IEEE Italy Section with Italian Industries – LEONARDO 500

Introducing Terna & decarbonization strategy

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Terna

About Terna

TERNA IS...

- ...the largest **independent** Transmission System Operator (TSO) in Europe and a **public listed** company.
- ...the owner of the National High Voltage Transmission Grid.
- ...responsible for the transmission and dispatching of electricity all over the country.
- …is **not integrated** in companies that also own distribution networks, power generation plants or follow trading or retail activities in the electricity market.

ITALIAN TRASMISSION GRID*

- 72.900 km of power lines
- ~ 855 transforming and switching substations
- 25 Interconnections with foreign countries

*as of end of 2016

Italian 380 kV Grid

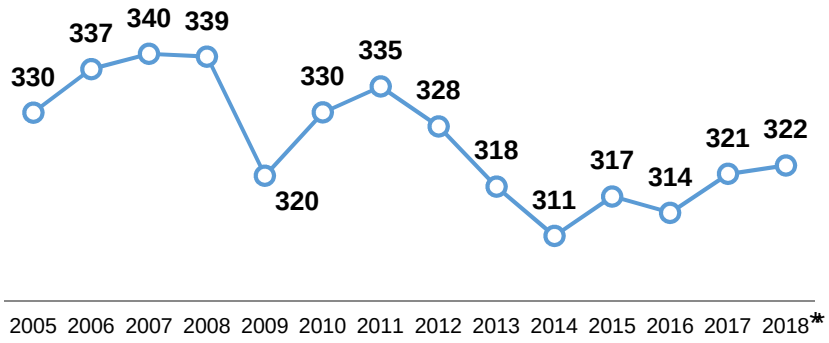
57.8 GW peak load (2018)

Context

The Italian Electricity System at a glance

Total electricity demand

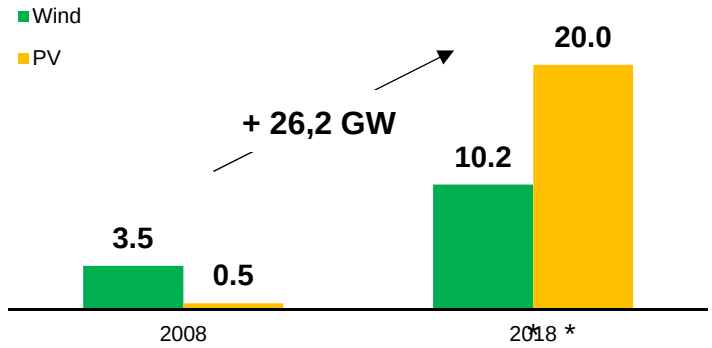
[TWh]



Electricity demand still under pre-crisis level

Installed capacity of PV and Wind

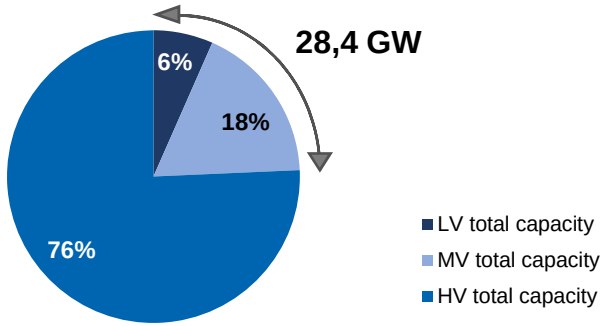
[GW]



Significant increase of RES over 10yrs

Installed capacity by voltage level (2018*)

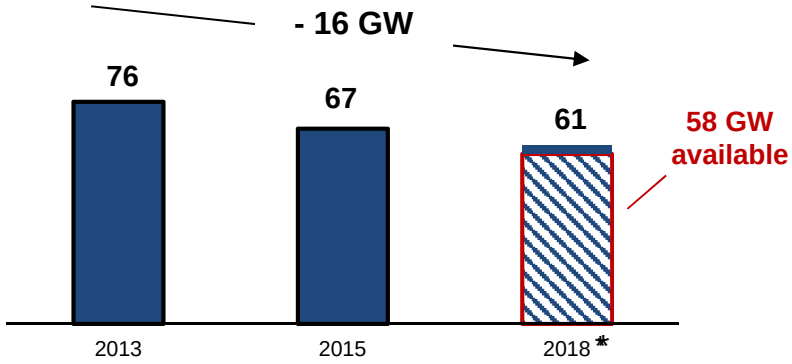
[%]



Considerable share of distributed generation already today

Installed Capacity

[GW]



Progressive reduction of thermal capacity

* Provisional data

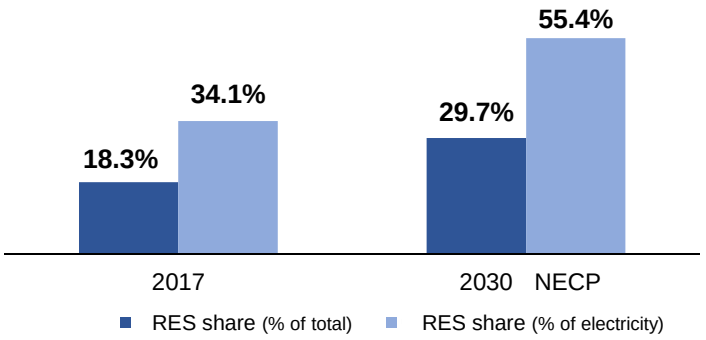
Decarbonisation

National Energy and Climate Plan (NECP): Italy by 2030

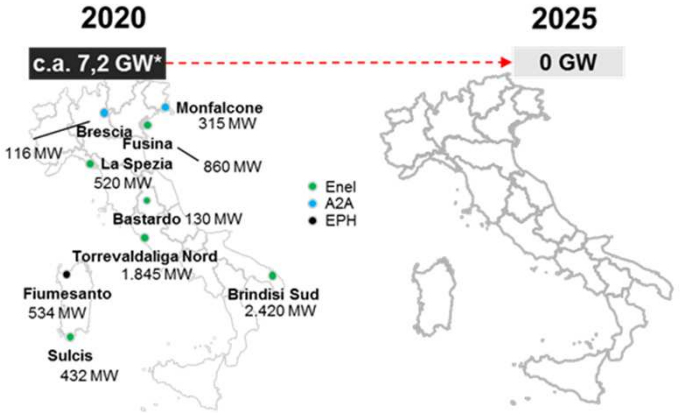
PROPOSTA DI PIANO NAZIONALE INTEGRATO PER L'ENERGIA E IL CLIMA

Main target of PNIEC

Growing RES share

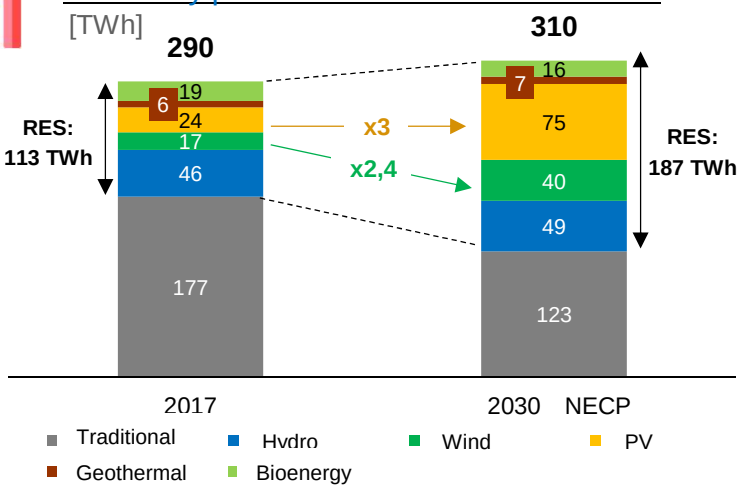


Coal phase-out by 2025

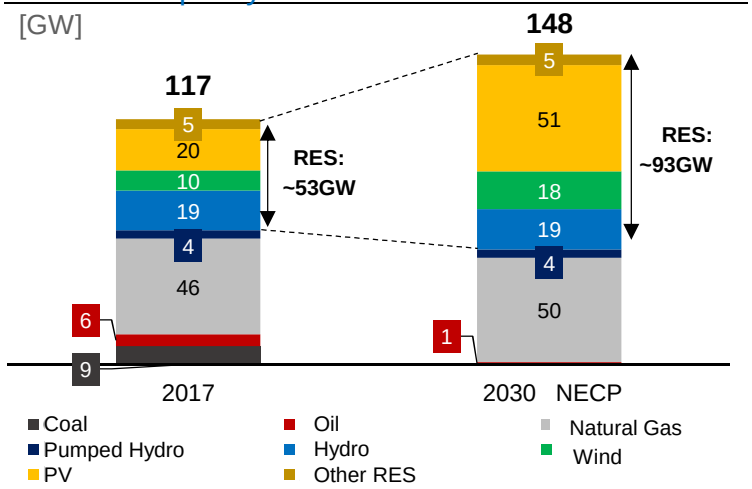


2030 Scenario

Electricity production



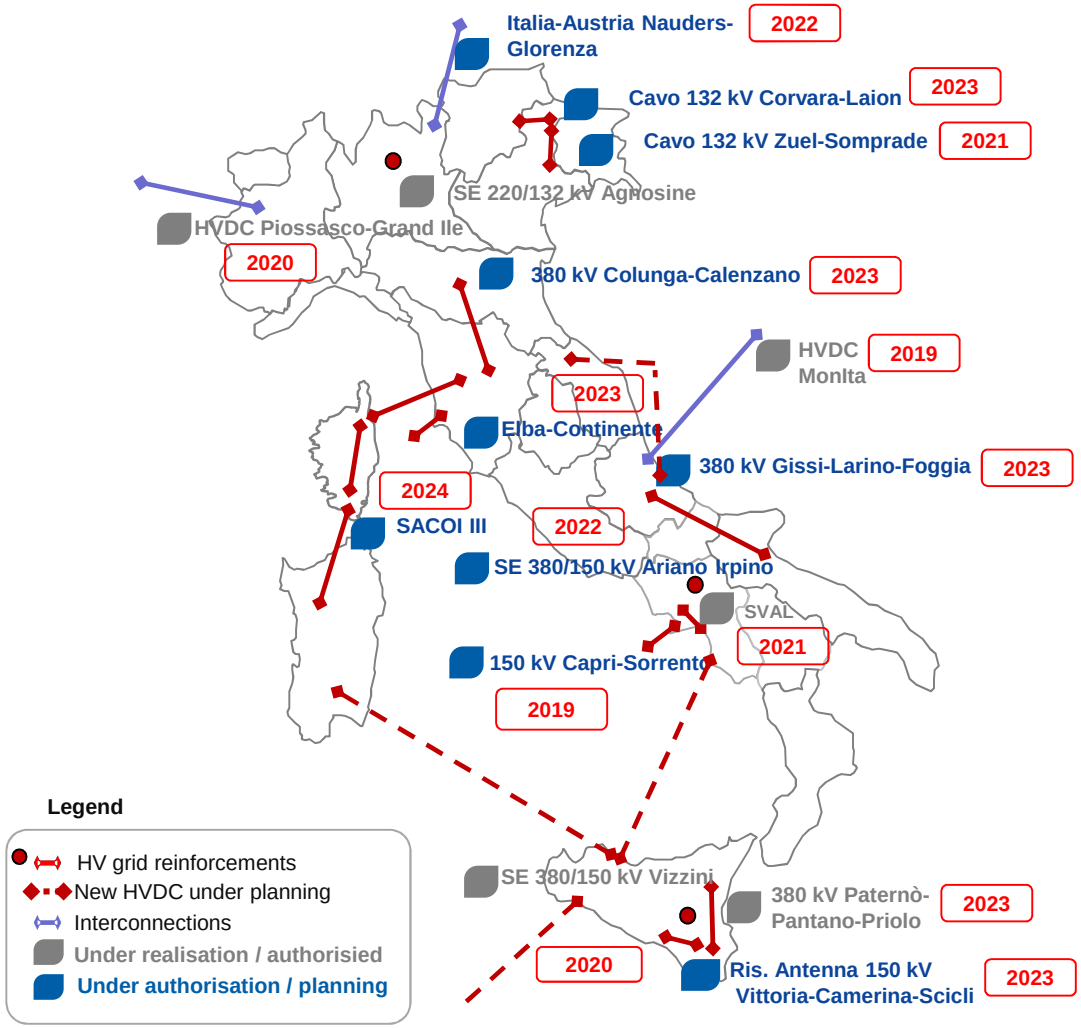
Installed capacity



The NECP targets a complete coal phase-out by 2025 and a significant push towards RES

Transmission grid development

Main projects under development



DRIVER

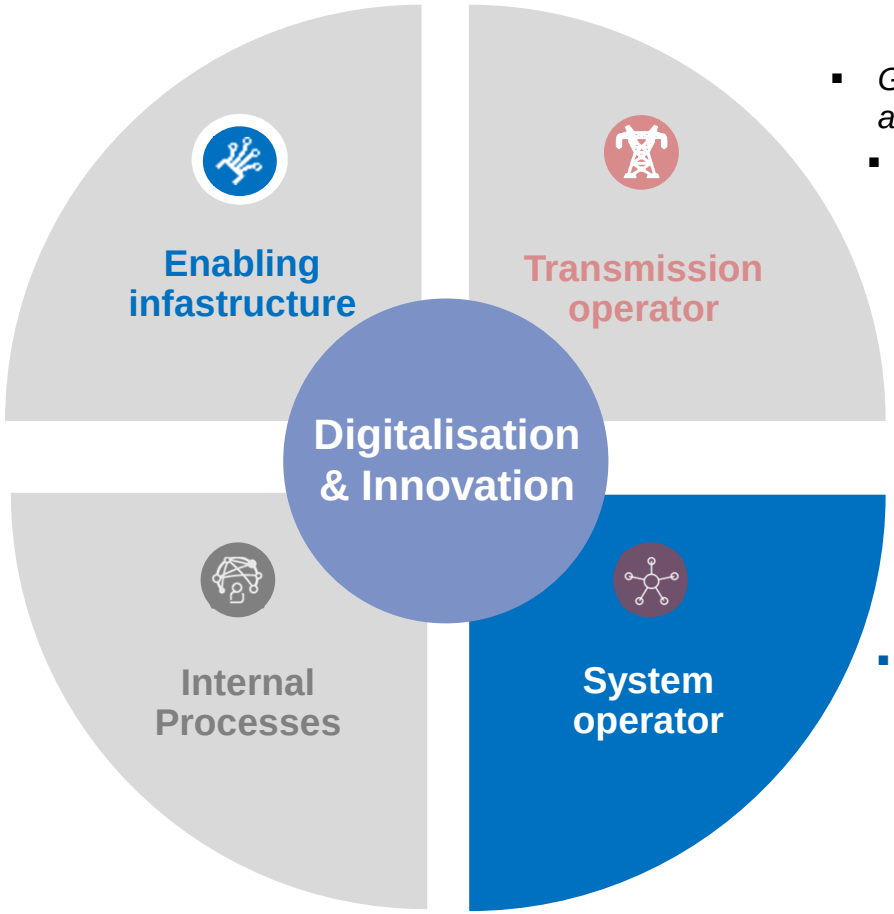
- Decarbonisation
- Market Efficiency
- Security of supply and resiliency
- Sustainability

OBJECTIVES

- To solve congestions and limits of the grid
- To manage ancillary services optimally
- To increase security of supply and adequacy
- To increase RES integration
- To support a sustainable development model

Digitalisation & Innovation

- *Optical fiber network*
- *Distributed data storage*



- *Gradual digitalisation of grid assets (lines and substations)*
  - *Evolution of the processes of Construction and Asset management*

- *Internal processes efficiency through automation and standardisation*

- *Supporting the energy transition coherently with the electricity system needs*

Over 700 €mn investments in digitalisation and innovation