citizenZ

THE CHALLENGES OF THE GREEN AND DIGITAL TRANSITIONS IN THE EU

The green and digital transitions are at the heart of the EU's vision for a sustainable, competitive, and resilient future. While they offer enormous benefits, these transitions also come with **significant challenges and trade-offs** across economic, social, political, and technological domains. Policymakers, businesses, and citizens must navigate these obstacles carefully to ensure that the transformation is inclusive and effective.

1 | Economic Challenges

Costs, Inequalities, and Industrial Risks

The shift to a green and digital economy requires **massive public and private investment.** The EU's Green Deal alone is expected to cost **€1 trillion** over a decade, while digital infrastructure and AI development demand billions more.

While large corporations can afford digitalization and green investments, **small and medium-sized enterprises (SMEs)** may struggle with the costs of adopting new technologies.

High Transition Costs

Unequal Access for SMEs

Competitiveness Risks

Job Disruptions

Stricter **green regulations** (such as carbon taxes and emissions limits) may increase costs for European businesses, making them less competitive compared to regions with lower environmental standards.

While new jobs will emerge in **clean energy and digital industries**, traditional sectors like **coal, steel, and automotive manufacturing** face job losses, requiring costly reskilling programs.

Example:

The EU's Fit for 55 plan to reduce emissions has led to protests from farmers and industry groups concerned about higher costs.

Co-funded by the European Union

citigen*Z

2 | Social Challenges: Digital Divide and Unequal Burdens

Digital Inequality

The EU's Digital Decade aims to ensure that 80% of adults have basic digital skills by 2030, but **rural areas, older populations, and lower-income groups** still struggle with access to training and technology.

Rising Energy Costs

While renewables lower costs in the long run, the transition away from fossil fuels has caused **short-term energy price spikes**, disproportionately affecting lower-income households.

Ethical AI & Automation Risks

Increased automation in digital industries could **replace low-skilled jobs**, while AI raises concerns about **privacy, bias, and surveillance.**

Public Resistance & Lifestyle Changes:

The move towards **electric cars, energy-efficient housing, and digital work environments** requires behavioral changes, which some citizens find difficult or unaffordable.

Example:

The rapid phase-out of combustion-engine cars by 2035 has sparked concerns over affordability and job losses in traditional car manufacturing.

3 | Political Challenges: EU Unity and Global Competition

Tensions Between Member States

Not all EU countries are transitioning at the same pace. Wealthier nations like **Germany and the Netherlands** can invest heavily in green and digital projects, while **Eastern and Southern European countries** face financial and structural challenges.

Geopolitical Risks

Reducing fossil fuel imports weakens ties with **energy-exporting countries** (e.g., Russia, Algeria), while competition for **rare earth minerals** needed for digital and green tech increases dependency on China.

Example:

The EU's ban on Russian oil and gas accelerated the green transition but also led to short-term energy shortages and inflation.

Dependence on Foreign Technology

The EU still relies on **non-European digital technologies**, including **semiconductors from Taiwan and AI from the US**, despite efforts to strengthen **European digital sovereignty** through the Chips Act.

Regulatory Challenges

The EU is leading global regulations on **AI (AI Act) and climate policies (Carbon Border Adjustment Mechanism)**, but businesses worry that **too many regulations could stifle innovation**.

Co-funded by the European Union

citigen*Z

Energy Demand of Digitalization

The digital transition itself increases **electricity consumption**—data centers, AI models, and cloud computing require massive amounts of energy, which must come from **renewable sources** to align with EU climate goals

Slow Infrastructure Rollout

Despite the Digital Decade targets, **5G expansion, fiber-optic internet, and semiconductor production** in some regions are slower than planned, delaying the benefits of digitalization.

4 | Technological Challenges:
Infrastructure, Cybersecurity, and Innovation Risks

Cybersecurity Threats

As Europe becomes more digital, it also becomes more **vulnerable to cyberattacks**. The EU is strengthening **cyber defenses**, but **hacking threats from Russia, China, and other actors** remain a major concern.

Risk of Digital Monopolies

The shift to digital business models increases **the market dominance of tech giants**, raising concerns about **data privacy, competition, and misinformation**.

Example:

The **growth of AI-based surveillance and data tracking** raises ethical concerns about **privacy and government overreach** in the digital era.

Co-funded by
the European Union

CONCLUSION: A NECESSARY BUT COMPLEX TRANSFORMATION

The green and digital transitions are essential for the EU's future, but they come with significant **economic, social, political, and technological challenges**.

To ensure a fair and sustainable transformation, the EU must:

- ✓ Invest in **affordable solutions** for citizens and businesses.
- ✓ Ensure **equal access to digital education and reskilling programs.**
- ✓ Strengthen **European technology** sovereignty while remaining competitive.
- ✓ Balance **climate ambition with economic and social stability.**

The success of these transitions will depend on how well the EU manages these risks, ensuring that no country, sector, or social group is left behind.

Co-funded by
the European Union