

AY 2025

e-distribuzione

SUCCESS CASE 4.2025

Executive Program Smart Grids e-distribuzione S.p.A. (Enel group) and Politecnico di Milano (Italian University)



THE CHALLENGE

There are many challenges facing the Italian distribution network, which despite being among the most virtuous in Europe, thanks to the effective investment of capital that has enabled high rates of innovation, efficiency and infrastructural development, needs further important interventions that prepare it for a context that is rapidly changing and for climate changes that go from extraordinary to increasingly ordinary. The growing financing for the energy transition for the period 2021-2026 foreseen by the Next Generation EU program, the impressive growth of distributed renewable energy sources expected by 2050, the greater electrification of final consumption in terms of volumes and the increasingly active role of consumers place a new development of the distribution network at the center of the current energy debate as an essential means to enable this evolution and as the main energy carrier for all fundamental activities in advanced economies. Without obviously forgetting the necessary propensity for innovation, for new generation technologies - such as developments relating to network automation and smart grids. This context requires that future protagonists of the energy transition have advanced skills in the design and management of the digital networks that e-distribution requires.

THE SOLUTION

The Smart Grids Executive Program is a training course created by e-distribuzione S.p.A. in partnership with the Politecnico di Milano with the aim of strengthening participants' skills of design and management of digital networks called "smart grids", promoting innovation in the electricity system and training future protagonists of the energy transition. The Executive Program began in November 2024, finished in April 2025, involves 35 young engineers employed by e-distribuzione from many different Italian regions, is organized in theoretical classes of an amount of 170 hours plus 40 hours for laboratories with at the end challenges on business topics for participants organized in teams.



This project aims to offer innovative, broad and transversal teaching between in-person with professors of Politecnico di Milano and online teaching held by e-distribuzione managers.

The topics covered contains in-depth studies on national and European energy scenarios, the role of the DSO, the specificities and implementation of Smart Grids, economic investment planning strategies, notions on Health & Safety with related legislation, and soft skills courses such as project management, storytelling and public speaking. Classes cover five months program and focuses on the study of the evolution of electricity systems, and it aims at forming highly qualified professionals able to face complex design problems and foster technological innovation in the field of electrical power systems. The final goal is to explore in depth the technical aspects of the Electric Power Systems design, operation and control, as well as their real-life Implementation. This program supports selected young STEM (Science, Technology, Engineering and Mathematics) professionals in tackling the technological challenges of the energy sector, especially in the context of digital networks, essential infrastructures to promote the decarbonization and electrification of consumption through generation distributed by renewable sources.

MAIN ACHIEVEMENTS

- Increase of specialized figures needed by the energy transition and the digitalization of the network;
- · Reinforcement and development of new, more specialized skills of young engineers;
- Training future protagonists of the energy transition directly within the Enel Group.

KEY SUCCESS FACTORS

- The partnership with a relevant academic stakeholder (talent attraction) able to offer high specialization and expertise of professors;
- A robust and transparent selection procedure aimed at having participants with high level of commitment and an excellent technical knowledge;
- The empowerment of managers involved as professors within the Executive Program.

WAY FORWARD (Next Steps)

- To strengthen skills in the design and management of digital networks;
- To promote innovation in the electricity system and train future protagonists of the energy transition;
- To adapt skills learned in the Executive Program directly to the energy transition;
- To expand to include more participants/colleagues in the following installments of the Executive Program.







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