

Bioenergy in the EU context

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Department



BioRural Knowledge-exchange Workshops:
Advancing the European Rural Bioeconomy

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Workshop 5: Bioenergy

About Bioenergy Europe



Common voice of the European bioenergy sector since 1990



Unites more than **40 national associations** and around **140 companies** from all steps of the bioenergy value chains



Hosting the European Pellet Council (EPC)



Quality & Sustainability Certifications

Bioenergy
EUROPE

Our Services:



EU Policy Monitoring & Influence



Market Data



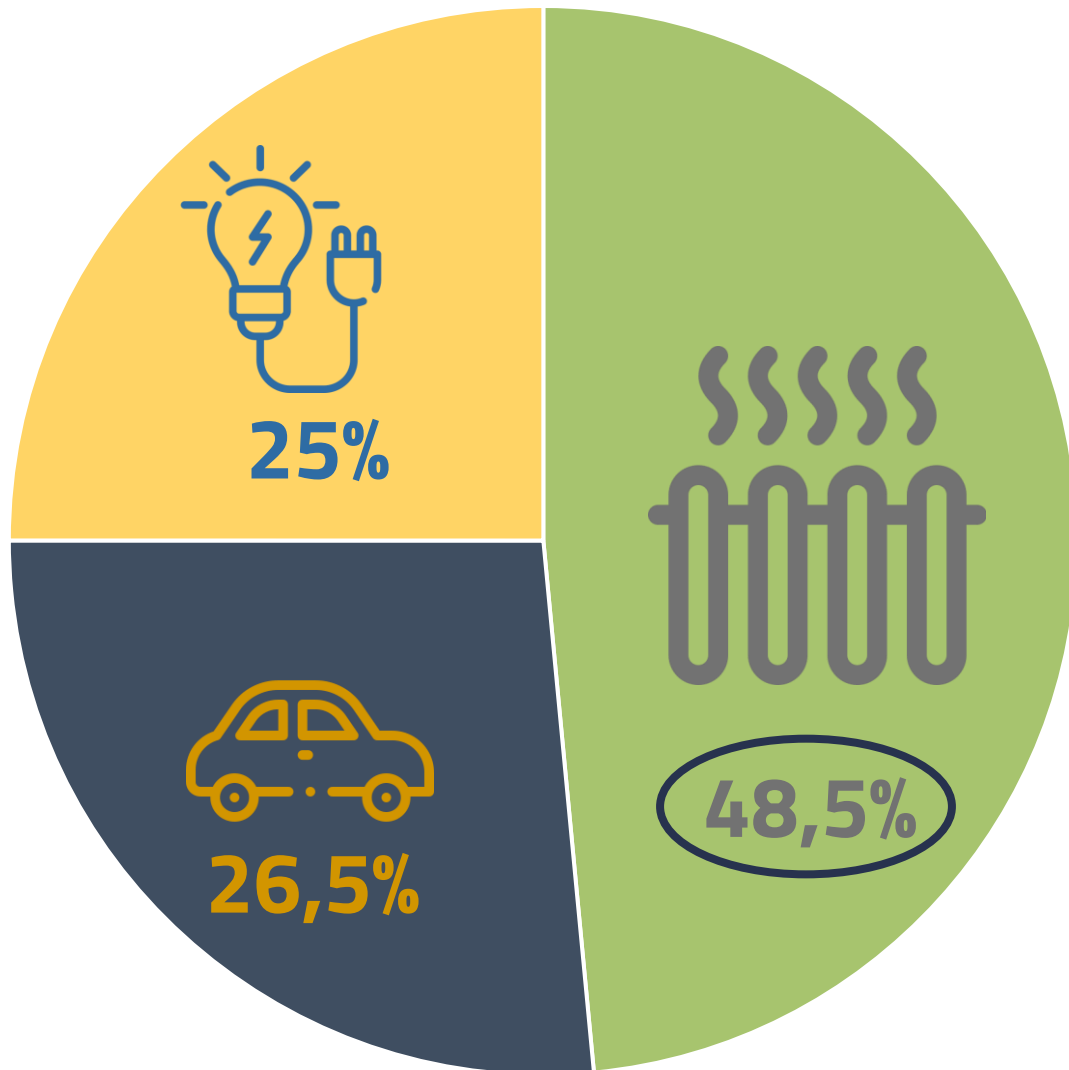
Visibility



Networking



Free & Discounted Events

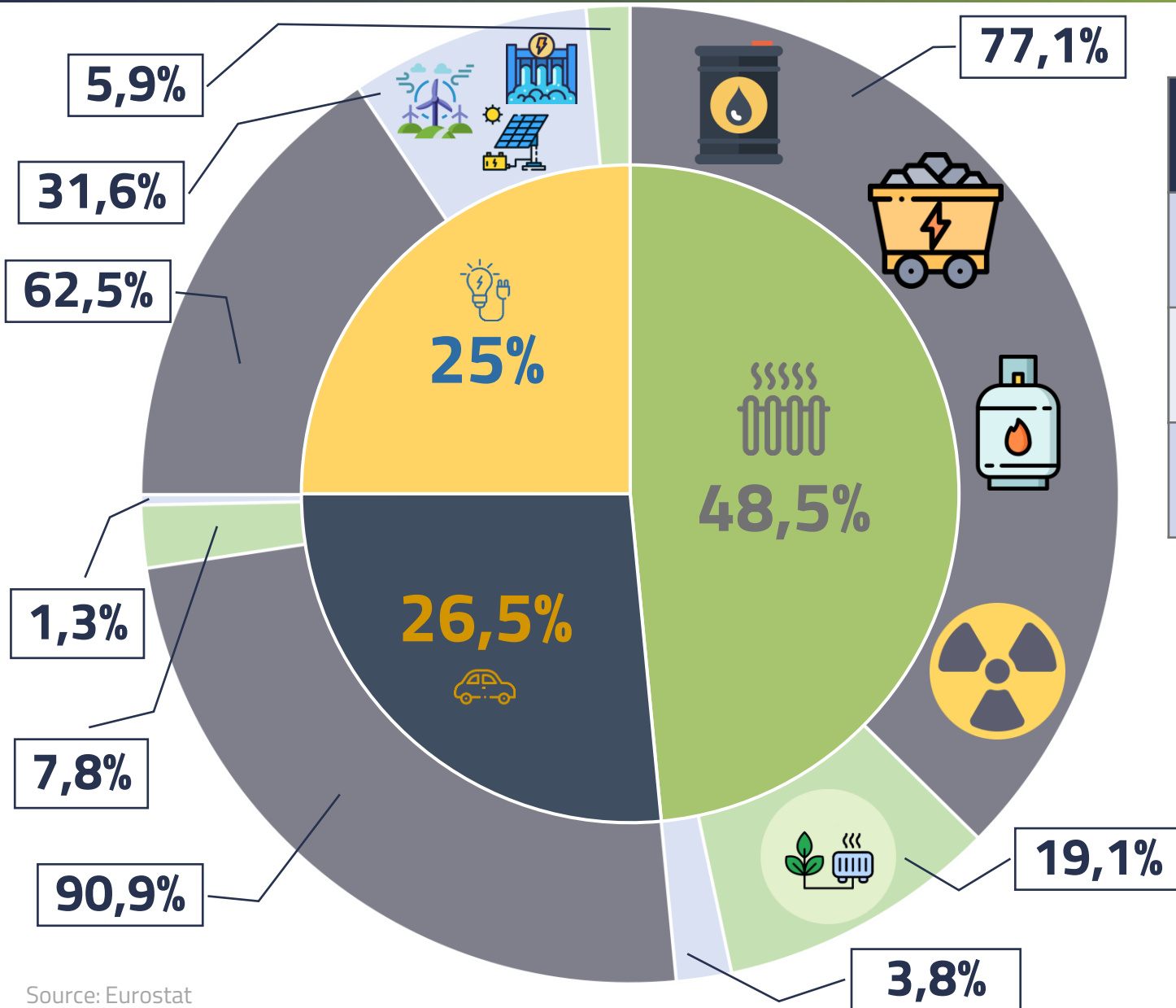


Emphasis being put on **electrification** and **decarbonization** of the **electricity ...**

BUT

Half of our energy is used for **heating!**

The EU's energy system – current state



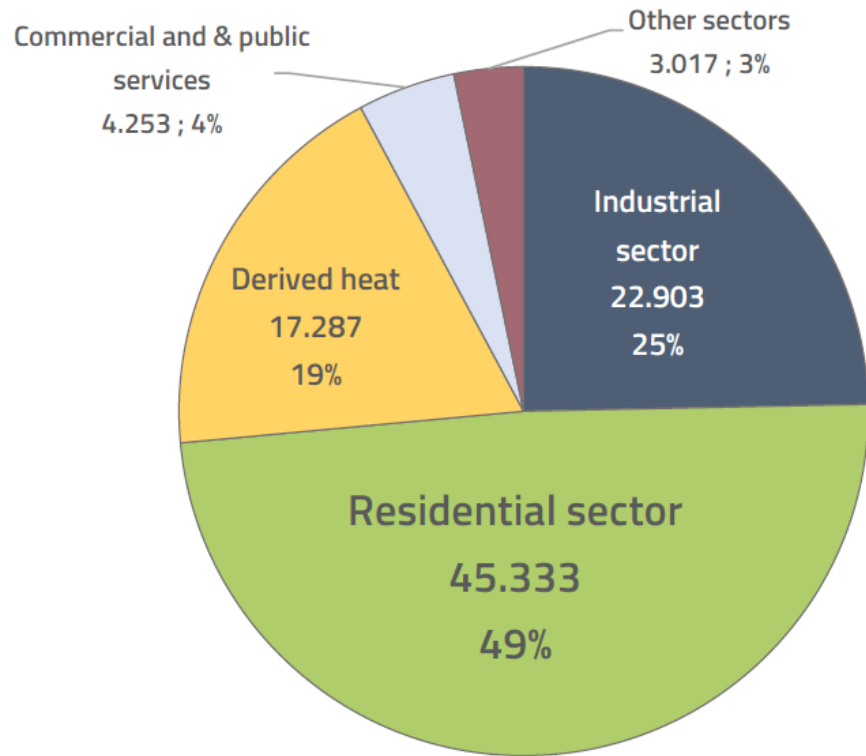
Type of End Use	Share of Non-RE	Share of RE	Bioenergy in the RE mix
Heating & Cooling	77,1%	22,9%	83,6%
Transport	90,9%	9,1%	85,7%
Electricity	62,5%	37,5%	15,4%

In 2021, Bioenergy = 55,7% of the renewable mix!

Bioenergy is key for all types of end-uses!

Bioheat consumption in the EU industry

Total bioheat consumption in different sectors for EU27 in 2021 (in ktoe-%)



Share of biomass usage in the different industries in EU27 in 2021 (in ktoe)

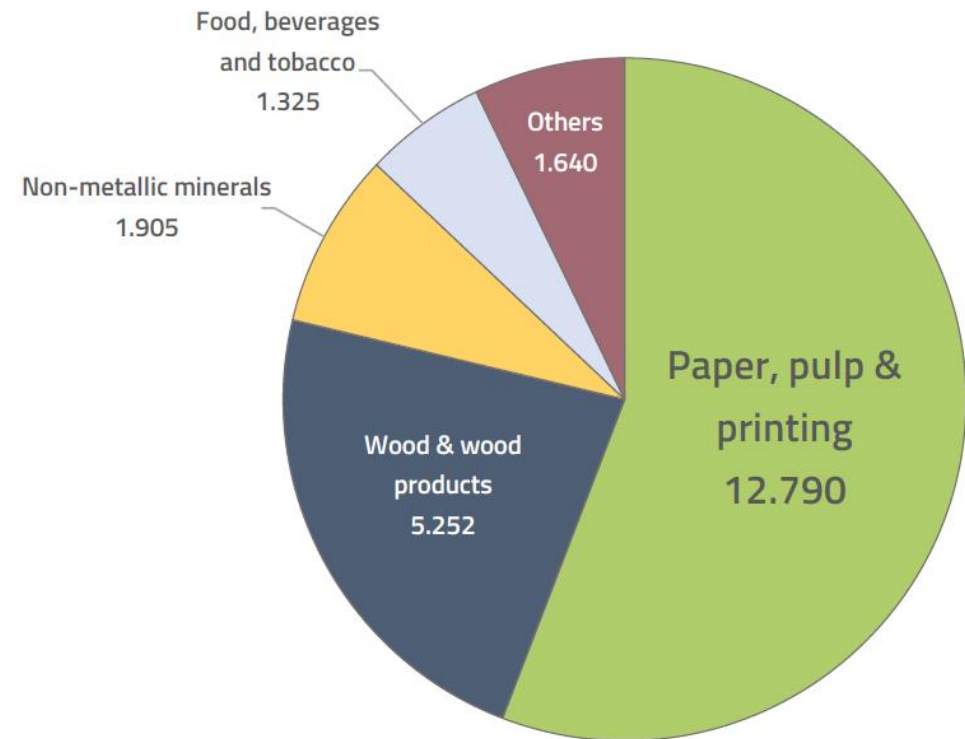


Image Sources:
Bioenergy Europe, Bioheat Statistical Report 2023, Eurostat data

Bioheat overview

For all:

- Automatic solutions
- Cheap, renewable fuel
- Run on demand

Stoves: 3-10 kW



- Cozy
- Pellets saved expensive main heating systems

Medium scale boilers:
some 100 kW



- Schools, hospitals, smaller industries & DH networks, etc.
- Rural economy

Domestic boilers:
15-50 kW



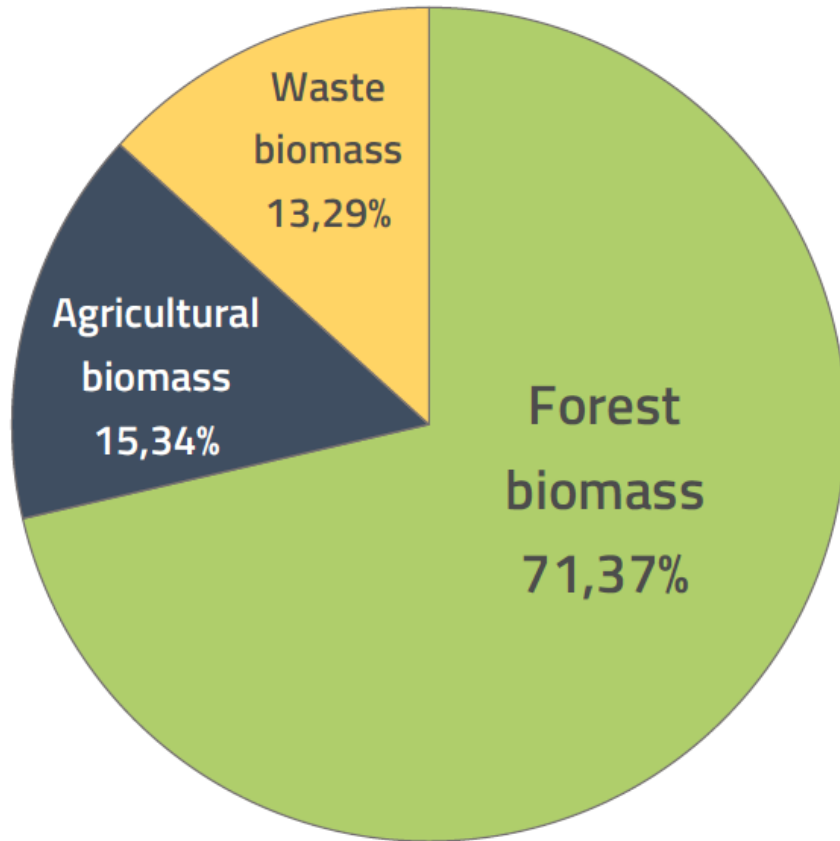
- Almost zero emission systems on the market

Industrial boilers:
some MW

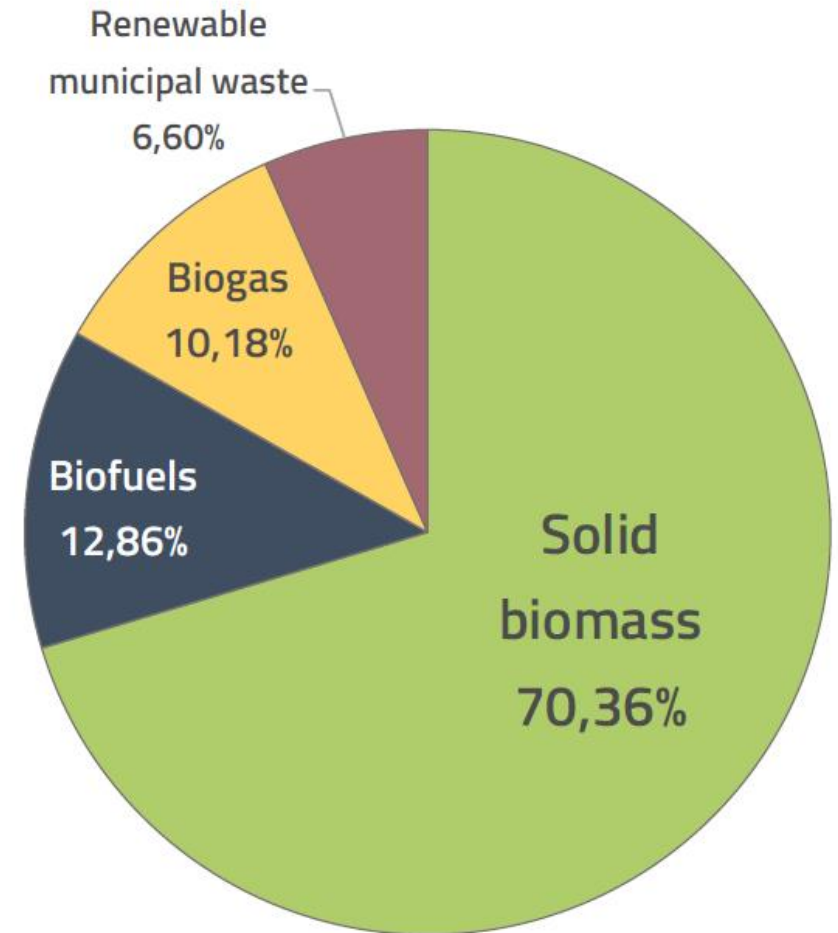


- Multi MW size
- High temperature and steam
- Heat for larger DH networks
- Combined Heat & Power

Distribution of the various biomass feedstock for energy in 2021 (%)



Gross inland energy consumption of biomass by type in the EU27 in 2021 (%)



Biomass supply – restrained?

Reed fires in Kherson, Ukraine



Wildfire in Greece

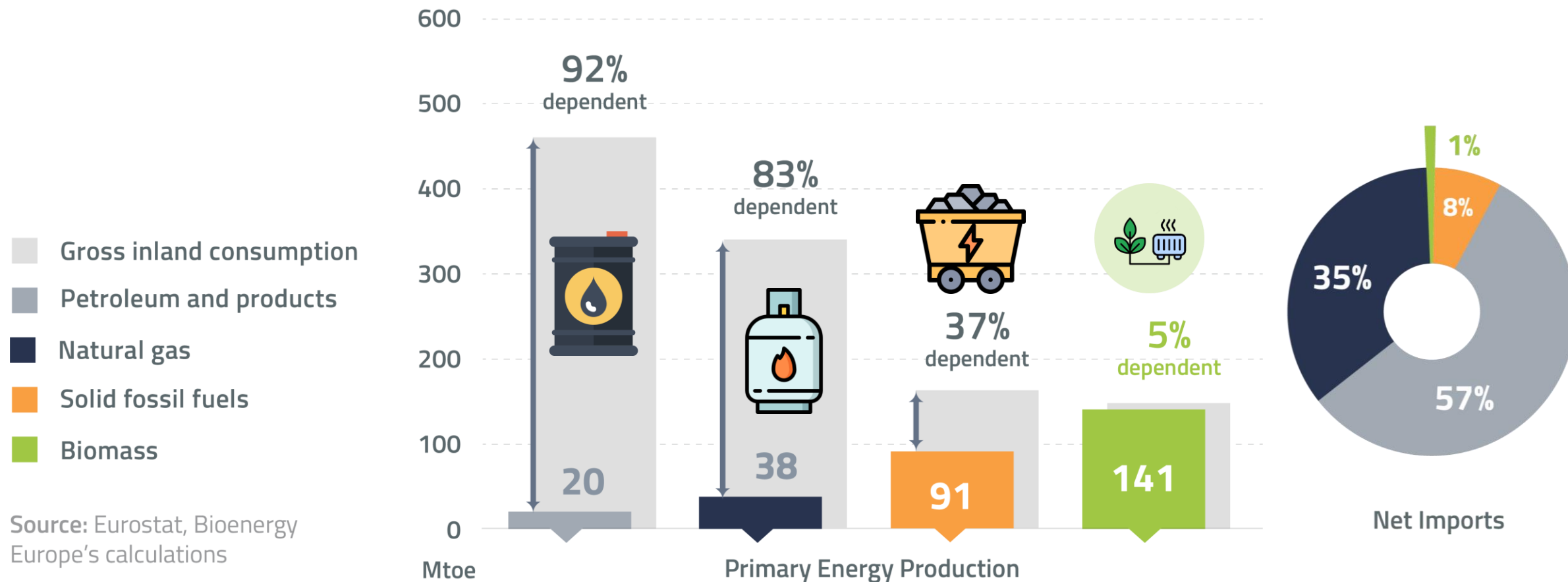


Olive tree pruning open fires in
Central Greece



- Biomass is a finite, but not scarce resource
- Is it better to leave biomass to burn in wildfires or in field fires or in modern combustion systems?
- Which other valorization pathways have the capacity to process huge volumes of biomass from sustainable forest management and agronomic practices?

Bioenergy, a key to energy independence

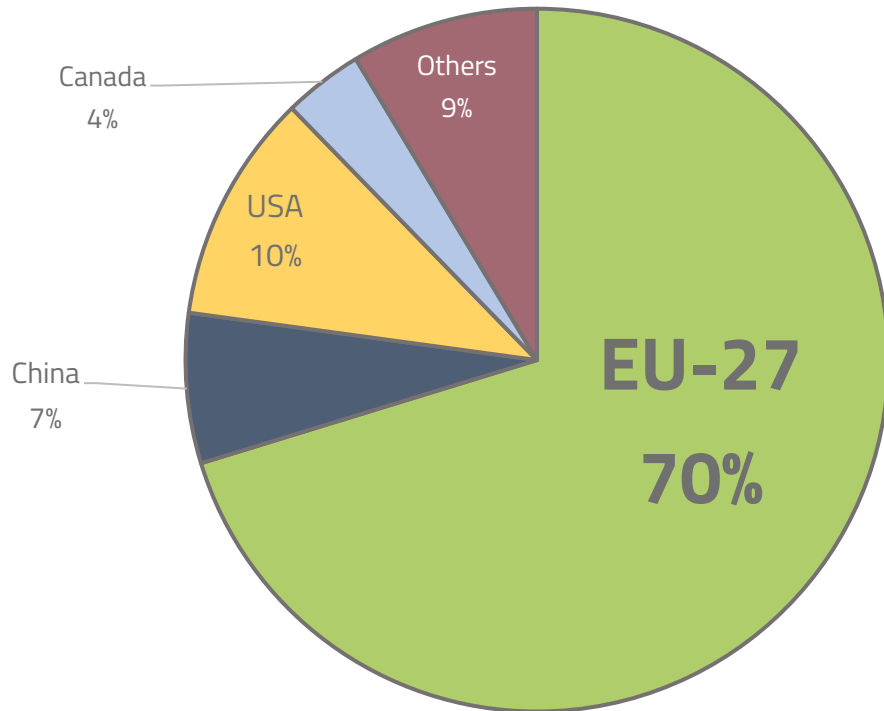


While fulfilling around **12%** of our energy demand, bioenergy represents **1%** of our energy imports!

EU industry leadership



Share of bioenergy equipment suppliers per geographical areas



Source: Bioenergy Europe

Global Suppliers Directory 2018

This is the 11th annual update of Bioenergy International Global Suppliers Directory, presenting over 464 international suppliers of equipment to the bioenergy sector.

THE PURPOSE IS TO PROVIDE AN OVERVIEW and some pointers on who supplies what. To qualify companies have to be engaged in export and/or have subsidiaries in other regions, the country shown is where it is headquartered. Although comprehensive, the directory is not exhaustive neither is it an endorsement. Note that the directory does not include equipment for the small scale heating sector. For reference and reading purposes we have used same groups as previously.

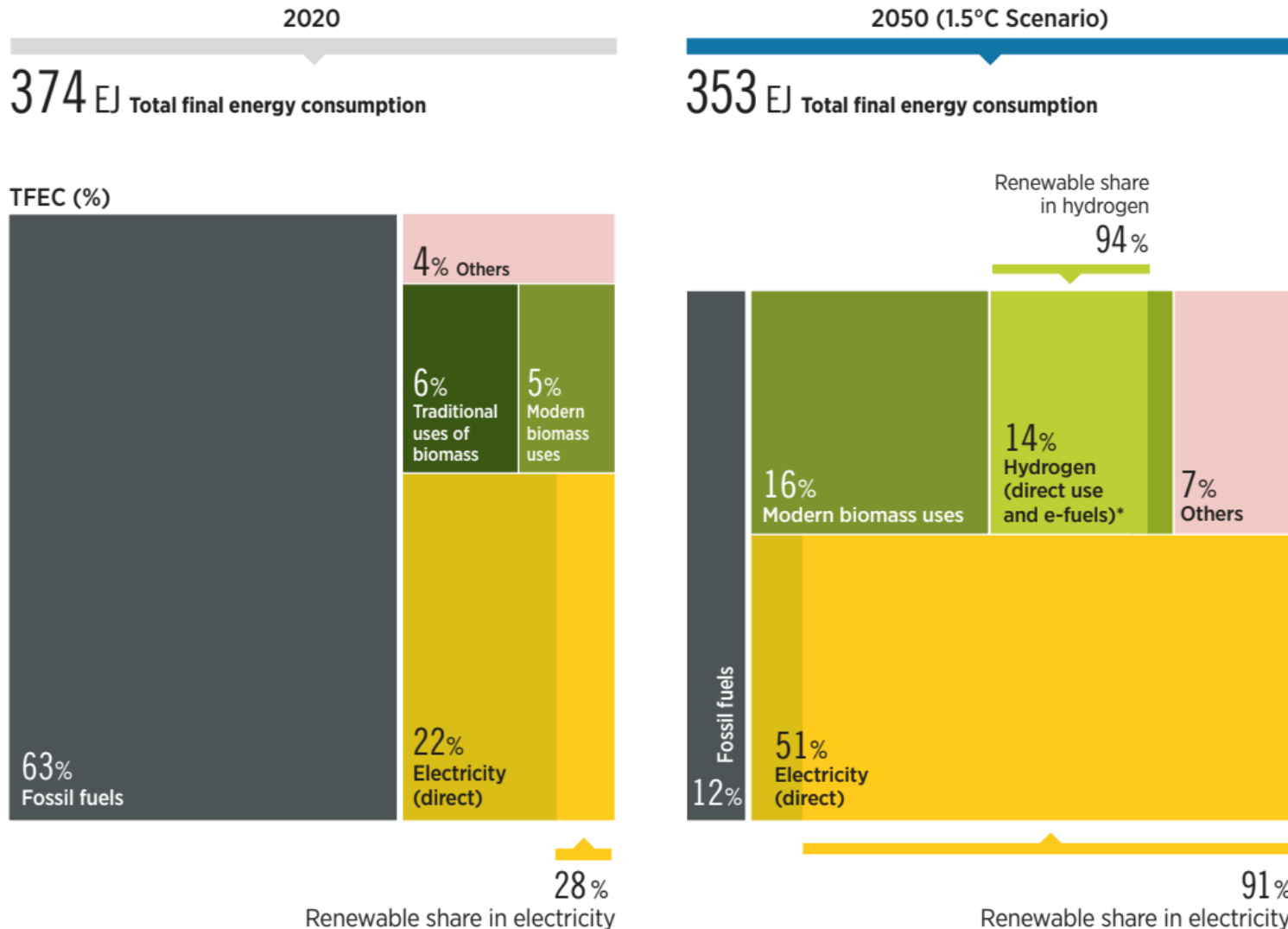
CODE EXPLANATION	
g1:	Field equipment (forwarders, harvesters etc)
g2:	Solid fuel preparation (chippers, pelletizers etc)
g3:	Combustion (boilers, burners etc)
g4:	Chimneys, Filters etc
g5:	Steering, Control, Automatization
g6:	Drying, Condensing etc
g7:	Storage, Handling
g8:	Turbines, Generators etc
g9:	Chemical conversion (biodiesel, ethanol, biogas, etc)

Company	Country	Website	Code	Comment
A.B.S Silo- und Förderanlagen GmbH	Germany	www.abs-silos.de	g7	Solutions for storage, conveying, dosing and discharging bulk goods for agriculture, wood pellet storage, and other industrial applications.
Aalborg Energie Teknik A/S	Denmark	www.aet-biomass.com	g3	Develops, designs, engineers, builds and provides servicing of biomass-fired boilers, CHP and power plants 25-170 MWh.
AB Alstor	Sweden	www.alstor.se	g1	Manufactures off-road machines with articulated steering, full mechanical drive on all eight wheels and full bogie boxes.
Advanced Cyclone Systems, S.A.	Portugal	www.acsystems.pt	g4	Develops efficient cyclone systems worldwide for particle emission control in biomass boilers, heaters and dryers. Products include patented Hurricane and ReCyclone Systems.
Aerovit A/S	Denmark	www.aerovit.dk	g4	Manufactures automatic soot blowing systems.
AFM-Forest Ltd	Finland	www.afm-forest.fi	g1	Manufactures high-quality single-grip harvester, processor and combi heads for demanding forest operations.
Againity	Sweden	www.againity.com	g9	Manufactures and delivers complete solutions for biodiesel production with a capacity of 2 000 to 340 000 litres per day.
Agico Group	China	www.agico.com.cn	g2	Manufactures and exports complete plants and equipment related to biomass, including small pellet mills, wood pellet mills, briquette presses, and pellet stoves.
Agrar Plus Beteiligungs-GmbH	Austria	www.agrarplus.at	g3, g9	Provides energy contracting, biomass district heating systems, cogeneration, and biogas.
AgriPower	USA	www.agripower.com	g3	Manufactures transportable medium-sized biomass burning systems for electricity production.
Agro Forst & Energietechnik GmbH	Austria	www.agro-ft.at	g3	Manufactures equipment for energy production from renewable resources like bark, sawdust, wood shavings, wood chips, scrap wood, recycled wood and straw.
Aimo Kortteen Konepaja Oy (Murska)	Finland	www.murskabioPACKER.fi	g2, g7	Manufactures modular pellet production plants for sawmills, furniture factories or cattle feed production.
Airex Energy	Canada	www.airex-energy.com	g3, g6, g9	Develops solutions for thermal biomass and wood processing, offers energy recovery solutions.
Akhurst Machinery Ltd	Canada	www.akhurst.com	g1	Produces equipment for grinding and shredding, material drying, Pellet equipment and briquetting presses.
AKRON	Sweden	www.akron.se	g5, g6, g7	Offers grain handling equipment, biofuel handling equipment for wood chips and pellets, industrial fans and electric motors
Alcon A/S	Denmark	www.alcon.nu	g3, g4	Develops, produces and sells straw boilers in sizes from 30 kW to 1200 kW.
Alan Bruks AB	Sweden	www.alanbruks.se	g1, g2	Develops and manufactures mobile chippers, harvesters and cranes for the forest industry.
Alstom Power Group	France	www.alstom.com	g3, g5	Provides equipment and services for power generation and rail transport. Turnkey projects: power, CHP and heat plants, and flue gas cleaning.
Amandus Kahl GmbH & Co.KG	Germany	www.amandus-kahl-group.de	g2	Complete wood pelleting plants from total to highest capacities with flat die pellet mills
Anderson Group Inc	Canada	www.granderson.com	g1	Designs and builds innovative, high quality agricultural and forestry equipment that ensures high yield and facilitates one-person operation.
Andritz Energy & Environment GmbH	Austria	www.aee-austria.at	g3	International provider of systems for thermal power generation and environmental technologies.
Andritz Feed & Biofuel	Denmark	www.andritz.com	g2	Complete process systems for industrial biomass pelleting. Total process solutions from raw material (i.e. wood logs, chips, sawdust, straw, agricultural byproducts) intake to ready pellets including debarker, chipper, dryer, grinders and pellet mills.
Andritz MeWa GmbH	Germany	www.bio-qz.de	g2	Manufactures a range of size reduction equipment and recycling machinery for different types of materials. Single machine or integrated in complete plant solutions.
Ankur Scientific Energy Technologies	India	www.ankurscientific.com	g3	Manufactures biomass gasification systems; world wide activity.
Artti Teollisuus Oy	Finland	www.artti-teollisuus.fi	g7	Silo and conveying system for bulk materials within bioenergy applications. Silos for sawdust, shavings, chips and pellets. Mechanical and pneumatic conveyors for sawdust, shavings, chips and pellets.
Anyang Gemco Energy Machinery Co. Ltd	China	www.agtc.cn	g2, g3, g9	Provides several types of equipment for biomass energy preparation; complete plants for biodiesel as well as pellets, briquets or charcoal.

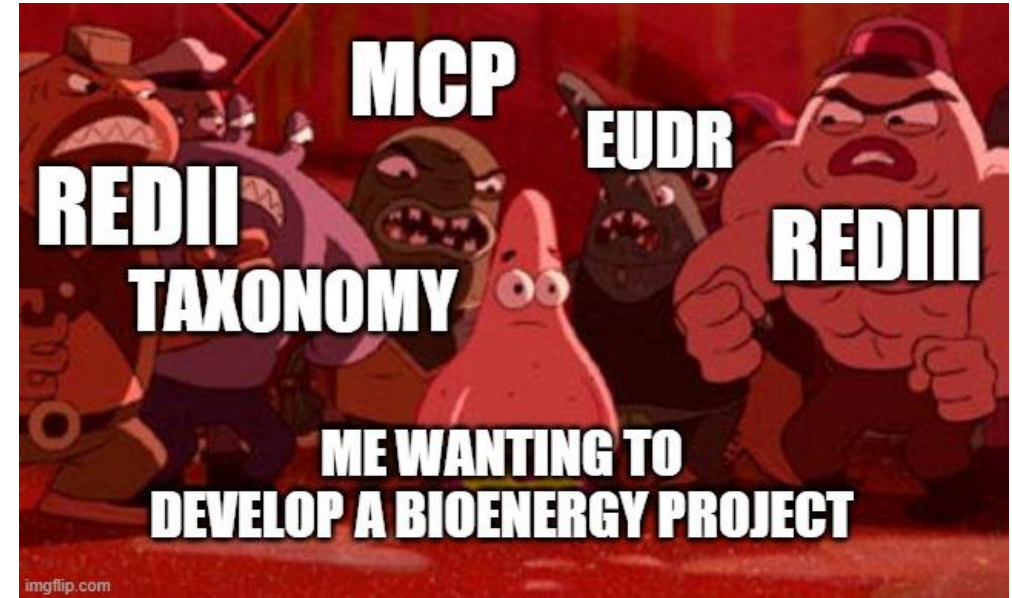
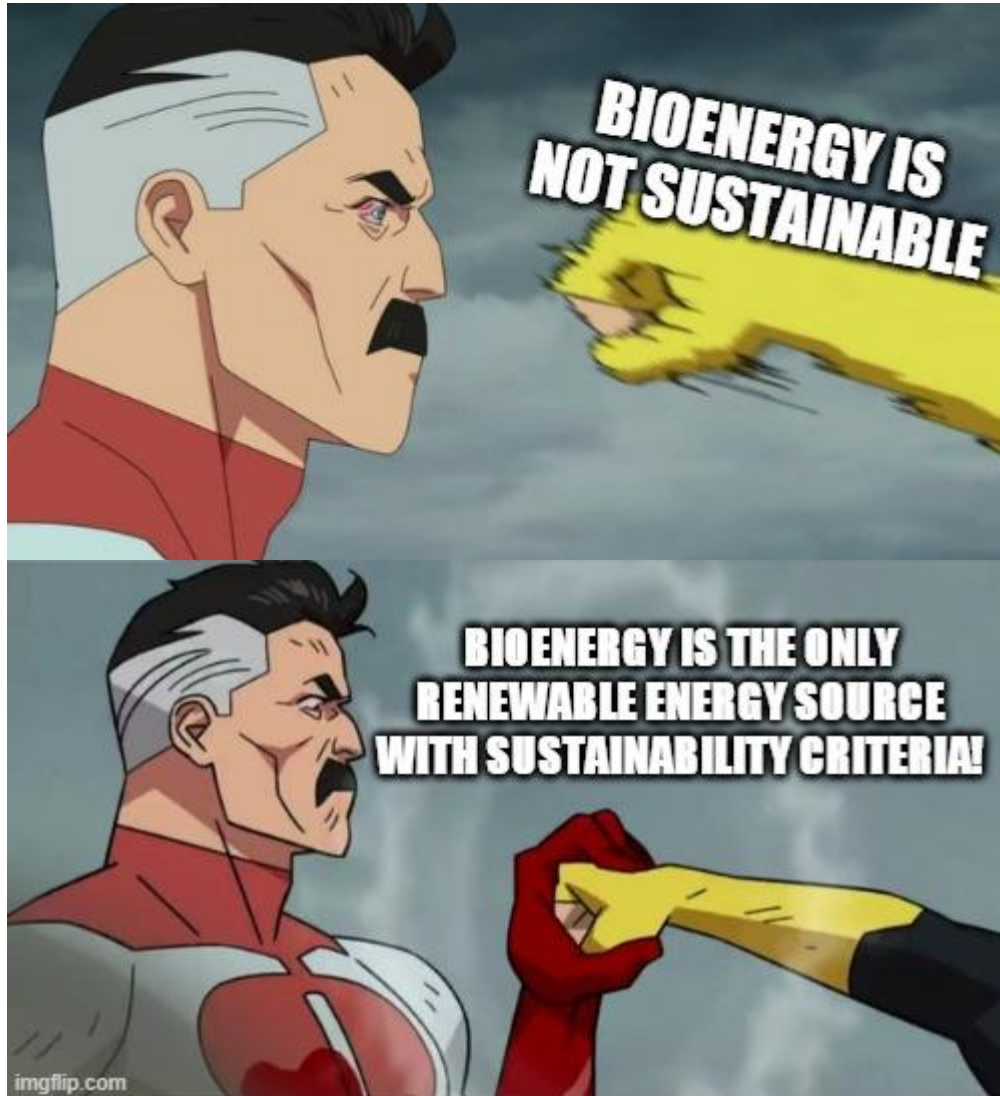
50.000+
Bioenergy businesses in the EU

Bioenergy, a key for the future

FIGURE 1.2 Breakdown of total final energy consumption by energy carrier between 2020 and 2050 under the 1.5°C Scenario



- The role of bioenergy in future energy consumption is expected to increase, both in absolute terms, as well as in relative importance
- Important to move away from inefficient, traditional uses to modern uses of biomass



- The fact that the sector is regulated is NOT the issue...
- The frequent changes in the legislation (and the public debate) is another story...

3 Steps Towards the Energy Transition

• • •
Bioenergy Europe's Manifesto for the
2024 European Elections



BiOenergy
EUROPE

01

A Clear Fossil Fuels Exit Strategy

- End all fossil fuel subsidies and develop a clear defossilisation strategy.
- Calculate the full value-chain emissions for fossil fuels and create minimum standards.
- Require Member States to set end dates for the use of fossil fuels in different sectors with indicative trajectories and clear measures.

02

Sustainable and Efficient Bioenergy Enhances Energy Security

- Launch an ambitious programme to replace old heat appliances.
- Establish a fund for the modernisation of heating appliances and promote investments in efficient bioenergy use.
- Add heat and energy storage mapping to the National Energy & Climate Plans.

03

Unlock the Potential of Bioenergy with Carbon Capture and Storage, utilisation and biochar

- Enable a political and financial framework to accelerate the ramp-up of biogenic Carbon dioxide removal technologies (CDR).
- Set quantitative targets for technological carbon removals in 2030, 2040 and 2050.
- Promote synergies for bioenergy and BECCS in hard-to-abate sectors.

Thank you for your attention!

