

POLICY BRIEF

Target:

Universal access to electricity by 2030
100% Electrification



Zambia's Energy Future

Executive Summary

Zambia's Energy Compact is a national commitment under the Mission 300 to deliver universal, affordable, and sustainable energy access by 2030 enshrined in the Sustainable Development Goal (SDG7), with a particular focus on accelerating renewable energy deployment and expanding productive uses of energy. Achieving these ambitious goals hinges on robust private-sector participation in financing, technology deployment, mini-grids, commercial and industrial solar, energy storage, e-mobility, and clean cooking solutions. However, private investment remains constrained by regulatory hurdles, financing risks, limited project pipelines, and institutional fragmentation. This brief offers an accessible analysis of Zambia's current energy landscape, highlights the essential role of private actors, and provides actionable recommendations grounded in national policy frameworks to catalyse a sustainable energy transition.



Zambia's Energy Compact aligns with the United Nations Sustainable Development Goal 7 and Zambia's Vision 2030. It commits to:



Achieving universal access to modern, clean energy services by 2030.



Increasing renewable energy generation capacity, targeting 10,000 MW installed capacity by 2030, with renewables comprising a significant share.



Expanding energy access for productive sectors including agriculture, industry, water, and telecommunications.



- Promoting equity through job creation, gender inclusion, and local manufacturing.



Diversifying the energy mix to reduce climate vulnerability from hydropower dependency.



The **Integrated Resource Plan (IRP)** outlines a 30-year roadmap for power sector investment estimated at \$11.6 billion by 2030, incorporating \$7.2 billion for renewable generation and about \$2.2 billion for rural and off-grid electrification.

The **Zambia Energy Compact** estimates total investment needs around \$11.9 billion by 2030, of which approximately 82% (\$9.5 billion) is expected from the private sector.

The Role of the Private Sector in Zambia's Energy Compact

Financing and Capital Mobilization

Private investors are critical for supplementing public funds by financing renewable energy generation, storage, and distribution infrastructure. Innovative blended finance mechanisms such as public-private partnerships, private equity funds, green bonds, and carbon markets are expanding capital flows to energy projects.

Technology Deployment and Innovation

Private companies drive adoption of solar commercial and industrial (C&I) systems, battery energy storage solutions (BESS), decentralized mini-grids, and e-mobility. New business models like pay-as-you-go and energy-as-a-service improve affordability and expand access.

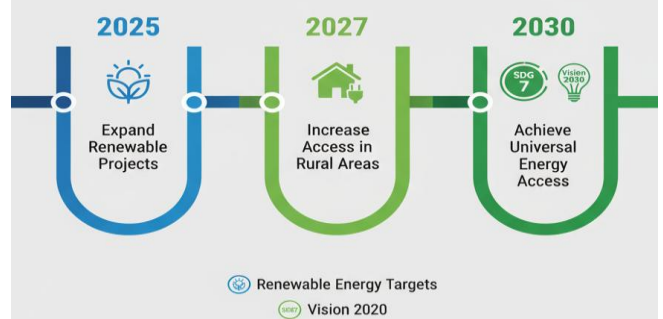
Productive Uses of Energy

Private enterprises provide energy solutions for irrigation, cold storage, milling, water pumping, and small manufacturing, stimulating rural economic growth in partnership with SMEs and cooperatives.

Clean Cooking and Energy Efficiency

Firms supplying LPG, ethanol, biofuels, and improved cookstoves mitigate household air pollution and deforestation, contributing to health and environmental gains.

ZAMBIA'S ENERGY ACCESS GOALS TIMELINE



Job Creation and Skills Development

The energy sector employs technicians, installers, engineers, and supports local manufacturing capacity, with opportunities to expand through training and education partnerships.

Local Value Chain Development

Promoting manufacturing, assembly, maintenance services, and compliance with standards by private suppliers will ensure energy solutions are sustainable and locally relevant.



Opportunities for Policy and Market Reforms

1. Regulatory Clarity and Predictability

To accelerate private-sector investment, Zambia should prioritize finalizing and operationalizing net-metering and wheeling regulations, refining mini-grid tariff structures, establishing clear standards for C&I solar and storage systems, and fully implementing a digital one-stop licensing platform.

2. Private Sector Engagement Platforms

Establish a Private Sector Roundtable to monitor and evaluate the Energy Compact implementation and conduct periodic technical working groups with developers, financiers, SMEs, and other stakeholders.

3. Investment Incentives and Risk Mitigation

Implement Value added Tax (VAT) and duty exemptions for certified renewable technologies, performance-based incentives for mini-grid and productive use developers, and partial risk guarantees via development banks and climate funds.

4. Innovative Financing Instruments

Promote green bonds, carbon credit trading, results-based financing, and securitisation models to broaden access to capital for rural electrification and clean cooking.

5. Local Manufacturing and Skills Development

Support local assembly of solar panels, batteries, and cookstoves, alongside expanding TEVET-accredited technical skills training programmes.

6. Research and Innovation

Develop a coordinated research and innovation framework, anchored by structured university–industry partnerships to support energy technology adoption, workforce development, and knowledge transfer.

7. Scaling Productive Energy Use

Integrate private sector energy solutions into agriculture and water management programs, promote solar-powered irrigation and agro-processing mini-grids, and support anchor load models with schools, health facilities, telecommunication towers, and SMEs.

8. National Clean Cooking Strategy

A comprehensive clean cooking strategy with explicit private-sector pathways will unlock investment, streamline market development, and ensure that clean cooking solutions reach households nationwide. This is critical for meeting Zambia's energy access targets and improving health outcomes, especially for women and children.

Challenges Limiting Private Sector Participation



1. Regulatory and Policy Gaps

Regulatory uncertainty persists due to slow licensing processes, unclear tariff frameworks for off-grid and C&I projects, and uncertainties and imperfections for key regulations required by the private sector (e.g. use of system agreements, net metering etc.).



2. Limited Access to Finance

High local borrowing costs, absence of comprehensive risk mitigation instruments, and limited early-stage project preparation funding sources hinder investment.



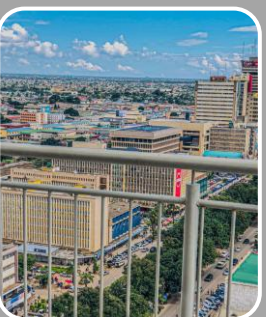
3. Project Preparation Ecosystem Weaknesses

The energy sector continues to experience a limited pipeline of bankable projects due to inadequacies in project preparation. Key gaps include insufficient feasibility studies, incomplete load assessments, insufficient options for bankable off-take, limited geospatial planning capacity and constraints to Grid Access. These shortcomings reduce the pipeline of viable projects.



4. Import Dependence and Cost Barriers

Heavy reliance on imported solar panels, batteries, and components increases costs and constrains local industry development, exacerbated by taxes, duties, and exchange rate volatility.



5. Institutional Coordination Deficits

Fragmentation across the Ministry of Energy, regulatory bodies (ERB, REA), utility (ZESCO), standards authority (ZABS), and local governments complicates policy implementation.

Policy Recommendations

- 1. Policy Coherence:** Develop an Integrated Private Sector Roadmap aligning energy, investment, and industrial policies with clear timelines and targets.
- 2. Efficient Project Development:** Implement a consolidated, digital one-stop licensing and permitting system to simplify procedures, harmonize regulatory requirements, and shorten approval timelines. This will lower costs for developers, enhance transparency, and create a more enabling environment for private-sector investment.
- 3. Targeted Financial Support:** Expand government-backed partial risk guarantees and blended finance partnerships with development finance institutions and local banks.
- 4. Local Participation:** Strengthen local value chains by incentivizing assembly, supplier development, and maintenance services.
- 5. Clear Direction:** Mainstream private sector participation in integrated resource planning using data-driven tools to identify optimal project sites.
- 6. Increased transparency:** Publish clear tariff and interconnection rules and update stakeholders regularly through official channels.

Conclusion

Zambia's path to achieving its Energy Compact objectives lies in mobilising the private sector through regulatory reforms, clear derisking incentives and coordinated institutional frameworks. Unlocking private capital and innovation is critical to expanding clean energy access, reinforcing energy security, and driving sustainable development. Zambia's leadership in forging industry partnerships and enabling policy frameworks will position the country as a regional renewable energy hub by 2030. Zambia Renewable Energy Association (ZARENA) and the Global Renewables Centre under the University of Strathclyde (UoS) will continue to advocate for the multi-sector collaboration that will accelerate the deployment of renewable energy solution in Zambia.

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