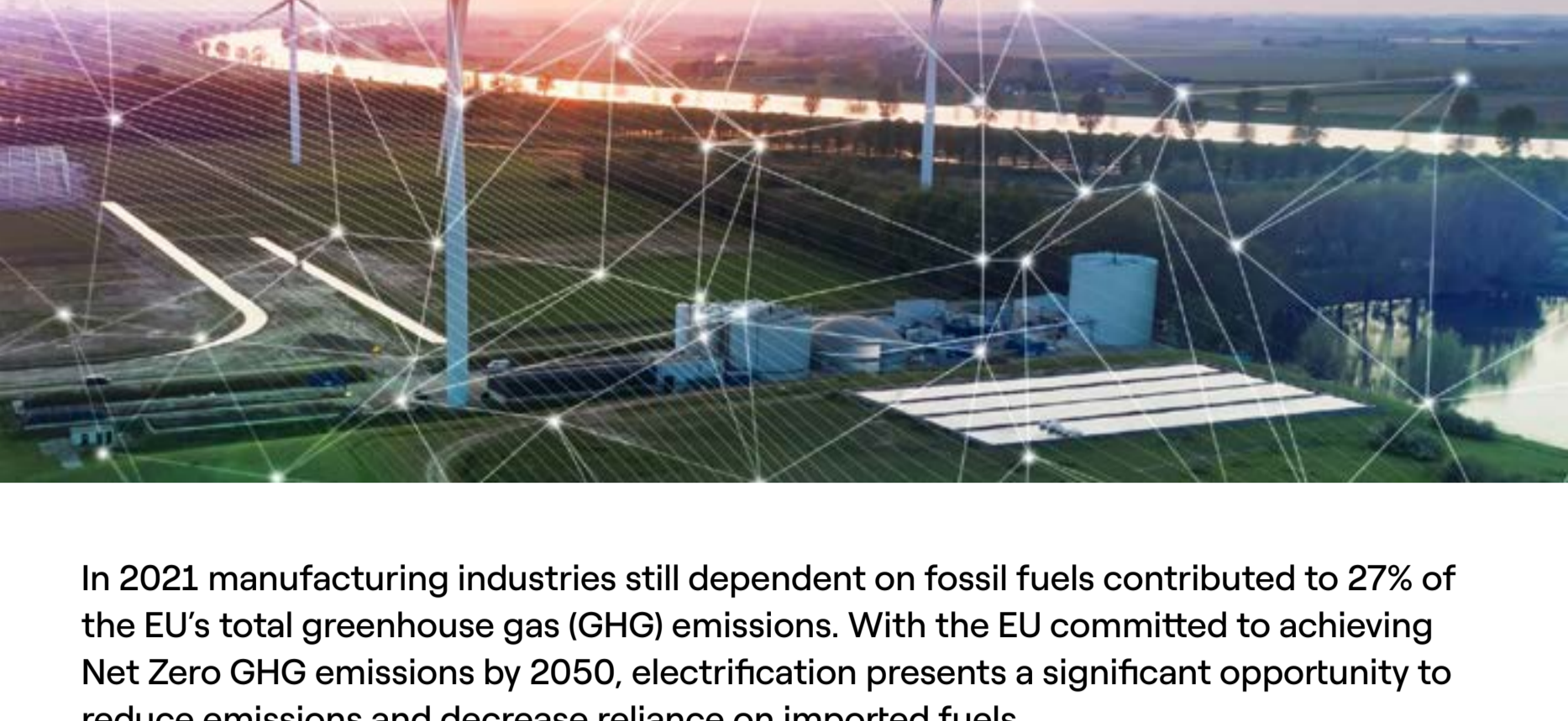


Enel Foundation Newsletter

December 2024

How to boost competitiveness through energy.



In 2021 manufacturing industries still dependent on fossil fuels contributed to 27% of the EU's total greenhouse gas (GHG) emissions. With the EU committed to achieving Net Zero GHG emissions by 2050, electrification presents a significant opportunity to reduce emissions and decrease reliance on imported fuels.

To identify shared solutions for decarbonizing Europe while enhancing industrial competitiveness, Enel Foundation, in collaboration with **Compass Lexecon** and **European Roundtable on Climate Change and Sustainable Transition (ERCST)**, conducted a study titled "Reviving Europe's Industrial Power: how to boost competitiveness through energy".

The findings are grounded in a rigorous approach, including: an **analysis of the technical and economic potential of direct and indirect electrification**; the **identification of non-economic barriers to industrial decarbonization** and support mechanisms for electrification. Finally, **a broad range of stakeholders have been engaged** through an open, innovative, and participatory process; feedback was collected during consultations and two dedicated workshops with representatives from key EU industries.

Building on these insights, the study eventually outlines **policy recommendations** aimed at fostering industrial transformation.

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The spillover effects of industrial decarbonization policies can either accelerate or hinder climate action.



On November 14th, in Baku, Azerbaijan, during the 29th United Nations Climate Change Conference (**COP29**), Enel Foundation, the Harvard Project on Climate Agreements, the Massachusetts Institute of Technology (MIT), and the Foundation Environment-Law Society co-hosted an official side event. The event showcased the presentation of "**Good Spillover, Bad Spillover? Industrial Policy, Trade, and the Political Economy of Decarbonization**", a new research paper by Michael Mehling, Deputy Director of MIT's Center for Energy and Environmental Policy Research.

Key findings from the study suggest how reframing climate policies can maximize the positive spillovers and mitigate the negative ones. Specifically, policies that distribute decarbonization costs across society tend to generate positive spillover effects while those that place direct private costs on emissions, like carbon pricing, often lead to negative spillovers and face strong political resistance, empowering opponents of climate action. Furthermore, the paper argues that international cooperation is essential to foster positive cross-border spillover effects, which are critical for global decarbonization.

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Energy security, independence, and cost-effectiveness are closely tied to global trade and geopolitical balances.



The geopolitical challenges of the energy transition are explored in a paper co-authored with LUISS. Grounded in environmental sustainability, energy transition is increasingly revealing its strategic dimension. Energy security, independence, and cost-effectiveness are closely tied to global trade and geopolitical balances. This creates a complex landscape of risks and opportunities in which the energy sector must navigate.

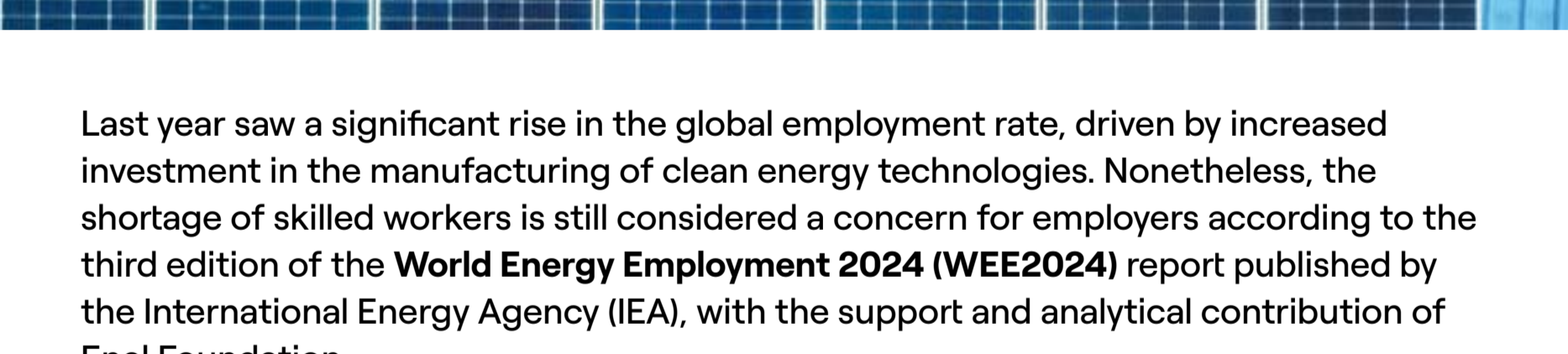
The energy transition reshapes key global dynamics, generating winners and losers, which can either accelerate or slow down the process. States' positions on the transition will be shaped by both international and domestic impacts, such as effects on competitiveness or industrial production.

The availability of resources and the ability to turn them into usable materials will be pivotal. Innovation will play a key role as a driver of cost reduction, efficiency, and decrease of materials, products, or processes that pose environmental, economic, or dependency-related risks.

All these factors suggest that the energy transition could **reshape international alliances and interdependencies** as we know them.

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The energy sector added 2.5M jobs last year though skills shortage is still a problem.



Last year saw a significant rise in the global employment rate, driven by increased investment in the manufacturing of clean energy technologies. Nonetheless, the shortage of skilled workers is still considered a concern for employers according to the third edition of the **World Energy Employment 2024 (WEE2024)** report published by the International Energy Agency (IEA), with the support and analytical contribution of Enel Foundation.

The number of jobs related to energy – particularly those linked to the clean energy sector – increased by 3.8% last year, reaching 67.5 million. This growth was primarily led by manufacturing and key clean technologies, such as solar PV, wind, and grids. In particular, power sector employment has surpassed 21 million, with over 75% in clean energy.

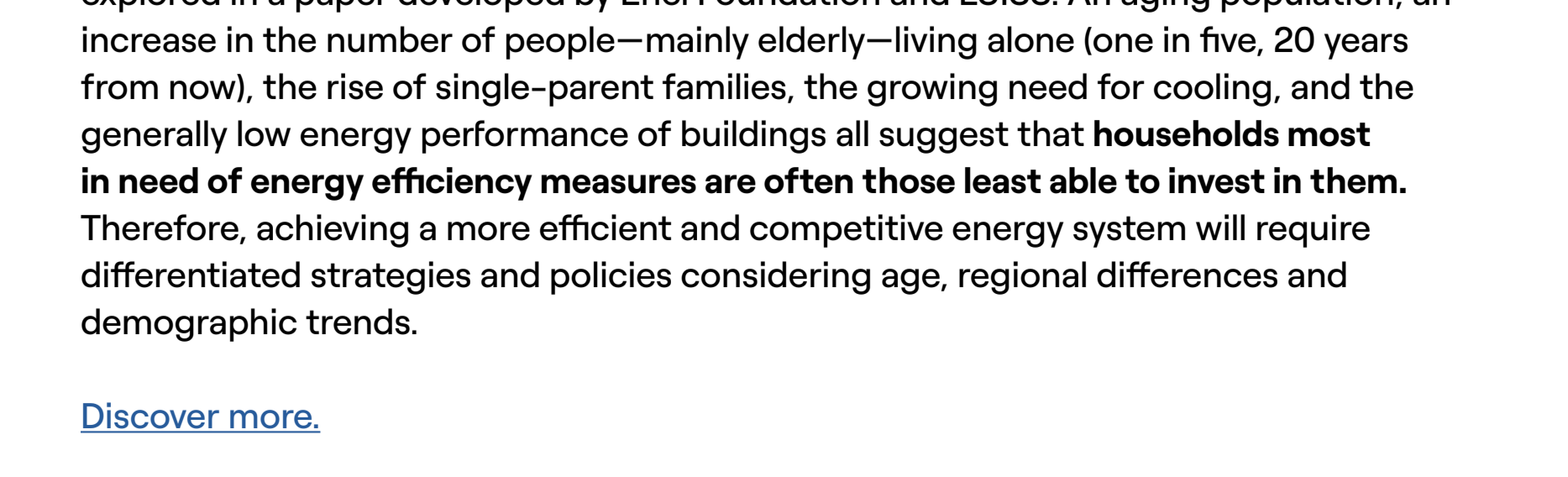
However, most respondents to the IEA's survey of over 190 energy employers across 27 countries reported the will to hire but difficulties to find qualified workers for nearly every occupation category.

"This report shows that **greater investment in skills and training is critical**. Governments, the private sector, and educational and training institutions must work together to improve the hiring pipeline, which will play an important role in shaping our energy future" declared Laura Cozzi, IEA's Director of Sustainability, Technology and Outlooks.

Understanding the **evolving workforce dynamics**, as well as the role of innovation, digitalization, and AI in shaping **new, non-linear career paths**, were central topics during the launch event of the WEE2024 report.

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Demographic trends will significantly influence families' energy consumption.



Demographic trends will significantly influence families' energy consumption, a topic explored in a paper developed by Enel Foundation and LUISS. An aging population, an increase in the number of people—mainly elderly—living alone (one in five, 20 years from now), the rise of single-parent families, the growing need for cooling, and the generally low energy performance of buildings all suggest that **households most in need of energy efficiency measures are often those least able to invest in them**. Therefore, achieving a more efficient and competitive energy system will require differentiated strategies and policies considering age, regional differences and demographic trends.

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