

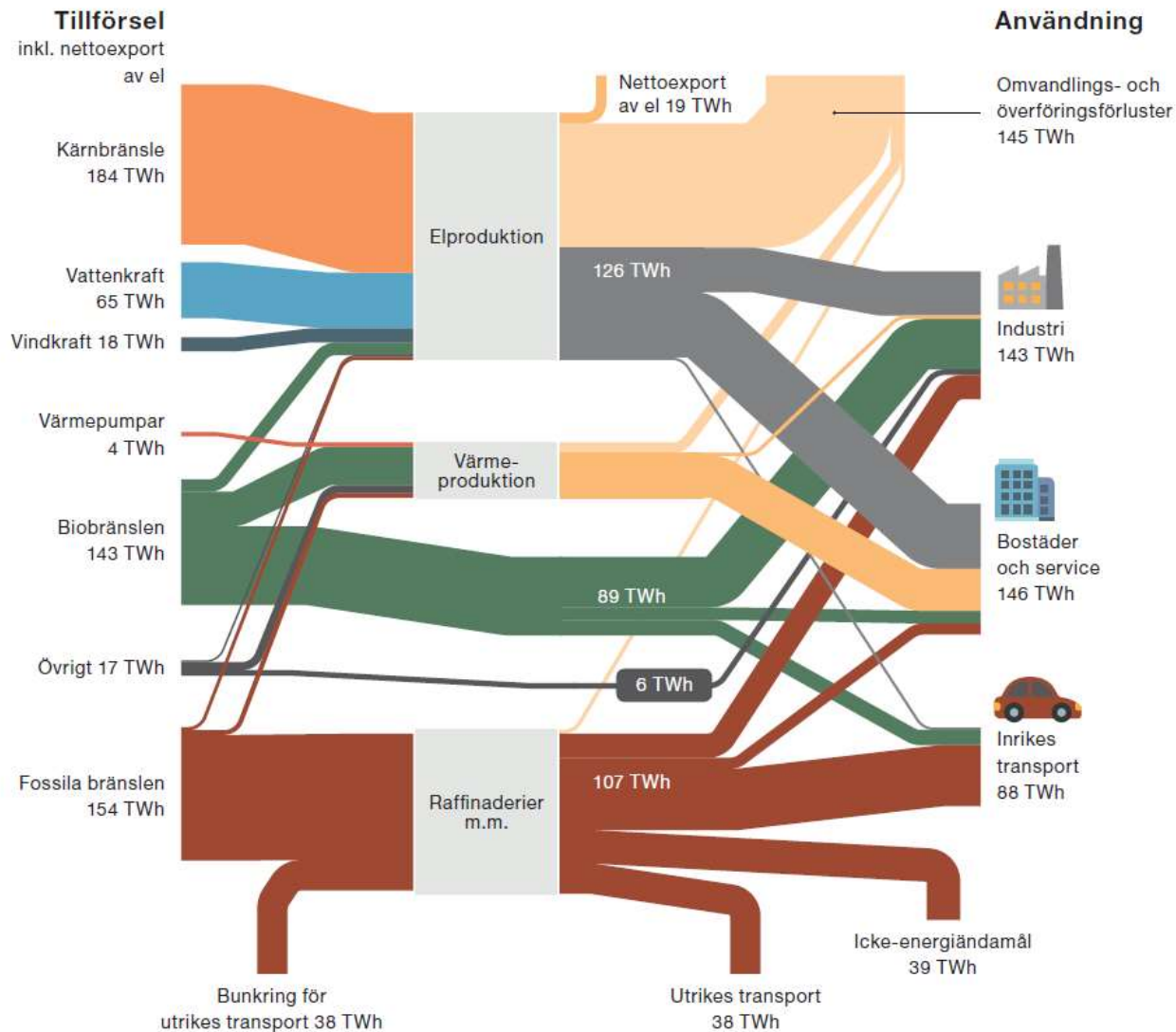
**Johanna Mossberg**

**RISE**

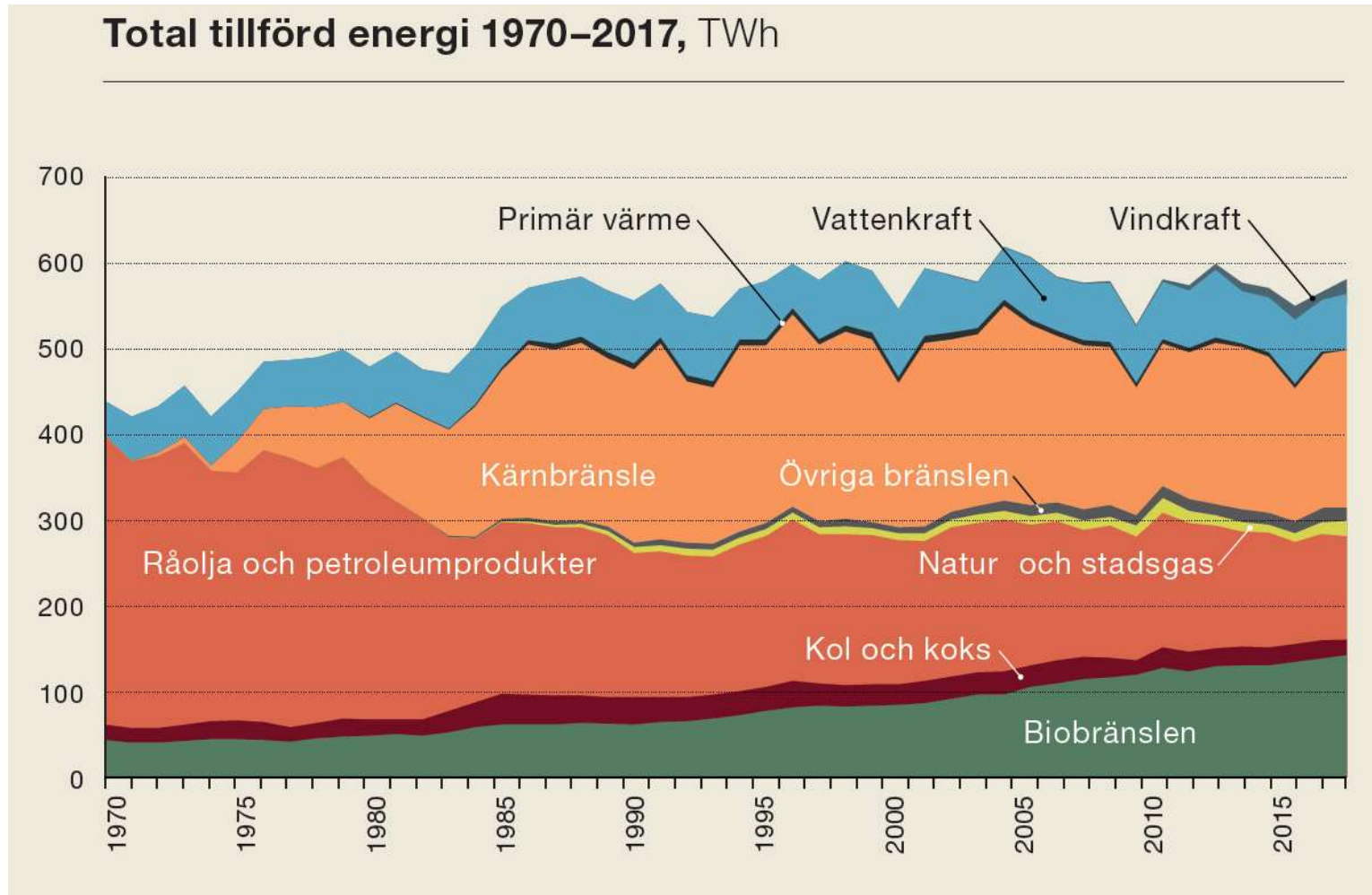
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# 1.1 Total primary energy supply (TPES)



# 1.2 Contribution bioenergy



## 2. Biomass use for non-energetic purposes

- ...

# 3. Bioenergy policies and status of implementation

- Policy (tax) pushing out the last fossil from the heat and power production system => biogas and biooil as supplements (short term)
- The climate law – target on getting to net neutral by 2045 – action plan every 4 years
- “Bränslebytet” – reduction obligation system which pushes for drop-in biofuels into diesel and gasoline
- Reduction obligation for bio jet fuels? – suggested to start in 2021 and gradually increase the share of bio jet fuel
- (a bioeconomy strategy slowly in the making)

## 4. Research focus related to bioenergy and biorefining

- Biofuels – all sectors
- Co-production of biofuels and biochemicals
- New materials (strongly related to incumbent pulp and paper industry)
- Forest and agricultural residue based biorefineries and conversion processes
- Industry integrated biorefineries and biorefinery processes
- BECCS/BECCU

# 5. Biorefining related funding

- Strategic research environments (funded separately)
  - Bio4Energy
  - Chalmers Energy Initiative
- The Swedish Energy Agency
  - Bioenergy
  - Biofuels (several programs)
  - Energy transition / system aspects
  - ...
- Vinnova
  - BioInnovation
  - UDI
  - Vinnväx
  - ...
- Formas
  - Some larger programs related to the bioeconomy
  - Focus on societal transitions
- Other
  - Industry related funding (foundations)

## 6. Commercial biorefineries

- Biofuel focus
  - Lantmännen Agroetanol
  - Preem
  - Adesso Bioproducts
  - St1 Sweden
  - Gothenburg
  - St1
  - Domsjö Fabriker
  - Ecobränsle
  - Sunpine
  - Södra Mönsterås

## 7. Regional initiatives

- The Paper Province
- Lignocity
- The Biofuel Region
- Processum Biorefinery
- Klimatledande processindustri / The west Sweden materials and chemical cluster
- BOBIC – Bothnia Biobased Industries Cluster
- Food Valley of Bjuv
- Bioeconomy Region

## 8. Demo plants

- Etanolpiloten / RISE Biorefinery Demonstration Plant
- Lignoboost Demo Plant (Lignocity)
- LTU Green Fuel
- Gobigas

## 9. Pilot plants

- SCA Obbola – lignin oil production from BL
- RenFuel
- SunCarbon
- (many research infrastructures at RISE and the universities)
- ...

# 10. Major innovation activities

- Recent news!

[HOME](#) › [REGIONS](#) › SETRA AND PREEM TO PRODUCE PYROLYSIS OIL FROM SAWDUST IN SWEDEN

## Setra and Preem to produce pyrolysis oil from sawdust in Sweden

[BIOMASS AND BIOFUEL](#) [COMPANIES](#) [EDITOR'S CHOICE](#) [EUROPE](#) [M&A, JV AND PARTNERSHIP](#) [NEWS](#) [QUALITY, R&D, TECHNOLOGY, SUBSTITUTION](#) [REGIONS](#)

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Setra and Preem are teaming up to [produce pyrolysis oil from sawdust](#). The jointly owned company Pyrocell will manufacture raw material for the production of biofuels. Work is now beginning on construction of the plant alongside Setra's Kastet sawmill in Gävle, Sweden.

According to the announcement, the construction work will begin in the autumn and the plant is expected to be up and running in 2021. The plant will produce around 25,000 tonnes of pyrolysis oil per year.

Pyrocell is jointly owned by Setra and Preem. The company is an important link in the value chain for renewable fuel. Setra has the raw material, sawdust, while Preem has refineries and fuel stations. The sawdust will be processed into a renewable raw material for biofuels at Pyrocell's pyrolysis plant,

# BioInnovation

- Joint industry initiative funded by Vinnova, the Swedish Energy Agency and Formas
- Vision: Sweden has a bio-based economy by 2050
- Focus areas:
  - Chemicals & Energy
  - Materials
  - Construction & Design
- So far...
  - 8 calls
  - 241 MSEK
  - Material (42%), Construction & Design (28%) and Chemicals and Energy (27%)
- <https://www.bioinnovation.se/>

# Vinnväxt – Climate leading process industry

- 10 effort funded by Vinnova, region of Västra Götaland and the partners in the West Sweden Chemicals and Material Cluster
- 4 focus areas
  - **Renewables** (biobased feedstock to the chemical process industry)
    - The circular refinery
    - Climate leading process technologies
    - Climate leading value chains
  - For biobased feedstock in the area Renewables focus on the sugar platform
- 100+ MSEK over 10 years
- <https://www.johannebergsciencepark.com/en/news/major-initiative-western-sweden-will-be-world-leader-sustainable-industry>

# SET-Plan and SET4BIO



- JRC together with DG RES, ENER set up the Implementation Working Group for action 8, Bioenergy and Renewable Fuels for SustainableTransport in June 2019, IWG8
- SET Plan action 8 CSA Support project call in august 2019 (LC-SC3-JA-2-2018-2019)
  - RISE (Coordinator) applied for SET4BIO project together with VTT (FI), SINTEF (NO), FNR (DE), CIRCE (SP) and ETA Florence (IT)
  - Budget 1MEuro during 3 years
  - Positive evaluation results received 14th of November 2019. Now under grant agreement preparation.

SET4BIO

# 11. Major stakeholders

# Biofuel actors in Sweden - examples



Refinery industry



Recycling/waste management

Gasum



Chemical process industry



Pulp and paper industry



Saw mill industry



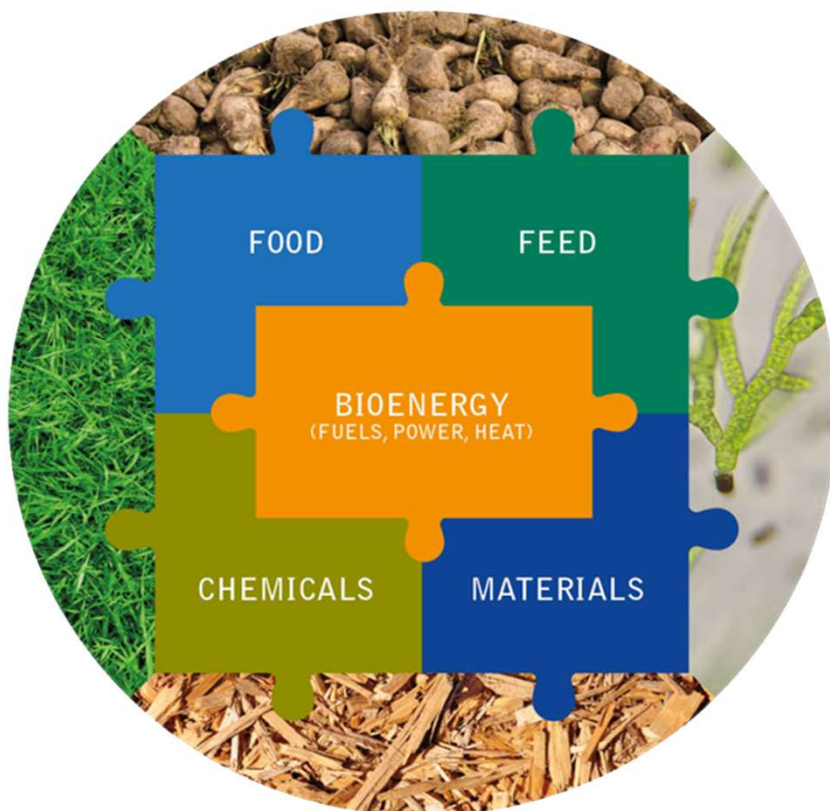
Heat and power sector



Agricultural sector



"New biofuel industry"



**IEA Bioenergy**



**Task42 – Biorefining in a Circular Economy**

### **Contact Details**

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[www.ieabioenergy.com](http://www.ieabioenergy.com)

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[www.task42.ieabioenergy.com](http://www.task42.ieabioenergy.com)