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Greening the Macro Economic Regime for Low Carbon Development

Pakistan stands at a critical juncture. Structural inefficiencies in the energy sector, fiscal constraints, and growing exposure to international climate standards are threatening macroeconomic stability and industrial competitiveness. Without bold and targeted reforms, Pakistan risks being left behind in the global shift towards low-carbon economies. This policy brief outlines key challenges and actionable policy pathways to realign Pakistan's macro-fiscal regime with its low-carbon development goals.

Key Messages

- Fixing the energy sector is key to fixing the economy. Circular debt, uncompetitive tariffs, and grid instability are macro-fiscal risks—targeted reforms can unlock stability and growth.
- Green exports need green energy. Without affordable, decarbonised power, Pakistan's industries risk losing ground in global markets under CBAM and emerging climate regulations.
- Grid modernisation is Pakistan's climate hinge point. Investing in storage, transmission, and market liberalisation will enable the clean energy transition and drive long-term resilience.

Pakistan's energy sector sits at the heart of a macroeconomic challenge—and a strategic opportunity. Decades of structural inefficiencies, from grid instability and high generation costs to fossil fuel dependence, are squeezing industrial productivity and driving large-scale industries towards off-grid, captive solutions. This shift drains demand from the national grid, deepens the financial strain on distribution companies, and accelerates the build-up of circular debt, threatening the stability of both fiscal and energy systems.

At the same time, global markets are tightening the rules of the game. Export-oriented sectors—critical to Pakistan's GDP, employment, and foreign exchange earnings—face rising pressure to meet evolving international climate, such as the Ecodesign for Sustainable Products Regulation (ESPR), Carbon Border Adjustment Mechanism (CBAM), Corporate Sustainability Reporting Directive (CSRD). Without affordable, low-carbon energy, Pakistan's exports riskpunitive tariffs and eroded market access.

These challenges are not isolated; they are interconnected and reinforcing. Regressive subsidies distort price signals, elevated interest rates limit capital flows, and the absence of a coherent long-term policy framework keeps investment in renewable energy on the sidelines. The result is a lock-in to costly, high-emission energy pathways that threaten economic competitiveness and climate ambition alike.

Key Challenges

Despite progress in clean energy (55% of generation), the national grid is unable to reliably absorb intermittent renewables. Periods of low demand and weak infrastructure force curtailment, while the lack of battery energy storage systems (BESS) and outdated transmission lines delay large-scale adoption. Unless urgent upgrades are made, Pakistan risks missing its 60% clean energy target by 2030 and undermining industrial decarbonisation efforts mandated by global frameworks such as the EU's CBAM.

Fiscal Constraints and Energy Pricing Disparities

The energy sector is weighed down by regressive subsidies, rising capacity payments, and a mounting circular debt crisis. Electricity costs remain uncompetitive at PKR 15/kWh, undermining industrial growth and exports. A surge in off-grid solar adoption (30,000 MW imported in three years) is further eroding DISCO revenues and worsening financial instability. Without tariff rationalisation and better cost recovery, the energy sector will remain a drag on the economy.

Investment Deterrents and Policy Fragmentation

The absence of a long-term energy transition strategy deters private and climate-aligned investments. Misaligned federal-provincial strategies, limited access to concessional finance, and weak institutional coordination are further compounding implementation challenges. This risks locking industries into high-cost, high-emission systems that threaten both climate and economic goals.

Policy Recommendations

Accelerate Competitive Trading Bilateral Contract Market (CTBCM) and Renewable Procurement
Fast-track the implementation of the CTBCM to enable industries to procure renewable energy at 50-70% lower costs. This will generate demand for clean power, reduce fossil fuel dependence, and enhance export competitiveness under CBAM and the Corporate Sustainability Due Diligence Directive (CS3D)

Empower Industry with Competitive Energy Solutions
Introduce economically feasible Use of System Charges under CTBCM to enable the industry to leverage the liberalised market for reliable, sustainable, and regionally competitive electricity, enhancing our exports' competitiveness in the global market through power sector liberalisation and green growth

Mandate Carbon Audits and Green Budgeting
Introduce carbon emissions reporting on electricity bills; allocate 20-25% of the Public Sector Development Programme (PSDP) to low-carbon infrastructure and green projects. These actions will support CBAM compliance, attract climate finance, and promote green industrialisation.

Promote Rationalised Net Metering
The national net metering framework should rationalise tariffs, simplify regulatory procedures, and integrate smart grid and storage solutions. Smart subsidies, industrial incentives, and access to climate finance will enable upscaling, ensure social equity, and enhance grid stability.

Modernise the Grid for Renewable Integration
Deploy battery storage, distributed energy resources (DERs), synchronous condensers, and STATCOMs to enhance grid flexibility. Introduce time-based pricing and support demand-side management through Independent System and Market Operator (ISMO) to improve energy use efficiency, reduce costs, and enable integration of intermittent renewables. These upgrades will reduce CO2 emissions from 340g/kWh to 120g/kWh by 2035.

Utilise Policy Based Loans and Climate Finance for Infrastructure
Leverage the Policy Based Loans and concessional climate finance to modernise infrastructure, reduce fiscal stress, and transition to a low-carbon, export-driven economy. Strategic use of concessional funds will lower borrowing costs and catalyse long-term, sustainable growth.

Prioritise Green Skills Development
Promote green skills programs within the national technical and vocational education frameworks to equip the workforce with competencies in sustainable technologies and practices. Green skills will boost productivity, lower environmental and carbon footprints, and improve alignment with global green standards.

Enhance Policy Coordination and Institutional Capacity
Align federal and provincial climate and energy policies, strengthen institutional coordination, and ensure dedicated climate finance in PSDPs. Public investments should focus on upgrading transmission and distribution infrastructure over expanding generation. Promote innovative financing mechanisms and region-specific technologies to deliver resilient and cost-effective energy solutions across provinces.

Pakistan has a narrow but critical window to reset its macro-fiscal trajectory and lead with climate-smart policy. Bold, coordinated reforms today can unlock a resilient, low-carbon economy—one that powers growth, protects exports, and delivers energy security for generations to come.

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