Current landscape and future evolutions of the power sector in Italy

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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.

70% of the **electricity consumed in Italy** is covered by companies that are members of Elettricità Futura.

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**We are member of:**

- CONFINDUSTRIA
- Eurelectric
- SolarPower Europe
- WindEurope
- RES4MEDITERRANEAN
- FreeCoordinamento
- MOTUS
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"
Global electricity production by source (2018 data)

- **Coal**: 38%
- **Gas**: 23%
- **Nuclear**: 10%
- **Bioenergy**: 3%
- **PV**: 5%
- **Wind**: 2%
- **Hydro**: 16%
- **Other**: 1%

Renewable energy sources represented about 26% of the total production.

Global electricity production: 26,673 TWh

Italian share: 1.1%

Source: EF elaborations based on IEA data
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)

<table>
<thead>
<tr>
<th>Power</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV</td>
<td>835,100</td>
</tr>
<tr>
<td>Wind</td>
<td>835,100</td>
</tr>
<tr>
<td>Hydro</td>
<td>835,100</td>
</tr>
<tr>
<td>Bioenergy and Geothermal</td>
<td>835,100</td>
</tr>
</tbody>
</table>

**Table: Installed power and number of RES plants (2018)**

<table>
<thead>
<tr>
<th>Source</th>
<th>Power [GW]</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV</td>
<td>20.1</td>
<td>822,161</td>
</tr>
<tr>
<td>Wind</td>
<td>10.3</td>
<td>5,661</td>
</tr>
<tr>
<td>Hydro</td>
<td>21.9</td>
<td>4,330</td>
</tr>
<tr>
<td>Bioenergy and Geothermal</td>
<td>4.4</td>
<td>2,948</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>56.7</strong></td>
<td><strong>835,100</strong></td>
</tr>
</tbody>
</table>

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**
- **Insufficient national contribution**

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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 contribution¹ 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-defined 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
Forecasted PV and Wind installed capacity included in the Italian NECP underestimated according to Elettricità Futura (EF) due to the overestimation 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 are 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

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
To achieve the goals of PNIEC, the companies of our system are planning to invest around € 4.6 billion a year until 2030 (compared to € 1.4 billion in the "as-is" scenario)

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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