EU policies affecting the bioenergy sector

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SEF 2019 - Ukrainian biofuel forum
16 October 2019, Kyiv (Ukraine)

Bioenergy EUROPE

About us

The common voice of the European bioenergy sector for the past 26 years.

Our aim is to develop a sustainable bioenergy market based on fair business conditions.

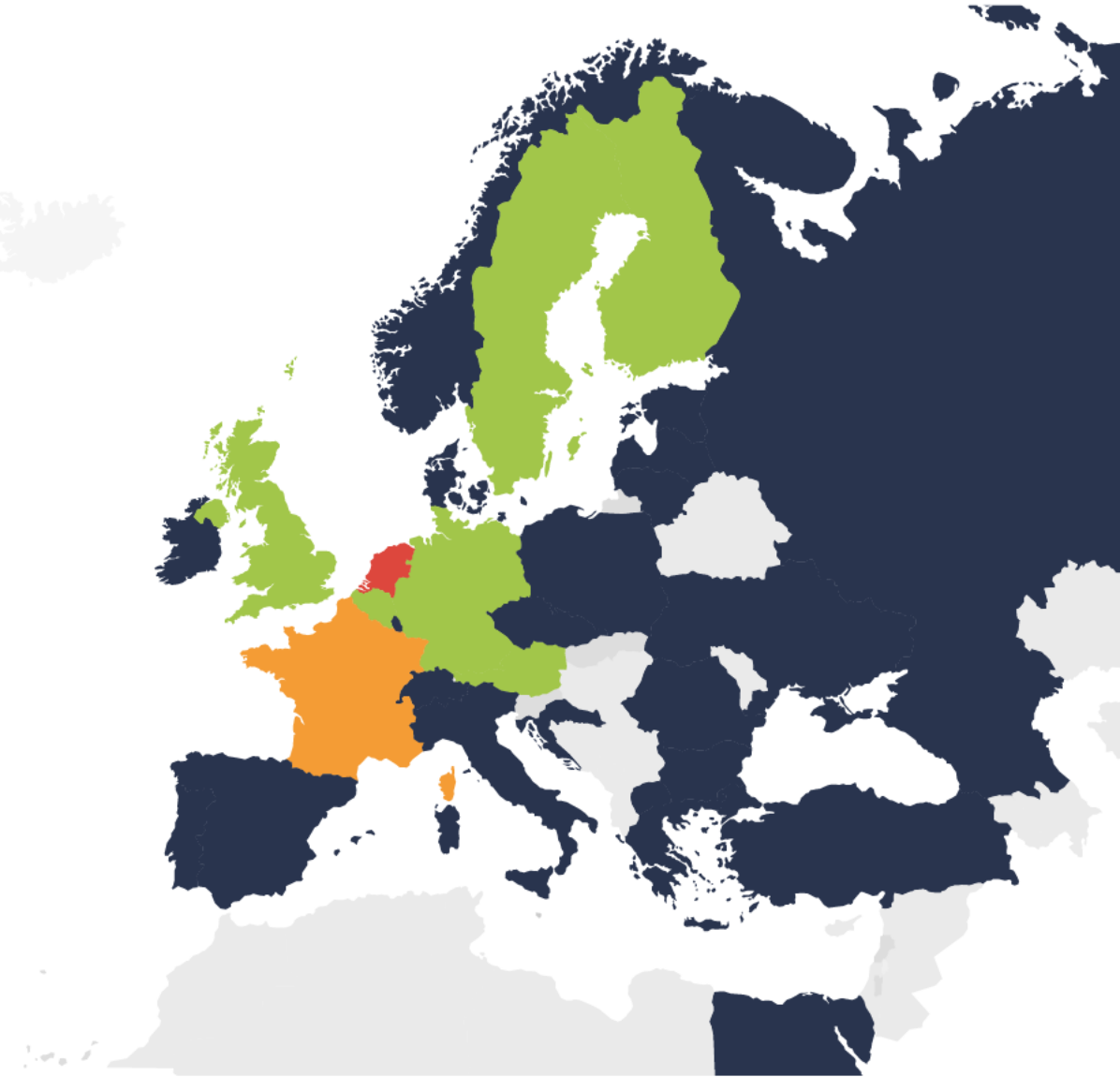
We bring together around 30 national associations and 90 companies from all across Europe.

We are an umbrella organisation for the European Pellet Council and the International Biomass Torrefaction Council.

Our members

Membership Spread

1 to 5
5 to 10
10 to 15
15+



Our members

Companies

Associations

Academia & Research Centres

Bioenergy in the EU

The state of play of leading renewable source

FEEDSTOCK

69.6%
Woody biomass
Forestry & wood industry residues

18.3%
Agricultural biomass
Crops & redidues

12.1%
Biowaste
Solid municipal biowaste, sewage

TECHNOLOGY

50.9%
- Power plants
- Bioliquid plants
- Heat plants
- CHP plants
- Biogas plants

49.1%
- Boilers
- Stoves

OUTPUT

74.7%
Heat

13.4%
Electricity

11.9%
Transport fuel

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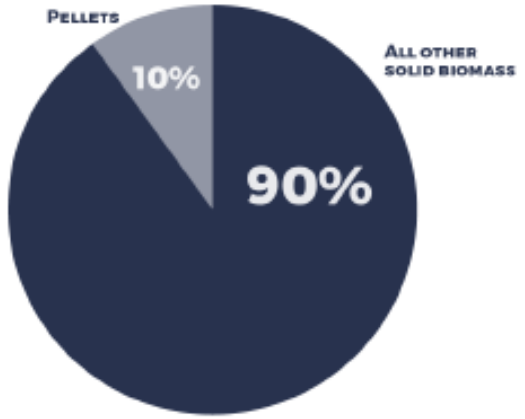
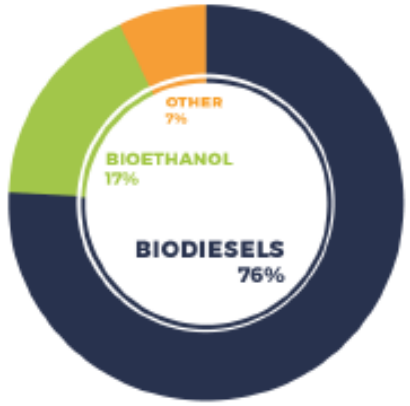
Gross inland energy consumption of biomass by type, use and source in the EU28 in 2017 (ktoe and %)

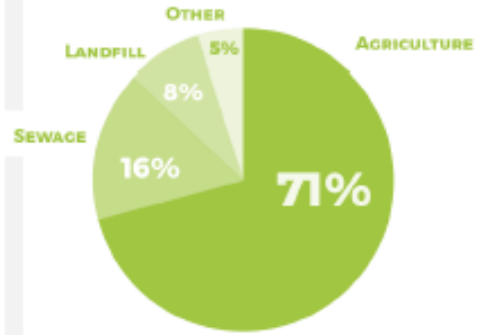
SOLID BIOMASS
100.296 KTOE
(Growth rate 2016 - 2017: +2,30%)



BIOFUELS
16.492 KTOE
(Growth rate 2016 - 2017: +9,06%)



BIOGAS
16.826KTOE
(Growth rate 2016 - 2017: +0,44%)



MUNICIPAL WASTE (RENEWABLE)
10.474 KTOE
(Growth rate 2016 - 2017: +3,40%)

144.087
KTOE

Source: Bioenergy Europe, EPC, Eurostat, EBA

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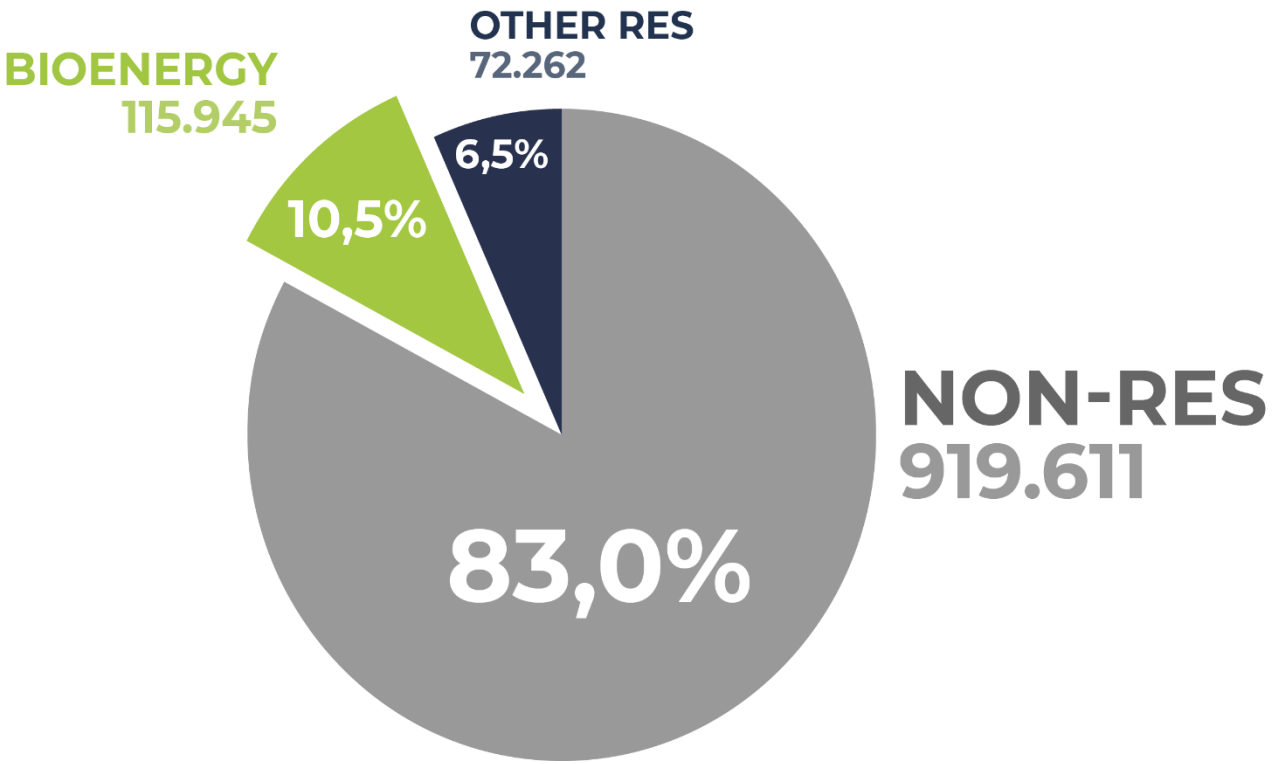
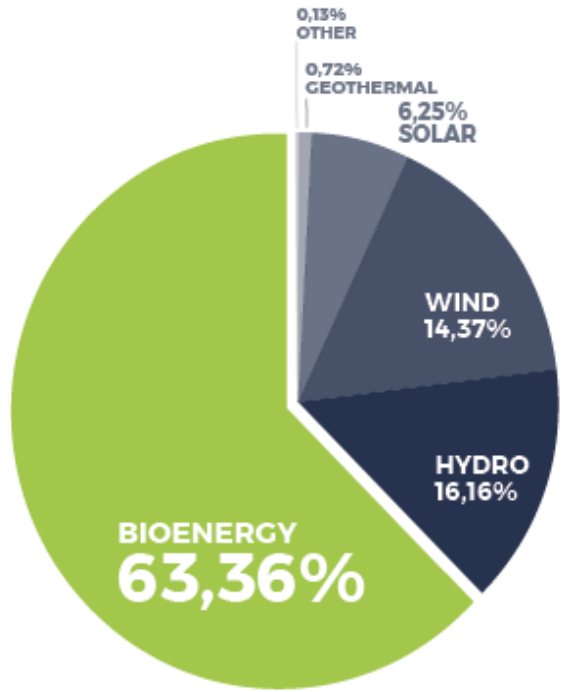
EU SHARE OF ENERGY FROM RENEWABLE SOURCES IN THE GROSS FINAL ENERGY CONSUMPTION

(IN KTOE, %) SOURCE: EUROSTAT, BIOENERGY EUROPE'S CALCULATIONS



EU SHARE OF RENEWABLE SOURCES IN THE GROSS FINAL ENERGY CONSUMPTION

(IN %) SOURCE: EUROSTAT, BIOENERGY EUROPE CALCULATIONS



Synergy is the key

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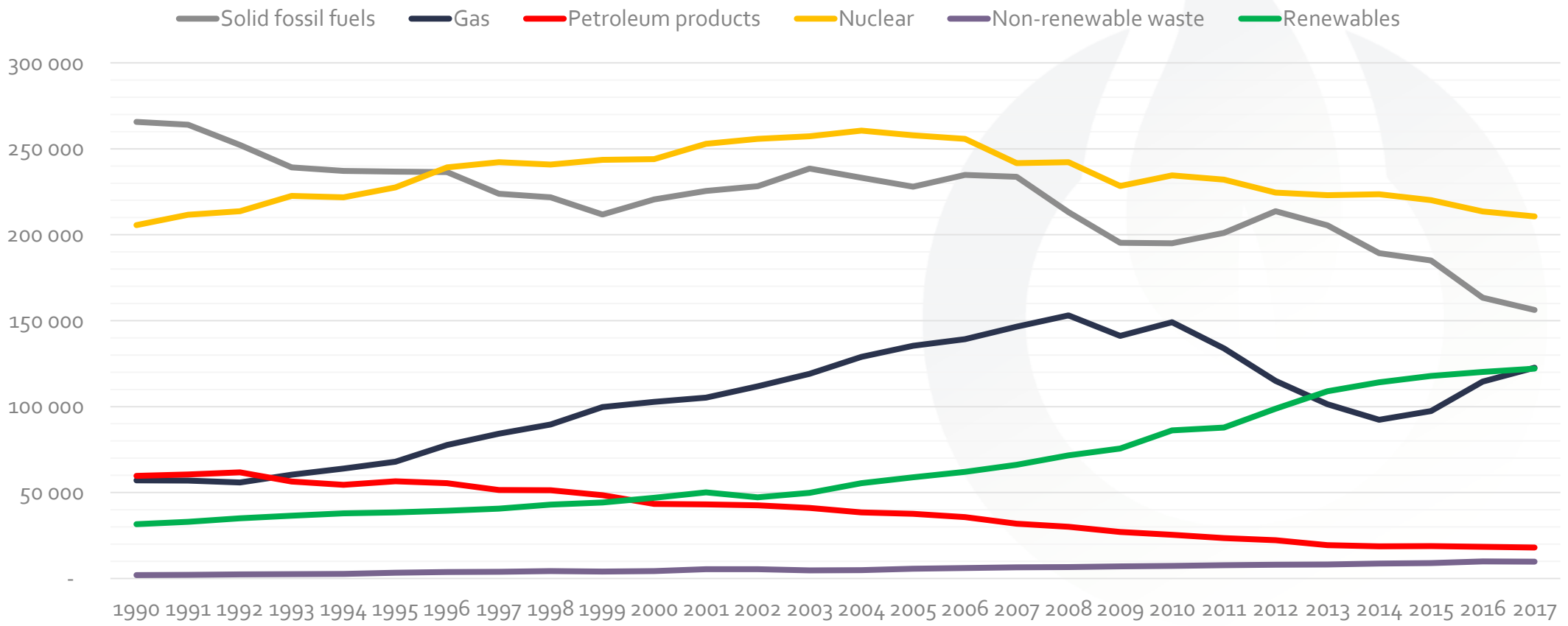
Evolution of fuels inputs for electricity generation in the EU28 (in ktoe)

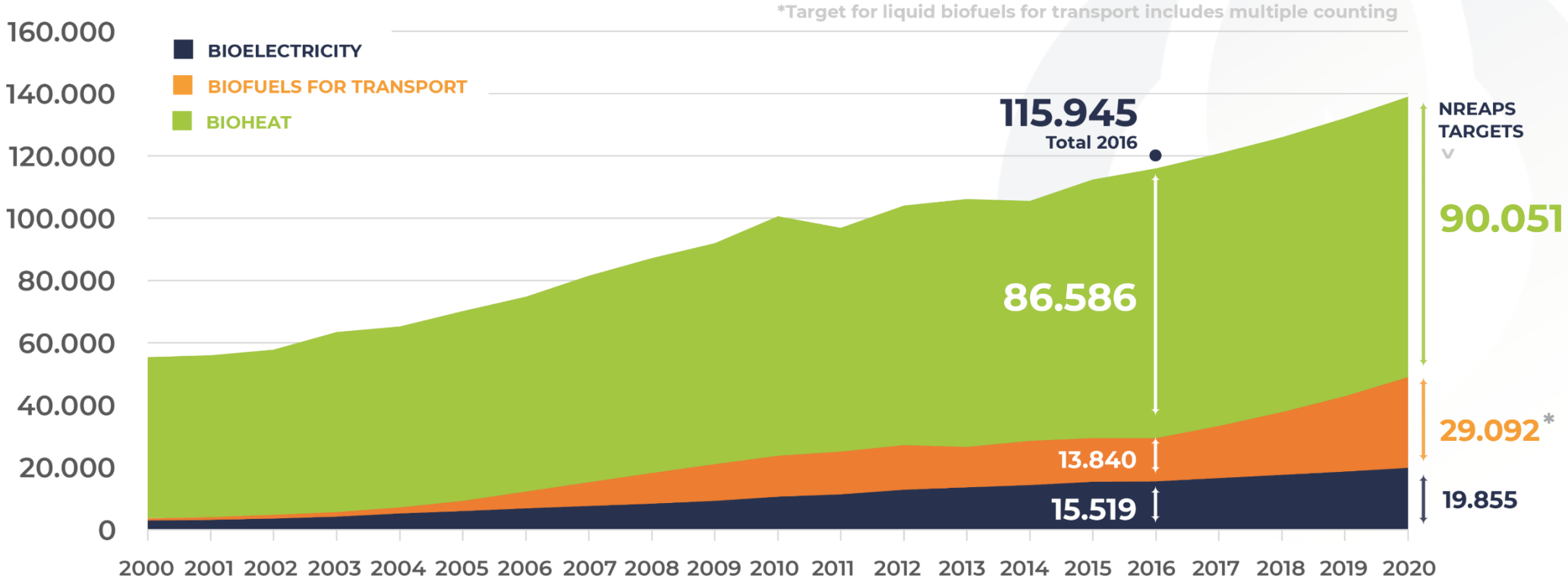


Energy Consumption: 2020 Scenario

EVOLUTION OF EU-28 GROSS FINAL ENERGY CONSUMPTION OF BIOENERGY

(FROM 2000 TO 2020, KTOE) SOURCE: EUROSTAT,
NATIONAL RENEWABLE ENERGY PLAN (NREAPS), BIOENERGY EUROPE'S CALCULATIONS

BIOENERGY EUROPE
STATISTICAL REPORT
2018



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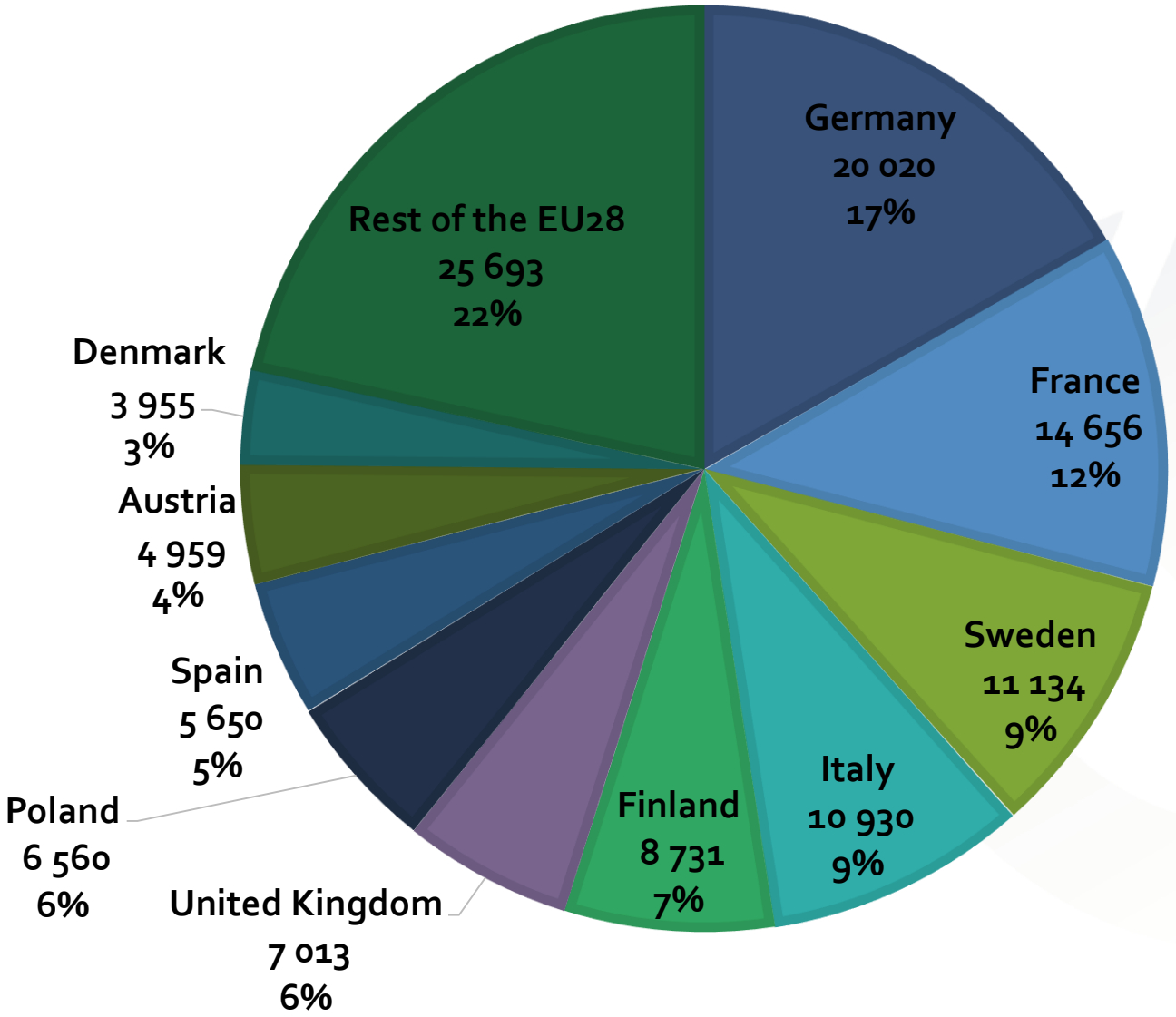
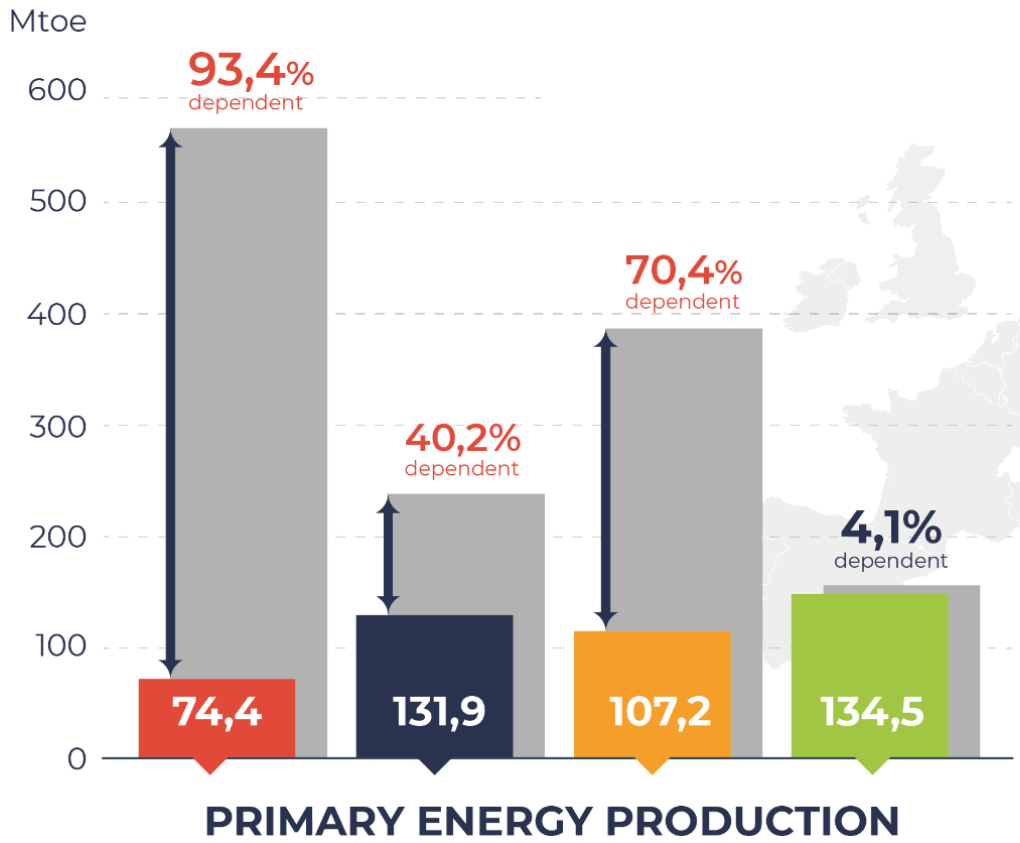
BIOENERGY GROSS FINAL ENERGY CONSUMPTION IN KTOE PER COUNTRY 2017



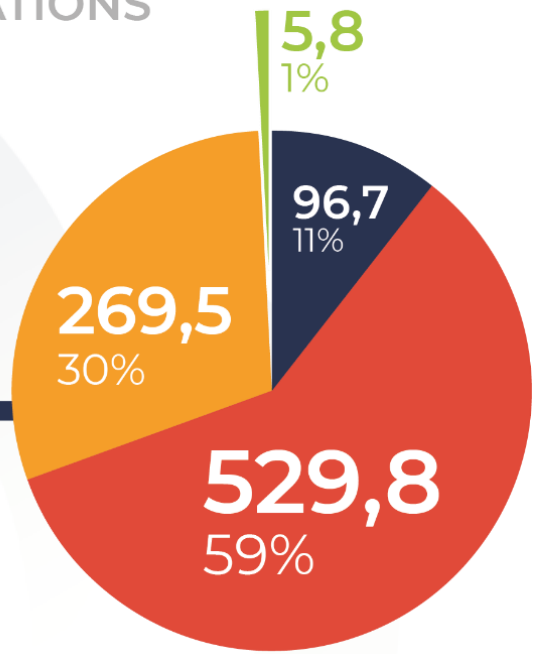
EU-28 ENERGY DEPENDENCY AND NET IMPORTS

(IN 2016, MTOE, %) SOURCE: EUROSTAT, BIOENERGY EUROPE'S CALCULATIONS



PRIMARY ENERGY PRODUCTION

NET IMPORTS



- GROSS INLAND CONSUMPTION
- SOLID FOSSIL FUELS
- BIOMASS
- NATURAL GAS
- PETROLEUM AND PRODUCTS

BIOENERGY EUROPE STATISTICAL REPORT 2018

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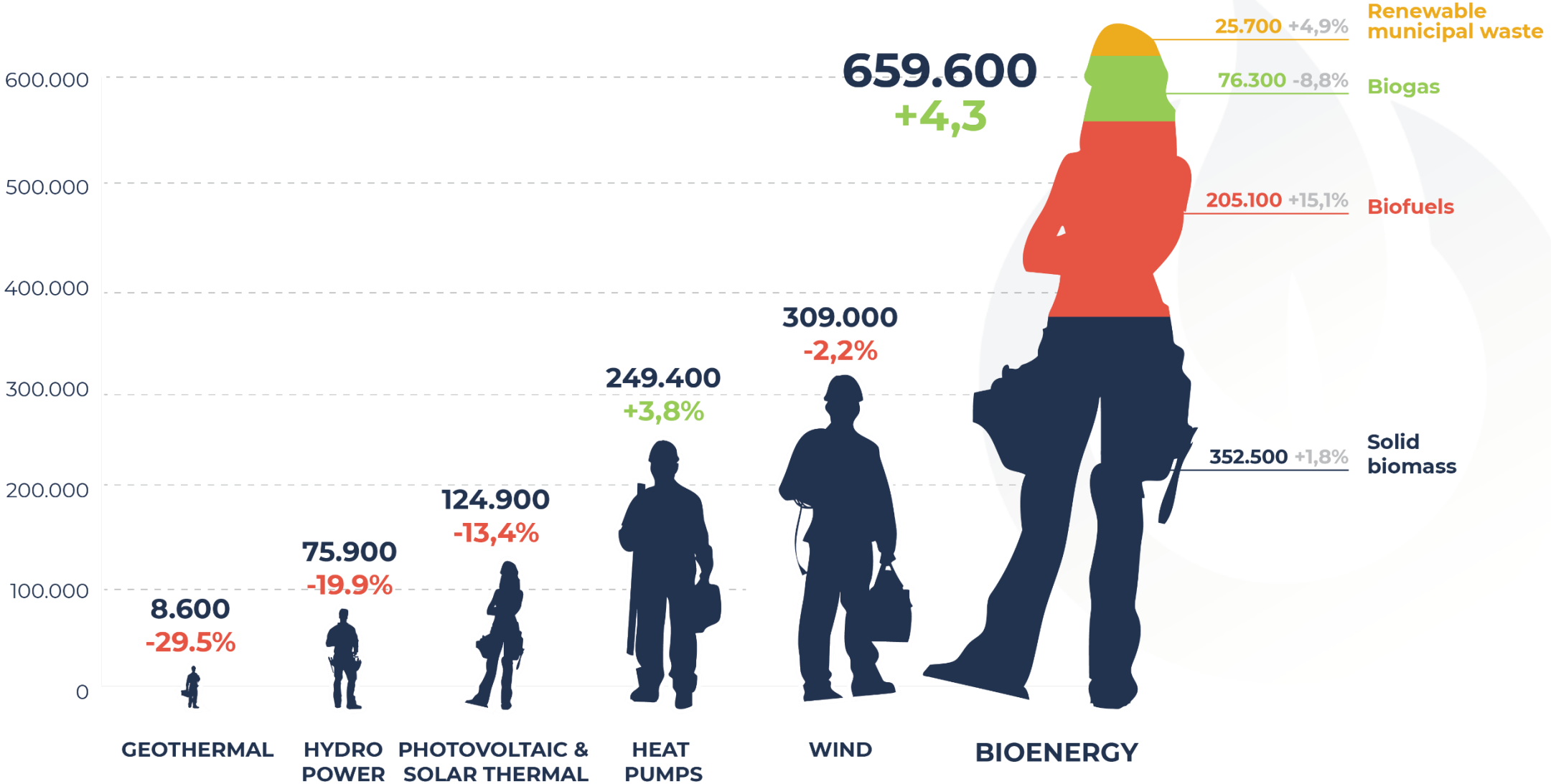
EU-28 EMPLOYMENT DISTRIBUTION IN RENEWABLE ENERGY

(IN 2016, % GROWTH 2015-2016, DIRECT AND INDIRECT EMPLOYMENT)

SOURCE: EURObserv'ER

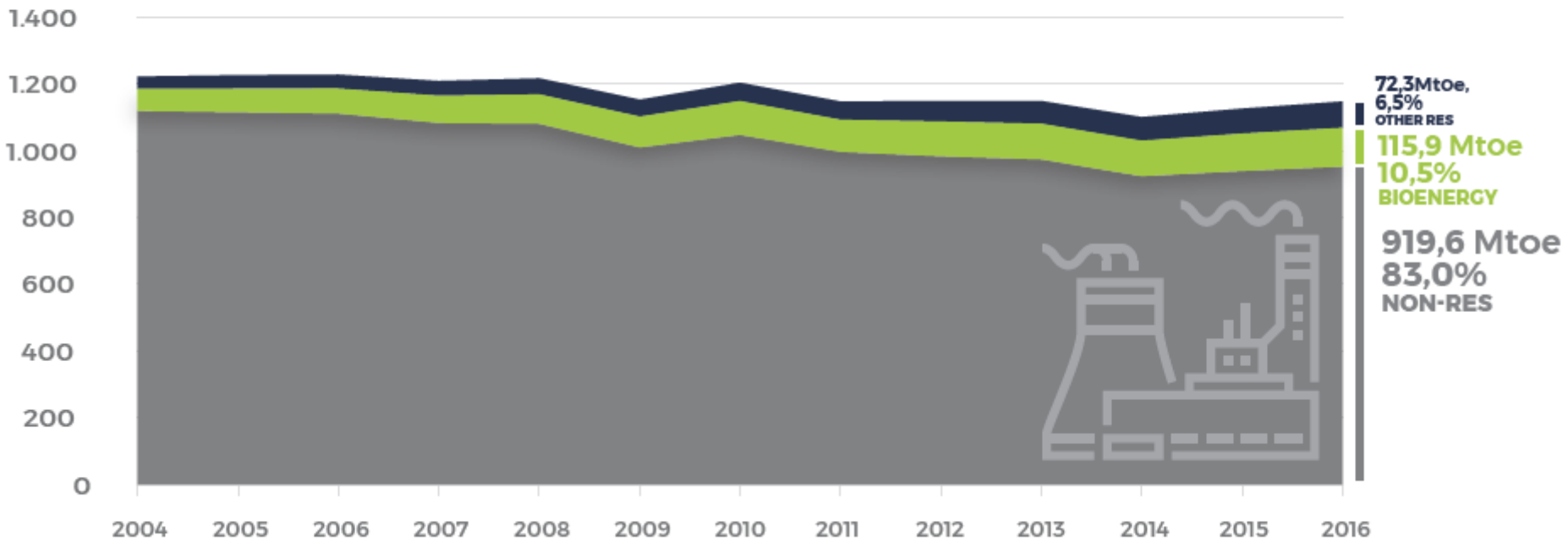
BIOENERGY EUROPE STATISTICAL REPORT 2018



EVOLUTION OF EU-28 GROSS FINAL ENERGY CONSUMPTION

(MTOE, %) SOURCE: EUROSTAT, BIOENERGY EUROPE'S CALCULATIONS

BIOENERGY EUROPE STATISTICAL REPORT 2018



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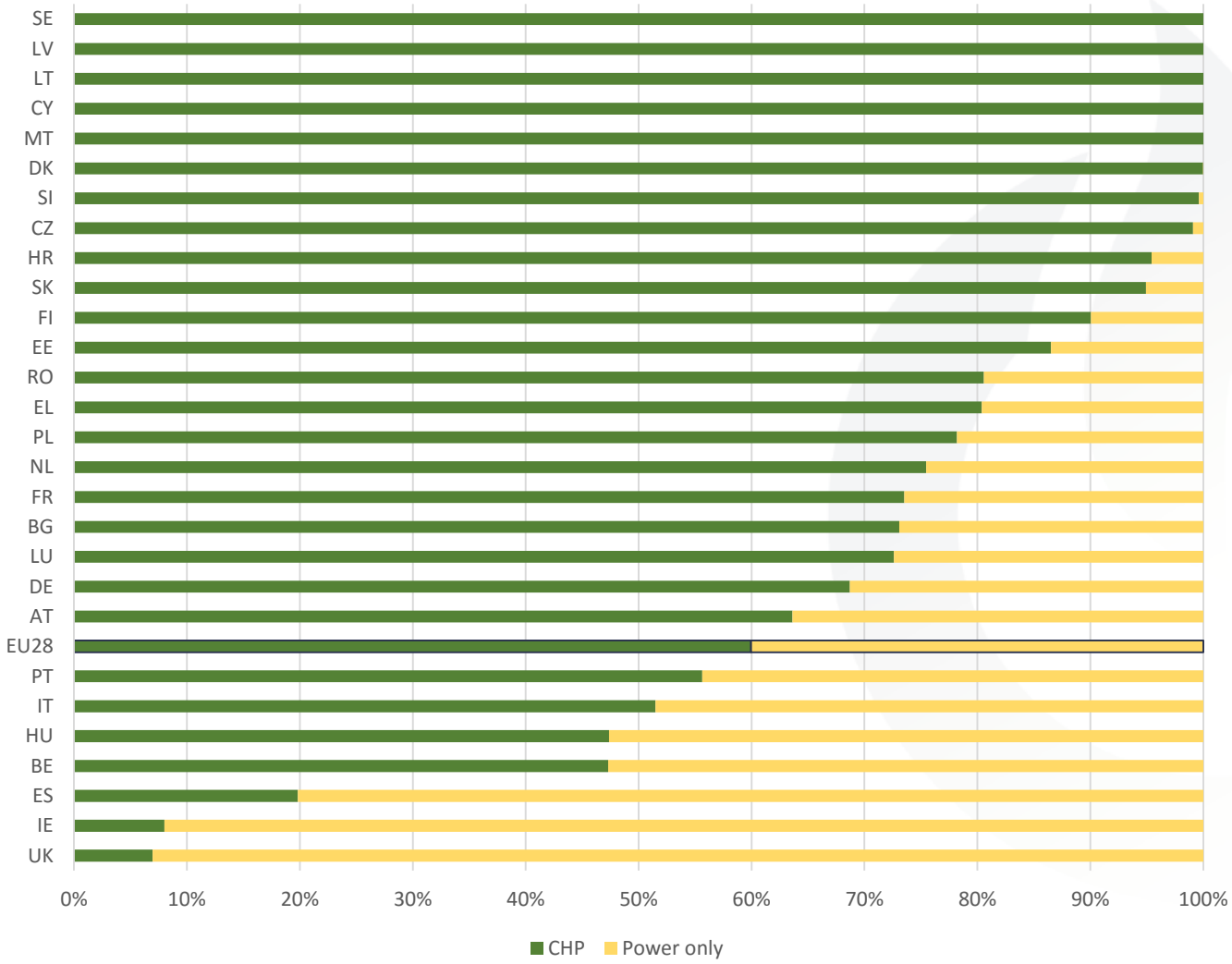
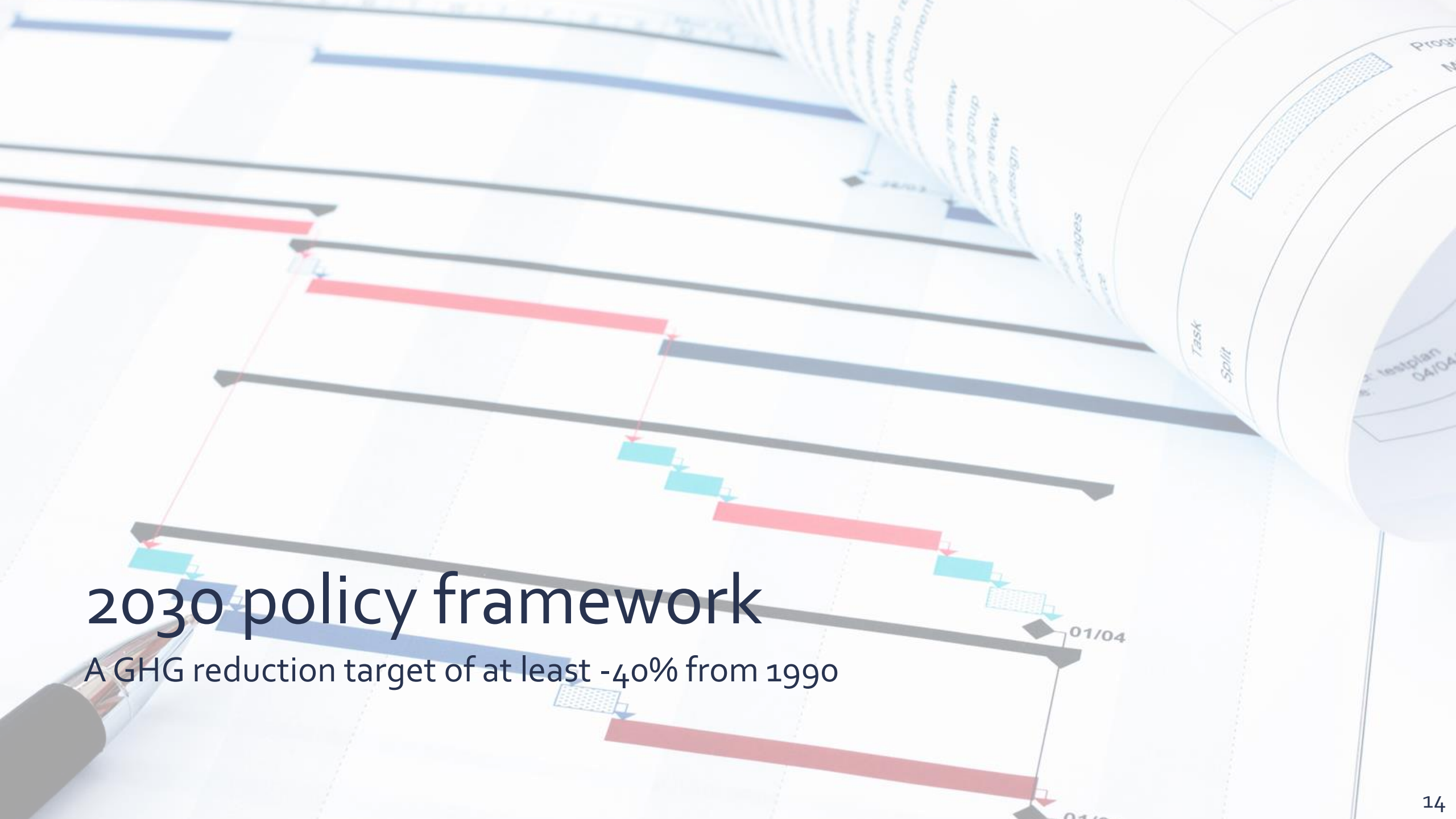
Share of gross electricity generation of conventional thermal power plants* produced from CHP and share of bioelectricity produced from CHP in 2017 in EU28 Member States (%)





2030 policy framework

A GHG reduction target of at least -40% from 1990

GHG emissions reduction of at least 40% by 2030 from 1990

EU ETS

(40% emissions)

- power and heat generation
- energy-intensive industry sectors
- commercial aviation
- N_2O from acids production

Climate Action Regulation

(60 % emissions)

- transport,
- buildings
- agriculture
- non-ETS industry
- waste

-43% from 2005

-30% from 1990

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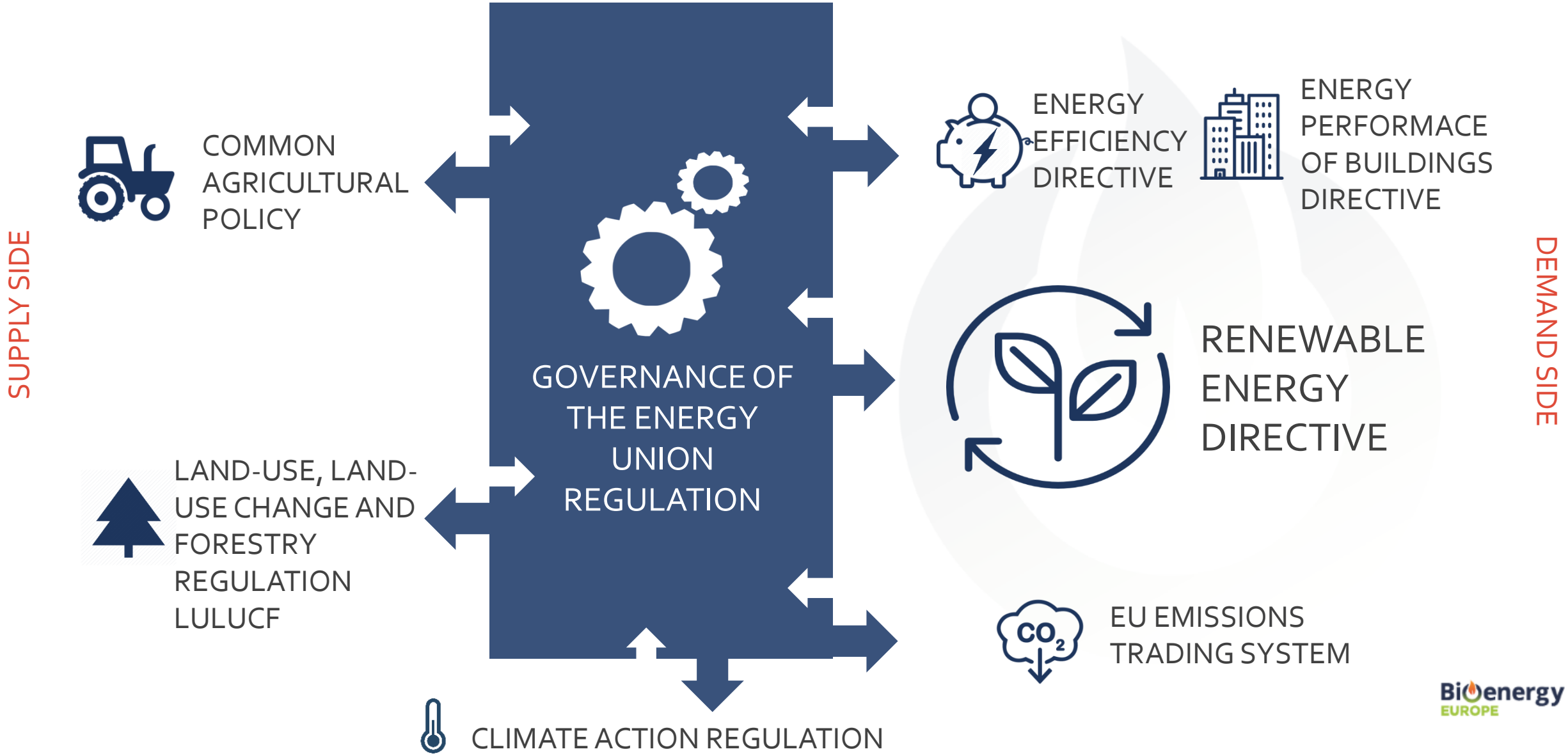
EU Bioenergy Policy: a complex legislative framework



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EU Bioenergy Policy: a complex legislative framework

COMMON AGRICULTURAL POLICY (CAP)

CAP is the biggest EU spending. The framework post 2020 currently under discussion.

LAND-USE, LAND-USE CHANGE AND FORESTRY REGULATION (LULUCF)

EU Member States have to ensure that greenhouse gas emissions from land use, land use change of forestry are offset by at least an equivalent removal of CO_2 from the atmosphere in the period 2021 to 2030.

EU Bioenergy Policy: a complex legislative framework

ENERGY EFFICIENCY DIRECTIVE

Energy efficiency non-binding target for the EU for 2030 of 32.5%. Energy-efficiency first principle.

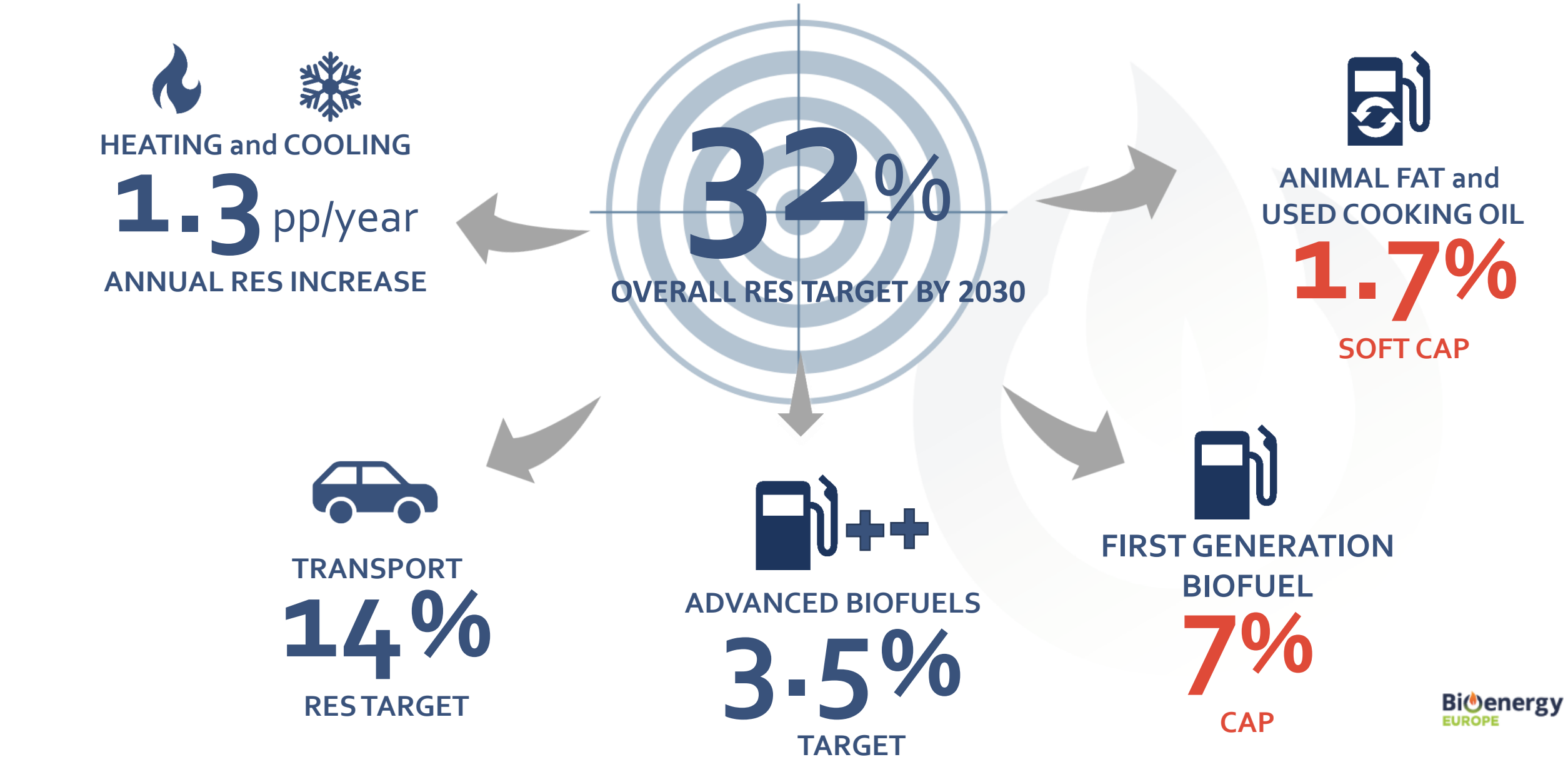
ENERGY PERFORMACE OF BUILDINGS DIRECTIVE

The revised EPBD aims at decarbonising the EU building stock

EU EMISSIONS TRADING SYSTEM

Under the EU ETS compliance cycle biomass is Zero rated : when using biomass, operators will not need to surrender allowances. Sustainability criteria need to be fulfilled.

Renewable Energy Directive II : Targets and Caps



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EU sustainability criteria for bioenergy

To be accounted towards the overall **RES-target** and **sectorial sub-targets**
To be elibigible for **public financial support**
To **be zero-rated under the ETS system**

Sustainability requirements

LULUCF requirements

GHG emissions savings requirements

EXEMPTIONS

- **Small installations** below 20 MW for solid biomass fuels and 2 MW for gaseous biomass fuels of thermal capacity are exempted (but Member States may set lower threshold)
- **Biomass fuels produced from waste and residues**: only GHG criteria and soil quality requirements for agricultural biomass apply

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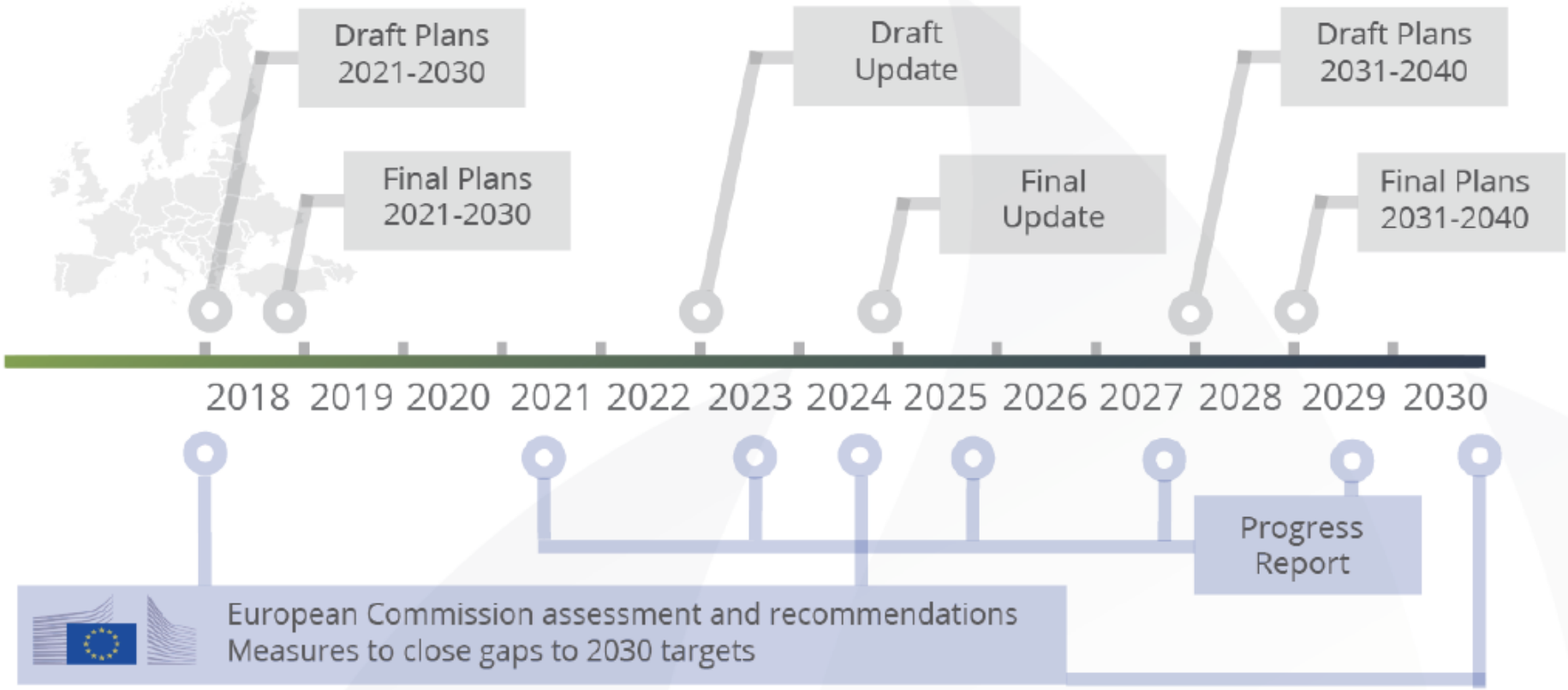
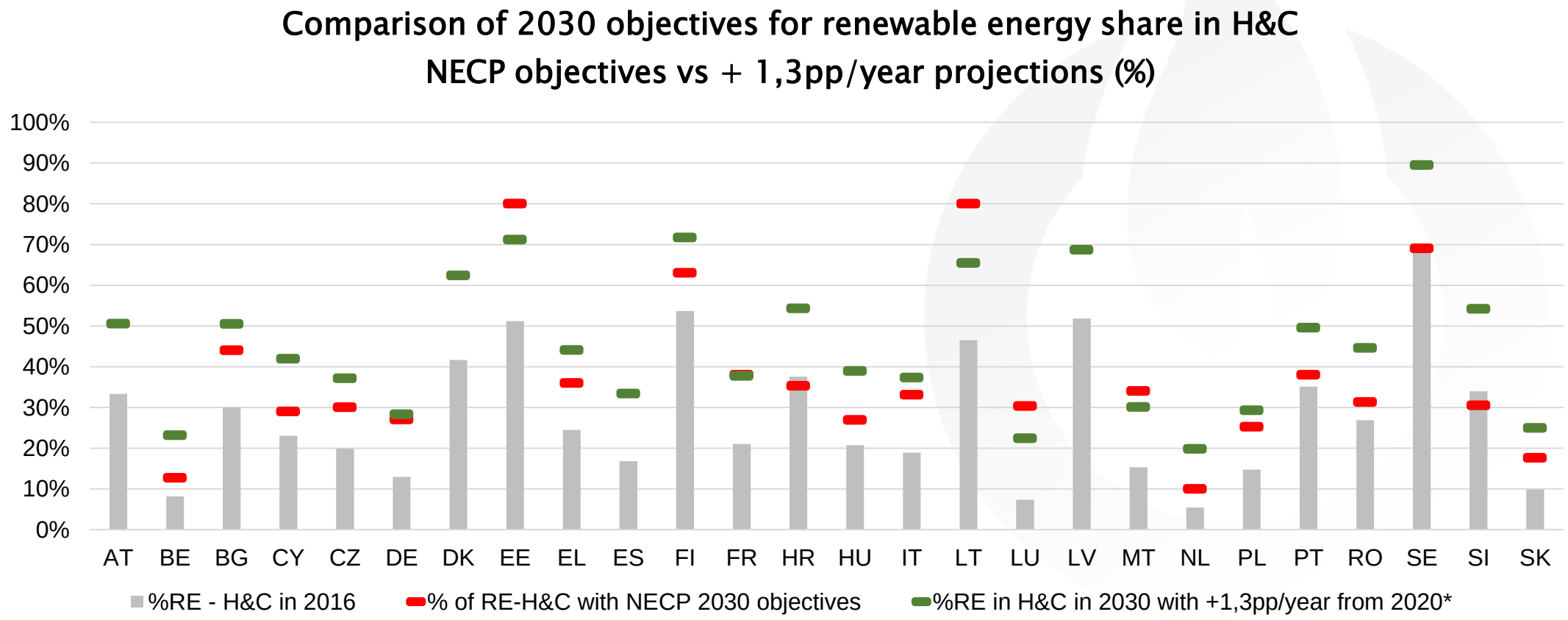
National Energy and Climate Plans: calendar



National Energy and Climate Plans: outlook

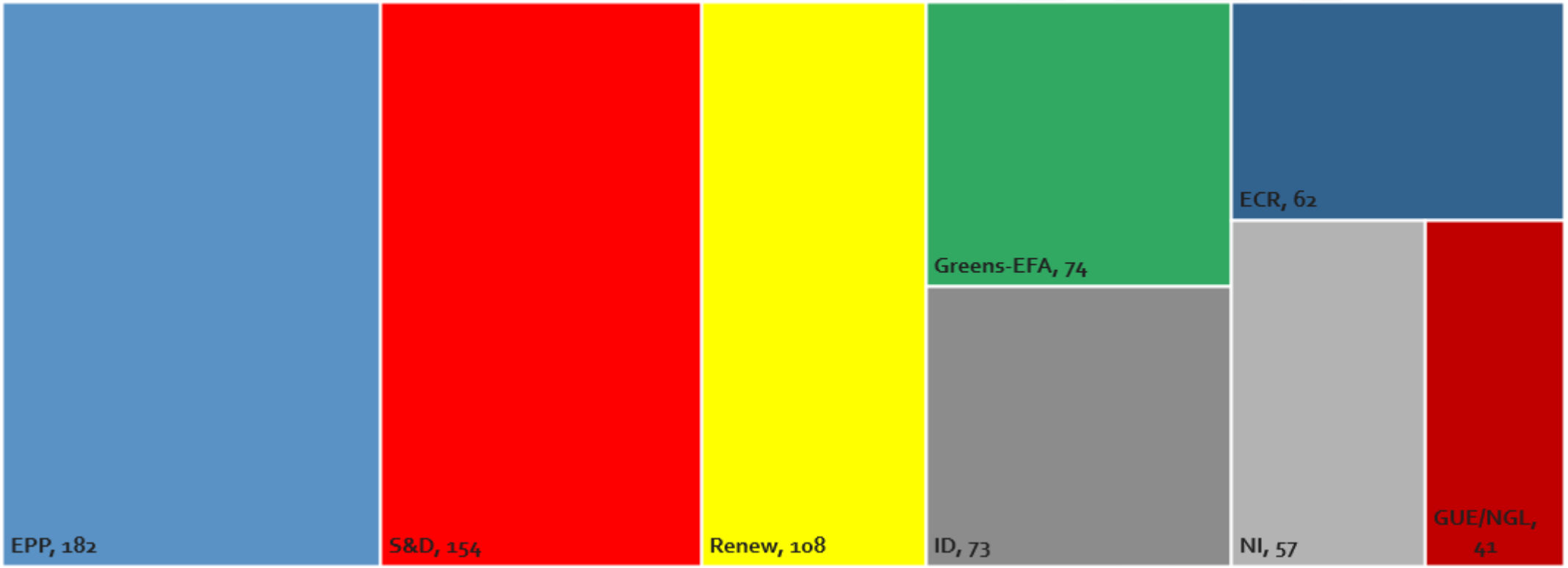


New term at EU institutions

2019-2024 energy and climate policy debate

European elections 2019

by political group (751 in total)



President-elect's European Green Deal

- Revision of 2030 targets, at least -50% GHG emissions (-55% proposed) from 1990
- Carbon-neutral EU by 2050
- Carbon Border Tax
- Review the European Taxation Directive
- EU ETS to be extended to transport

Ursula von der Leyen was elected by the European Parliament President of the European Commission on 16th July 2019, her term stars in 1st November 2019

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Bioenergy Europe's wish-list

- Increasing the target from 40% to 55%, clear milestones and carbon-neutral continent by 2050.
- Holistic carbon price. The Energy Taxation Directive should be reviewed to deliver on climate objectives and spark a transition to clean fuels and improved energy efficiency. All subsidies to fossil fuels must be halted
- Greater role of biomass in the circular economy. By 2050, there will be 406 Mtoe of sustainable biomass available, including residues from forestry, agriculture, industry and organic waste.
- Urgent action in the heating sector.
- Biopower's contribution to energy security must be recognised, rewarded and included in energy cost calculations.
- Bioenergy key decarbonisation agent for industry, transport and buildings. The deployment of mature technologies should be politically supported until fair market conditions apply.

How to become the first carbon-neutral continent

Bioenergy contribution for achieving net-zero emission by 2050

EU Long-Term decarbonisation Strategy

EU contribution to COP 21, to be submitted by 2020

+ Biomass is a key solution in one of the most ambitious scenarios (1.5 TECH)

- One scenario (1.5LIFELB) is explicitly reducing the use of biomass

Biomass supply

+ Very balanced assessment of forest biomass and strong support for the development of agricultural biomass and dedicated energy crops

+ Foresees bioenergy to double by 2050 (150 → 300 Mtoe)

Buildings

+ No negative wording on biomass in the residential sector: issue of air pollution is solved by modern installations

- Biomass is foreseen to decrease its role in the residential sector at the expense of electrification (heat pumps). The remaining share in the heat sector will be covered by 'green gas' (biogas, e-gas, hydrogen)

- ***Power sector***

+ Biopower is seen as main solution to balance the grid and provide for negative emissions

+ BECCS is considered as one of the key technologies to achieve negative emissions by 2050

- ***Transport sector***

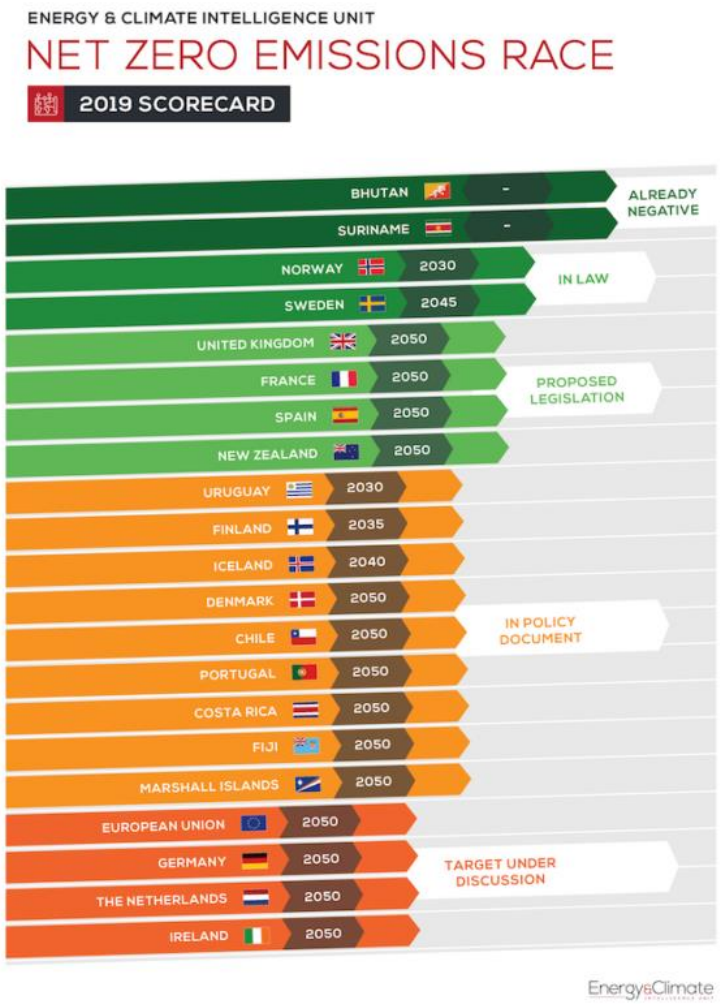
+ Biofuels are clearly included in the solutions to decarbonise the transport sector (mainly for air, marine and heavy duty vehicles)

- For passenger cars, electrification is dominant solution and land use is seen as an important constraint

- ***Biogas***

+ Biogas is replacing large amounts of natural gas (up to 25%) and is considered a solution to non-CO_2 emissions (capturing of methane)

The way to carbon neutrality



- Carbon neutrality by the second half of the 21st century under Paris Agreement
- National legislations on net-zero
- 2019 EP resolution on higher ambition
- European Commission endorsement
- Council discussions on 2050 carbon neutrality
- Member States' Long-term strategies

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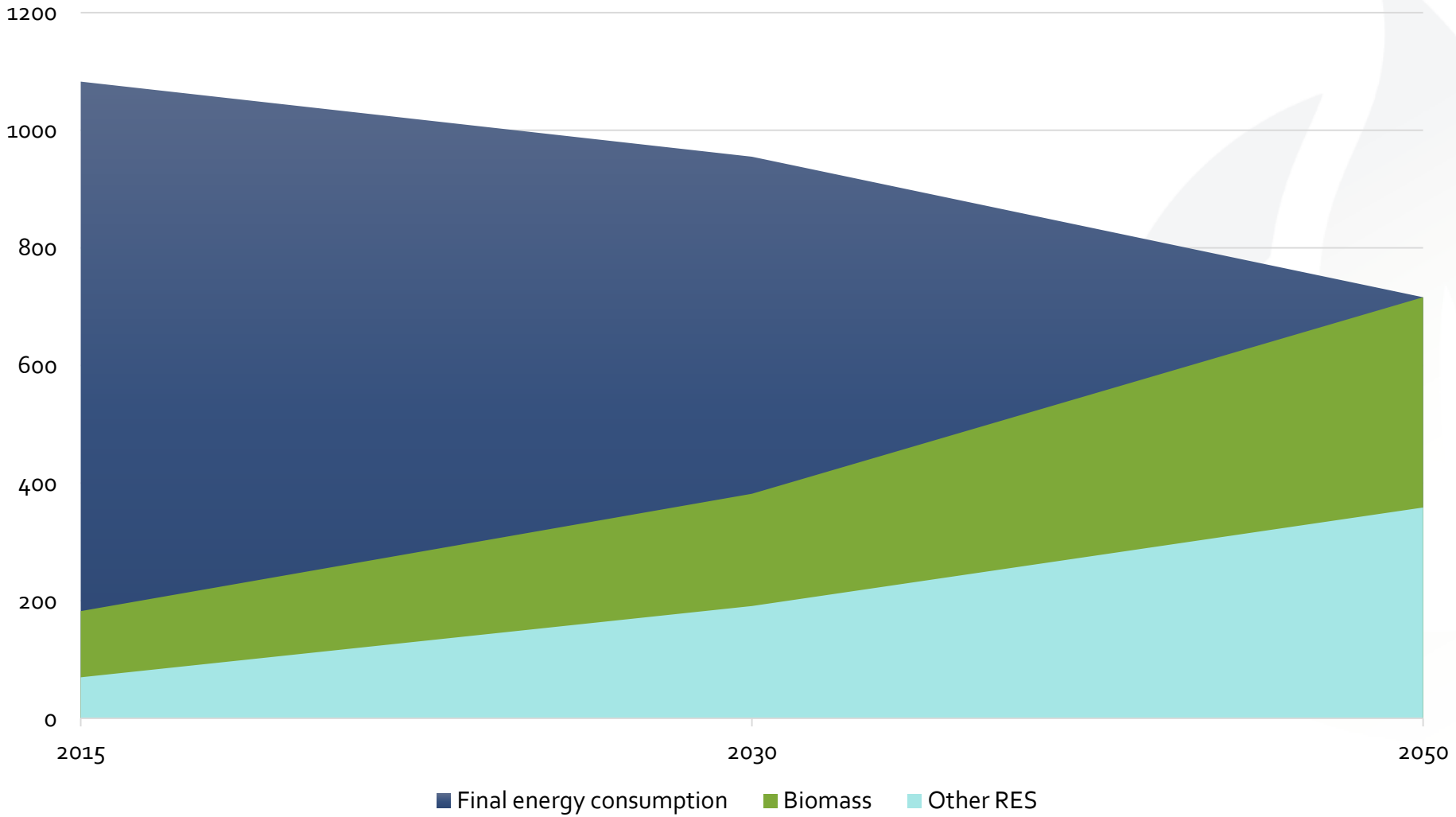
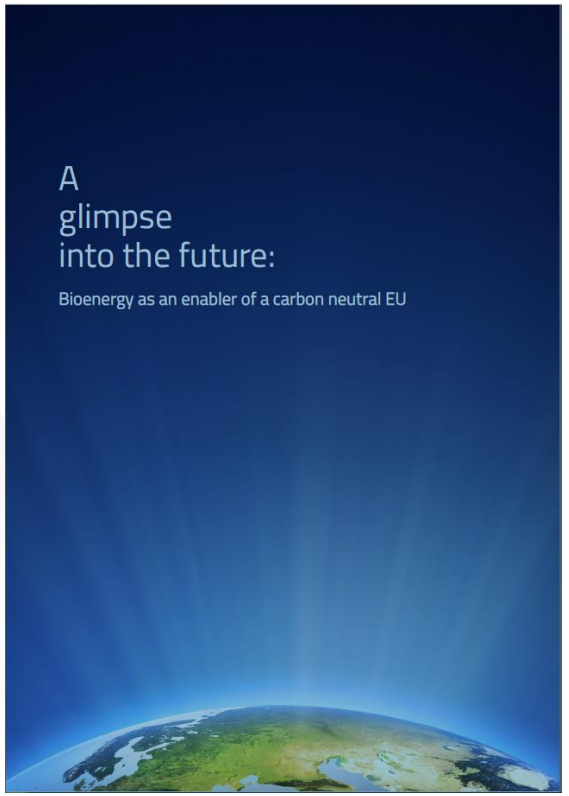
2050 Pathways towards net-zero GHG emissions (in Mtoe)





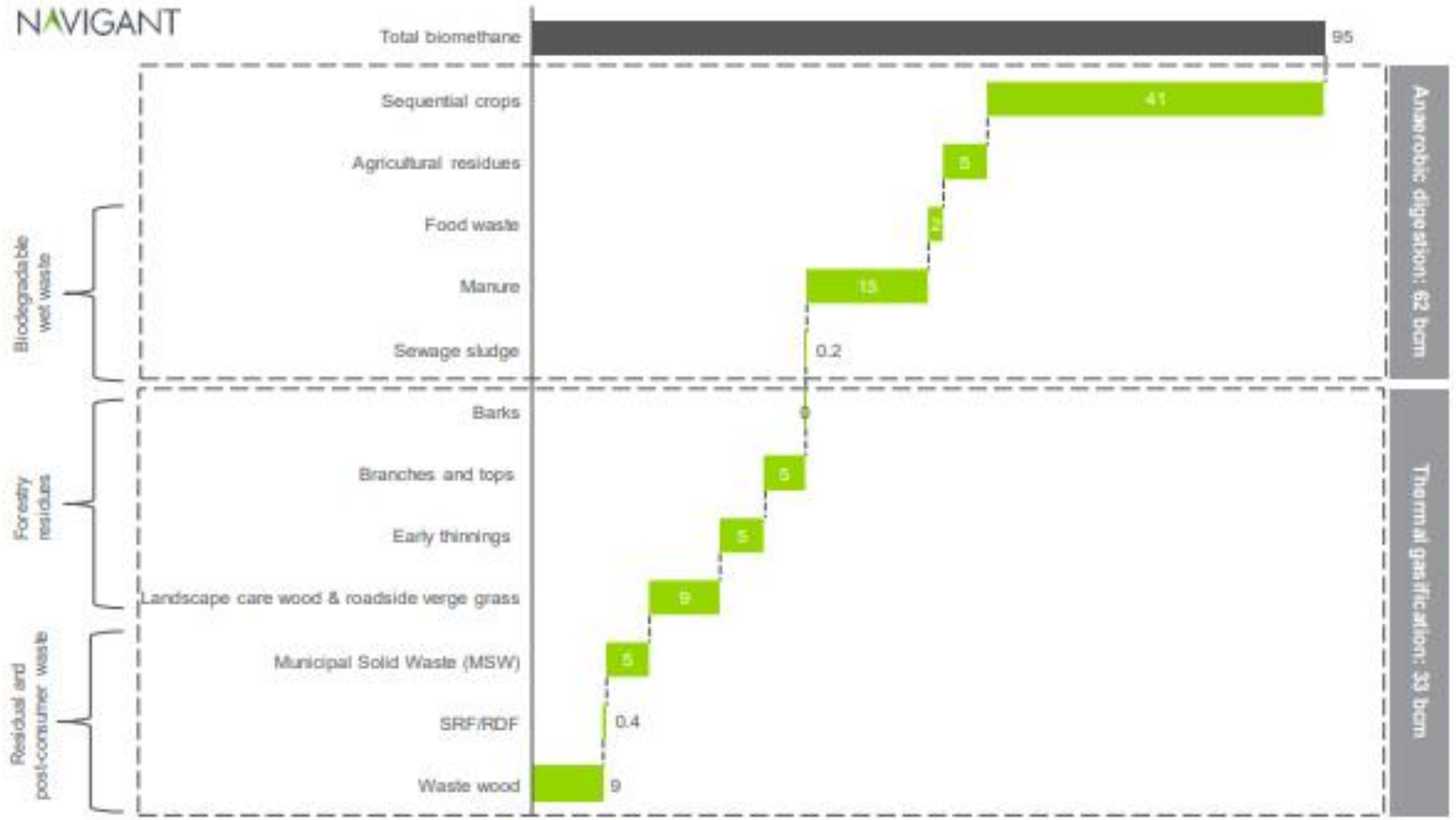
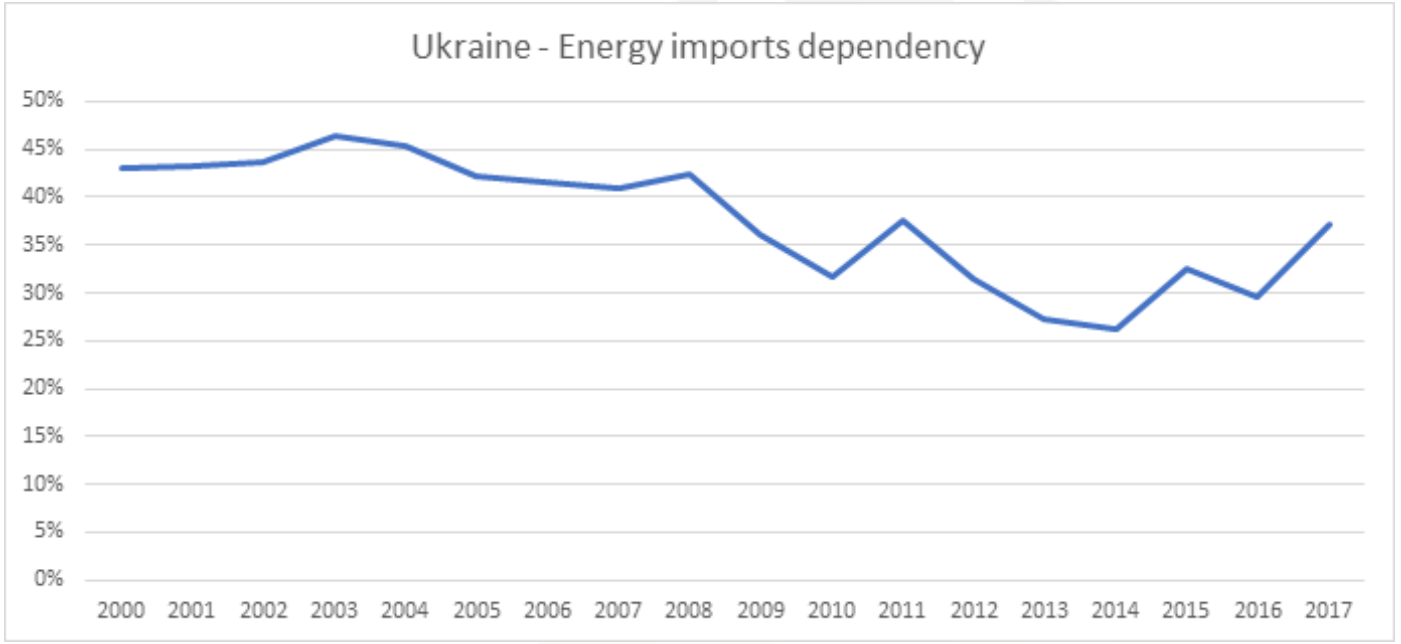


Figure 9 EU biomethane potential per conversion technology and feedstock (in bcm natural gas equivalent) type by 2050[16]

Ukrainian potential

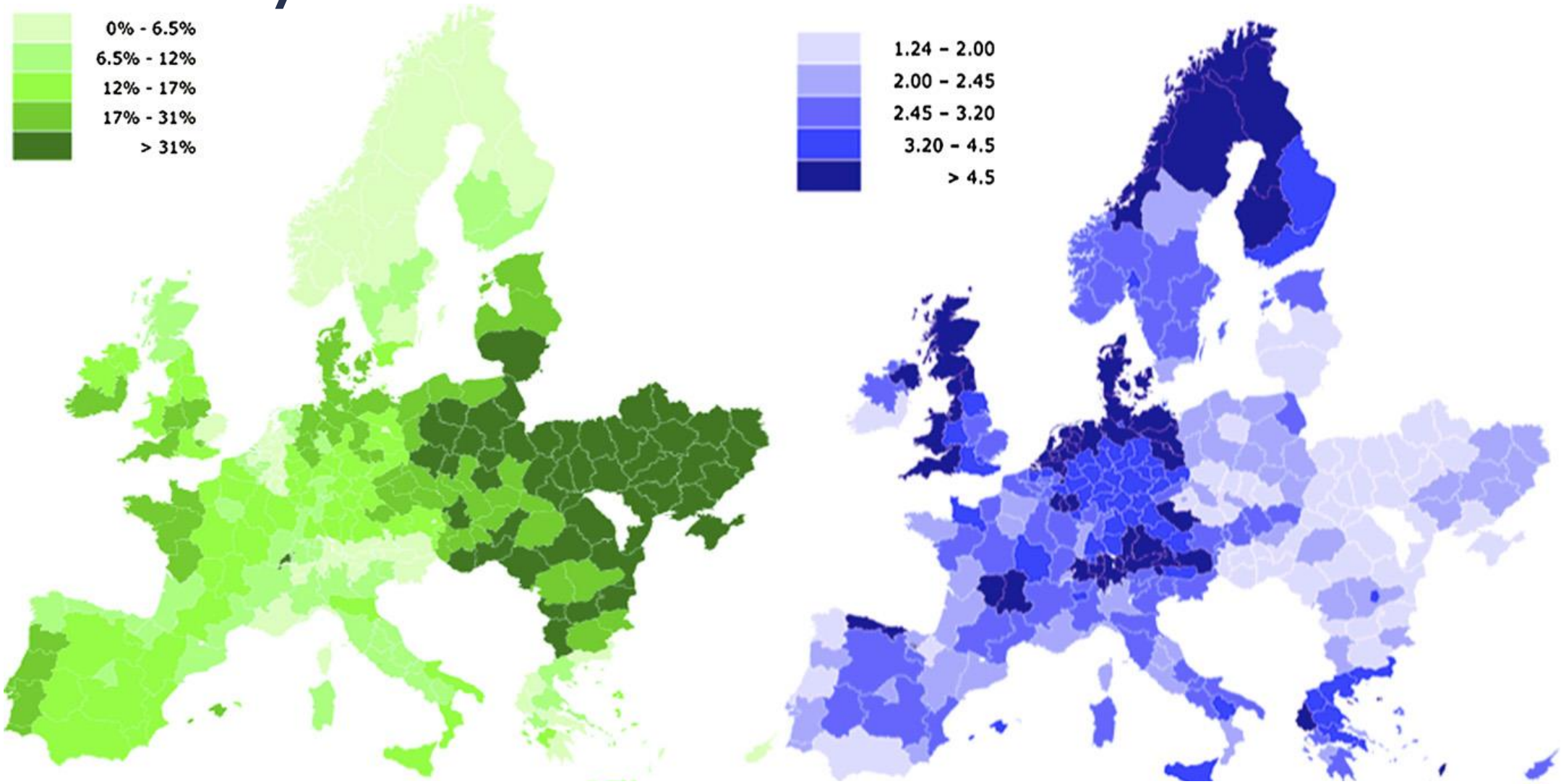
Current situation

Ukraine -2017	ktoe
Gross inland consumption (GIC)	89.196
Energy dependency	37%
Bioenergy GIC	2.992
Bioenergy share on GIC	3,4%
Bioenergy share on renewable GIC	77%
Biomass primary production	3.559
Biomass export	537
Fossil fuel primary production	31.316
Fossil fuel net import	34.107



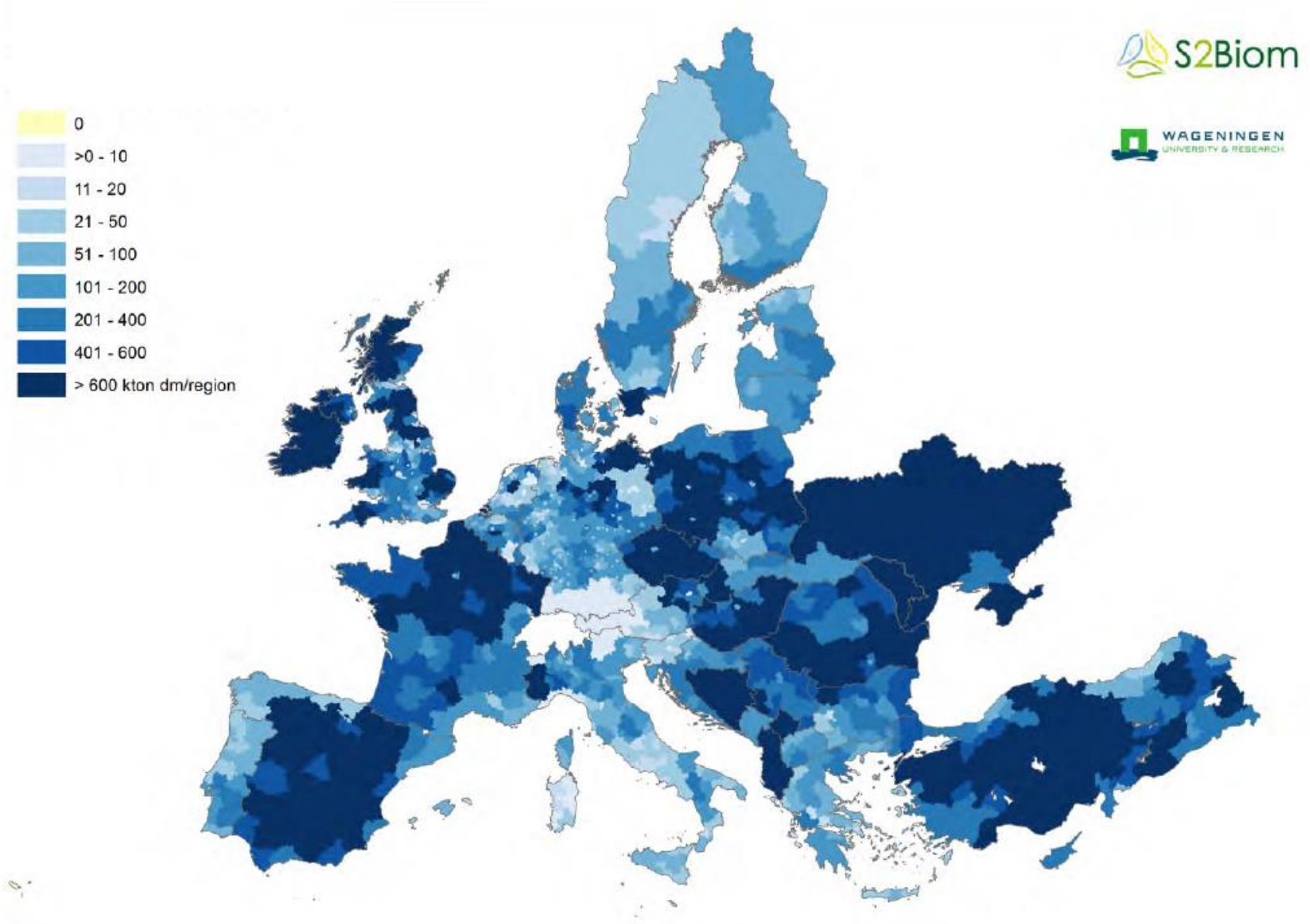
Source: Eurostar

Availability and costs of biomass



Map of available land and related costs (de Wit et al 2010). On the left: The 'surplus' land potentially available for the production of biomass by 2030 green shades indicate the amount of surplus land as a percentage of the total land). On the right, the production costs for woody crops in 2005 (blue shades indicate the production costs of woody crops)

Available residues in ton of dry matter



Thank you!

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