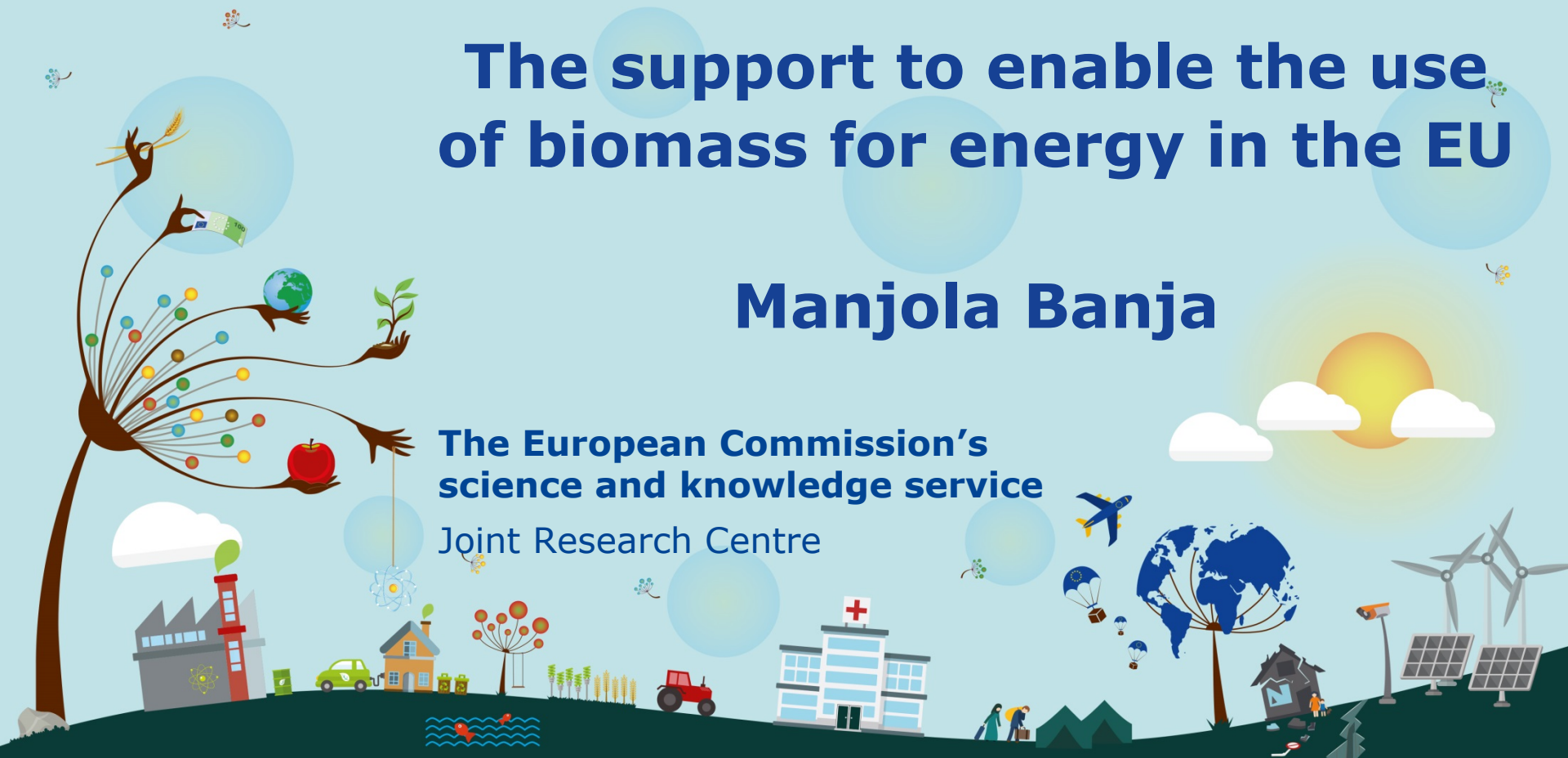


The support to enable the use of biomass for energy in the EU

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**The European Commission's
science and knowledge service**
Joint Research Centre



European
Commission

The support to enable the use of biomass for energy in the EU

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Aim:

Overview of the support for bioenergy

Policy framework:

EU climate and energy strategy

Data used/sources:

→EU Member States Progress Reports on renewables
(2011, 2013, 2015)

→RES-Legal EU

Outline

Bioenergy in the EU

Sustainability of bioenergy

Conversion efficiency

Overall support measures for bioenergy in the EU

Who applies what?

Key takeaways

Bioenergy in the EU, 2005 -2016

116 Mtoe in 2016

→a rise by **78%** comparing with 2005

Almost **60%** of final RES (196 Mtoe)

Biomass (E+HC) – **52%** of final RES in 2016

The growth mainly due to **biogas**

Biogas (E+HC) – **5** times fold 2005 level

Germany (9 fold), Italy (5 fold), United Kingdom (2 fold)

Sustainability of feedstock's bioenergy

Voluntary schemes

→ 20 schemes recognized (14 active)

Regulations for bioenergy emissions – part of the support schemes

→ AT, BE (Flemish, Wallonia), NL and UK

Prohibition use of certain feedstock's

→ BE (woody feedstock for wood-processing)

→ PL, HU (stem wood with diameter above a certain size)

→ FI (coarse round wood)

→ NL (woody residues for energy only as a by-product)

Cascading principle – use for energy last step

→ BE, HU, NL (different approaches)

Conversion efficiency

Relevant for public support schemes beyond 2025

Heating production

Higher energy conversion efficiency rates are applying in some front running EU Member States

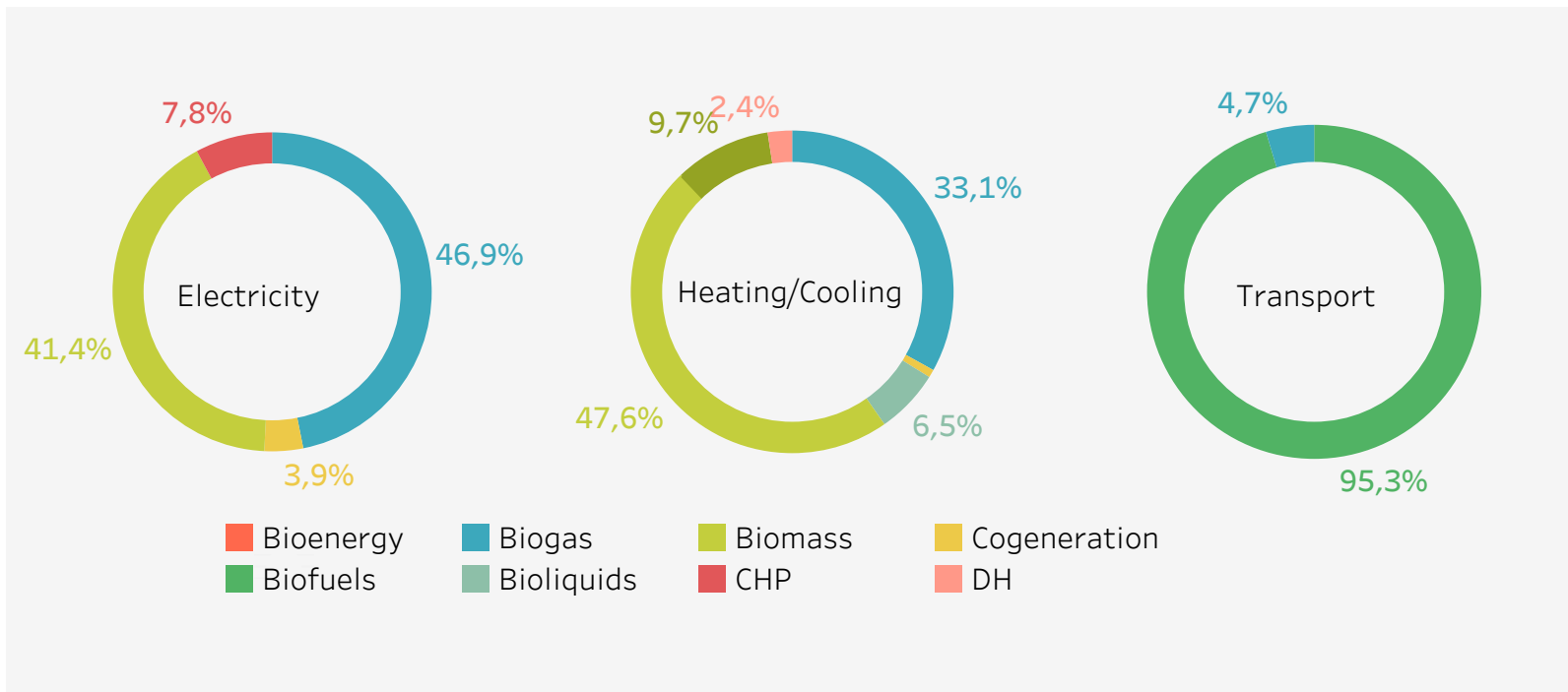
→ Austria (60%), Germany (70%), France (75%)

Electricity production

So far, only GHG reduction goals in the supply chain

→ Denmark, United Kingdom, Belgium, the Netherlands

Overall support measures for bioenergy (2005-2015)



Who applies what ?

Bioelectricity

Bioheat

Biofuels

Bioelectricity

Feed-in-tariff – 18

BG, CZ, DE, IE, EL, FR, HR, IT, CY, LV, LU, HU, AT, PL, PT, SI, SK, UK

Constant FIP – 13

CZ, DK, DE, EE, EL, FR, HR, IT, LU, HU, NL, PL, FI

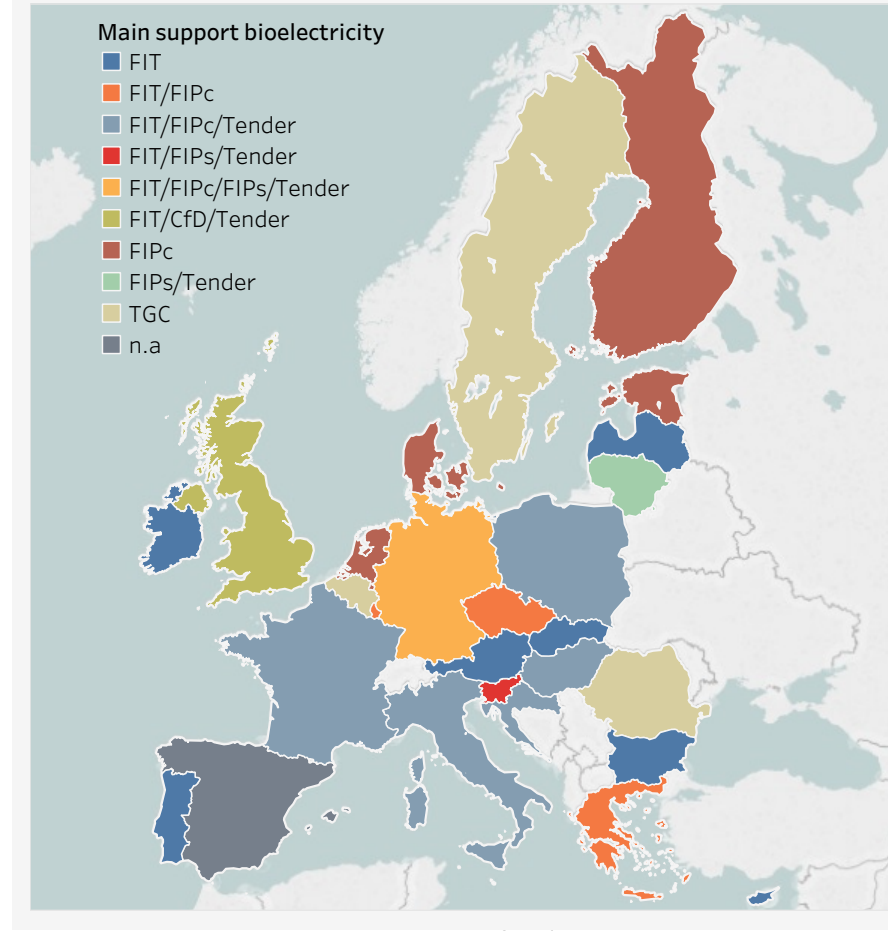
Sliding FIP – 3

DE, LT, SI

Green certificates – 3

BE, RO, SE

Auctions – DE, FR, IT, LT, HR, HU, PL, PT, SI, UK



Changes in the support schemes after 2014 bioelectricity

Germany, France, Italy United Kingdom

→combination of tariffs and premiums with auctions

Croatia, Ireland, Latvia, Bulgaria

→combination of tariffs with premiums

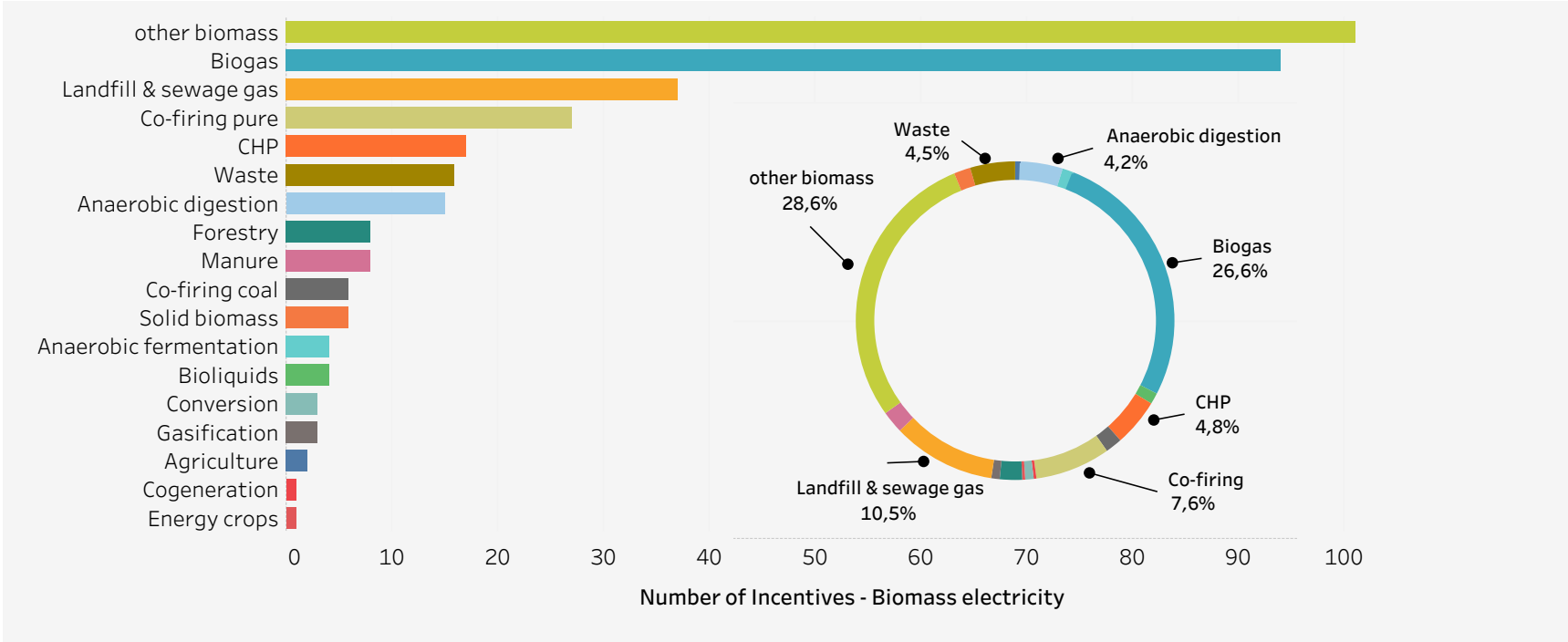
Incentives for bioelectricity

>350 incentives

>40% biogas, landfill and sewage gas

CZ, EL, NL, DE, HU, UK

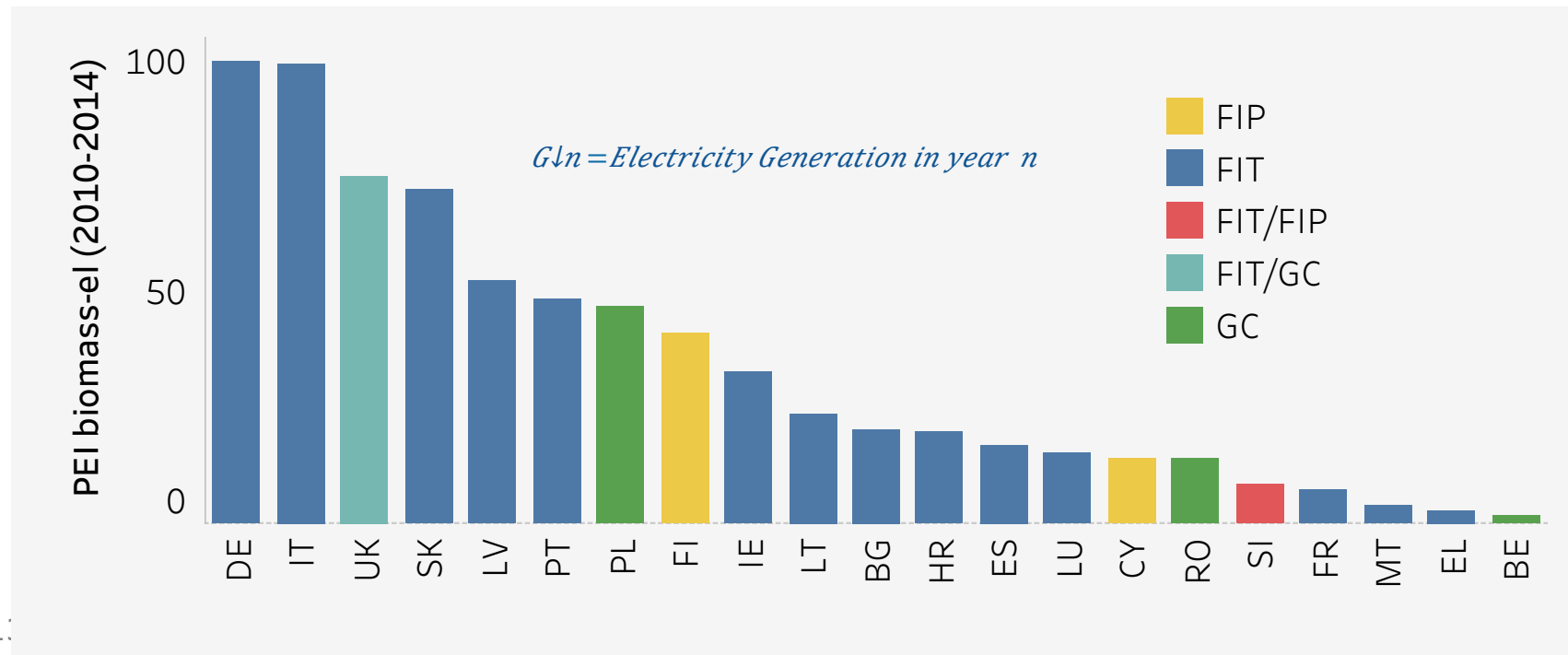
largest number of incentives for bioelectricity



Example of an Effectiveness Indicator bioelectricity(2010-2014)

Comparison with 2020 plans

Clear pattern in "support schemes – deployment"

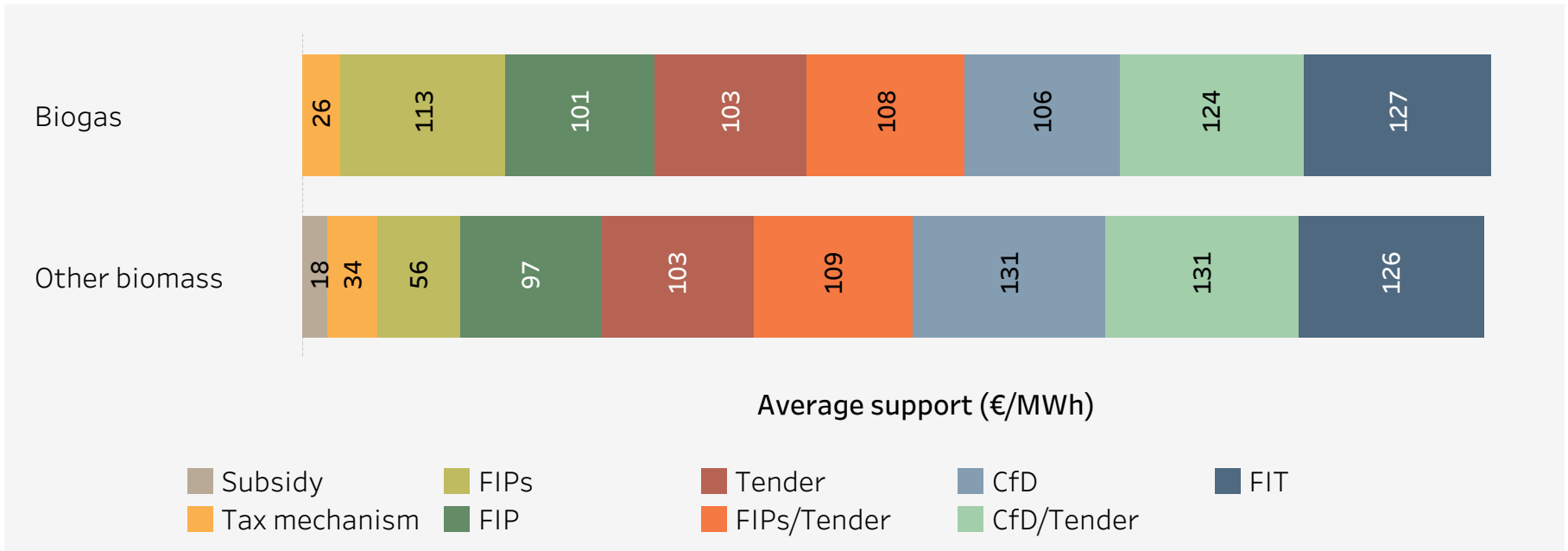


Average support for bioelectricity

Italy – the highest average feed-in tariff 2010-2014, at 230 €/MWh

France – the highest average feed-in tariff after 2014, at 187,5 €/MWh

Average **sliding feed-in premium** for biogas double that of other biomass



Bioheat

Subsidy- 18

BE, BG, CZ, DE, EE, IE, EL, FR, LT,
LU, HU, AT, PL, RO, SI, SK, FI, UK

Tax mechanism- 8

CZ, DK, EL, FR, LV, LT, NL, SE

Feed-in Premium – 2

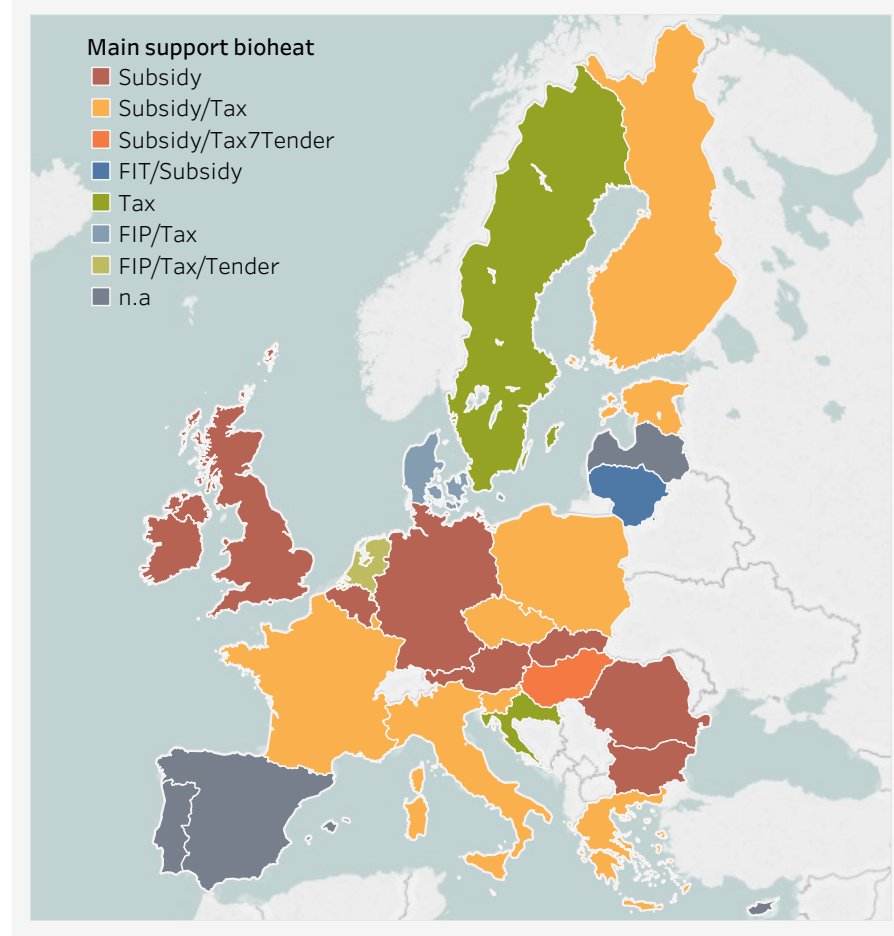
DK, NL

Feed-in tariffs- 1

LT

Auctions – 1

HU, NL



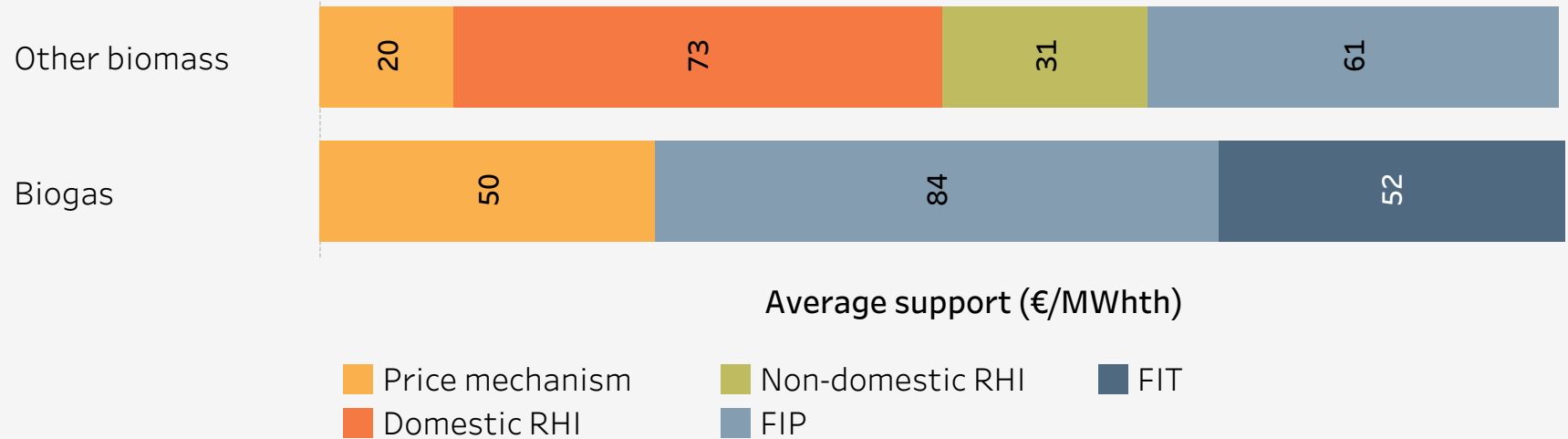
Incentives bioheat

58% of incentives for other biomass for heat

Feed-in tariff and premium main support for biogas for heat

Netherlands –the highest average premium for fermentation in CHP

Germany – the highest average subsidy for pellet installations



Biofuels

Quota- 24

BE, BG, CZ, DK, IE, EL, ES, FR, IT, LV, LT, LU, HR, HU, MT, NL, AT, PL, PT, RO, SI, SK, FI, UK

Tax mechanism- 14

BE, CZ, DK, EL, LV, LT, HU, NL, AT, PT, SI, SK, FI, SE

GHG reduction quota - 1

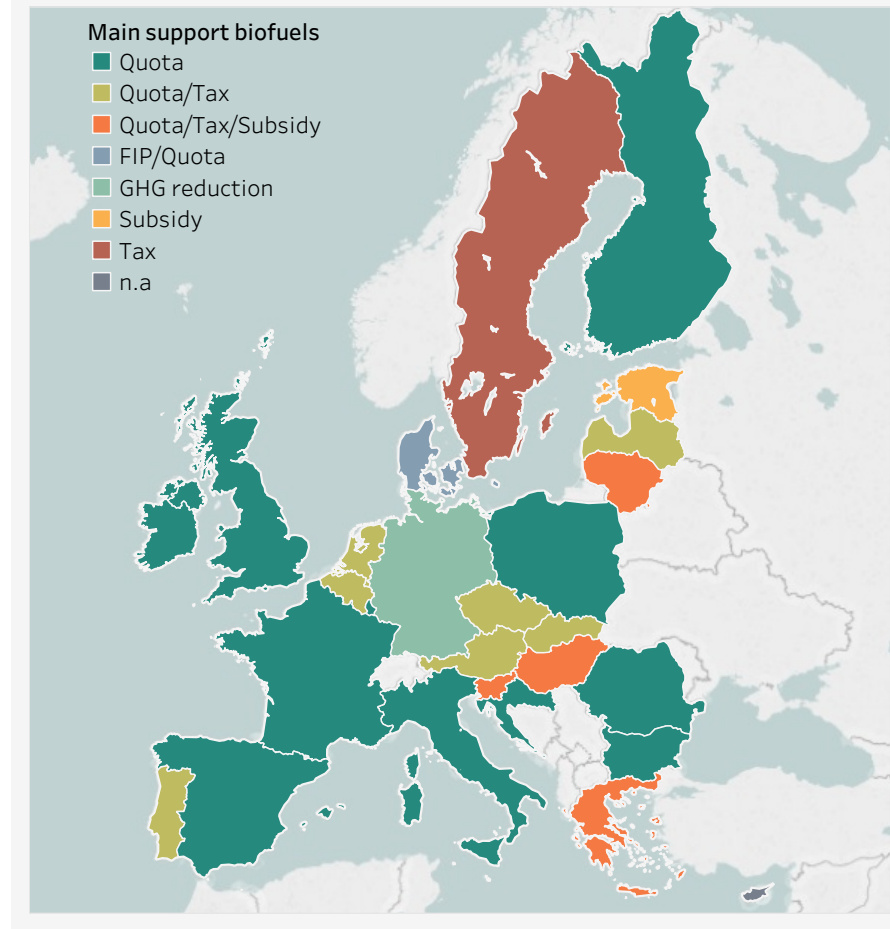
DE

Subsidy- 6

EE, EL, LT, HU, AT, SI

Premium tariff - 1

DK



Biofuels blending obligation

In 2016

Bioethanol – 3.3% blending share (energy basis)

Biodiesel – 5.8% (blending share (energy basis))

France – the highest blending share in 2014 (7.7%)

Finland – the higher blending share in 2016 (10%)

Italy, Denmark – mandate for advanced biofuels

Key takeaways

Electricity sector

Support schemes in the focus of policy makers

→Targets (role of policy)

For example: phasing out coal (co-firing)

→Costs (lowering)

→Shifting towards combination FIT & FIP with Auctions

large-scale installations

successful in some countries

→Financial and fiscal incentives

→Technology support : focus on biogas electricity

Heating/cooling sector

Support schemes less widespread and aggressive
Main support for other biomass than biogas

- Financial incentives (subsidy, loans and few feed-in tariffs)
- Fiscal incentives (energy tax and carbon tax)
 - effective in some countries but not in others
- Production-based incentives (Renewable Heat Incentives)
 - not successful at the desired scale
- Competition with gas/oil prices is getting more feasible

Transport sector

Lags behind the expectations

- Biofuels obligation/mandates (markets for road transport)
- Fiscal incentives (tax mechanism)
- Financial incentives (premium tariff – only Denmark)
- Regulatory measures (the main type applied)
- Sustainability criteria (few MS have national schemes)
- Competition of advance biofuels
 - from waste, residues and lignocellulose material
 - from food and feed

Thank you for your attention !

Questions ?

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