Inquiry for a national strategy for a growing bioeconomy

Lena Ek
Head of Committee of Inquiry
Lena.Ek@regeringskansliet.se



The purpose of the inquiry

Promote

Promote sustainable growth, innovation and employment throughout the country

Contribute

Contribute to environmental and climate benefit

Create

Create enhanced national security of supply and reduced vulnerability in society



How?

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

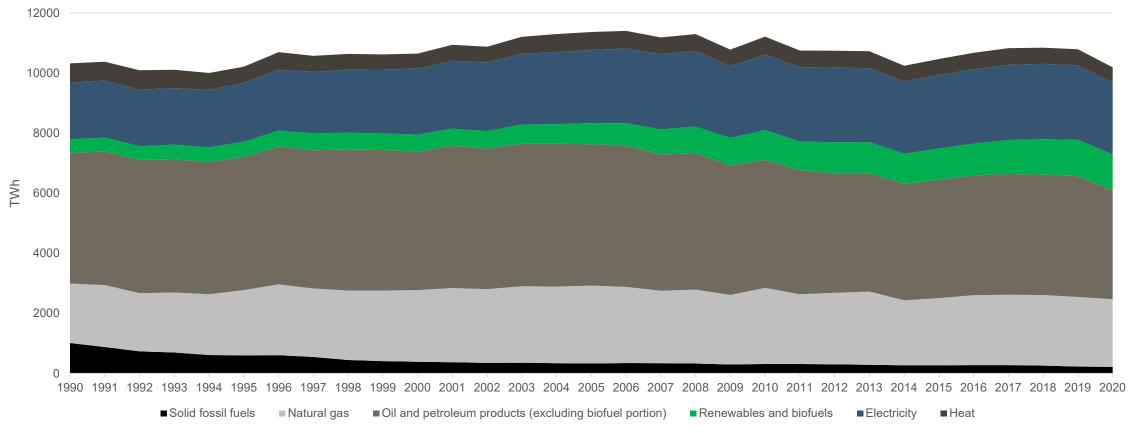
Report 31st October, 2023

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

Reported 29th March, 2023

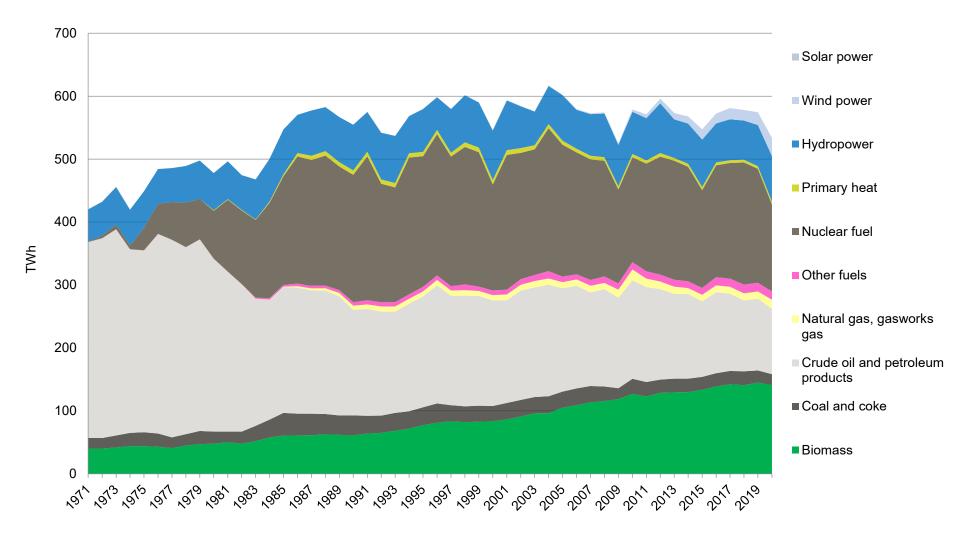


Final energy consumption in Europe



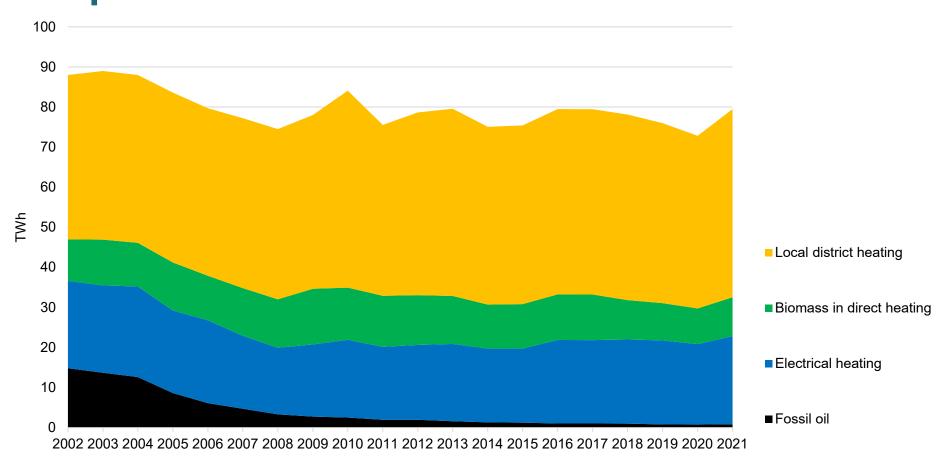


Final energy consumption in Sweden



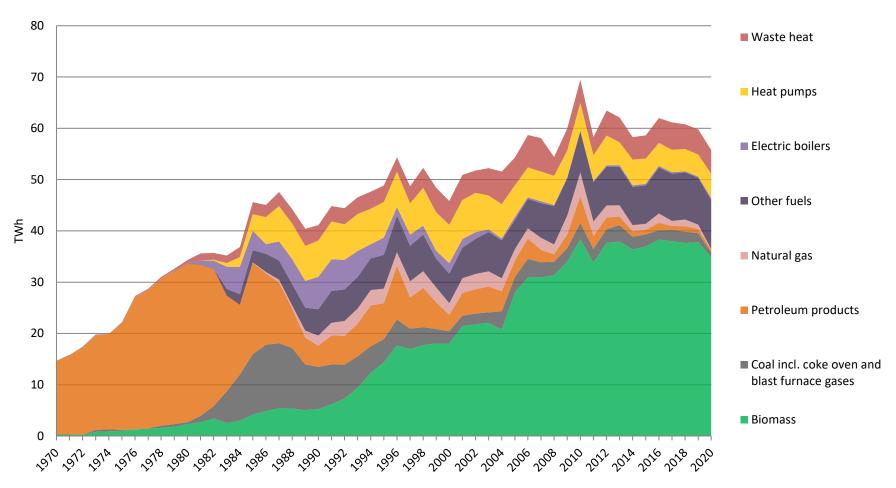


Importance of district heating for heat consumption in Sweden



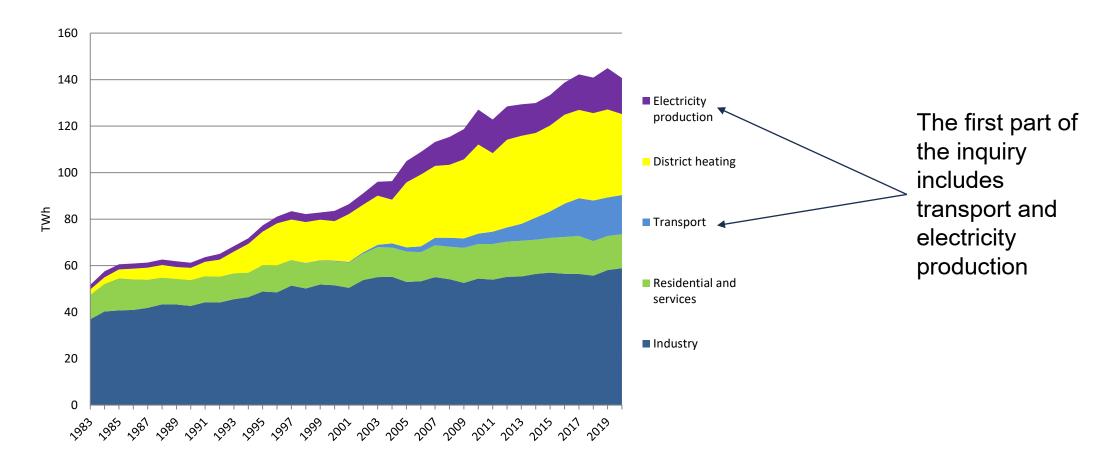


Energy used in district heating in Sweden





The use of biomass per sector in Sweden

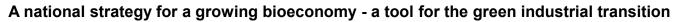




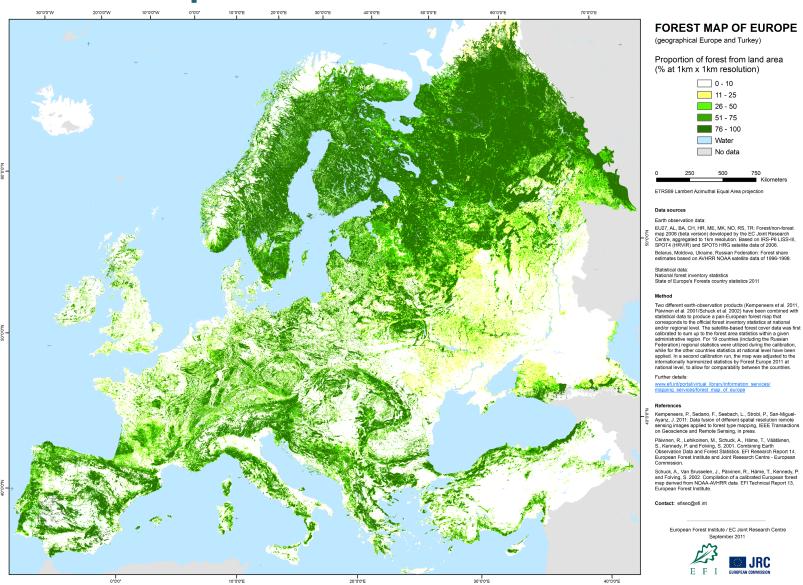
Diverse availability of biomass

SWEDISH GOVERNMENT





Forest in Europe





EU POLICIES IMPACTING FORESTS IN THE EU

ENVIRONMENT STRATEGY FOR **ECODESIGN FOR CIRCULAR SUSTAINABLE SUSTAINABLE ECONOMY TEXTILES ACTION PLAN PRODUCTS EU BIODIVERSITY CLIMATE REGULATION STRATEGY ZERO POLUTION SOIL HEALTH SUBSTANTIATION FOR PACKAGING BIOECONOMY POLICY** IAW OF GREEN AND PACKAGING **STRATEGY RENEWABLE** CLAIMS WASTE **VOLUNTARY ENERGY** CLOSER-TO-WATER **GUIDELINES** DIRECTIVE **NATURE FOREST** (BIO) CIRCULAR ECONOMY **FRAMEWORK** (CLOSER-TO-(RED II/RED III) **MANAGEMENT** NATURE / OLD-DIRECTIVE **CERTIFICATION?** GROWTH, **ADAPTATION PRIMARY FOREST STRATEGY** FORESTS / **EU WILDFIRE MONITORING & CLIMATE PLANS** AFFORESTATION, **RESPONSE** LONGTERM **FORESTS** REFORESTATION) **PLANS EUROPEAN CLIMATE LAW EU FOREST REVISION OF EU RULES NATURE** HABITATS AND **CERTIFICATION** ON PLANT AND FOREST **STRATEGY** RESTORATION **BIRDS DIRECTIVE** REPRODUCTIVE LAW MATERIAL **GREEN** CAP AND EU FINANCING/ **STRATEGIC EU TIMBER DEFORESTATION TAXONOMY REGULATION PLANS REGULATION REGULATION CORPORATE CORPORATE PROHIBITING** PRODUCTS MADE WITH SUSTAINABILITY SUSTAINABILITY **FOREST SUPPLY** FORCED LABOUR ON REPORTING **DUE DILIGENCE** THE UNION MARKET **LEVEL CHAIN**

LULUCF

REGULATION

NATIONAL

ENERGY AND

CARBON

REMOVAL

PEFC/01-00-01

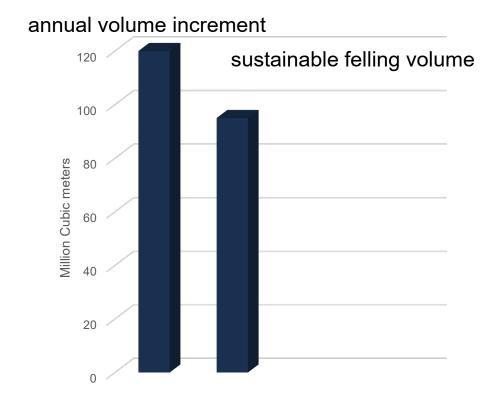
OTHER

*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 m3**.

Highest annual sustainable felling volume until 2035 will be **95–100** million m3





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

Branches and tops – for bioenergy

Planks

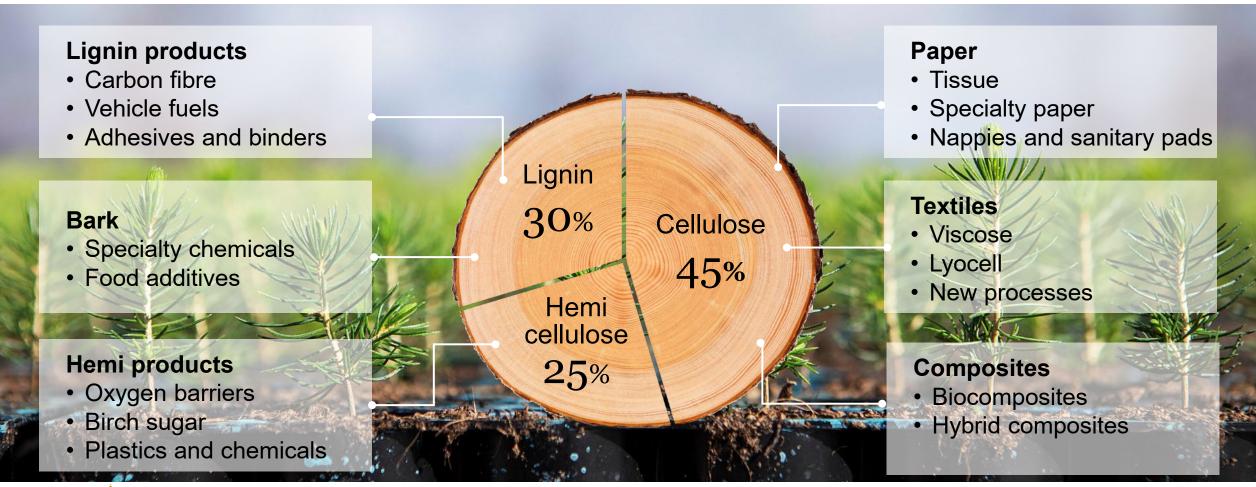
Boards

Stems – for sawn timber and pulpwood

Chips – for pulpwood Sawdust – for boards and bioenergy Bark - for bioenergy

Source: Swedish Forest Industry Federation

The forest as a renewable resource





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



Source: European Commission, 2023

Europeen Commission

EU BIOECONOMY

European Commission's Knowledge Centre for Bioeconomy



A	GRICULTURE	8.8	193	29%
P F	ORESTRY	0.5	25	4%
> F	ISHING AND AQUACULTURE	0.2	6	0.9%





Source: based on Ronzon et al., 2022

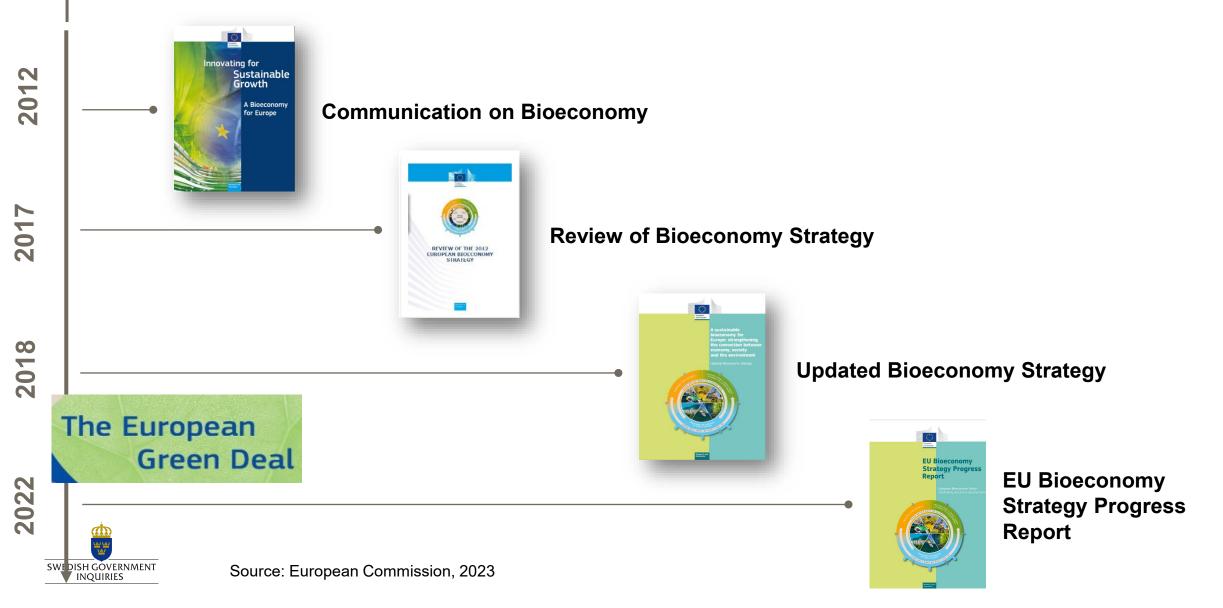
http://data.europa.eu/89h/7d7d5481-2d02-4b36-8e79-697b04fa4278

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

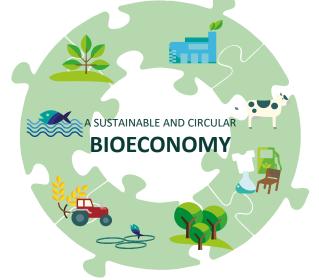


OBJECTIVES

A circular and sustainable Bioeconomy

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













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

National

Genetic Resources Sustainable growth National CAP Export and Road map for fossil-Climate plan for the Programme Programme for International Growth **Programme** free transport land use sector **Transport** Programme RRF (Sustainable growth Programme) **KAISU** Water's turn Commitment to Nutrient recycling programme sustainable development Rural policy programme **National Air Pollution** programme National Forest **Control Programme METSO** The regional Strategy Export of water expertise project programme **Education Policy** development decision Report Promotion programme on HELMI-RDI roadmap Bioeconomy domestic fish and other blue ohielma Cultural environment **Strategy** bioeconomy strategies strategy Battery strategy Logistics digitalisation Cultural Heritage **Wood Building** strategy Strategy Strategic Finland's Tourism

Programme

Rural Development Programme

Strategy on recreationant nergy and climate strategy use of nature

Government report on

the future of the retail

sector

Wood Building Programme for the Transport infrastructure

programme to promote a

circular economy Climate-friendly Food Programme

Biodiversity strategy

Strategy

Usability and sustainability of biorecources and other ecosystems

Plastics Roadmap

Biogas Programme

Government Programme Sector-specific

National public **SOTKA** Procurement Strategy project

Roadmap to the creative economy

Report of the Advisorv Committee on technology

low-carbon roadmaps

Strategic priorities of the Bioeconomy Strategy

Source: Ministry of Economic Affairs and **Employment**

A competitive operating environment

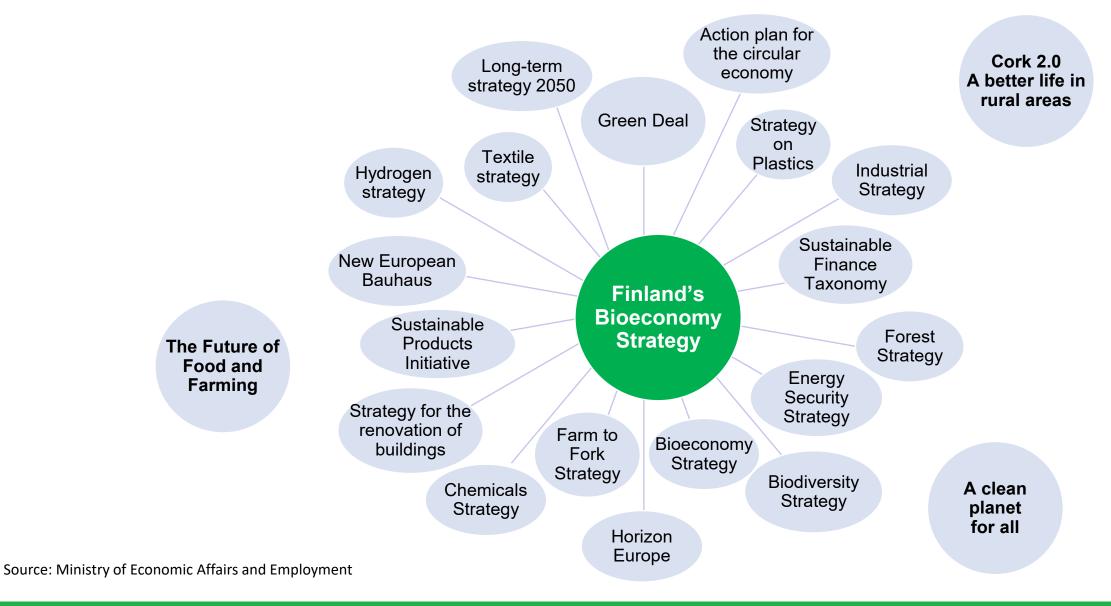
Higher added value from bioeconomy

A strong knowledge and technology base

Muut ja läpileikkaavat



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

Ecologically functional

Biodiversity
Carbon capture
Solutions to global
problems

Green transition
Cirularity
Renewables

Socially sustainable

Equity Well-being Jobs **Economically** rational

Double value added Advanced technologies

Source: Ministry of Economic Affairs and Employment

The Swedish bioeconomy (2019)

7 procent

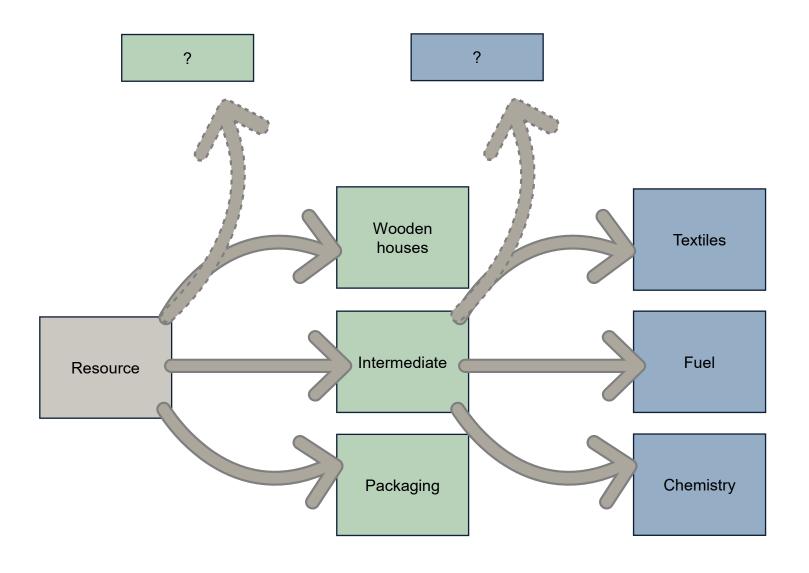
of Sweden's total value added

21 procent

of Sweden's total export value

Source: Statistics Sweden.



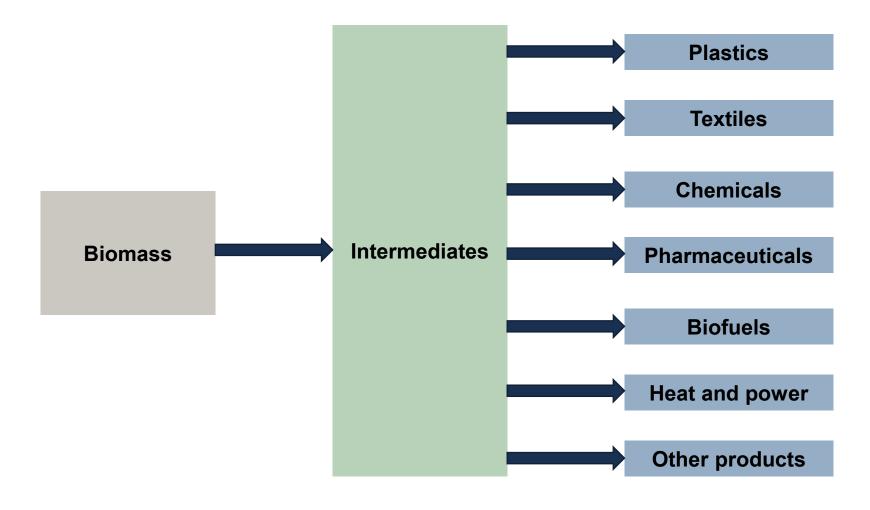




Bioeconomy is the future and the path away from fossil dependency



Bioeconomy to reduce fossil dependency





Inquiry for a national strategy for a growing bioeconomy

Lena Ek
Head of Committee of Inquiry
Lena.Ek@regeringskansliet.se

