ELETTRICITÀ FUTURA
imprese elettriche italiane

LCS-RNet 11th Annual Meeting

Parallel Session 4-1: Challenges and opportunities from fossil energy to renewable energy

Current landscape and future evolutions of the power sector in Italy

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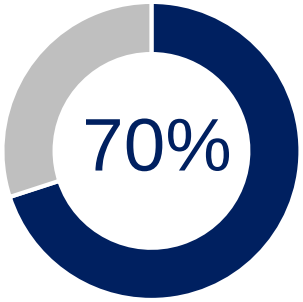
About Elettricità Futura

Elettricità Futura is the **main electrical energy sector Association in Italy**. It encompasses electrical energy generators involved in RES as well as traditional sources, distributors, retailers and service providers. It contributes to making today's electrical market more efficient, ready for the future evolutions and challenges



of the **electricity consumed in italy** is covered by companies that are members of Elettricita' Futura

600	40.000	75.000 MW	1.150.000 km
MEMBERS	WORKERS	INSTALLATED CAPACITY	ELECTRICAL LINES

We are member of:

CONFINDUSTRIA · eurelectric · SolarPower Europe · Wind EUROPE · RES4MED · FREE coordinamento · MOTUS-E

The future of the power sector according to Elettricità Futura

Promote **decarbonisation** of the European energy mix via the strengthening of the ETS system

Promote **electrification** in the transport and heating and cooling, driving technology evolution

Further develop **Renewable Energy Sources** (RES) using efficient and market-oriented mechanisms, ensuring regulation stability and investments continuity

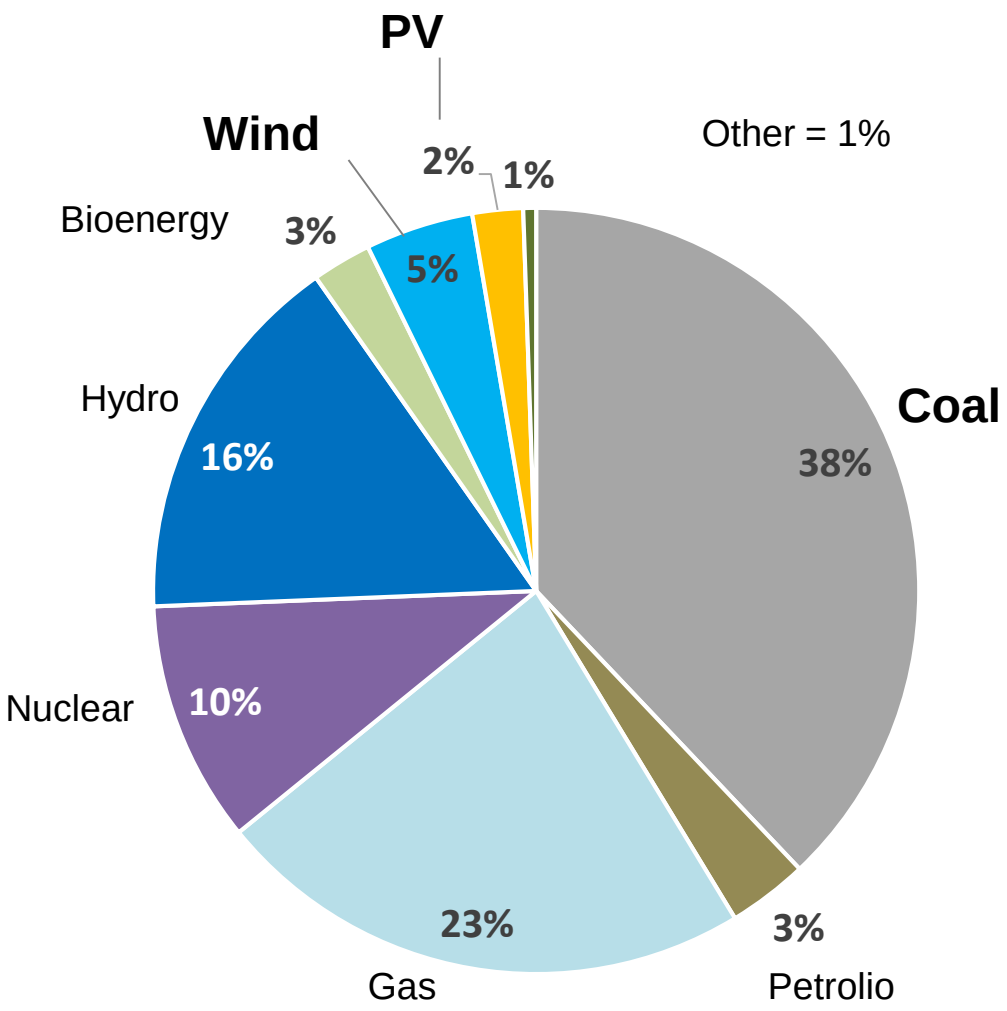
Reform the **electrical market**, integrating RES and new technologies, and providing clear long-term price signals to all the power plant technologies

Rely upon **digitalisation** and information access to increase customers awareness of their role and options in the liberalised market

Health and Safety for workers and respect of Environment by sharing the best practices and promoting a work culture with the goal of "zero injuries"

Landscape of the Electricity Production Worldwide

Global electricity production by source (2018 data)



Global electricity production

26,673 TWh

Italian share:

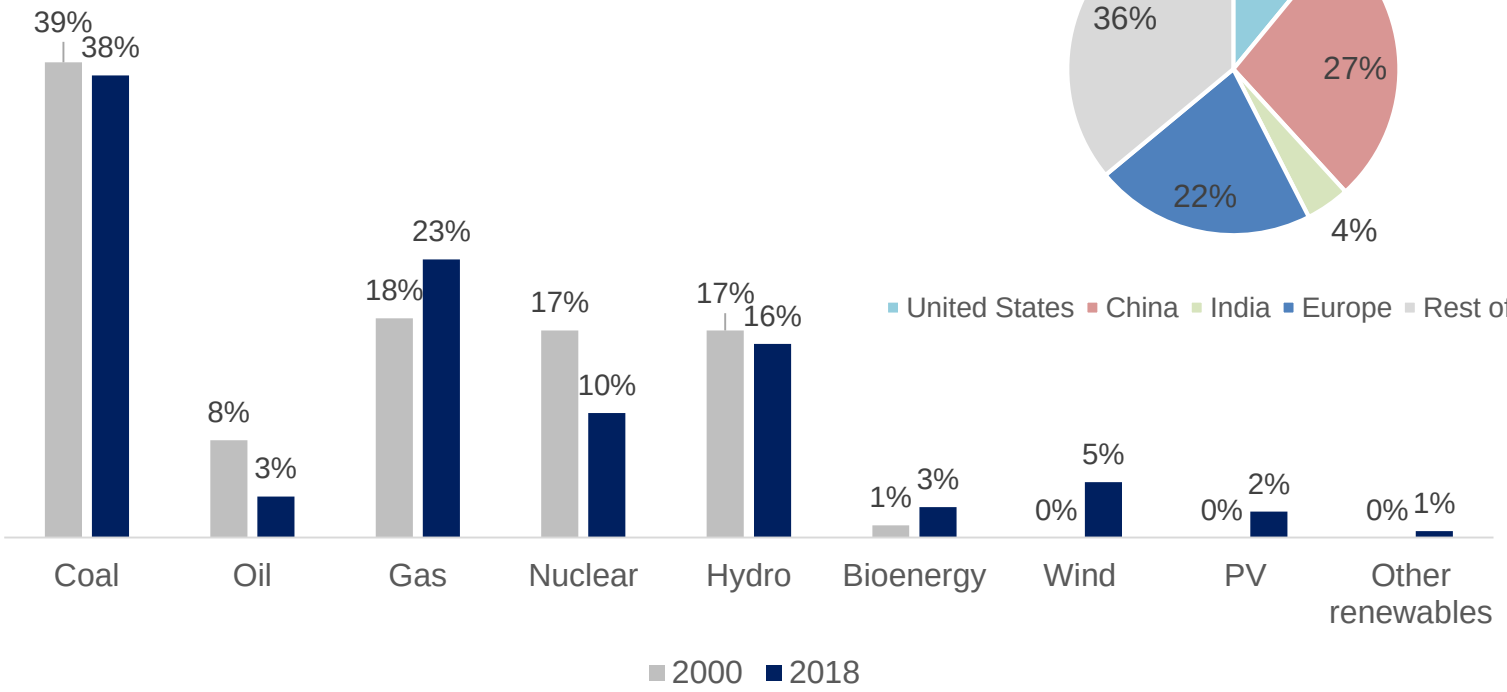
1.1%

Renewable energy Sources represented about **26%** of the total production

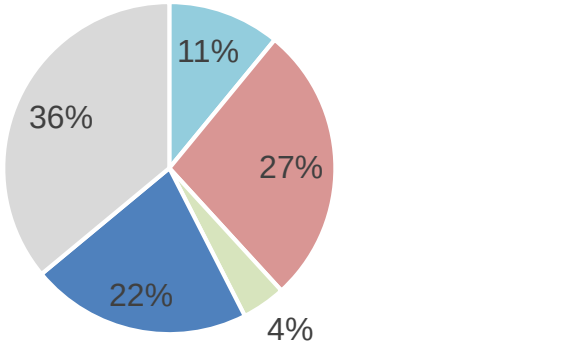
Source: EF elaborations based on IEA data

Landscape of the Electricity Production Worldwide

Comparison of electricity production by source (2018 vs 2000)



Electricity production by geographical area (2018)

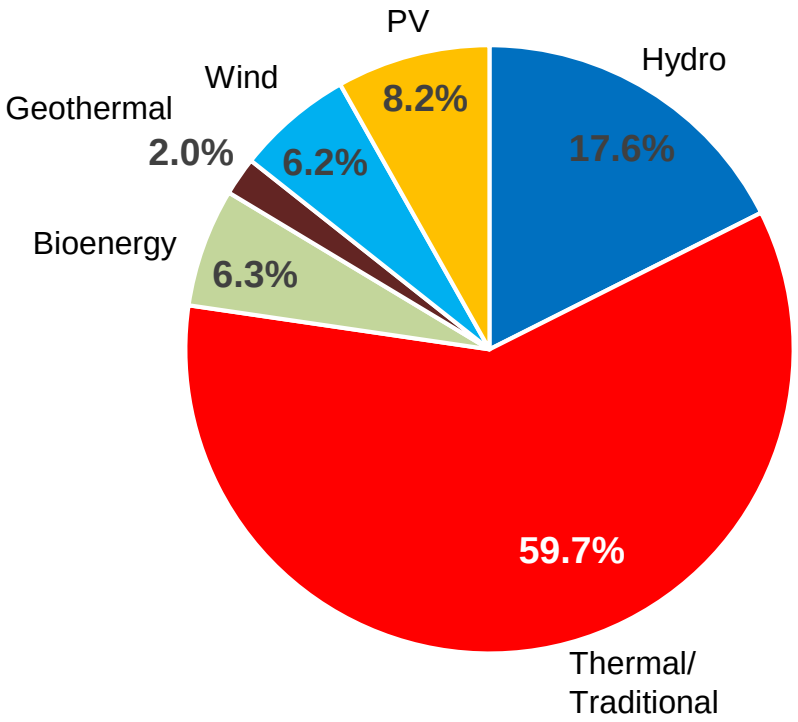


Electricity production by RES in 2018 was **6,800,000 GWh** globally. China and Europe have a central role with **27%** and **22%** respectively of the overall production

Source: EF elaborations based on IEA data

The electricity production by RES in Italy was equal to 40.3% of the total in 2018 (+4.2% wrt 2017)

Breakdown of **electricity** production by **source** (2018)



Overall electrical energy production in Italy (2018):

280,234 GWh

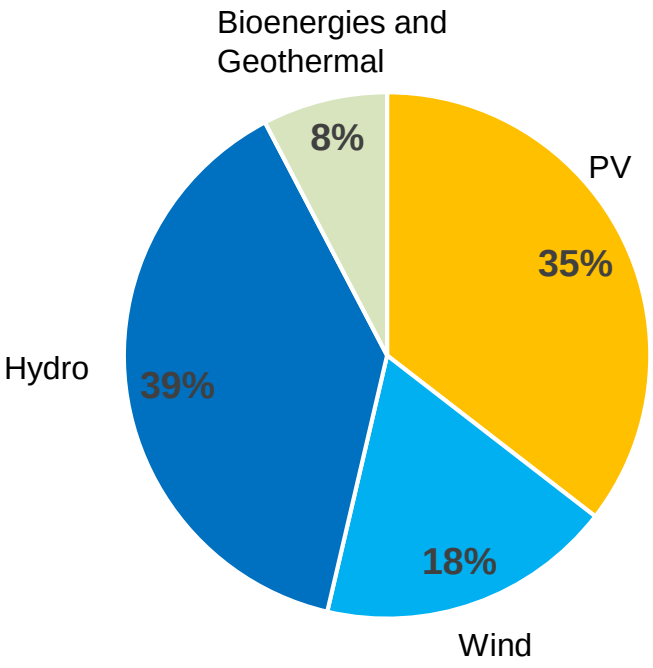
Electrical energy production by RES (2018):

112,847 GWh (40.3% of the total)

Source: EF elaborations on Terna's data

Italy has an overall RES capacity of 56.7 GW and it will be key to maintain and upgrade it

Percentage distribution of RES capacity in Italy in 2018
(Total: 56.7 GW)



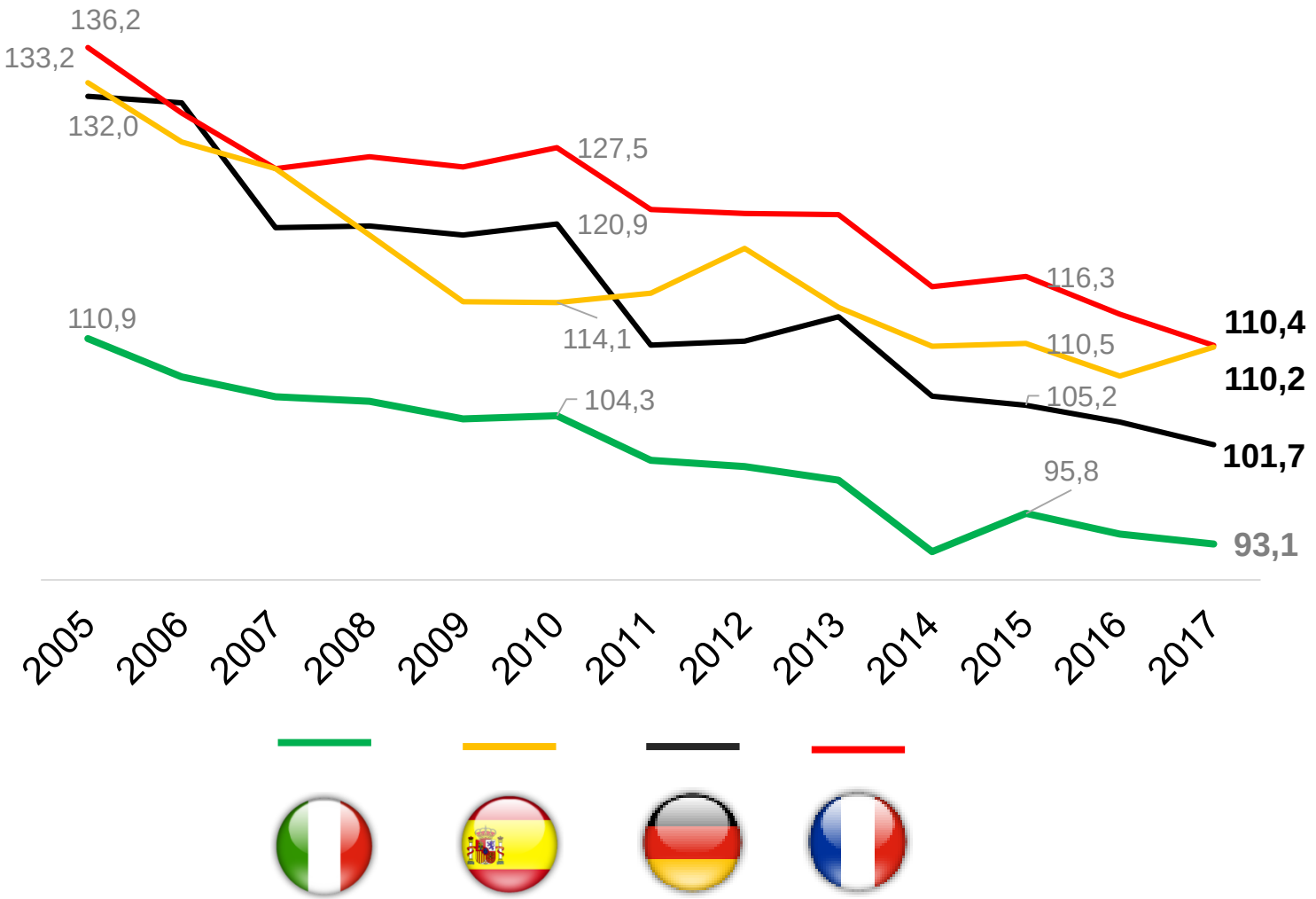
Installed power and number of RES plants (2018)

Source	Power [GW]	Count
PV	20.1	822,161
Wind	10.3	5,661
Hydro	21.9	4,330
Bioenergy and Geothermal	4.4	2,948
Total	**56.7**	**835,100**

Source: EF elaborations on Terna's data (RES data update on 31/12/2018)

The Italian power sector & manufacturing system is among the most efficient in Europe and worldwide

Primary energy intensity
[tep /M€]



Source: Eurostat (Country datasheet – April 2019 update) – M€ referred to 2010

The Italian 2030 objectives according to the National Energy and Climate Plan (NECP)

30 %

RES share on the Gross Final Energy Demand

(UE 2030 target: 32%)

55,4 %

RES share in the electricity sector

(Italy 2017: 34.1%)

43 %

Energy efficiency targets wrt PRIMES 2007 scenario

(UE 2030 target: 32.5%)

33 %

GHG emissions reductions wrt 2005 (for non-ETS sectors)

(Target UE 2030: 30%)

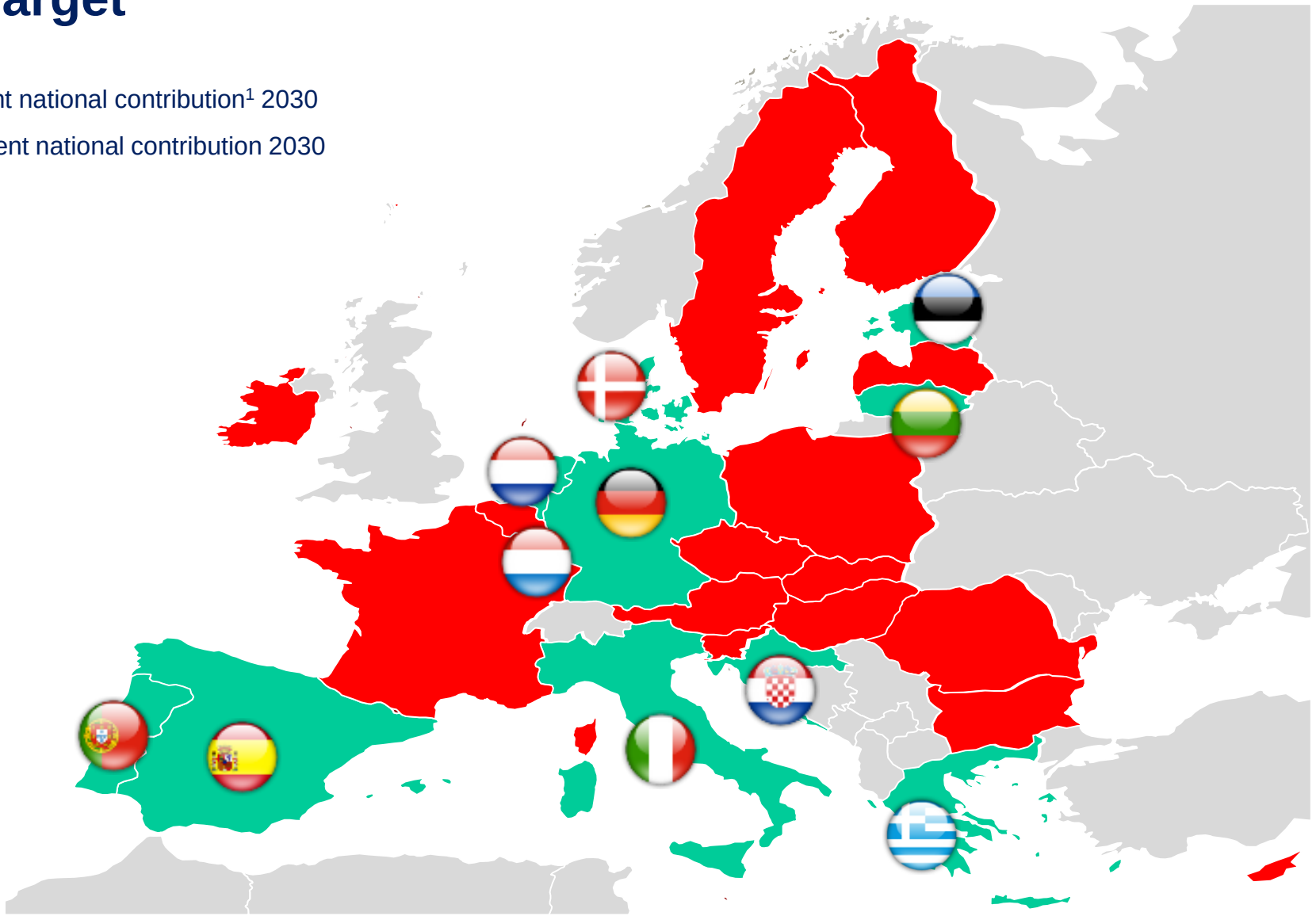
Such targets might become more ambitious in the light of the "Green New Deal" announced by the neo EC president Ursula von der Leyen

Source: Italian NECP proposal published in January 2019

By 2030, the 30% target on renewables set by Italy is in line with the Commission's expectations

RES Target
2030

- Sufficient national contribution[1] 2030
- Insufficient national contribution 2030



Sources: Integrated national energy and climate plans

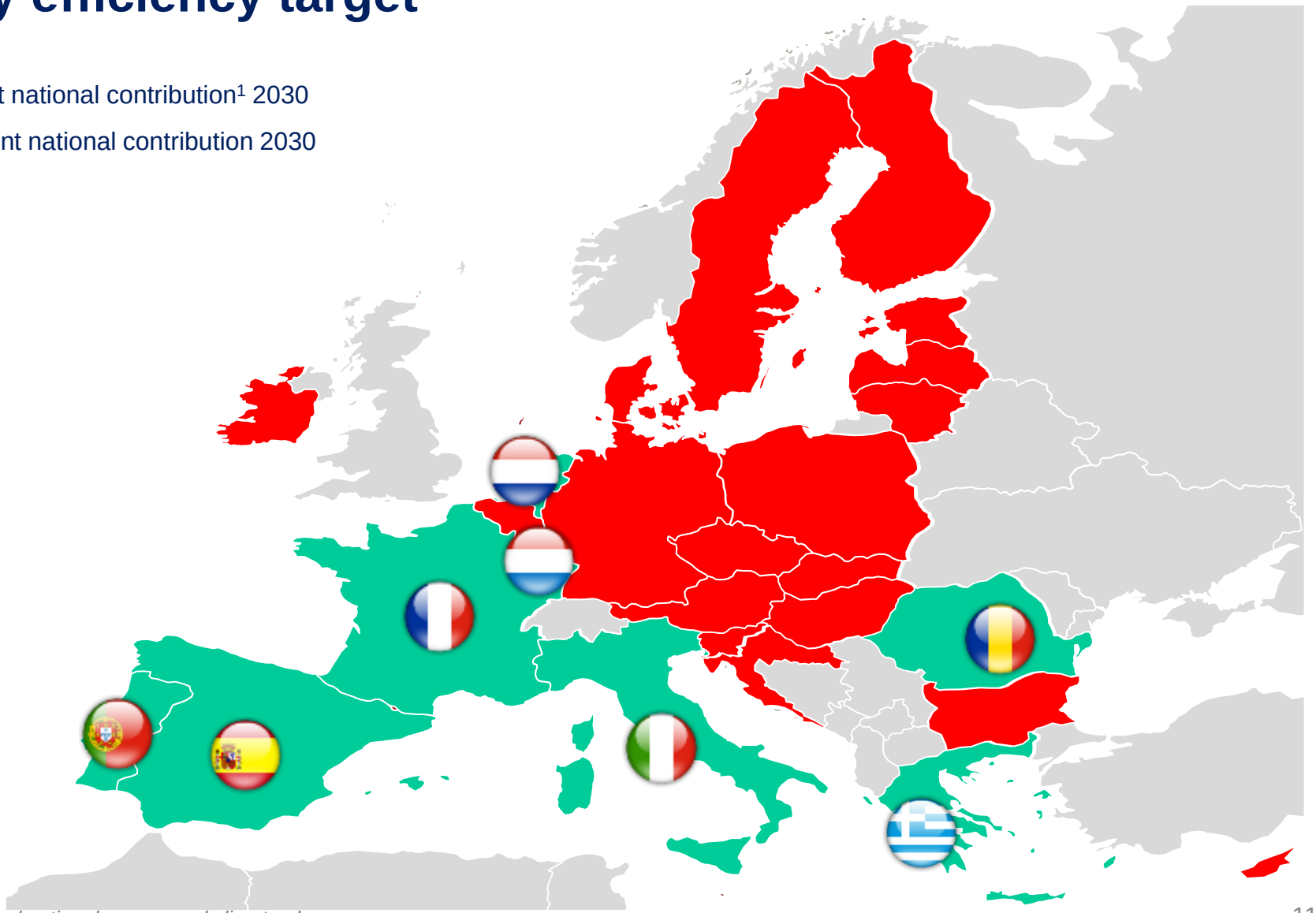
1 The national contribution to 2030 is considered sufficient if equal to or greater than the result of the formula indicated in the Governance Regulation

… as is the target on energy efficiency

Energy efficiency target

2030

- Sufficient national contribution[1] 2030
- Insufficient national contribution 2030



Sources: Integrated national energy and climate plans

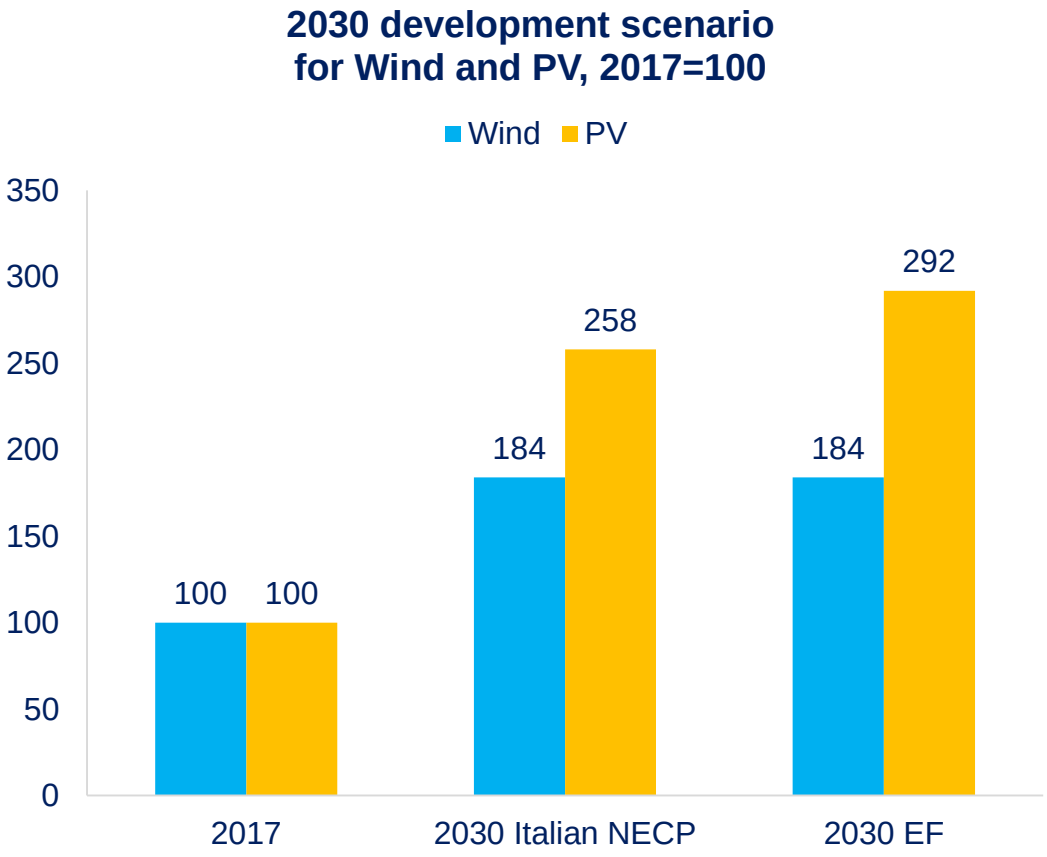
1. The national contribution to 2030 is considered sufficient if equal to or greater than the European target

The Italian National Energy and Climate Plan (NECP)

- **The NECP is a key tool** to guide Italy through the **energy transition** pathway and to achieve the 2030 **decarbonization targets**
- The NECP draft proposal is **an important starting point** to allow Italian companies to build their own **development plans** within a well-define mid-term framework
- The **proposed targets appear reasonable** (emphasis on the energy mix balance)
- It is now important to **put in place concrete measures** to achieve the targets

Elettricità Futura is ready to give its contribution to support Italy in maintaining a leadership role in the field of energy transition and the technology challenges ahead

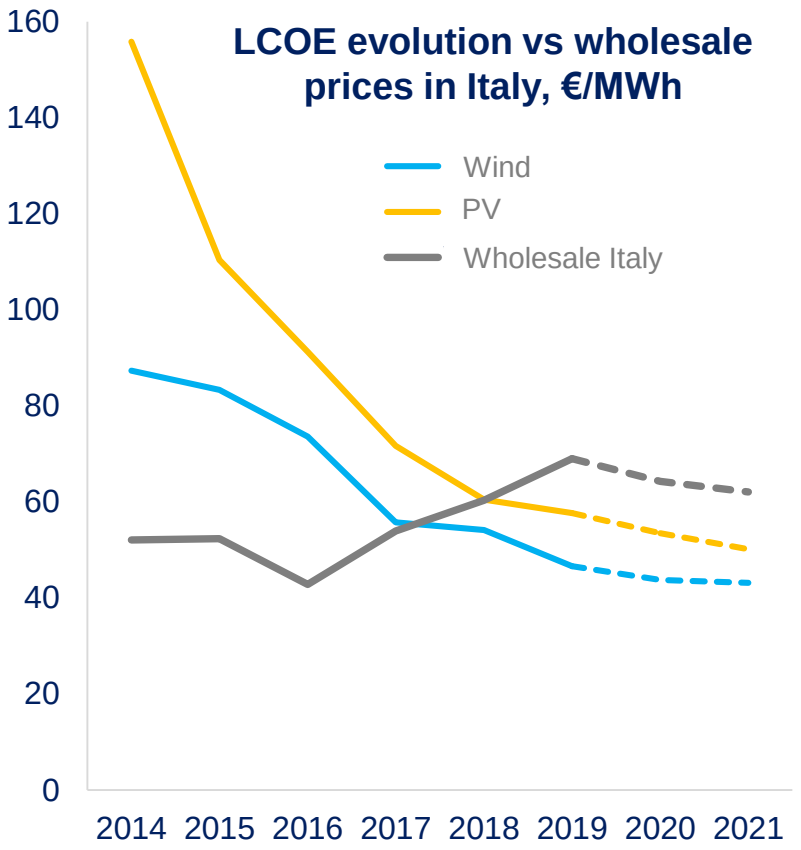
Italian NECP: PV and Wind development forecasts by 2030



GW	10	19,7	18,4	50,9	18,4	57,5

Forecasts on the PV installed capacity included in the Italian NECP underestimated according to Elettricità Futura (EF) due to the over-estimation of the production rate/efficiency

Source: Elettricità Futura elaborations on the Italian NECP draft proposal (Jan 2019) and Elemens 2018 study «A new era for RES-E»

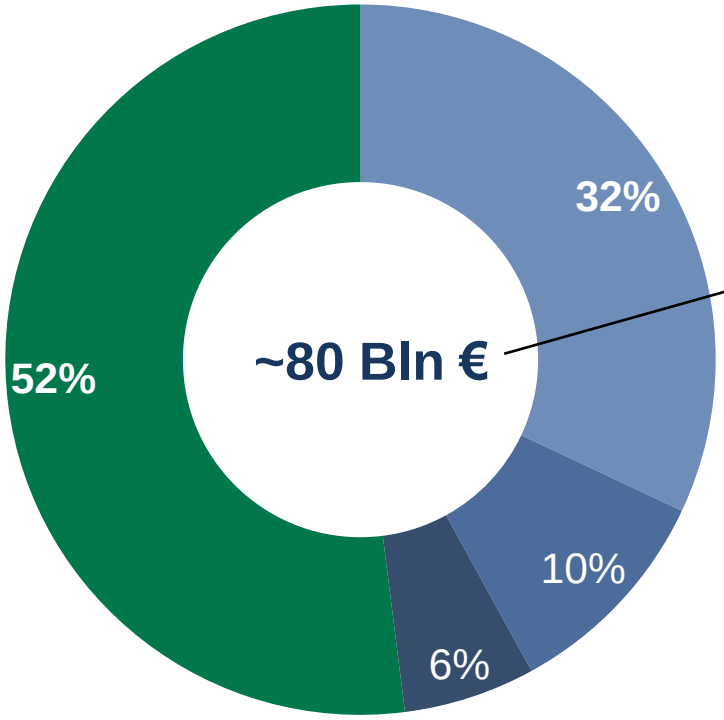


Costs of PV and Wind is decreasing sharply and they are already in line with the forward prices of the wholesale markets

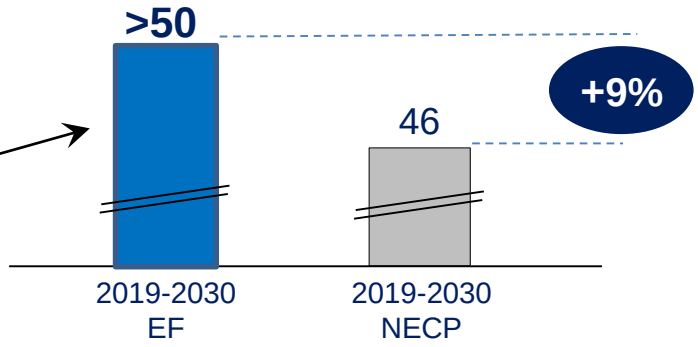
Source: Elettricità Futura elaborations on BNEF data (historical LCOE for PV and Wind refers to Italy, 2019-2021 refers to Germany), GME, EEX (wholesale 2019-2021)

Investments needed to achieve the NECP 2030 targets in Italy according to EF

Cumulative investments 2019-2030 according to EF, [Bln €]



[Bln €]



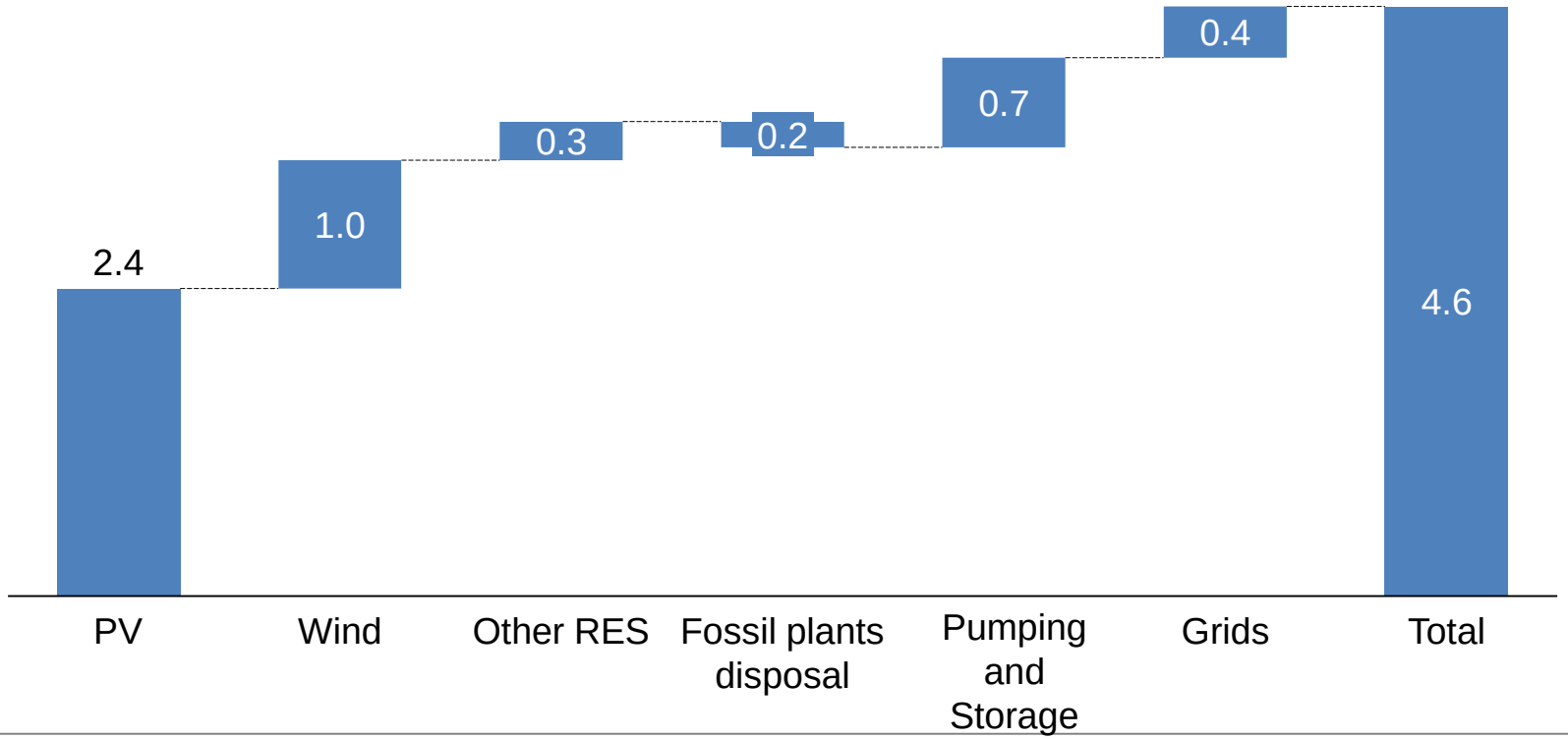
- Networks - baseline
- Storage (pumped and batteries)
- Networks - additional
- Generation - additional

The cumulative investments in the period 2019-2030, considering also the "inertial" ones for the networks, amount to **about 80 billion euros**, of which over **50 billion additional, according to EF** (compared to the approximately 46 billion provided by Italian NECP)

Source: EF elaborations based on NECP and Elemens data

Necessary investments to achieve the goals by 2030 according to EF

Additional annual investments for the electricity system 2019-2030 [€ Bn]



To achieve the goals of PNIEC, the companies of our system are planning to invest around € 4.6 billion a year until 2030

Source: EF estimates on PNIEC and Elemens data

Closing Remarks

- The **Italian electricity sector** is an international excellence and it is ready to play a **leadership role** in the path towards **energy transition** and global decarbonisation

- **The National Energy and Climate Plan** is a fundamental tool and its concrete implementation can boost **investments** and **employment by 2030**

- **Work** in the electricity sector of the future will be different compared to today: the **technology evolution** and the **skills evolution** will be key to maximise the benefits

Contacts

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