



# Basic Information on Bioenergy 2025

7.7.2025



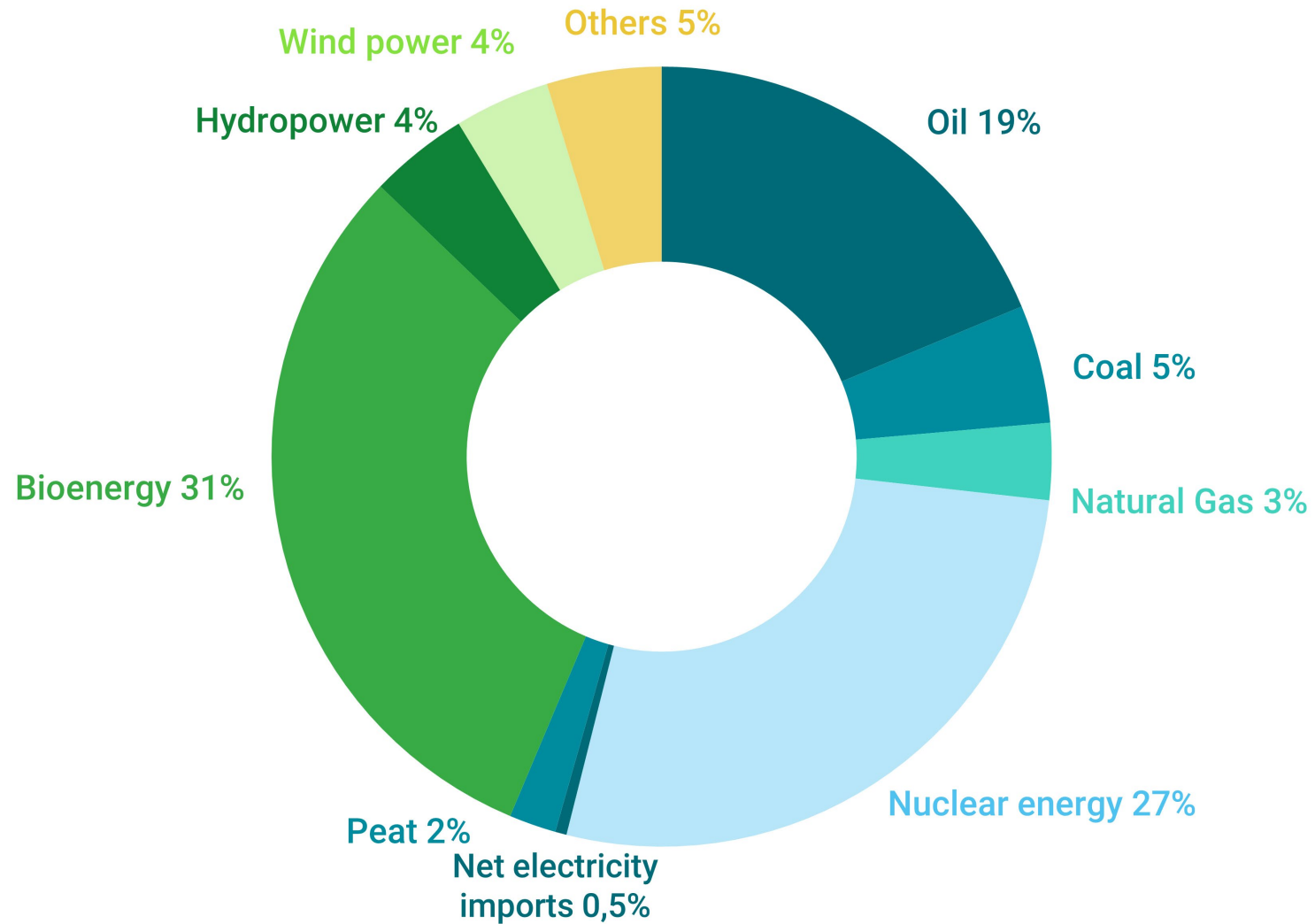
# Content

|                        |    |
|------------------------|----|
| Bioenergy in Finland   | 3  |
| Bioenergy in the EU    | 14 |
| Bioenergy in the world | 21 |



# Bioenergy in Finland

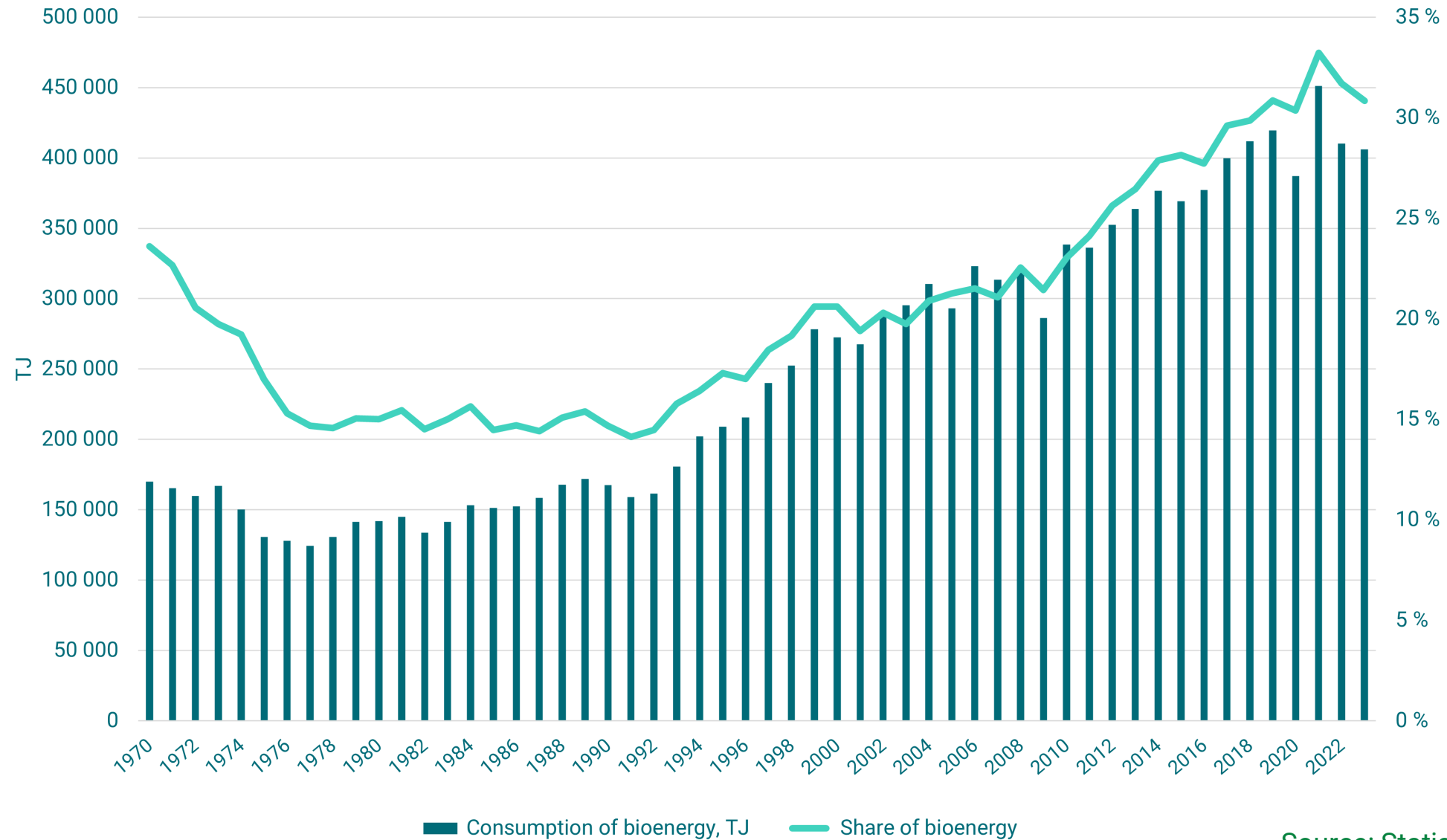
# Energy Consumption in Finland 2023



Source: Statistics Finland, 2024

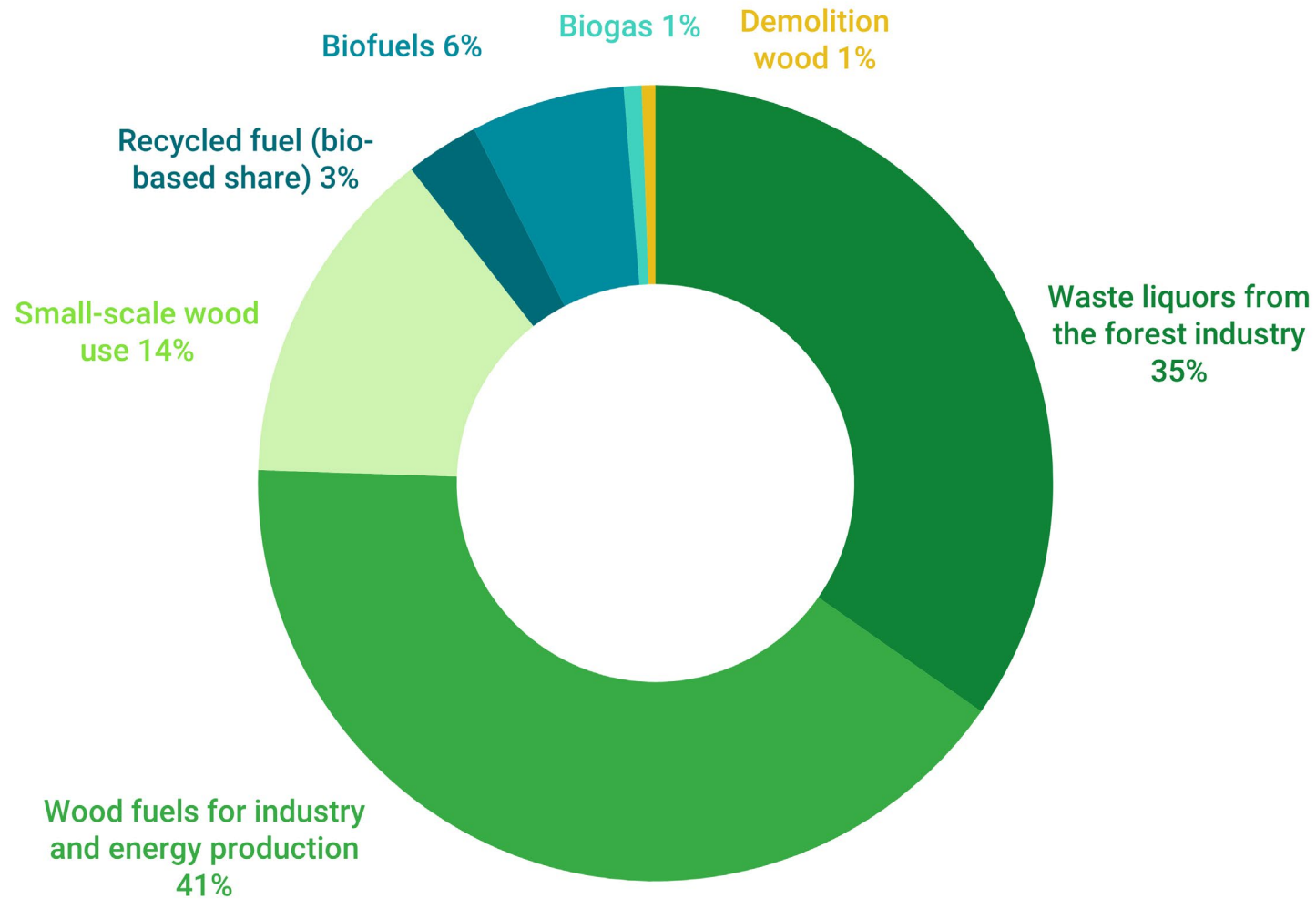


# Bioenergy in Finland 1970–2023



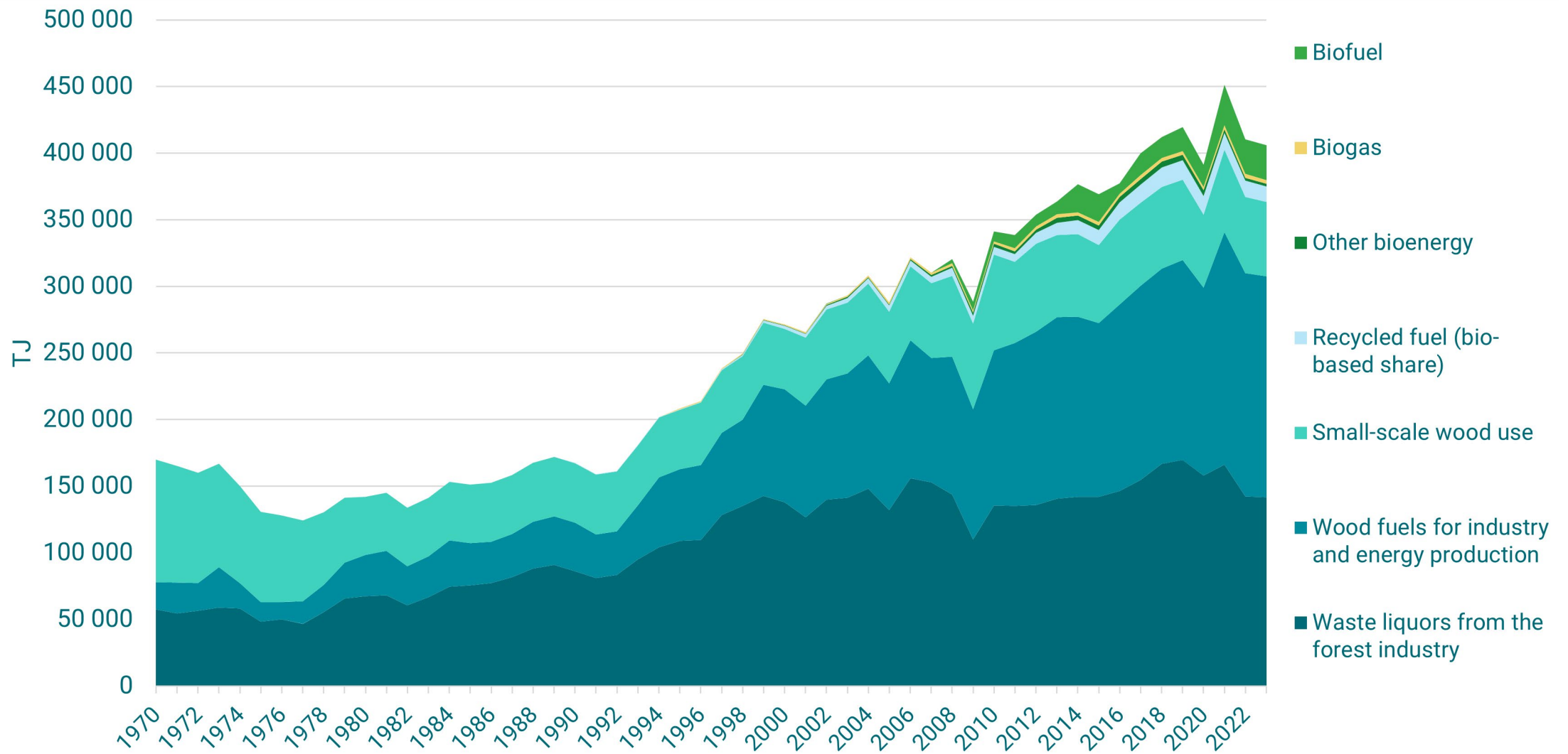
Source: Statistics Finland, 2024

# Bioenergy in 2023



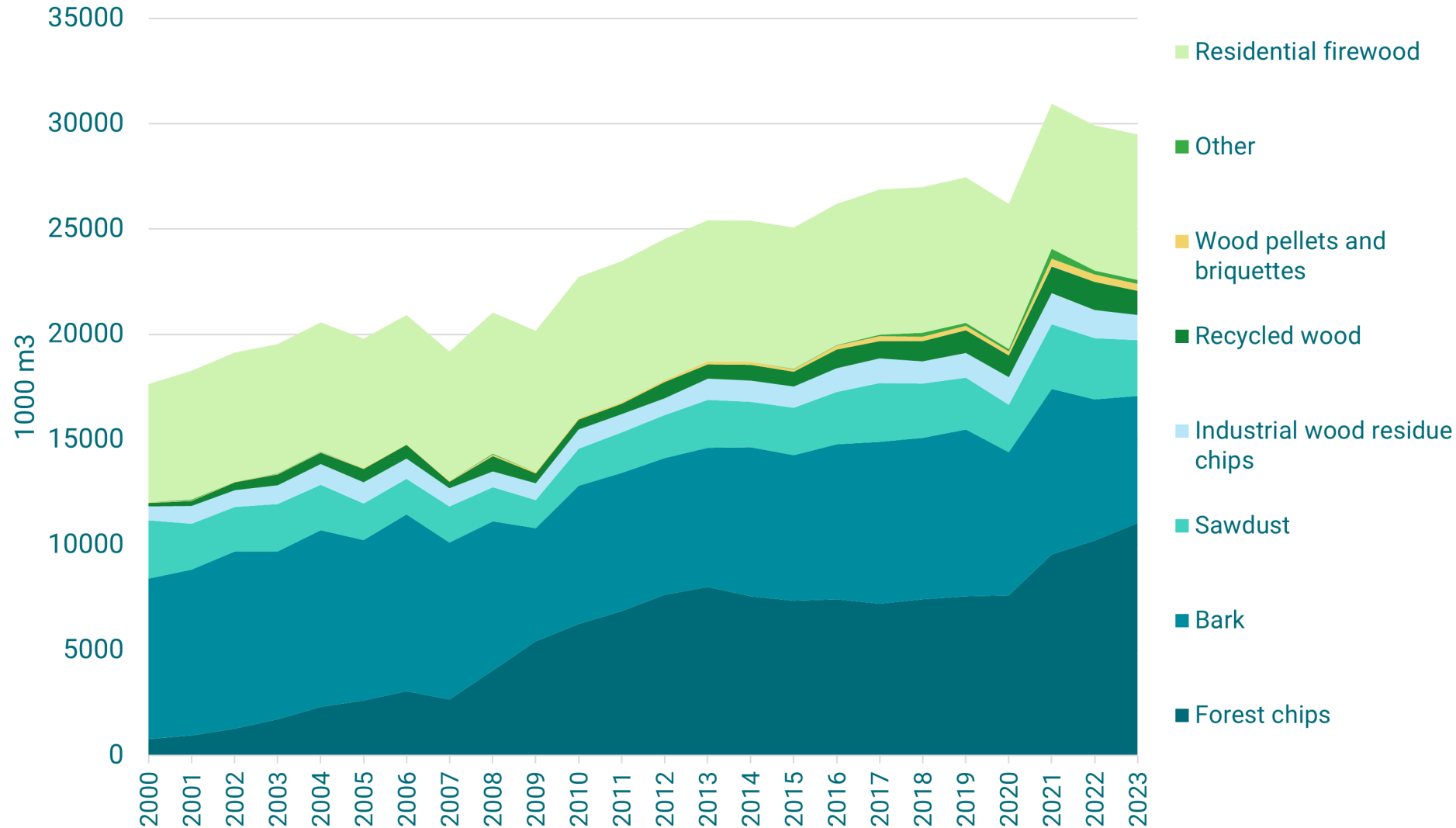


# Bioenergy per Type 1970–2023





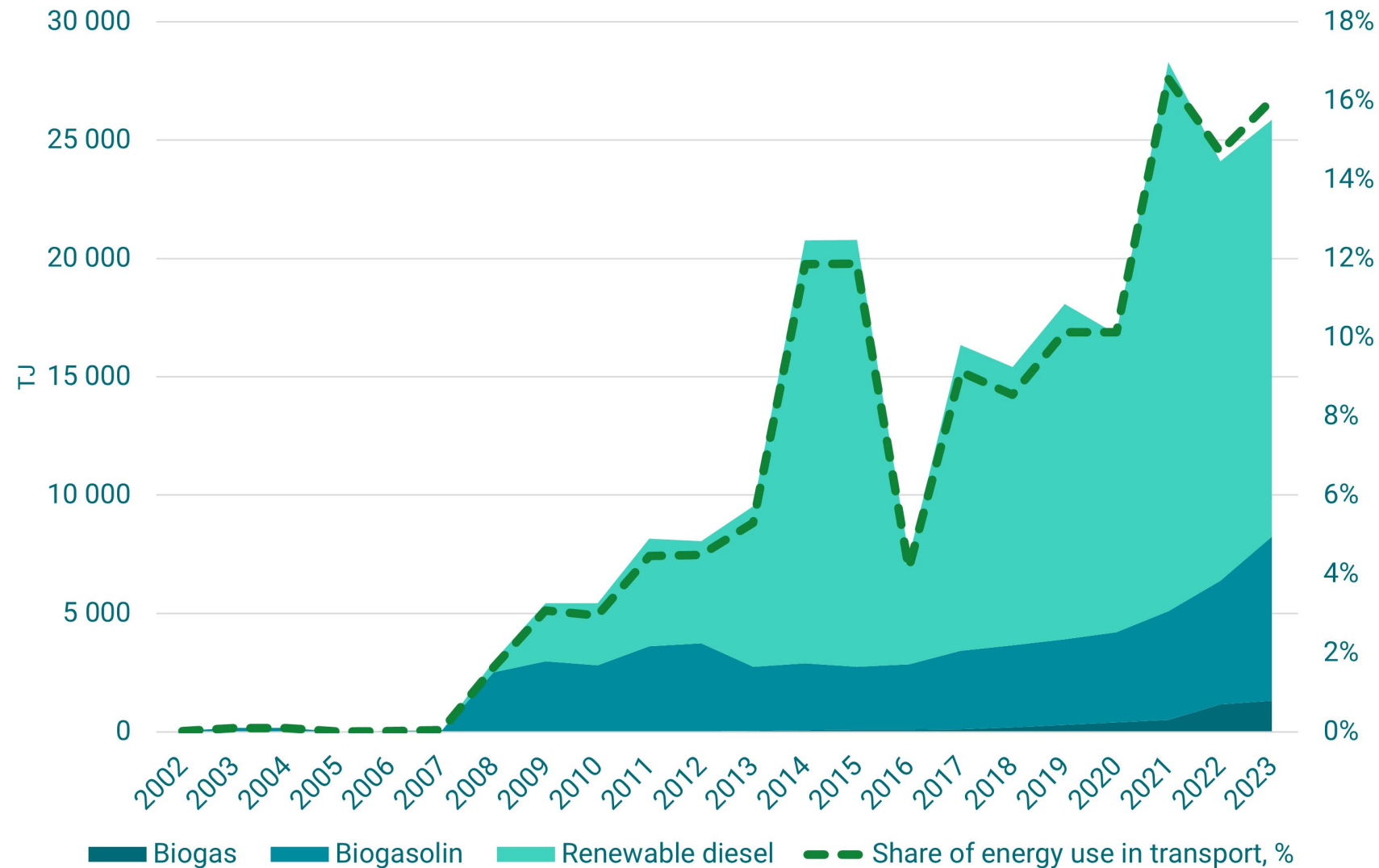
# Solid Wood Fuels per Type 2000–2023



Source: Natural Resources Institute Finland, 2024



# Bioenergy in Transport 2002 – 2023

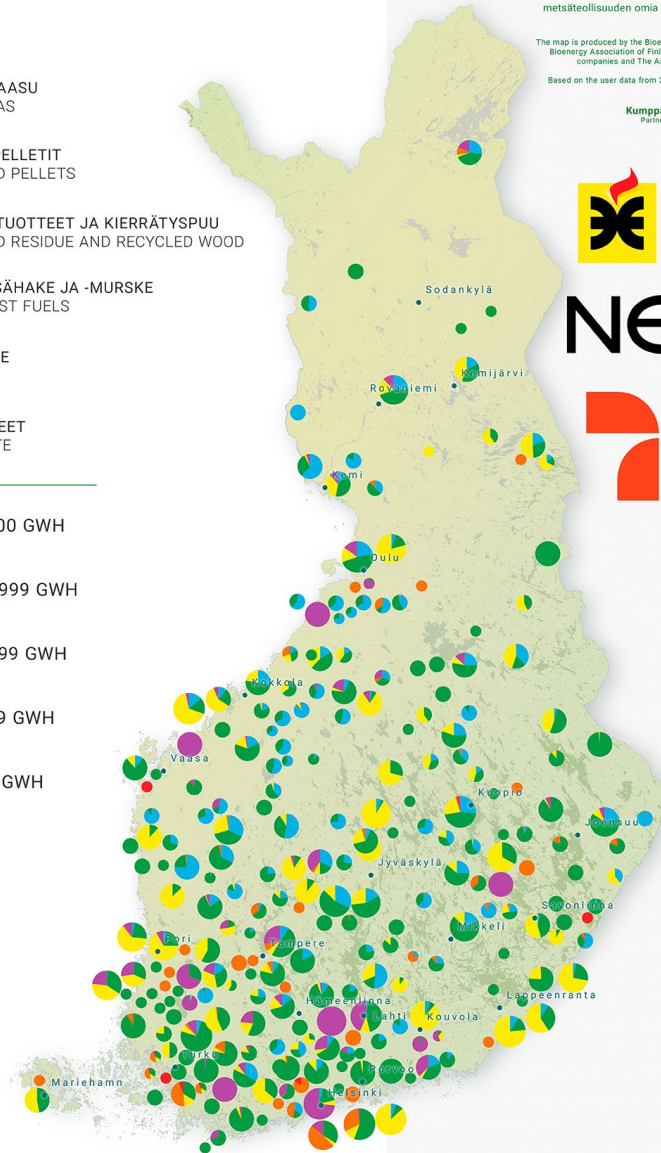


# BIOENERGIAN TUOTTAJAT 2024

## BIOENERGY PRODUCERS 2024

- BIOKAASU  
BIOGAS
- PUUPELLETIT  
WOOD PELLETS
- SIVUTUOTTEET JA KIERRÄTYSPUU  
WOOD RESIDUE AND RECYCLED WOOD
- METSÄHAKE JA -MURSKE  
FOREST FUELS
- TURVE  
PEAT
- JÄTTEET  
WASTE

- > 1000 GWH
- 500-999 GWH
- 50-499 GWH
- 10-49 GWH
- < 10 GWH



Kartan on toteuttanut Bioenergia-lehti yhteistyössä Bioenergia ry:n jäsenten, Energiateollisuus ry:n, Gispo Suomi Oy:n, metsäyhtiöiden ja Kuntaliiton kanssa.

Toteutettu vuoden 2023 käyttäjätietojen mukaan. Ei sisällä metsäteollisuuden omia sivutuotteitaan 100-prosenttisesti käytäviä kohteita.

The map is produced by the Bioenergia magazine in association with the members of The Bioenergy Association of Finland, Finnish Energy, Gispo Finland Ltd., Finnish forest companies and The Association of Finnish Cities and Municipalities.

Based on the user data from 2023. Does not include plants with 100 % use of Wood residues.

Kumppanit kartan toteutuksessa:  
Partners in the production of the map:



Check out the map:

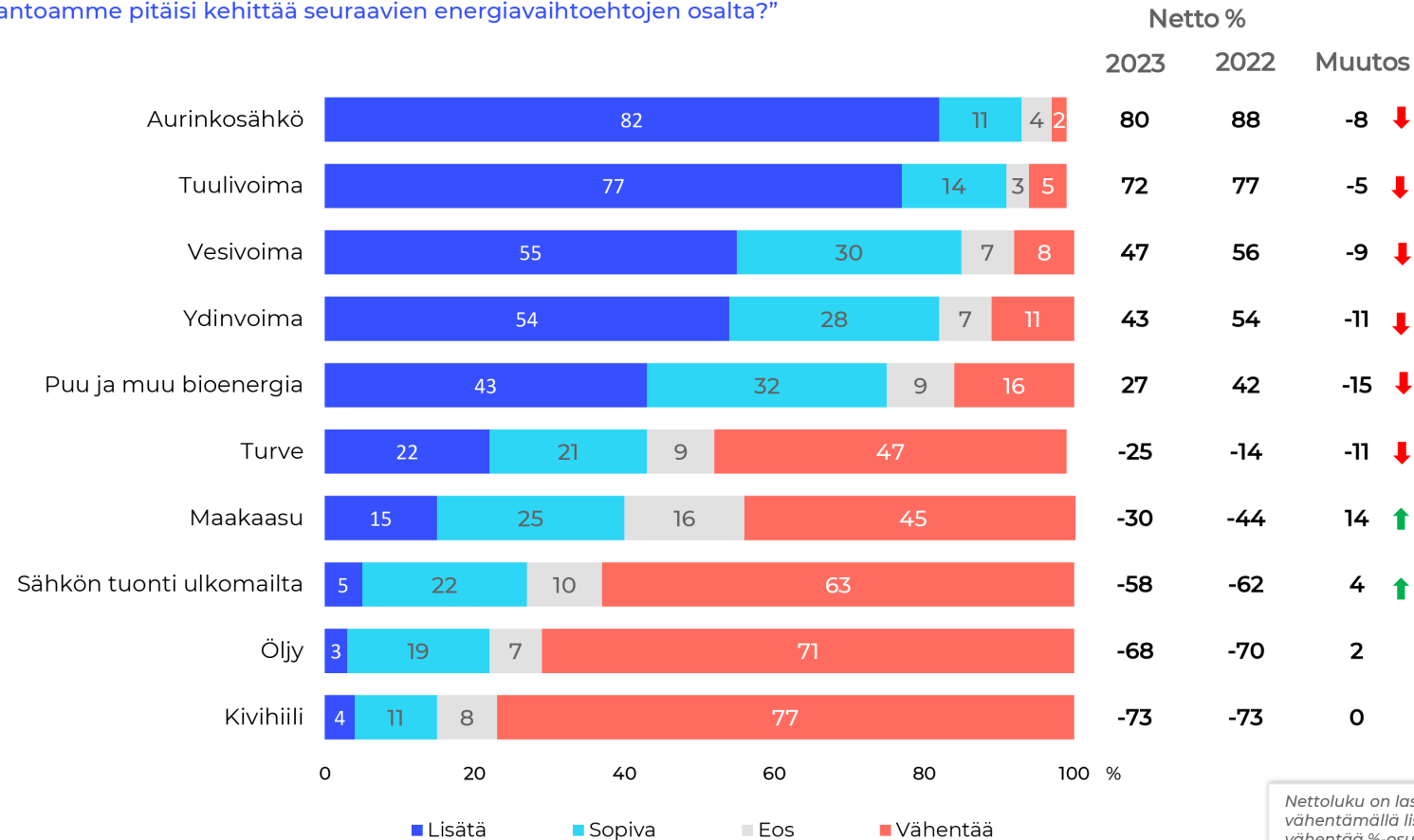
[bioenergia.fi/bioenergiantuottajat](https://bioenergia.fi/bioenergiantuottajat)



# Development of Electricity Production

"Mihin suuntaan sähköntuotantoamme pitäisi kehittää seuraavien energiavaihtoehtojen osalta?"

Kaikki vastaajat, n=1000

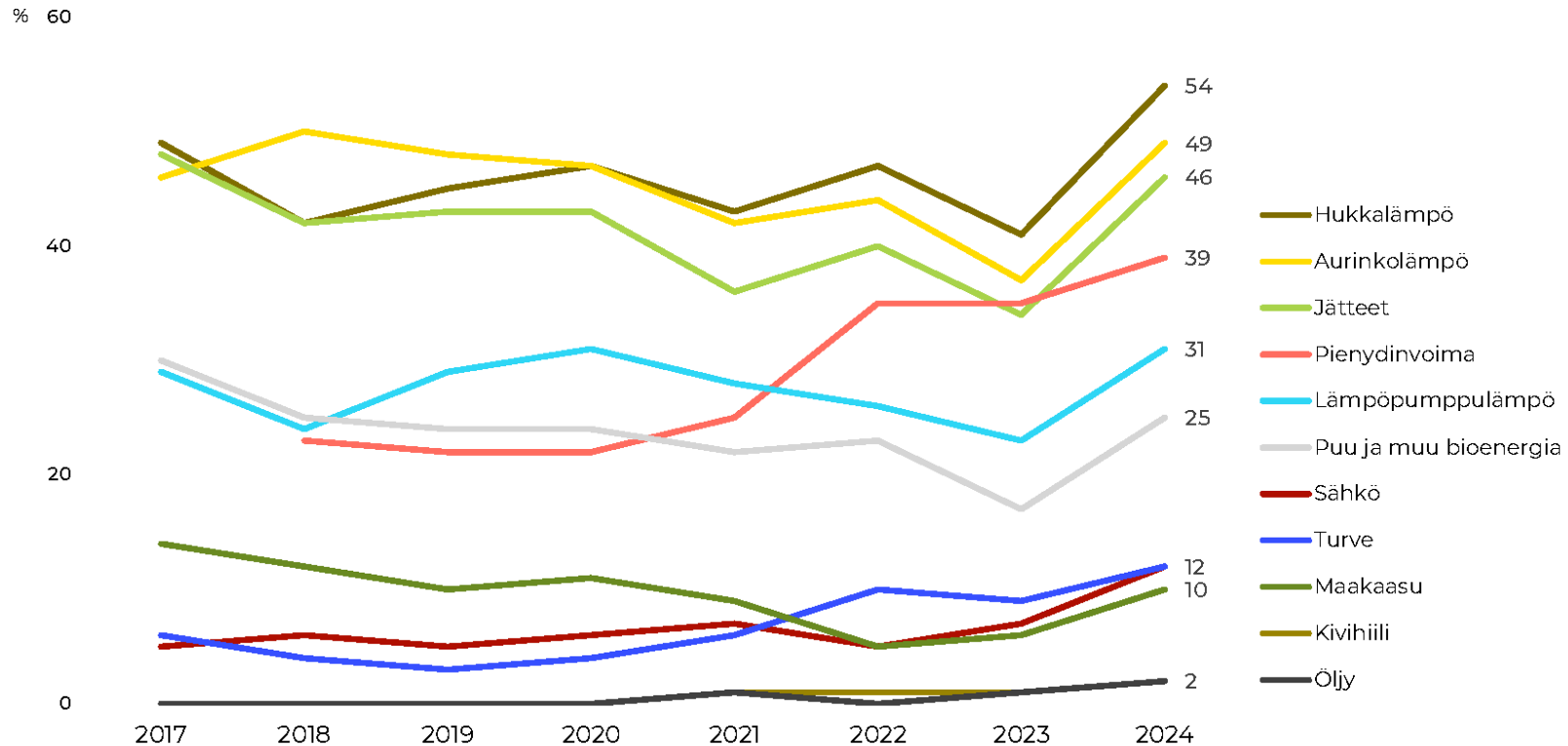




# Evolution of District Heating Production

"Mihin suuntaan kaukolämmön tuotantoa pitäisi kehittää?"

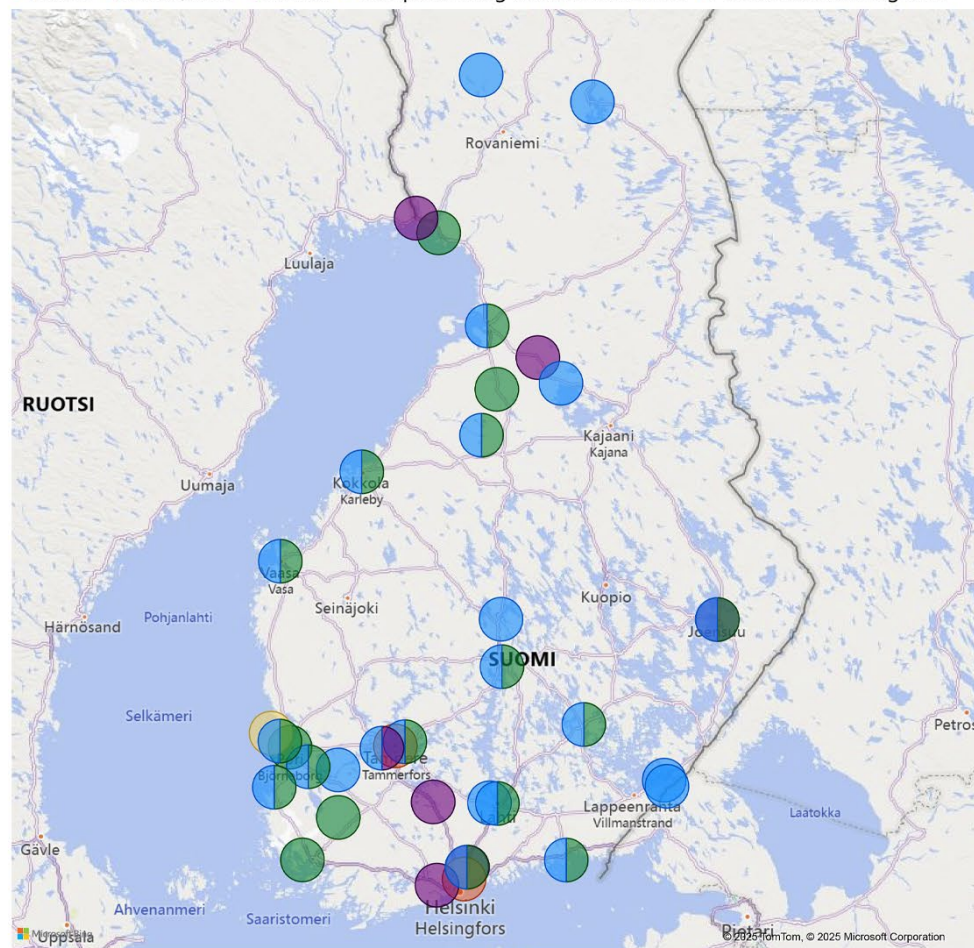
Kaikki vastaajat, n=1000



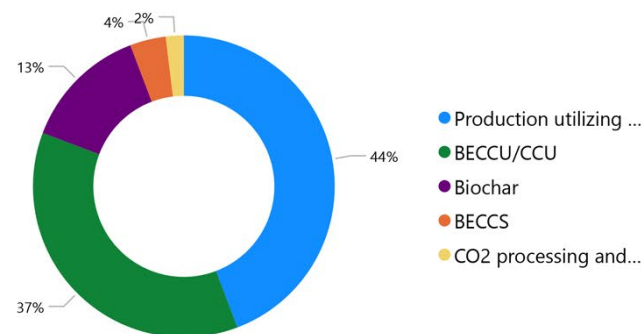
# Projects on the Map: Bio-CCUS & Biocoal



● BECCS ● BECCU/CCU ● Biochar ● CO2 processing and infrastructure ● Production utilizing CO2



Technology category



Technology category

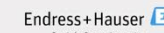
- ☐ BECCS
- ☐ BECCU/CCU
- ☐ Biochar
- ☐ CO2 processing and infrastructure
- ☐ Production utilizing CO2

Operator

- ☐ Aliceco Energy + TEH2 + Kokkol...
- ☐ Alva-yhtiöt + Nordic Generation...
- ☐ Bioenergo
- ☐ Carbo Culture
- ☐ Carbofex
- ☐ Carbonaide
- ☐ Freija AS
- ☐ GRK
- ☐ HSY Ämmässuo
- ☐ Joensuu Biocoal
- ☐ Kemira Chemicals
- ☐ Keravan Energia + Nordic Ren-...
- ☐ Metsä Group + ANDRITZ
- ☐ Nordfuel

**BIOENERGIA**  
**BIOENERGIALEHTI**

Partners in the  
implementation of  
the map:



Check out the map:

[bioenergia.fi/bio-ccus-ja-biohiili](https://bioenergia.fi/bio-ccus-ja-biohiili)

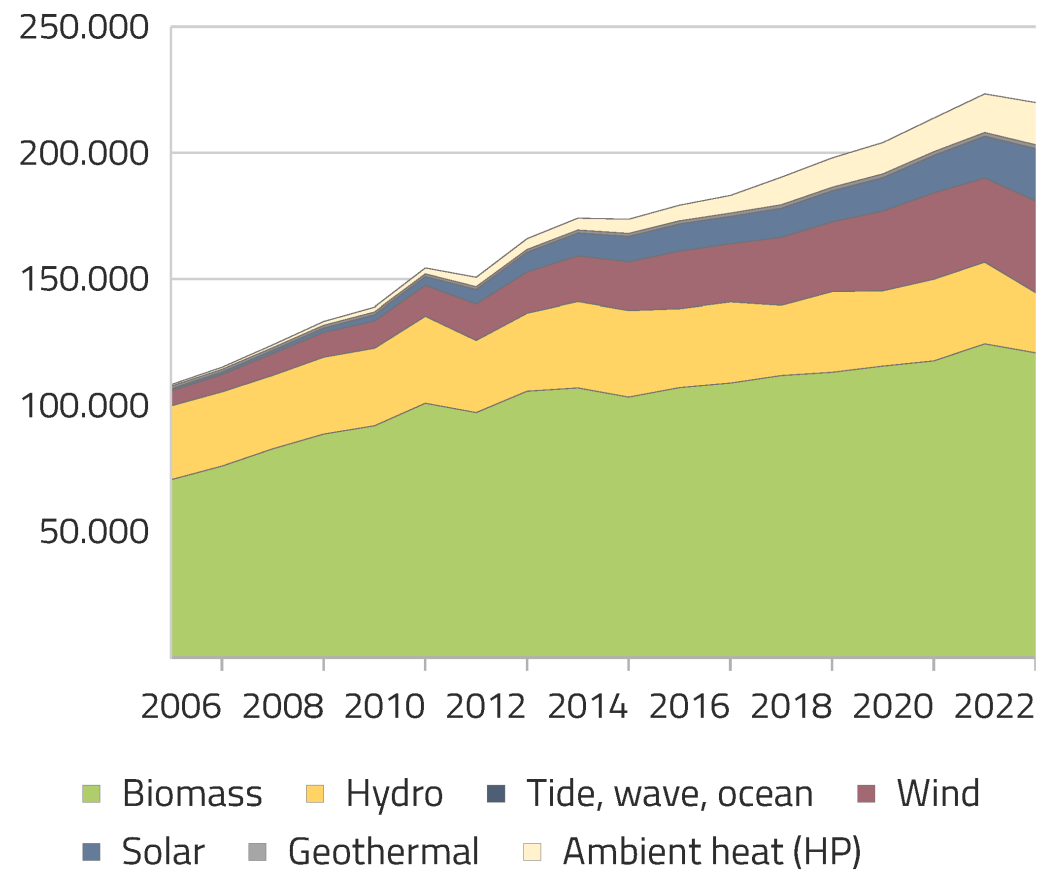


# Bioenergy in the EU

# Evolution of the Renewable Energy Consumption in the EU 2006 – 2022

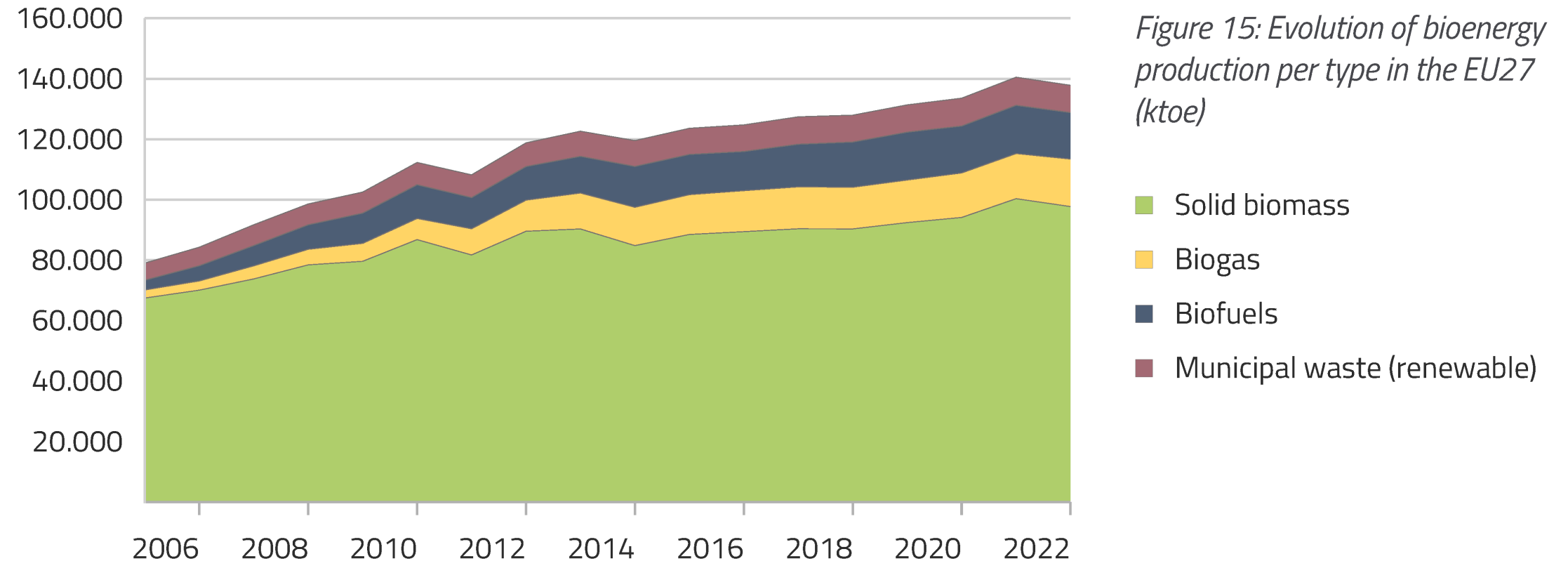


*Figure 13: Evolution of the renewable energy consumption in the EU27 (ktoe)*





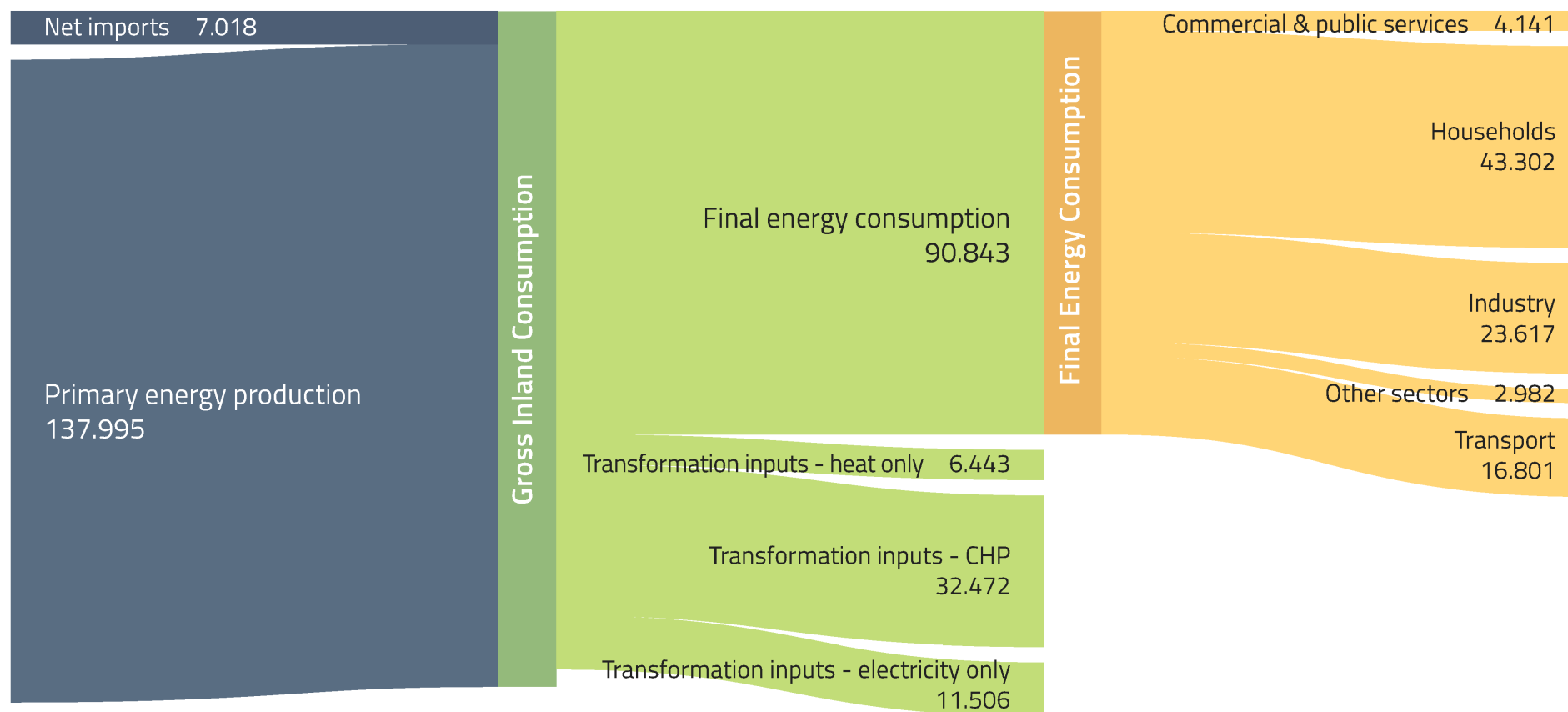
# Evolution of Bioenergy Production 2006 – 2022



# Bioenergy Balance in the EU 2022



Figure 14: Simplified Bioenergy flows in the EU27 in 2022 (ktoe)





# EU – the Largest Users of Bioenergy in 2022

## European Biomass Gross Inland Consumption

(in 2022, ktoe) Source: Eurostat

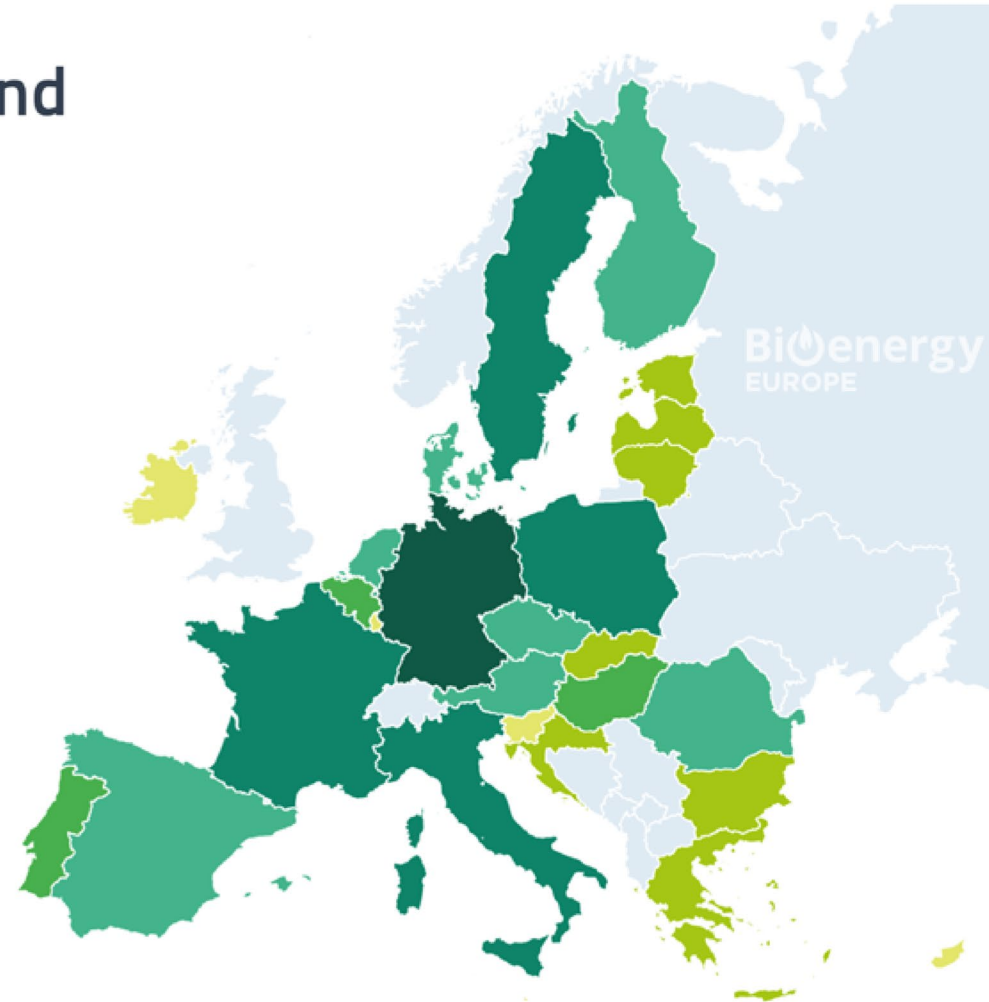
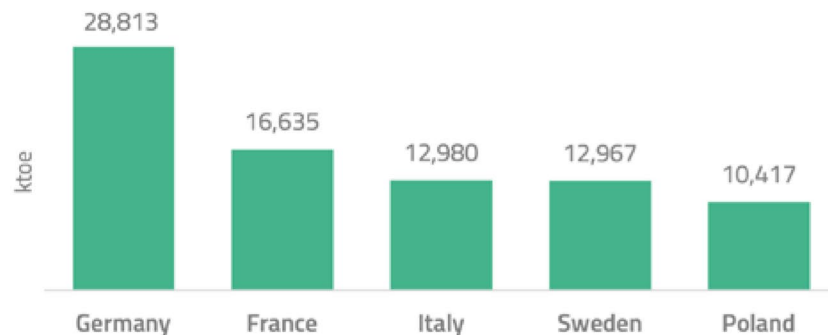
Actual Consumption (ktoe/year)



2022 European  
Consumption

**143,9**  
mtoe

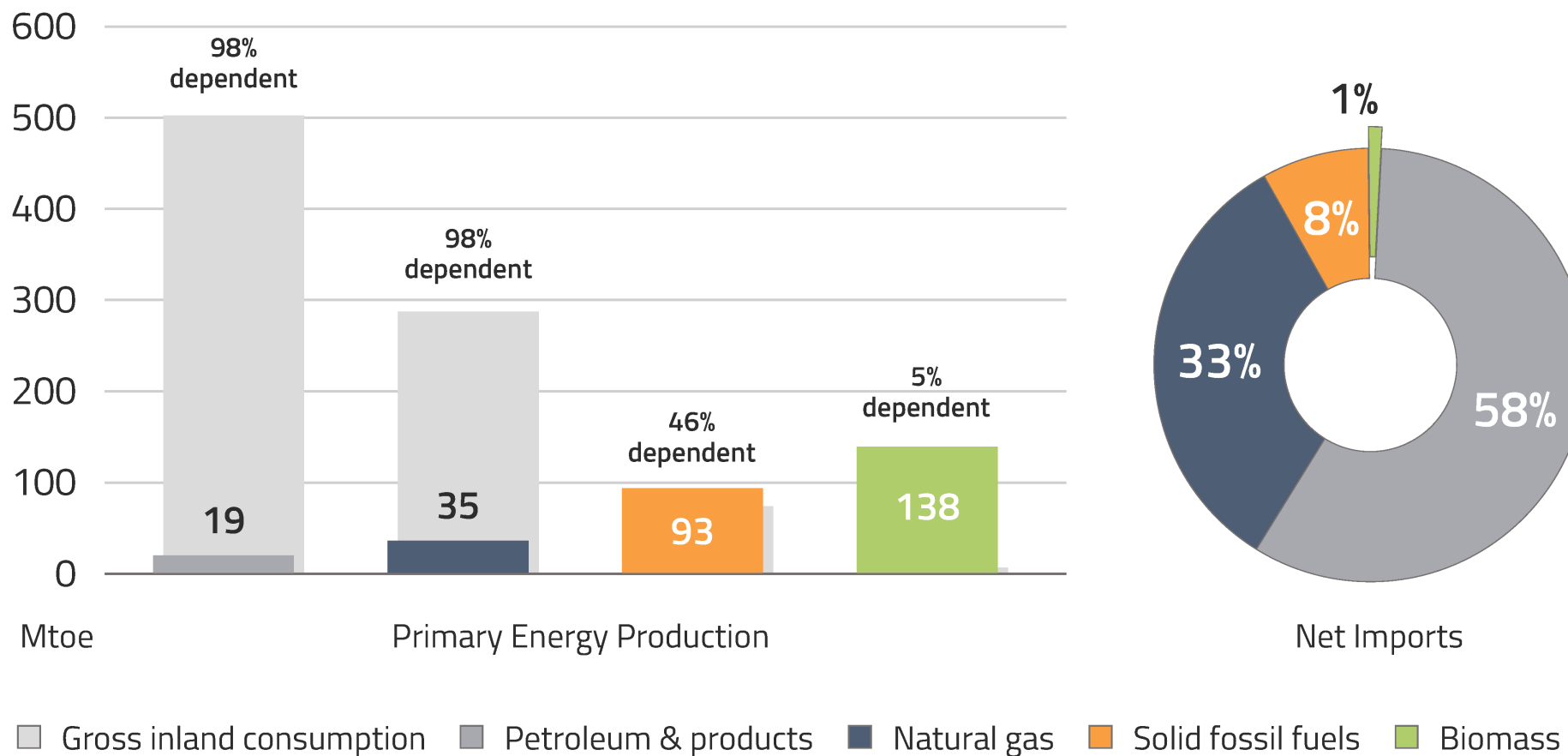
Consumption in top 5 European countries in 2022



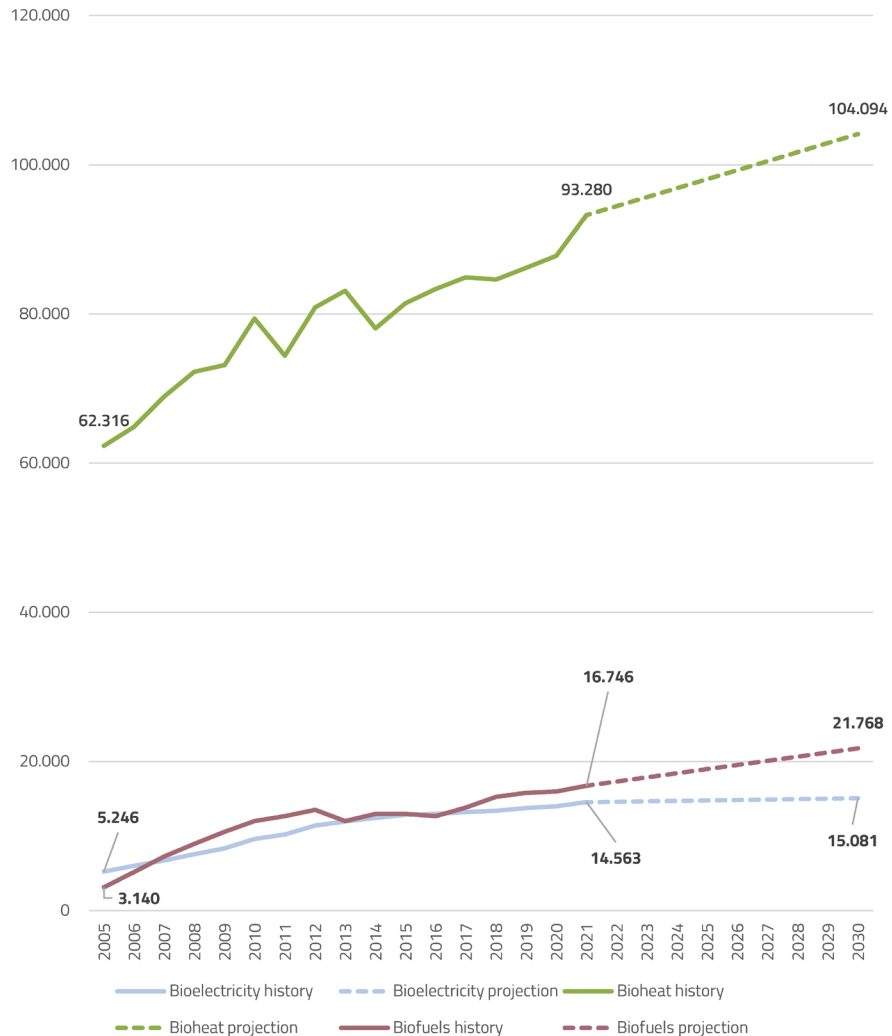
# Bioenergy is Mainly Domestic Energy Source in the EU



Figure 19: Consumption, production, imports and dependency of different fuels in the EU27 in 2022 (Mtoe, %)



# Outlook of the Final Consumption of Bioenergy (ktoe) in the EU, NECP-plans

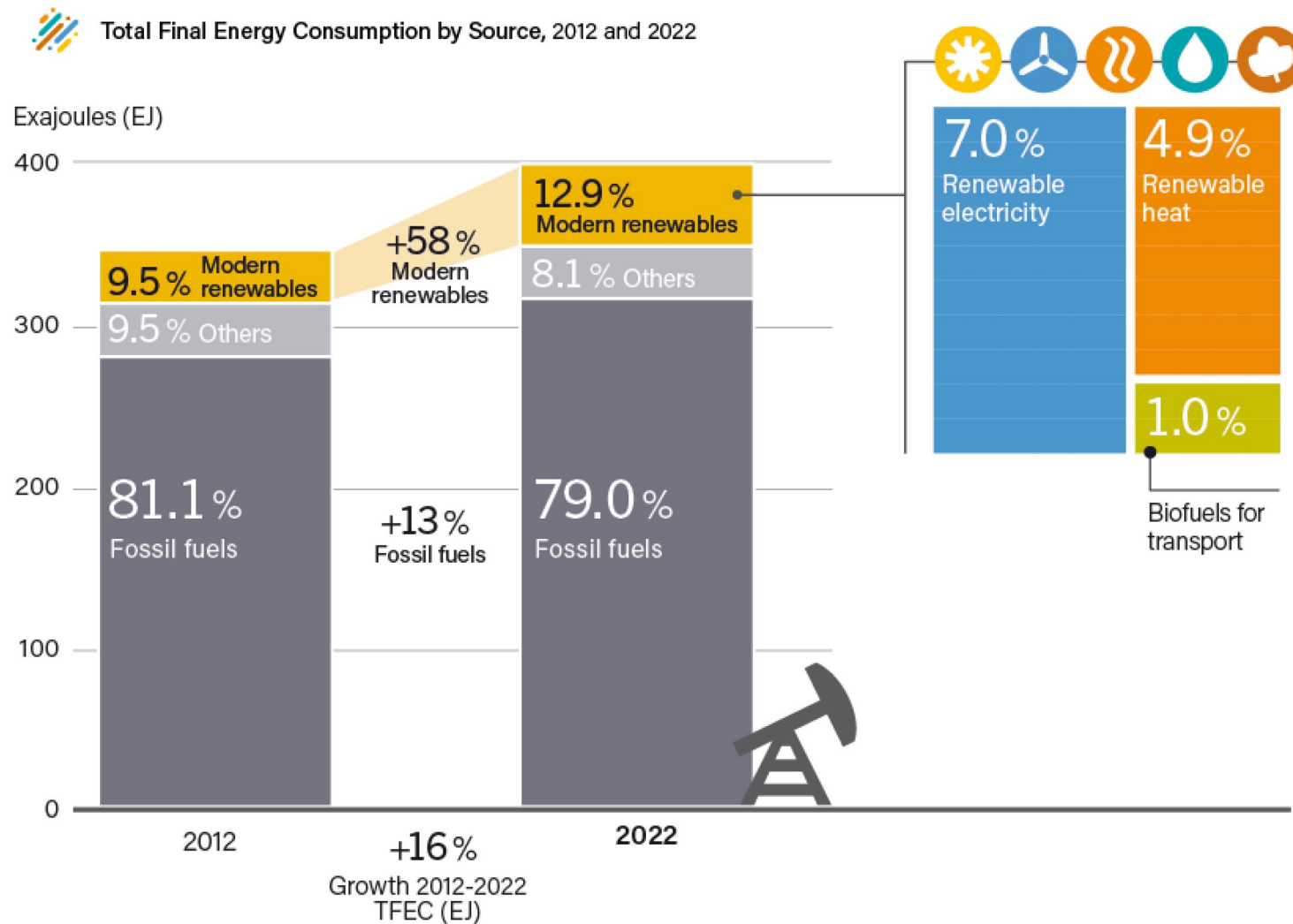




# Bioenergy in the World



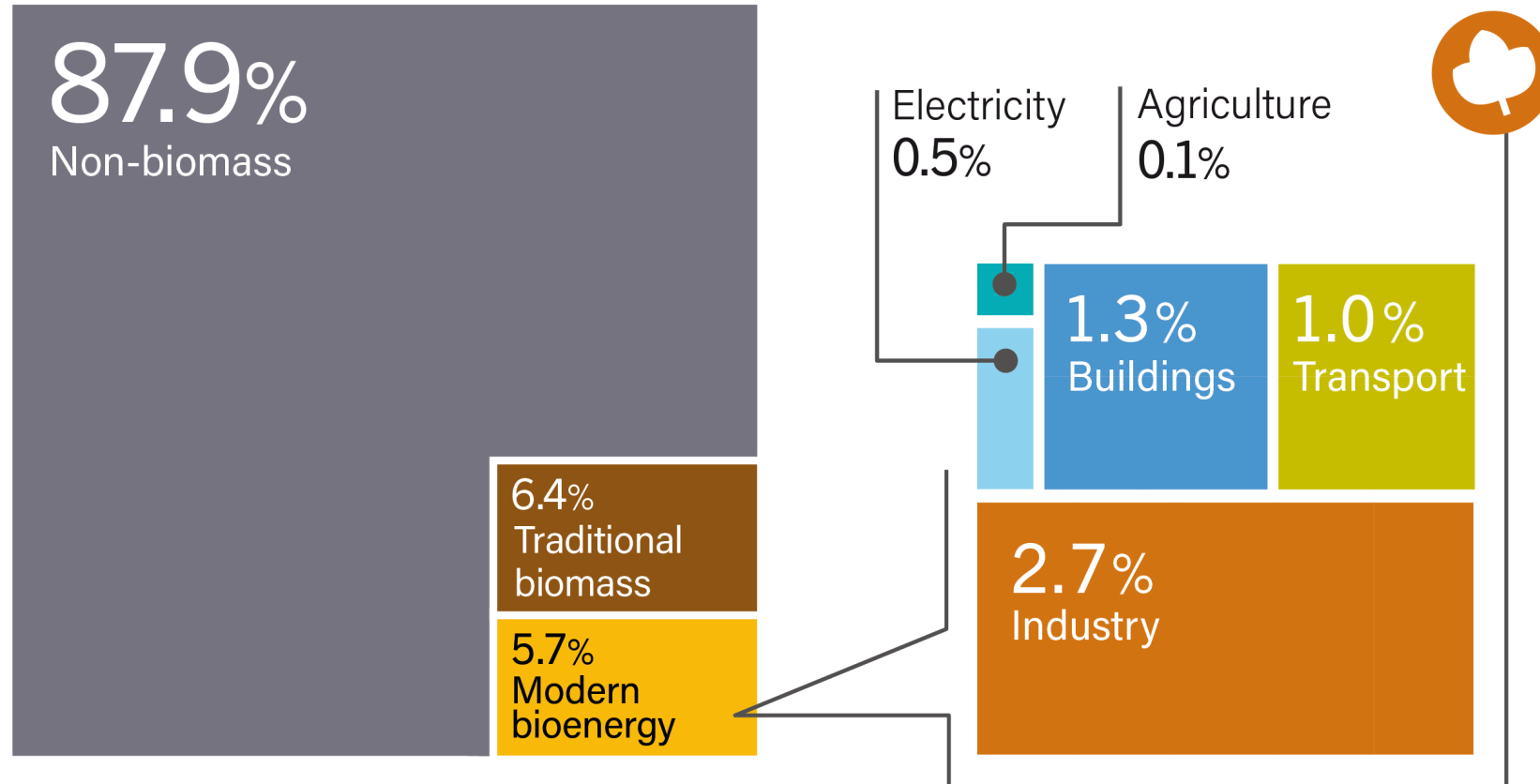
# The Growth of the Renewable Energy



Source: REN21, 2024, [the Renewables 2024 Global Status Report \(GSR\)](#)



# Bioenergy has a Major role in the Heating Production





# The Role in the Electricity Production is lower

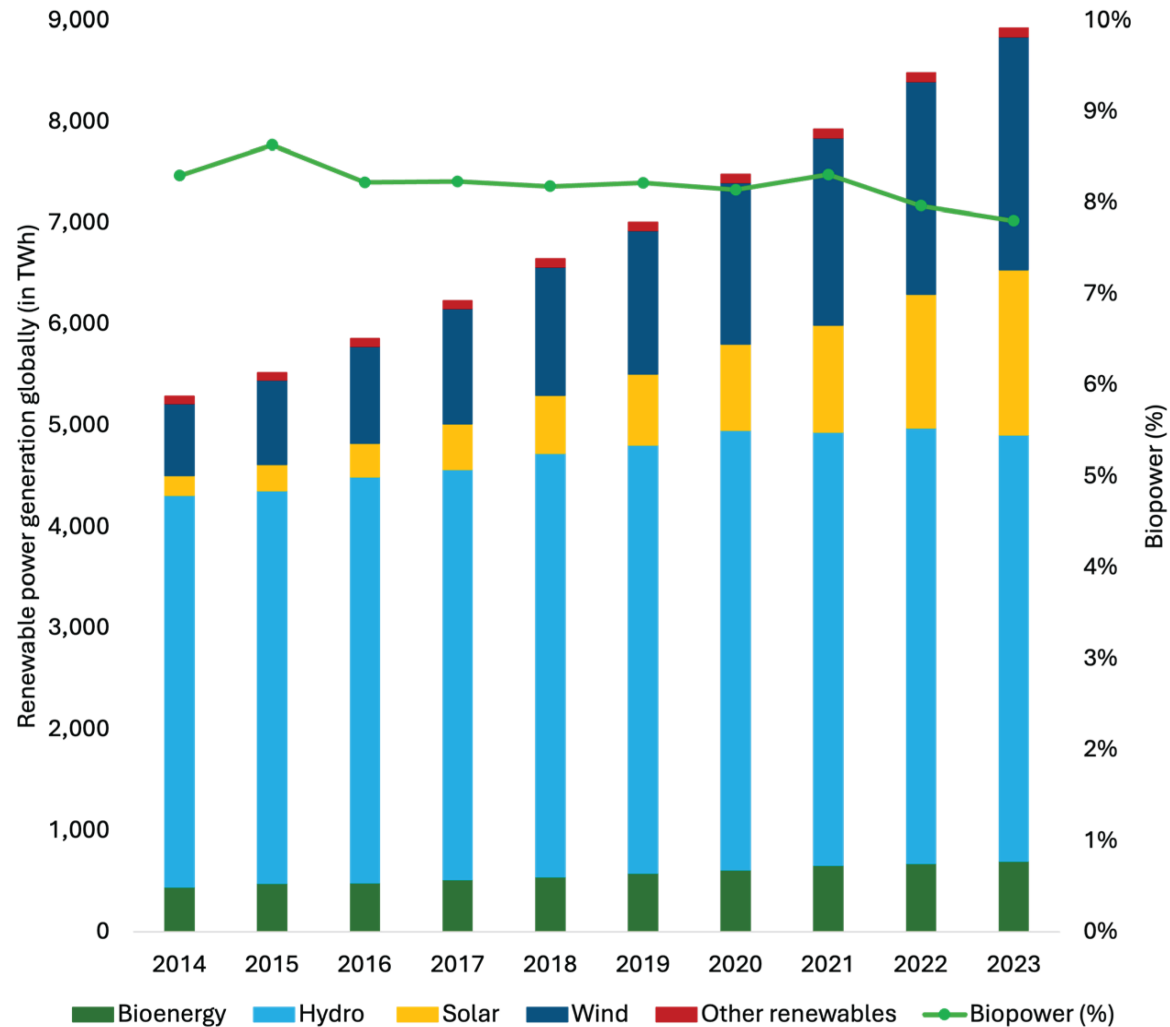


Figure 3. Renewable power generation and share of bioenergy



# Share of Bioenergy 2013 – 2022

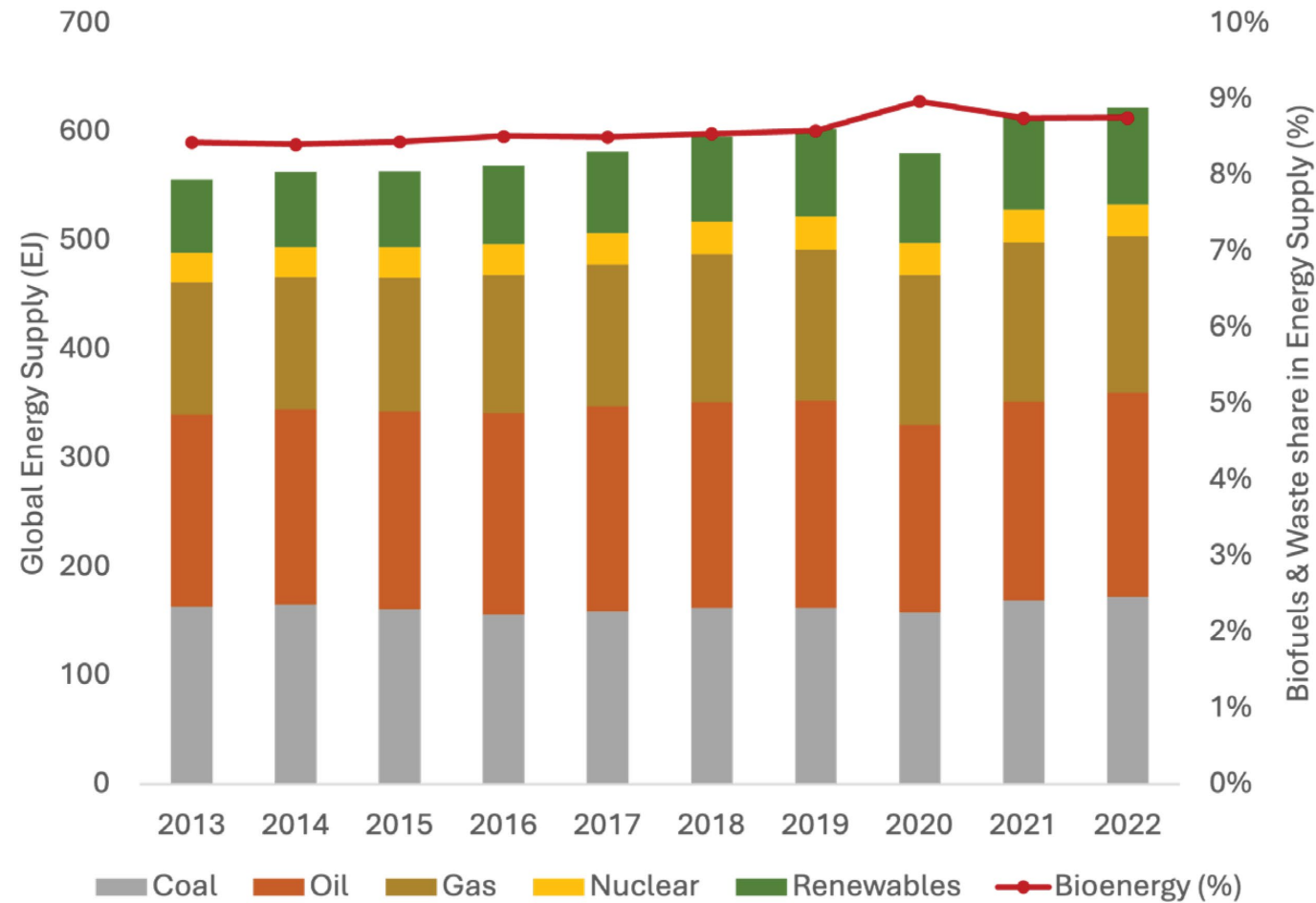


Figure 1. Total Energy Supply globally and share of bioenergy

# The Production of Renewable Electricity in Different Parts of the World

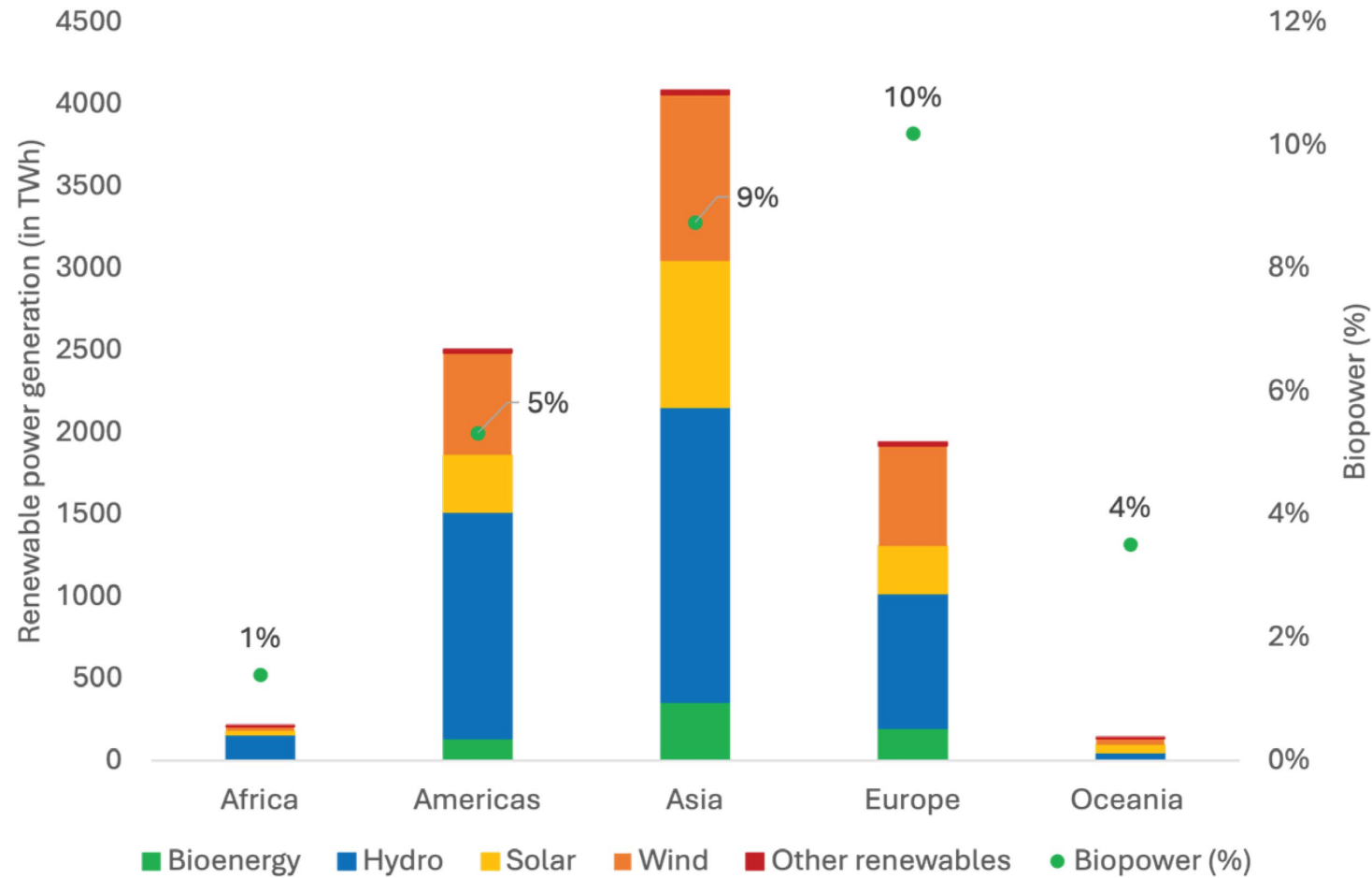


Figure 4. Renewable power generation in continents in 2023

# The Production of Renewable Heating in the World 2000 – 2022

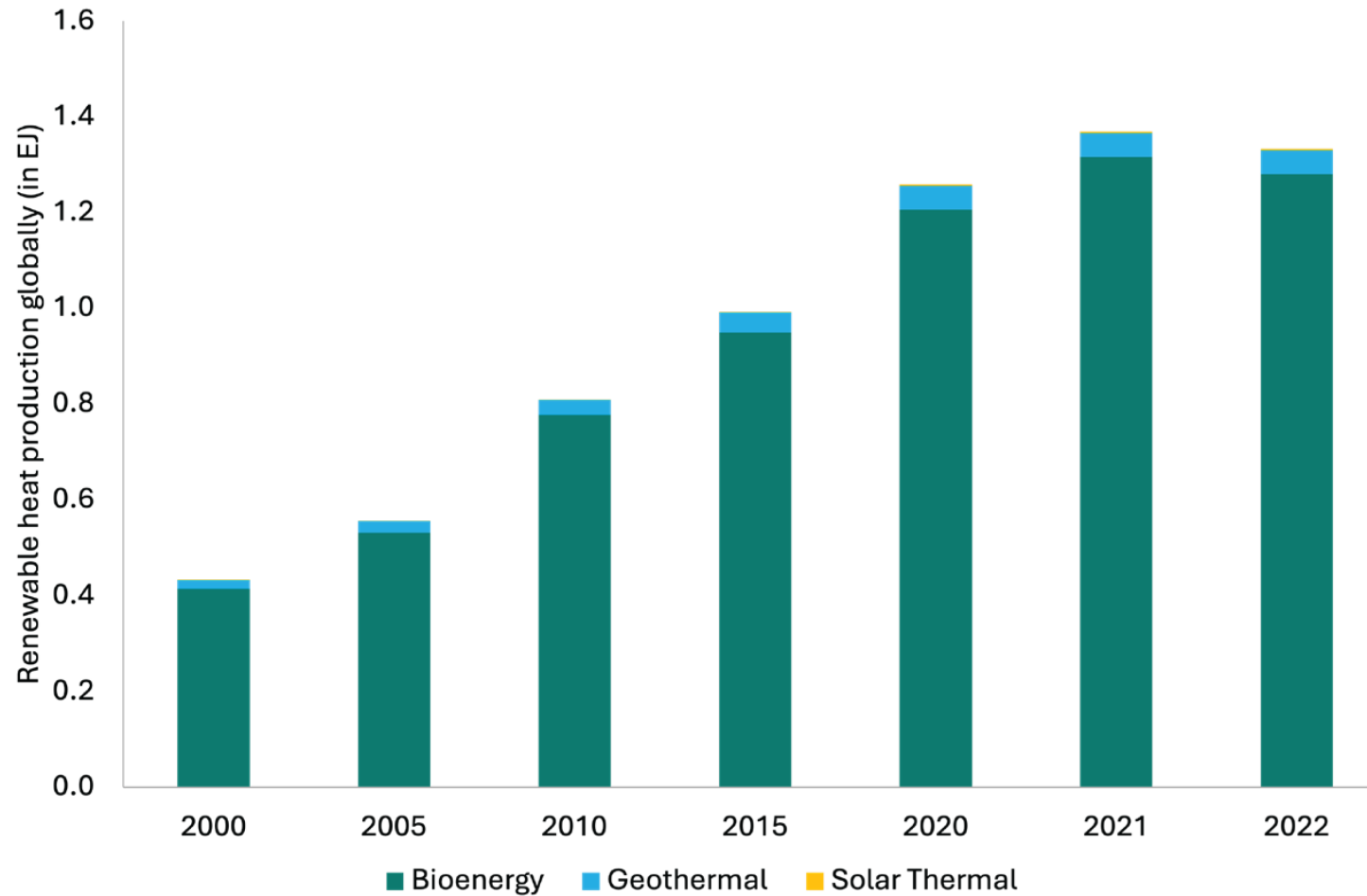
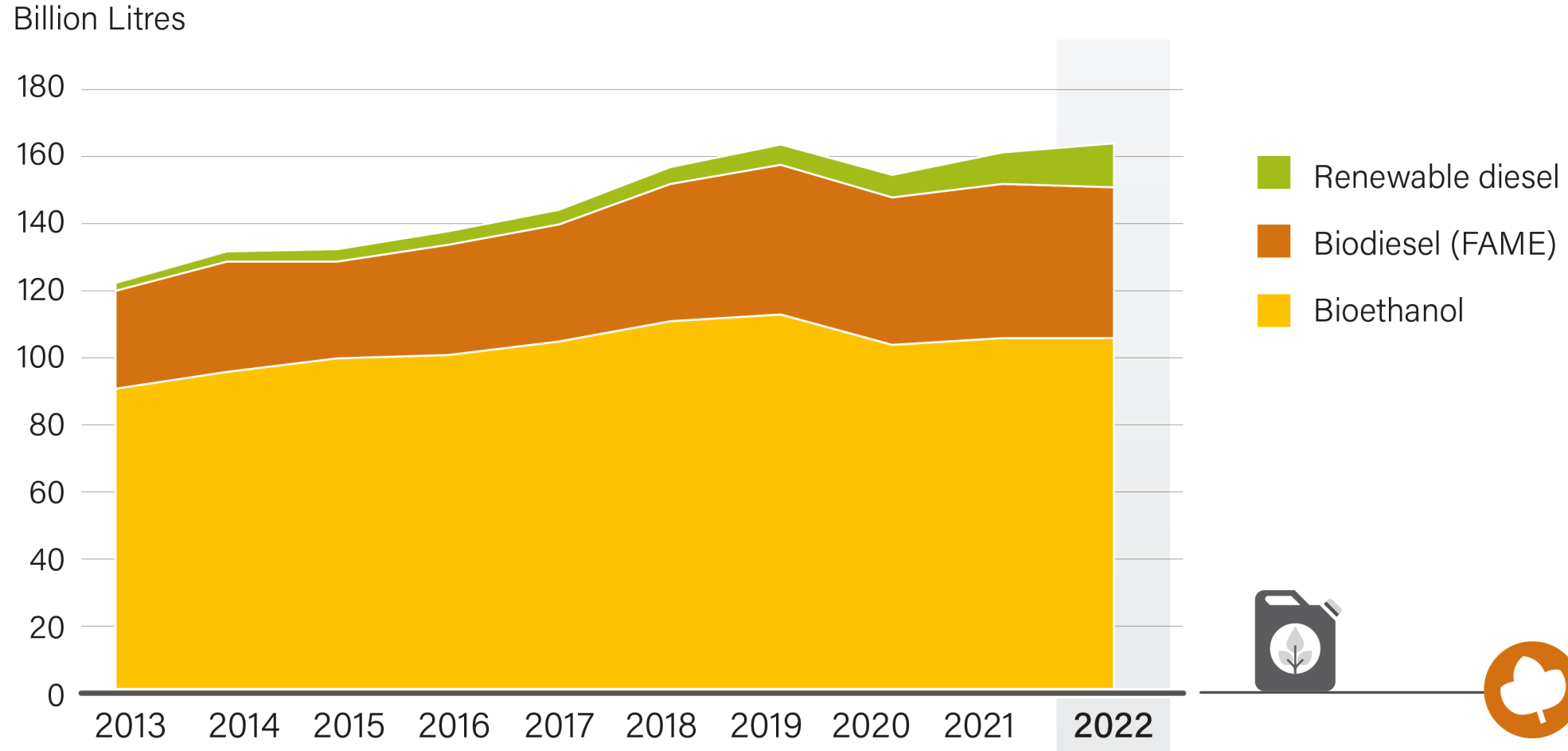


Figure 5. Renewable heat production globally



# Liquid Biofuels 2013 – 2022



Source: REN21, 2024, [the Renewables 2024 Global Status Report \(GSR\)](#)



# The Largest Producers of Bioethanol 2014 – 2023

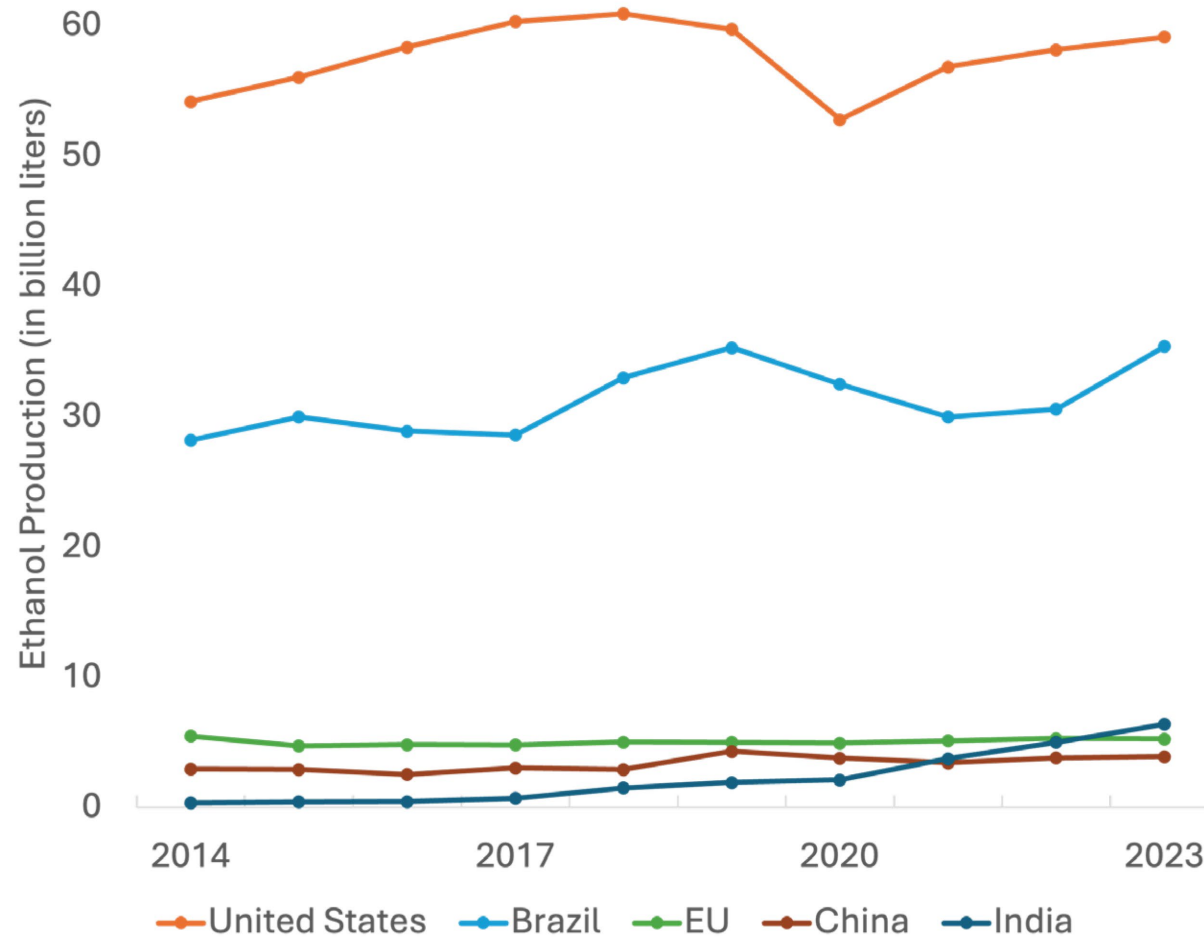


Figure 25. Ethanol production of the 5 largest producers. Source: USDA GAIN Reports

# The Largest Producers of Biodiesel and Renewable Diesel



## Biodiesel:

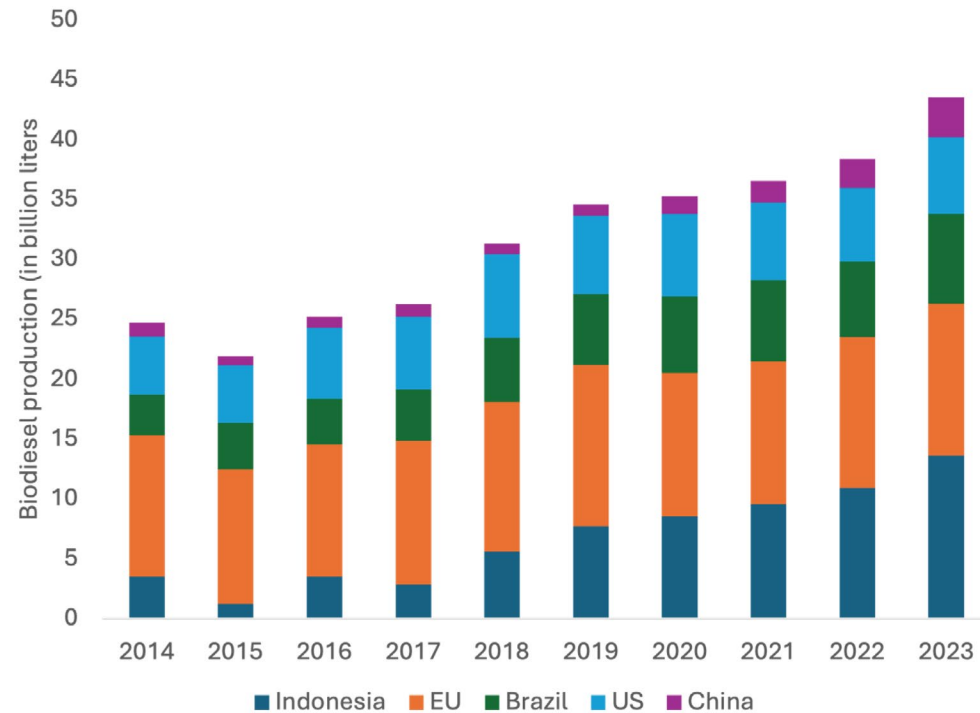


Figure 26. The top largest biodiesel producers. Source: USDA Gain Reports

## Uusiutuva diesel (HVO):

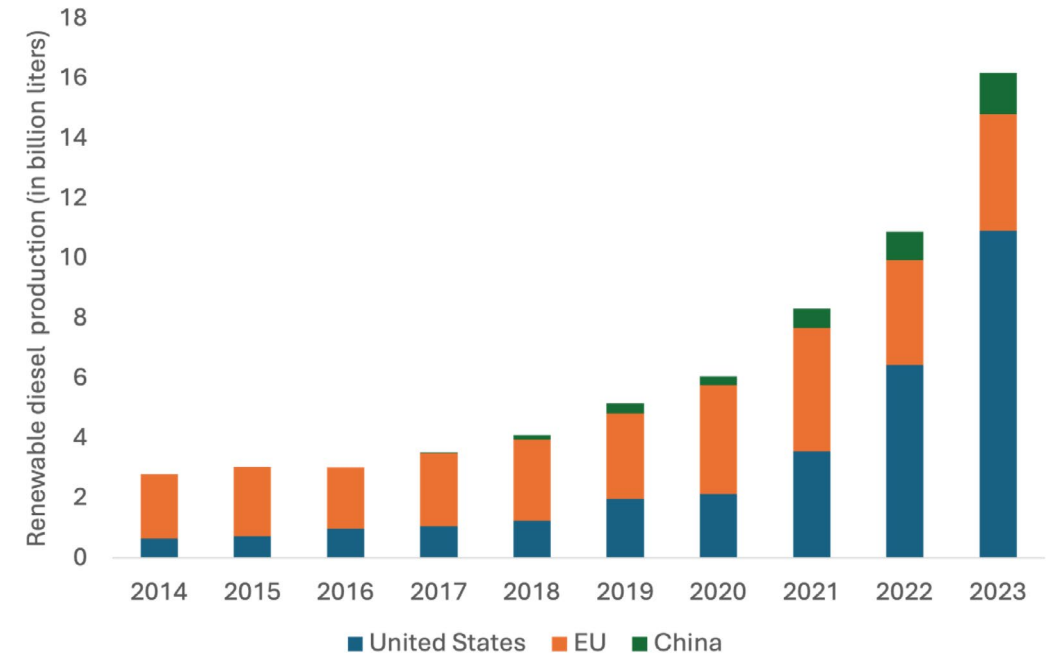
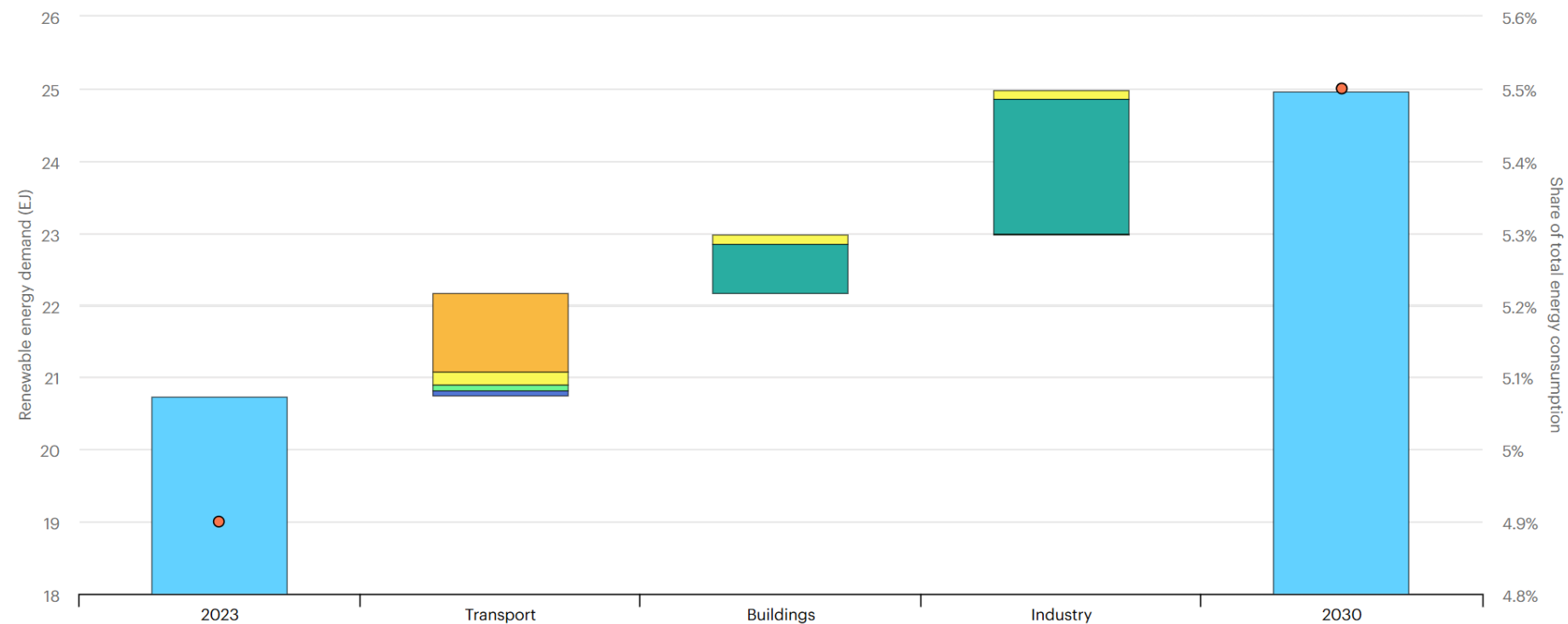


Figure 27. Renewable diesel production in the United States, the European Union, and China

# The Growth of Renewable Fuels by Sector 2023 – 2030

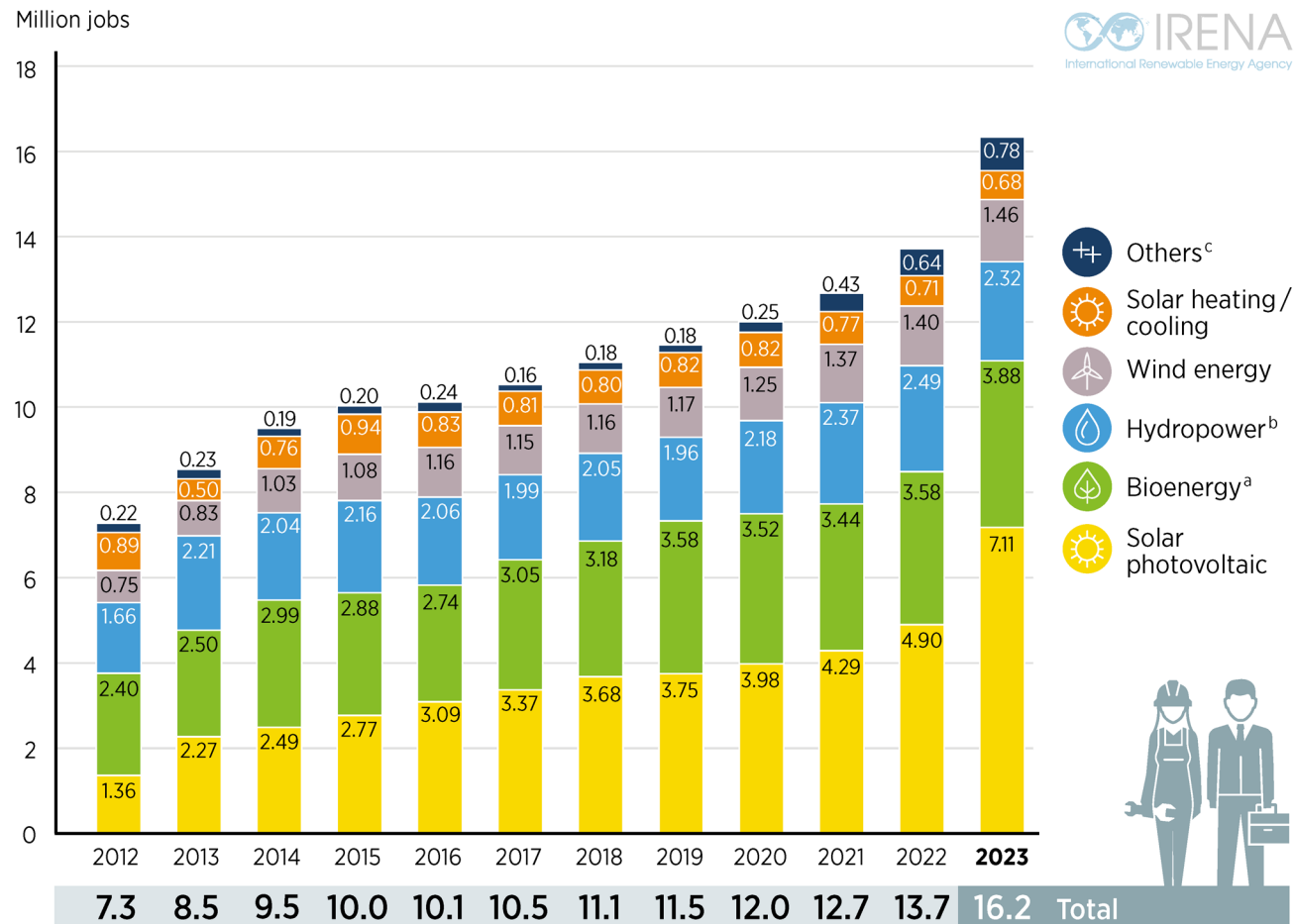


IEA. Licence: CC BY 4.0

E-fuels   Hydrogen   Solid biomass   Biogases   Liquid biofuels   Shares



# Jobs in Renewable Energy 2012–2023





# Jobs in Renewable Energy 2023

