Achieving Mission 300

INCLUDE

KNOWLEDGE PLATFORM ON INCLUSIVE DEVELOPMENT POLICIES

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The INCLUDE Knowledge Platform actively participated in the 2025 Sustainable Energy for All (SEforALL) Global Forum, held from 12-13 March in Bridgetown, Barbados. This biennial event brought together over 1,300 leaders from government, industry, civil society, and international organizations to address urgent challenges in sustainable energy, climate action, and development. Through our engagement in key discussions and side events, we gathered critical insights that shape our reflections on the way forward.

A major takeaway from the Forum was the need for ambitious initiatives–referred to as 'moonshots'–to achieve 'Mission 300,' an initiative launched in collaboration with the World Bank, the African Development Bank, SEforALL, and other key partners. Mission 300 aims to halve the number of people without electricity in Sub-Saharan Africa while addressing the needs of 43% of those globally without electricity. This ambitious goal requires bold action and transformative energy solutions that can scale rapidly to bridge the energy access gap.

Another critical point of reflection was ensuring that the just transition does not become a handmaiden to the fossil fuel industry. Discussions at the Forum highlighted the need for policies and investments that prioritize renewable energy sources while preventing the transition from inadvertently reinforcing existing fossil fuel dependencies. A truly just and equitable energy transition must center on communities, ensuring sustainable, inclusive development without serving as a conduit for prolonging fossil fuel reliance.

To achieve Mission 300, we must go beyond conventional solutions and introduce disruptive, out-of-the-box strategies that address systemic barriers in energy access, financing, and infrastructure deployment. Here's some of what's needed as INCLUDE discussed with stakeholders at the forum:

1. Decentralized Energy Swarm Model

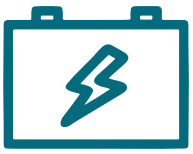
- Instead of relying on large-scale, slow-moving grid expansions, use AI-driven energy clustering that connects localized renewable energy hubs (solar, wind, micro-hydro) into an adaptive, decentralized swarm grid.
- Deploy self-learning energy distribution AI to balance load fluctuations in real time across industrial clusters and rural electrification zones.
- Utilize blockchain-powered energy transactions, allowing small energy producers and industries to trade surplus power without central grid dependency.

2. Financing Energy Like Telecoms: "Pay-As-You-Grow" Model

- Treat electricity access like mobile phone penetration–introduce microcredit models where industrial users pay for electricity expansion in incremental stages.
- Offer low cost industrial solar subscription models, where businesses start with minimal power and scale up usage over time, reducing upfront capital costs.

- Establish electricity-backed industrial bonds where manufacturing firms pre-purchase energy credits at discounted rates in exchange for financing new infrastructure

3. Industrial Battery-as-a-Service (BaaS) Ecosystem



- Shift from owning batteries to a subscription model where industries lease high-capacity energy storage instead of investing in expensive systems.
- Create "roaming batteries"–deployable energy storage units that move between manufacturing zones based on peak demand cycles.
- Implement AI-driven energy arbitrage where industries buy stored energy when costs are low and consume during peak hours, optimizing cost efficiency.

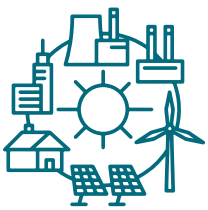
4. Energy-Backed Local Currencies

- Develop a regional energy-backed cryptocurrency that allows investors and manufacturers to trade industrial electricity credits.
- Peg the value of energy units to an industry-friendly digital currency, ensuring liquidity and long-term financial planning for businesses.
- Enable direct peer-to-peer energy trading between firms in industrial zones through a secure digital marketplace.

5. "Floating Power Plants" for Industrial Hubs

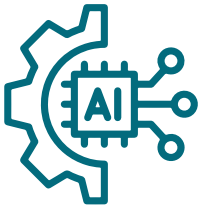
- Deploy offshore wind and floating solar power plants along coastal regions to provide dedicated industrial energy to manufacturing zones.
- Utilize mobile gas-to-power units that relocate between industrial sites based on fluctuating energy demand.
- Introduce mini-nuclear reactors (SMRs) in select industrial parks, providing stable, clean power without grid dependency.

6. "Gridless" Industrial Parks Powered by Renewable Microgrids



- Design new industrial zones to function entirely off-grid, using AI-optimized microgrid networks connected to multiple renewable sources.
- Integrate waste-to-energy plants within industrial parks, converting manufacturing by-products into a secondary power source.
- Establish high-frequency DC power networks within industrial parks, reducing energy transmission losses common with AC power grids.

7. AI-Powered Predictive Energy Infrastructure Deployment



- Utilize satellite imagery and AI to predict optimal energy deployment locations based on industrial growth patterns and economic activity.
- Create an automated national energy planning algorithm, ensuring infrastructure is built ahead of demand, preventing shortages.
- Deploy 3D-printed solar farms and modular grid components, enabling faster and cheaper infrastructure installation.

8. Industrial Water-Energy Nexus

- Implement hydro-battery storage systems, where water reservoirs store excess energy as potential energy, releasing it during peak industrial use.
- Use industrial wastewater treatment plants to generate biogas-powered micro-turbines that supply localized industries with power.
- Design floating industrial parks powered by tide and wave energy, reducing land dependency while ensuring sustainable power.

9. High-Voltage DC “Express Lanes” for Industrial Energy

- Instead of expanding slow AC transmission grids, build high-voltage direct current (HVDC) express lanes that deliver uninterrupted, high-efficiency power to industrial zones.
- Use drone-based transmission inspections to prevent power outages and optimize energy flow efficiency.
- Enable direct industrial grid connections, bypassing residential networks to prevent power rationing in high-demand manufacturing hubs.

10. “Energy Cloud” for Real-Time Industrial Load Balancing

- Develop a continent-wide energy cloud that integrates real-time industrial power demand with available renewable energy sources.
- Use predictive AI models to preemptively balance loads, ensuring manufacturing plants always operate at optimal energy efficiency.
- Introduce virtual industrial power plants (VIPPs) that aggregate energy from multiple factories to optimize costs and ensure reliability.

What Next?

- Ministers and stakeholders must think beyond conventional electrification– Mission 300 must be an energy revolution, not just an infrastructure project.
- Industrial energy must be treated as a real-time adaptive system, not a slow-moving, top-down grid expansion.
- Unconventional financing models must be embraced. Power infrastructure must be funded the way Africa's mobile revolution was financed.
- Technology must drive industrial energy, ensuring AI, blockchain, and advanced grid systems match Africa's rapid industrialization pace

INCLUDE is an independent knowledge platform funded by the Netherlands Ministry of Foreign Affairs since 2012. Through Research, Knowledge Exchange and Policy Dialogues, INCLUDE promotes and facilitates evidence-based policymaking on inclusive development, with a focus on Africa.

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