



KITZBÜHEL 2022

TRICO® FORESTRY CAMPUS  
GROW TOGETHER

# HANS GRIESHOFFER

THE FIBER INDUSTRY – SUSTAINABLE AND CIRCULAR

# PAPER & BIOREFINERY

PAPER



FOR FUTURE!

TRICO® FORESTRY  
CAMPUS

THE FOREST  
FIBRE INDUSTRY  
– SUSTAINABLE  
AND CIRCULAR

7 June 2022  
HANS GRIESHOFFER

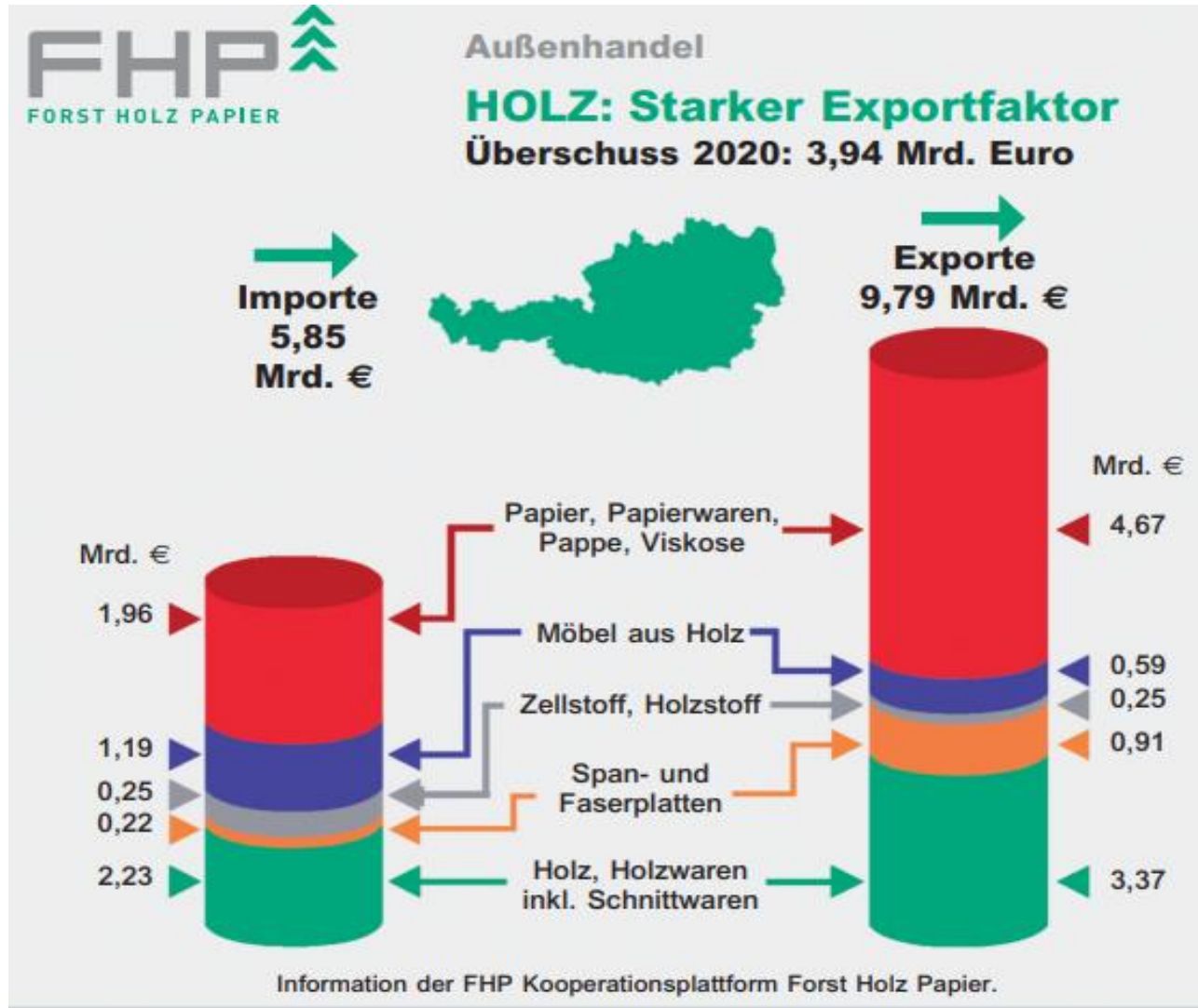
- 1. Introduction**
- 2. Facts and Figures about the European and Austrian Pulp- and Paper Industry**
- 3. Timber Availability – Is there enough for everyone?!**
- 4. Bioeconomy – Substitution of Fossil-Based Products**
- 5. Video – Green Source**
- 6. Recommendations and Conclusions**



## Hans Grieshofer, Vienna (AT)

- Graduate Engineer for Forestry and Timber Management, BOKU Vienna.
- Head of Department of Resource Policy for the Austrian Pulp and Paper Industry, Austropapier.
- Steering Group Member of the Cooperation Platform Forest Wood and Paper (FHP) as well as PEFC Austria.

## Trade: Forest Based Industry



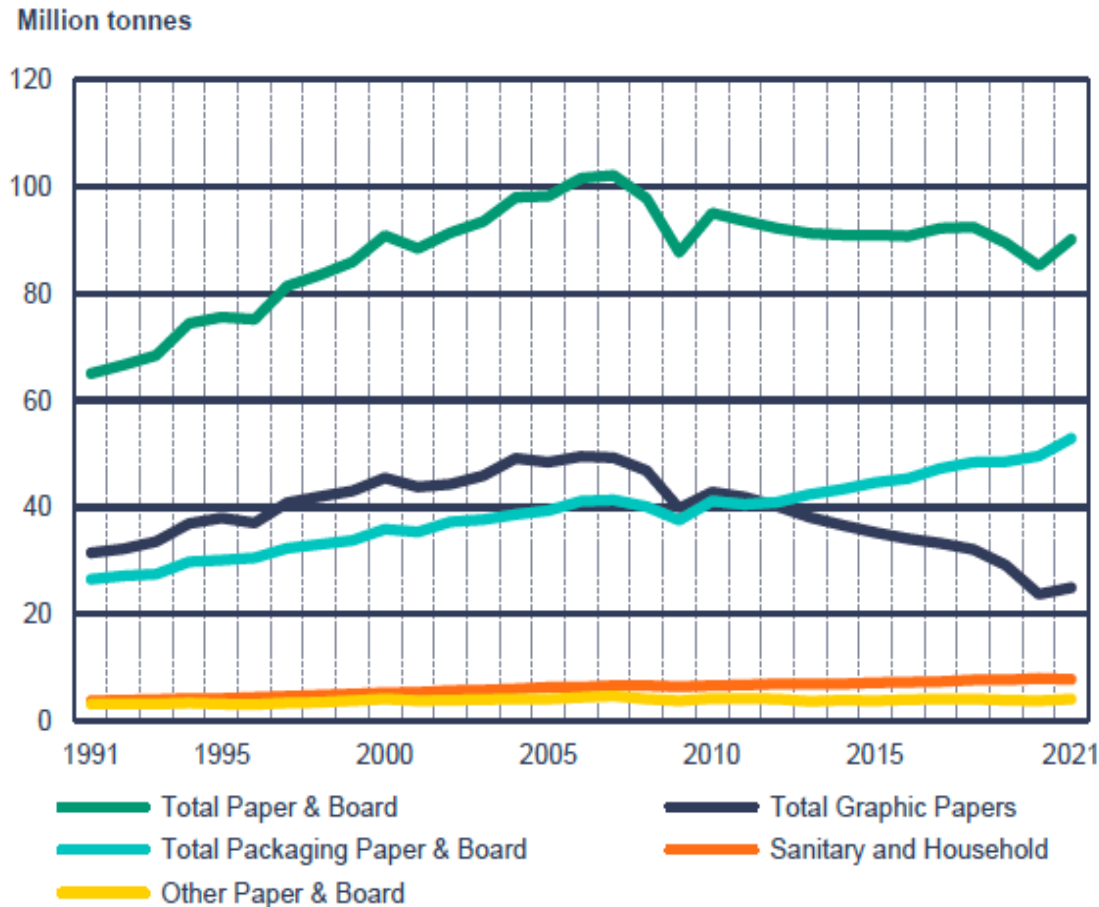
**Foreign Trade Surplus:  
€ 4 billion !**

# THE AMAZING TREE!

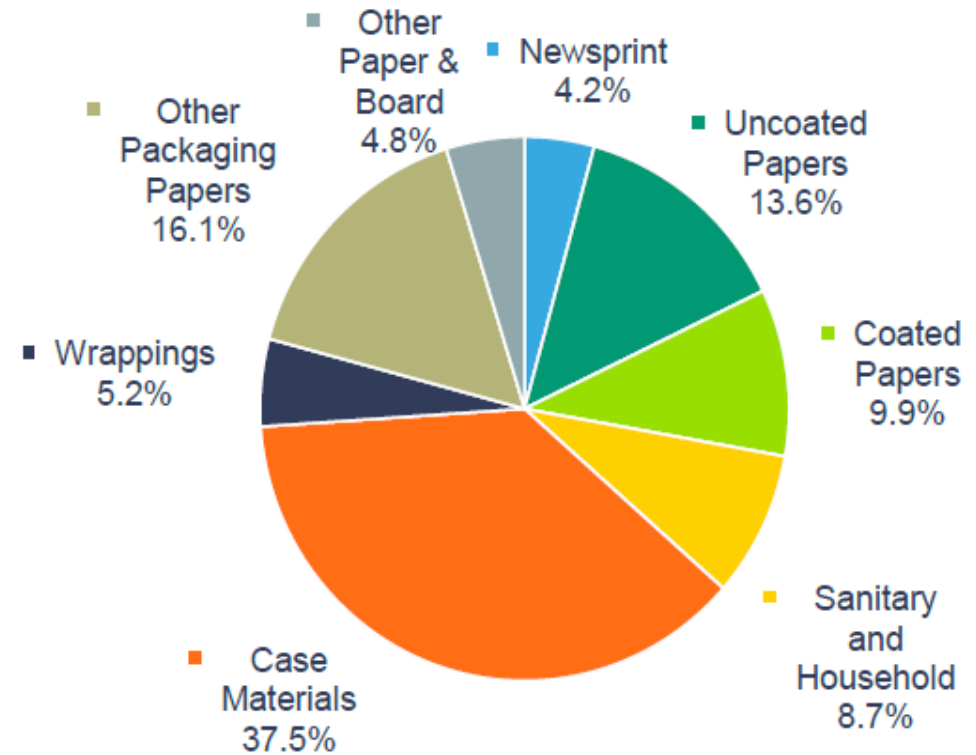


## Producing Pulp & Paper out of Timber (EU/Cepi)

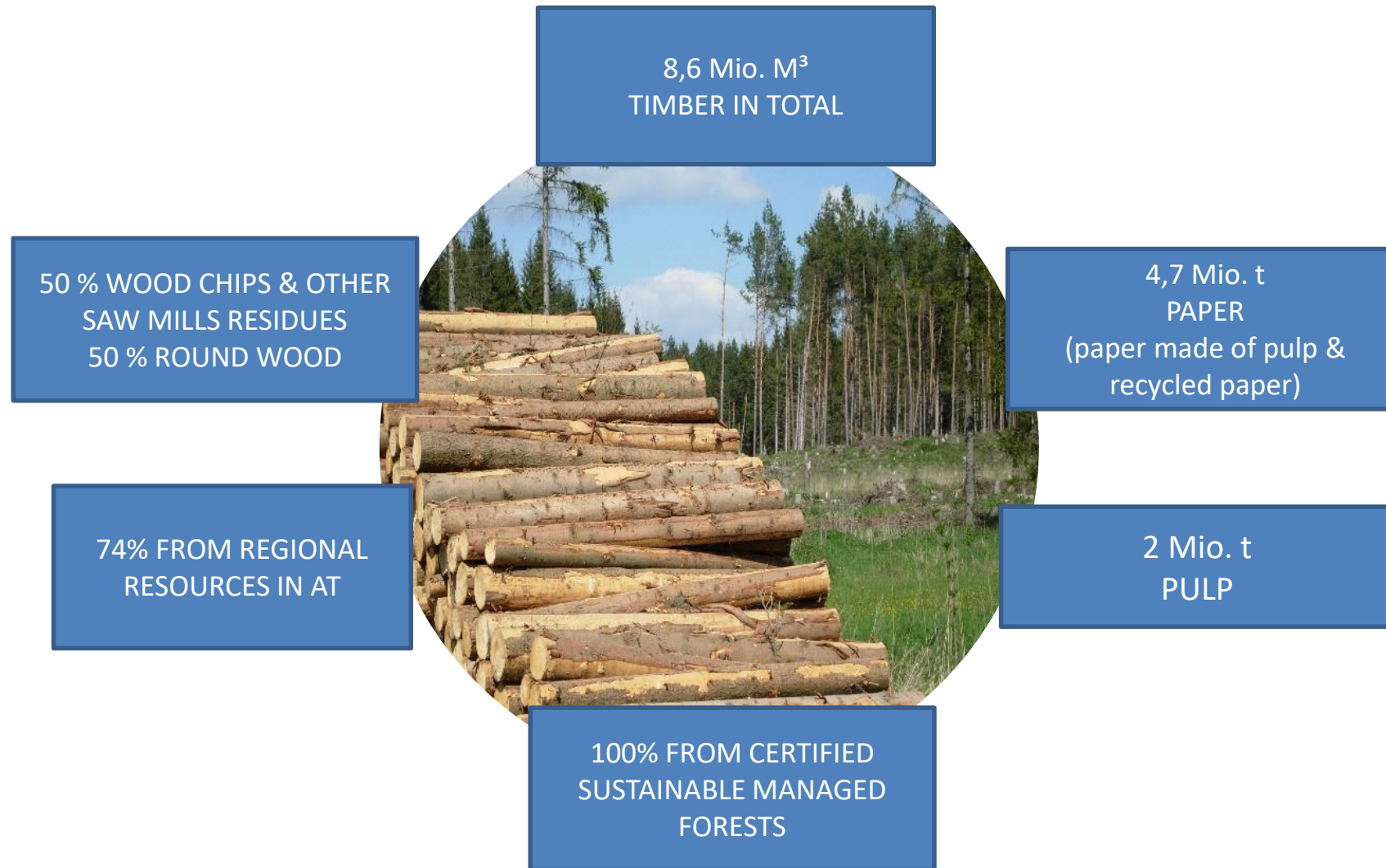
Production of paper and board in Cepi countries



Production of paper and board by grade in Cepi countries in 2021



## Producing Pulp & Paper out of Timber (AT)





## Forest Area (EU)



FOR MORE INFORMATION  
[eugreensource.org](http://eugreensource.org)

Forests cover more land in Europe today than since the Middle-Ages!



The annual growth of European forests is far greater than annual harvesting.



Therefore, **a quarter (25%)** of the annual growth is stocked which leads to the continuous accumulation of growing stock in forests.

The growing stock has increased by **59% in 30 years**.  
(source: State of Europe's Forests 2020)

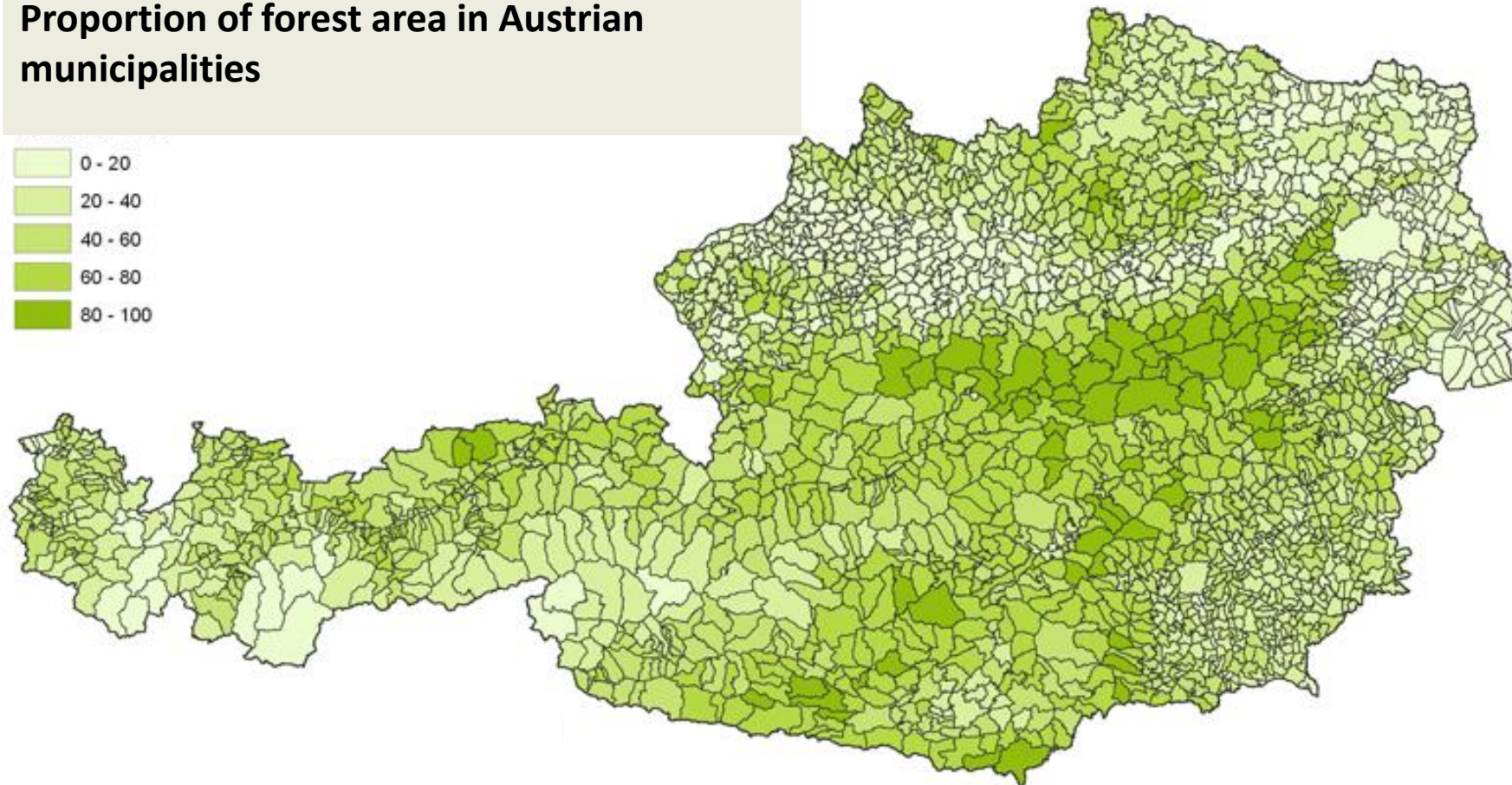
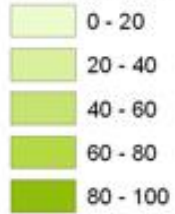
The area of forest designated for biodiversity conservation has increased by **65% in 20 years** already encompassing **1/4 of all forest** an area equal to that of **Spain**.  
(source: State of Europe's Forests 2020)

## Forest Area (AT)

4 mio. ha

48%

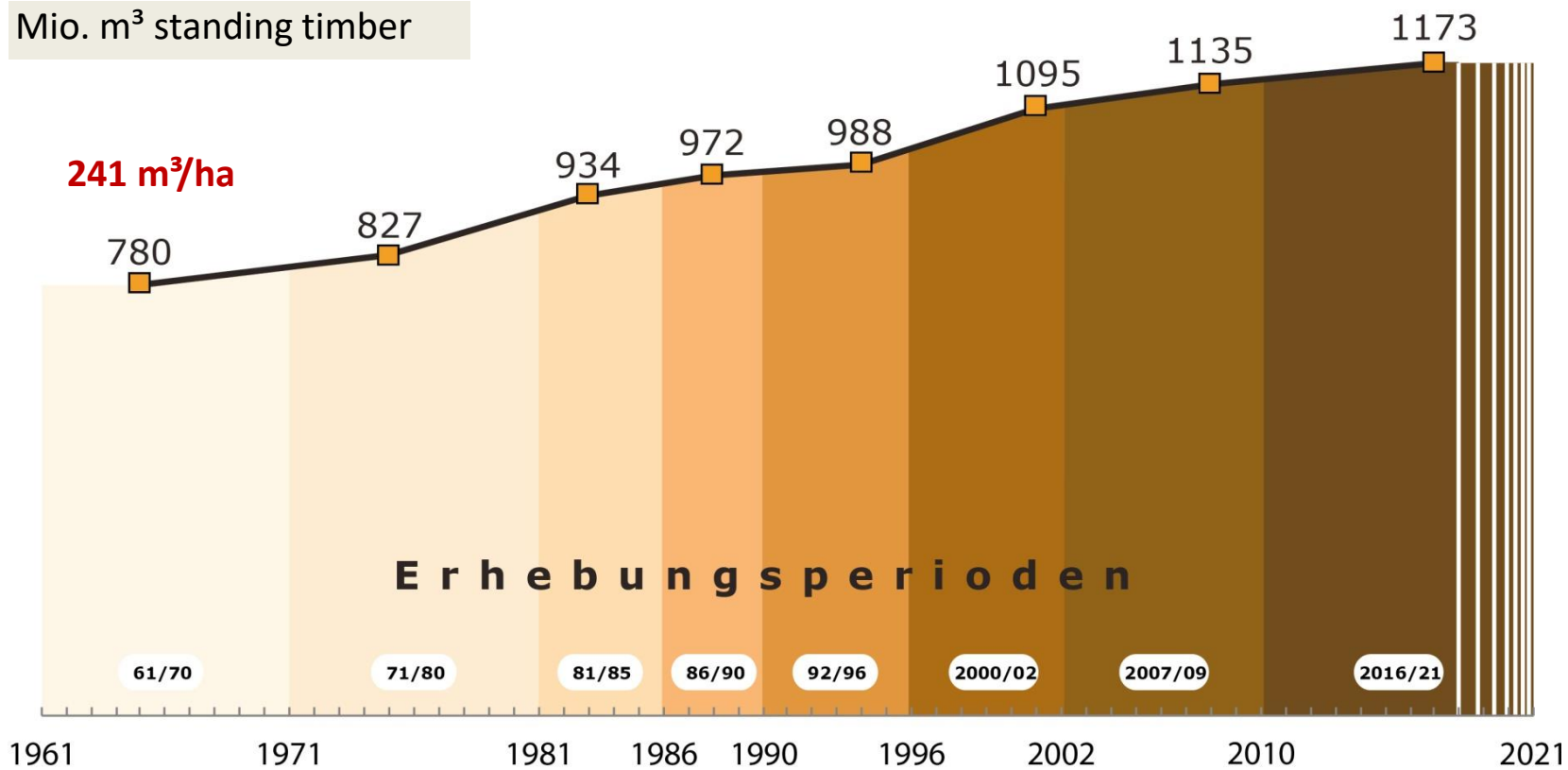
Proportion of forest area in Austrian municipalities



## Growing Stock (AT)

Sweden 110 m<sup>3</sup>/ha  
Finland 100 m<sup>3</sup>/ha

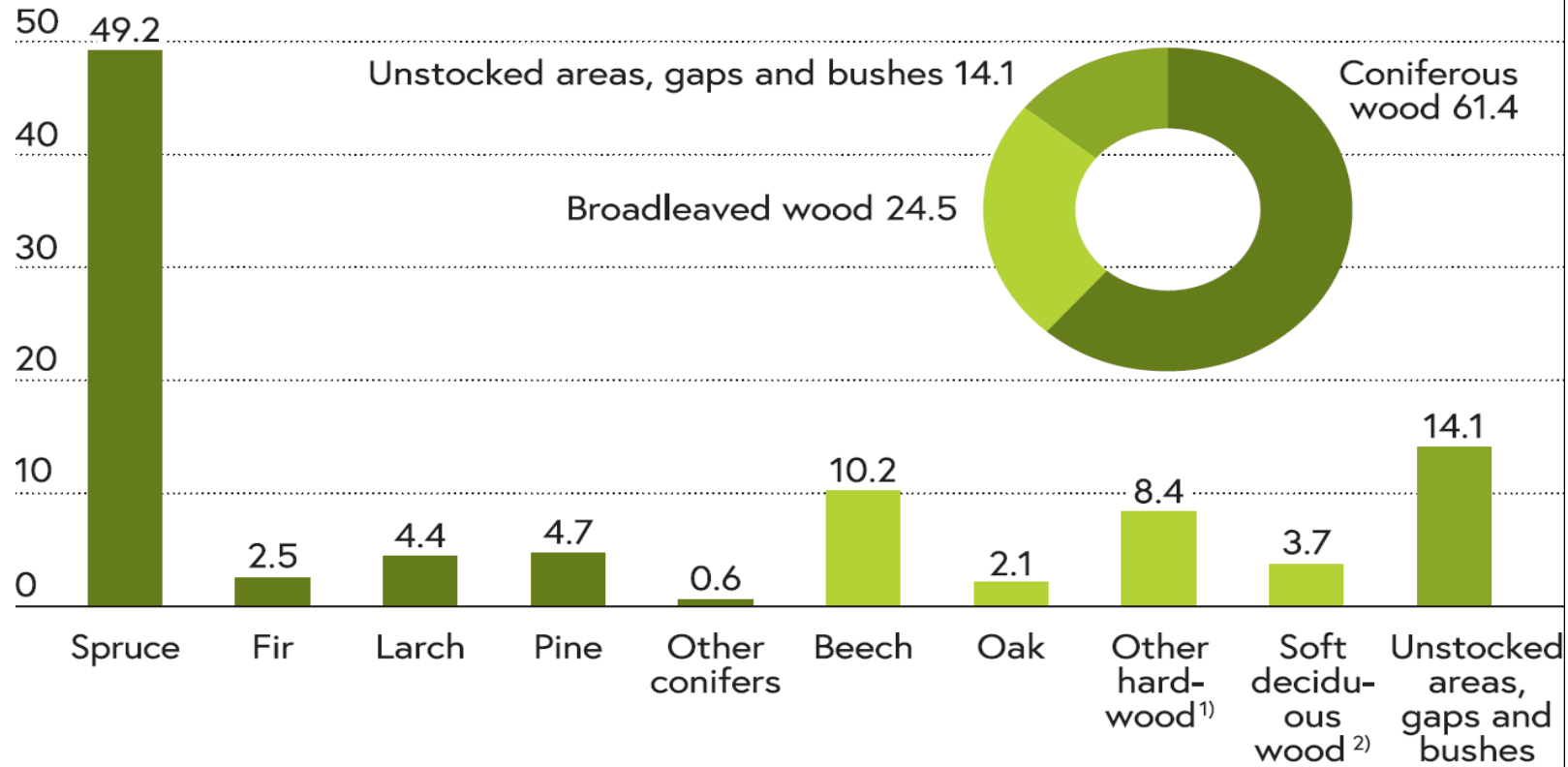
351 m<sup>3</sup>/ha



Source: BFW

## Tree Species (AT)

in percent area



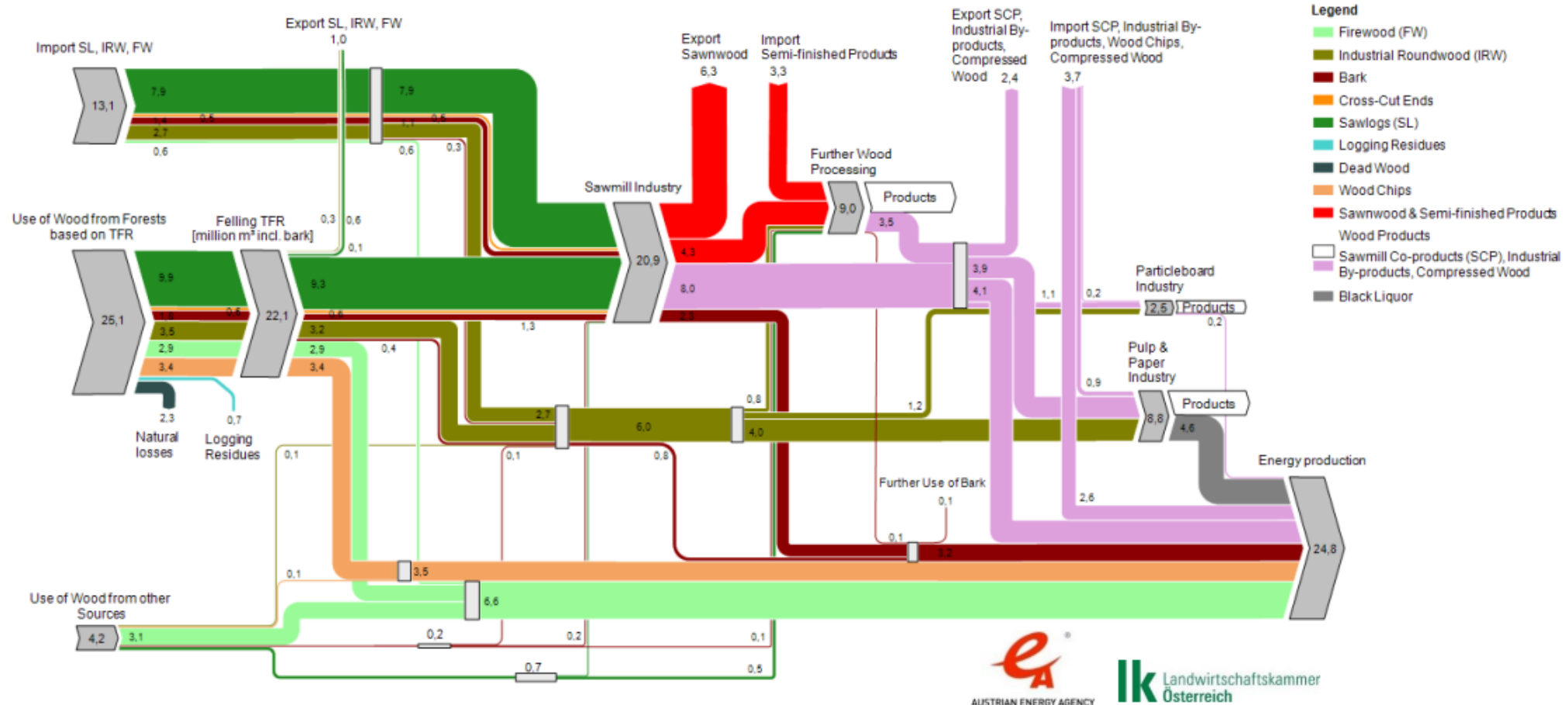
1) Common hornbeam, ash, maple, elm, Spanish chestnut, black locust, etc.

2) Birch, common alder, grey alder, linden, aspen, white, grey, black and hybrid poplar, willow, etc.

Source: Federal Research and Training Centre for Forests, Natural Hazards and Landscape 2019, Austrian Forest Inventory 2016/18

## Austrian Wood Flows (I)

### Wood Flows in Austria



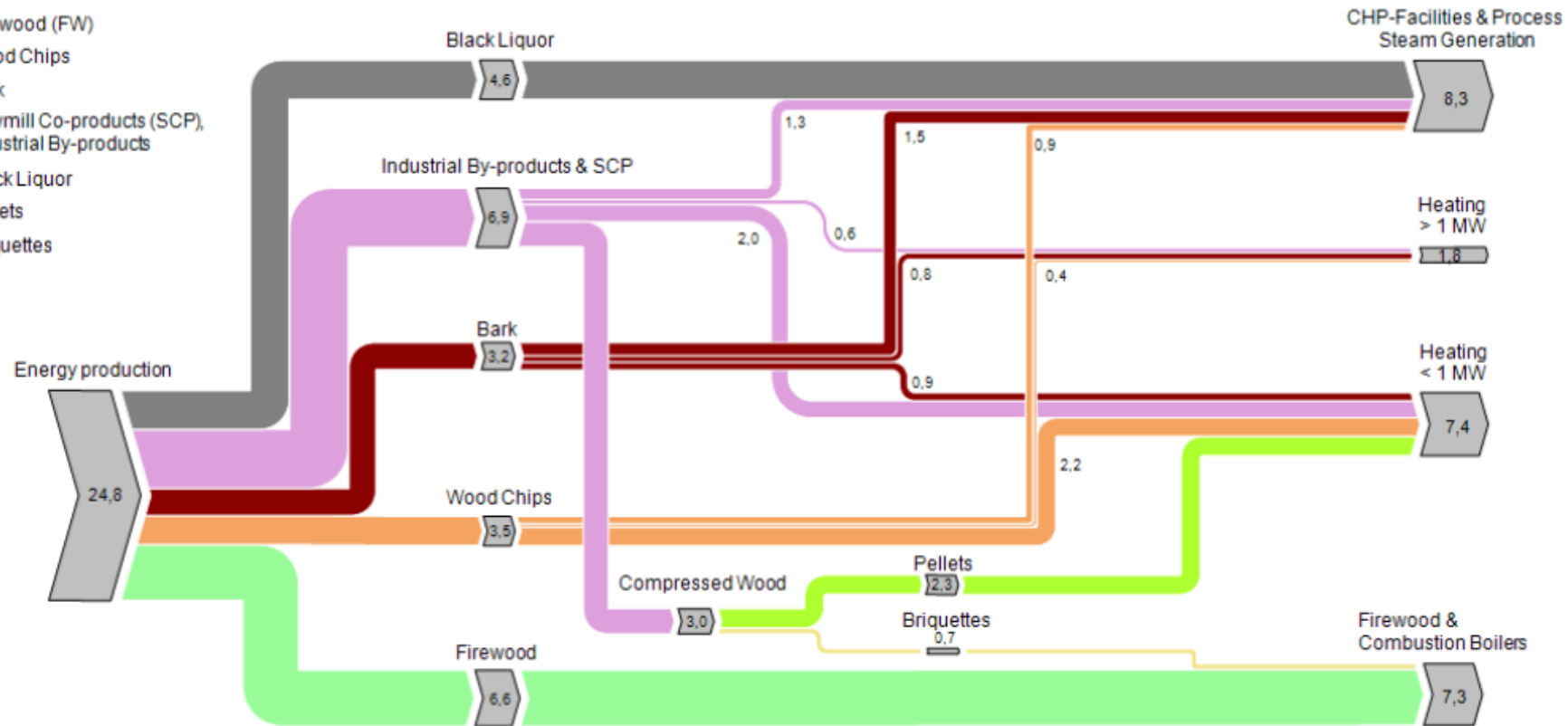
Issue: August 2021 / Reference year: 2019 - All values given in million m<sup>3</sup>; values <0,1 million m<sup>3</sup> are not shown; numerical values partially rounded; Compiled by Lorenz Strimitzer, Bernhard Wlcek, Austrian Energy Agency & Kasimir Nemestothy, Austrian Chamber of Agriculture – Compiled on behalf of BMK.

## Austrian Wood Flows (II)

### Wood Flows in Austria – Energy Production

Legend

- █ Firewood (FW)
- █ Wood Chips
- █ Bark
- █ Sawmill Co-products (SCP), Industrial By-products
- █ Black Liquor
- █ Pellets
- █ Briquettes



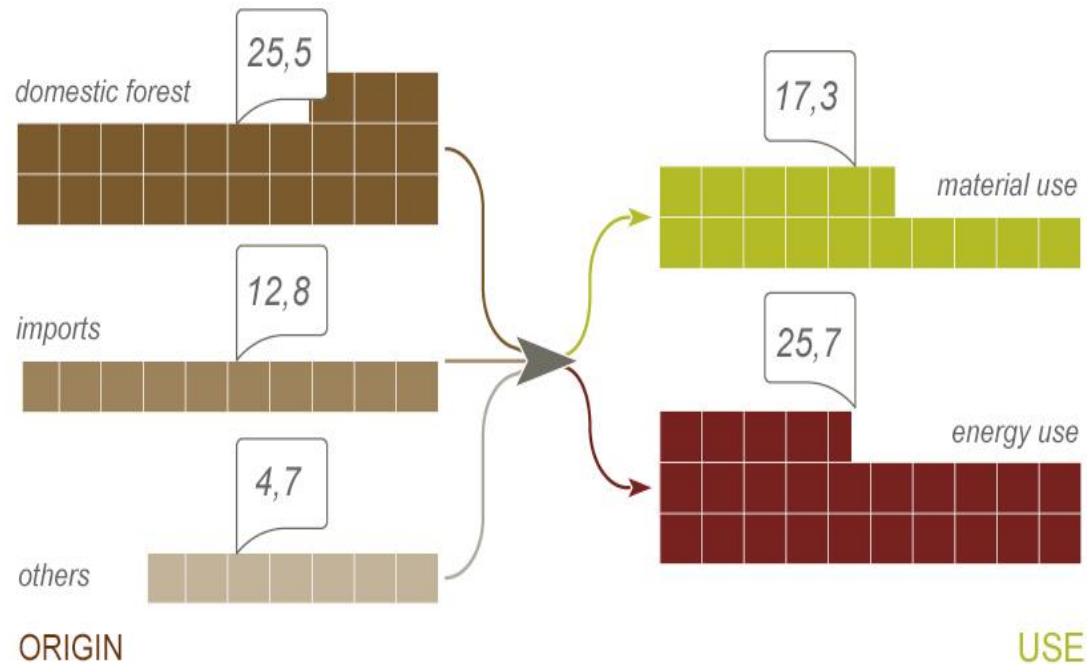
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## Austrian Timber Balance

### Austrian Timber Balance

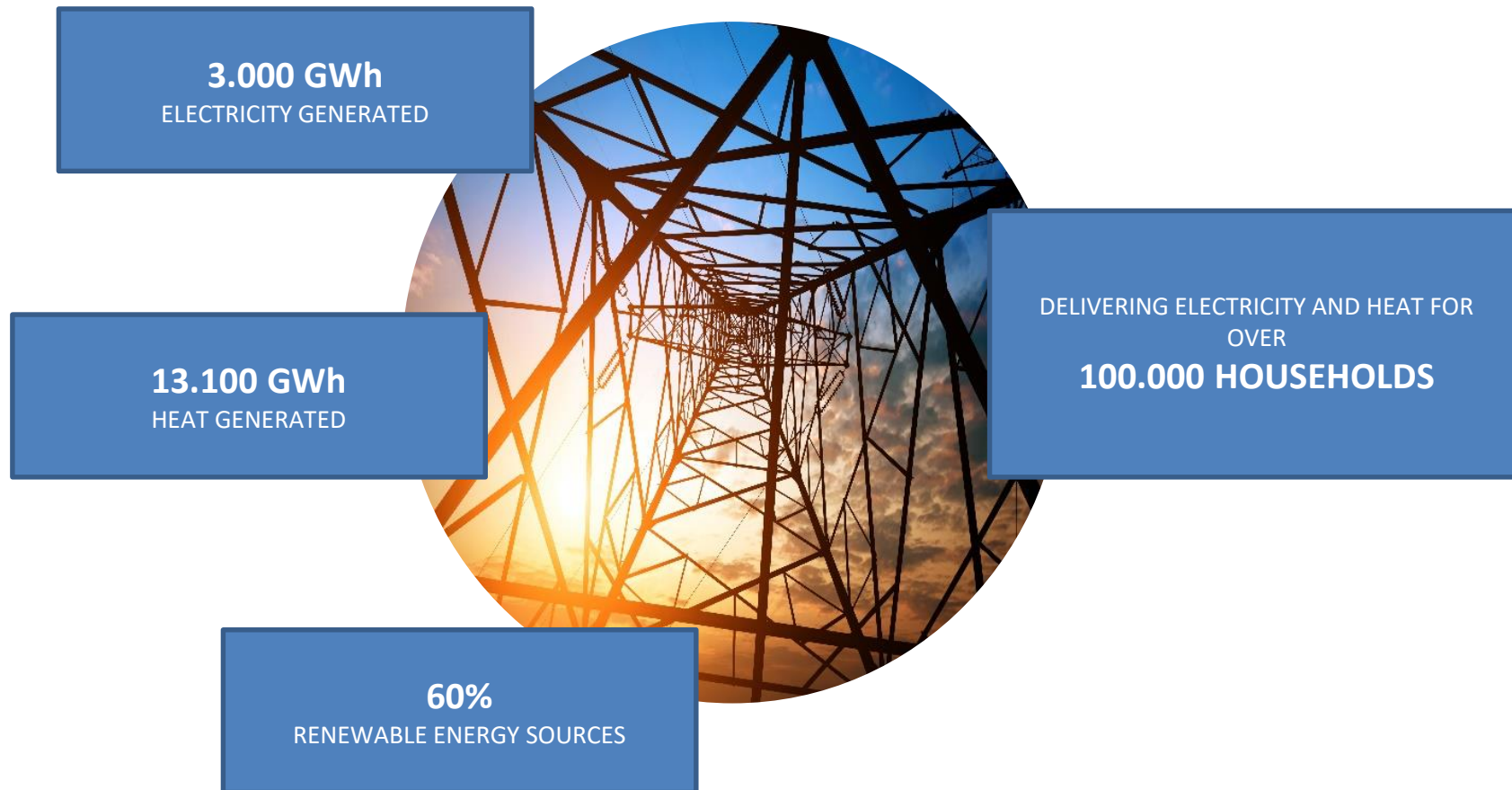
simplified graphic, in Mio. m<sup>3</sup> [2018]

Austropapier-Grafik



- ▶ Domestic forest: Round wood for saw mills and industry, bark, fire wood, wood chips
- ▶ Imports: Round wood for saw mills, industry, bark, fire wood
- ▶ Others: wood not included in annual logging report
- ▶ material use: products from saw mills, pulp, paper and panel industry
- ▶ energy use: generation of electricity and heat

## Biggest Industrial Provider of Renewable Energy (AT)

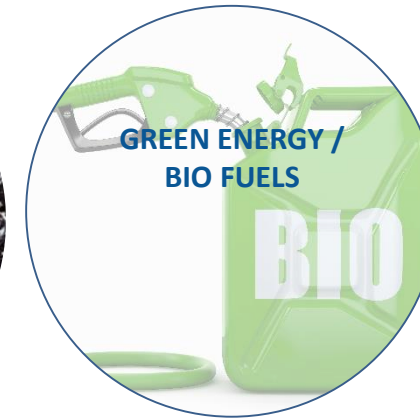




## European Green Deal – „Fit for 55“



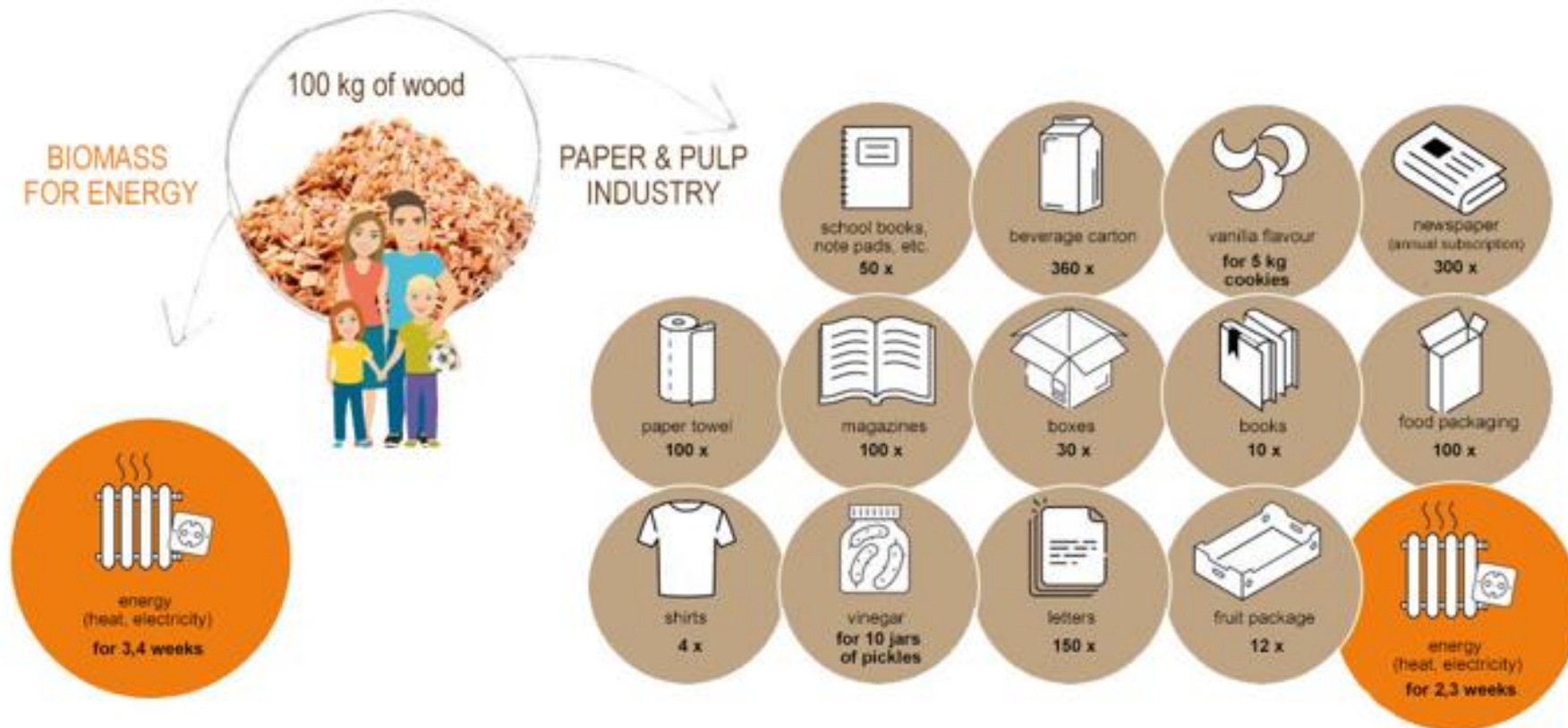
## BIOECONOMY: Substituting Fossil-Based Products



## What can you make from 100 kg of Wood?

What to do out of 100kg of wood?

Austropapier Grafik



## Status quo: Biorefineries in Europe

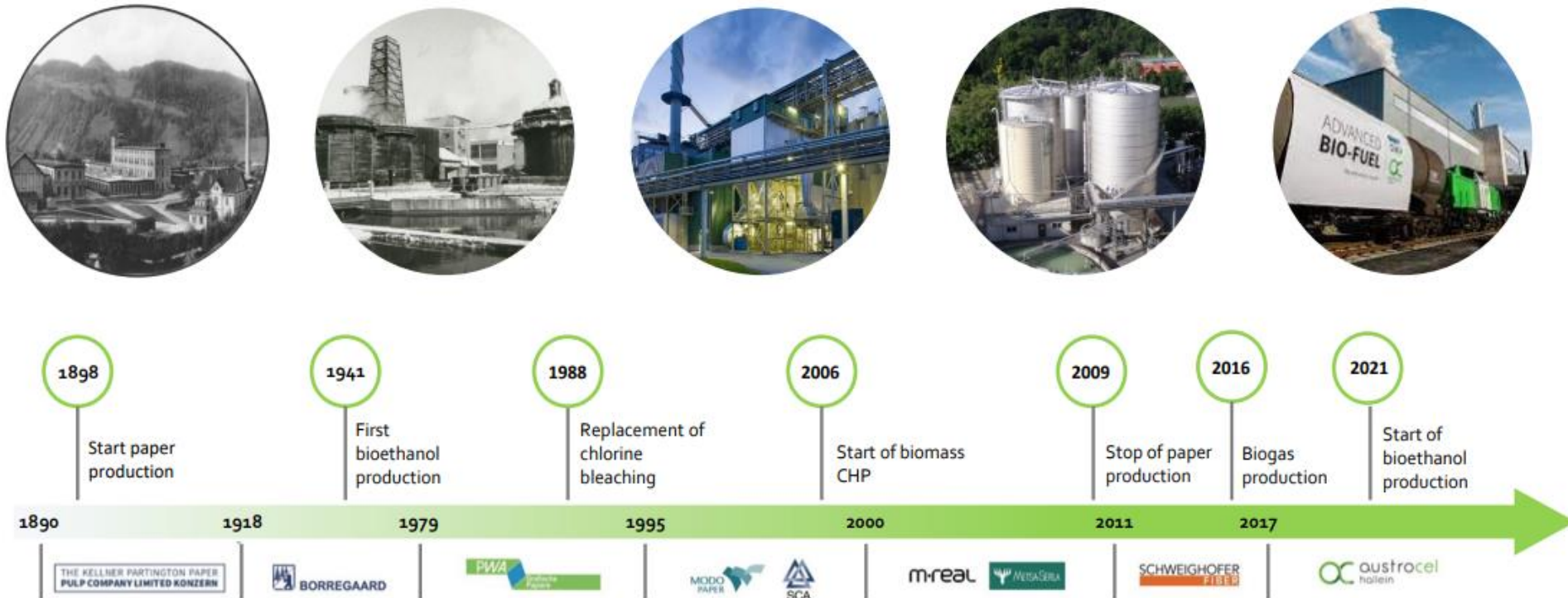


**Source:**  
CEPI (<https://www.cepi.org/wp-content/uploads/2021/03/Innovative-bio-based-products-for-a-sustainable-future-Cepinar.pdf>)

## Status quo: Biorefineries in Austria (I)



### AustroCels Biorefinery pathway

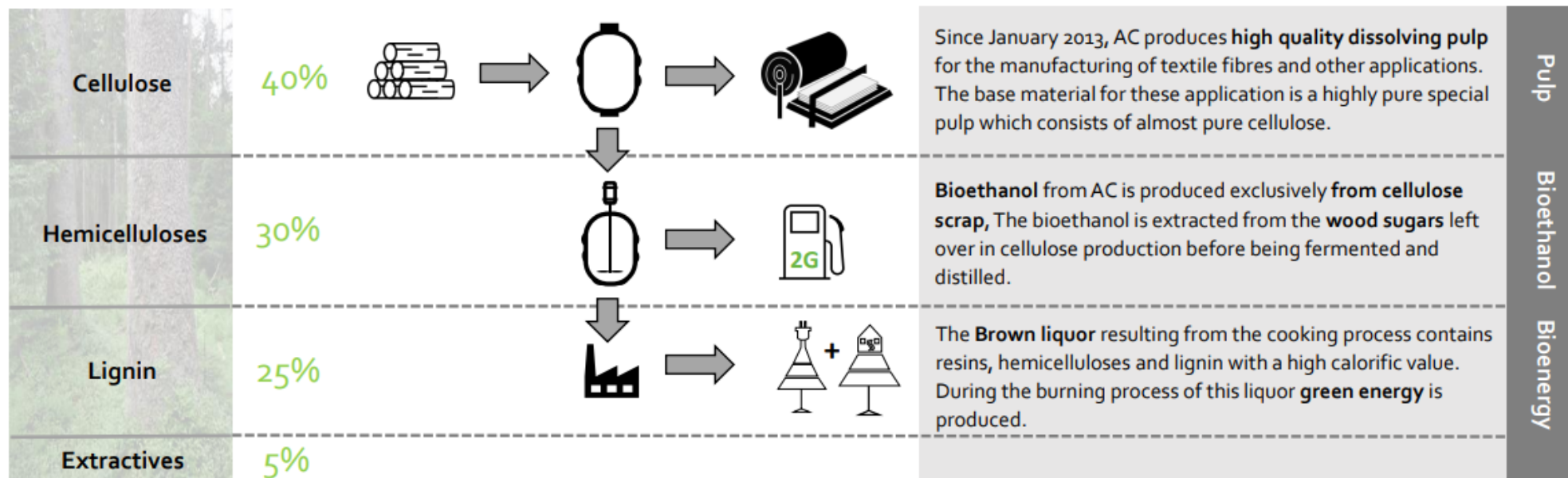


## Status quo: Biorefineries in Austria (II)



### Biorefinery @AustroCel

*Wood as a renewable and sustainable resource offers great opportunities for a comprehensive product portfolio to satisfy the different needs in a future BioEconomy. Biorefining is the sustainable processing of biomass into a spectrum of bio-based products (food, feed, chemicals, and materials) and bioenergy (biofuels, power and/or heat).*



# Video



### Recommendations and Conclusions

- Increasing demand for bio-based products, while climate change is impacting the availability of timber!  
➔ Potential of conflict, but the Pulp and Paper Industry (PPI) is part of the solution!
- The PPI is producing a wide range of bio-based products and green energy out of timber.
- 10 % of the overall renewable energy in Austria is provided by the PPI.
- PPI has still potential for new bio-based products out of timber to **substitute fossil-based products.**
- **To ensure the availability of timber for future generations, we must increase felling volumes, optimize the timber-volume per hectare as well as consistent cascading use.**





**THE FOREST FIBRE-BASED INDUSTRY IS  
A FRONTRUNNER IN DRIVING THE  
TRANSITION TOWARDS A  
CIRCULAR BIOECONOMY**

**Kwizda**

Agro



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**Q & A**