

IrBEA Bioenergy Webinar Series 2020

WEBINAR 4

Sustainable Bioenergy – Achieving Carbon neutrality and compliance with RED II

Date: Wednesday 22nd July 9.30 - 10.30am



About the Irish Bioenergy Association (IrBEA)

- Introduction.
- Representative organisation for the Bioenergy Sector on Island of Ireland.
- Sectors of Biomass, Biogas, Biofuels, Energy Crops and Wood Fuels.
- Broad and Growing Membership across all the sectors.
- Work on behalf of members through Representation, Lobbying, Advocacy, Networking, Technical support, Advice, Knowledge and Information sharing.
- Engaged in a number of Research, Development and Demonstration Projects.
- EIP Small Biogas Demo Project, Interreg Three C Project, Biomass Installers and Designers Registers and the Wood Fuel Quality Assurance Scheme (WFQA)



Webinar No 4 – Agenda

- Opening by Chair – Seán Finan - IrBEA CEO.
- Presentation by Jean Marc Jossart – Secretary General of Bioenergy Europe
- Presentation by Noel Gavigan – Technical & Projects Executive IrBEA.
- Panel Discussion and Q & A with presenter
- Webinar Attendees can submit Questions through the Q & A tab at the bottom of the screen and we will endeavour to answer as many of your questions as possible.

Becoming a Member of IrBEA

- To become a member and find out more check out www.irbea.org
- Various levels of membership – individual, small / medium or large corporate.
- If you would like to discuss how you can get involved please do get in touch with me at seanfinan@irbea.org

Webinar No 5 – We hope you can join us for our next webinar.

- Date: Wednesday morning - Mid August and run fortnightly for the year.
- Time: 9:30am – 10:30am
- Topic and Speakers: To be confirmed in the coming days
- Full details will be published through our social media and communication channels.
- We thanks you for joining us this morning and we hope you can join us for our next webinar.

IrBEA Bioenergy Webinar Series 2020

WEBINAR 4

Sustainable Bioenergy – Achieving Carbon neutrality and compliance with RED II

Date: Wednesday 22nd July 9.30 - 10.30am



Sustainable Bioenergy

Achieving Carbon Neutrality and Compliance with REDII

Jean-Marc Jossart

Secretary General

IrBEA webinar, 22 July 2020

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.

Bioenergy EUROPE

Membership Spread

1 to 5
5 to 10
10 to 15
15+



Our members

Companies



Associations



Academia & Research Centres

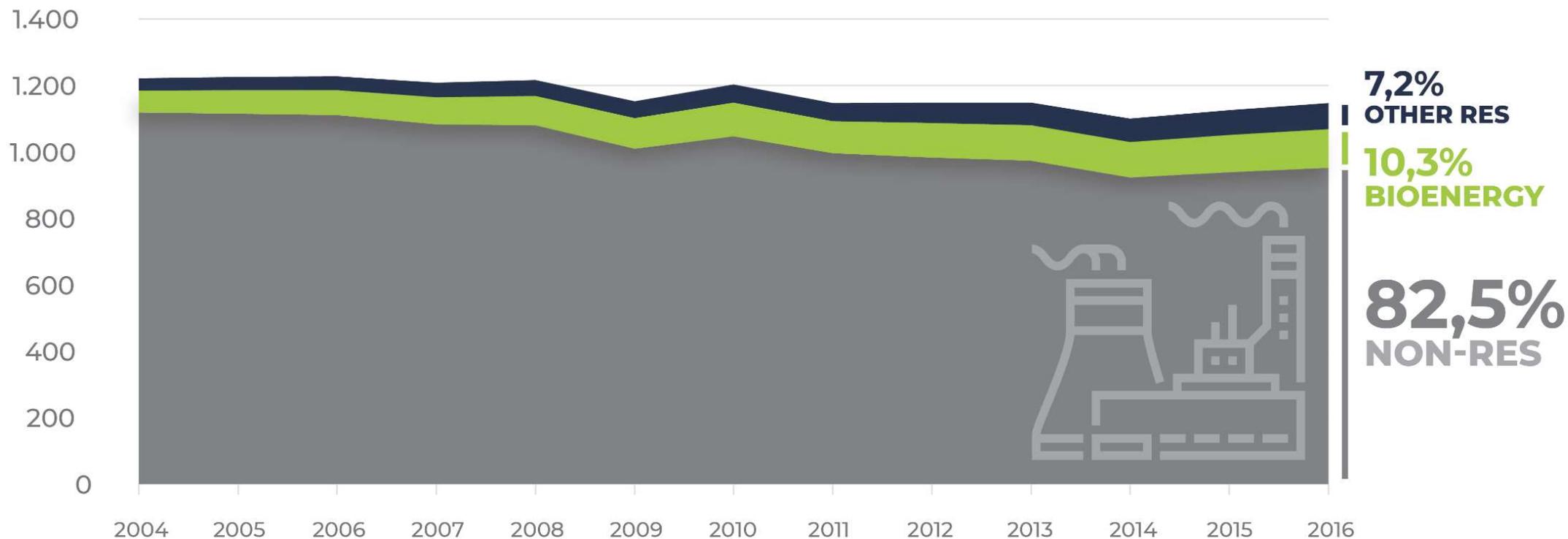


GOAL IS CLEAR AND VERY AMBITIOUS!





SO MANY THINGS TO DO SO LITTLE TIME!



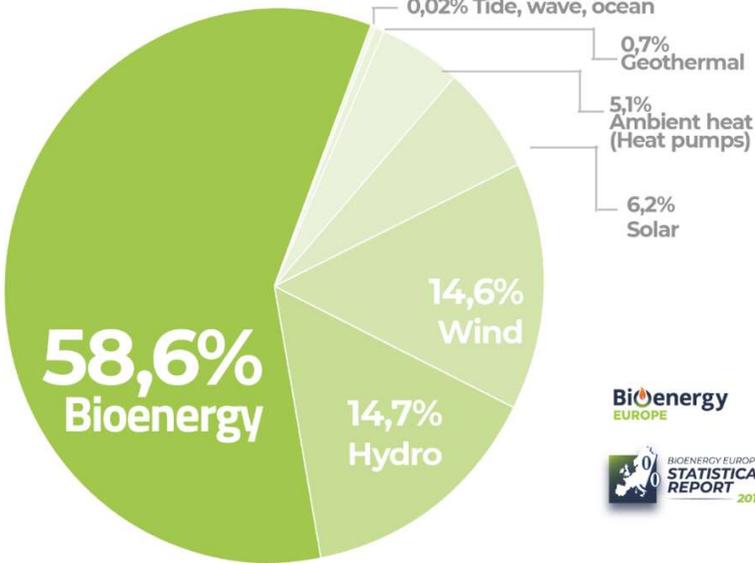
EVOLUTION OF EU-28 GROSS FINAL ENERGY CONSUMPTION

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

BIOENERGY IS ESSENTIAL IN EUROPE'S ENERGY FUTURE

DISTRIBUTION OF RENEWABLE GROSS FINAL ENERGY CONSUMPTION IN THE EU28 IN 2017

(%) Source: EUROSTAT, SHARES 2017

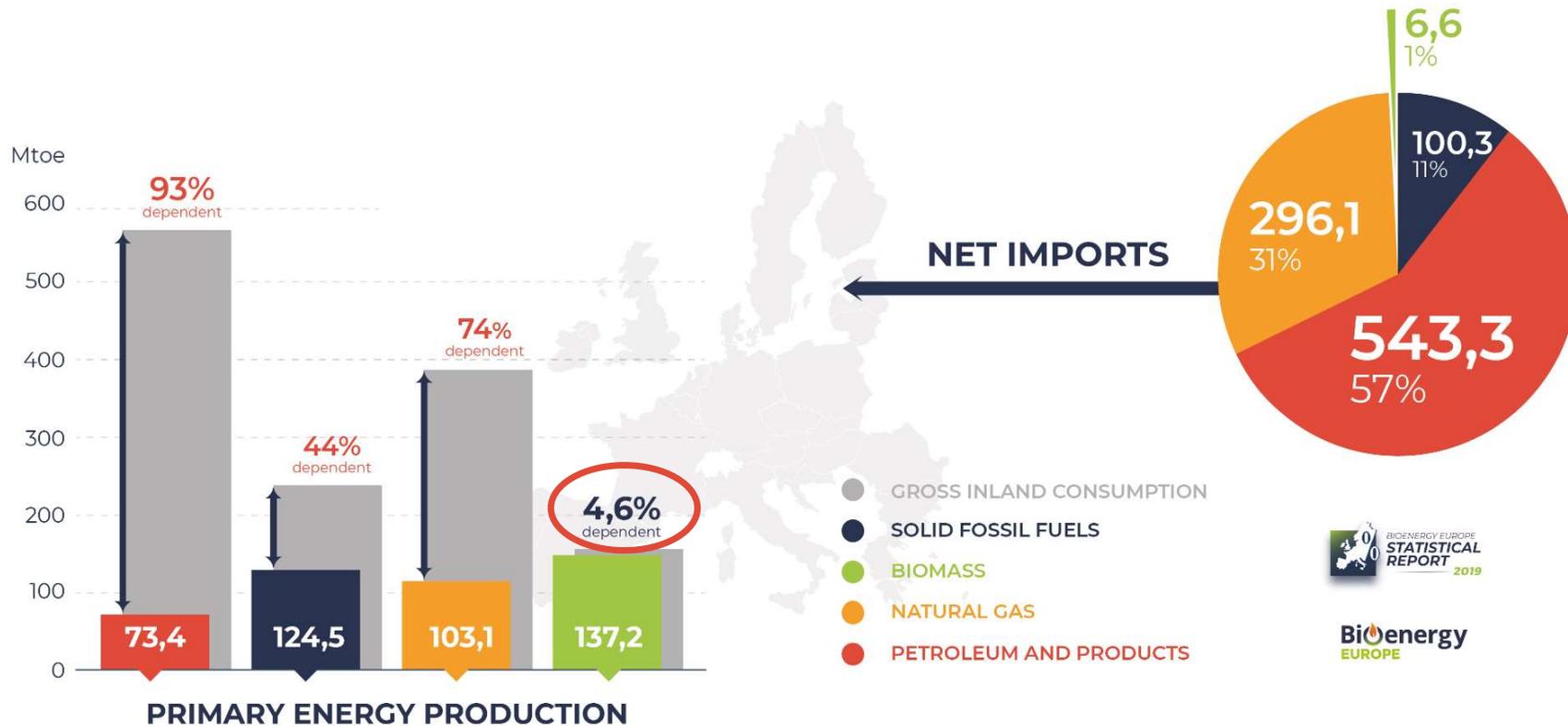


Bienergy
EUROPE





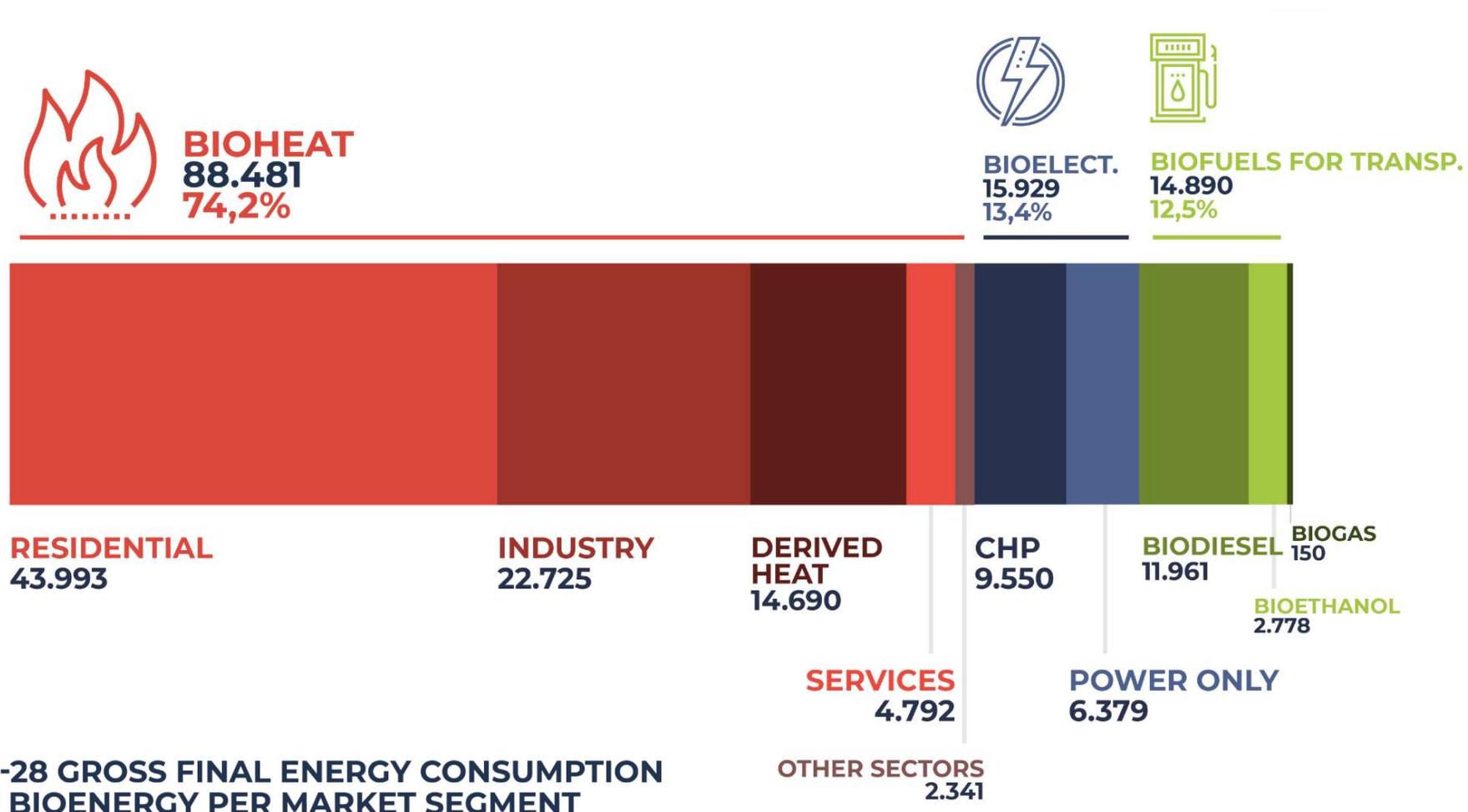
AUTOCHTHONOUS ENERGY SOURCES FIRST!



EU-28 ENERGY DEPENDENCY AND NET IMPORTS

(IN 2017, Mtoe, %) SOURCE: EUROSTAT, BIOENERGY EUROPE'S CALCULATIONS

TO DECARB ALL ECONOMIC SECTORS



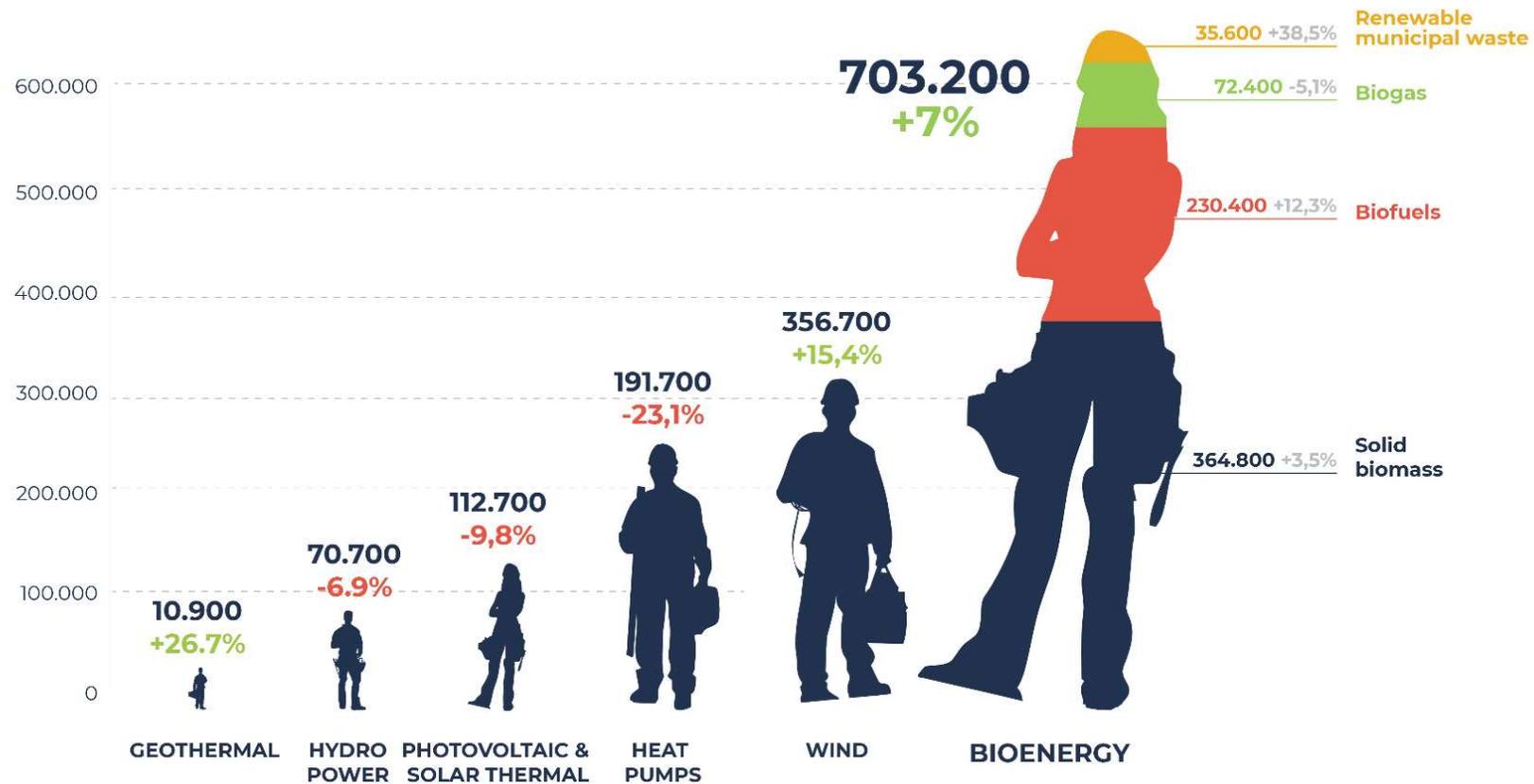
EU-28 GROSS FINAL ENERGY CONSUMPTION OF BIOENERGY PER MARKET SEGMENT

(IN 2017, KTOE, %) SOURCE: EUROSTAT, BIOENERGY EUROPE'S CALCULATIONS

EU-28 EMPLOYMENT DISTRIBUTION IN RENEWABLE ENERGY

(IN 2017, % GROWTH 2016-2017, DIRECT AND INDIRECT EMPLOYMENT)

SOURCE: EUROBSERV'ER

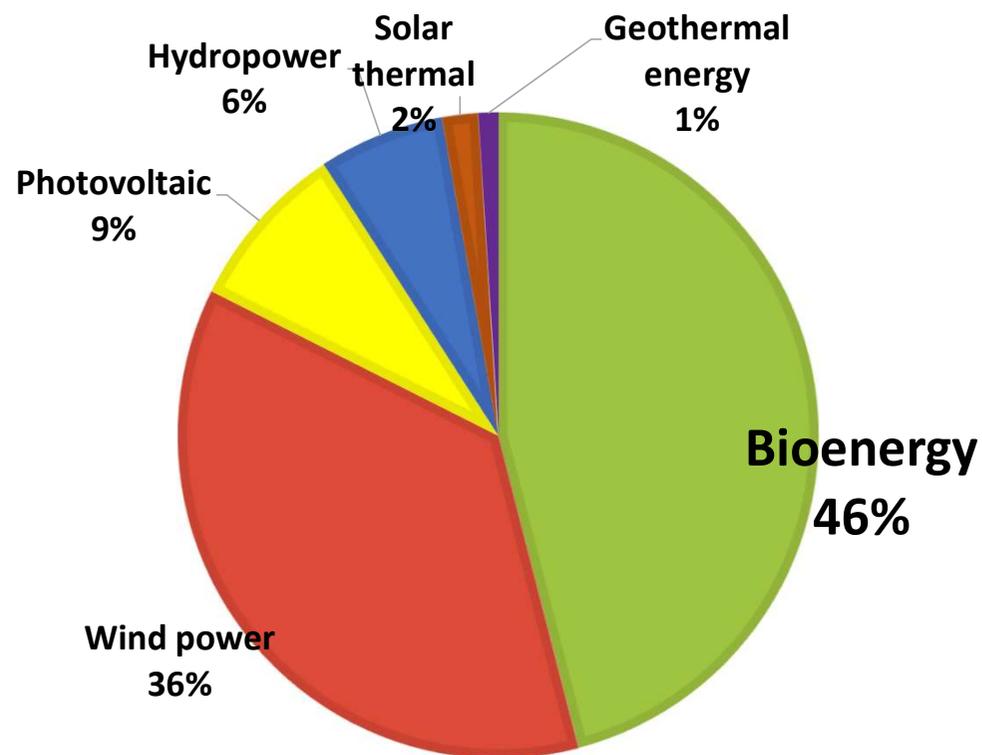
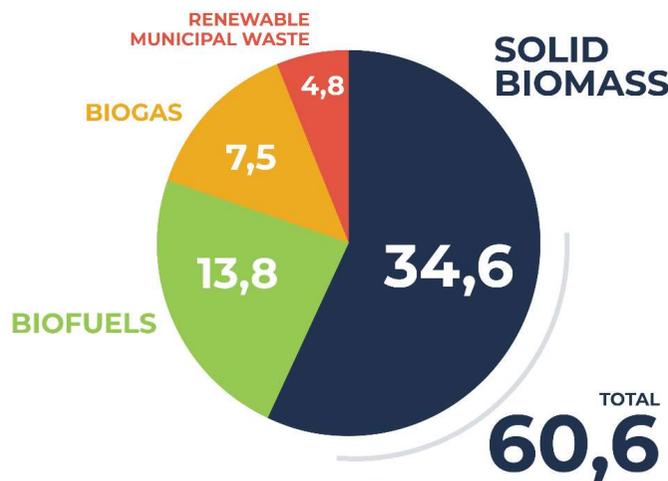




BOOSTING THE EUROPEAN ECONOMY

- 60,6 billion€ turnover
- +8% compared with 2016

TURNOVER OF THE BIOENERGY SECTOR
(IN 2017, BILLION €) SOURCE: EUROBSERV'ER



CONTRIBUTION OF THE DIFFERENT SECTORS TO THE RES TURNOVER IN EU
(IN 2017, %) SOURCE: EUROBSERVER





BOOSTING THE EUROPEAN ECONOMY

Key Industrial Player

Bioenergy has a significant effect on EU's job and Gross Value Added creation, due to the industry's direct impact on manufacturing and services linked to it.

This strong European-based industrial dimension boosts EU's competitiveness making it a global leader in the renewable energy sector.

This generates positive socio-economic impacts.



Bioenergy equipment suppliers* based in Europe

** Representing over 464 international suppliers of equipment to the bioenergy sector. This figure accounts only for companies engaged in export and/or have subsidiaries in other regions. It does not include small scale heating equipment suppliers.*

50.000 +
bioenergy businesses in the EU

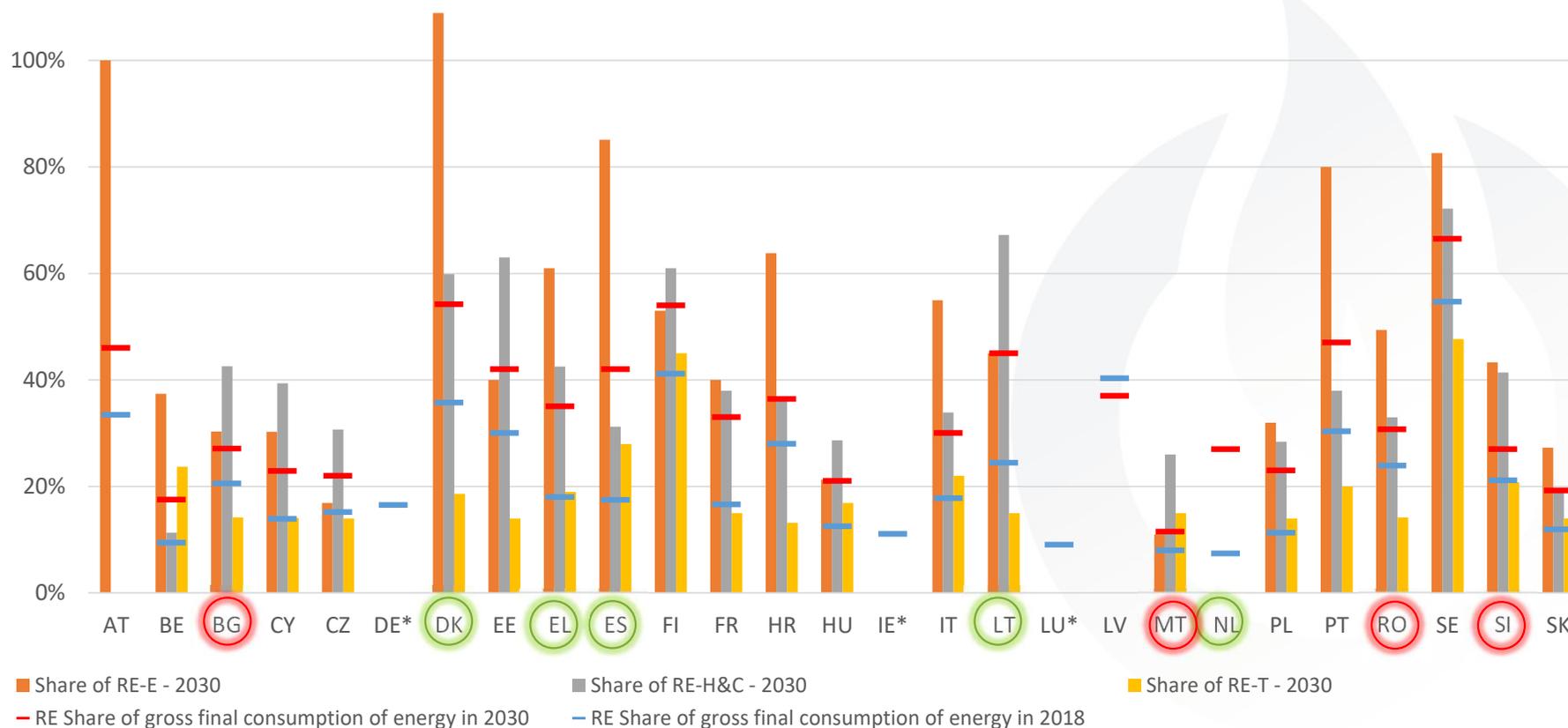
Renewable Energy Directive II (RED II):



The RED II covers the period 2021-2030

- ✓ Establishes a **Common framework** for the promotion of RES.
- ✓ Sets a **binding target** of the overall share of energy from renewable sources in gross final energy in 2030 (32%).
- ✓ Regulates the **financial support** to renewable electricity, H&C and transport.
- ✓ It establishes **sustainability** and **GHG emission saving criteria** for biofuels, bioliquids, electricity and heat (>2-20 MW).

2030 Renewable energy objectives – share of renewable energy in the different sectors and comparison with the 2020 targets (%)

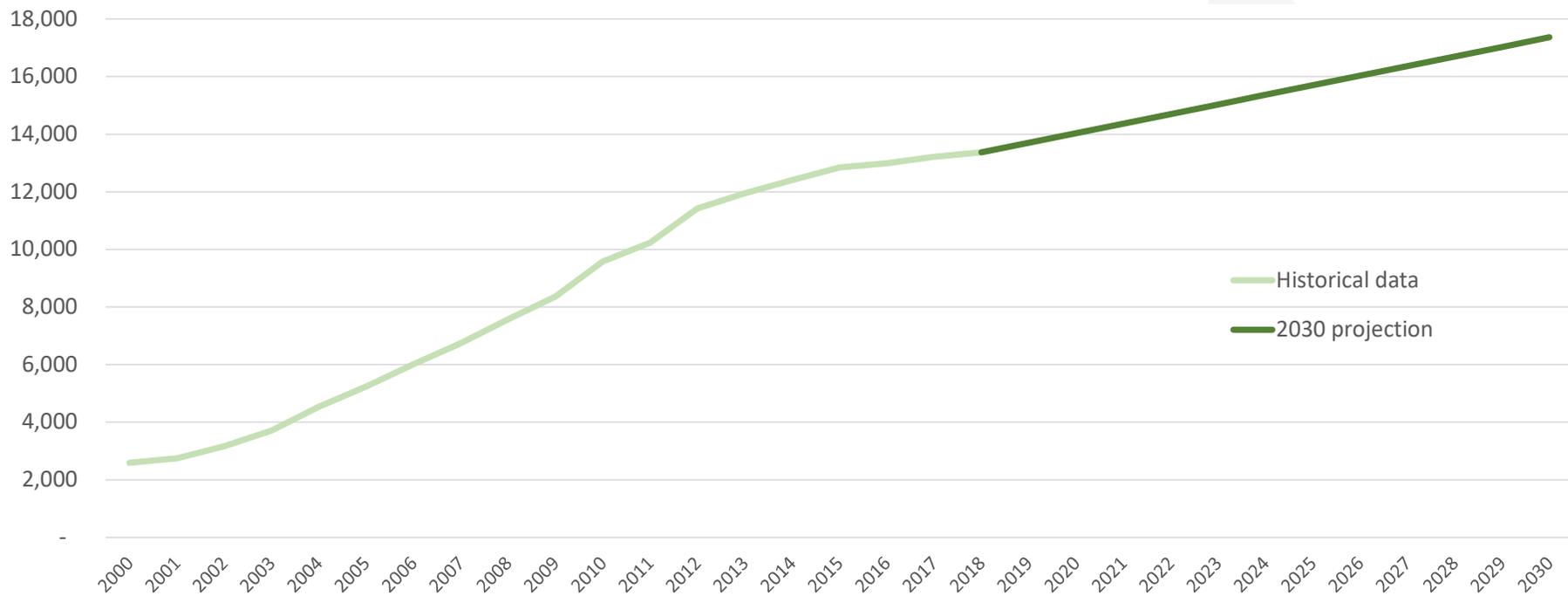


Notes: *Final NECP still missing for DE, IE & LU. When no data is presented it means that this data was not available in the NECP

Sources: NECPs & Eurostat

From 2006 to 2018: growth of +138%
From 2018 to 2030: growth planned +30%

Bioelectricity historical evolution and projections in EU27 (in ktoe)



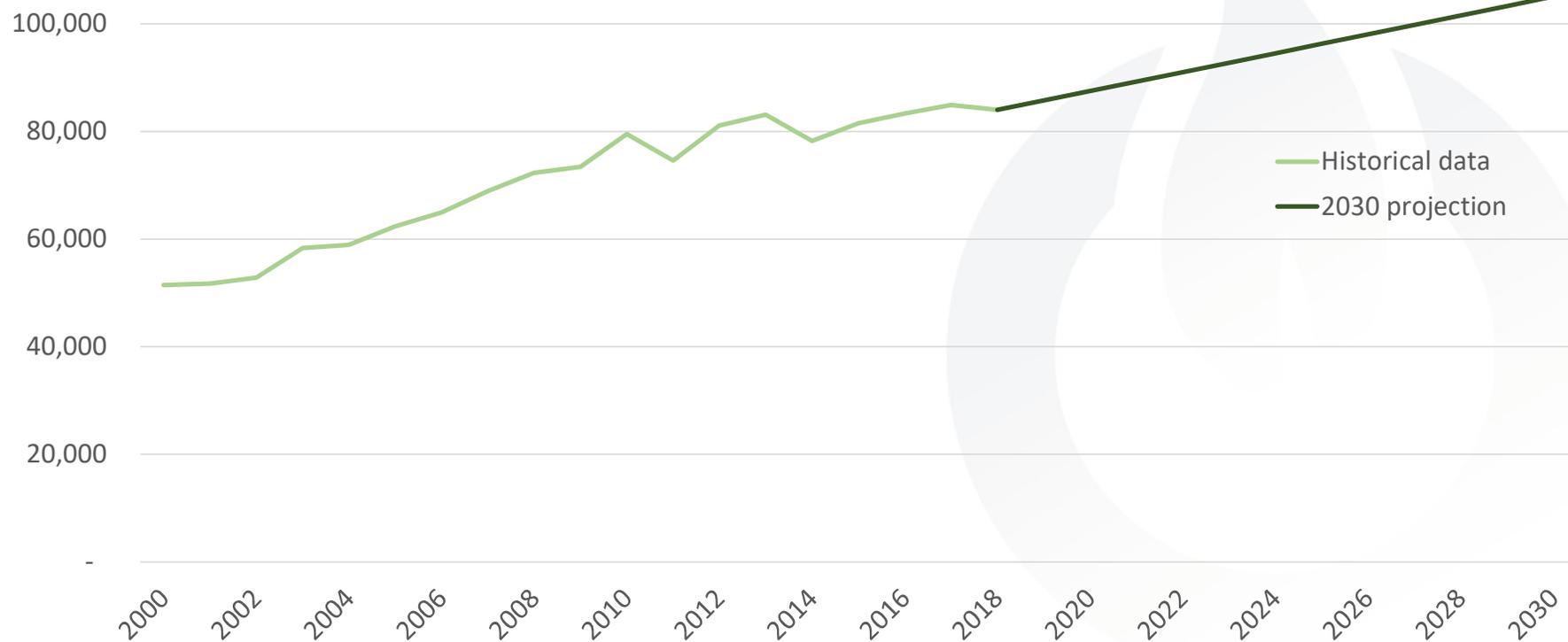
Note: when data not available for a country (CY, DE, IE, FR, LV, NL) it was considered that their bioelectricity will grow with the same growth rate than the average for all the EU countries with data available (i.e. +30%)

Sources: Eurostat and NCEPs

From 2006 to 2018: growth of +34%

From 2018 to 2030 growth planned (with available data from NECPs): +26%

Bioheat historical evolution and projections in EU27 (in ktoe)



Note: when data not available for a country (BE,CY, DE, ES, IE, LV, RO) it was considered that their bioheat will grow with the same growth rate than the average for all the EU countries with data available (i.e. +30%)

Sources: Eurostat

EU sustainability criteria for forest biomass



To be considered as **sustainable**, forest biomass has to fulfil the following criteria

- ✓ **Legality** of harvesting operations
- ✓ **Forest regeneration** takes place
- ✓ Areas designated by law for **nature protection purposes**, including in wetlands and peatlands, are protected
- ✓ Impacts on **soil quality** and **biodiversity** are minimized
- ✓ Harvesting does not exceed **long-term production capacity** of the forest

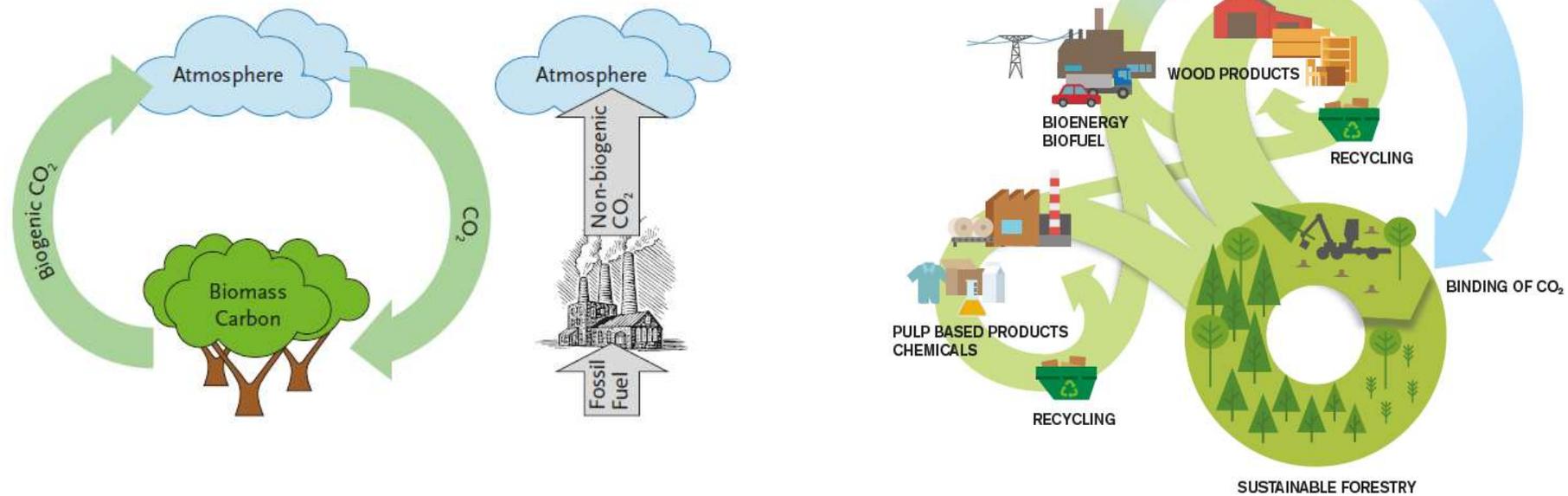
EU sustainability criteria for forest biomass



To be accounted towards the **union target** and be eligible for **financial support**, forest biomass shall meet the following **LULUCF** requirements

- ✓ The country of origin of the forest biomass is a party to the **Paris agreement**
- ✓ It has submitted **national determined contribution** (NDC) for agriculture, forestry and land use sector accounting for CO₂ emissions or
- ✓ It has national laws in place conserving **carbon stocks** and providing evidence that reported LULUCF sector **emissions do not exceed removals**

Bioenergy is carbon neutral

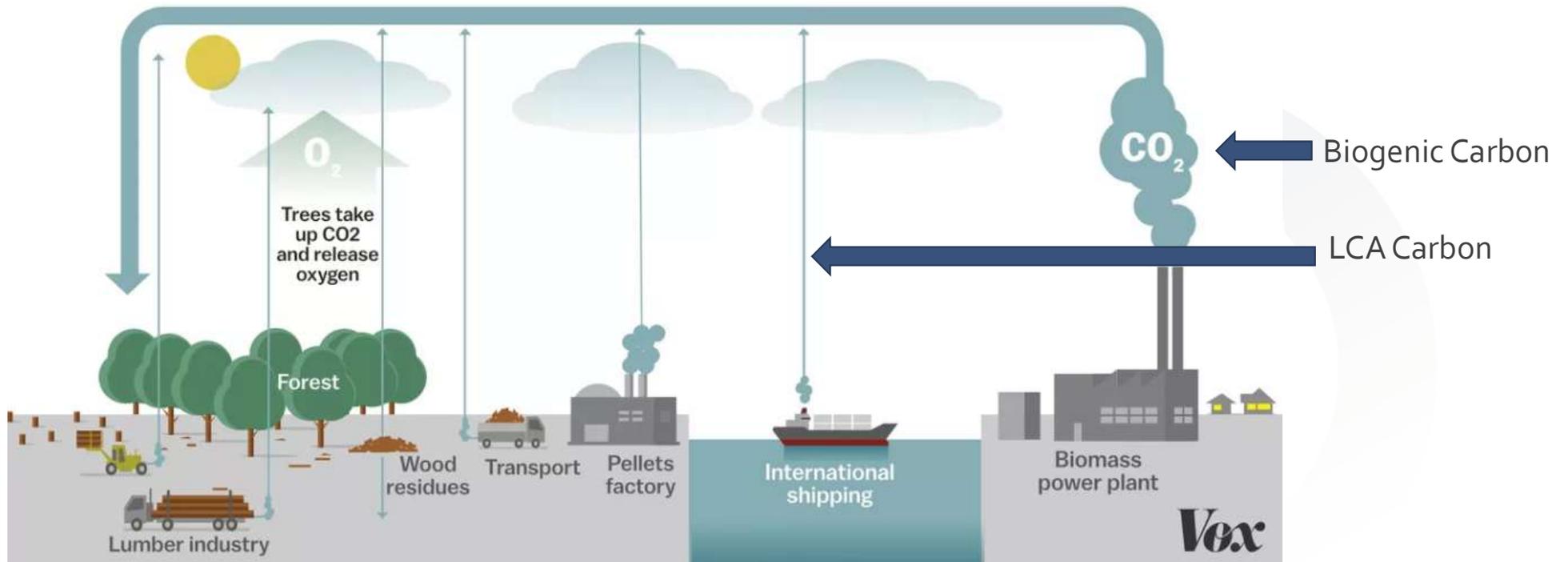


Carbon neutrality recognised in UNFCCC, EU RES Directive and ETS (Emission Trading Scheme)

Life Cycle Analysis (LCA) emissions



The cycle of biomass energy



Greenhouse Gas Emissions Saving Criteria



To be accounted towards the Union target and be eligible for financial support, GHG emissions savings from biomass has to fulfil the following criteria

- ✓ **≥ 50% in transport** (in installation in operation before 5 October 2015)
- ✓ **≥ 60% in transport** (in installation starting from 5 October 2015)
- ✓ **≥ 65% in transport** (in installation starting after 1 January 2021)
- ✓ **≥ 70% for electricity, heating and cooling** (in installation starting after 1 January 2021)
- ✓ **80% for electricity, heating and cooling** (in installation starting after 1 January 2026)

Take home messages:

- Bioenergy is a key RES to reach carbon neutrality.
- It favours local economy and jobs.
- Members States are, on average, projecting increases for bioelectricity and bioheat. Ireland will probably also be a frontrunning country 😊
- With REDII Bioenergy is the only energy source with mandatory sustainability criteria

Thank you for your
attention

Jean-Marc Jossart
jossart@bioenergyeurope.org



WWW.BIOENERGYEUROPE.ORG

Sustainable Bioenergy in Ireland

22 July 2020

IrBEA / WFQA Webinar
Series



Introduction

IrBEA

- Irish BioEnergy Association
 - Wood fuels
 - Biomass
 - Biogas / Anaerobic Digestion
 - Biofuels (bioethanol & biodiesel)
 - Energy Crops

IrBEA administers the WFQA

www.irbea.org

WFQA

- Wood Fuel Quality Assurance scheme
 - Certifies suppliers of:
 - Woodchip
 - Wood pellets
 - Firewood
 - Wood briquettes
 - All fuels certified for compliance with ISO 17225
 - Adding additional sustainable criteria in line with the European Renewable Energy Directive

www.wfqa.org

Biomass Sustainability

RED II Directive sets out detailed criteria around sustainability of all bioenergy fuels, solid biomass, liquid biofuels, gaseous fuels.

Land Use Criteria

Legality of land use and harvest

Sustainability of forest production capacity

Green House Gas Criteria

Minimum reduction of 70% by 2021 and 80% by 2026 for electricity, heating and cooling

Minimum reduction of 65% by 2021 for transport fuels

Biodiversity protection

Forest regeneration

Protection of sensitive areas e.g. wetlands & peatlands.

Soil quality and biodiversity

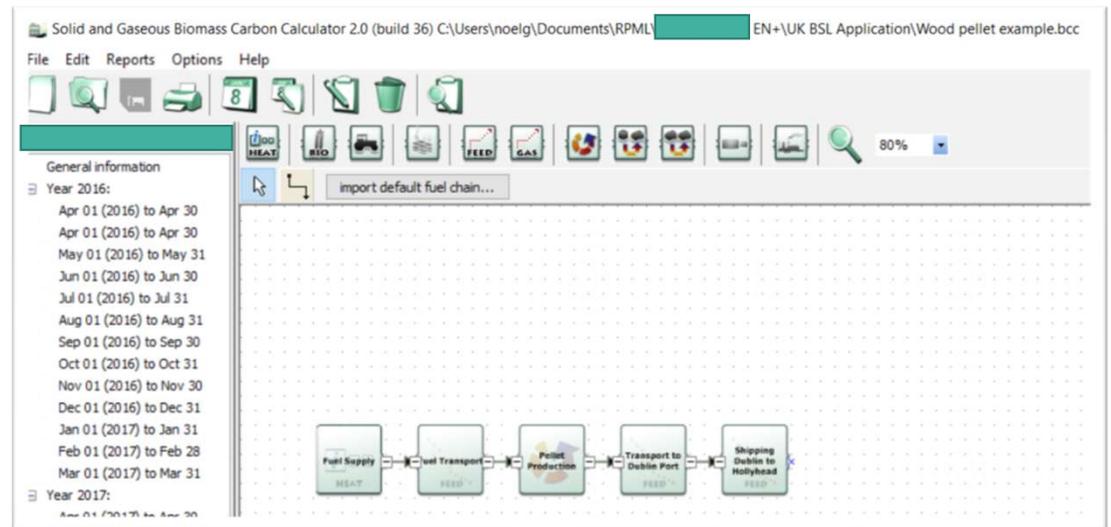
Land Use Criteria & Biodiversity protection

- Planting suitability
 - Protection of wetlands, peatlands, uplands etc...
 - Correct species selection
- Protection of high biodiversity areas
- Protection of soil carbon stock
- Protection of capacity of forest production



Greenhouse Gas Reduction Criteria

- RED II default criteria
 - Extensive tables of feedstock, production pathways and transport distances
- Life cycle analysis



RED II Preparations in Ireland

- COFORD Working Group on Climate Change
- Collaboration between SEAI, DAFM, IrBEA, Teagasc, NUIG, Coillte etc..
- Drawing up framework for Voluntary Certification Scheme
 - Linkages with existing felling licence system, providing excellent controls around proper forest management and protection of sensitive habitats.
- Fuel Certification through EN Plus, WFQA and BSL are all in place

Irish Forestry Material

- Forestry's prime harvest is lumber
- By products suitable for energy
 - Pulp
 - Brash
 - Sawdust
 - Bark

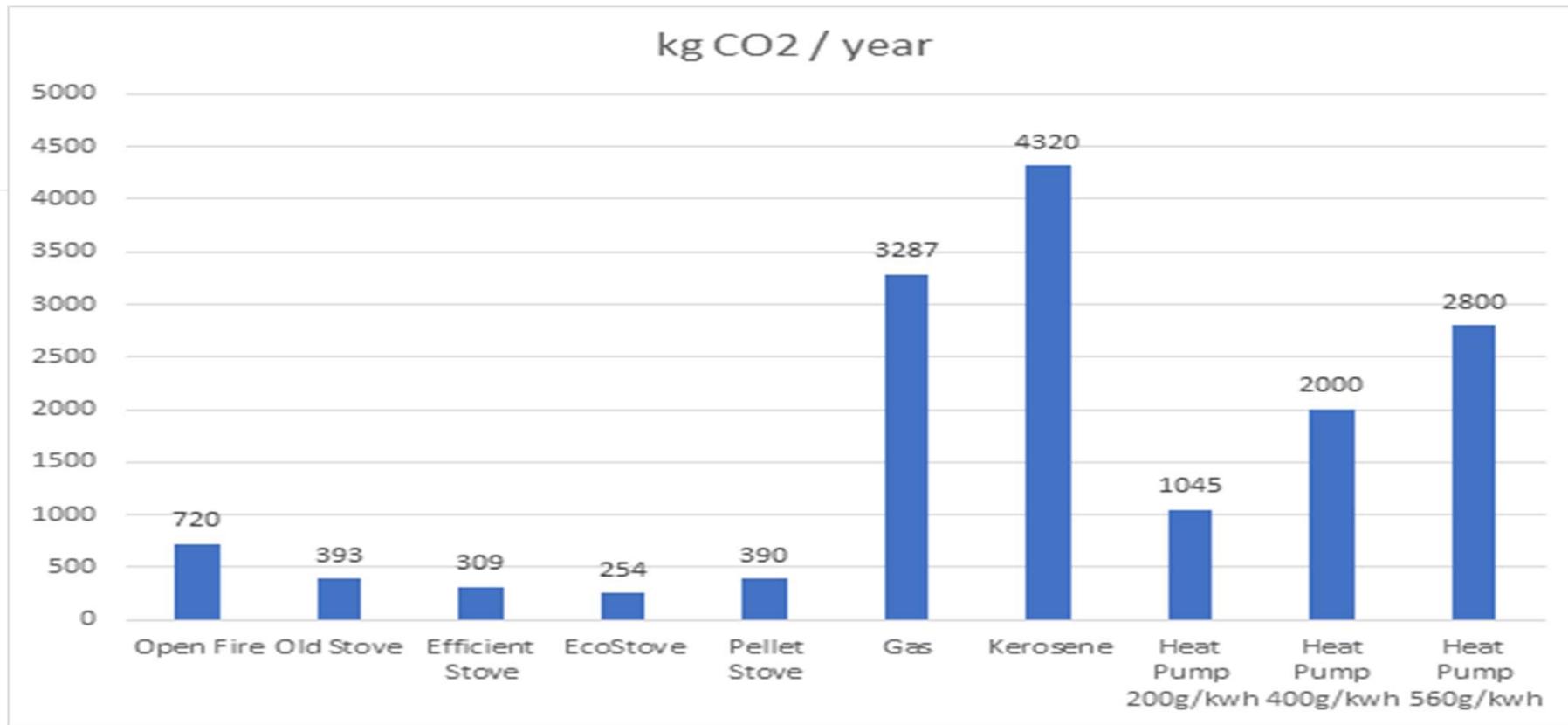




Irish Wood Fuel – Sustainability

- Sourcing from Sustainably Managed Forests
- Air dried reduces imbedded emissions
- Transport Distances kept to minimum
- Low moisture content to ensure efficiency
- Felling Licences ensure sustainable forest management
- Imbedded emissions from process equipment such as harvesters, processors and kiln added.
- Transport Distances kept to under 500km on Island of Ireland
- Certified fuel ensures low moisture content

Emissions for total heating supply of average domestic unit - 15,000 kwh/annum



Sources

CO₂ Data: SEAI Sustainability Criteria Options Report

CO₂ Data Heatpumps - based on published grid emissions and COP of 3



Suitable Industries

Food & Service

- Hotels
- Primary agriculture (poultry, pig, horticulture)

Industry

- Pharmaceutical
- Polymer
- Food Processing

Biogas & Biomethane



End uses

- Transport
 - Best option for heavy transport
- Electricity
 - Dispatchable power
- Heat
 - Onsite usage and grid injection

Sustainability

- Waste materials, food wastes and animal wastes are excellent sources of energy with excellent GHG reduction parameters
- Energy crops have difficulty meeting sustainability criteria

Certification

- Certification issues being addressed, complexity due to grid injection.
- Certification process under design since 2014, due to be available in 2021?

Biofuels for transport

Bio Ethanol

- Source crop
 - Cereals
 - Beet?
- Production cycle
- Very suitable for conversion of existing vehicle fleet
- Co-product status
 - Sugar?
 - Other

Bio Diesel

- Used cooking oil and tallow very suitable and sustainable
- Very suitable for conversion of existing vehicle fleet
- Energy crops
- Major issue with Palm Oil - to be avoided completely?

Bio Methane

- Anaerobic Digestion process
- Feedstock critical
- Excellent energy provider for heavy transport



Contact Information

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