CARBON-FREE EUROPE

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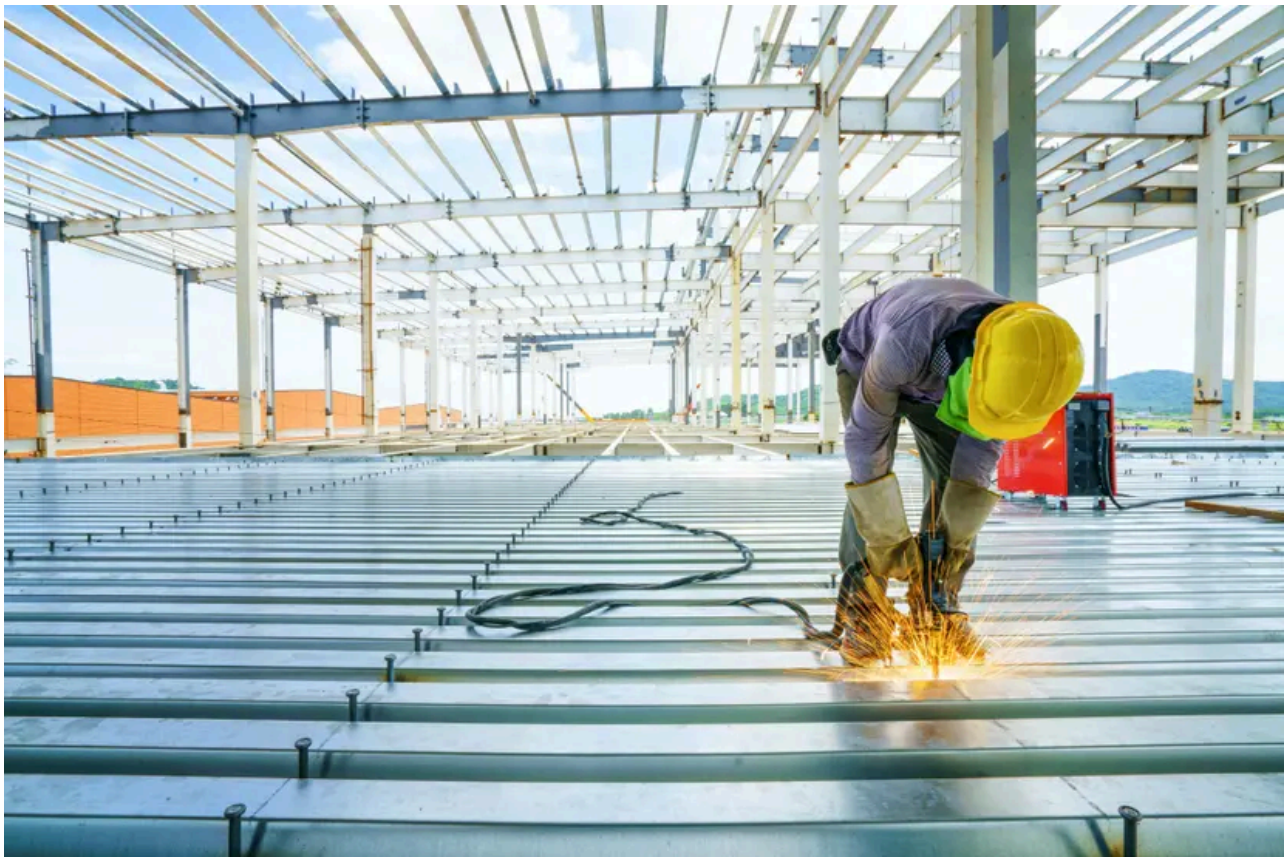
Decarbonisation as Industrial Strategy



Executive Summary - Report

Europe's Decarbonisation as a Driver of Jobs, Competitiveness, and Economic Resilience

The EU's clean energy transition is not just about climate. It is a strategic opportunity to revitalise its industrial base, create millions of high-quality jobs, and reinforce Europe's global

competitiveness. With major frameworks like the **Clean Industrial Deal (CID)** and the **Competitiveness Compass**, the European Commission is now explicitly linking decarbonisation to industrial strength, energy security, and long-term economic stability. This report advances that vision by quantifying the labour market impacts of a technology-inclusive pathway to net-zero by 2050.

Based on the data from the **2024 Annual Decarbonisation Perspective (ADP)**, this **Job Impact Analysis** shows that a full-scale transition to net-zero emissions by 2050 could generate **4.65 million net new jobs** across the EU. Crucially, this twice as many jobs as would be created under a business-as-usual scenario—**an additional 2.32 million jobs made possible by adopting a technology-inclusive approach that accelerates and diversifies decarbonisation**. These jobs will be anchored in clean energy manufacturing, infrastructure construction, and industrial supply chains, providing economic benefits well beyond emissions reduction.

A Technology-Inclusive Strategy Maximises Jobs and Industrial Output

The pathway to 4.65 million new jobs is clear, but only if the EU leverages all available technologies. A **technology-inclusive approach**, using a full mix of renewables, nuclear, hydrogen, and carbon management, is the most **cost-effective** and **resilient** strategy. It prevents over-reliance on any single technology, smooths price fluctuations, and allows each Member State to build flexibly on its strengths.

This approach avoids the structural and financial risks of narrow or delayed electrification. It distributes job creation across Europe and strengthens clean energy supply chains in manufacturing, construction, and services.

Clean Energy is Already Creating Jobs But Workforce Policy Must Catch Up

Decarbonisation does not eliminate jobs, it transforms them. **Construction** is the single largest driver of new employment, supporting both supply-side (generation, infrastructure) and demand-side (efficiency, electrification) deployment. **Industrial manufacturing and clean energy supply chains** will see sustained job growth. Emerging technologies like **hydrogen electrolysis** and **direct air capture (DAC)** will together add over half a million jobs by 2050, especially in infrastructure, engineering, and professional services.

However, job creation will not be evenly distributed over time, space, or sectors. **Demand-side jobs ramp up faster**, while supply-side investments create more total employment in the long run. Anticipating these shifts and training workers accordingly will be essential.

Moreover, while fossil fuel job losses will be offset by clean energy investments, this transition must be managed. **Job displacement will occur mainly in fossil fuel-producing countries outside the EU**, but Europe's own fossil-based workers must be supported through targeted reskilling. Without intervention, labour shortages, especially in construction, grid expansion, and manufacturing, will undermine the economic and emissions benefits of the transition.

Decarbonisation is a Competitiveness Strategy

Europe's industrial future depends on its ability to deliver clean energy at scale, supported by secure supply chains and a trained workforce. Smart policy design and effective, on time implementation will determine whether Europe captures or loses these economic benefits.

- Clean energy manufacturing, especially in wind, solar, batteries, and electric vehicles, must be scaled to prevent job leakage and supply vulnerabilities.
- Strategic investment in **public-private partnerships** can bridge financing gaps and support workforce development at scale.
- **Regulatory reforms** are needed to accelerate market access for new technologies like hydrogen and carbon removal.
- **A unified EU innovation strategy**, tied to employment outcomes, can outline the path to streamlining R&D funding and accelerating cleantech deployment and skills development together.

Europe has already taken important steps, but implementation momentum must accelerate. The CID, Net-Zero Industry Act, and Action Plan for Affordable Energy offer the right building blocks, but their success will depend on effective, timely implementation that actively links climate targets with industrial scale-up and labour market readiness.

A Strategic Window for Action

The next few years will determine whether Europe leads the global clean energy race or falls behind faster-moving economies.To ensure success, the EU must:

1. **Scale all clean energy industries** to secure long-term competitiveness.
2. **Invest in workforce development** to match labour supply with job demand.
3. **Align industrial, climate, and labour policy** to deliver on the promise of the CID and unlock job growth and competitiveness in parallel.

The energy transition is already underway. With the right decisions now, Europe can turn decarbonisation into the foundation of its next industrial era. **But without a skilled, ready, and supported workforce, even the best clean energy and industry plans will fall short**.

This report provides a clear, evidence-based roadmap.It quantifies job creation potential by year, sector, and Member States, and offers targeted policy actions to turn modelling into measurable economic impact in Europe.

Endnotes