



Sustainable Bioenergy solving energy & climate challenges

Hannes Tuohiniitty, Bioenergia ry



Bioenergia

Major role of bioenergy on european energy system already

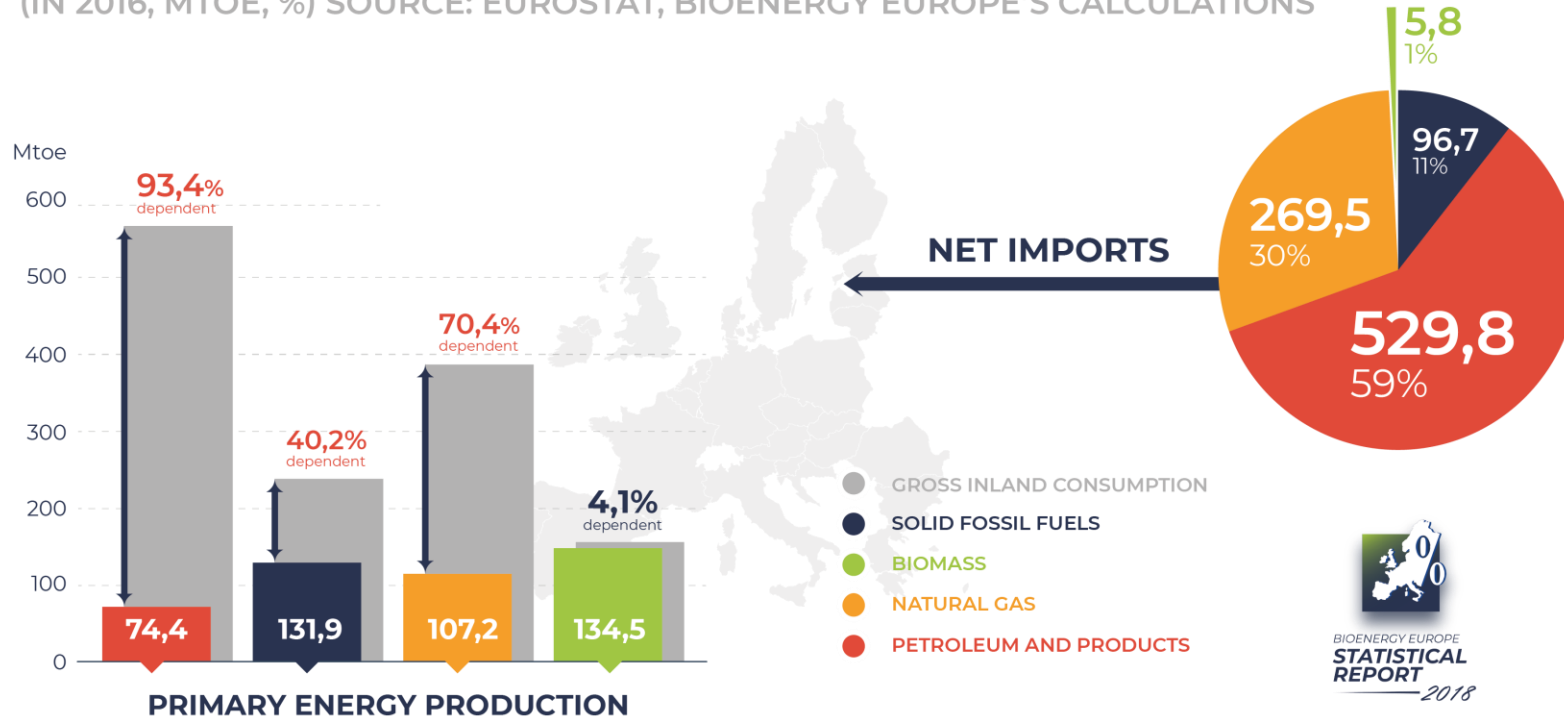
Hannes Tuohiniitty, Bioenergia ry





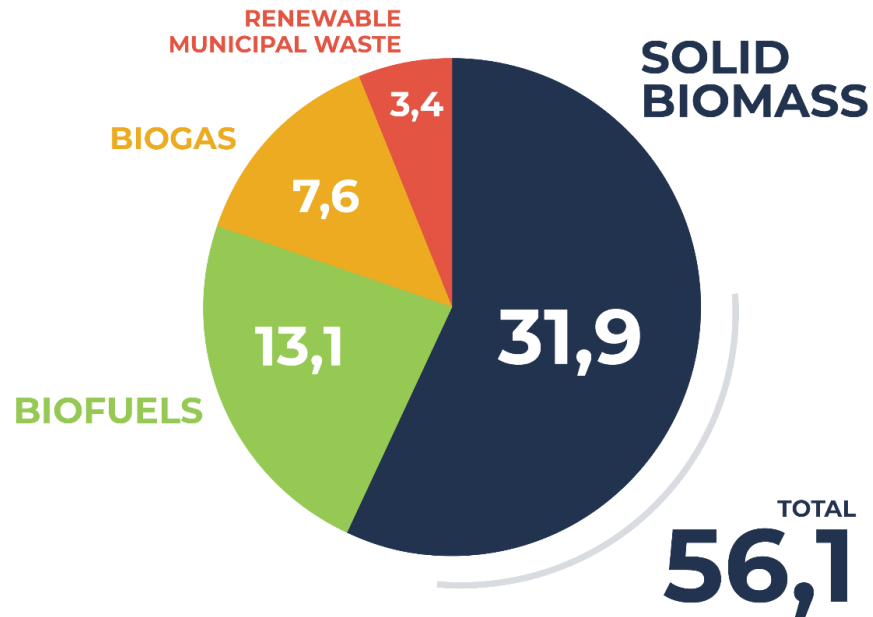
EU-28 ENERGY DEPENDENCY AND NET IMPORTS

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



TURNOVER OF THE BIOENERGY SECTOR

(IN 2016, BILLION €) SOURCE: EUROSERV'ER

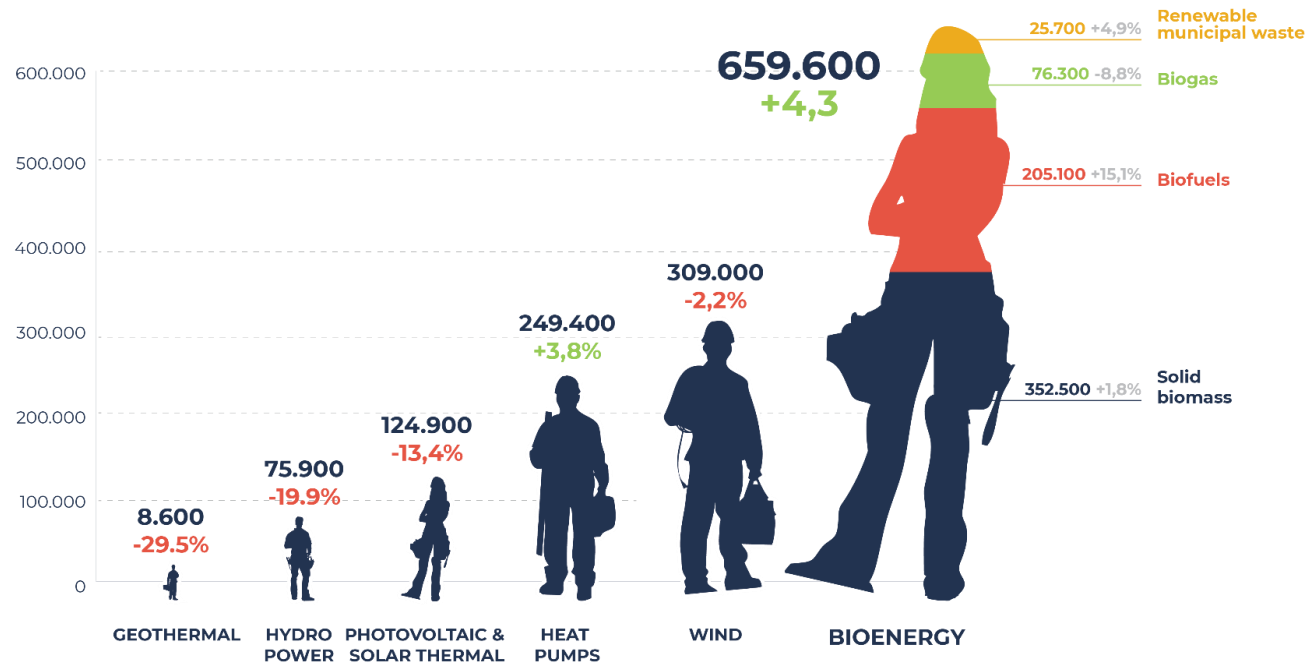




EU-28 EMPLOYMENT DISTRIBUTION IN RENEWABLE ENERGY

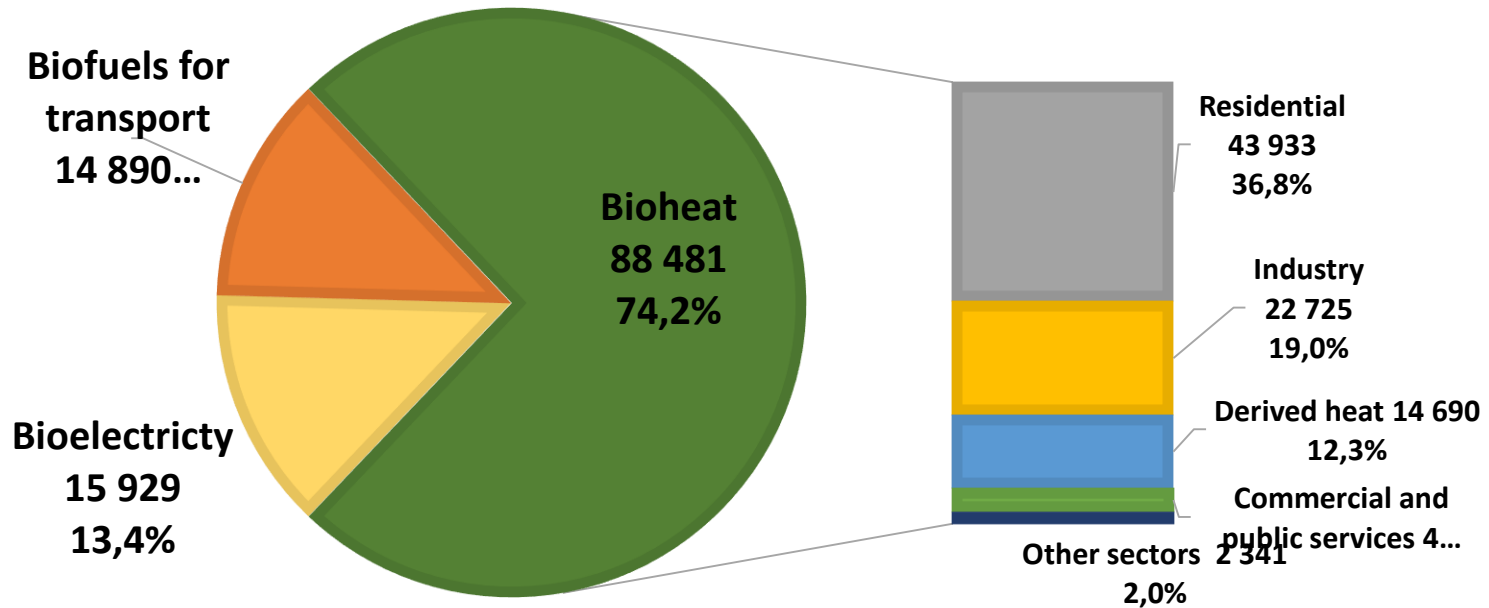
(IN 2016, % GROWTH 2015-2016, DIRECT AND INDIRECT EMPLOYMENT)

SOURCE: EUROBSERV'ER



Gross final energy consumption of biomass in heat, electricity and transport in EU28 Member States in 2017 (ktoe)

Bioenergy: 119 Mtoe → ~ 10% of the EU28 gross final energy consumption



Source: Eurostat, Bioenergy Europe

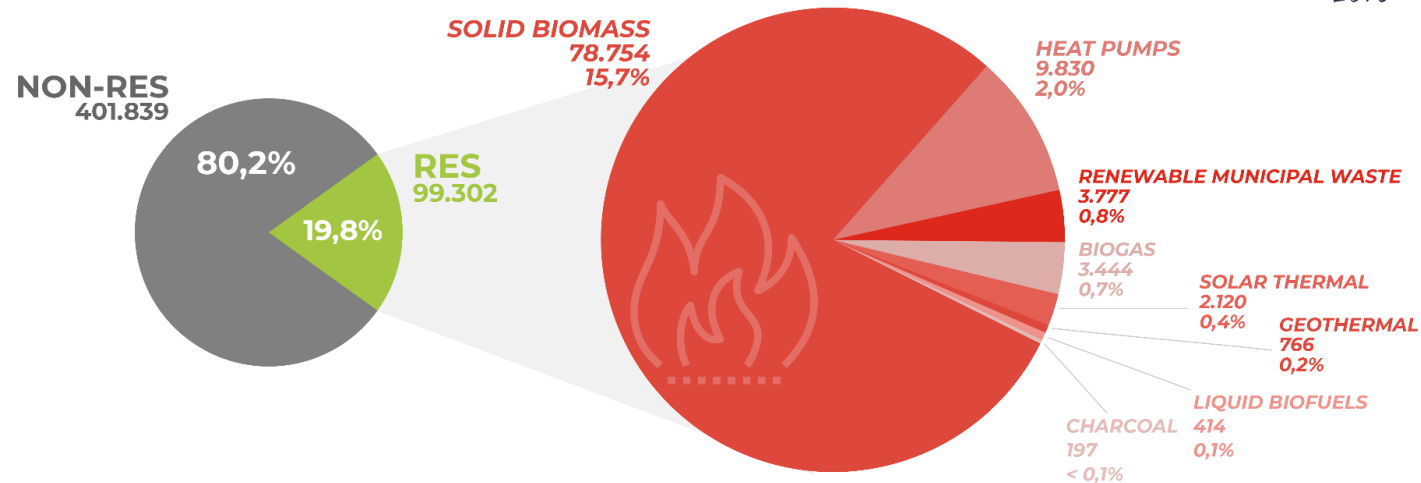


SHARE OF RENEWABLE ENERGY IN GROSS FINAL ENERGY CONSUMPTION FOR HEATING & COOLING IN EU28

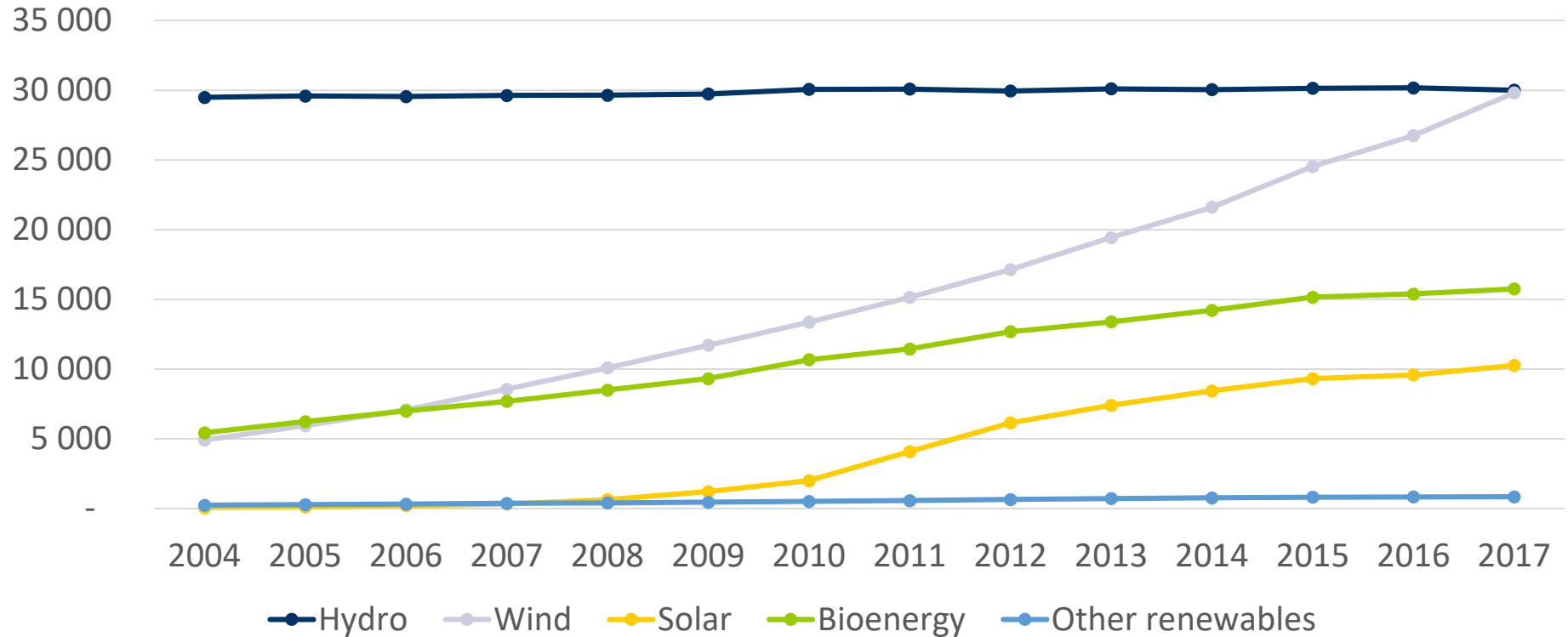
(2016, %, KTOE) SOURCE: EUROSTAT, BIOENERGY EUROPE'S CALCULATIONS



BIOENERGY EUROPE
**STATISTICAL
REPORT**
2018

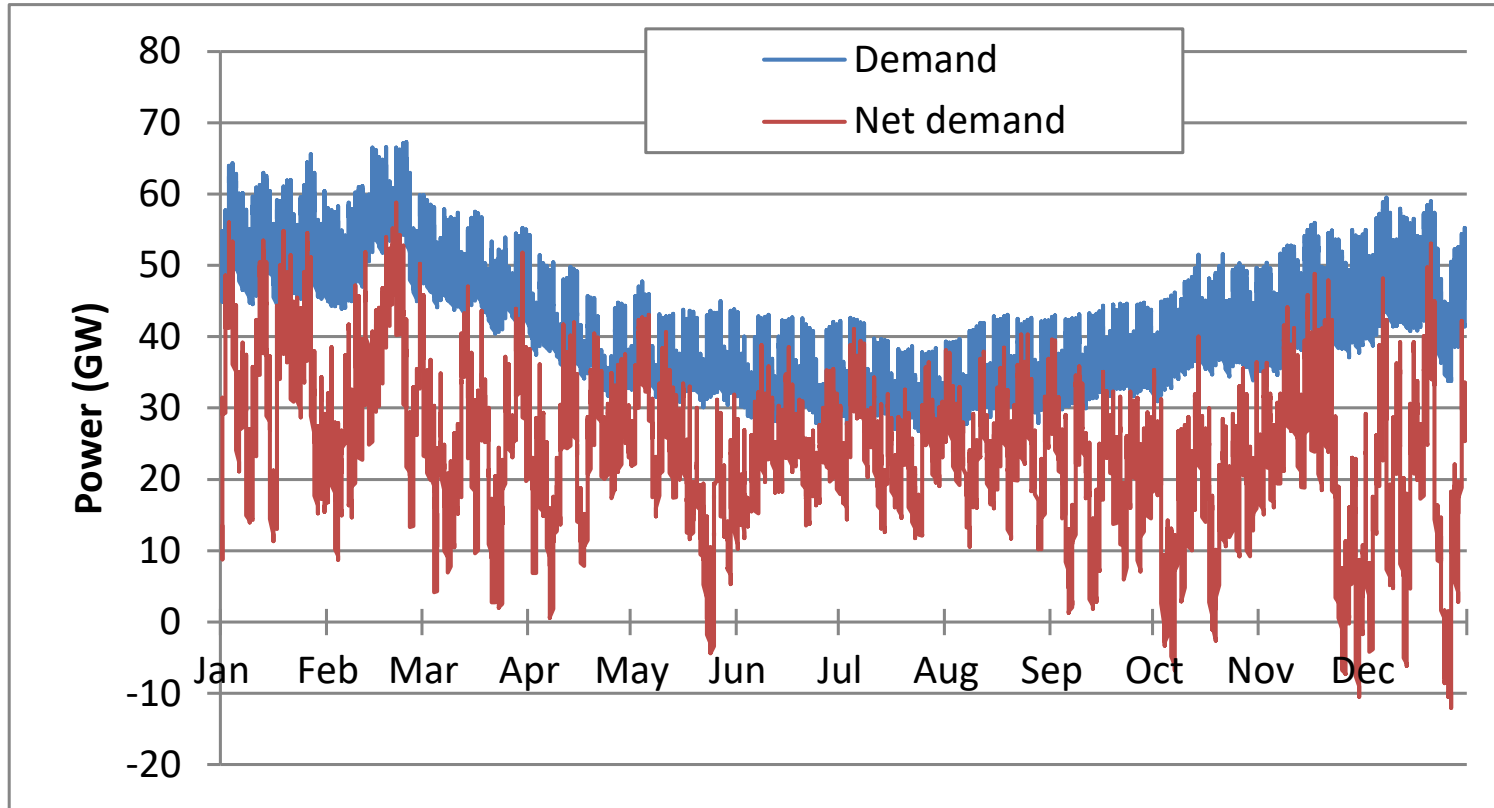


Evolution of gross final consumption of electricity from renewable sources* in EU28 between 2004 and 2017 (ktoe)



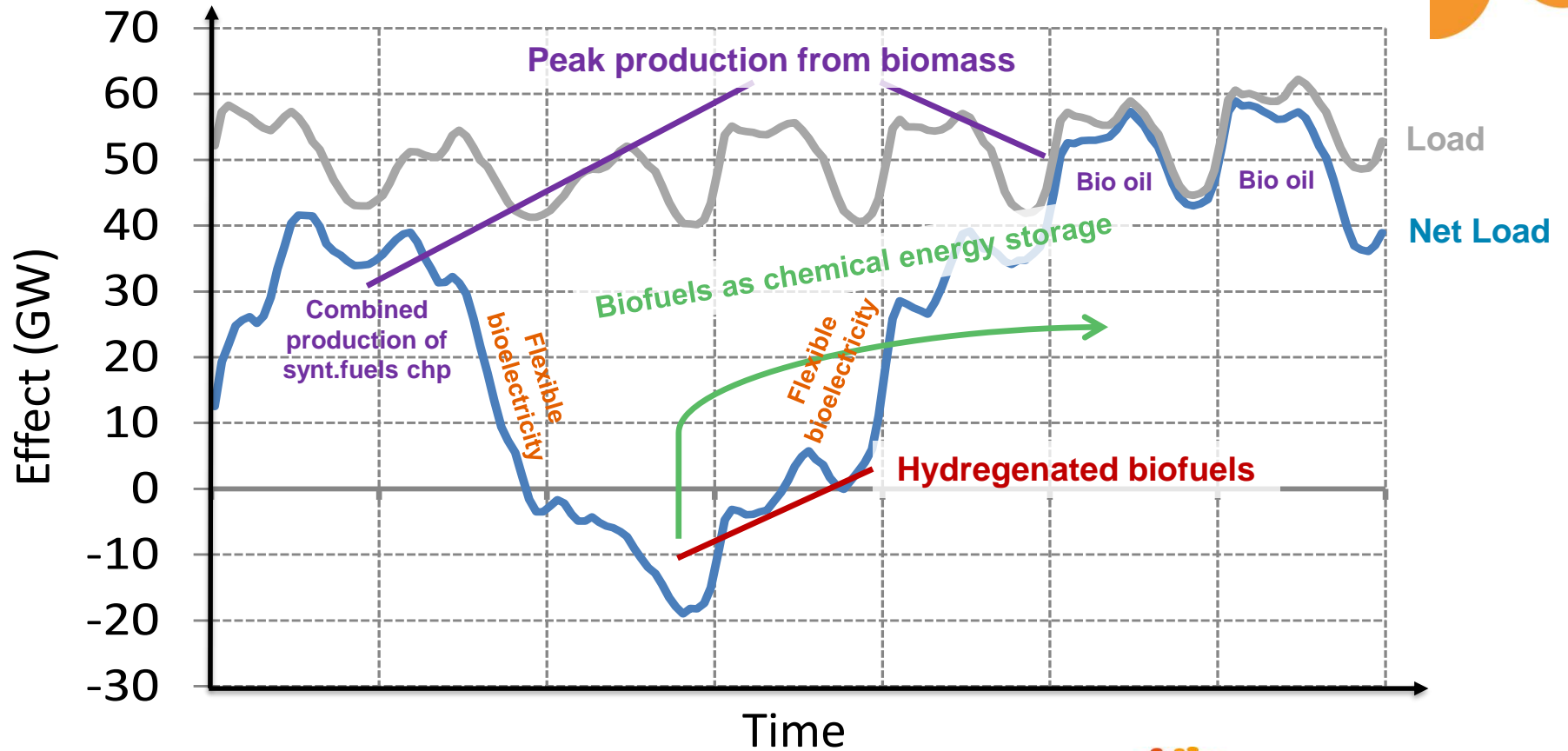
Source: SHARES 2017, Bioenergy Europe

Intermittent RES & bioenergy good pair



Modelling
when 40 % of
electricity is
produced as
wind energy in
Nordic
electricity
market area

Flexible bioenergy in high RES-e market



Adapted from: VTT, Hannula 2019

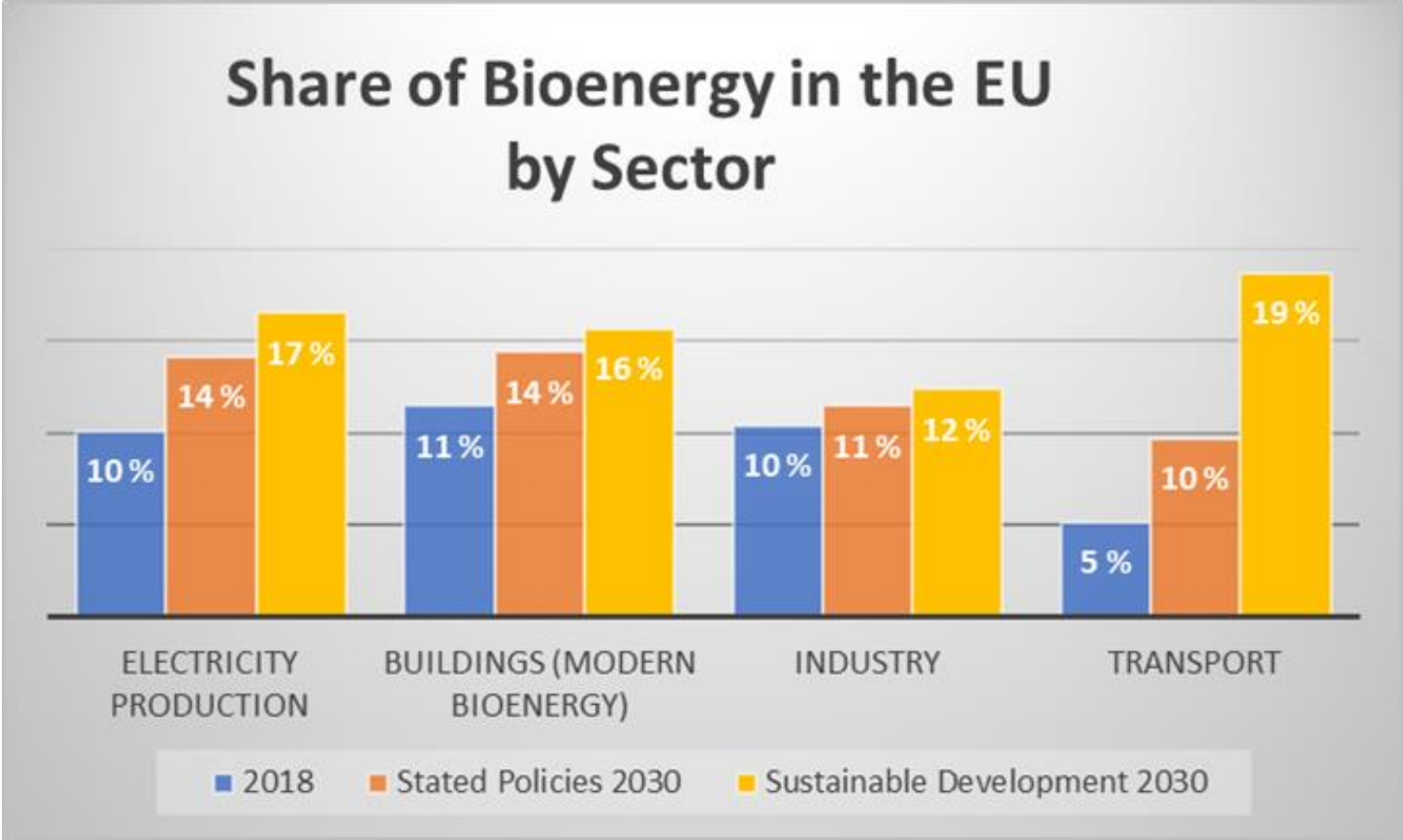
Hannes Tuohiniitty, Bioenergia ry

Outlook for more bioenergy ahead

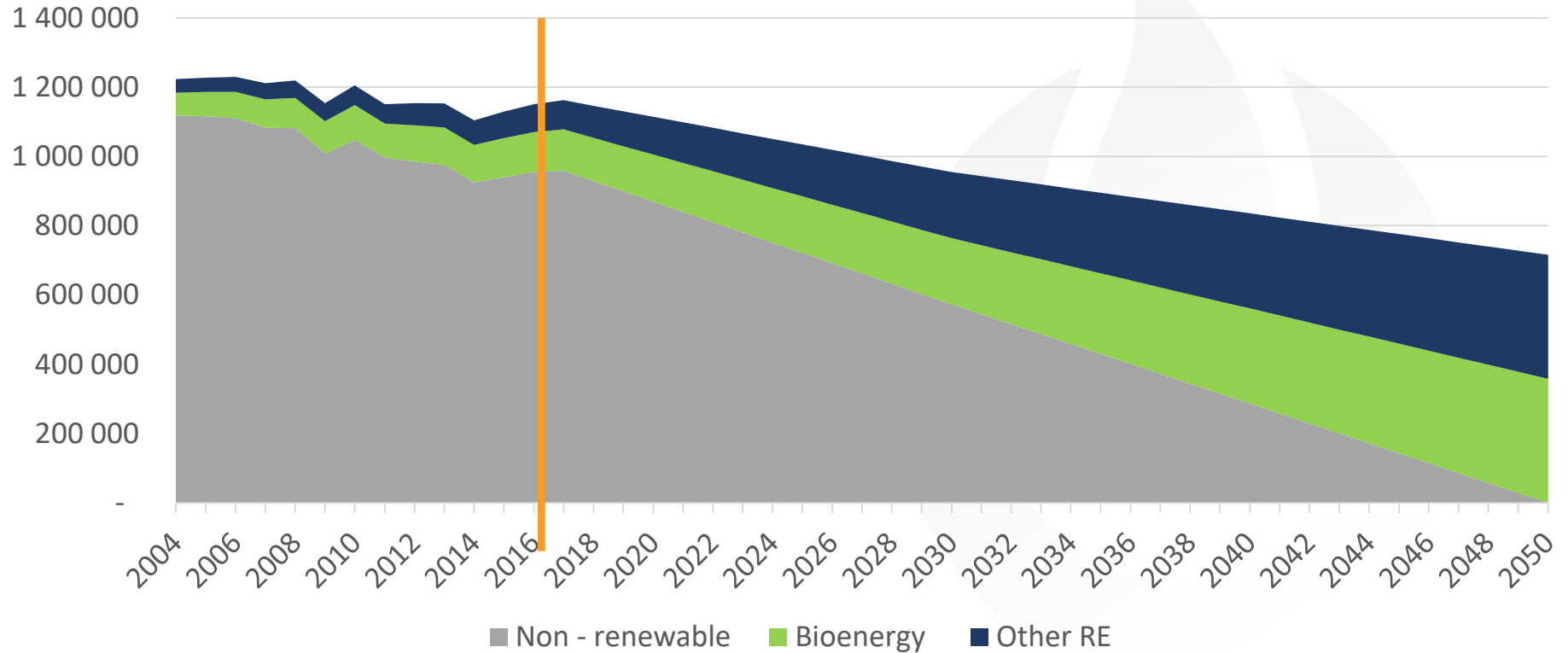
Hannes Tuohiniitty, Bioenergia
ry



IEA World Energy Outlook 2019, Global



Gross final energy consumption historical evolution and Bioenergy Europe's prospective to 2050 in EU28 (ktoe)



Source: SHARES 2017, Bioenergy Europe

Bioenergy Sustainability is precondition to growth

Hannes Tuohiniitty, Bioenergia
ry



REDII sustainability criteria - common framework

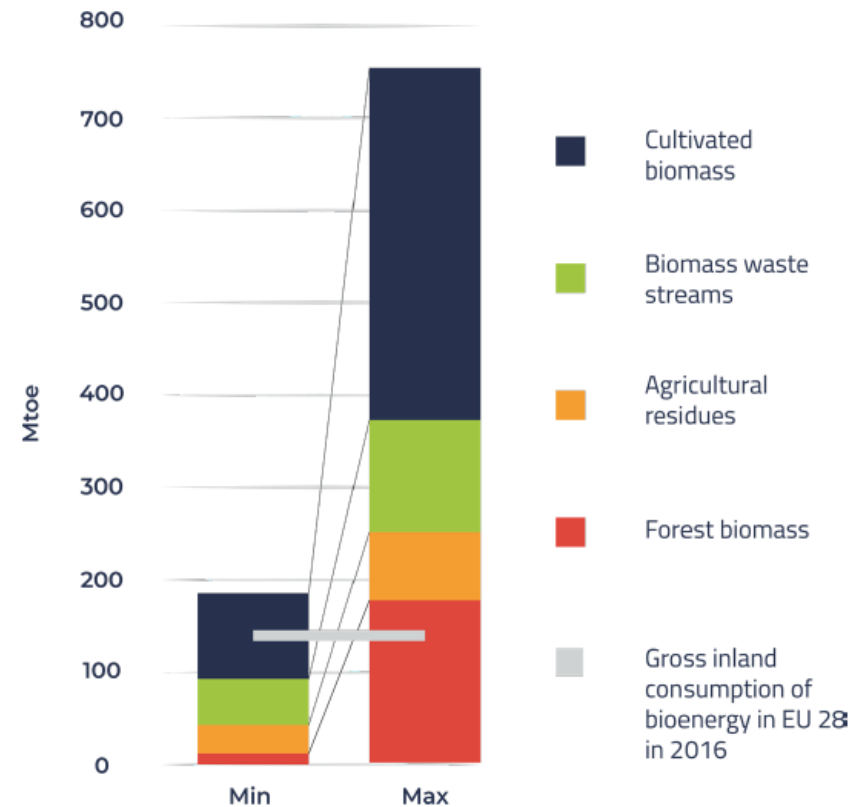
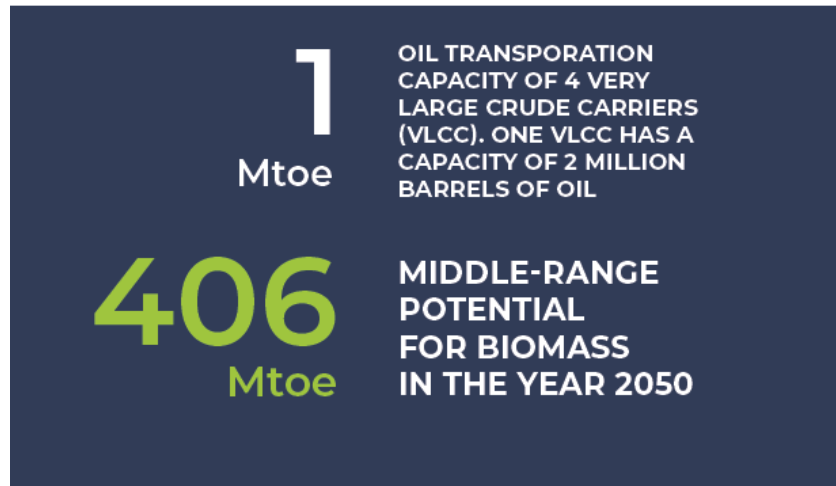
- First of a kind framework for operators and renewable fuel chain, affects globally
- No-go –areas: nature conservation, carbon integrity
- Criteria to maintain or enhance soil quality and biodiversity, LULUCF
- Sets (in practice) binding criteria for bioenergy feedstock and production
- Can be build on general forestry sustainability schemes & structures → common procedures regardless of end use



Picture: Sure Sustainable Resources Verification Scheme GmbH

Biomass potential – more from agri & left aside land

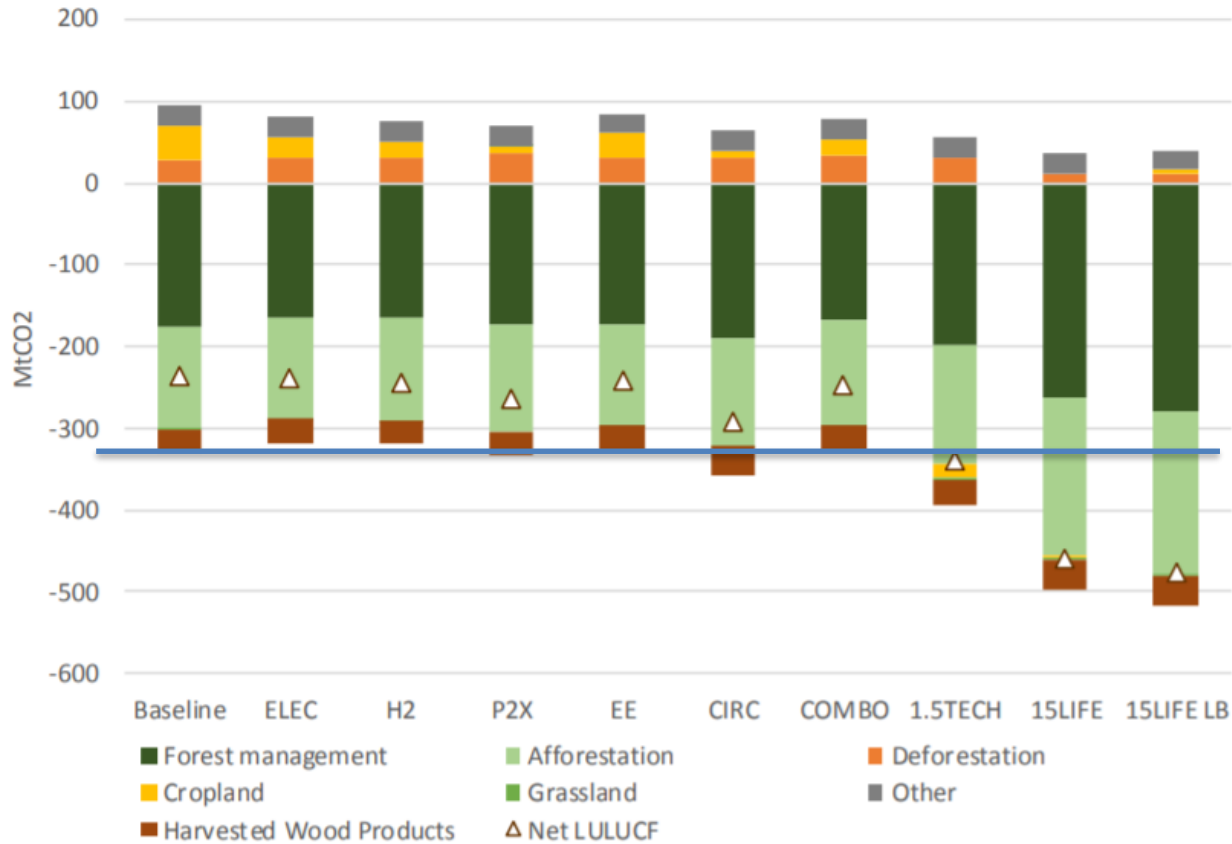
Only European domestic potential incl.



Negative emissions; needed more than ever – bioenergy has a role

More natural sinks needed

Figure 87: LULUCF emissions across the scenarios

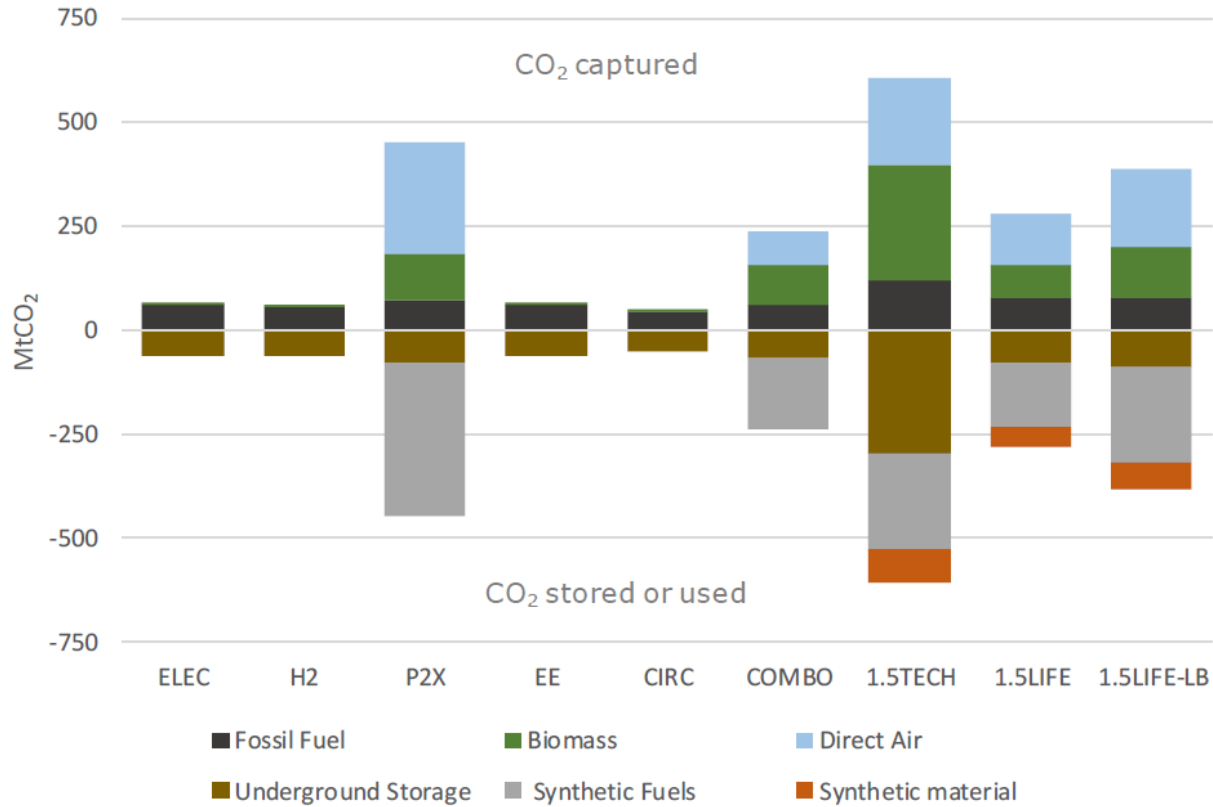


Increase of natural sinks from baseline

90 – 200 MtCO₂

Technological solutions

Figure 89: CO₂ capture and storage or reuse (2050)



270 – 600 MtCO₂
more compared to
baseline

Source: European Commission, 2018

The main messages



- Europe and World needs bioenergy, and more of it is to come
- Sustainable biomass is here to double – triple bioenergy use
- Is Europe serious about our carbon neutrality targets? If yes, emphasis needed on NET's too.



Let's continue the positive change!

Hannes.tuohiniitty@bioenergia.fi / +358 40 1948 628



www.bioenergia.fi

Detailed statistics free of charge available

<https://bioenergyeurope.org/article.html/101>



Fact sheets & policy papers

<https://bioenergyeurope.org/resources.html>

