



GLOBAL EXPERIENCES AND NATIONAL PERSPECTIVES ON STRATEGIC
DIRECTIONS FOR EXPANDING GREEN EMPLOYMENT OPPORTUNITIES

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Abstract: *This research provides a comprehensive analysis of the structural reconfigurations within contemporary labor markets driven by the global transition toward a green economy. As emerging and developing nations align their national policies with the United Nations Sustainable Development Goals (specifically SDG 8 and SDG 9), the traditional employment landscape faces profound adjustments, shifting from carbon-intensive industries toward sustainable, clean-tech alternatives. By contrasting international benchmarks from Germany, China, and the United States against Uzbekistan's domestic strategic initiatives specifically the targets outlined in Presidential Resolution PR-436 this paper investigates the quantitative and qualitative vectors for expanding green employment opportunities. Employing a tripartite methodological matrix that evaluates absolute employment metrics, relative sectoral labor shifts, and subjective workforce adaptability, the study examines the operational challenges of executing large-scale ecological transitions. The empirical discussion highlights that while Uzbekistan's strategic goals (such as deploying 15 GW of renewable energy capacity and executing large-scale afforestation over 458,000 hectares in the Aral Sea basin) possess massive potential for job creation, their successful actualization remains heavily constrained by deep structural skill deficits.*

Keywords: *green economy, employment opportunities, labor market transformation, structural adaptation, human capital development, public investment multipliers.*

INTRODUCTION

The contemporary global economy is undergoing a fundamental structural reconfiguration driven by escalating climate challenges and the systemic transition toward carbon neutrality.

Institutionalised through the United Nations Sustainable Development Goals (SDG 8 and SDG 9), this shift requires modern labour markets to evolve rapidly. Empirical projections by the International Labour Organization (ILO) indicate that transitioning to a green economy could generate roughly 24 million net new employment opportunities worldwide by 2030, particularly in renewable energy, circular waste management, and sustainable transport ecosystems. However, this shift simultaneously threatens to displace carbon-heavy industries, making proactive labour adaptation an urgent necessity [1].

In Uzbekistan, this transformation is legally driven by Presidential Decree PF-158 and Resolution PQ-436, which incorporate green benchmarks directly into national labour strategies. Key strategic mandates include deploying 15 GW of solar and wind renewable energy capacities by 2030, which is estimated to generate between 15,000 and 45,000 permanent operational roles alongside 150,000 temporary construction jobs.

Concurrently, regional eco-initiatives such as the "Yashil Makon" project specifically the massive afforestation of 458,000 hectares in the vulnerable Aral Sea basin serve as



crucial regional employment drivers, requiring 50 to 100 workers per 1,000 hectares for seasonal and permanent forestry operations [2].

Despite these clear targets, a significant structural problem persists: expanding green initiatives do not automatically translate into immediate employment stability. The contemporary domestic labour market exhibits a sharp mismatch between the current competencies of the workforce and the highly technical requirements of emerging clean-tech positions [3]. Without strategic intervention, this skills deficit risks causing frictional unemployment and stalling key environmental infrastructure projects [1]. Consequently, this paper evaluates the strategic directions for expanding green employment opportunities in Uzbekistan [2]. By matching global experiences against localised parameters, this study aims to provide an actionable framework to maximise workforce productivity and ensure long-term socioeconomic resilience during the transition.

Methodology and Literature Review

The conceptual link between resource efficiency and labour optimisation integrates foundational economic theories with modern sustainable paradigms [2].

Classical theory dictates that efficient resource distribution establishes the baseline for structural labour stability (Smith, 1776; Ricardo, 1817).

This is augmented by Keynesian models, which assert that targeted state capital injections into public eco-infrastructure serve as a powerful multiplier for expanding productive employment opportunities during structural transitions [5].

Furthermore, applying Joseph Schumpeter's (1942) theorem of Creative Destruction to the green economy demonstrates that innovative clean technologies systematically phase out obsolete, resource-heavy industries, driving a qualitative upgrade in workforce profiles and creating new green occupations [4].

To evaluate these mechanisms empirically, this research applies a tripartite conceptual framework that synthesises absolute, relative, and subjective parameters [1, 4].

The absolute approach quantitatively measures the net statistical growth of green jobs within emerging sustainable sectors, whilst the relative approach evaluates cross-sectoral economic efficiency and structural labour shifts away from traditional industries. Finally, the subjective approach integrates qualitative, socio-psychological lenses to evaluate workforce sentiment, public interest, and adaptation to new environmental safety standards.

Combining these approaches allows for a robust screening of global empirical benchmarks against the structural parameters of Uzbekistan's domestic labour market [2].

Results and Empirical Discussion

A comparative analysis of global benchmarks demonstrates that strategic green transformations serve as a powerful engine for structural labour reallocation [1].

Germany's Energiewende framework successfully generated over 340,000 secure technical jobs within the renewable energy sector [6], whilst massive state-led clean energy investments in China established a manufacturing base supporting over 5 million eco-centric workers [7].

Similarly, the United States utilised its Inflation Reduction Act (IRA) to systematically target the creation of 1 million highly specialised green job profiles [8].



These international experiences demonstrate that clear, state-backed regulatory mandates are crucial for expanding industrial labour demand and shifting sustainable employment opportunities away from traditional carbon-heavy sectors [11].

When mapping these global models against national directives, the potential for domestic employment expansion becomes highly quantifiable [2]. The specific quantitative targets and empirical labour demand projections for Uzbekistan's green transition are structured in Table 1 [2].

Table 1: Quantitative Projections for Green Employment Opportunities in Uzbekistan by 2030

Green Initiative and Strategic Sector	National Baseline Targets	Projected Labor Market and Employment Impacts
Renewable Energy Infrastructure	Deploy 15 GW of solar and wind energy capacity [20].	15,000-45,000 permanent technical/operational roles [2]. -150,000 temporary construction and engineering jobs [2].
Ecological Forestry ("Yashil Makon")	Afforestation of 458,000 hectares in the Aral Sea basin [2].	23,000-46,000 local/regional employment opportunities [2]. Baseline demand of 50-100 workers per 1,000 hectares [2].
Industrial Energy Efficiency	20% energy intensity reduction across 25 major state enterprises [20].	Immediate structural demand for energy auditors, green tech engineers, and carbon tracking specialists [2].

As demonstrated by the structured projections, these environmental initiatives provide a solid baseline for generating substantial workforce demand [2].

However, this rapid sector growth simultaneously exposes a critical structural mismatch between existing labour skills and the technical requirements of newly emerging clean-tech occupations [13].

The contemporary domestic labour market currently faces sharp deficits in highly specialised fields, indicating an urgent need for smart-grid operators, renewable energy technicians, carbon footprint auditors, and circular economy waste managers [2, 13].

This structural imbalance indicates that expanding green employment opportunities cannot rely solely on raw infrastructure investments [2].

Its ultimate socioeconomic success depends heavily on a coordinated overhaul of national educational and training ecosystems to build a qualified workforce ready for green technological demands [11].

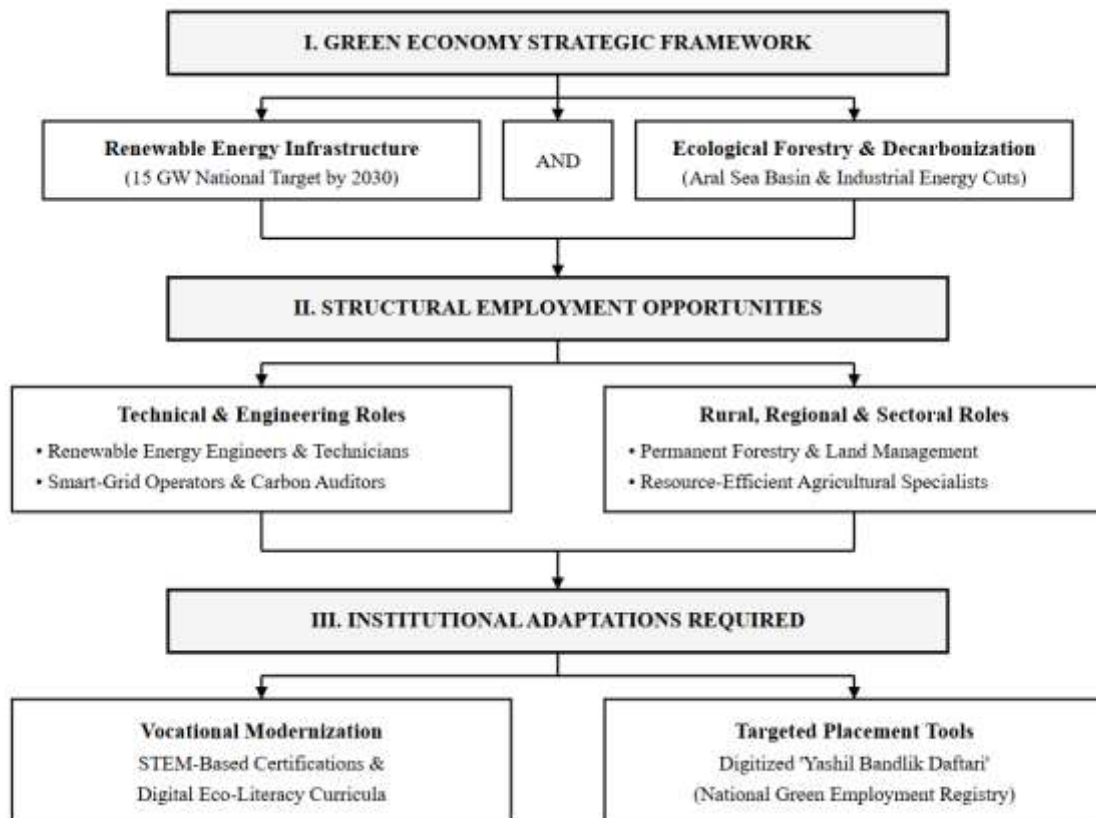
Consequently, bridging this macroeconomic gap requires a synchronised framework where capital infusions are directly coupled with active labour market policies and targeted enterprise-led training initiatives [2, 11].

This institutional synergy is what ultimately determines whether the green transition functions as a sustainable catalyst for net employment growth or becomes a driver of prolonged structural displacement across regional economies [3].

To visualise how these strategic drivers and institutional adaptations dynamically interact to reshape the domestic labour supply, the structural transition pathways are synthesised in Diagram 1 [2].



Diagram 1: Structural Pathways of the Green Economy and Employment Integration



Conclusion and Policy Recommendations

The foregoing analysis establishes that Uzbekistan's green economic transition presents a tangible and quantifiable opportunity for large-scale employment generation. However, the successful realisation of this potential is not automatic. The evidence from Germany's Energiewende, China's clean manufacturing expansion, and the United States' IRA-driven green jobs programme converges on a single conclusion: structural employment gains require the deliberate alignment of regulatory mandates, public investment, and human capital development [6, 7, 8, 11].

On the basis of this analysis, the following policy recommendations are advanced:

- Digitised Labour Market Tracking: Immediate deployment of the “Yashil Bandlik Daftari” (Green Employment Registry) to provide real-time monitoring of workforce transitions, skill gaps, and sectoral demand across green industries [2].
- VET System Modernisation: A systematic overhaul of national Vocational Education and Training frameworks to integrate STEM-based green certifications, digital eco-literacy programmes, and enterprise-accredited practicum placements in renewable energy and forestry operations [11].
- Regional Employment Corridors: Targeted investment in rural and peri-urban employment corridors linked to “Yashil Makon” afforestation zones, providing structured seasonal and permanent roles to reduce regional labour market imbalances [2].
- Public Investment Multipliers: Application of Keynesian investment-multiplier principles by coupling each unit of public green infrastructure capital with mandatory co-investment in active labour market policies and workplace reskilling programmes [5].



Collectively, these mechanisms position Uzbekistan's green transition not merely as an environmental imperative, but as a strategic instrument for sustainable socioeconomic development and long-term labour market resilience.

REFERENCES:

- [1] International Labour Organization. (2018). World Employment and Social Outlook 2018: Greening with Jobs. ILO Publishing, Geneva.
- [2] Republic of Uzbekistan. (2022). Presidential Resolution PQ-436 on the Comprehensive Development of the Green Economy and Expansion of Green Employment. Official Gazette of Uzbekistan.
- [3] World Bank. (2023). Skills for a Green Economy: Bridging the Competency Gap in Central Asia. World Bank Group Publications, Washington, D.C.
- [4] Schumpeter, J.A. (1942). Capitalism, Socialism and Democracy. Harper & Brothers, New York.
- [5] Keynes, J.M. (1936). The General Theory of Employment, Interest and Money. Macmillan, London.
- [6] Federal Ministry for Economic Affairs and Climate Action (BMWK). (2023). Renewable Energy in Figures: National and International Development, Status 2022. BMWK, Berlin.
- [7] International Renewable Energy Agency (IRENA). (2023). Renewable Power Generation Costs in 2022. IRENA, Abu Dhabi.
- [8] U.S. Department of Energy. (2023). Inflation Reduction Act: One Year In-Clean Energy Employment and Investment Impacts. DOE, Washington, D.C.
- [9] Smith, A. (1776). An Inquiry into the Nature and Causes of the Wealth of Nations. W. Strahan & T. Cadell, London.
- [10] Ricardo, D. (1817). On the Principles of Political Economy and Taxation. John Murray, London.
- [11] OECD. (2023). Greening Jobs and Skills: Labour Market Implications of Addressing Climate Change. OECD Publishing, Paris.
- [12] Republic of Uzbekistan. (2021). Presidential Decree PF-158 on the Strategy for Transition to a Green Economy for 2019–2030. Official Gazette of Uzbekistan.
- [13] Asian Development Bank. (2022). Green Jobs in Central Asia: Skills Demand, Gaps, and Policy Responses. ADB, Manila.
- [Bobojonov, 2025] Bobojonov, T. M. (2025). Yashil iqtisodiyotning ahamiyati va bandlik imkoniyatlari. Mehnat iqtisodiyoti va inson kapitali, 4(1), 81-94.