

# STATISTICAL FACTSHEET

## Geopolitics and Italian Foreign Policy in the Age of Renewable Energies

**Istituto Affari Internazionali – June 2020**

A project supported by the Ministry of Foreign Affairs and International Cooperation of Italy and Enel Green Power



Ministry of Foreign Affairs  
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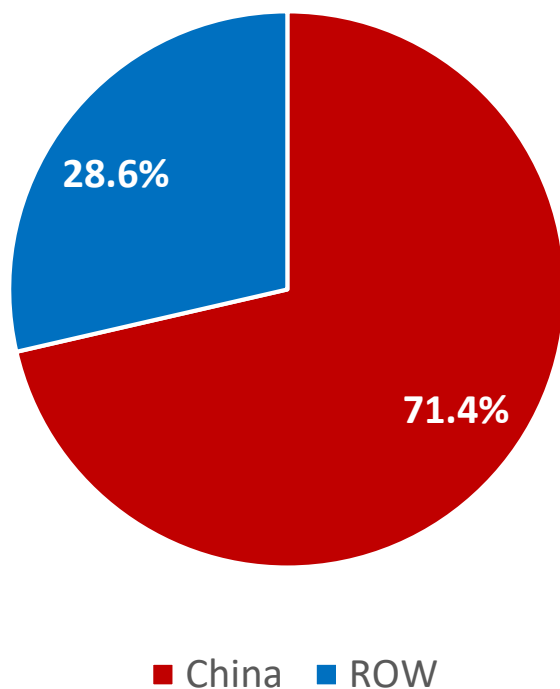
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# **SECTION 1**

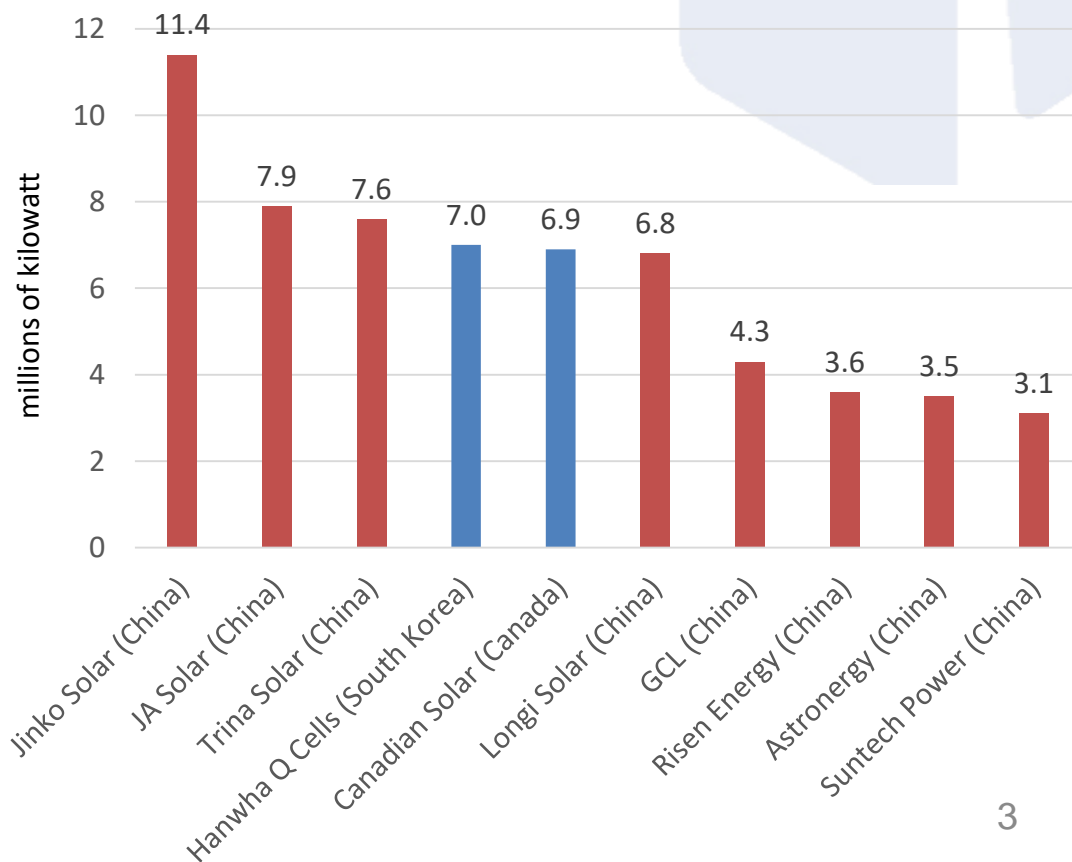
## **GLOBAL RES VALUE CHAINS AND CRITICAL MATERIALS**

## Solar PV Manufacturing (2018)

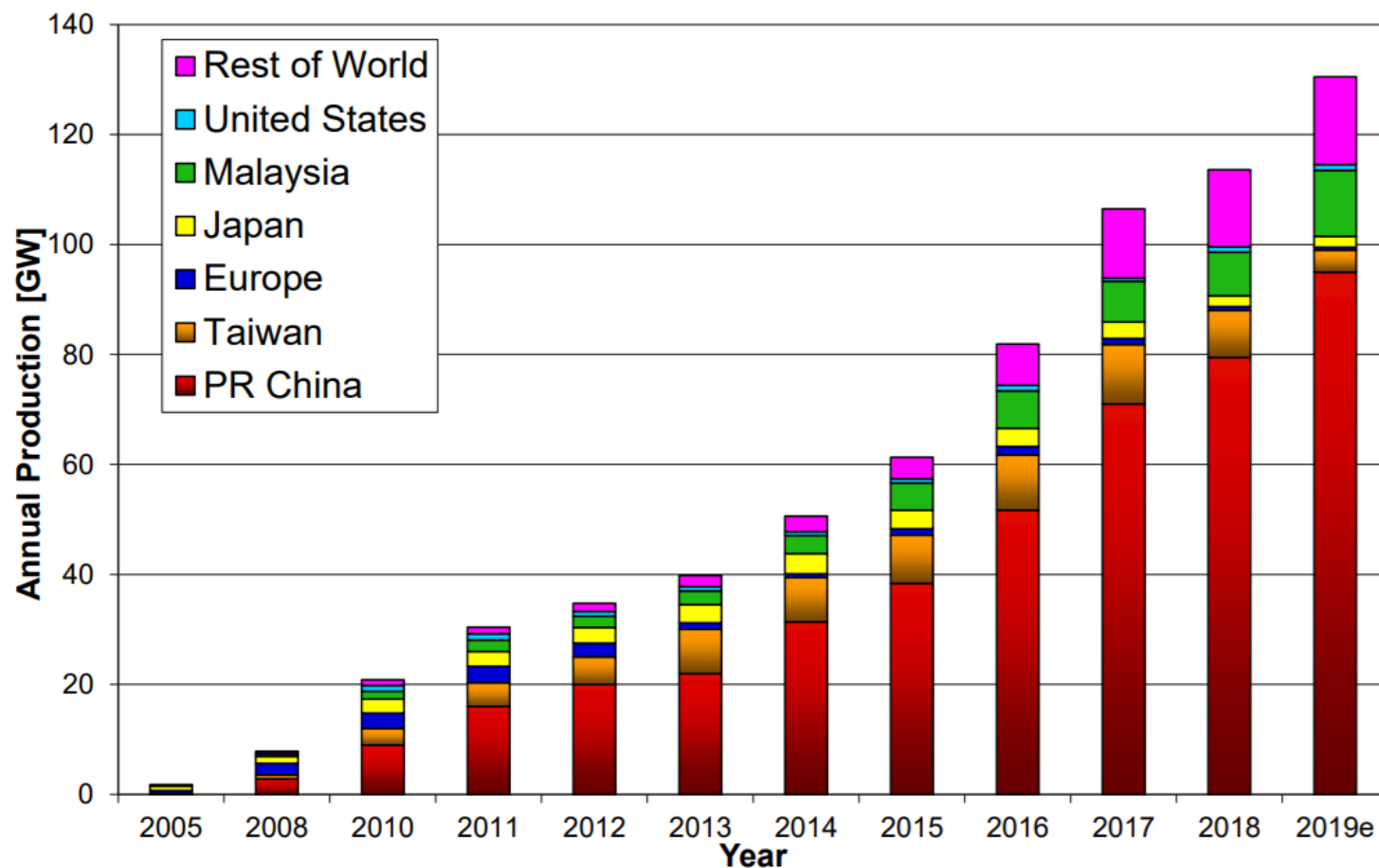
Market share – China vs ROW (2018)



Top 10 Manufacturers in 2018

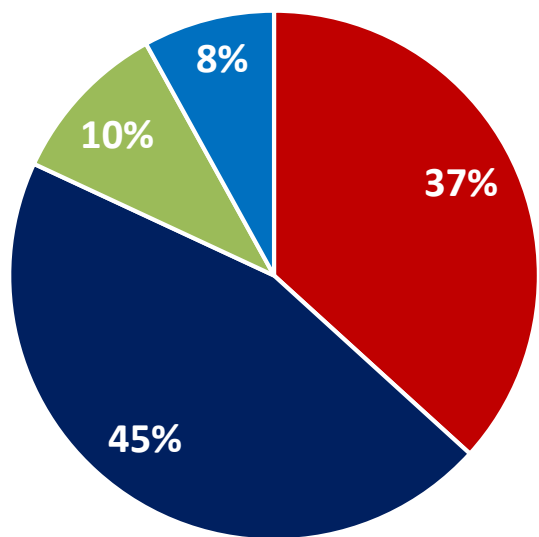


## Solar PV Cell/Module Manufacturing by Country (historical 2005-2018 and estimate for 2019)



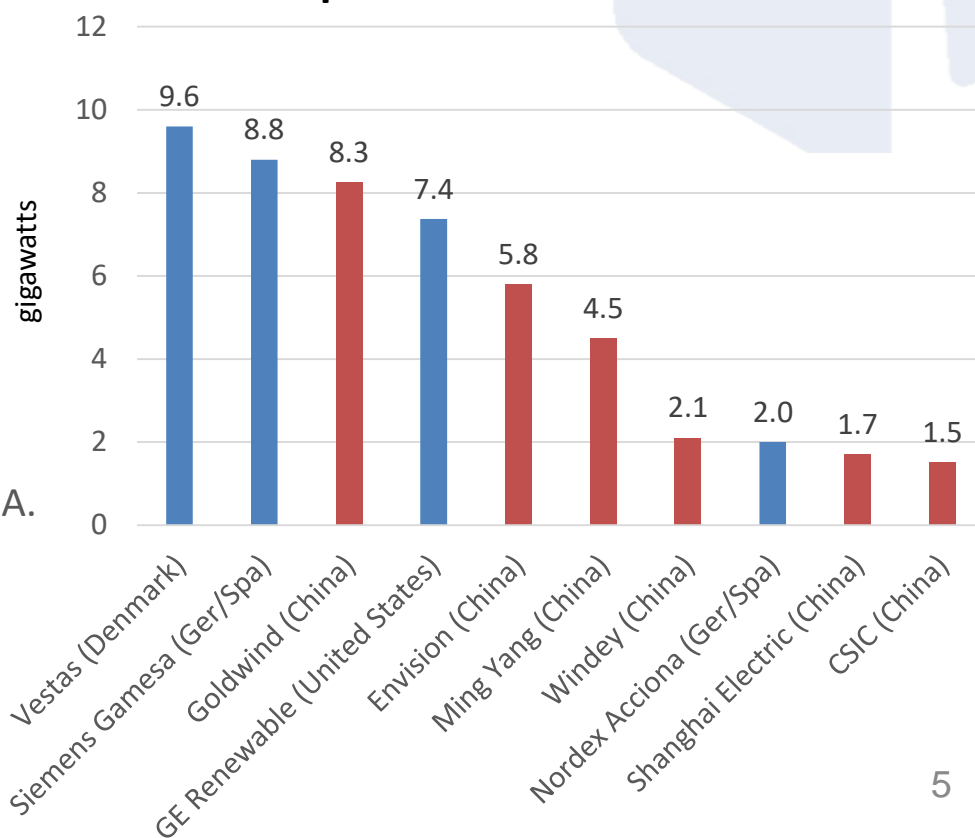
## Wind Turbine Manufacturing (2018/2019)

Market share (2018 est.)



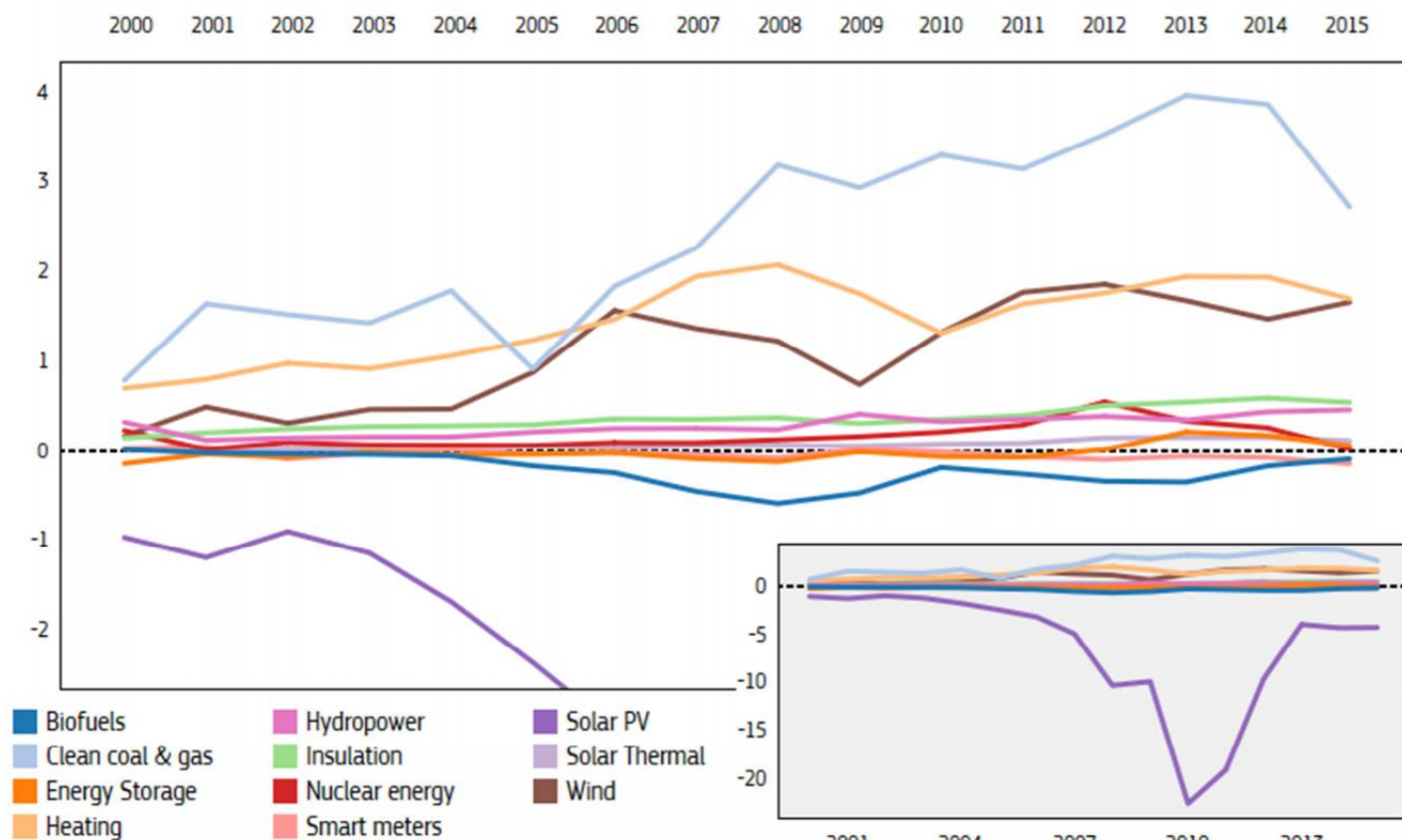
■ China ■ EU ■ United States ■ Others/N.A.

Top 10 Manufacturers in 2019

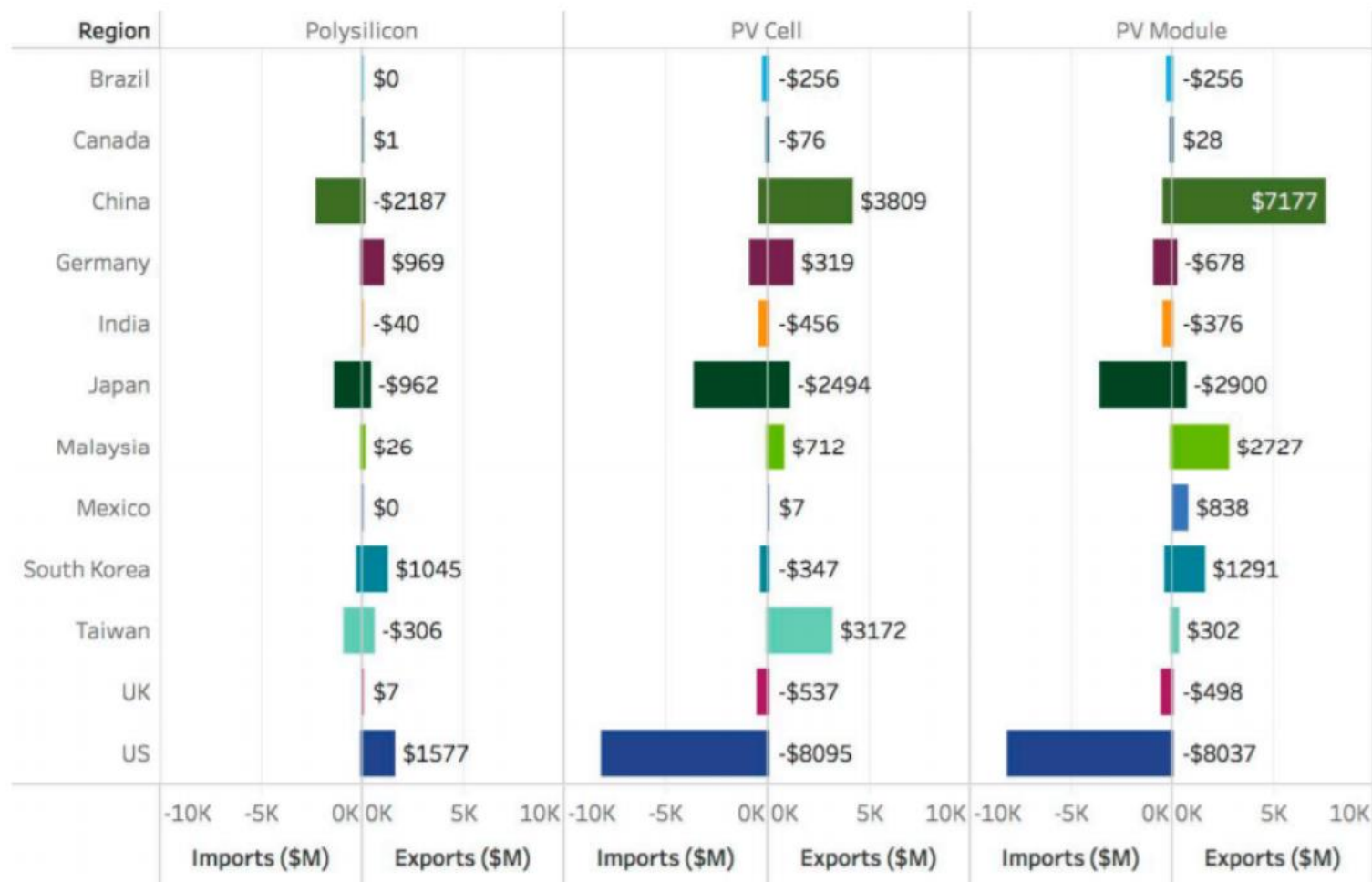


## European trade balance in key renewable energy technologies (2015)

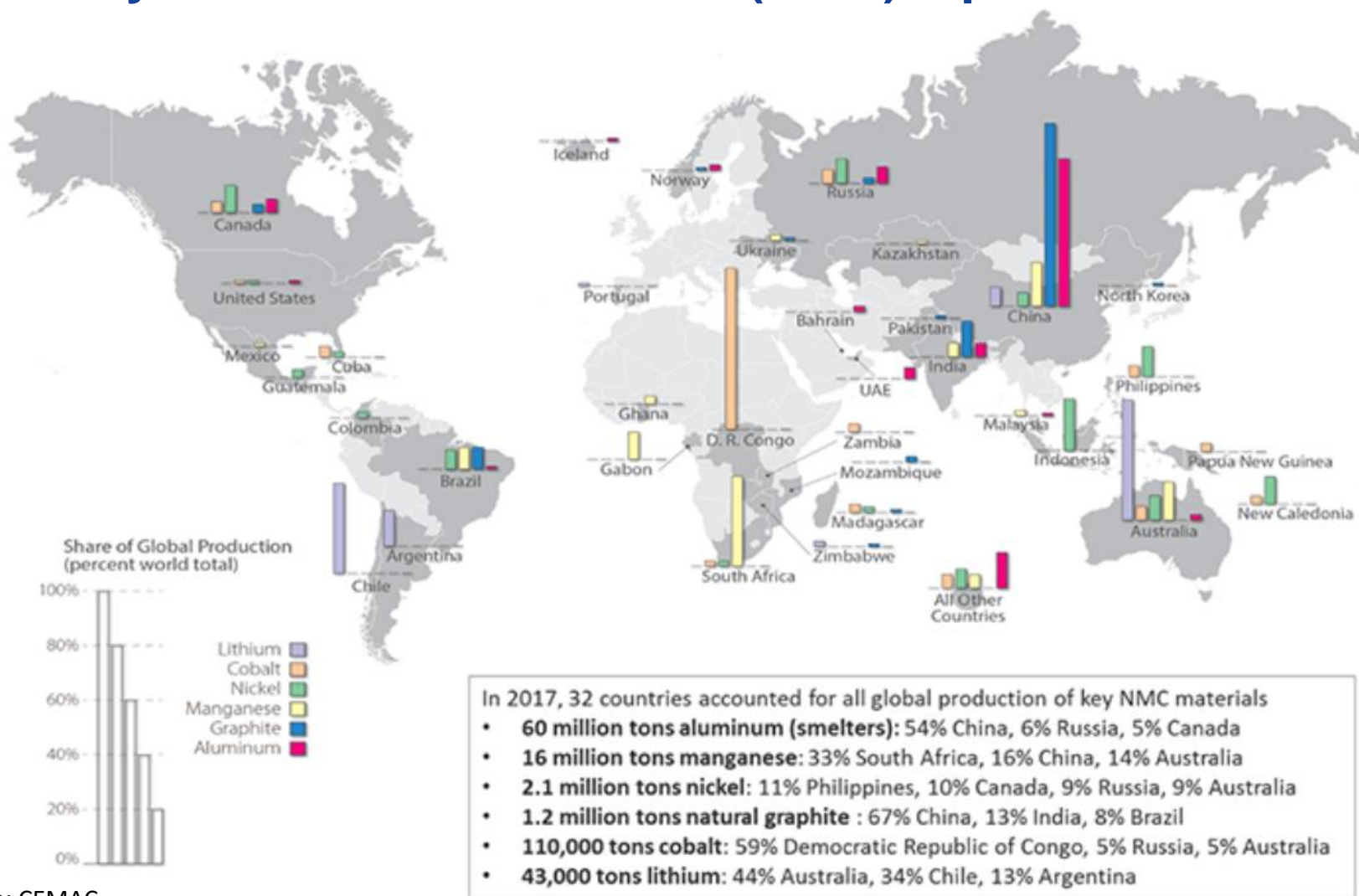
**a) EU28 - Trade balance (X-M) with Extra-EU28 [EUR Bn]**



## Polysilicon, PV cell and module net trade in selected countries (2016)

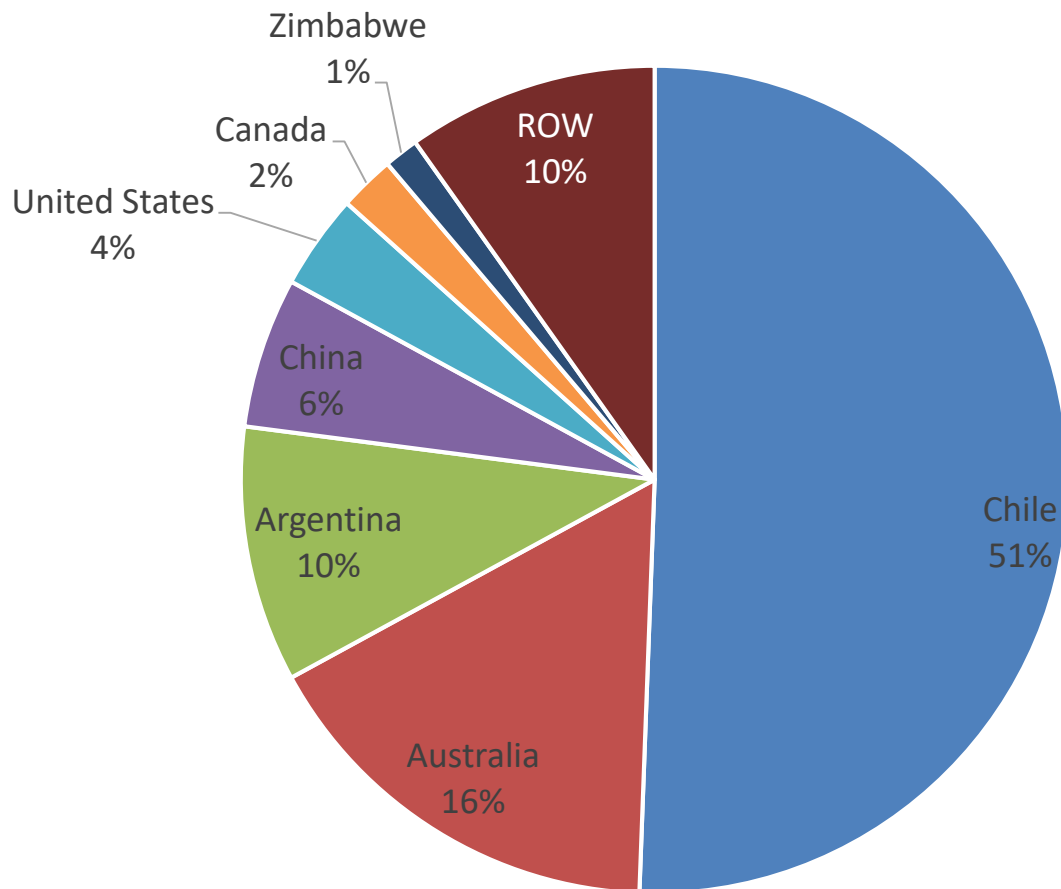


## Key materials for batteries (2017) – production

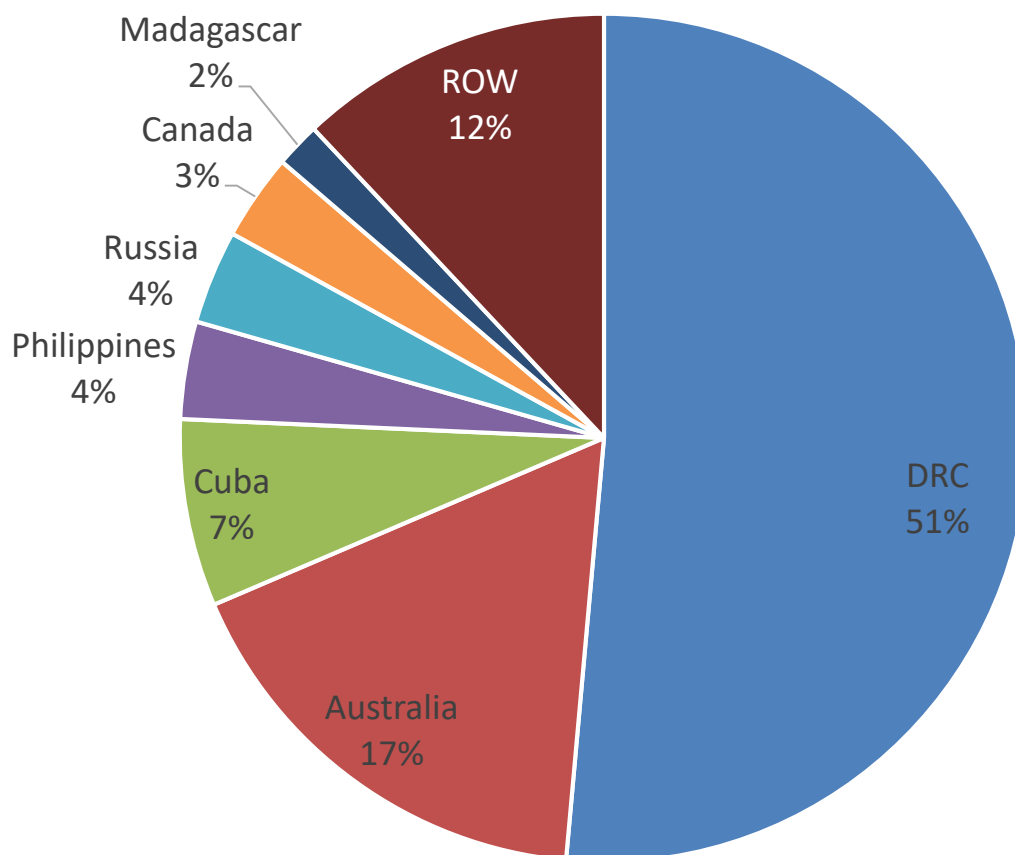




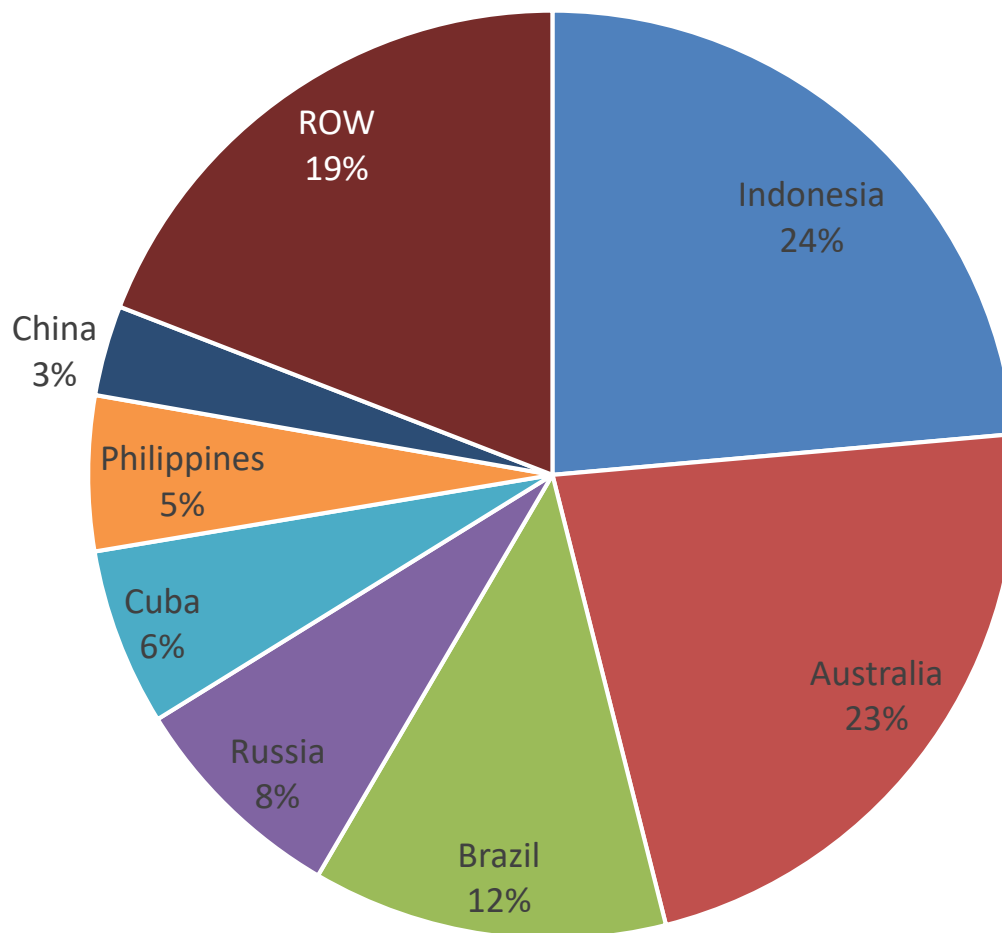
## Lithium reserves by country (2019)



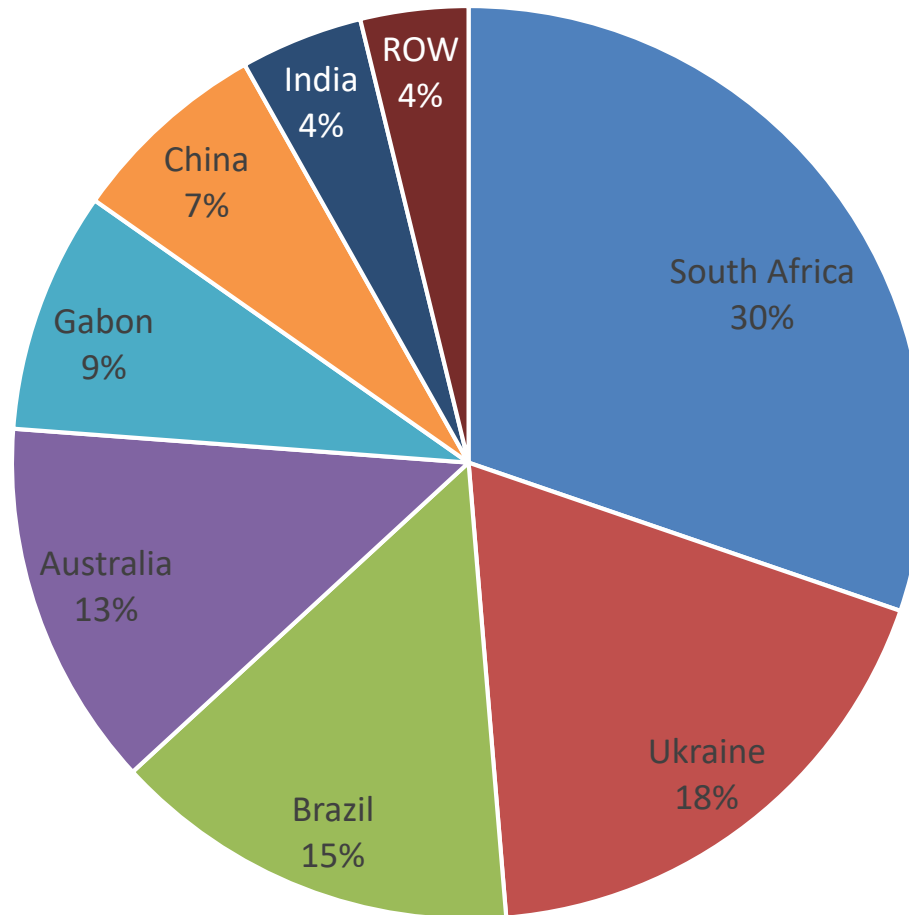
## Cobalt reserves by country (2019)



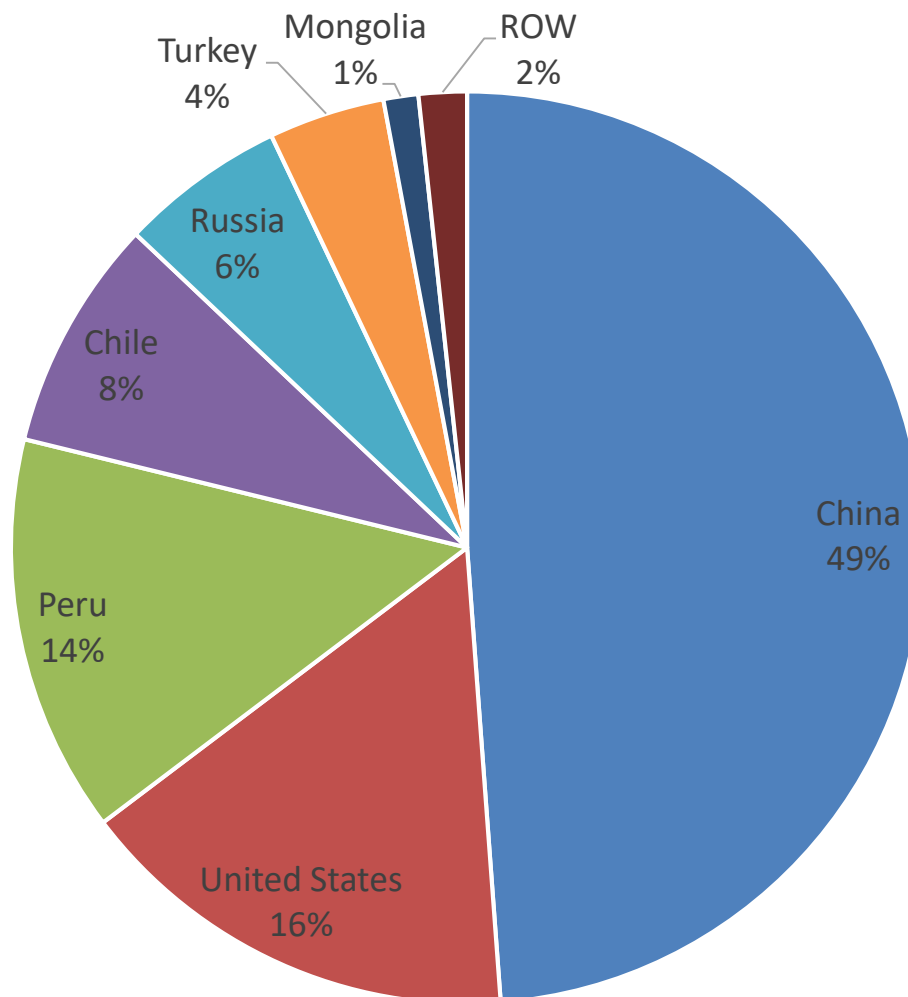
## Nickel reserves by country (2019)



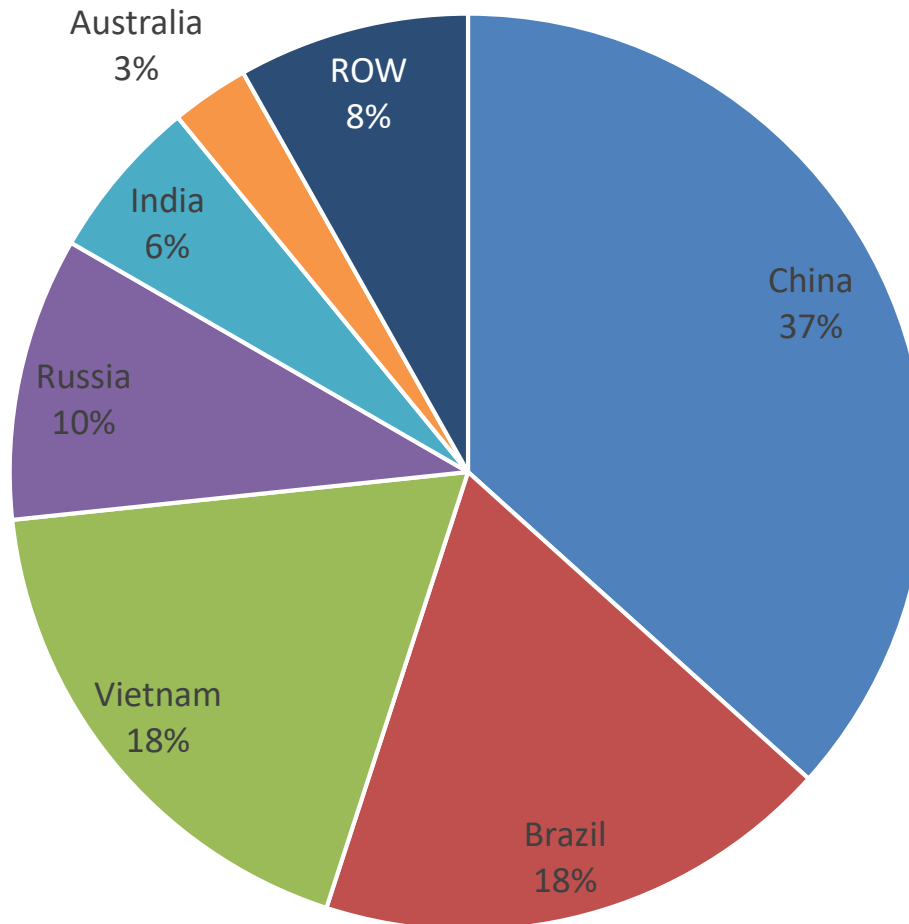
## Manganese reserves by country (2018)



## Molybdenum reserves by country (2019)



## Rare earth reserves by country (2019)



# **SECTION 2**

## **ITALY'S POSITION IN KEY RENEWABLE ENERGY INDICATORS**

## CONTENTS

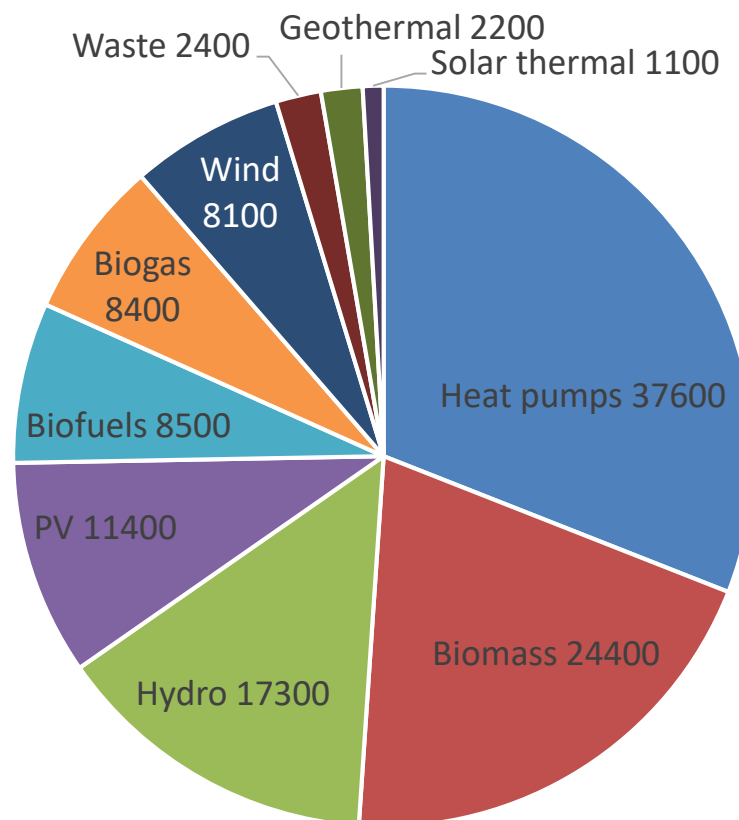
- ☐ Employment
- ☐ Turnover
- ☐ Solar PV – capacity and production
- ☐ Wind – capacity and production
- ☐ Biofuel
- ☐ Geothermal
- ☐ Solar thermal
- ☐ Hydropower – capacity and production
- ☐ Biomass
- ☐ Biogas – total energy and heat
- ☐ Heat pumps
- ☐ % of RES in
- ☐ RES components – trade balance & revealed comparative advantage



## Employment distribution by RES sector – Italy (2018)

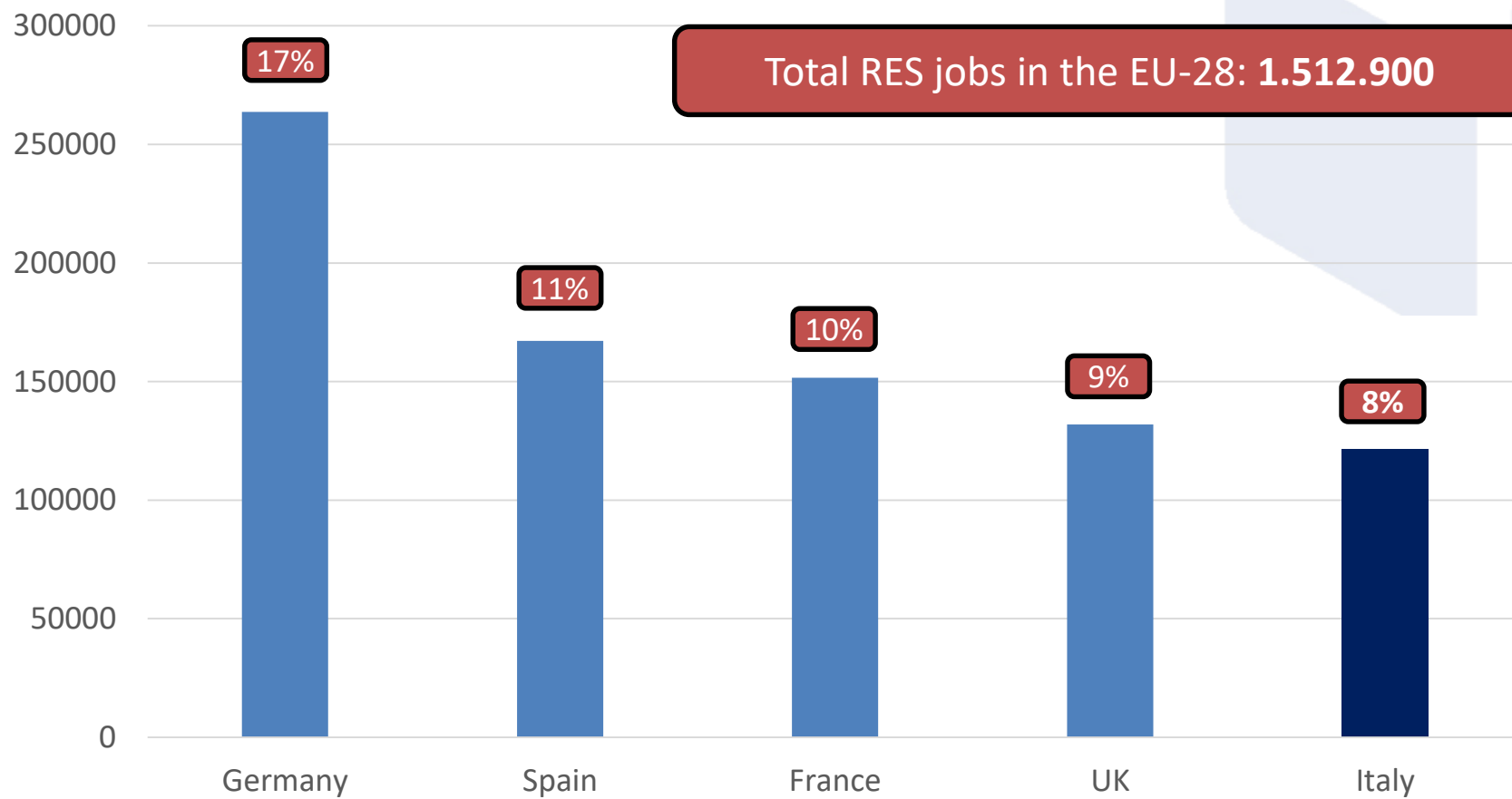
### Italy's Ranking in the EU-28 (employment)

Geothermal	1
Hydro	1
Biogas	2
Heat pumps	3
Solar PV	4
Biomass	5
Waste	5
Wind	6
Solar thermal	7
Biofuels	10



- ✓ Heat pumps and biomass account for 51% of RES employment in Italy
- ✓ At the moment only 16% of RES jobs in Italy are in the solar PV & wind sectors

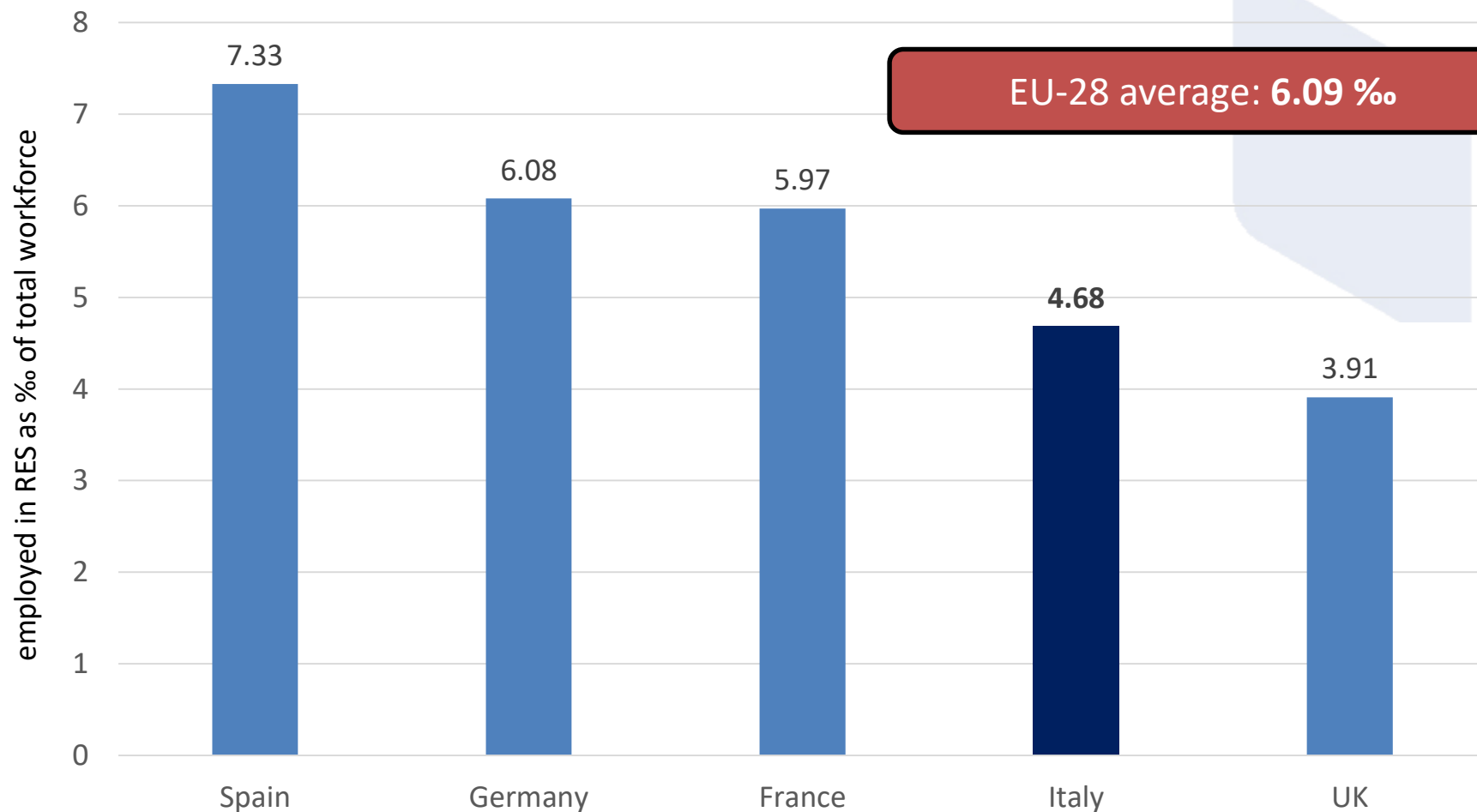
## Total employment in all RES sectors – Top 5 EU (2018)



X %

= % of EU RES jobs

## Relative employment in all RES sectors – Top 5 EU (2018) % of total workforce



**Labour productivity in the renewable energy sector, by country, 2016**  
(1000 EUR/FTE)



*Italy's ranking in the EU-28*  
RES labour productivity **3**

Note: Labour productivity is calculated as ratio between gross value added [EUR] and employment [FTE] related to the market production of energy from renewable sources (category CReMA 13A); Data for EU-28, Cyprus and Greece not yet available; Data for Luxembourg are confidential

(\*) estimate

(\*) provisional

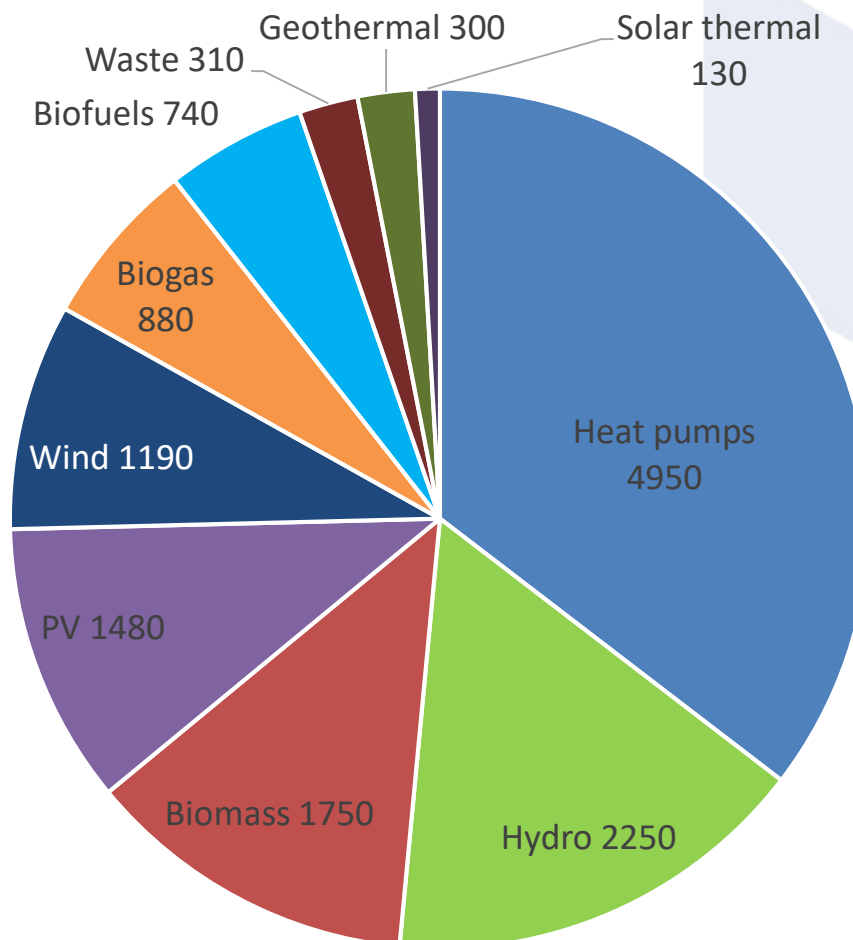
(\*) break in time series

Source: Eurostat (online data codes: env\_ac\_egss1, env\_ac\_egss2)

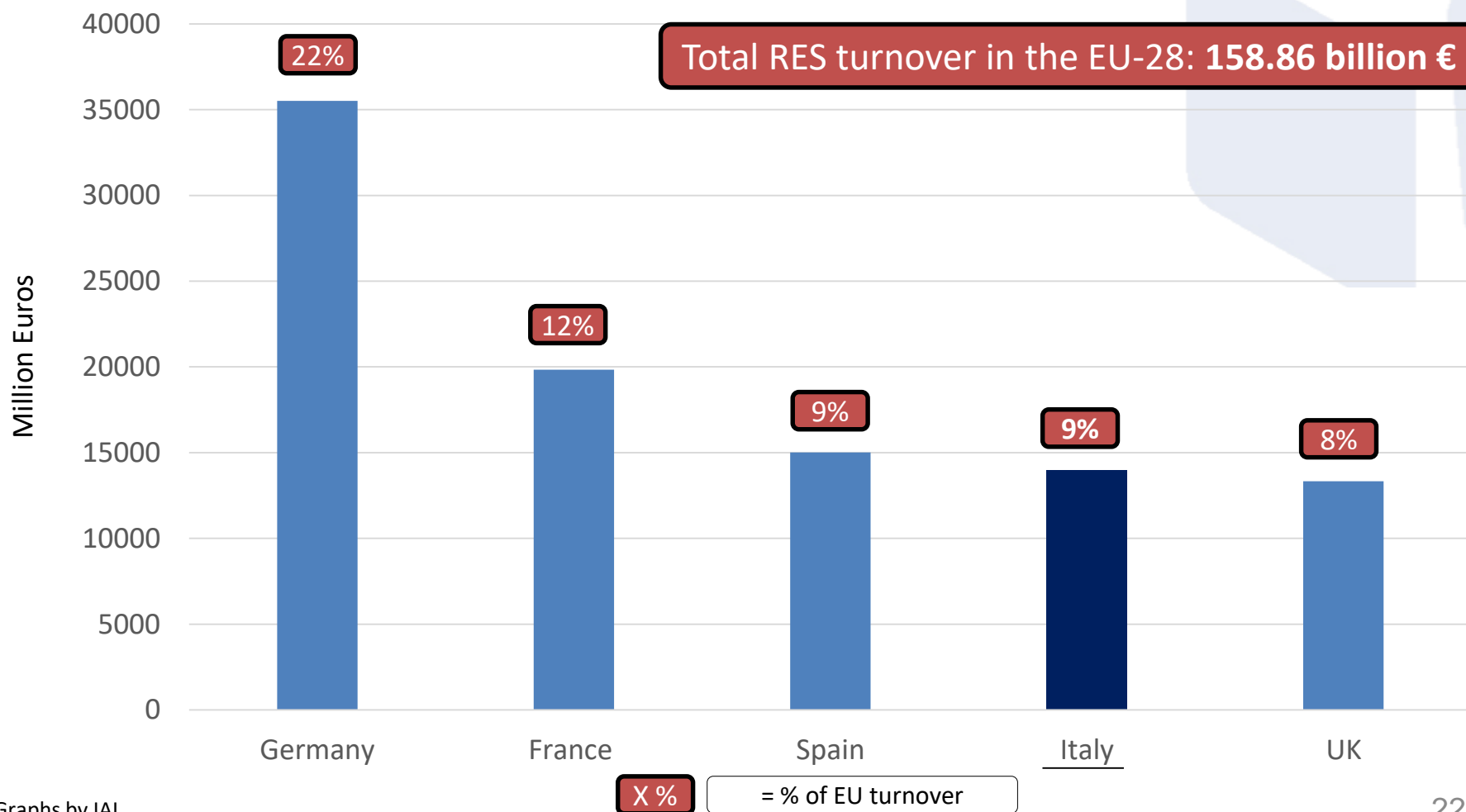
## Turnover by RES sector – Italy (2018) in million EUR

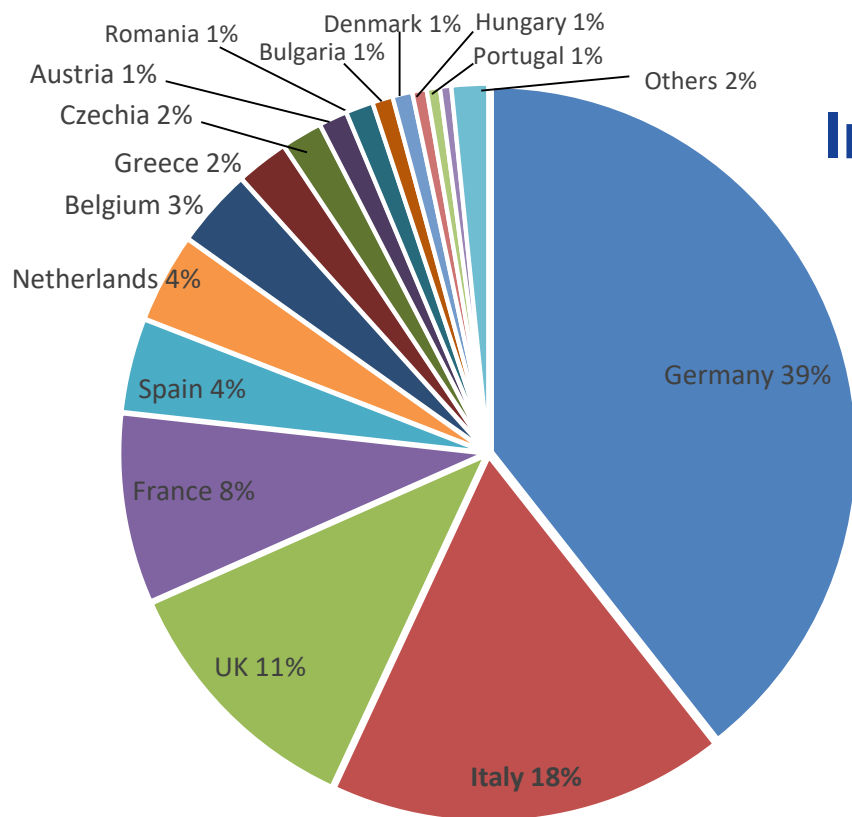
### Italy's Ranking in the EU-28 (turnover)

Geothermal	1
Hydro	2
Biogas	2
Heat pumps	3
Solar PV	4
Waste	5
Biomass	6
Wind	6
Solar thermal	6
Biofuels	7



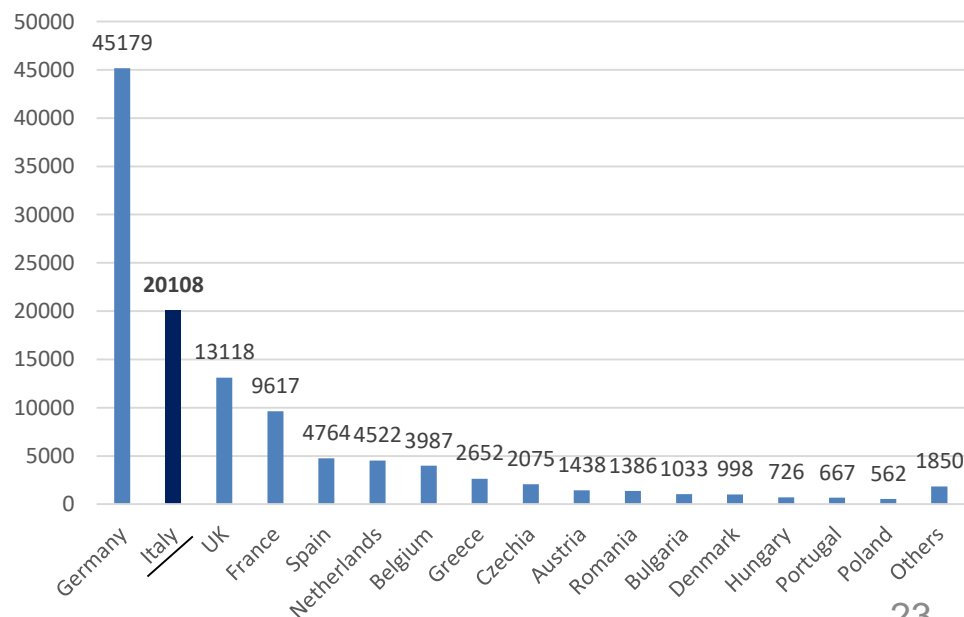
## Turnover in all RES sectors – Top 5 EU (2018)



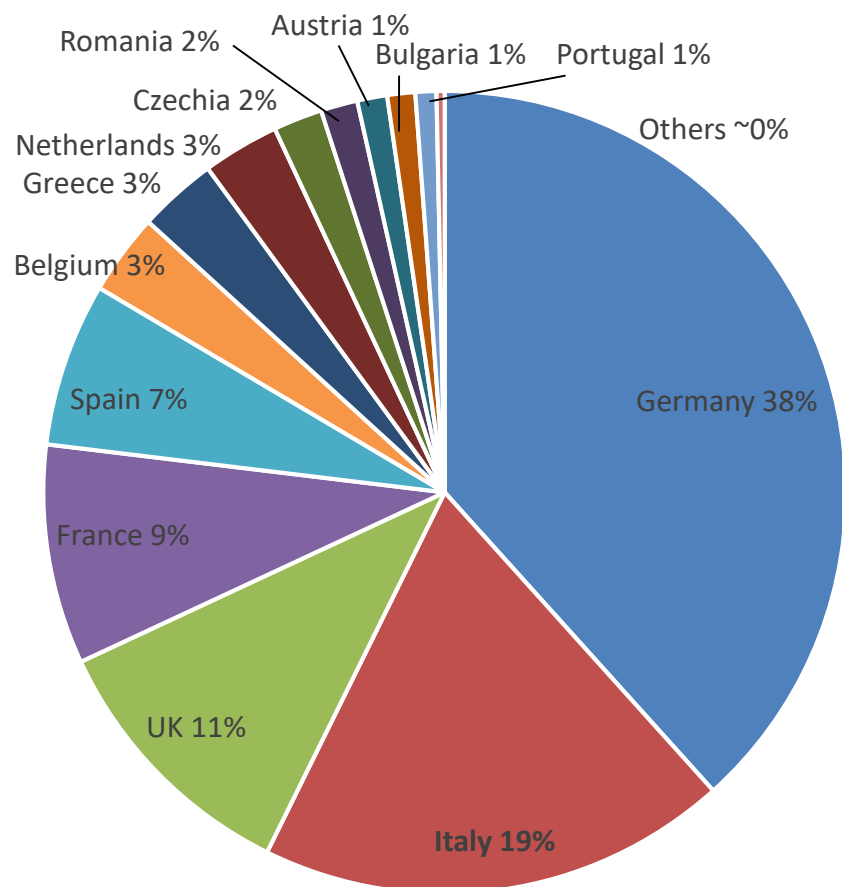


## Installed solar PV capacity in the EU-28 (2018) in MW

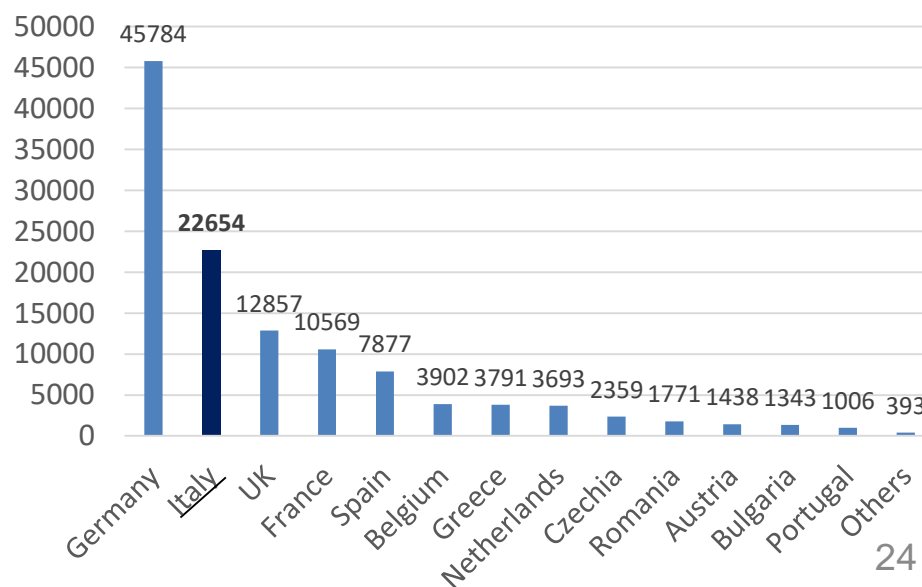
*Italy's ranking in the EU-28*  
Solar PV capacity 2



## Electricity production from solar PV in the EU-28 (2018) in TWh

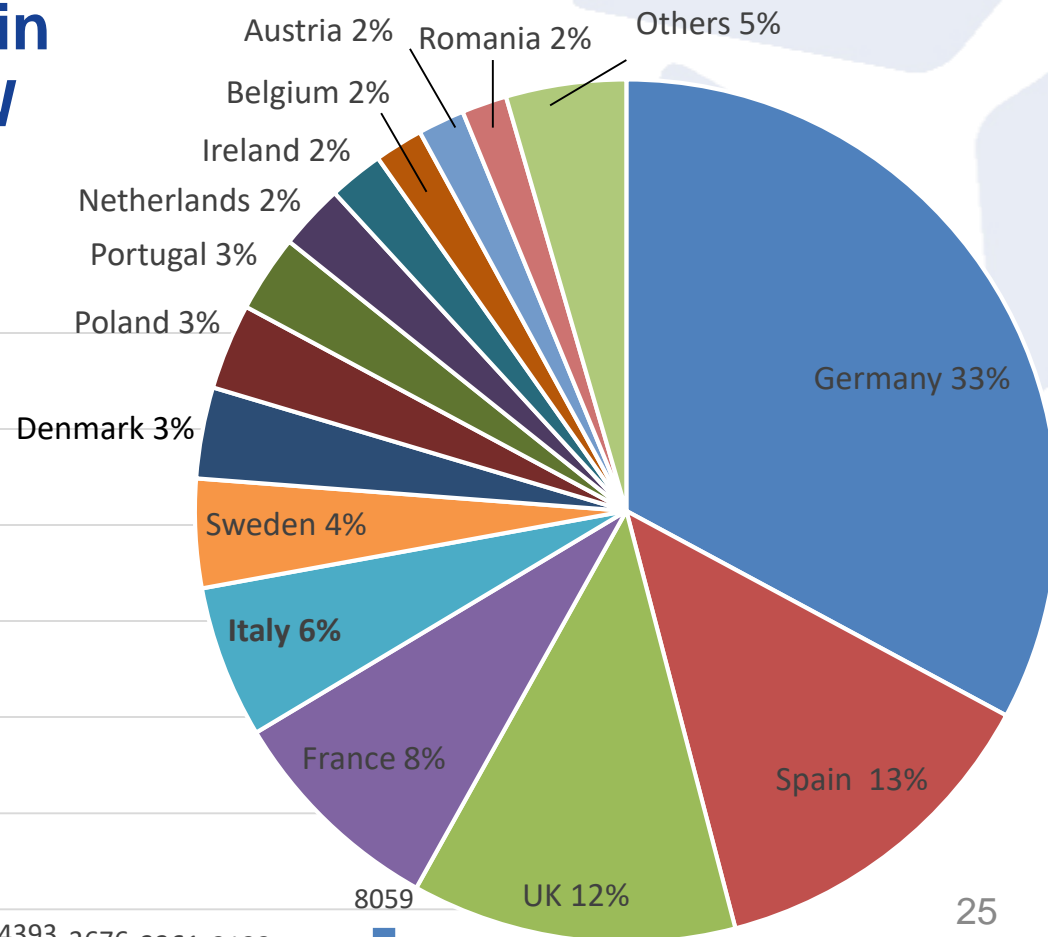
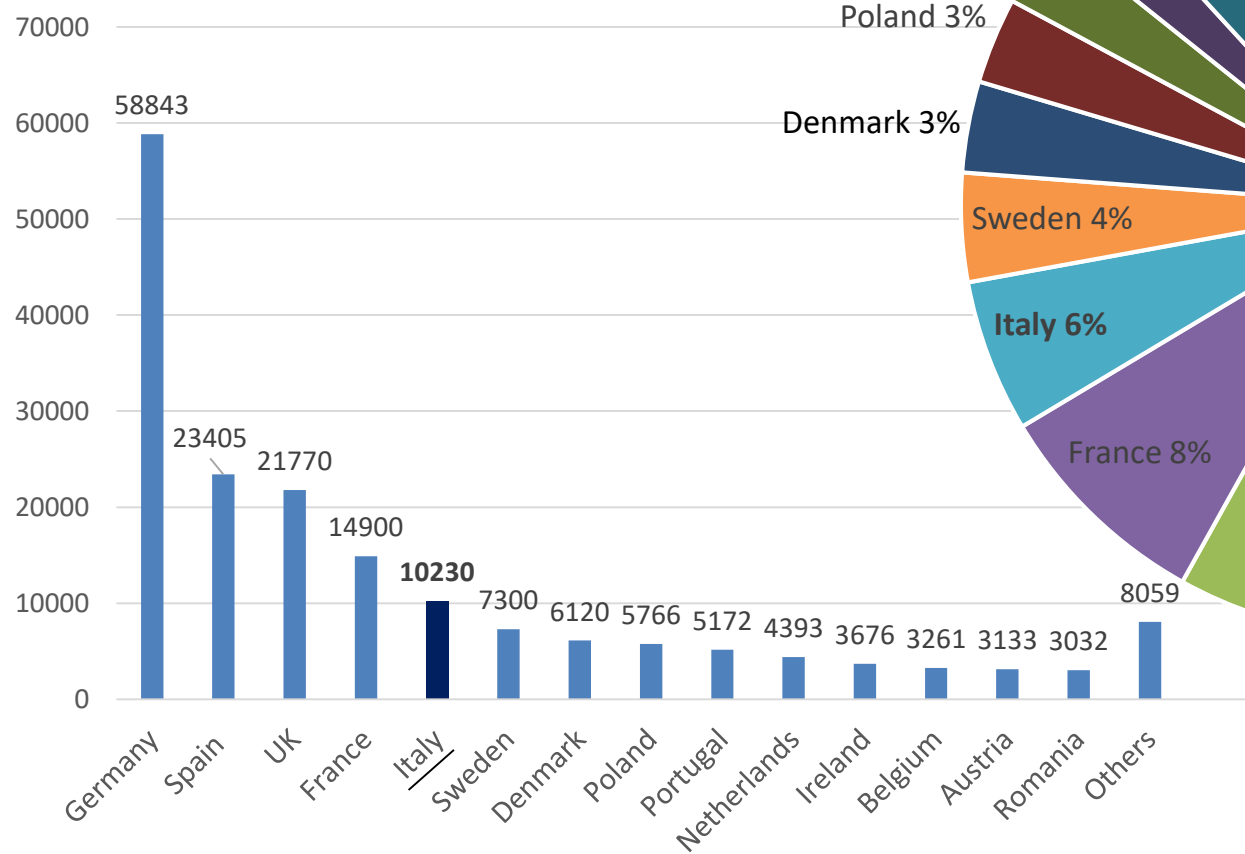


**Italy's ranking in the EU-28**  
Solar PV power prod. 2





## Installed wind capacity in the EU-28 (2018) in MW

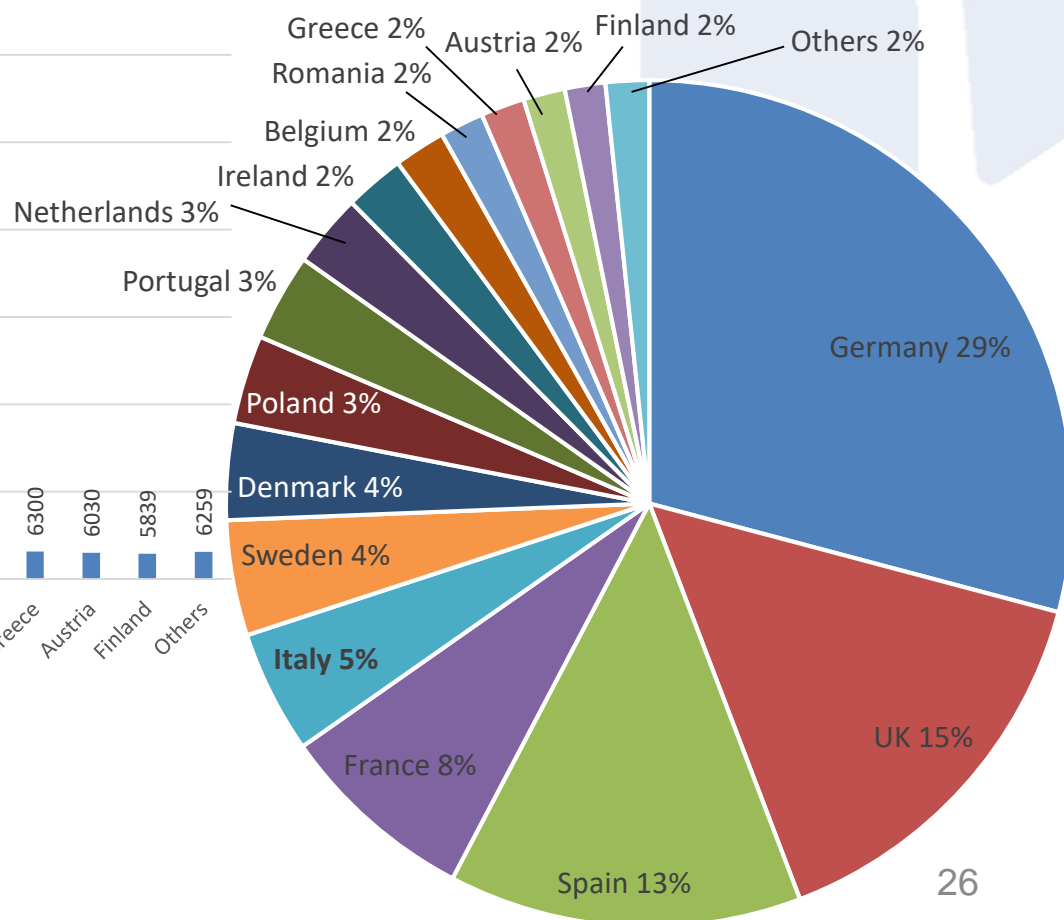
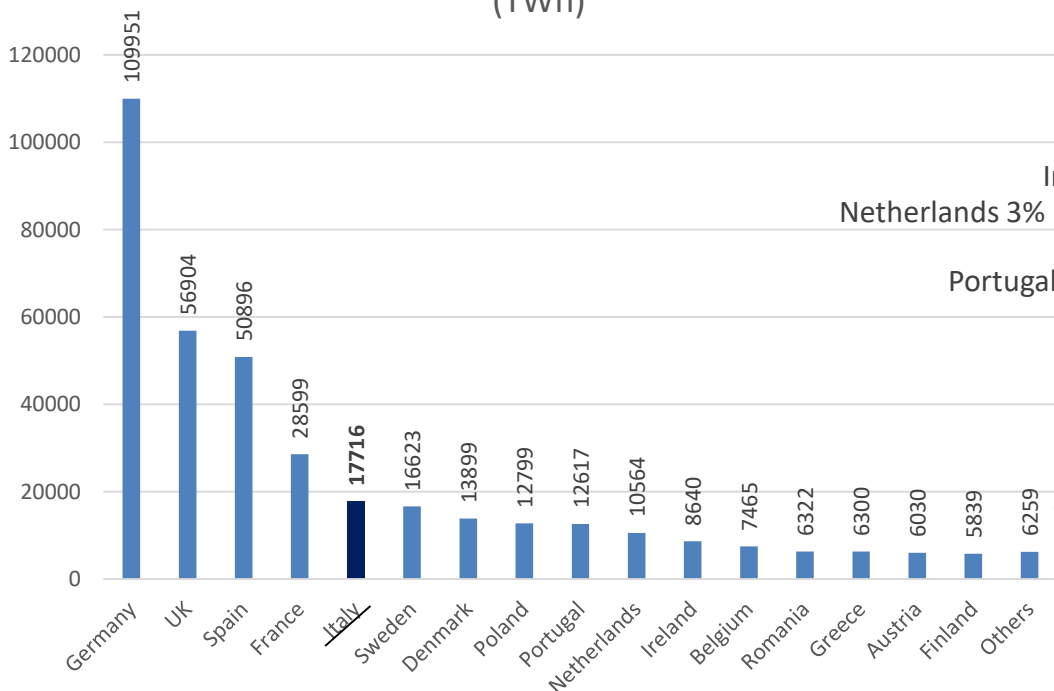


**Italy's ranking in the EU-28**  
Wind capacity **5**

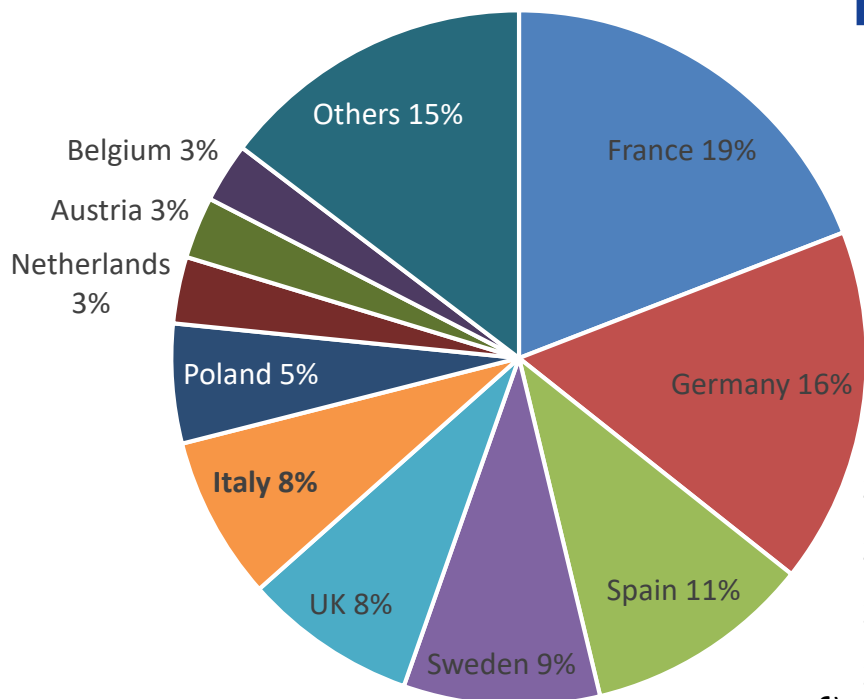
# Electricity production from wind power in the EU-28 (2018) in TWh

*Italy's ranking in the EU-28*  
Wind power prod. 5

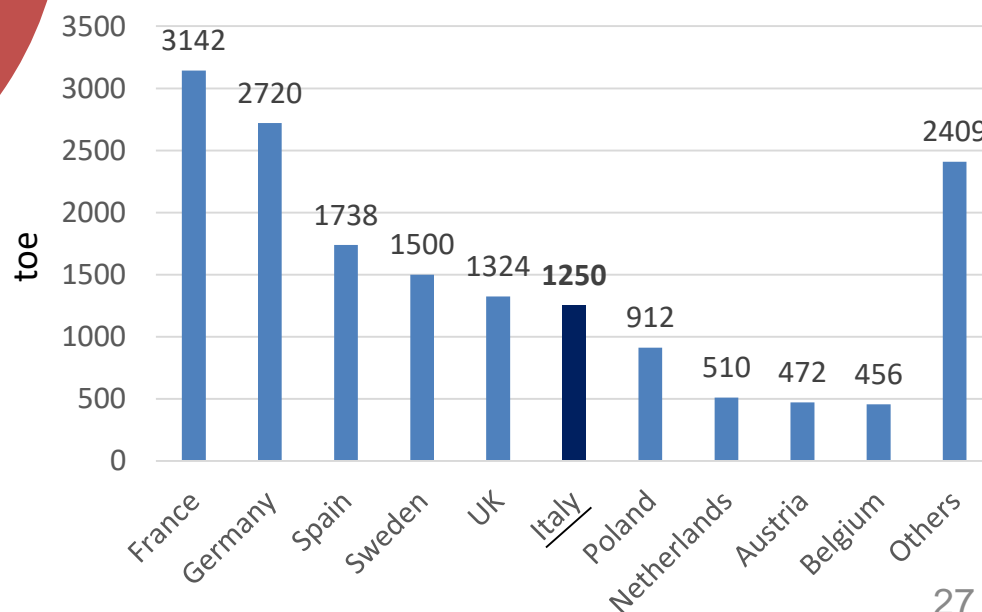
2018 Electricity production from wind power in the EU  
(TWh)



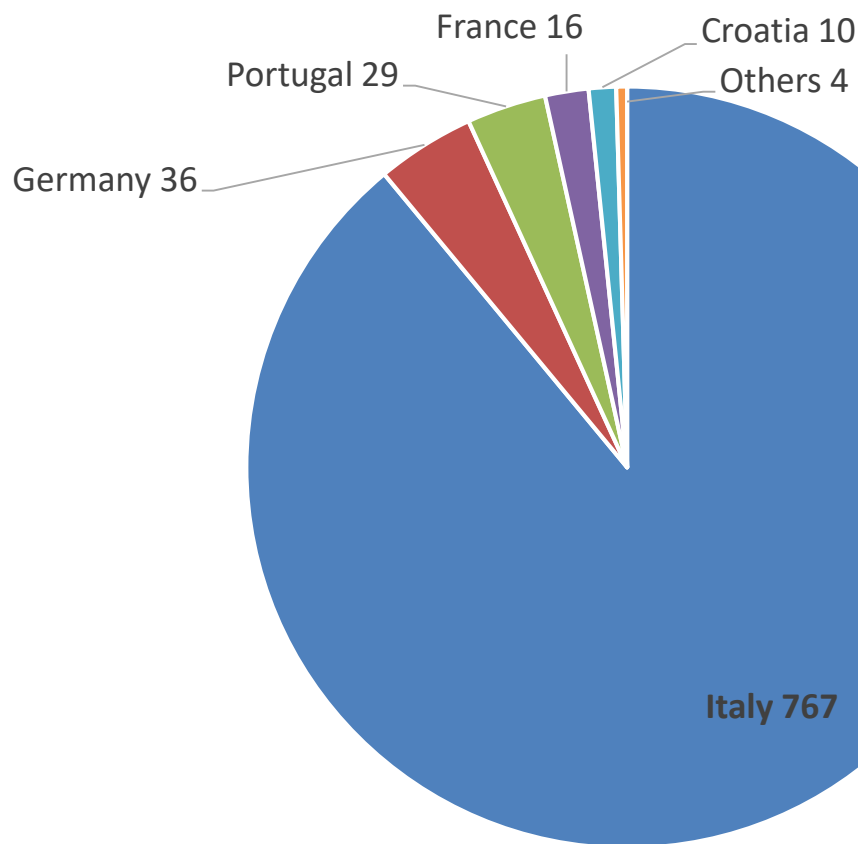
## Biofuel consumption in the EU-28 (2018) in toe



**Italy's ranking in the EU-28**  
Biofuel consumption 6

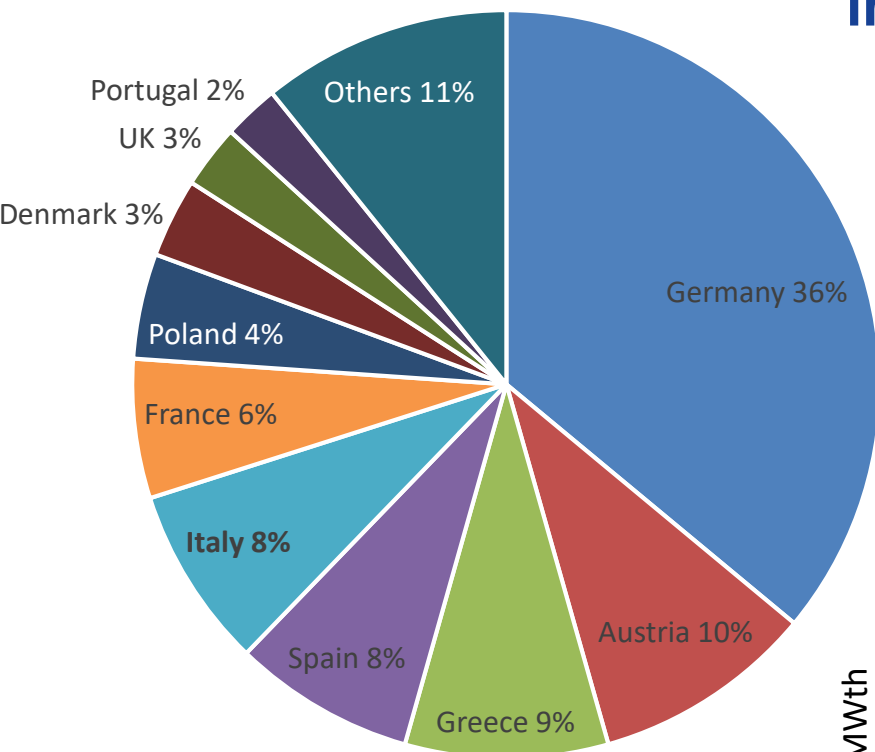


## Net usable geothermal capacity in the EU-28 (2018) in MWe

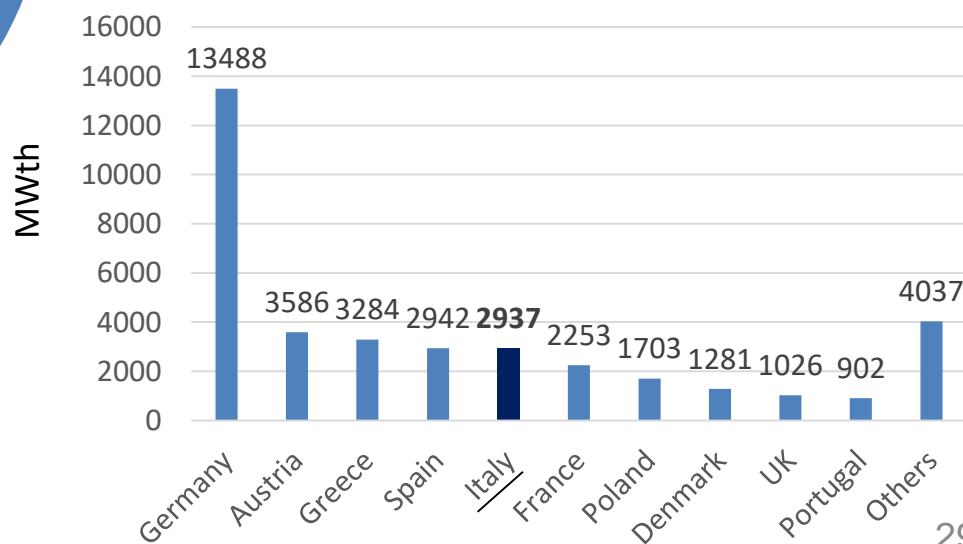


***Italy's ranking in the EU-28***  
Geothermal capacity 1

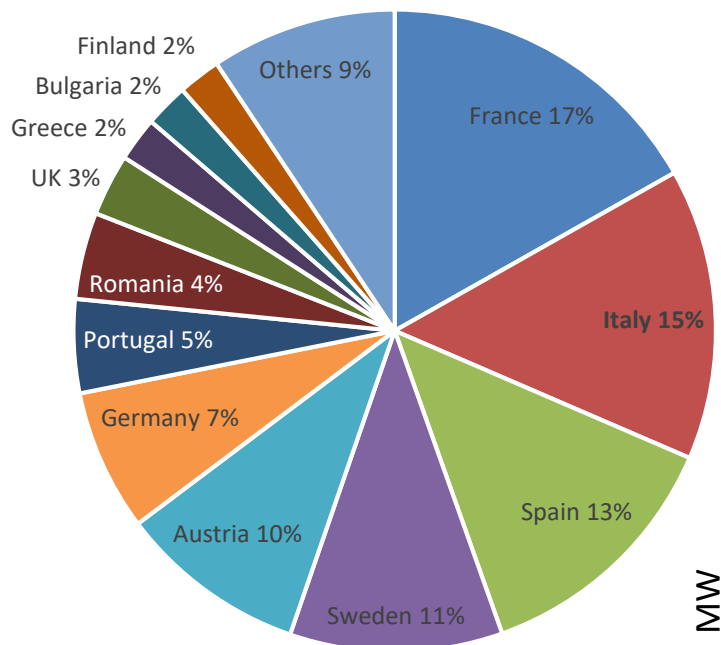
## Thermal solar collectors – cumulated capacity in the EU-28 (2018) in MWth



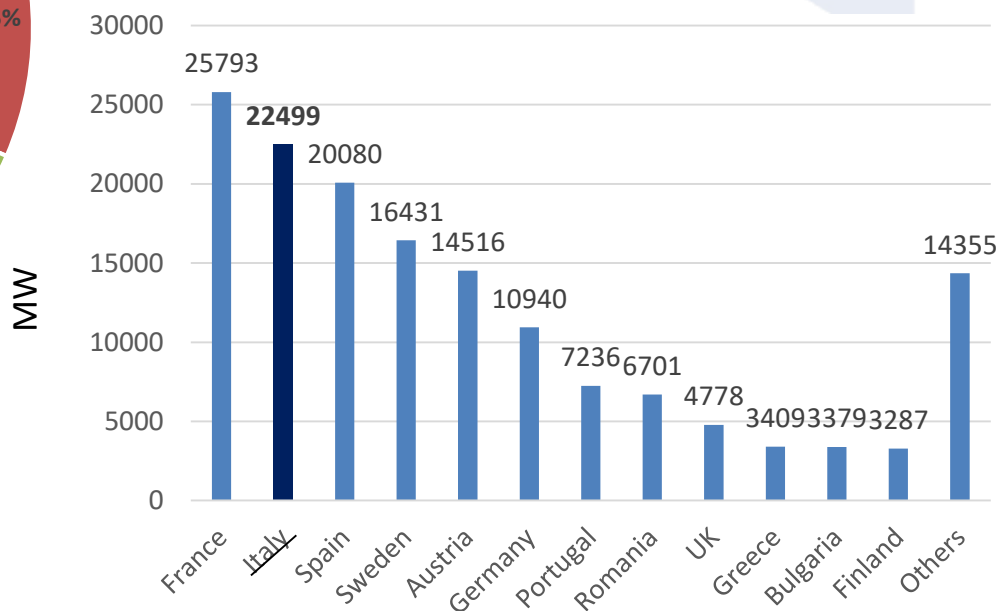
*Italy's ranking in the EU-28*  
Solar thermal (cap.) 5



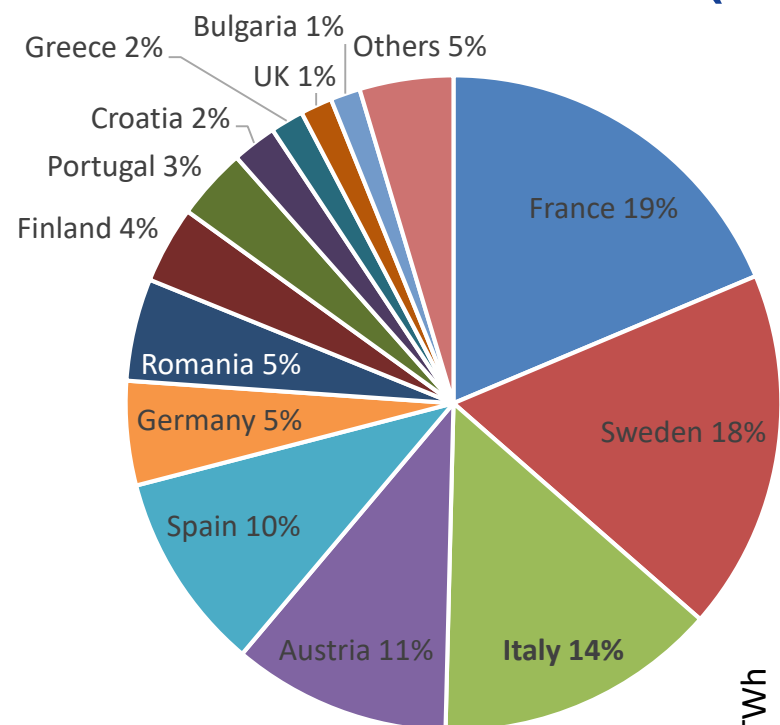
## Total net capacity of hydropower in the EU-28 (2018) in MW



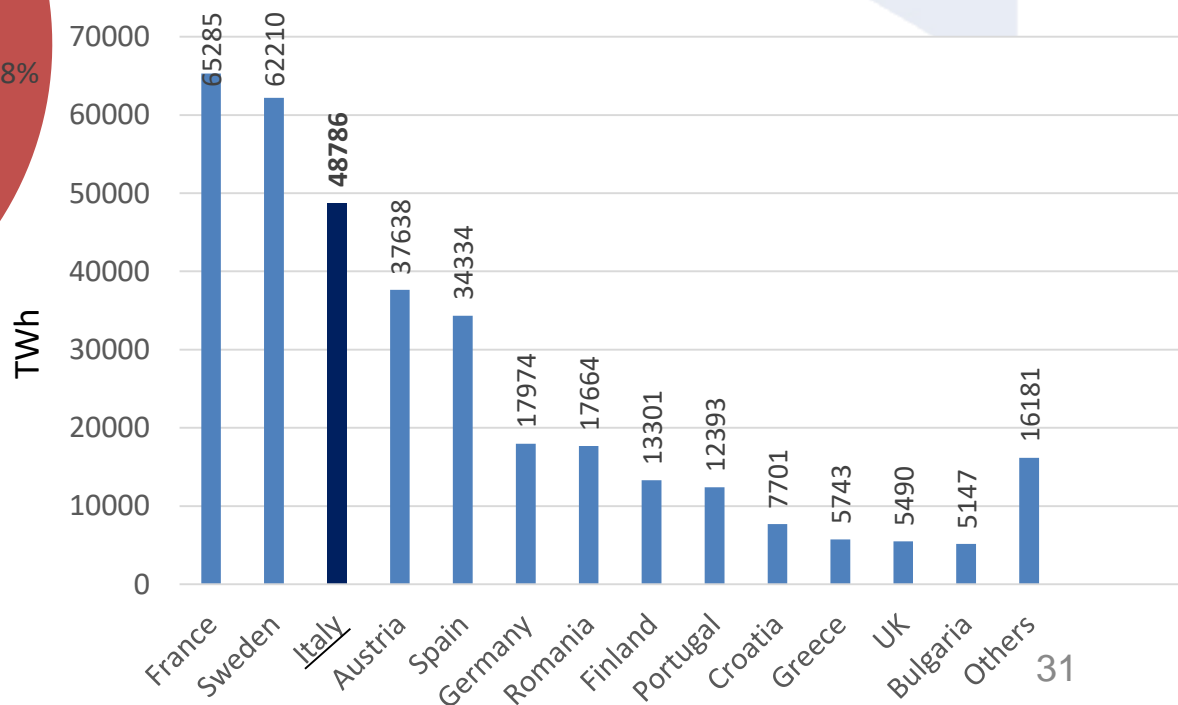
*Italy's ranking in the EU-28*  
Hydropower capacity 2



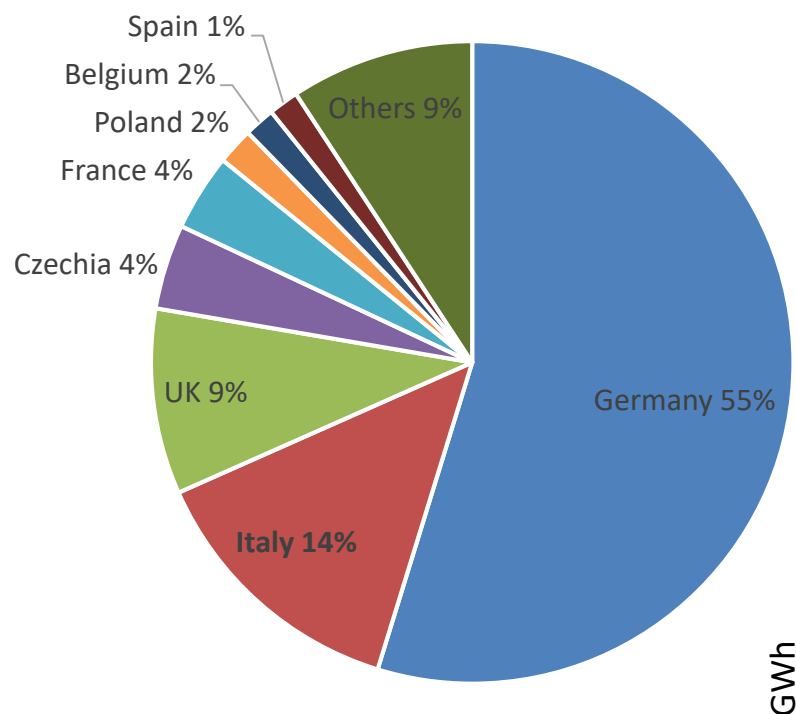
## Hydropower production in the EU-28 (2018) in TWh (without pumping)



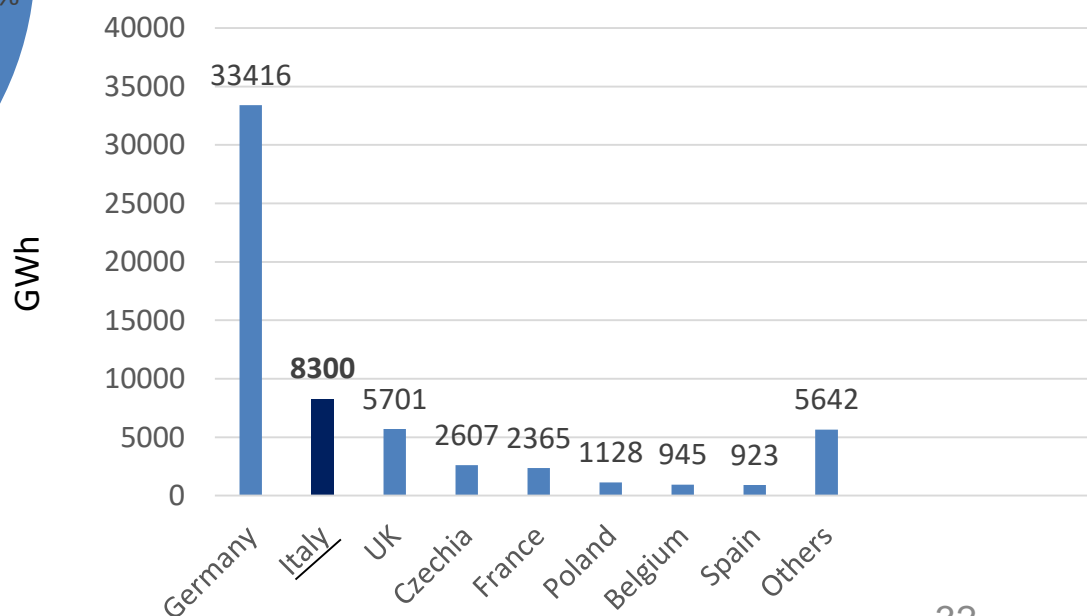
*Italy's ranking in the EU-28*  
Hydropower prod. 3



## Electricity production from biomass in the EU-28 (2018) in GWh

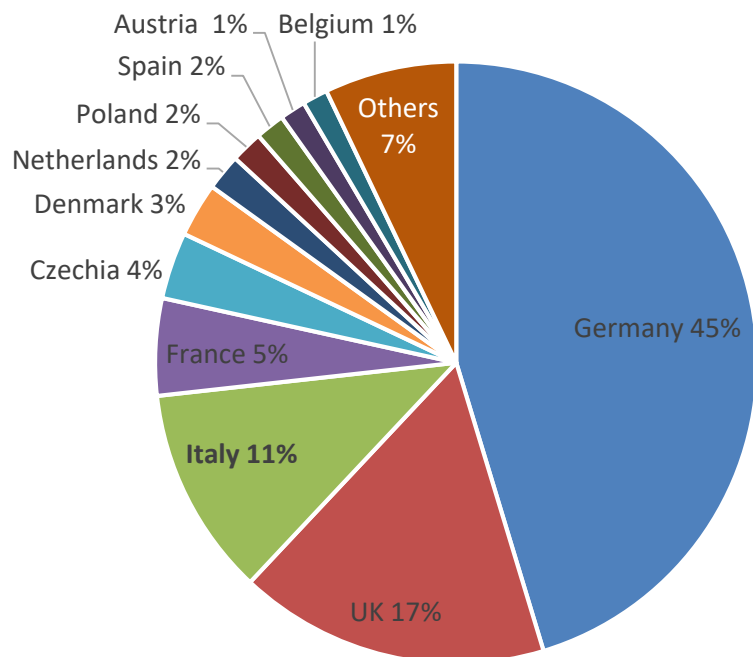


*Italy's ranking in the EU-28*  
Biomass power prod. 2

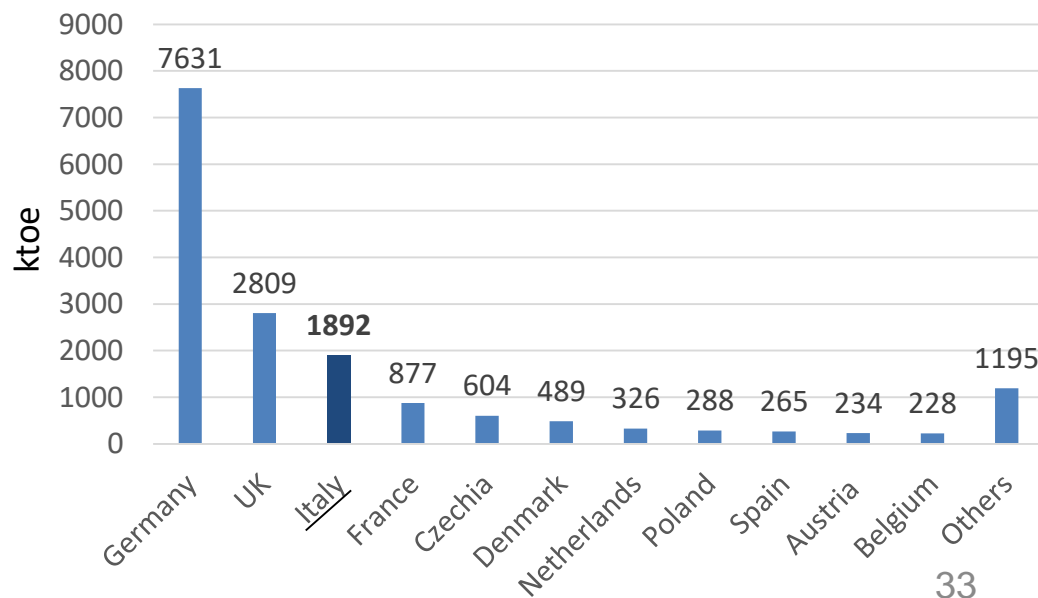




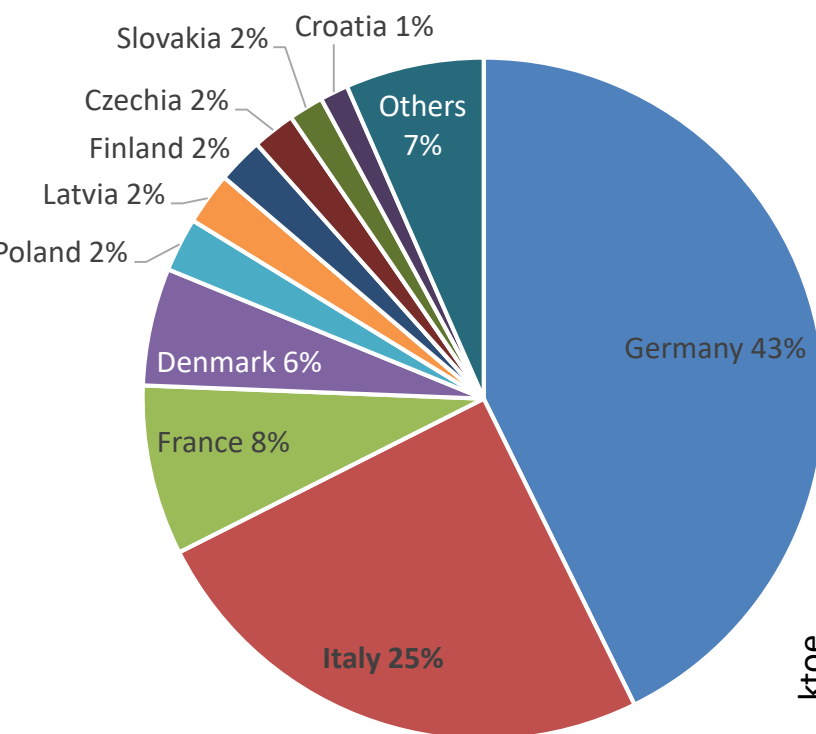
## Total energy production from biogas in the EU-28 (2018) in ktce



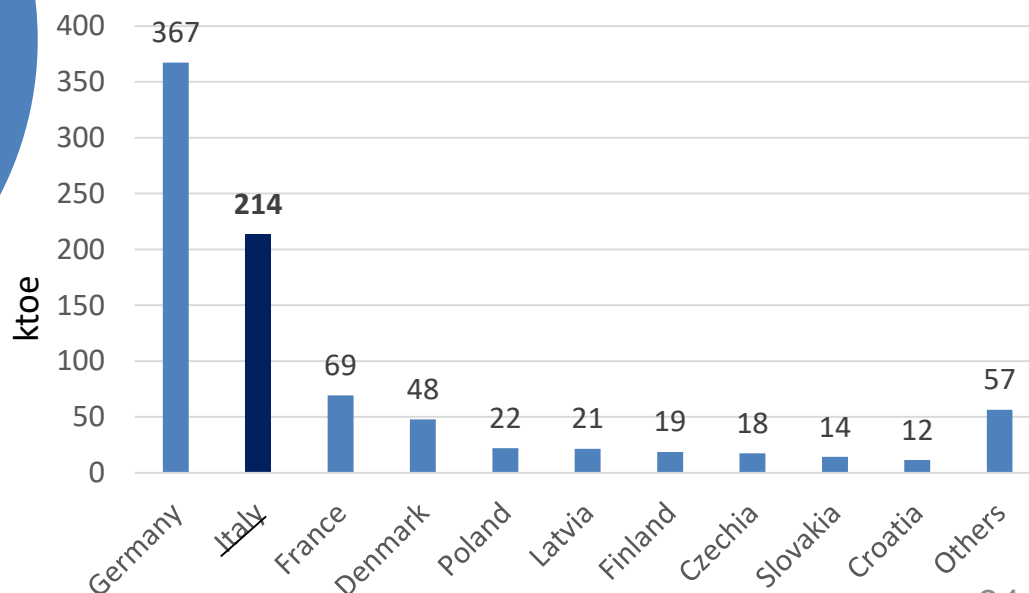
**Italy's ranking in the EU-28**  
Biogas energy prod. **3**



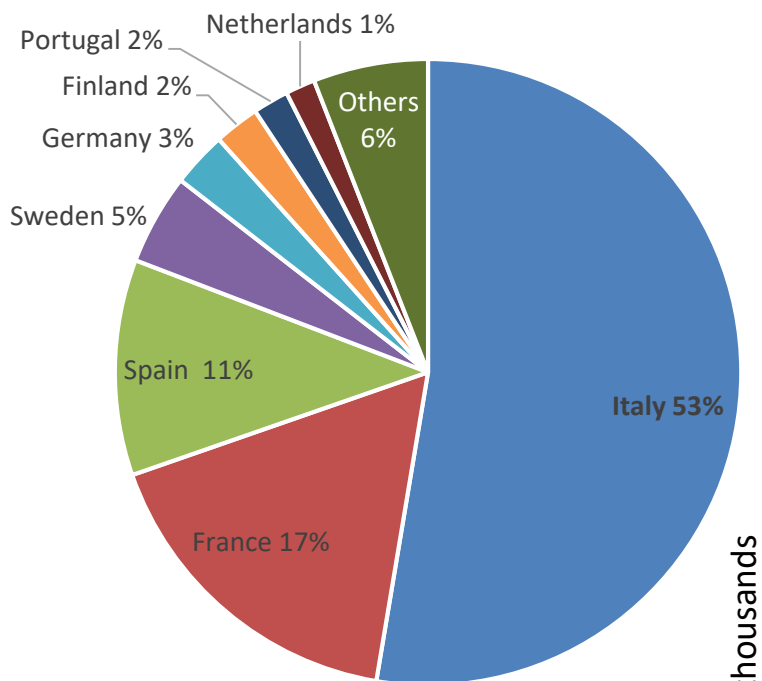
## Gross heat production from biogas in the EU-28 (2018) in the transformation sector – in ktoe



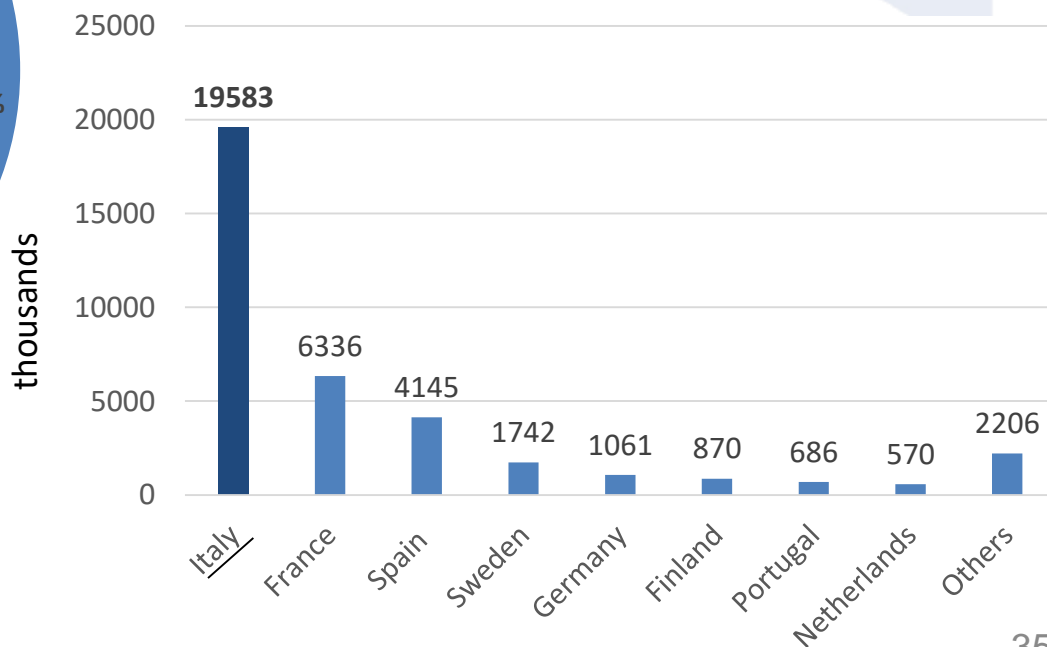
**Italy's ranking in the EU-28**  
Biogas heat prod. 2



## Heat pumps in operation in the EU-28 (2018) - thousands

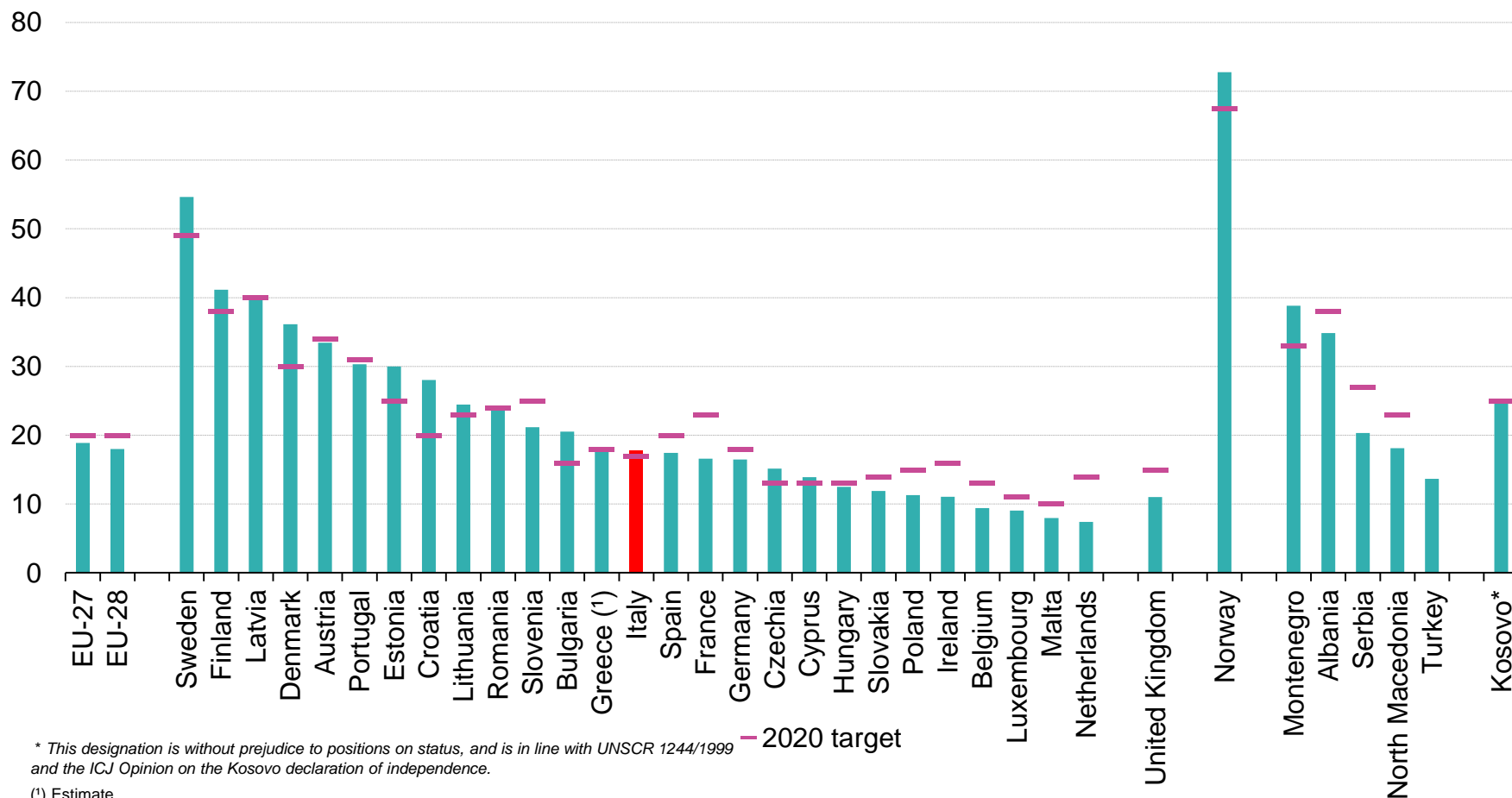


**Italy's ranking in the EU-28**  
Heat pumps no. 1

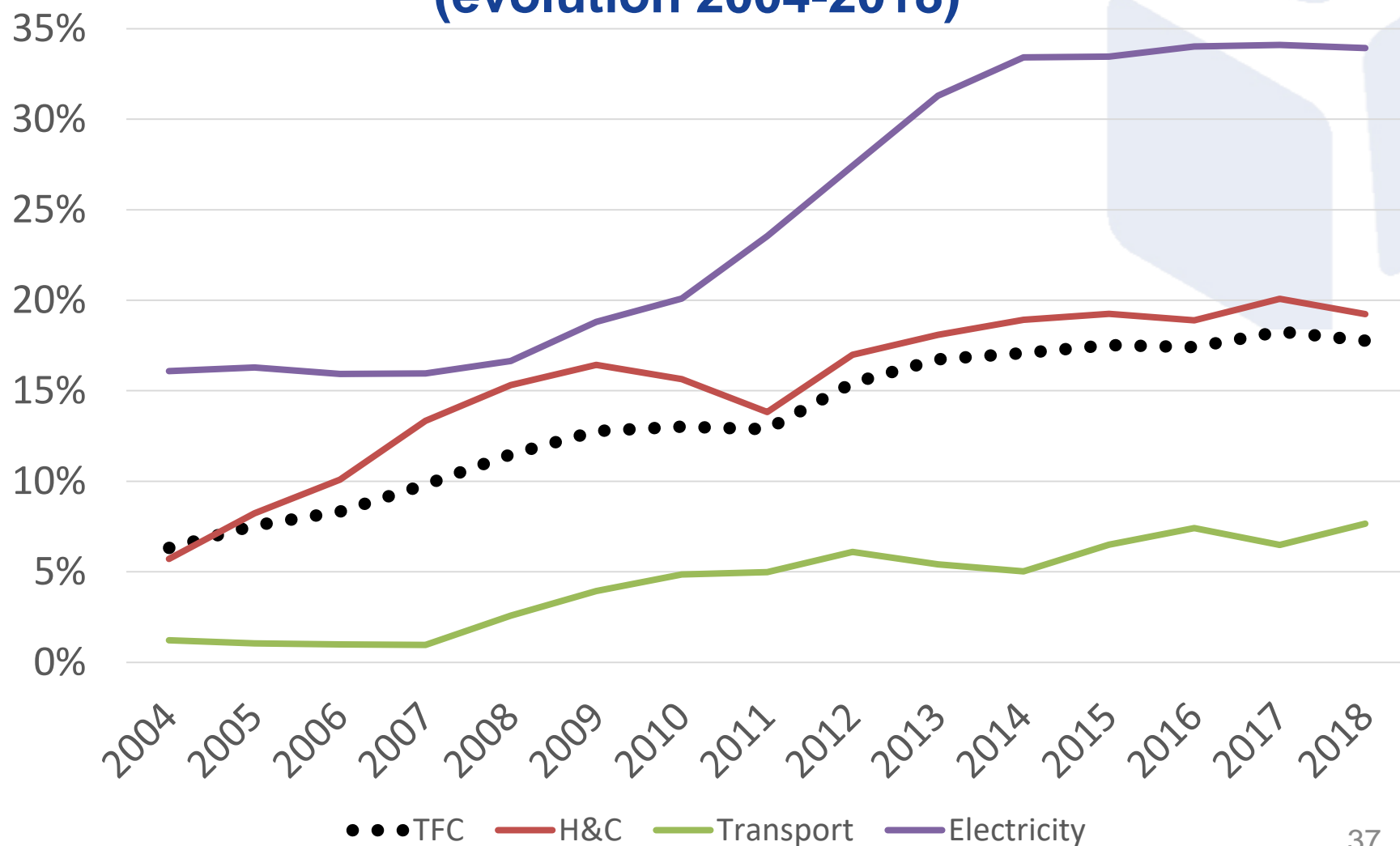


## Share of energy from renewable sources, 2018

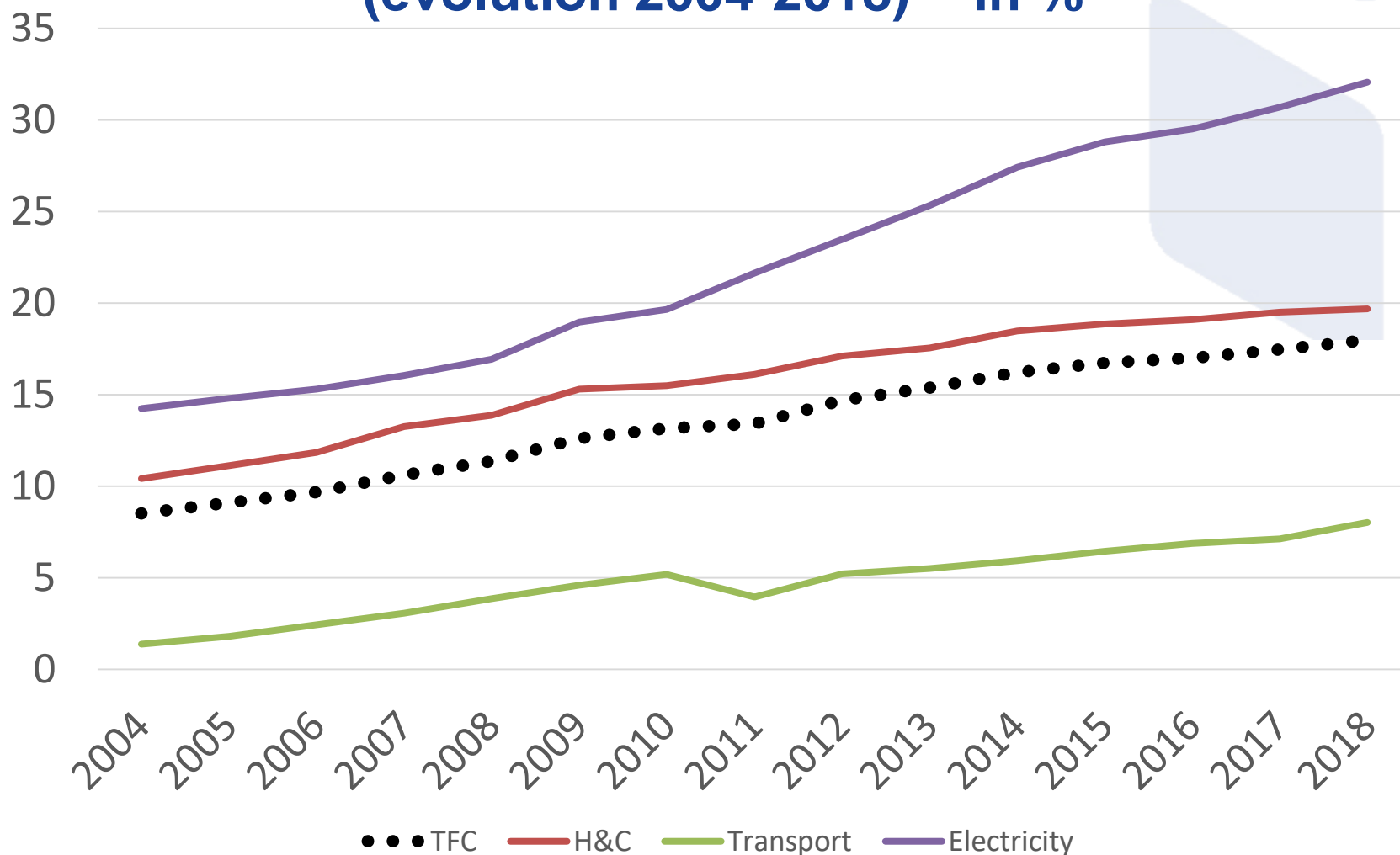
(% of gross final energy consumption)



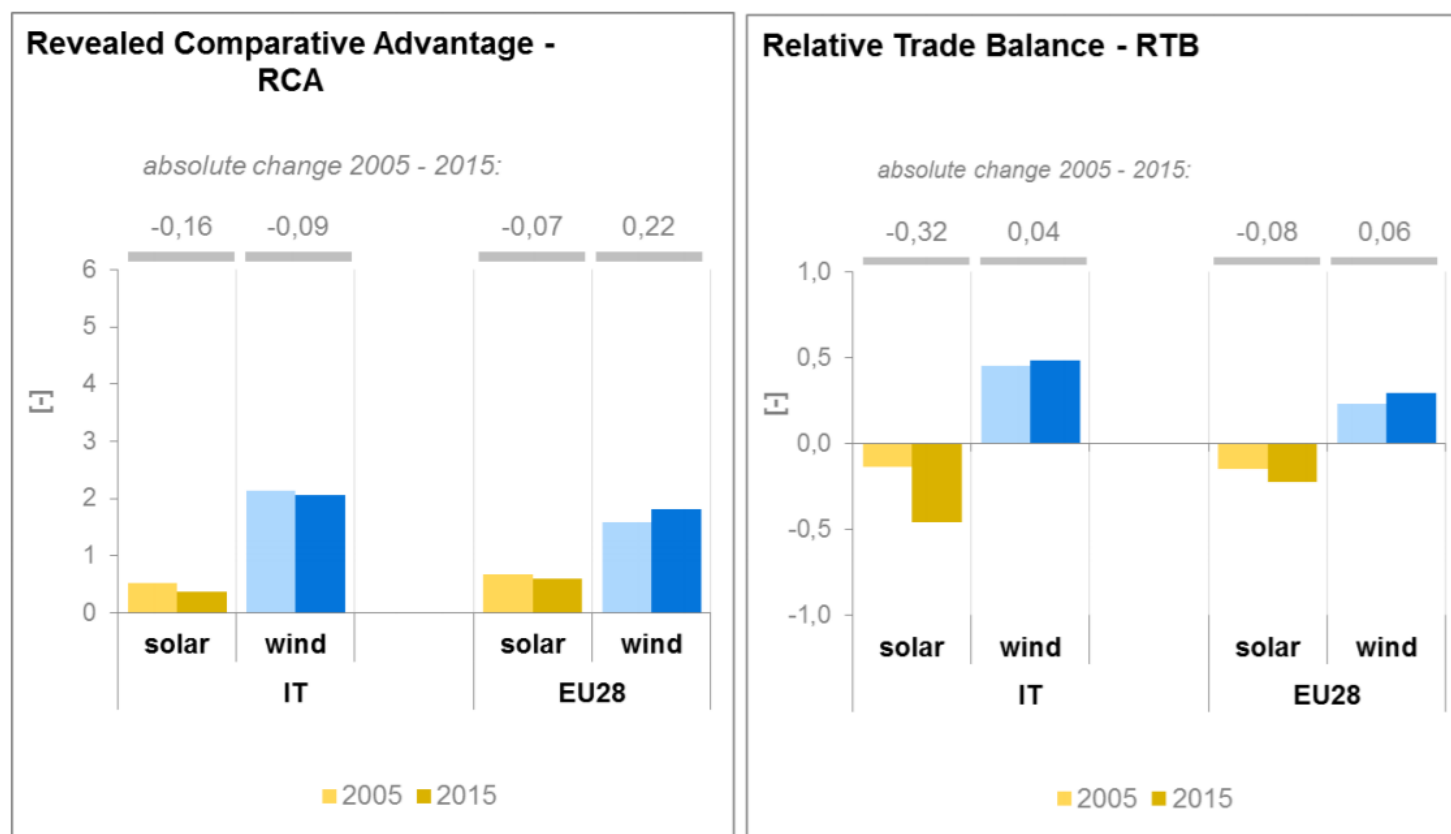
## Share of RES in Italy's TFC and specific sectors (evolution 2004-2018)



## Share of RES in the EU's TFC and specific sectors (evolution 2004-2018) - in %



## Italy's trade balance and comparative advantage in wind and solar technologies (2015)



## Net trade of EU-28 countries in key renewable energy technologies

