IREX EASY BUSINESS

UKRAINE
Sector Snapshot: Energy

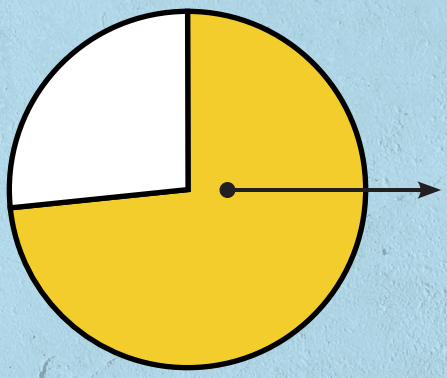
Introduction

Ukraine's energy sector has been heavily disrupted by Russia's unilateral invasion, with energy infrastructure becoming a primary target of missile attacks. By June 2024, 73% of the country's thermal-power-generating units had been rendered nonfunctioning, and only 25% of prewar generation capacity remained. Before 2022, the energy sector contributed nearly 3% of gross domestic product (GDP) and served as a net exporter of energy, underpinning the operation of all other industries. Rebuilding the sector is critical for enabling economic recovery across Ukraine and integrating the country into Europe's renewable energy landscape.

> **"Ukraine's energy transition hinges less on technology and more on people—modernization will succeed or fail based on how quickly the sector can develop and retain the specialized skills needed to run both legacy systems and new renewable infrastructure."**

MOST IN-DEMAND PROFESSIONS BY QUALIFICATION LEVEL

Professions	Skill level
Power engineers	HIGHLY SKILLED
Renewable energy specialists	HIGHLY SKILLED
Quality control engineers	HIGHLY SKILLED
Grid maintenance supervisors	HIGHLY SKILLED
Electrical technicians	SKILLED
Gas equipment repair mechanics	SKILLED
Boiler operators	SKILLED
Electricians for distribution networks	SKILLED
General helpers	UNSKILLED/SEMISKILLED
Maintenance workers	UNSKILLED/SEMISKILLED
Security personnel	UNSKILLED/SEMISKILLED
Assistants in distribution networks	UNSKILLED/SEMISKILLED



73% of the country's thermal power-generating units have been rendered **inoperative as of June 2024.**

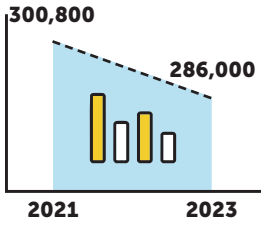
Labor Demand

What We Know: Ukraine's energy sector has seen a modest decline in total employment, dropping from approximately 300,800 workers in 2021 to 286,000 in 2023. While the net change in workforce size appears small, the sector faces acute shortages in highly specialized technical roles, including electricians, electrical engineers, dispatchers, and digital system specialists. These gaps are most pronounced in utilities, grid operations, and renewable energy companies adapting to modernized and decentralized production models.

Why it Matters: Even with stable overall employment numbers, the specialized nature of energy jobs means that shortages in key roles can significantly undermine energy reliability and stall the sector's transition to a smarter, greener system—both of which are essential for Ukraine's economic recovery.

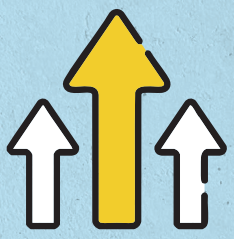
Three Key Takeaways

1. **1.3 job openings** for every registered unemployed person in **Ukraine's energy sector.**



2. Total employment in the energy sector fell from **300,800 in 2021** to **286,000 in 2023.**

3. Most **training institutions** are located in eastern and central Ukraine, while **job growth** is shifting toward western and central regions, creating a regional talent gap.



Sector workforce needs to be **increased by 47%** by 2032.

Recommendation: Establish international exchange programs focused on renewable energy expertise to build long-term workforce resilience, with structured knowledge-transfer components that position Ukrainian specialists to expand local expertise in grid modernization, renewable energy, and decentralized energy production. Prioritize cost-effective, targeted recruitment and retention incentives for experienced technical specialists in critical energy roles. Develop rapid upskilling and certification initiatives in coordination with major utilities to address immediate technical gaps while ensuring compatibility with EU energy systems and standards.

Pipeline and Supply Gaps

What We Know: Ukraine's energy-training system remains heavily oriented toward legacy Soviet-era infrastructure, with limited integration of competencies for renewable energy, smart grids, and modern digital systems. Training is primarily concentrated in eastern and central regions, creating regional mismatches with emerging energy-sector activity and needs in western and central Ukraine. Moreover, many programs still rely on classroom-based theoretical instruction, with relatively few offering practical, hands-on training aligned to current industry demands, particularly in renewables and modernization.

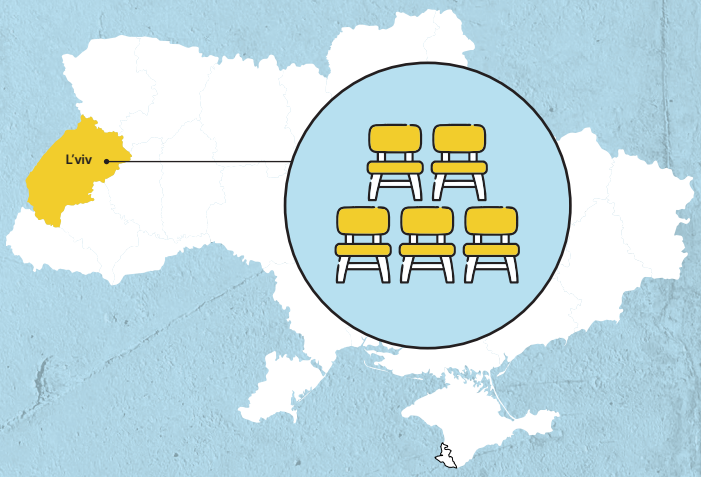
48% of companies reported having partnerships with universities and vocational education institutions.

Why it Matters: Without updating curricula and rebalancing training geographically, Ukraine risks a persistent lag in expert employees, which will slow both modernization and the adoption of decentralized, low-carbon energy systems. This mismatch threatens to limit the sector's ability to fill specialized roles and meet future operational and innovation needs.

Recommendation: Invest in rapid modernization of vocational and higher-education energy programs, updating curriculum through partnerships with international experts and energy companies that include modules on renewable technologies, digital grid management, and energy efficiency. Establish regional training hubs in western and central Ukraine to reduce geographic imbalances, and provide industry-led, hands-on instruction. Partner with leading European renewable and grid-technology companies to codesign and coinvest in scalable training models that can adapt to evolving market and technological demands.

Skills Gaps

What We Know: Ukraine's energy sector faces a discrepancy between the skills that workers have and those needed to operate and modernize the system. Employers report persistent shortages of highly skilled technical specialists—particularly electricians, electrical engineers, dispatchers, and energy technicians—whose work is essential for both day-to-day operations and the shift to modernized infrastructure. Emerging technologies are creating new skill demands in renewable energy integration, smart grid management, automation, and energy storage systems—areas where too few current workers have expertise. The problem is compounded by limited experience among younger workers, which slows their ability to take on complex technical roles without extended on-the-job training.



Regional variance: Lviv region has about **five vacancies** per unemployed job seeker.

Why it Matters: Without addressing these competency gaps, Ukraine's energy sector risks disruptions in service reliability, delays in renewable energy adoption, and reduced capacity to maintain and expand critical infrastructure. European energy partners, for their part, miss out on opportunities to re-engage an energy supplier.

Recommendation: Implement formal mentorship and knowledge-transfer initiatives, pairing experienced workers nearing retirement with midcareer and junior technicians. Donors and program implementers should consider establishing programs that position experienced workers as mentors prior to retirement. Expand employer-led apprenticeship and upskilling programs that target high-demand technical roles. Expand specialized training in renewables, digital energy systems, and storage technologies through short courses and certifications.

About IREX

IREX is a global development and education organization. We strive for a more just, prosperous, and inclusive world in which individuals reach their full potential, governments serve their people, and communities thrive. With an in-country presence in Ukraine for over three decades, IREX has been driving transformative change by investing in human capital, catalyzing innovation, and empowering communities. With a dedicated team operating across all regions at both national and local levels, IREX continues to ensure sustainable development through the war with a deep commitment to building a brighter future for Ukraine and Ukrainians.

About EasyBusiness

EasyBusiness is a nonprofit Think-and-Do tank with the mission to drive Ukraine's recovery and economic growth by fostering private-sector development, with a particular focus on advancing Ukraine's integration into the European Union. The organization combines research with actionable solutions to address barriers, empower local communities, and promote sustainable development. Guided by freedom, responsibility, initiative, trust, and respect, we work to create a thriving, competitive economy.

METHODOLOGY. This brief synthesizes data from quantitative labor market analysis, employer surveys, and expert interviews conducted by EasyBusiness. It focuses explicitly on labor demand, training pipeline issues, and skills gaps in Ukraine's manufacturing sector, presenting targeted recommendations to inform donor and private-sector interventions. Estimates for additional required employment in each sector are from the ILO.