# Crafting a Just Energy Transition in North Africa

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North Africa stands at a pivotal crossroads today, one which has the potential to transform the future of a region caught between the fading grip of fossil fuels and the urgent promise of renewable energy. While the previous decades were marked by important improvements in economic and energy indicators, the renewable energy transition presents an unprecedented opportunity to overcome the middle-income trap. For North Africa, this opportunity is clearer than ever as RES technologies become cheaper, offering the potential to position the region as a competitive player in low-carbon value chains. At the same time, strategic investments in renewable energy must deliver tangible economic returns, ensuring growth does not come at the expense of sustainability. As each North African country designs its own energy transition pathway, the challenge is clear: to decouple fossil fuels from economic expansion, while guaranteeing affordable and secure energy for all.

## The Regional Energy Landscape

Blessed with abundant solar irradiation and strong wind corridors, the region holds immense potential to become a clean energy powerhouse. Recognizing their potential, countries across the region have established ambitious renewable energy targets through their Nationally Determined Contributions (NDCs). These commitments have been accompanied by tangible progress in strengthening policy frameworks and regulatory environments to accelerate the energy transition. Yet despite progress in integrating renewables into power generation in the last decade, North Africa remains heavily reliant on fossil fuels for its overall energy needs, with natural gas and oil as the primary sources – and coal still playing an important role in Morocco.

Although some similarities exist, energy transition pathways in North Africa are diverging due to varying economic priorities, resource endowments and policy approaches. Morocco has made significant progress with ambitious renewable energy investments, targeting 52% of its electricity from renewables by 2030 through large-scale solar and wind projects, while also positioning itself as a green hydrogen exporter. Egypt, meanwhile, is balancing important gas discoveries with rapid utility-scale solar and wind deployments, including the Benban Solar Park, and aims to supply 42% of its electricity through renewables by 2030. Tunisia and Algeria, though slower in adoption, are gradually integrating solar and wind energy, but remain constrained by fossil fuel dependencies. Libya's renewable energy transition has been hindered by political instability (IRENA, 2023).

These differing pathways unfold against a backdrop of geopolitical competition where energy cooperation in the region remains fragmented. Indeed, beside some Mediterranean-level energy cooperation initiatives, North African countries predominantly gear their energy ties toward the European Union, their principal economic partner. Unsurprisingly, Europe also views North Africa as indispensable for energy security, particularly for cost-effective solar and hydrogen imports, which are central to the EU's diversification goals. Moreover, the European Union's drive to reshore and nearshore critical supply chains presents an opportunity for North Africa – but one that comes with urgent decarbonization demands.

As European industries seek alternatives to distant Asian suppliers, North Africa's proximity, trade agreements and low labour costs position it as a natural beneficiary. However, the success of such a shift will depend on securing the financing and technology transfer needed to decarbonize at the required pace, ensuring the region does not become merely an outsourcing hub, but instead a true partner in Europe's green industrial transition.

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On the other hand, this traditional North-South dynamic is increasingly challenged. In recent years, the Gulf states and China have deepened their influence, investing in infrastructure and renewables. For instance, a Morocco-UAE consortium recently announced an $11 billion investment in strategic water and energy infrastructure (MJCC, 2025), while Saudi Arabia is financing large-scale renewable energy (RES) and green hydrogen initiatives in Egypt and Morocco. As for China, it has expanded investment into wind energy and electric vehicle battery systems, seizing the opportunity to maintain access to key markets in the face of growing trade restrictions.

## The Transition Equation: Diversification and Not Only

The energy transition represents the cornerstone of North Africa's sustainable development, intertwining energy independency, economic growth and climate resilience. By harnessing its abundant renewable resources strategically, the region can simultaneously meet surging energy demand, reduce fossil fuel dependency, and unlock value-added industrial opportunities. This transformation is not just about replacing energy sources but also about reshaping economies to retain economic value and democratize benefits.

This requires addressing a dual challenge: upgrading the "hardware" (scaling up renewable energy sources and modernizing infrastructure), while developing the "software" (building technical capacity and strengthening policy and regulatory frameworks).

### Energy (and Economic) Diversification

North Africa faces a pressing need to diversify its economies beyond traditional energy sectors, and it is important for both energy exporters and importers, though for different reasons.

For exporters like Algeria and Libya, diversification reduces dependence on volatile hydrocarbon revenues and prepares economies for a post-fossil-fuel future. For importers like Morocco and Tunisia, which already face energy insecurity, diversification – through renewable energy development, green industrialization and high-value sectors like technology or green hydrogen – can strengthen economic resilience, create jobs and reduce reliance on imported fossil fuels. The EU's CBAM (Carbon Border Adjustment Mechanism) further raises the stakes for all North African economies, as carbon-intensive exports like steel, cement and fertilizers risk becoming uncompetitive. Thus, diversification is a shared priority to build sustainable, balanced economies.

### Infrastructure and Grid Modernization: Overcoming Fragmentation

The region's renewable energy ambitions demand equally ambitious grid upgrades and flexibility. As solar and wind projects multiply, new high-capacity transmission lines must link these remote installations to urban demand centres. At the local level, reinforced distribution networks are essential to absorb both rising electricity consumption and the surge in distributed solar generation. Smart grids also play an important role in this process as they automatically adjust to changes in solar and wind power, keeping electricity flowing smoothly and pre-

venting blackouts. The ultimate prize lies in creating interconnected smart grids capable of managing renewable surpluses and deficits across the region, though this vision remains constrained by today's fragmented infrastructure and geopolitical barriers.

### The Human Capital Challenge

North Africa's shift to a green economy cannot succeed without parallel investments in its people. While policies and infrastructure set the framework, the region's workforce must be equipped to meet the demands of emerging renewable energy sectors – from managerial skills to solar and wind farm maintenance, green hydrogen production and smart grid operation. This skills gap is particularly urgent in fossil fuel-dependent communities, where job losses in traditional energy sectors could deepen economic inequities if not proactively addressed.

To bridge this divide, an important amount of upskilling and reskilling programmes will be needed, blending vocational training for technical roles (like solar panel installation or turbine repair) with advanced education in project management and energy system design. Public-private partnerships will also be key, ensuring training aligns with industry needs while fostering local entrepreneurship in green technologies. Without this focus on human capital, a mismatch could form between the burgeoning renewable energy projects and the skilled labour required to realize them – jeopardizing the just transition's promise of inclusive growth.

### Financing the Transition

Investment in North Africa's power sector has remained steady over the past decade, peaking at $5.7 billion in 2017 before dropping to $2.4 billion in 2022. While transmission investments fell by 20% (2019-2020) (IRENA, 2023), power generation stayed stable, with Egypt and Morocco dominating. Solar PV/thermal projects received 60% of funding, followed by wind (27%), and Morocco led in solar investments. Unlike global trends, the public sector drove 46% of renewable financing (2013-2020), enabling private investments via reforms, IPPs and tools like FiTs and auctions. DFIs and multilateral institutions supported projects with nearly $9 billion in loans and guarantees (2011-2020), yet private investment still lags behind the region's potential.

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Utility-scale renewable projects require substantial upfront capital, yet perceived risk perception remains high due to regulatory uncertainty and currency instability in some cases. According to the IEA, private clean energy financing in emerging economies must increase from $135 billion annually to over $1 trillion by the early 2030s to meet climate targets (IEA & IFC, 2024).

### The Integration Imperative

The large-scale extraction and global trade of fossil fuels from a limited number of nations has led to the globalization of energy markets, making many countries dependent on distant energy sources and integrating energy diplomacy into foreign policy. However, the transition to renewables enables greater energy self-sufficiency, reducing reliance on international fossil fuel trade, and enhancing the importance of regional energy production, though global supply chains for clean energy technologies will remain essential (IRENA, 2024). While each country's energy transition path differs, renewables inherently favour interconnection because green energy thrives on shared infrastructure. A regionally integrated grid could balance Morocco's solar variability with Algeria's wind potential and Egypt's hydropower reserves, forging a more stable and efficient renewable energy network. According to MED-TSO's Masterplan of Mediterranean Interconnections, several electricity interconnection projects are in the pipeline, but intra-regional electricity exchange remains far below its potential, with current trade vol-

umes failing to match the region's shared grid capacity and renewable energy ambitions. This issue is further compounded by geopolitical barriers. The decades-long freeze in the Arab Maghreb Union, driven largely by the Algeria-Morocco tensions, has stifled energy cooperation just when it is needed most. Third-party mediation, whether through the African Union or EU-backed incentives, may be necessary to revive dialogue. Regional integration is not just an economic opportunity; it is a strategic imperative to avoid fragmentation.

## Learning from the Past: This Energy Transition Must Be Different

A just energy transition represents a fundamental reimagining of how societies produce and consume energy, one that prioritizes equity, inclusion and redress alongside decarbonization. It acknowledges that the shift from fossil fuels to renewable systems cannot be considered successful if it replicates or deepens existing inequalities, whether between nations, within communities or across generations. At its core, justice in this context demands that the burdens and benefits of transition are distributed fairly, with particular attention to those most vulnerable to economic disruption and climate change impacts.

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For North Africa, this means confronting hard questions: What strategies can oil- and gas-reliant economies use to accelerate their transition to renewable energy while ensuring a just transition for workers and affected regions? How can the region harness its immense renewable resources to prioritize local development and industrialization needs? And how can it cultivate mutually beneficial partnerships with its global partners?

The measure of success will therefore not be gigawatts installed alone, but whether the transition narrows inequality, empowers marginalized groups and builds resilience against the climate disruptions already underway. The decisions made in this decade will determine which path prevails. The time to shape them is now.

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