



Le bois, le vecteur de croissance durable finlandais!

**Antti Asikainen, Executive Vice President, Luke;
Chair, Finnish Forest Bioeconomy Science Panel**

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Bioeconomy is a complex playground

ECONOMY

SOCIETY

ENVIRONMENT



The transformation of well-being and work



Security of supply



Technological and economic transitions



Population growth



Climate change



Global tensions and politics



Nature loss and scarcity of natural resources

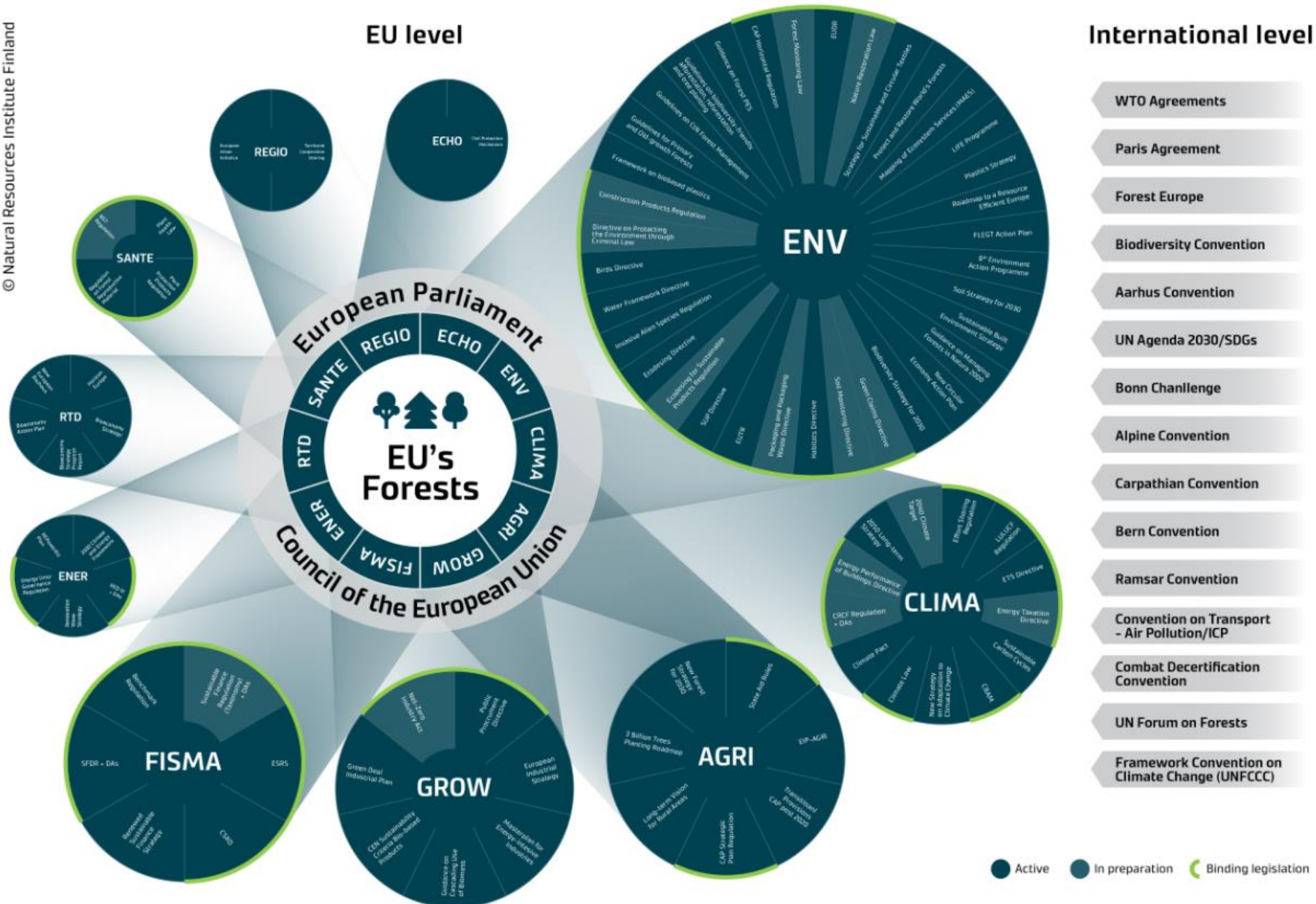


Green transition and energy transition

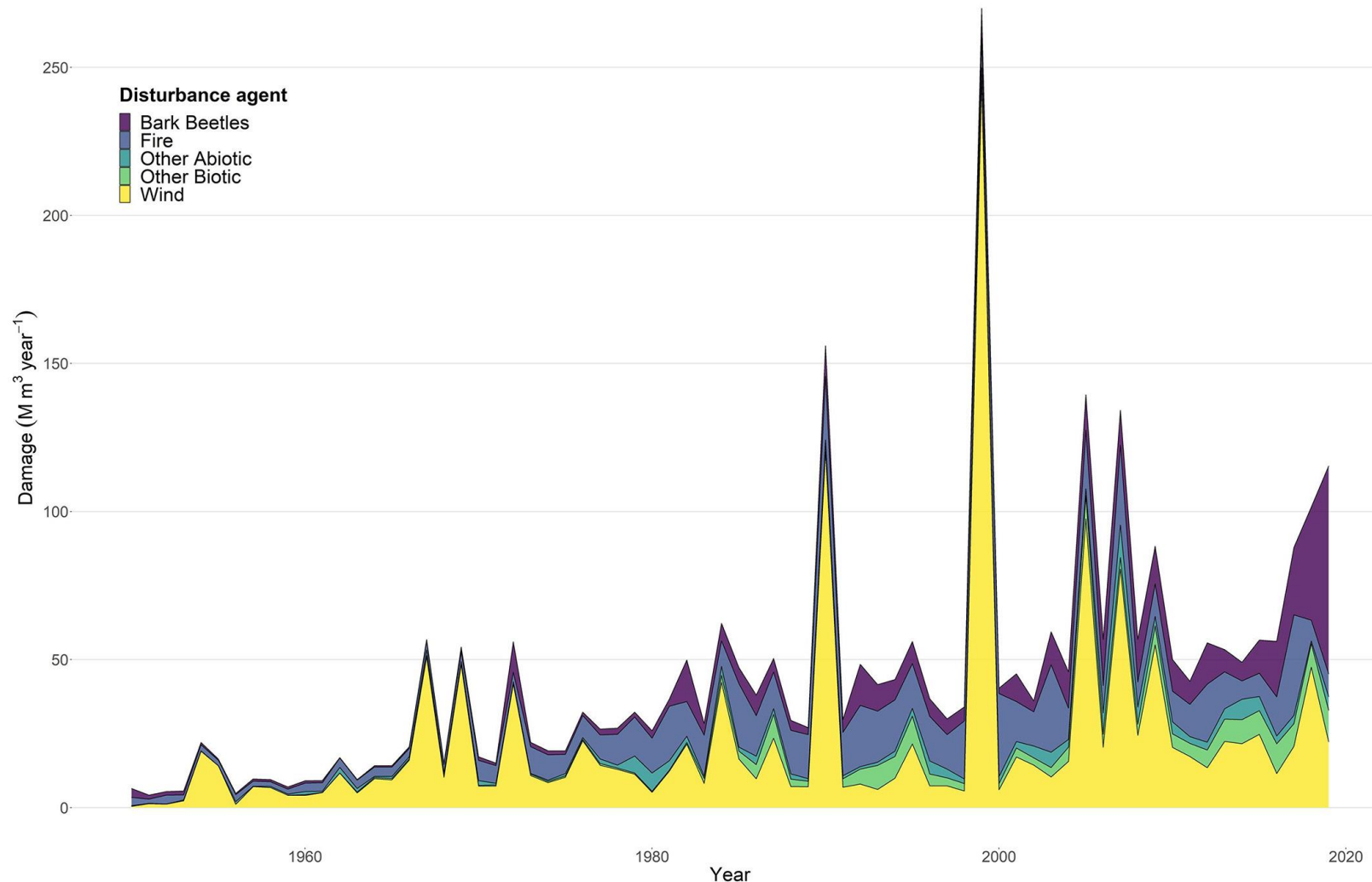
Current EU Forest Policy Environment

The chart is not comprehensive. Legislative documents, such as RED III or Taxonomy Regulation, are typically accompanied by delegated acts by the Commission (DAs), which are not presented separately in the chart. The division of policy instruments into the DGs is indicative. For example, the New EU Forest Strategy was prepared together with DG AGRI, DG ENV, and DG CLIMA. The chart illustrates the situation in May 2024.

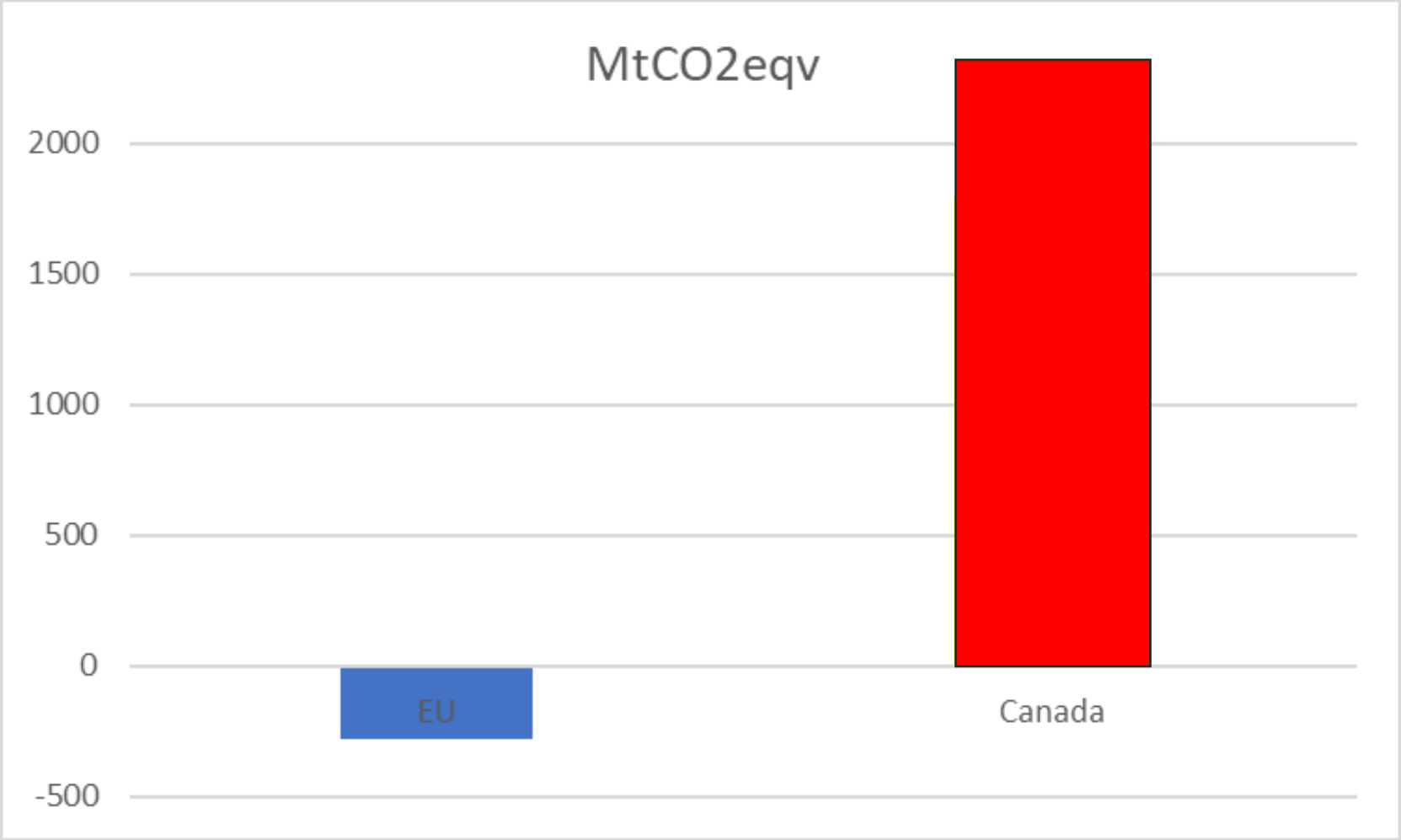
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Forest disturbances increase in EU



Forest carbon sink of EU in 2021 and Canada's forest fire emissions in 2023



Copernicus institute 2024 Canada produced 23% of global wildfire... (yellow bar)
Byrne & al. 2024. Unprecedented Canadian forest fires carbon emissions 2023. (red bar)

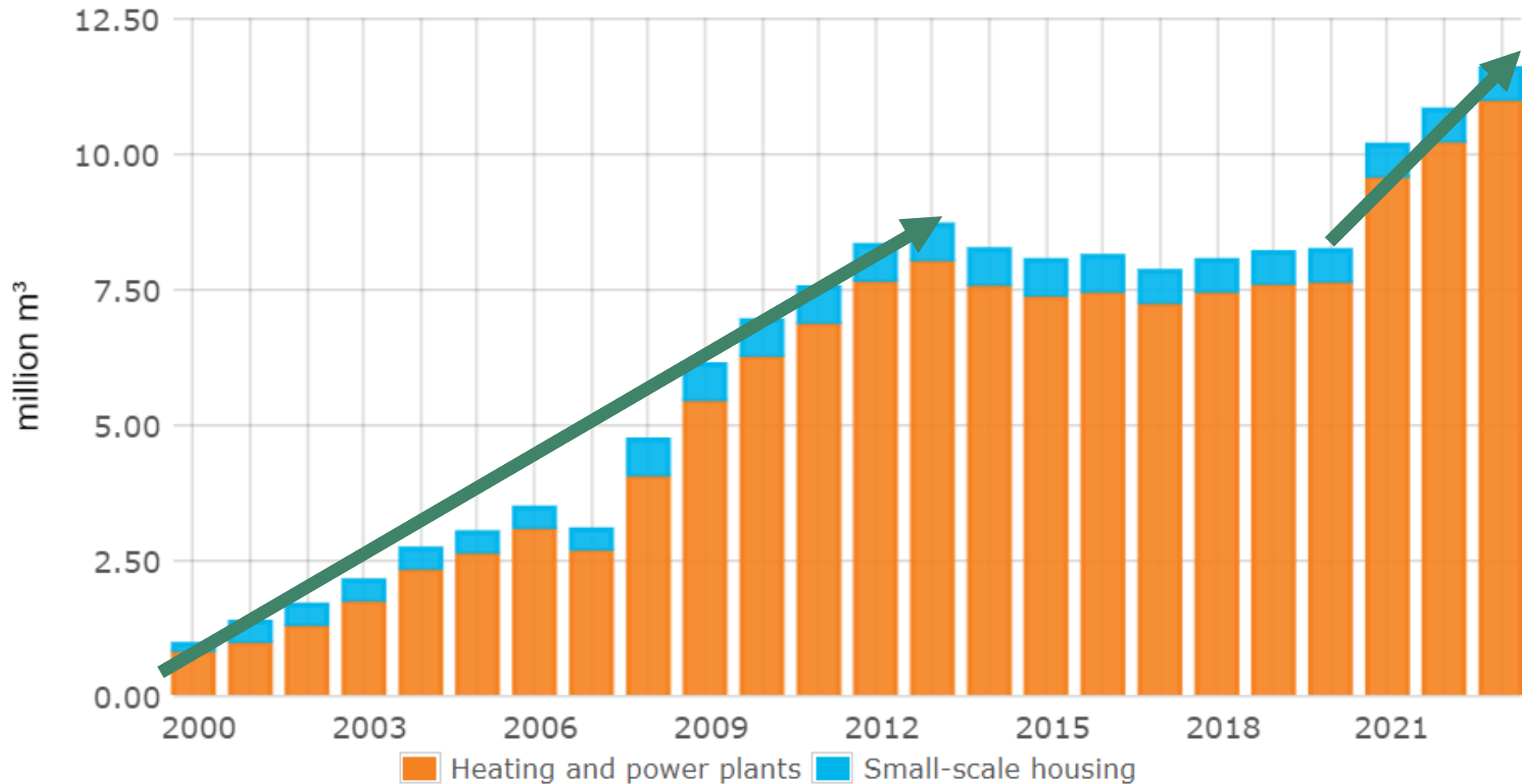




1992-2014 Forest fuel – how to burn water?



1992-2013 Forest chips – how to burn water?



Source: OSF: Natural Resources Institute Finland, Wood in energy generation.

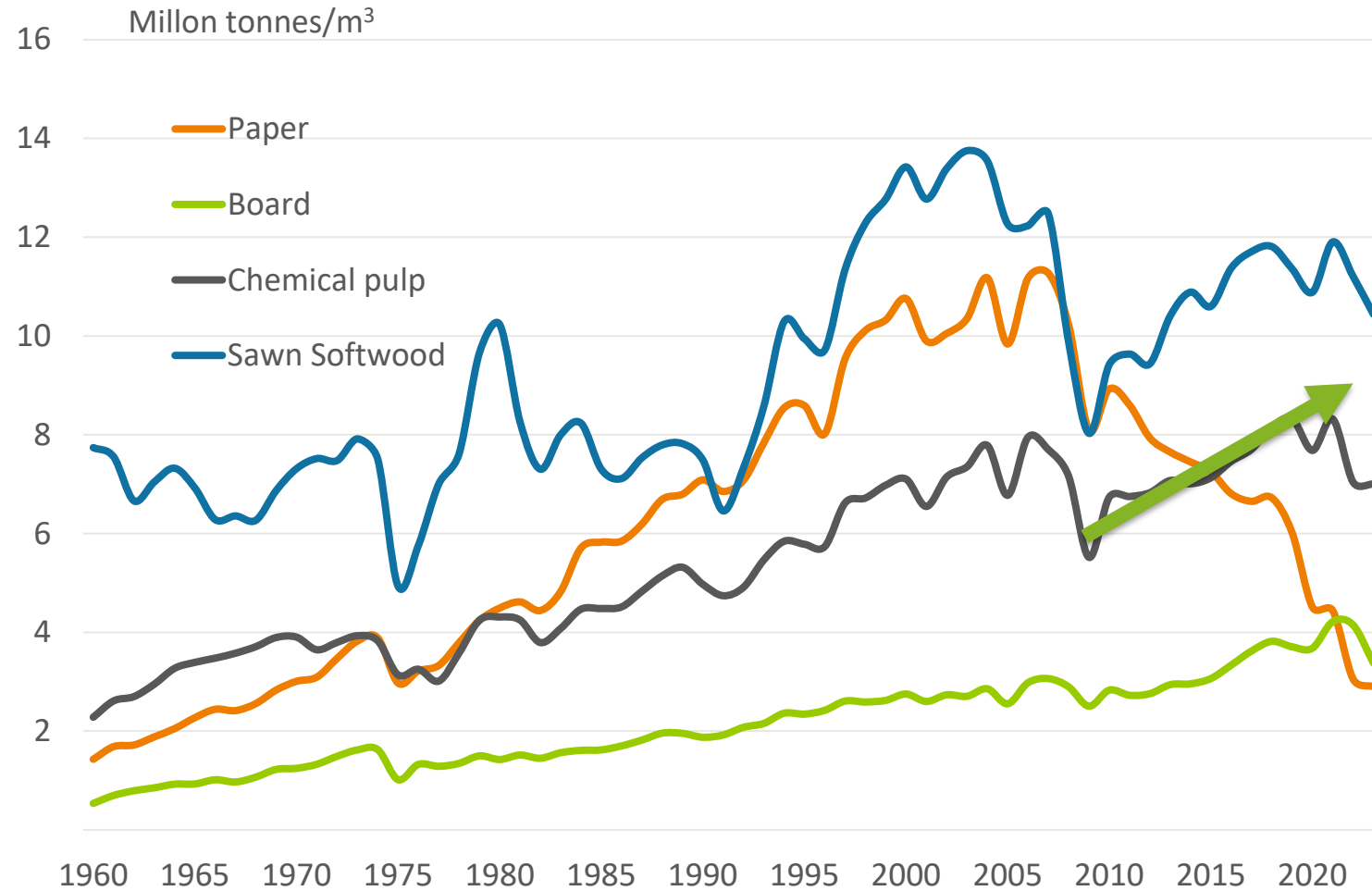


An aerial photograph of a large industrial pulp mill. The facility is characterized by several large, conical piles of yellowish-brown wood chips, some of which are situated within circular concrete basins. A complex network of metal conveyor belts and pipes connects various parts of the plant. In the background, there are several large industrial buildings, including a prominent white structure with a green roof and a tall, slender smokestack. The sky is overcast with grey clouds. The text "2015-2022 Resurrection of pulp industry" is overlaid in white on the center of the image.

2015-2022 Resurrection of pulp industry



Forest industry production volumes since 1960



Production		2023
Paper		2 905
Paperboard	1000 t	3 380
Chemical Pulp	1000 t	7 001
Sawn softwood*	1000 m ³	10 437
Change from prev. year		
Paper		-5,0 %
Paperboard		-18,6 %
Chemical Pulp		-0,5 %
Sawn Softwood		-6,8 %

*estimate

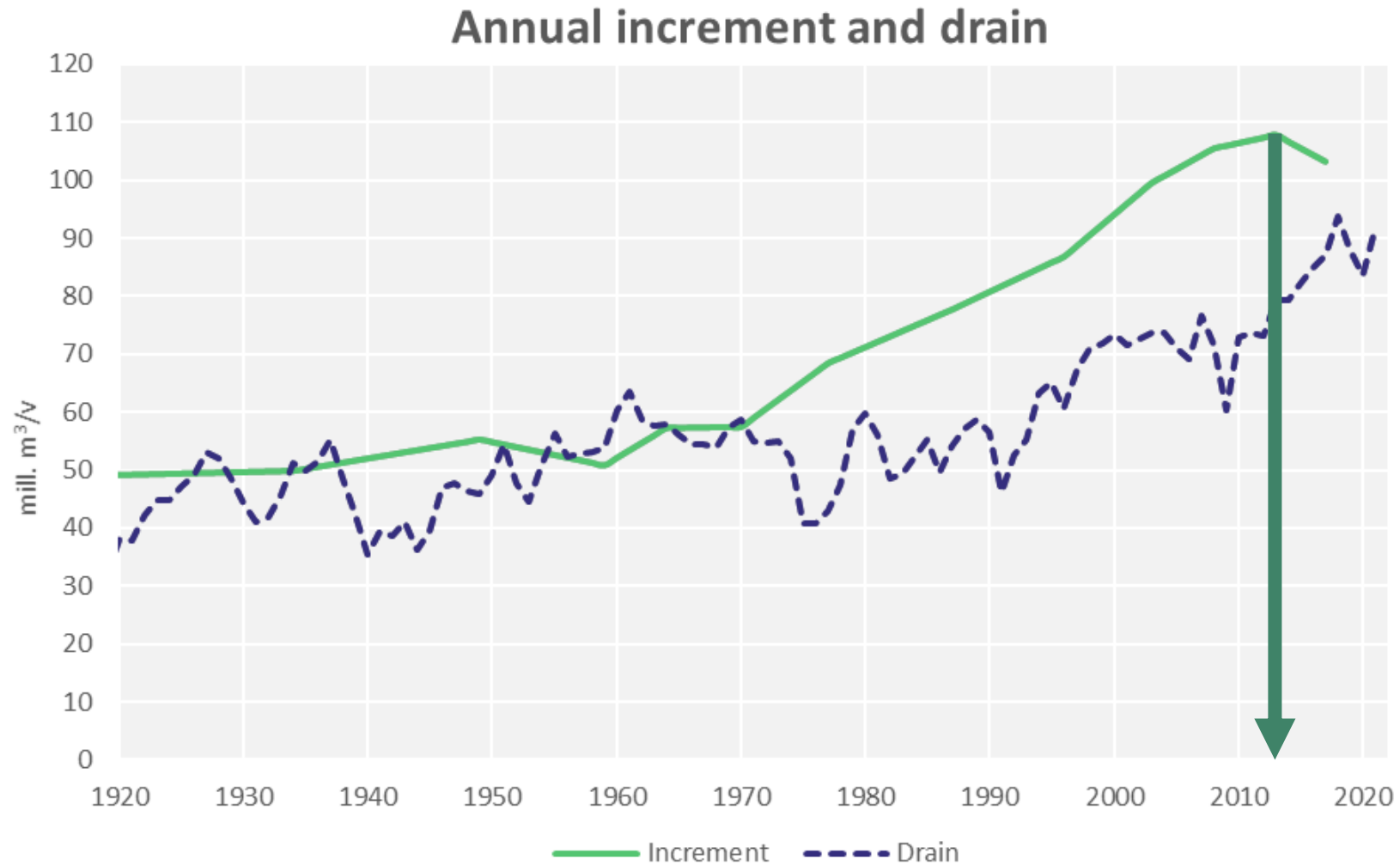
2022- Era of value added products



The Finnish Bioeconomy Strategy



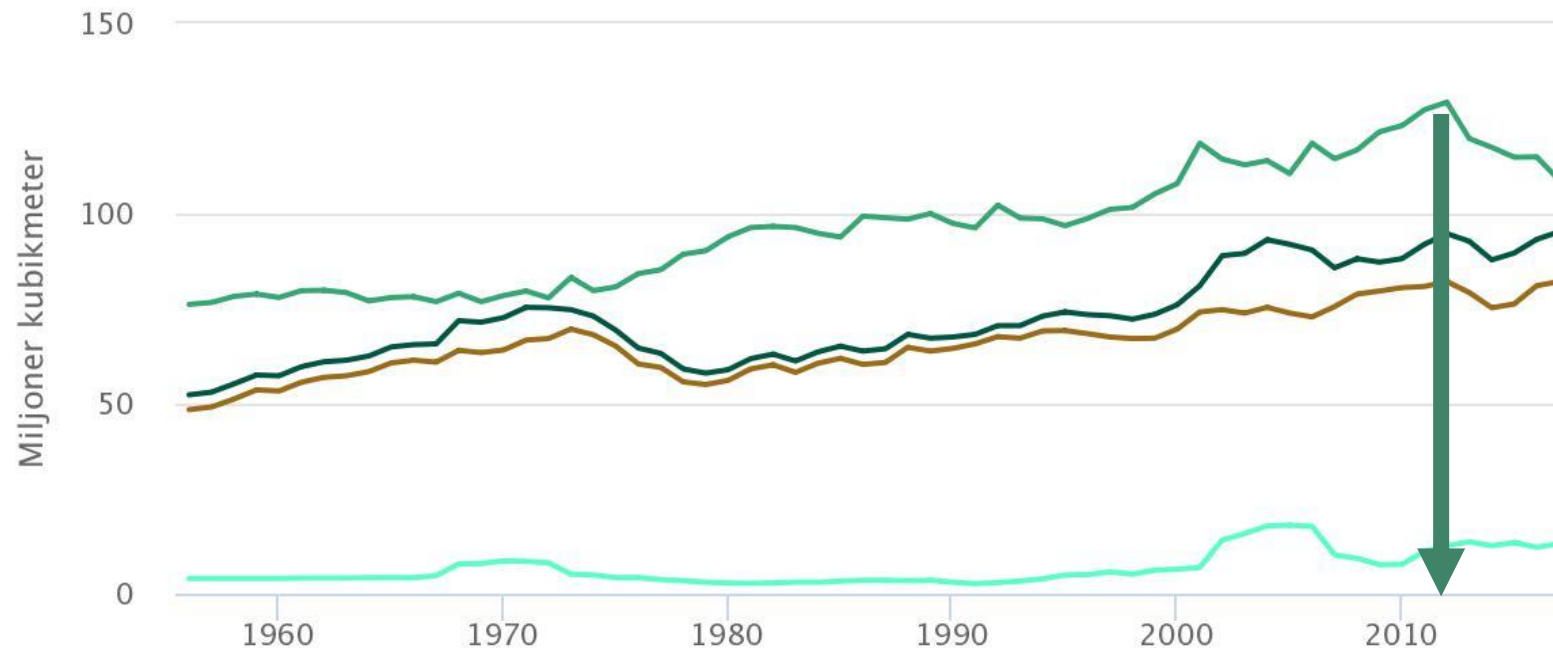
Forest growth in Finland...



Lähde: Luke



...Sweden



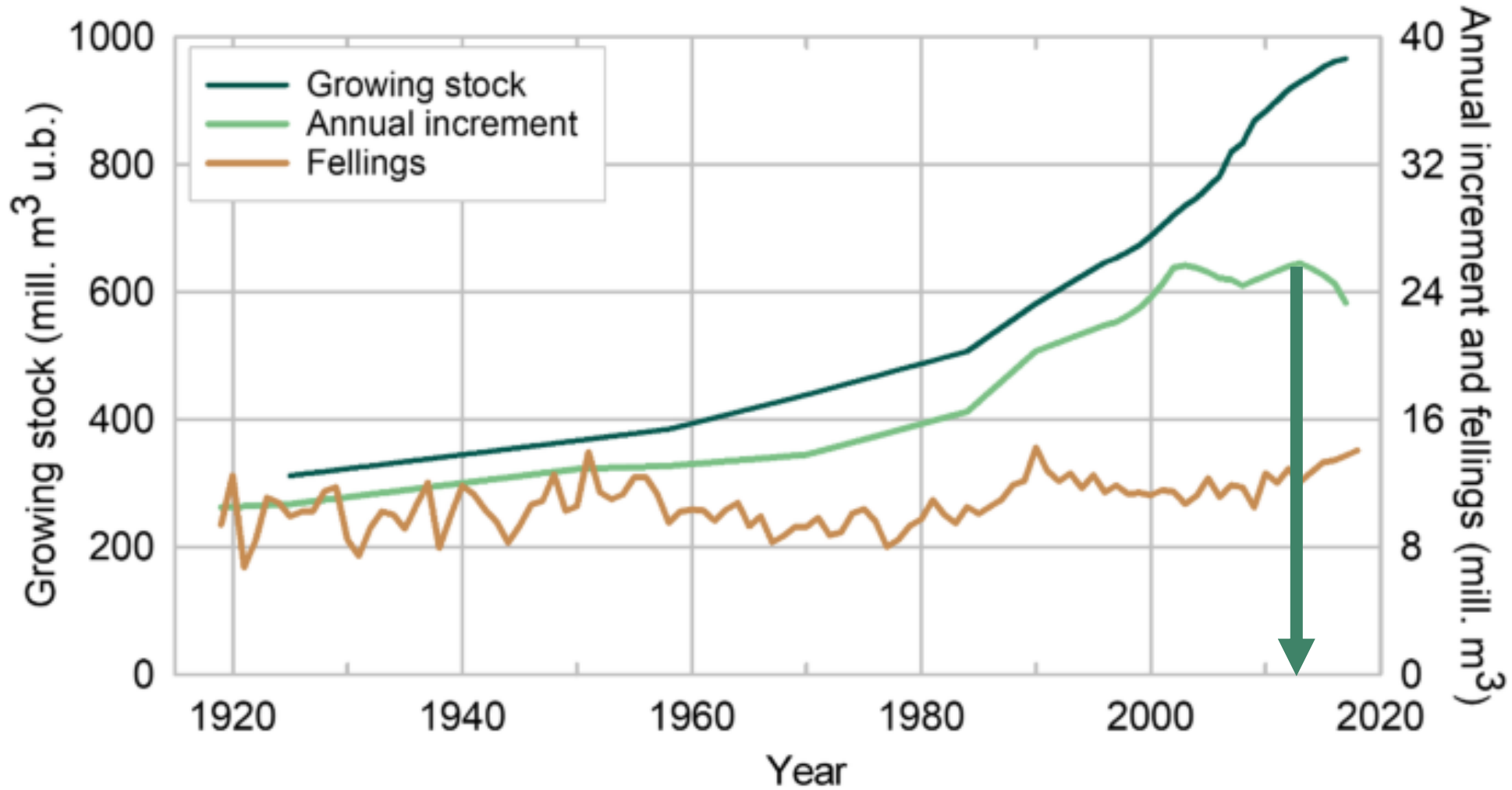
Tillväxt och avverkningar i skogen 1956-2017

- Total tillväxt
- Total avgång (avverkning och naturlig avgång)
- Avverkning av levande träd
- Naturlig avgång

Lähde: <https://www.slu.se/nfi>



...and Norway

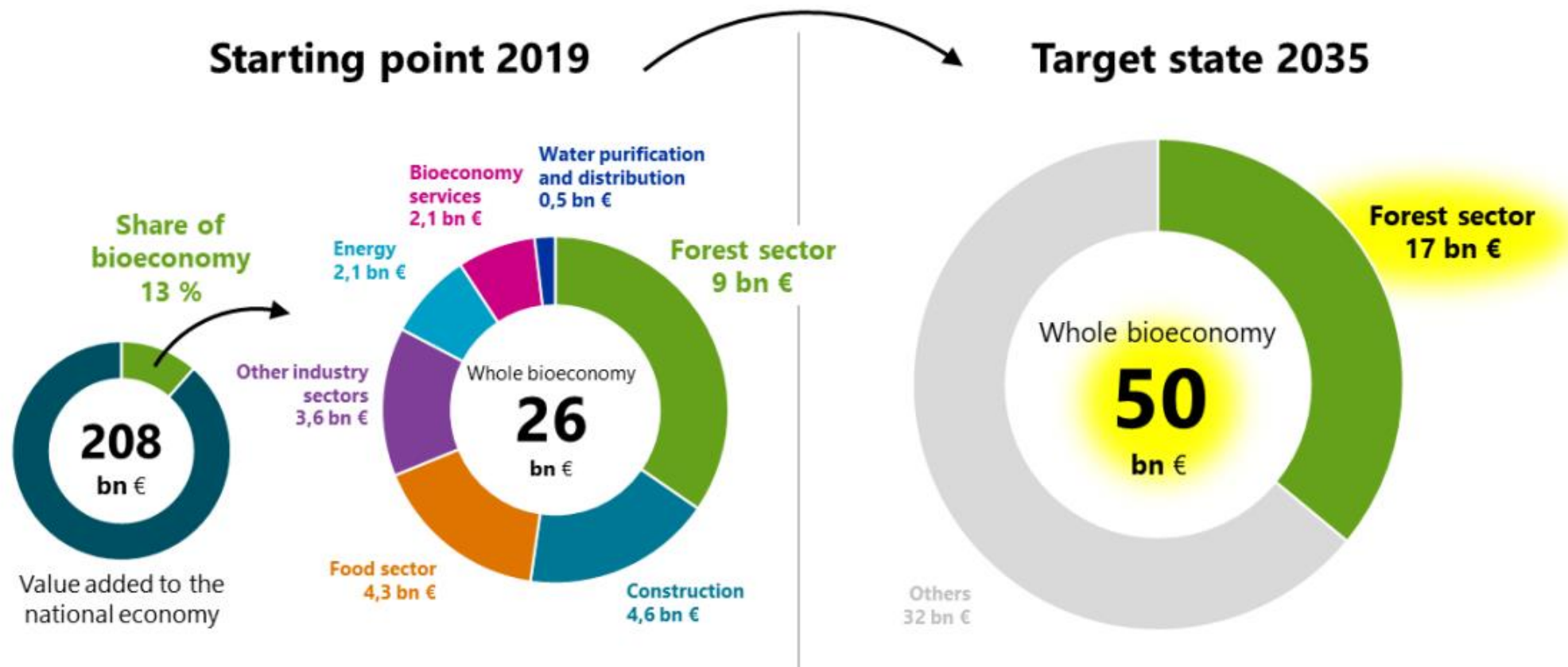


Lähde: <https://www.ssb.no/en/statbank/table/06289/>



Bioeconomy strategy aims at double value added

Target state of forest sector 2035



Forestry, mechanical and fibre process



MECHANICAL WOOD PROCESS

FIBRE PROCESS

Wood

By-products

Pulp

By-products

CLT

Sawn timber

Hemicellulose

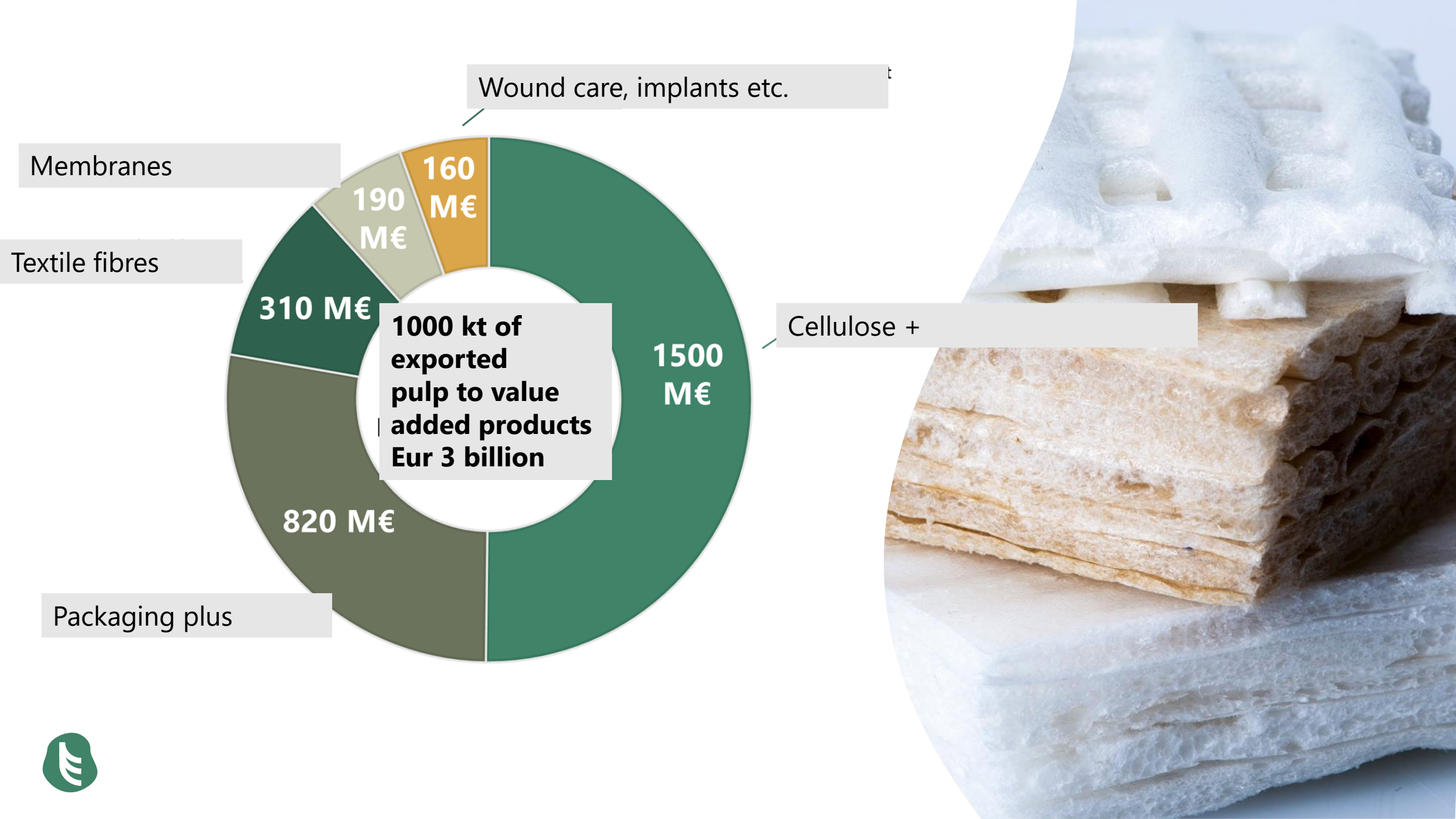
Packaging materials

Textile fibre

Paper

Tissue paper

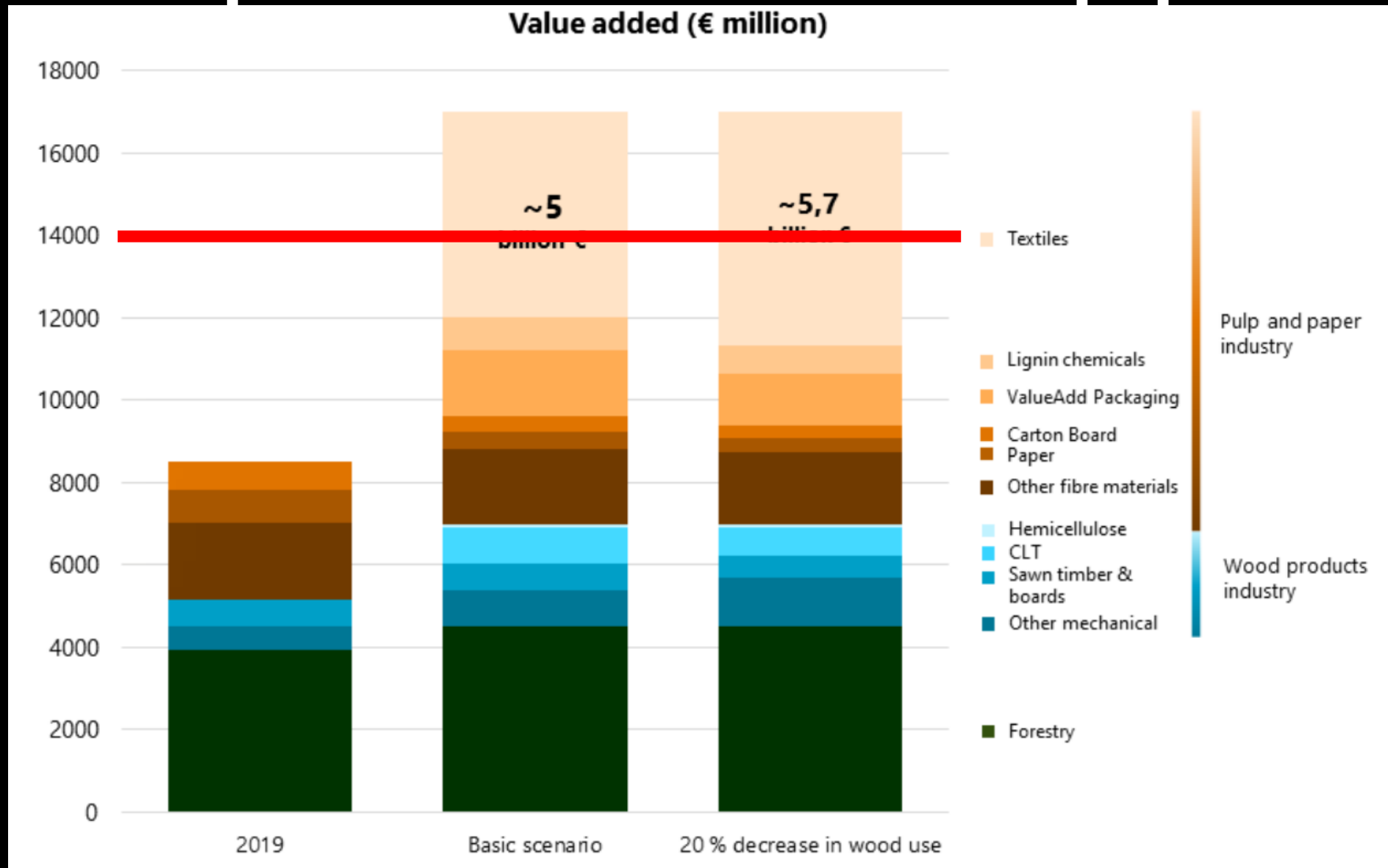
Lignin





**40% (1 600 kt) lignin to products
€ 1,5 billion value added**

Pulp to textile fibres – “New paper”



Solutions for value adding production

Metsätaloustuotteiden arvonlisäys ja arvioitu potentiaalinen tuotantomäärä

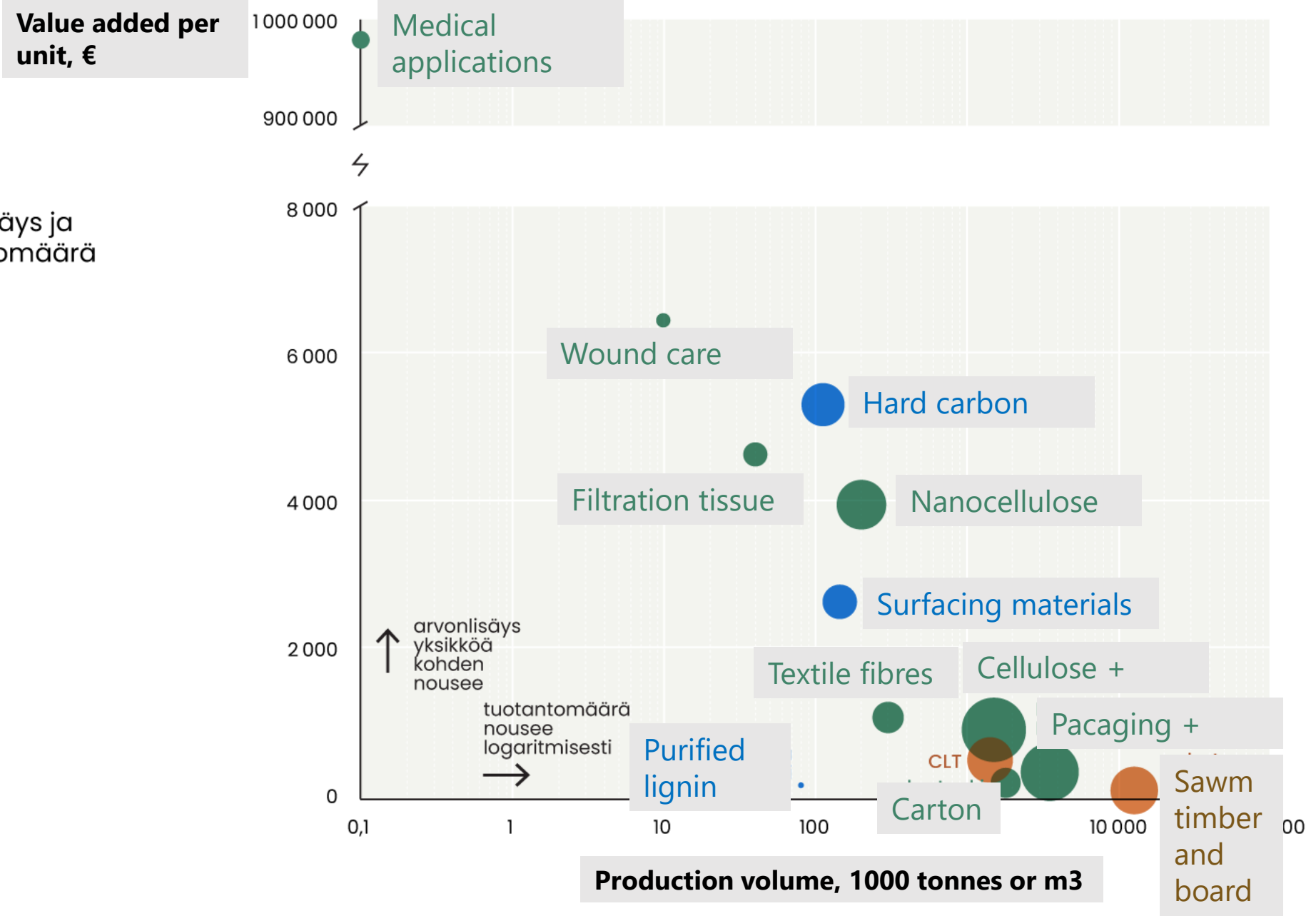
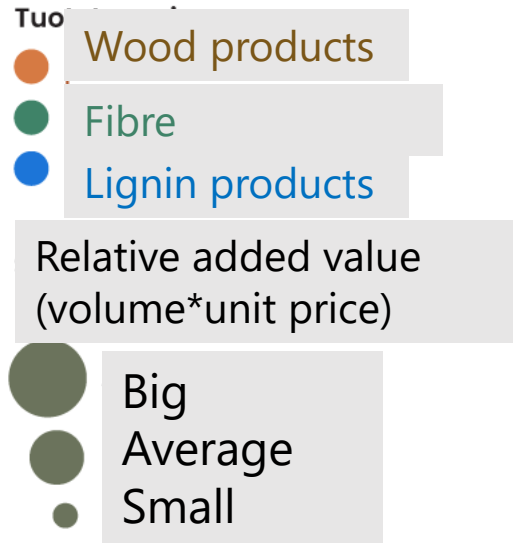


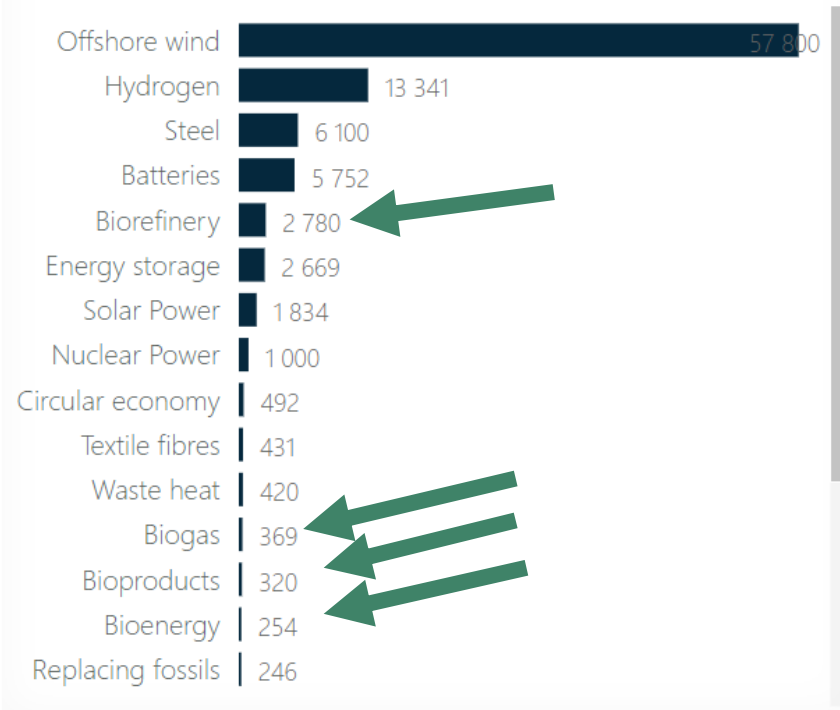


Photo by William DeHoogh on Unsplash

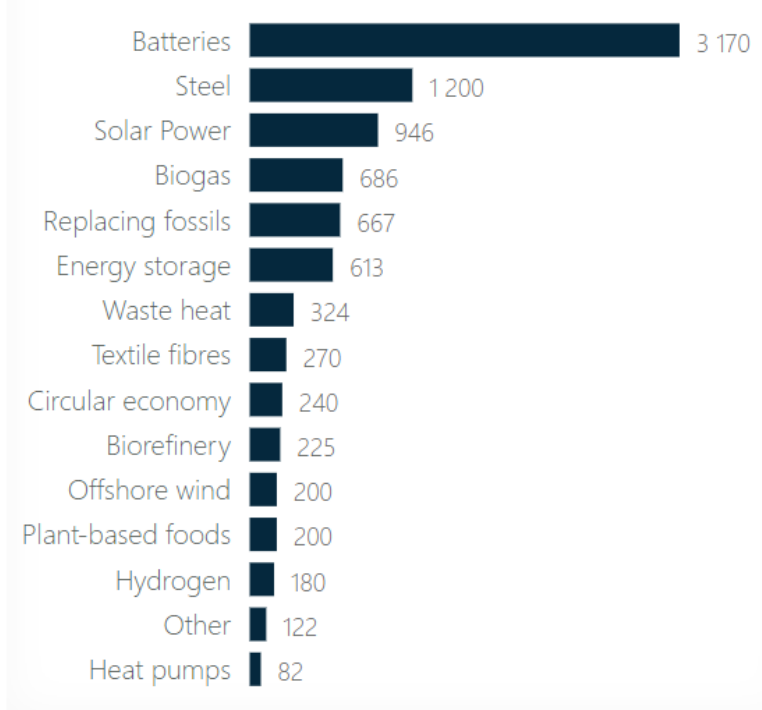
Energy transition reshapes land use

Wind dominates green investments, Finland

Investment amount (M€) by theme



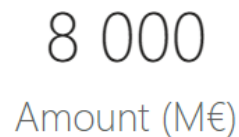
Jobs by theme



On-shore wind investments



Transmission grid investments



Impacts on land use

- Income for landowners as land rent
- Transfer of farmland and forest land to energy production and transfer
- Intensive studies going on about the impacts of mammals, birds and insect populations
- How to ensure just transition?



Case Finland: Costs of land and waters restoration

- Total cost by 2050 13-19 billion €
- Peatlands 2-5 billion €
- Sea 5-7 billion €
- Inland waters 2-5 billion €
- Forests 1-4 billion €



More value added from forest

Lintunen, J., Kohl, J., Buchert, J., Asikainen, A., Jyske, T., Maunuksela, J. & Lehto, J. 2024. 2035 Vision: Doubling the Value Added of Finland's Forest sector. Natural resources and bioeconomy studies 15/2024. Natural Resources Institute Finland, Helsinki. 21 p.

Österberg, M., Karjalainen, M., Lintunen, J., Tammelin, T., Asikainen, A., Vakkilainen, E., Toivonen, R., Virta, P. Henn, A., Nuutinen, E-M., Kohl, J., Hassinen, J. 2024. Lankusta lääkkeisiin - Tuoteportfolion arvonnoususta uutta arvonnisää metsäsektorille. Metsäbiotalouden tiedepaneelin raportti 1/2024. Metsäbiotalouden tiedepaneeli. Helsinki. 36 s





The Finnish Forest Bioeconomy Science Panel

The Finnish Forest Bioeconomy Science Panel offers independent and interdisciplinary research information on the sustainable and versatile use of Finland's forests. The panel strengthens the knowledge base for decision-making and supports the development of forest-based innovations [Metsatiedepaneeli.fi](https://metsatiedepaneeli.fi)