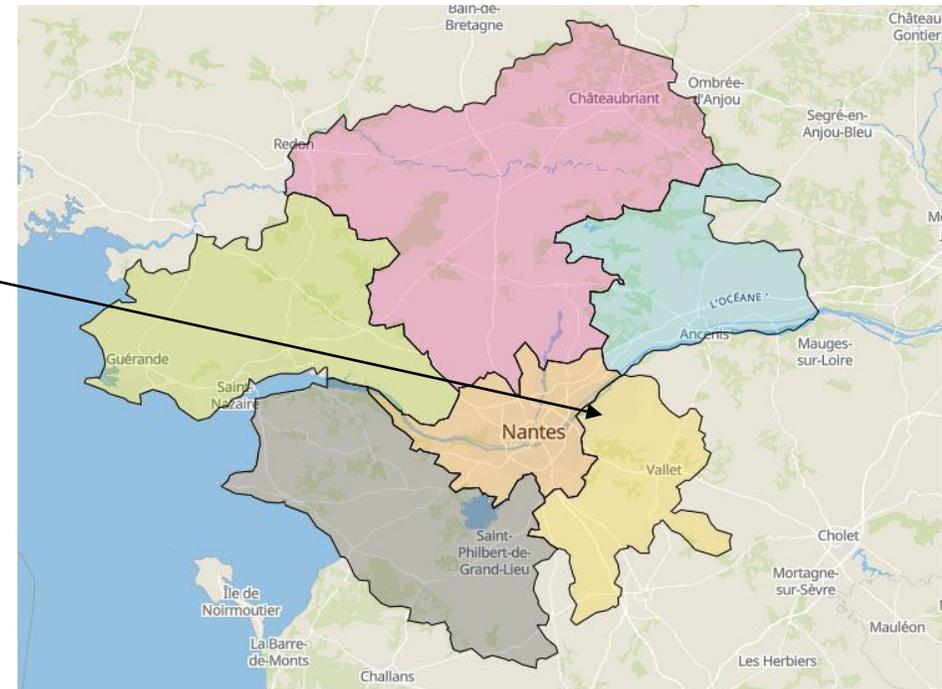
**ÉCOLE
SUPÉRIEURE
DU BOIS**

Sciences et
technologies
des matériaux
biosourcés

Cucumber waste



- Collected 52 kg on 15/10/19
- Location: Haute Goulaine



Pressing waste



Initial WC \approx 85%
Agri-waste weight reduced
by 29%
Producing approx 15 L of
juice





WC of MDF = 6.5%
MC of MDF = 7.0%

Pressed with a force of 10.5 MPa



Storage experiment

- 4 mix ratios:
 - 15, 20, 25 and 33% WC
- Approx. 8.5 kg per box
- Plastic boxes
- Continuous temperature measurements
- Protected outdoor location







EcoReFibre

Ecological Solutions for Recovery of Secondary Materials from Post-Consumer Fibreboards

Call: HORIZON-CL4-2021-RESILIENCE-01 Project: 101057473

2022

Mark IRLE



**ÉCOLE
SUPÉRIEURE
DU BOIS**
Sciences et
technologies
des matériaux
biosourcés

EcoReFibre

DIEFFENBACHER

MOVE FORWARD. TOGETHER.

M4

HOMANIT



CORMATEX
Textile Machinery and Lines

**SONAE
ARAUCO**

Taking wood further



SOPREMA
GROUP

smartpanel[®]

manifaktura



BIESSE

VEOLIA



EUROPEAN PANEL FEDERATION
WOOD - BASED PANELS

FLA
FEDERLEGNOARREDO

INNOVAWOOD

st w **Steinbeis**

SLU

esb

FCBA

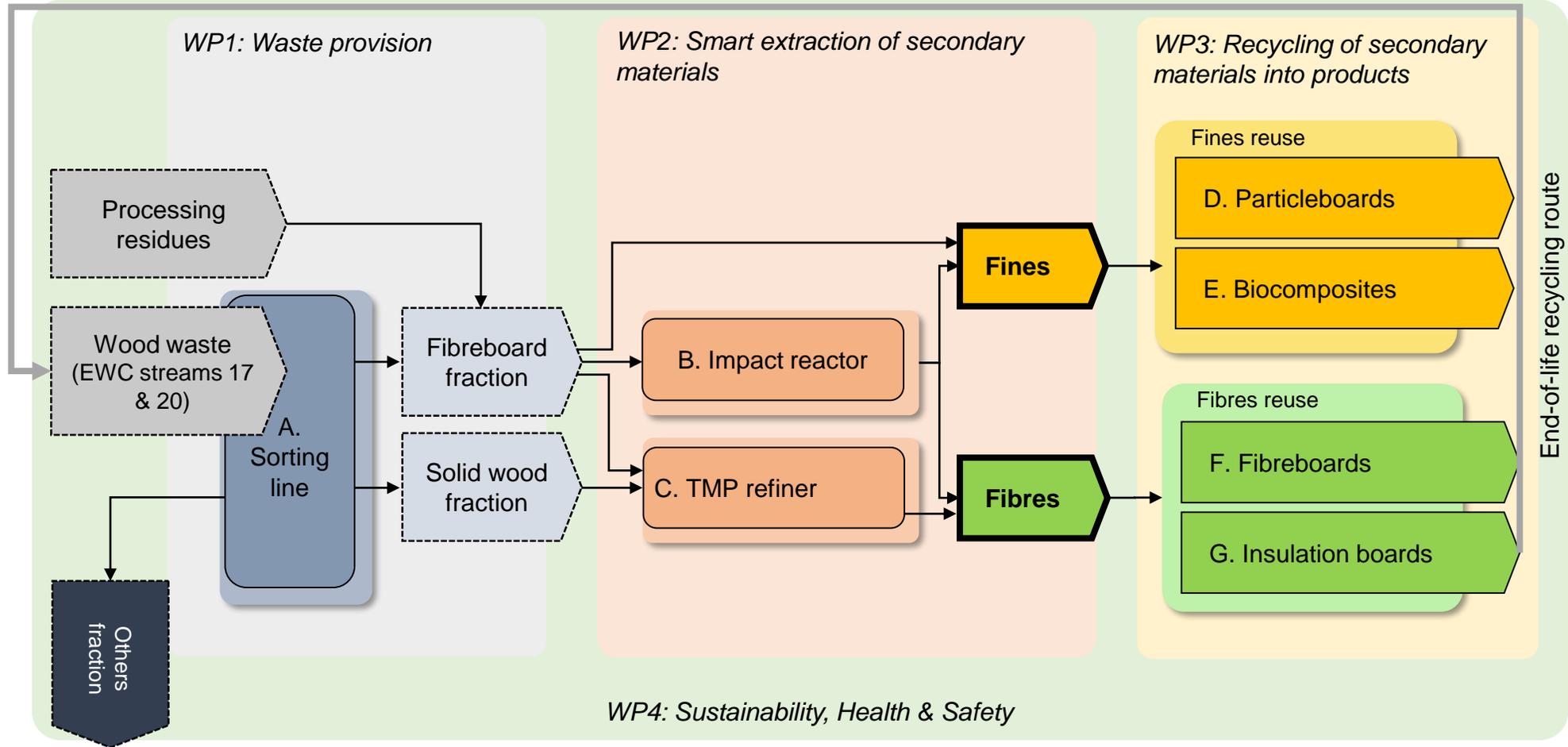
IHD
SCIENCE BY EXPERTS

ivl
Swedish Environmental
Research Institute

NIBIO

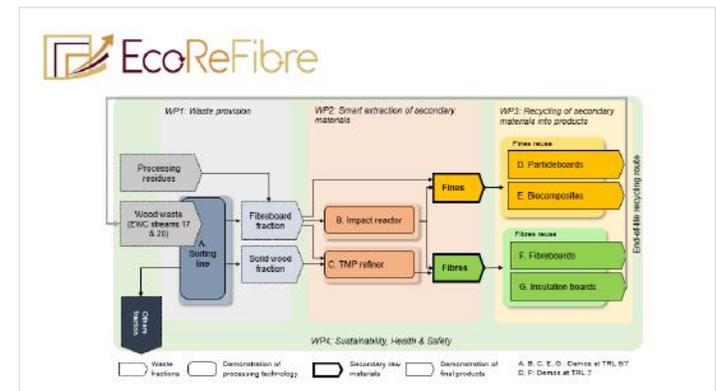
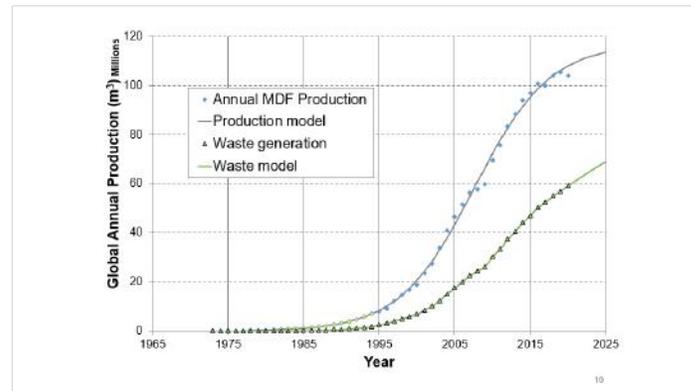


EcoReFibre



 Waste fractions
 Demonstration of processing technology
 Secondary raw materials
 Demonstration of final products
 A, B, C, E, G : Demos at TRL 6/7
 D, F : Demos at TRL 7

Conclusions



**MERCI
DE VOTRE
ATTENTION**

www.esb-campus.fr

Atlanpôle – BP 10605
Rue Christian Pauc
F – 44306 Nantes Cedex 3



**ÉCOLE
SUPÉRIEURE
DU BOIS**
Sciences et
technologies
des matériaux
biosourcés