PRESS
RELEASE

"THE ROLE OF ELECTRICITY DISTRIBUTION FOR A SECURE ENERGY TRANSITION": THE STUDY BY TEHA IN COLLABORATION WITH ENEL HIGHLIGHTS THE STRATEGIC ROLE OF THE DISTRIBUTION GRID AND THE IMPORTANCE OF INVESTMENTS IN CRUCIAL INFRASTRUCTURE TO CONTRIBUTE TO DECARBONIZATION AND DEVELOPMENT IN ITALY

- *An analysis has been carried out on the current and prospective role of the electricity distribution grid in the energy transition and decarbonization*
- *The main characteristics of the electricity distribution grid in Italy have been evaluated, in comparison with those in other European countries*
- *The investments required in the electricity distribution grid in Italy in the coming years and the future challenges have been identified*

Cernobbio, September 7th, 2024 – The distribution grid plays a key role in enabling the energy transition. **Investments** are therefore necessary for the grid to be able to manage the change in the structure of the electricity system and cope with climate change. This is what emerges from the study "***The role of electricity distribution for a secure energy transition***", carried out by TEHA in collaboration with Enel and previewed today during a press conference at the 50th edition of the Forum held by The European House – Ambrosetti, "*Intelligence on the World, Europe, and Italy*". The contributors to the press conference included **Lorenzo Tavazzi**, Senior Partner and Board Member of The European House – Ambrosetti and TEHA Group, **Gianni Vittorio Armani**, Director of Enel Grids and Innovability at Enel and **Guido Bortoni**, President of CESI, former Head of Energy Department, Italian Government; former President, ARERA.

"In light of the changes taking place in the electricity system and those required to achieve decarbonization, the consolidation and development of the distribution grid as an essential mean of enabling this evolution is indeed at the heart of the current energy debate. To support this major new phase in the development of the distribution grid through invested capital and innovation, it is necessary to ensure a coherent set-up that allows financial stability and sustainable management for distribution grid operators," commented **Gianni Vittorio Armani,** Director of Enel Grids and Innovability at Enel.

"The progressive increase in distributed generation from renewable sources and the greater electrification of final consumption require an adequate electricity distribution to enable a 'seamless' transition," commented **Lorenzo Tavazzi**, Senior Partner and Board Member of The European House – Ambrosetti and TEHA Group. *"The evolution of the electricity system and the role of distribution require significant new investments in the grid to ensure continuity of performance: in Italy, over the next 10 years, about 6 billion euros of investments per year will be planned, to activate significant direct, indirect and induced impacts on the country's economy."*

According to the European Commission, in order to achieve the 2050 decarbonization targets, **the EU will need to double the annual installation rate of renewable energy sources (RES)** with respect to the average of the past 5 years, mostly in the **electricity sector**, which will have to cover **60%** of Europe's final consumption. The significant growth of RES distributed across the territory and the **increased electrification of final consumption** in terms of volumes require a new development of the **distribution grid as an essential mean to enable this evolution**.

It is therefore no coincidence that the European Commission's Net Zero Industry Act (NZIA) has identified the **electricity grid** as a **strategic technology** for achieving net zero emissions by 2050. Furthermore, the European Commission has also recently highlighted the relevance and strategic nature of the power distribution grid, as in Directive (EU) 2022/2557, identifying this sector as an **essential service to keep vital societal functions and critical for the proper functioning of productive economic activities**.

In Italy, the strategic nature of the electricity grid is confirmed by its presence in the list of strategic infrastructure defined by the **Golden Power**, in a context where **more than 80% of the electricity consumed in Italy is supplied by the distribution grid**. The electricity distribution grid is also an essential service not only for the maintenance of vital societal functions (serving more than 30 million households), but also and above all for **economic activities**, with 7 million commercial and industrial users connected.

More specifically, in Italy the electricity distribution grid plays a **key role to enable the energy transition** both for the increasing connection of **distributed plants** (over 70% of the additional renewable capacity to be installed by 2030 in Italy will be connected to the distribution grid) and for the **increasingly active role of end consumers** in the electricity system, who are becoming **prosumers** and promoters of innovative 'activities'. These two trends – distributed generation and the increasingly active role of end consumers – highlight the **strategic nature of infrastructure**: in 2023, over 370,000 connections were made in Italy, seven times the number recorded 10 years ago, demonstrating the importance of **decentralized** electricity generation, with relatively smaller power generation facilities and closer to end consumers.

Distribution must therefore be **adapted to these new needs dictated by the changing structure of the electricity system**. According to the traditional structure of the sector, electricity used to follow a **one-way flow** with end consumers playing a passive role. However, the modern power grid must be able to handle bi-directional flows of energy and increasingly active end consumers, as well as the **increasing number of distributed sources of electricity production.**

The debate is therefore focused on the issue not only because of this change in the structure of the electricity system, but also because of the **current climate change**. Indeed, **extreme weather events** can cause **significant damage to the electrical infrastructure**, with impacts on the production system and the community. To ensure constant reliability of the electricity service, investments are therefore required to **increase the resilience of the distribution grid in the coming years**.

However, an assessment of the future of electricity distribution in Italy and Europe cannot be separated from the related analysis of current performance. Moving on from these considerations, TEHA has set itself the objective of identifying the **salient characteristics of distribution grid performance in Italy**, comparing it with other benchmark countries in Europe. The analytical assessment model developed shows that **the Italian distribution grid** (in its current set-up) **is among the most virtuous in Europe**, thanks to effective development of invested capital that has enabled **high rates of innovation**, **efficiency** and **infrastructure development**. Specifically, the Italian grid ranks first in terms of cost-effectiveness of grid charges and in terms of penetration rate and functionality of smart meters.

The efficiency, efficacy, cost-effectiveness and innovation of the distribution sector have been supported by an **advanced legislative and regulatory framework developed on several levels and well suited to the grids**.

However, the evolution of the electricity system and the role of distribution require **major new investments in the grid to ensure continuity of performance**. **In Italy, over the coming 10 years, around 6 billion euros of investments per year will be required**, resulting in major benefits for the country. Indeed, the estimated average annual investments in the power distribution grid in Italy is expected to generate over **13 billion euros of added value** in the system every year, about **0.7%** of Italian GDP, creating over **170,000 jobs** and guaranteeing over **12 billion euros of income for Italian families**.

In the light of the current performance of the distribution sector in Italy, represented by investment capacity and effectiveness, service quality, innovation and cost-effectiveness for end users, it is desirable that, starting from the current set-up, **future development will preserve and enhance – in a long-term perspective – the important benefits guaranteed so far by the legislative and regulatory system**.

It is therefore necessary that the prospective evolution of the legislative and regulatory framework does not, in the second half of this decade, **restrain** the investments required to evolve the grid.