

# Inquiry for a national strategy for a growing bioeconomy

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# The purpose of the inquiry

Promote	Contribute	Create
Promote sustainable growth, innovation and employment throughout the country	Contribute to environmental and climate benefit	Create enhanced national security of supply and reduced vulnerability in society

A national strategy for a growing bioeconomy - a tool for the green industrial transition

# How?

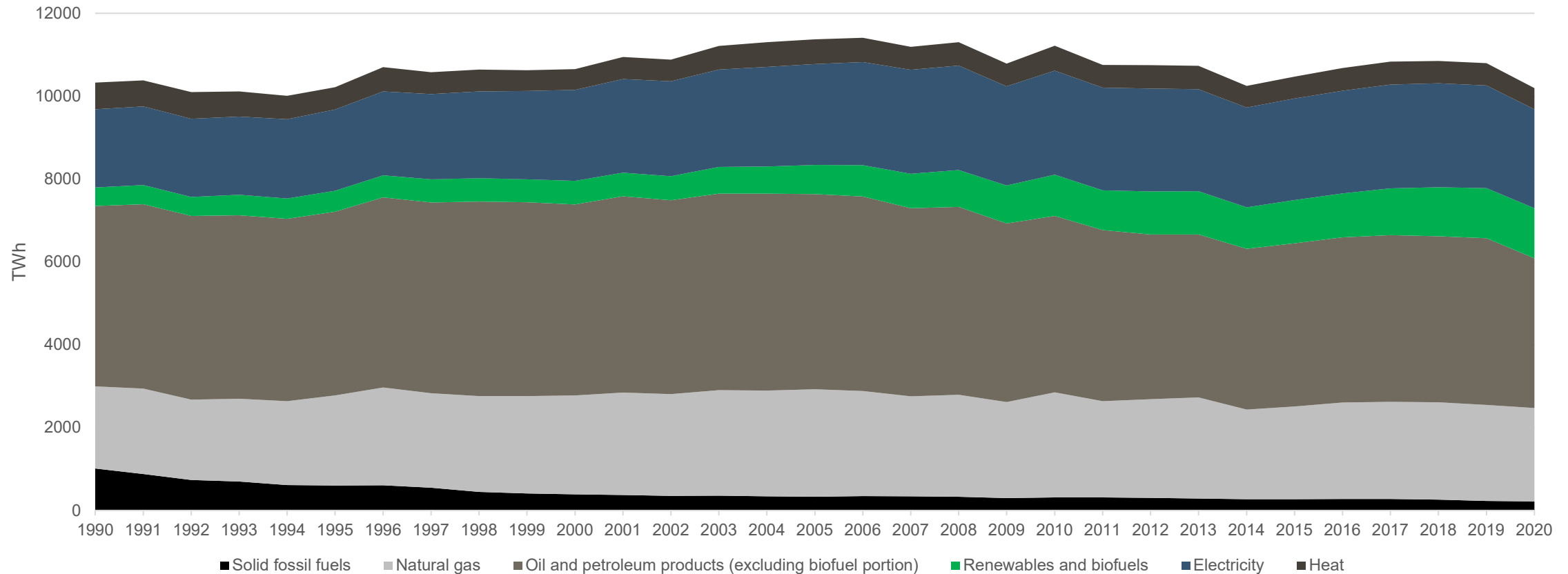
Develop proposals for a national strategy for a sustainable, competitive and growing bioeconomy

*Report 31st October, 2023*

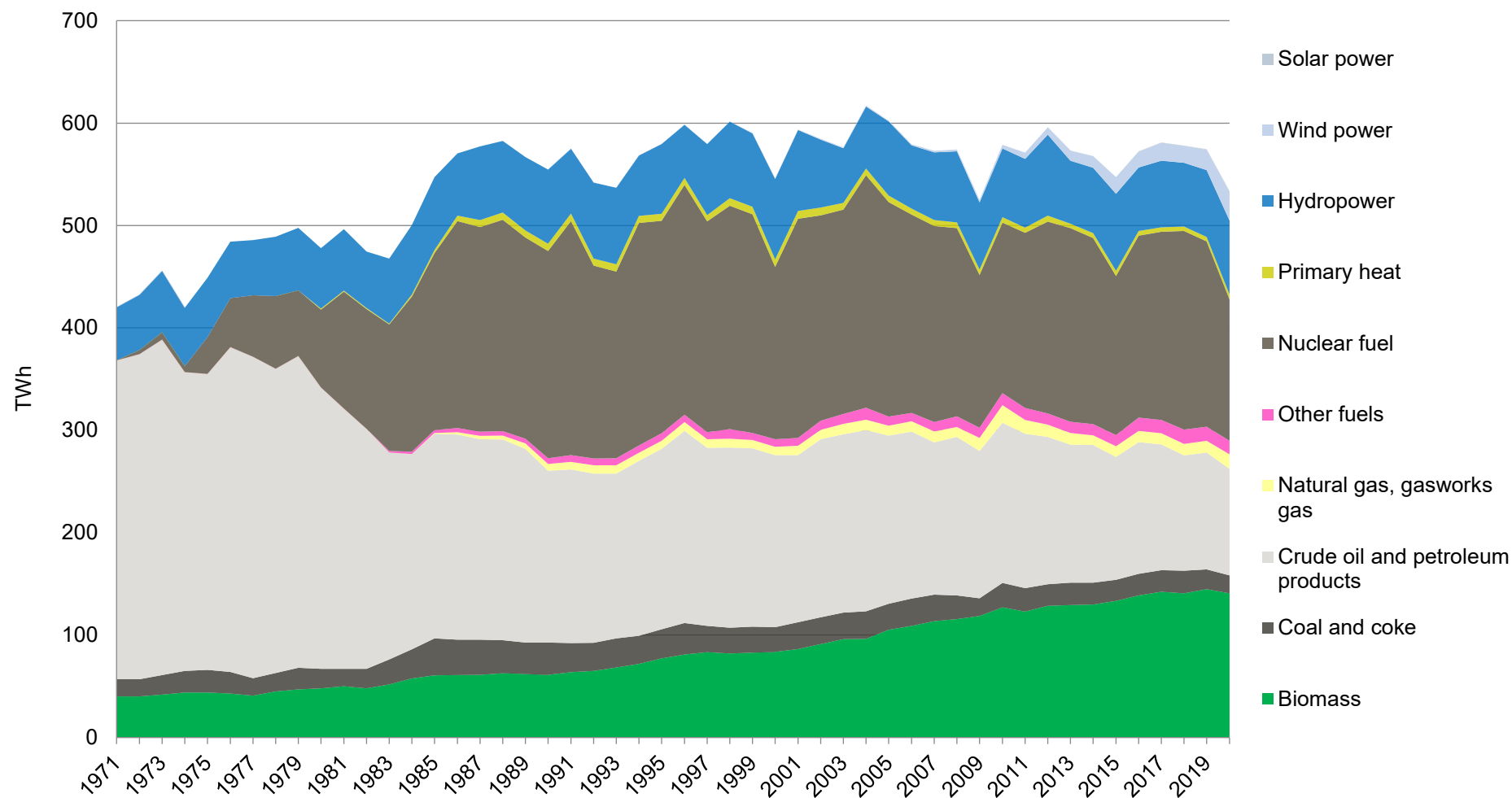
Propose measures promoting effective production of liquid biofuels, based on domestic raw materials in Sweden

*Reported 29th March, 2023*

# Final energy consumption in Europe



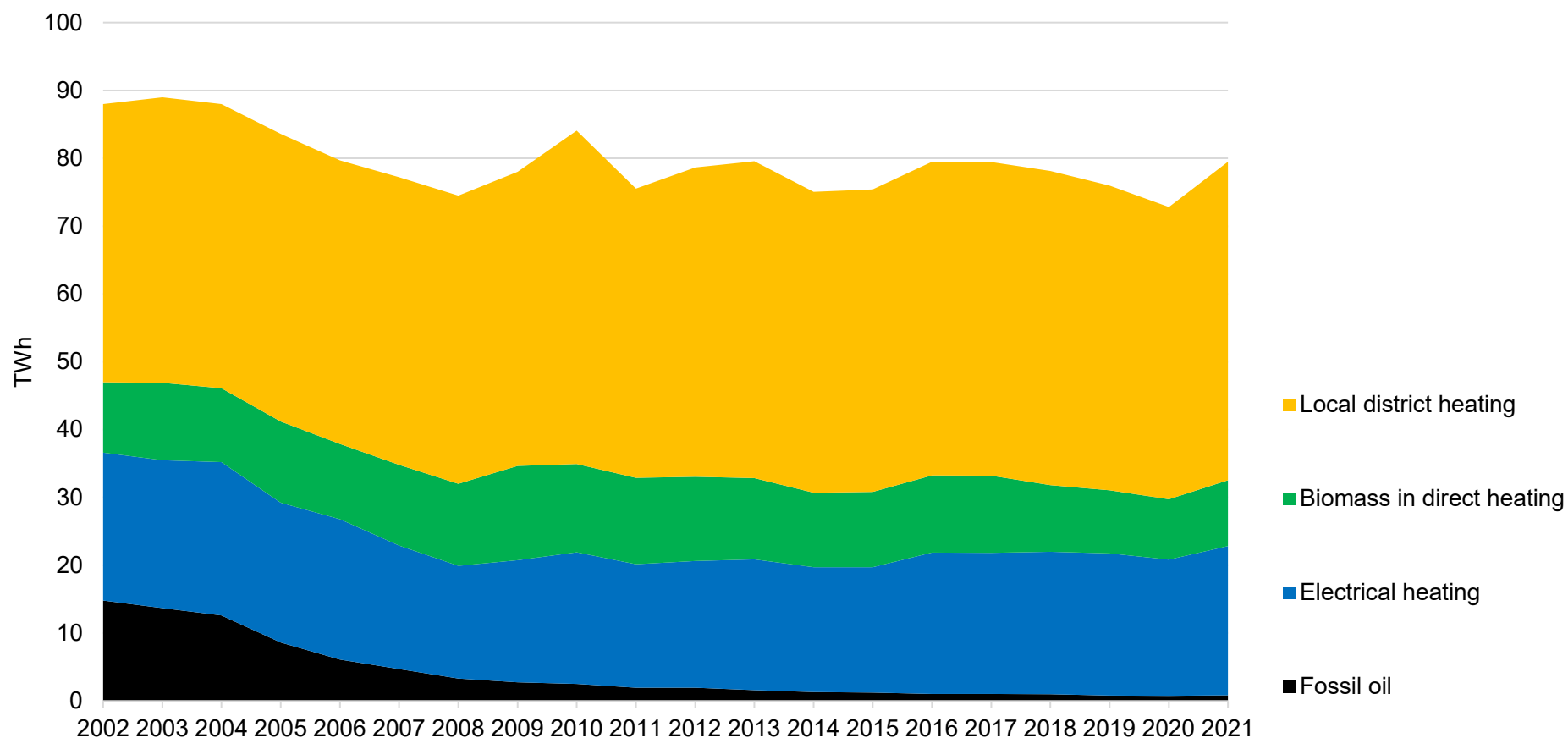
# Final energy consumption in Sweden



Source: Swedish Energy Agency

**A national strategy for a growing bioeconomy - a tool for the green industrial transition**

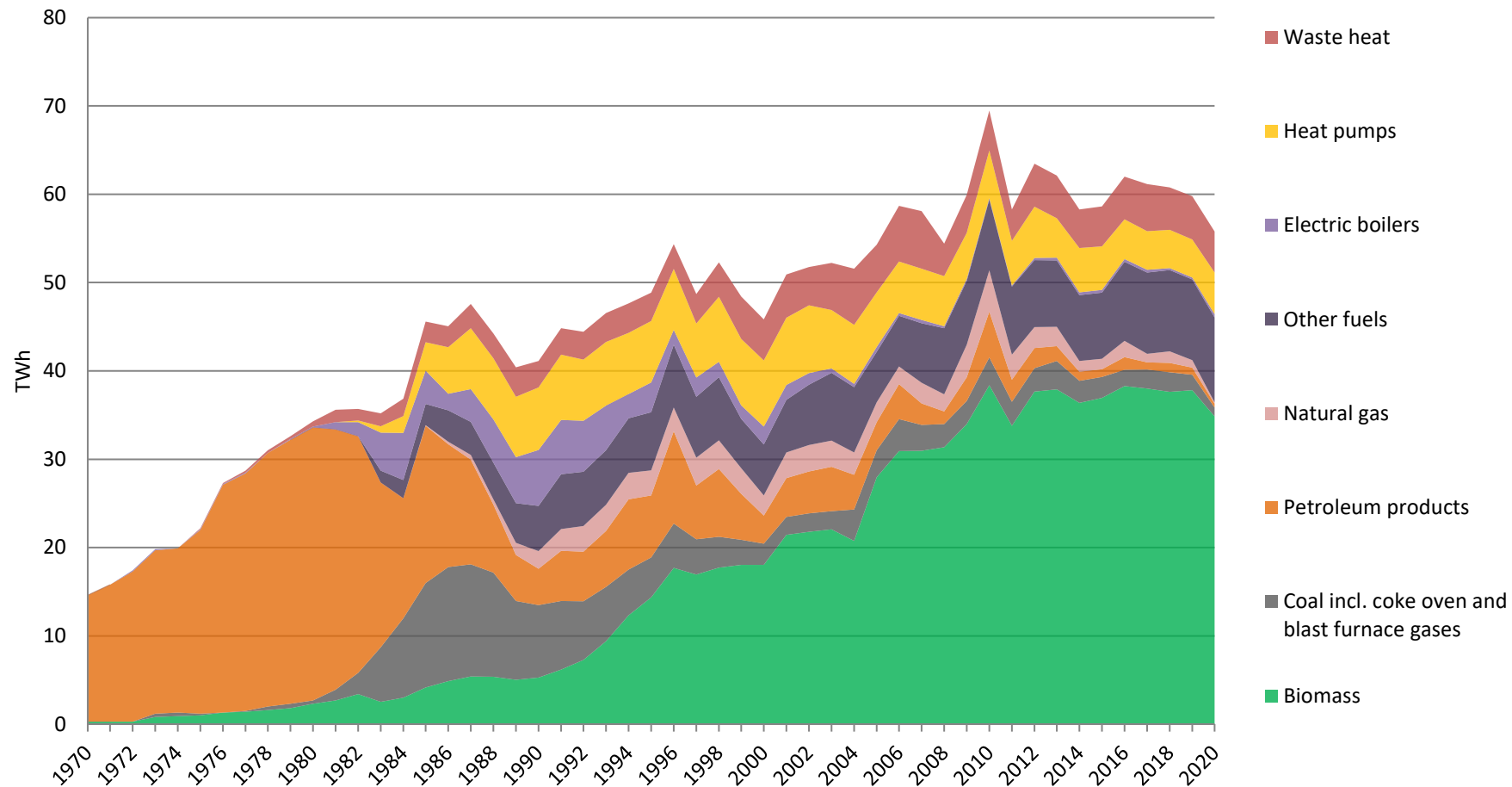
# Importance of district heating for heat consumption in Sweden



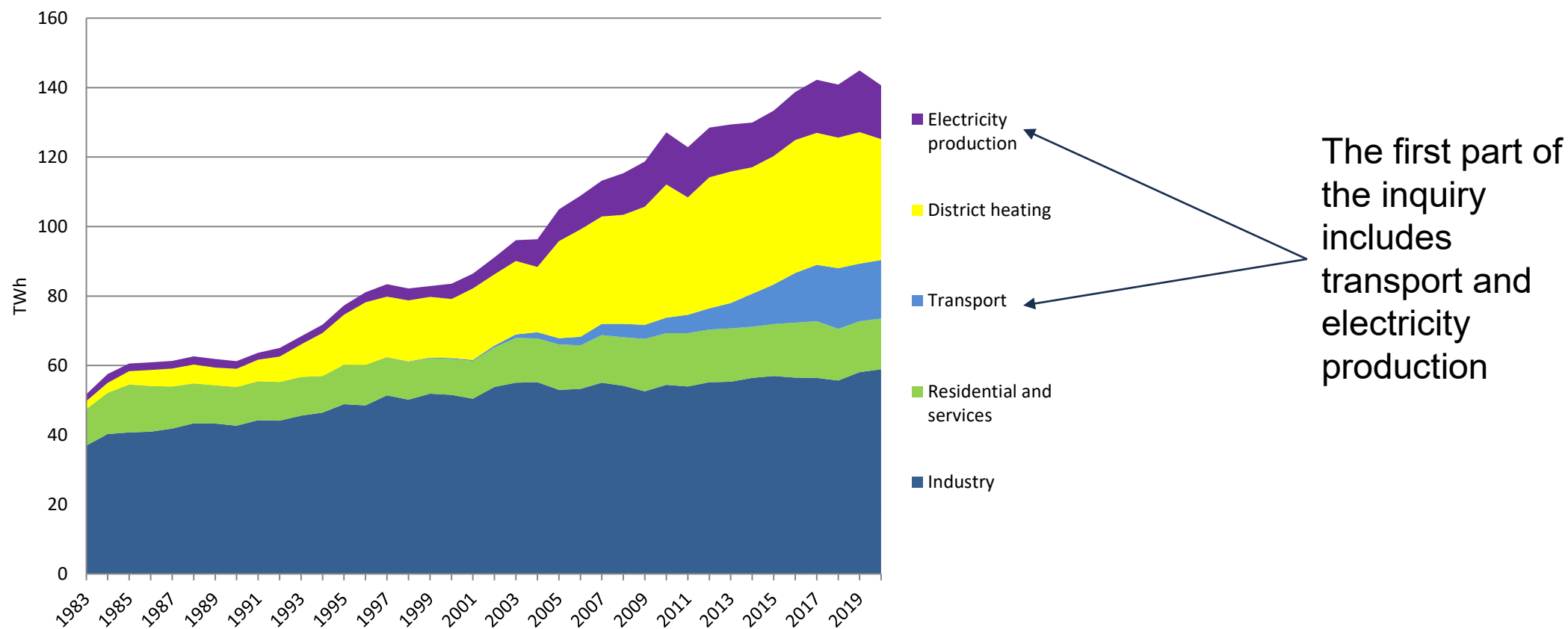
Source: Swedish Energy Agency

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# Energy used in district heating in Sweden

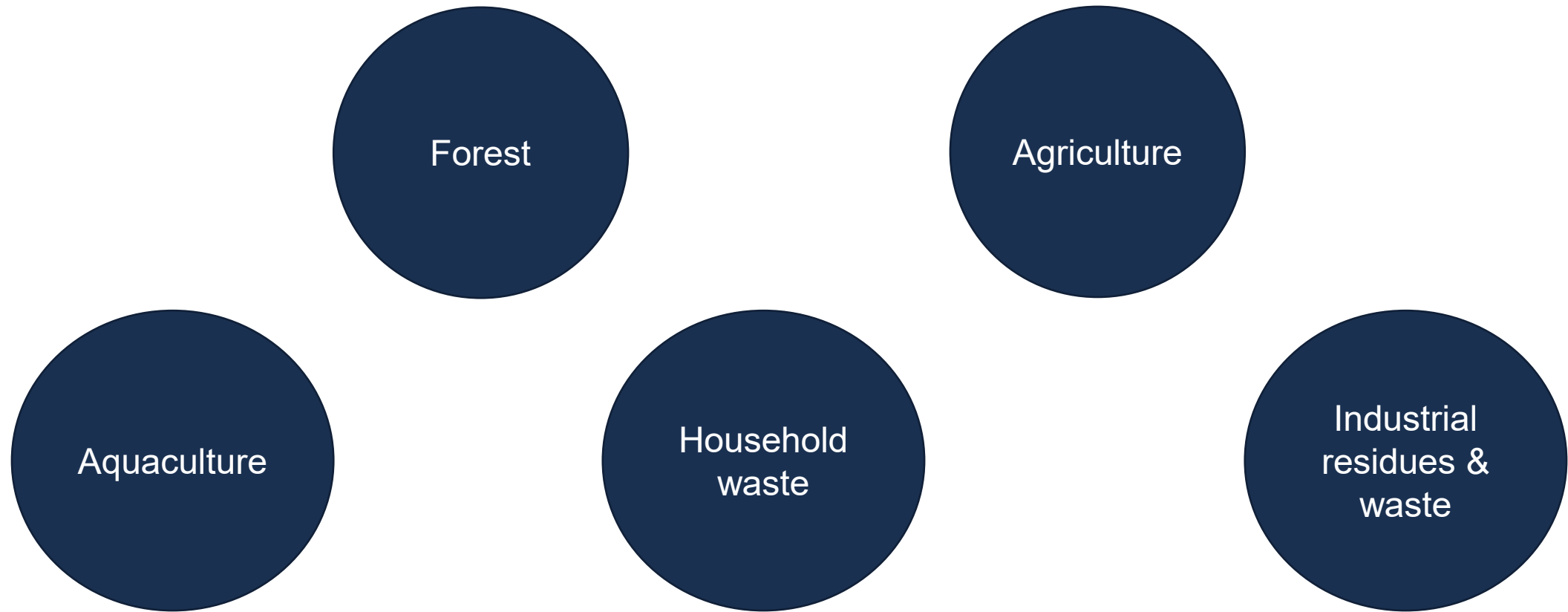


# The use of biomass per sector in Sweden

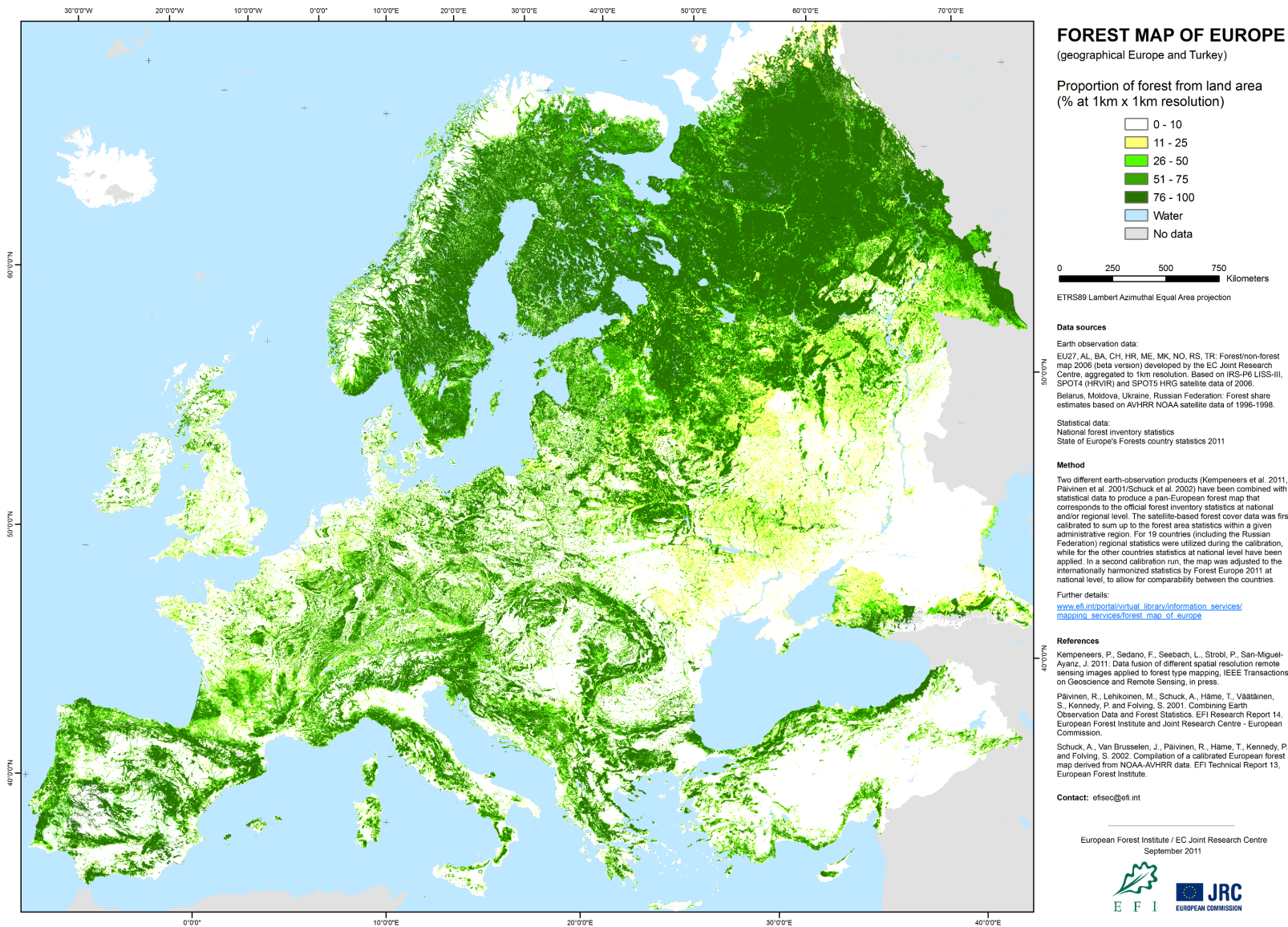




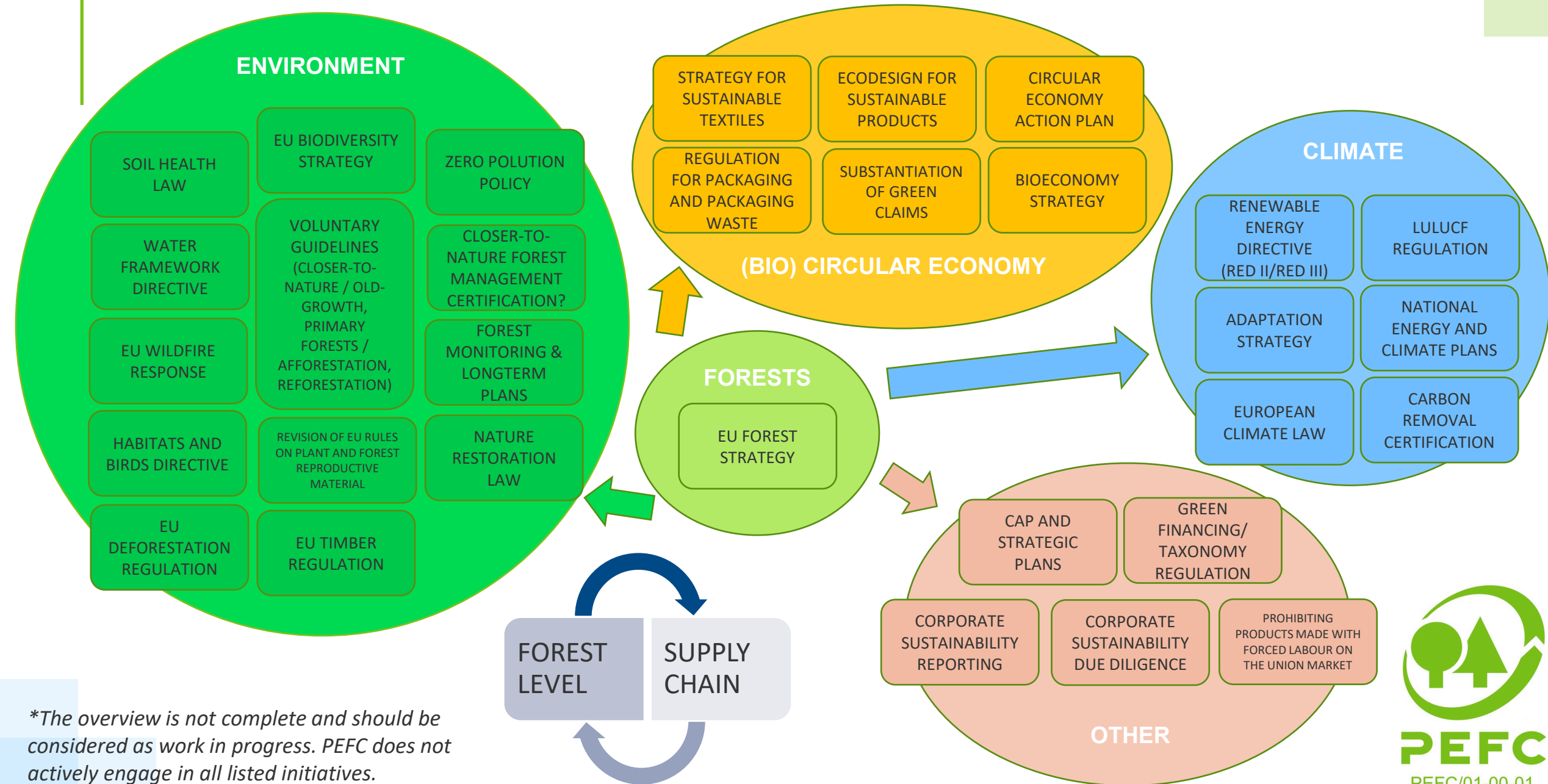
# Diverse availability of biomass



# Forest in Europe



# EU POLICIES IMPACTING FORESTS IN THE EU

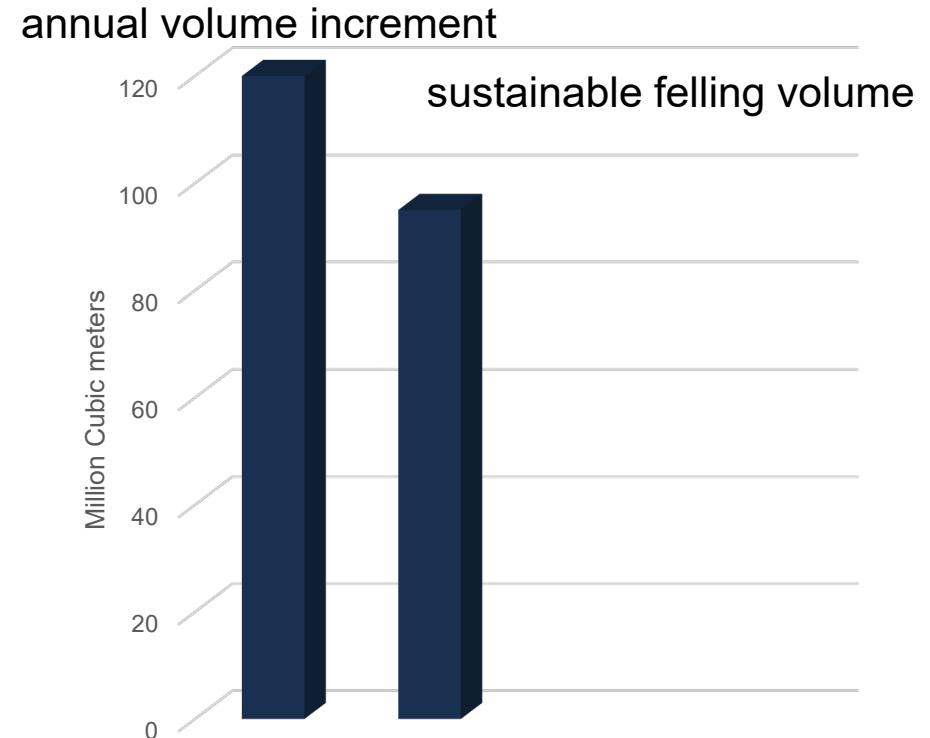


*\*The overview is not complete and should be considered as work in progress. PEFC does not actively engage in all listed initiatives.*

# Forest growth and sustainable harvest levels

Mean annual volume increment 2016 (average) was **120 million m<sup>3</sup>**.

Highest annual sustainable felling volume until 2035 will be **95– 100 million m<sup>3</sup>**



# Potential of harvest residues as bioenergy from Swedish forest

**Annual use of harvest residues for the period 2016-2020 compared to potential annual use for the period 2025-2034 under four scenarios.**

**Potential on forest available for wood supply with deduction according to the recommendations from the Swedish Forest Agency.**

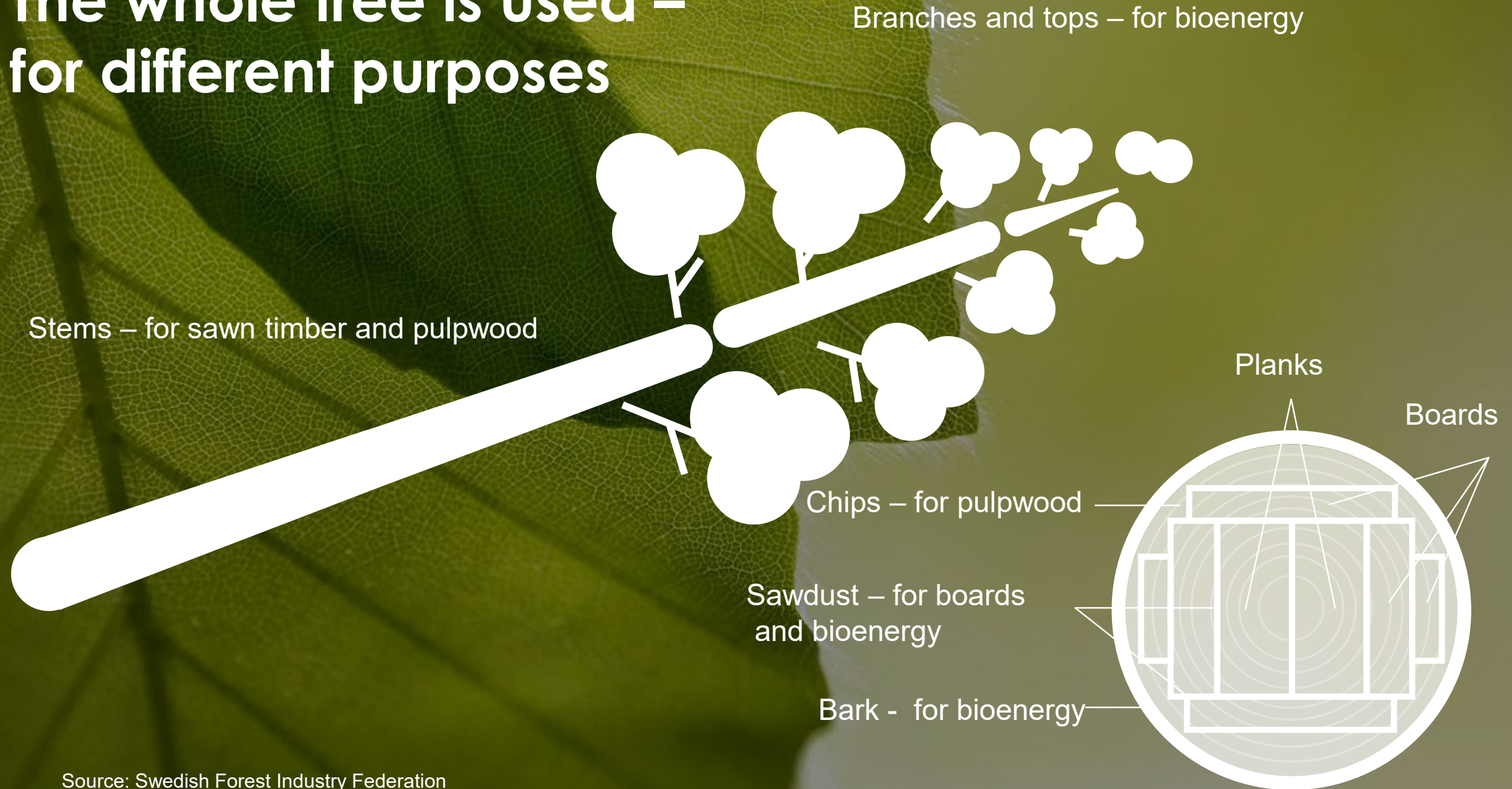
**Total potential without deduction within brackets.**

**Numbers in TWh.**

	Current annual use	BAU potential harvets	Focus Climate adaptation	Focus Diversity	Focus Growth
Sweden	8,7	40,2 (60,8)	37,4 (56,9)	28,5 (42,7)	39,8 (62,6)



# The whole tree is used – for different purposes





# The forest as a renewable resource

## Lignin products

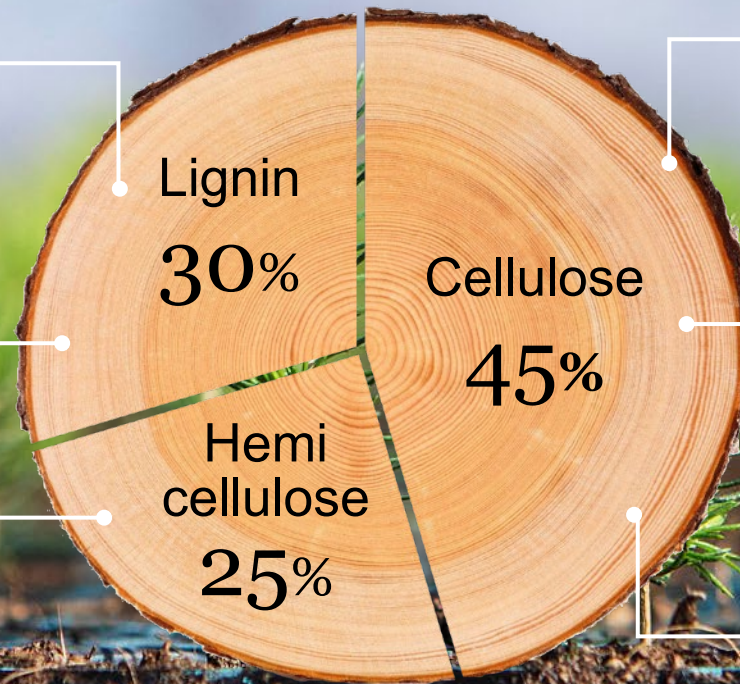
- Carbon fibre
- Vehicle fuels
- Adhesives and binders

## Bark

- Specialty chemicals
- Food additives

## Hemi products

- Oxygen barriers
- Birch sugar
- Plastics and chemicals



## Paper

- Tissue
- Specialty paper
- Nappies and sanitary pads

## Textiles

- Viscose
- Lyocell
- New processes

## Composites

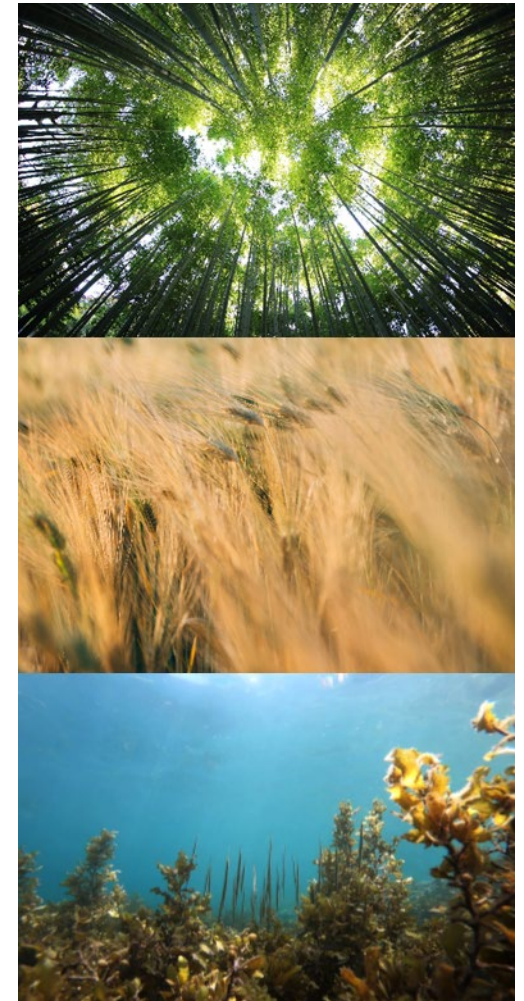
- Biocomposites
- Hybrid composites

# The Bioeconomy in the EU

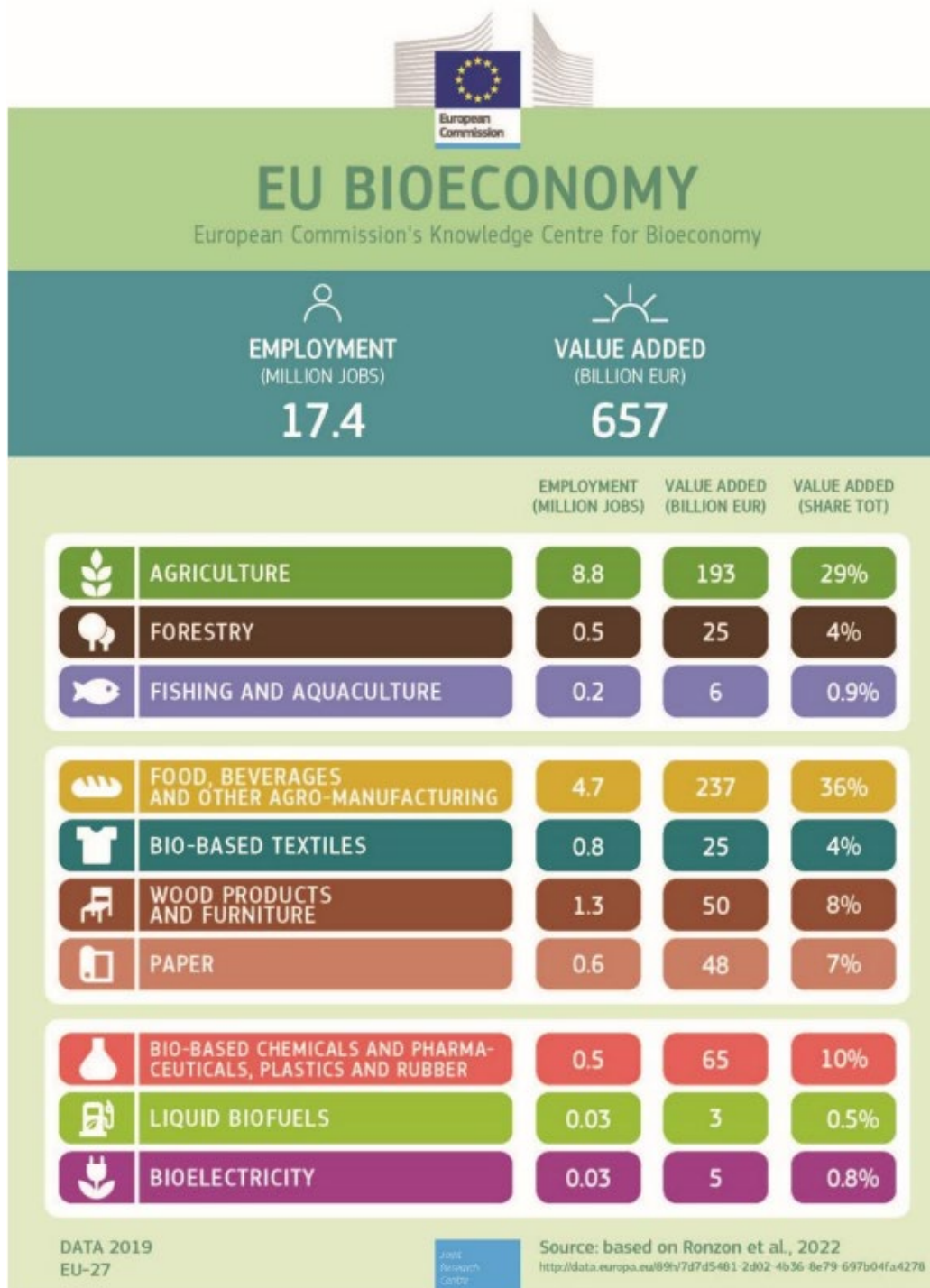
EU's understanding of the Bioeconomy:

**“All sectors and associated services and investments that produce, use, process, distribute or consume **biological resources** (animals, plants, micro-organisms, including **organic waste**), including ecosystem services”.**

- **Ecosystem services** on land and sea
- Primary **production** systems - agriculture, forestry, aquaculture / fisheries – incl. **waste/side streams**
- Food, feed, fibre, **bio-based industry**, fuels and bio-energy







# A key sector of the EU's economy

- **8.3%** of the EU's workforce and **4.7%** of GDP
- Agriculture and the manufacture of food, beverage and tobacco provide **65%** of the total value added
- The bioeconomy's share in GDP (10.4% for EU-28 in 2020) + labor force is much higher, when including **bioeconomy services** (e.g. nature tourism, transport + trade of biobased goods, education and research)
- **High job creation potential**, in rural, coastal and urban areas, through the growing participation of primary producers and deployment of bio-based solutions

Source: European Commission, 2023

# European bioeconomy policy development

2012



**Communication on Bioeconomy**

2017



**Review of Bioeconomy Strategy**

2018



**Updated Bioeconomy Strategy**

2022

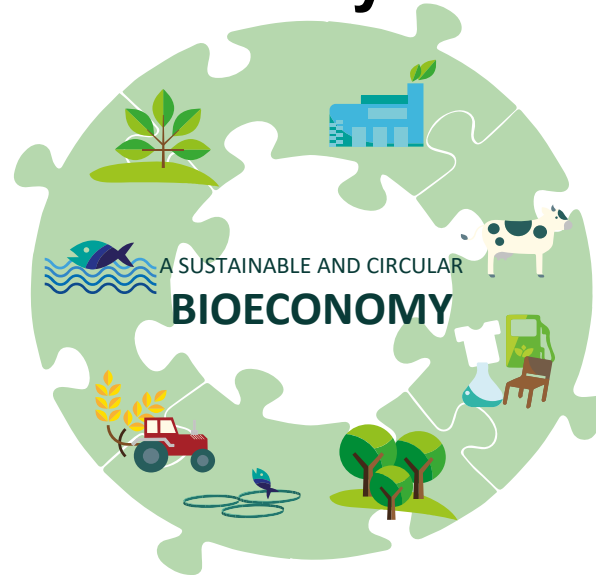


**EU Bioeconomy Strategy Progress Report**

# OBJECTIVES

**A circular and sustainable Bioeconomy**

**A model for green growth and a catalyst for the European Green Deal**



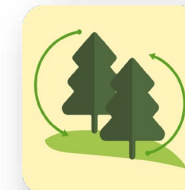
**Mitigating and adapting to climate change**



**Reducing dependence on non-renewable, unsustainable resources**



**Ensuring Food and Nutrition security**



**Managing natural resources sustainably**



**Strengthening European competitiveness and creating jobs**

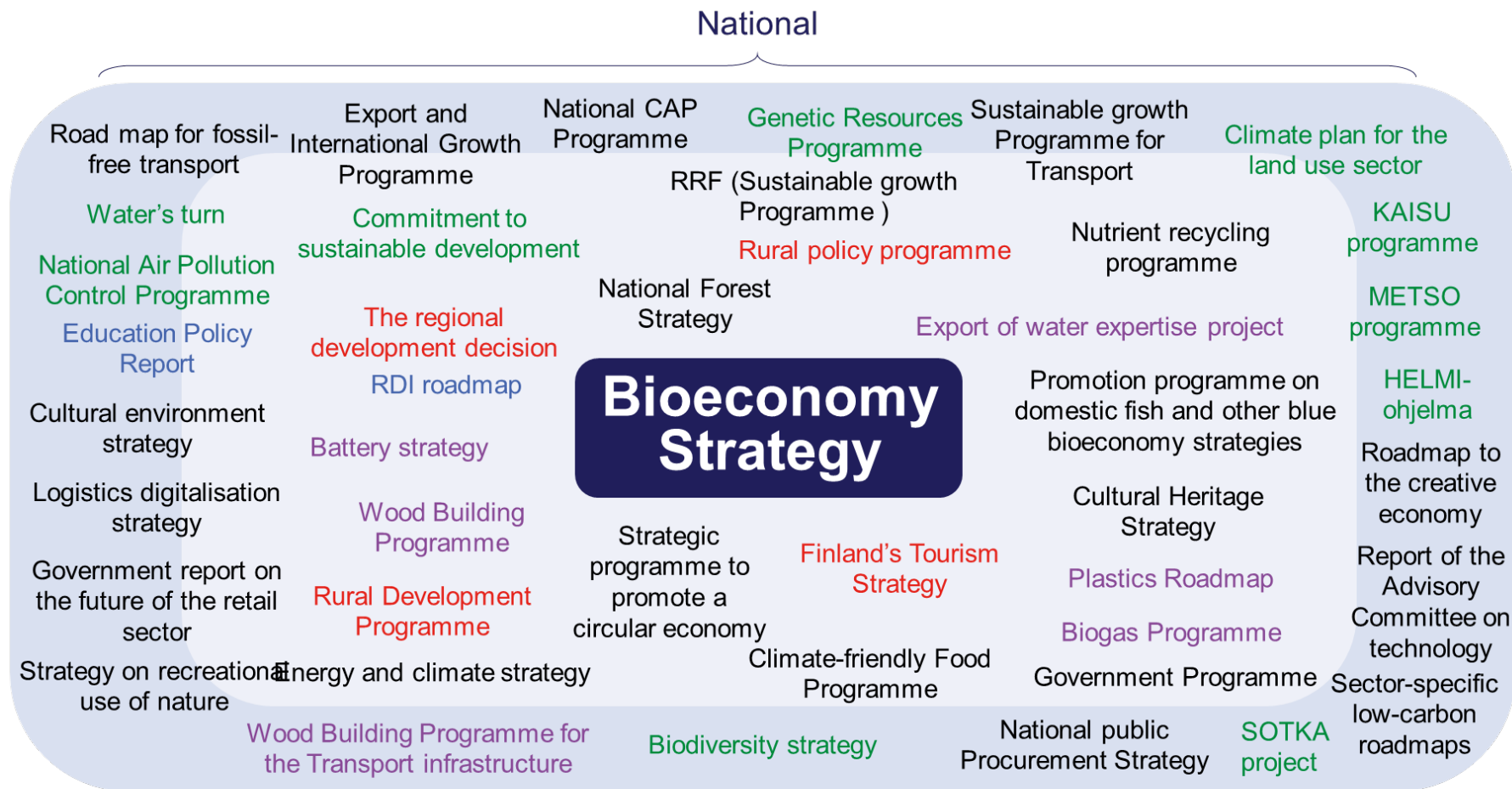


# Finland's Bioeconomy Strategy

Sustainably towards  
higher value added



# Bioeconomy is guided by a wide range of strategies





# Bioeconomy is guided by a wide range of strategies in EU

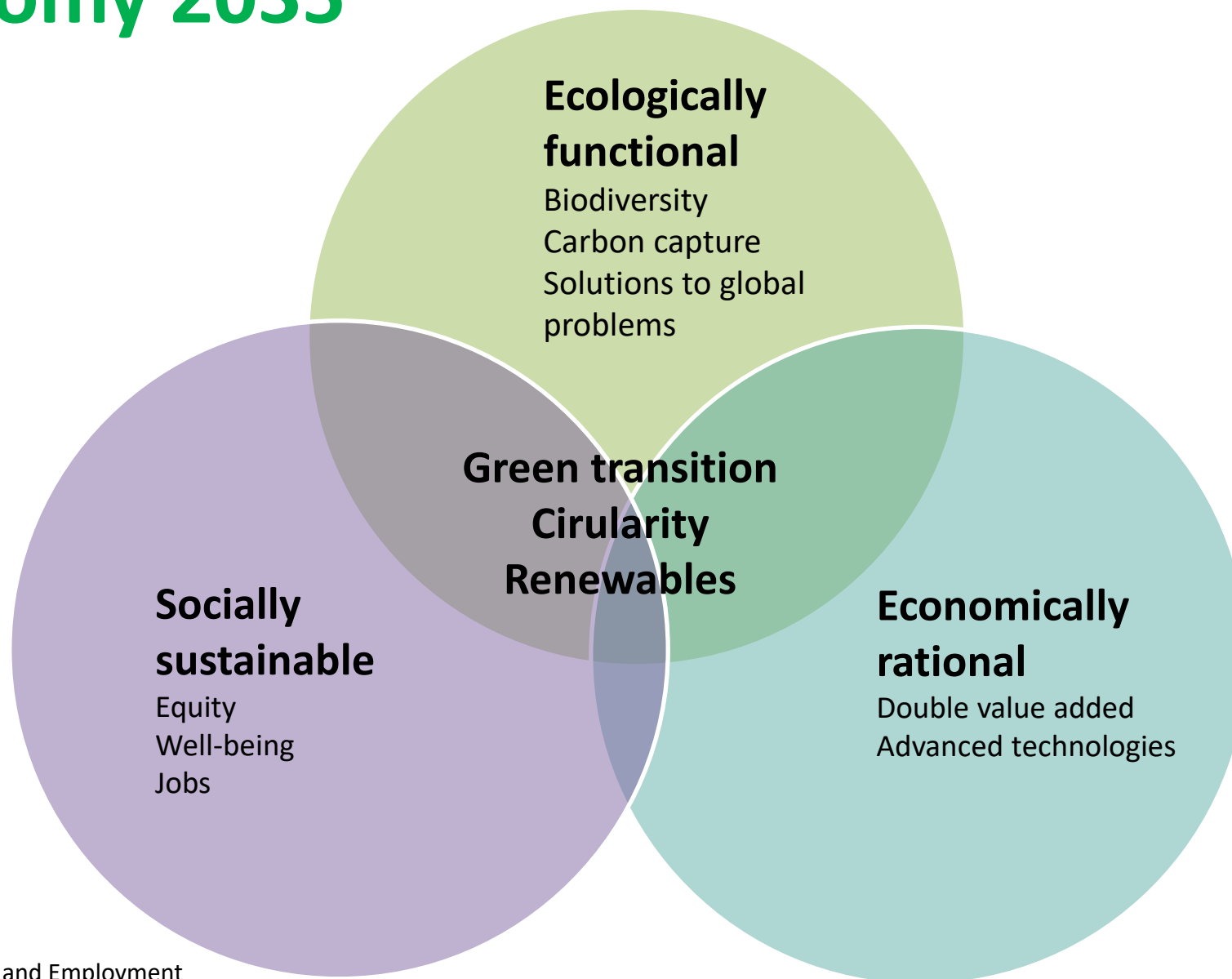


# Vision 2035

## Sustainably towards higher value added

- increasing **the value added** of the bioeconomy was identified as an important priority that **is not addressed in other strategies**
- **instead of taking a stand on the amount of production, the strive is to create a higher value added**
- timeline in line with Finland's carbon neutrality targets
- focus on creating a broad-based action plan
- productivity of work based on technological development in key role

# Bioeconomy 2035





# The Swedish bioeconomy (2019)

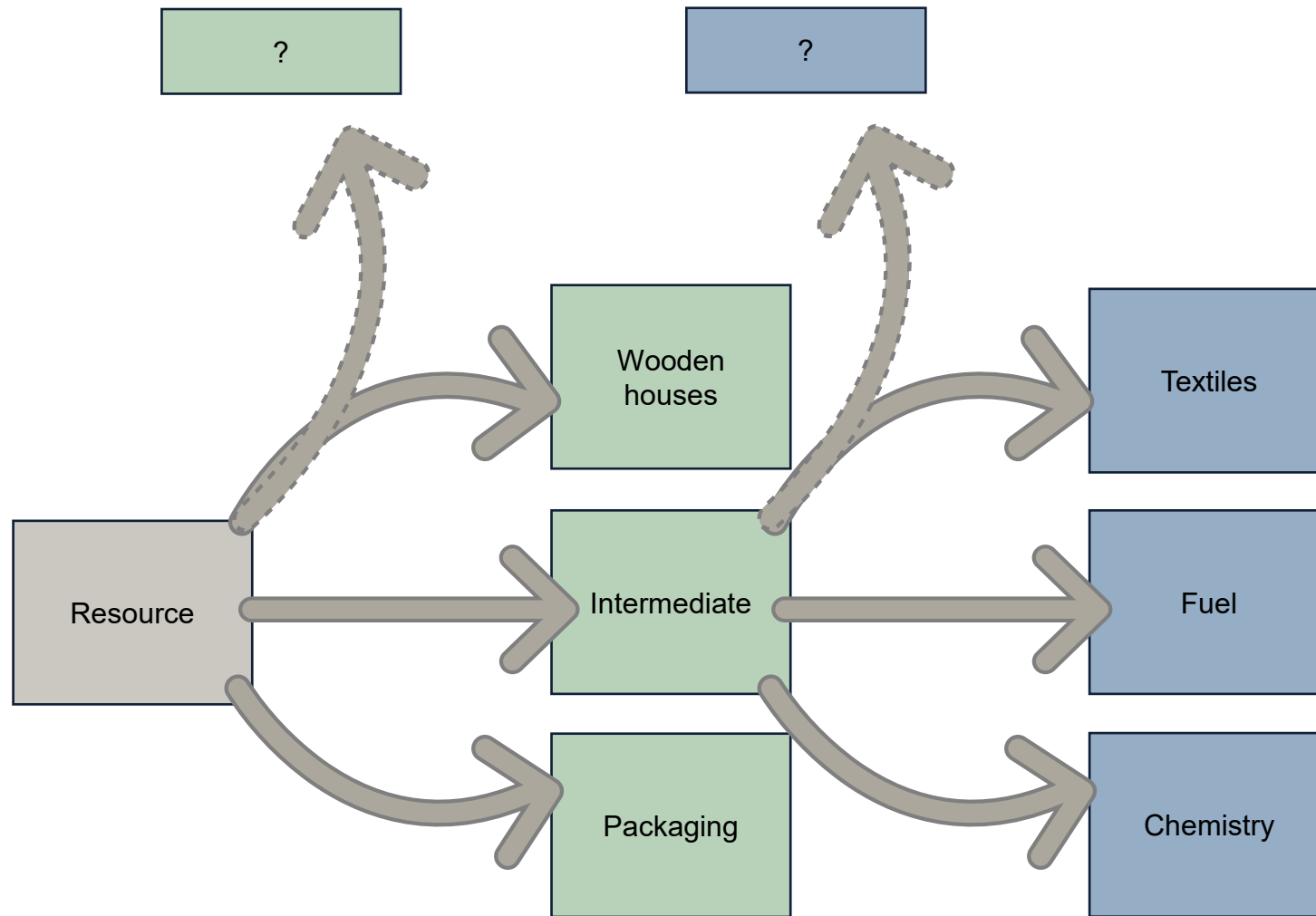
**7 procent**

of Sweden's total value added

**21 procent**

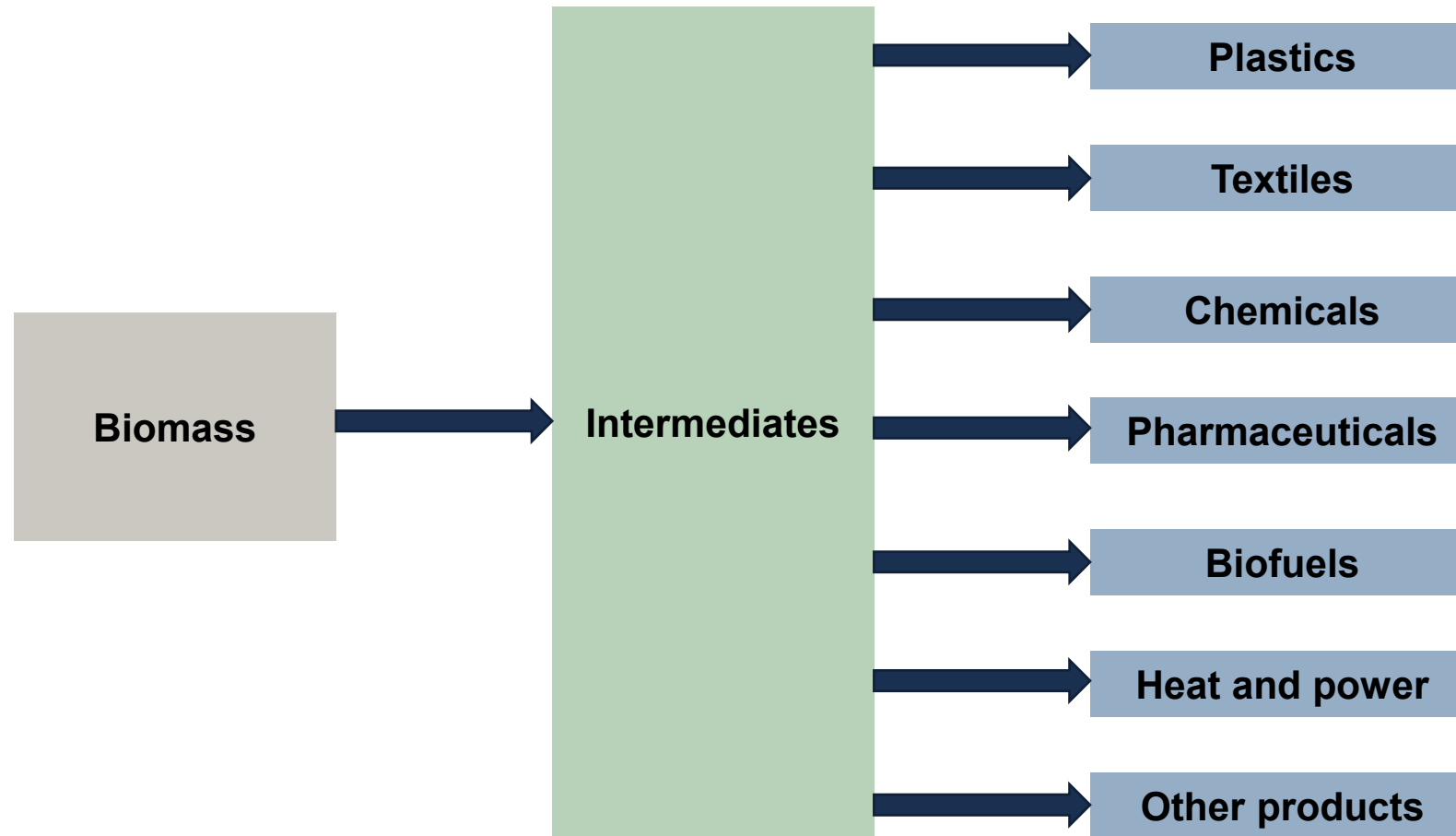
of Sweden's total export value

Source: Statistics Sweden.



# Bioeconomy is the future and the path away from fossil dependency

# Bioeconomy to reduce fossil dependency



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