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Sector: Energy

TOP TEN GLOBAL CHALLENGES FOR ENERGY TRANSITION

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ENERGY SECURITY & RELIABILITY

CHALLENGE:

Globally, nations are focused on seeking to ensure reliable and affordable energy supplies. In developed economies, where public opinion is increasingly supporting green energy, there is a particular emphasis on reducing dependence on fossil fuels, especially given recent geopolitical conflicts and market volatility.

RESOLUTION

Diversify energy sources (types and sources), invest in grid modernisation (improve infrastructure), and foster regional energy cooperation to share resources and stabilise supply.



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OUTDATED AND INADEQUATE INFRASTRUCTURE

CHALLENGE:

Existing grids and infrastructure are often designed for centralised fossil fuel generation, not for distributed renewable energy, which brings unique storage and timing of generation issues.

RESOLUTION

Upgrade and expand energy infrastructure, integrate advanced technologies for grid management, and invest in interconnections between regions and countries. Consider more focus on micro grids to support locally generated renewable energy.



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FINANCING AND INVESTMENT GAPS

CHALLENGE:

High upfront costs, perceived risks, and disparities in investment between developed and developing countries hinder progress.

RESOLUTION

Mobilise blended finance, green bonds, and risk-mitigation tools to attract private capital in emerging markets. Strengthen global support for developing nations to adopt transition fuels and scale renewables, backed by effective policies, incentives, and regulations.



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TECHNOLOGICAL MATURITY AND INTEGRATION

CHALLENGE:

Many renewable and storage technologies are not fully mature or integrated, limiting their reliability and scalability. Others have significant challenges.

RESOLUTION

Accelerate R&D, pilot projects, and deployment of emerging technologies such as advanced batteries, hydrogen, and carbon capture. Developments for alternative solutions to lithium batteries are beginning to show promise.



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SUPPLY CHAIN AND CRITICAL MINERALS

CHALLENGE:

Limited access to critical minerals (e.g., lithium, cobalt, rare earths) and vulnerabilities in global supply chains.

RESOLUTION

Diversify supply sources, invest in recycling and alternative materials, and strengthen international cooperation on supply chain resilience. Seek to divert more investment into alternative energy storage solutions to reduce reliance on lithium batteries.



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POLICY AND REGULATORY UNCERTAINTY

CHALLENGE:

Inconsistent or outdated policies and regulations slow the adoption of renewables and create uncertainty for investors.

RESOLUTION

Harmonise regulations, provide long-term policy certainty, and implement supportive measures such as feed-in tariffs and carbon pricing. Governments need to ensure policies and regulations encourage transition.



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SOCIAL AND ECONOMIC DISLOCATION

CHALLENGE:

Transitioning away from fossil fuels can disrupt communities, industries, and workers dependent on traditional energy sectors.

RESOLUTION

Implement just transition policies, retrain workers, and support affected communities with economic diversification and social safety nets. Ensure adequate support for equipping traditional energy workers with the required energy transition and renewables skills.



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GLOBAL INEQUALITY AND ACCESS

CHALLENGE:

Unequal access to clean energy and technology, particularly in developing countries, perpetuates energy poverty and limits global progress.

RESOLUTION

Channel international financing, technology transfer, and capacity-building to the Global South, and tailor solutions to local needs. Support implementation of micro grids and decentralised energy generation to increase energy penetration, especially in remote rural areas.



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MANAGING RENEWABLE ENERGY VARIABILITY

CHALLENGE:

The intermittency of wind and solar power requires robust storage and flexible demand management.

RESOLUTION

Invest in storage technologies (batteries, pumped hydro), demand response systems, and hybrid generation solutions.



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POLITICAL AND GEOPOLITICAL TENSIONS

CHALLENGE:

Competing national interests, trade restrictions, and geopolitical rivalries can disrupt collaboration and slow the transition.

RESOLUTION

Foster international dialogue, multilateral agreements, and trust-building to ensure coordinated action and mitigate trade conflicts. In many ways this can be the biggest obstacle.



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DRIVING SOLUTIONS ACROSS BORDERS

At Moore, we support governments, investors, and energy innovators across the world to overcome structural challenges and unlock real transition outcomes.

From audit and assurance to ESG, supply chain resilience and cross-border investment — our global network is ready to help you thrive in the future of energy.

Get in touch with our
energy experts

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