

MISSION 300
#PoweringAfrica

NATIONAL
ENERGY
COMPACT
FOR
THE
REPUBLIC OF UGANDA

Preamble

The Republic of Uganda reaffirms its unwavering commitment to Sustainable Development Goal 7 (SDG 7), to ensure access to affordable, reliable, sustainable, and modern energy for all, and to the Mission 300 Initiative that aims to modernize Africa's energy sector through catalytic infrastructure development leveraging private capital and comprehensive policy reforms to facilitate 300 million people in sub-Saharan Africa connect to electricity by 2030.

Anchored in Uganda's long-term development blueprint, the Vision 2040, and guided by the Energy Policy 2023, This Compact serves as Uganda's flagship national instrument under Mission 300, outlining a unified, results-oriented framework to accelerate the transition toward universal energy access, climate resilience, and inclusive green growth.

The Compact further aligns with the commitments under the Paris Agreement, Uganda Energy Policy, 2023, the Energy Transition Plan 2023, National Electrification Strategy, and the National Development Plan IV (2025/26–2029/30) to position energy as both a driver and an enabler of socio-economic transformation, linking electrification, clean cooking, and productive energy use with Uganda's broader objectives in industrialization, job creation, public-service delivery, and environmental sustainability.

Through this Compact, Uganda seeks to mobilize and coordinate resources from public investment, private capital, climate finance, and development-partner support to deliver concrete outcomes in:

1. **Universal, Affordable and Reliable Electricity Access , emphasizing underserved parishes, social institutions, productive-use enterprises and refugee settlements.** Uganda will prioritize last-mile electrification, focusing on underserved parishes, social institutions, productive-use enterprises in rural and peri-urban areas and refugee settlements. Least cost planning will guide a balance of on-grid and off-grid pathways to achieve universal electricity access by 2030. To spur investment and economic growth, sustainable and innovative financing frameworks and risk mitigation strategies that encourage strategic investments and partnerships thus stimulating competitive private sector investment and participation as well as enhancing project bankability shall be developed.
2. **Clean cooking adoption, to reduce biomass dependence and improve health, gender equity, and environmental outcomes.** Efforts will focus on scaling access to Liquefied Petroleum Gas, electricity, biogas, bioethanol, and advanced biomass stoves to accelerate the transition from traditional biomass to modern and clean cooking solutions, addressing public health, gender equity, and environmental challenges. The Clean Cooking Acceleration Facility will mobilize public and private investment for technology deployment, consumer awareness, and standards enforcement. Clean cooking interventions will be mainstreamed into health, education, and refugee-hosting programs, reducing household air pollution and

deforestation while creating inclusive opportunities for women and youth in fuel supply chains and appliance distribution.

3. **Renewable-energy scale-up, including grid and off-grid solar, hydropower, wind, geothermal, and modern bioenergy.** The Least-Cost Integrated Resource and Transmission Expansion Plan will guide capacity additions, ensuring alignment between supply growth and system demand. Multiple renewable energy technologies (hydropower, solar PV (grid and off-grid), wind, geothermal, and sustainable biomass) will be scaled to achieve a resilient, diversified, and low-carbon generation mix. Large hydro and solar parks will be complemented by mini-grids and distributed generation to enhance reliability in rural areas. Strategic investments in Battery Energy Storage Systems (BESS), grid reinforcement, and local manufacturing of clean-energy components (modules, meters, cables) will support system flexibility and domestic industrialization. This approach will position Uganda as a regional clean-energy hub and contribute to emission reductions under its Nationally Determined Contribution (NDC).
4. **Regional power integration, strengthening Uganda's position within the Eastern Africa Power Pool and cross-border trade.** Electrification of cross-border trade hubs and One-Stop Border Posts will foster regional commerce and socio-economic integration. Uganda aims to strengthen its role as a key player in the Eastern Africa Power Pool (EAPP) through completion and operationalization of priority interconnectors with Kenya, Tanzania, Rwanda, DRC, and South Sudan. These regional links will unlock opportunities for least-cost power trade, system balancing, and export of surplus renewable energy. Harmonization of technical standards, wheeling tariffs, and open-access frameworks will be prioritized to enhance interoperability and attract private sector participation in cross-border supply arrangements. Regional integration will not only improve Uganda's energy security and foreign exchange earnings but also contribute to broader East African market stability and resilience.
5. **Financially sustainable utilities, capable of delivering reliable, affordable, and high-quality energy services.** UETCL, UEGCL, and UEDCL will implement performance-improvement plans focused on cost recovery, efficiency, and digital transformation. Ensuring financially sound, customer-oriented, and technologically modern utilities is central to Uganda's energy transition. Additional investments in Supervisory Control and Data Acquisition (SCADA) monitoring system, Advanced Metering Infrastructure (AMI) and asset-management systems will strengthen transparency, billing accuracy, and service reliability. ERA will conduct cost-of-service reviews and phased tariff reforms, balancing utility sustainability with consumer affordability. The Compact Delivery and Monitoring Unit (CDMU) will track operational and financial indicators, ensuring accountability and cross-agency coordination. These reforms will reduce grid (ATC&C) losses, enhance revenue collection, and enable utilities to attract

private financing for network rehabilitation and expansion, laying the foundation for universal, reliable, and affordable energy access.

This Compact was developed through widespread engagements and discussions with various stakeholders, including development partners, private sector, and civil society to foster partnerships crucial for achieving the Compact's ambitious goals. The Compact (targets detailed in Table 1) therefore provides an implementation bridge between Uganda's policy ambitions and practical delivery mechanisms, ensuring that national goals are translated into measurable results, consistent with international commitments under Agenda 2063, the Africa Renewable Energy Initiative (AREI), and the Sustainable Energy for All (SEforALL) framework.

Recognizing that success requires capacity building and considerable collective efforts, the Government of Uganda calls upon development partners, philanthropies, the private sector, and civil society to join this transformative expedition. Together, the Ugandan government aims to accelerate the pace of energy access and renewable energy development. Meeting the targets of this Compact is estimated to cost US\$6 billion, with USD \$ 2.2 billion expected from the private sector, against a USD 3.8 billion public and concessional anchor, achieving a leverage ratio of 1:1.7 by 2030.

Table 1: Uganda Mission 300 Compact – Summary of 2030 Commitments

Strategic Pillar	Uganda's 2030 Outcome Target	Core Government Actions	Role of Private Sector / Partners	Key Enablers / Instruments
1. Universal, Affordable and Reliable Electricity Access	≥ 97 % of households, public/social institutions, productive nodes and refugee settlements electrified (grid + off-grid), up from ~60 %.	Implement the National Electrification Strategy (NES) pathway with ~50 % on-grid and ~50 % off-grid delivery. Accelerate grid extension, densification and intensification in rural districts and economic zones. Rehabilitate and digitize distribution networks to cut losses below 14	Develop, finance and operate solar home systems, mini-grids, C&I solar and productive-use systems. Co-invest in last-mile connections under results-based financing.	Integrated least-cost planning; Electricity Connections Policy; Results-Based Finance (RBF) for new connections; lifeline tariffs and targeted subsidies.

Strategic Pillar	Uganda's 2030 Outcome Target	Core Government Actions	Role of Private Sector / Partners	Key Enablers / Instruments
		% and improve voltage quality.		
	> 90 % of total installed capacity from renewables by 2030; system expanded toward $\approx$ 2.8 GW +.	Update and implement the Least-Cost Integrated Resource and Transmission Expansion Plan. Add hydro, solar PV, wind, geothermal and hybrid solar + BESS. Rehabilitate and modernize transmission and distribution lines; deploy SCADA / EMS.	Develop IPP / PPP projects through auctions and standardized PPAs. Invest in utility-scale and C&I solar, storage and mini-hydro. Localize assembly of meters, cables, modules and batteries.	Competitive auctions; partial-risk guarantees; credit guarantees; viability-gap funding; renewable energy feed-in tariffs; time-of-use tariffs; and demand stimulation.
2. Scale distributed renewable energy and Clean Cooking for last-mile access	$\geq$ 50 % of households using modern and clean cooking solutions by 2030; all key institutions transitioned to modern fuels / technologies.	Operationalize the National Integrated Clean Cooking Strategy (NICCS 2023–2028). Establish a Clean Cooking Acceleration Facility to coordinate finance, standards, procurement and awareness. Introduce incentives for efficient biomass, LPG, e-cooking, bioethanol and biogas.	Manufacture, import, distribute and service stoves, fuels, cylinders and induction cookers. Provide PAYGo / consumer finance and generate carbon credits.	Clean Cooking Acceleration Facility; RBF / OBA for stoves; standards via UNBS; support for women- and youth-led enterprises.
3. Regional Power Integration	Uganda positioned as a reliable	Complete and operationalize strategic	Invest in bilateral and regional PPAs, wheeling	EAPP platform and Power Exchange; AfDB / World Bank

Strategic Pillar	Uganda's 2030 Outcome Target	Core Government Actions	Role of Private Sector / Partners	Key Enablers / Instruments
and Cross-Border Electrification	regional power hub; operational priority interconnectors with Kenya, Tanzania, Rwanda, DRC and South Sudan.	interconnectors. Harmonize trading codes, data and tariffs with the Eastern Africa Power Pool. Electrify border towns and trade hubs. Develop wheeling and open-access arrangements.	services and cross-border IPPs. Finance commercial loads in border economic zones.	regional interconnector finance; open-access regulations for cross-border IPPs.
4. Financially Viable, Digitalized Utilities	Utilities financially sustainable: ATC&C losses < 15 %; > 98 % revenue collection; SAIDI < 10 hours / year; digitalized and transparent utilities by 2030.	Undertake cost-of-service studies and phased tariff reforms with protection for vulnerable groups. Roll out AMI, SCADA, DMS and automated outage management. Enforce performance-improvement plans and publish utility dashboards.	Finance and deploy metering, automation, e-payment and customer-service platforms. Partner in O&M and invest in productive-use electrification.	ERA regulatory alignment; Utility performance dashboard for tracking losses and SAIDI / SAIFI; distribution-modernization programs under MEMD / ERA.
5. Incentivize private sector participation	40 % private / commercial capital	USD 3.2 Bn private capital mobilized;		Green Energy Facility & Guarantee Fund; RBF programs; Competitive procurement; standardized legal documents; Local-currency financing (UDB/UECCC loans); PPPs; RE Certificate Trading Platform;

Strategic Pillar	Uganda's 2030 Outcome Target	Core Government Actions	Role of Private Sector / Partners	Key Enablers / Instruments
				- ETF-W and CDMU operationalized.

Table 2: Estimated financing for Mission 300 Compact

Strategic Pillar	Uganda's 2030 Outcome Target	Core Government Actions	Role of Private Sector / Partners	Key Enablers / Instruments
Financing Architecture & Delivery Capacity	≈ USD 5 billion mobilized through 2030 (~ 60 % public / concessional / climate; ~ 40 % private / commercial). ETF-W and CDMU operationalized.	Establish the Energy Transition Financing Window (ETF-W) and Compact Delivery & Monitoring Unit (CDMU). Integrate gender and youth targets in procurement and program delivery.	Bring capital, technology, delivery models and jobs. Co-finance productive-use, e-mobility, clean cooking and mini-grids. Participate in carbon markets and green bonds.	Blended finance (RBF, OBA, PRGs, UDB / UECCC credit lines); Annual Investment Dialogue; Mission 300 / REC platform tracking commitments.

Table of Contents

Preamble	2
Declaration of Commitment.....	11
Electricity Access	11
Renewable Energy Development	11
Clean Cooking	12
Regional Power Integration.....	12
Financially Viable and digitalized Utilities	12
Private Capital Mobilization	13
Uganda Energy Sector Overview	15
National Context.....	15
Energy Resource Base and Generation Mix	15
Current installed generation capacity (2025): 2053MW.....	15
Planned additions (2025–2030): 15000MW	16
Electricity Access and Distribution	16
Clean Cooking Transition	16
Transmission, Regional Integration, and Power Trade	17
Sector Institutions and Regulatory Framework.....	17
Investment Landscape and Financing	18
Key Challenges.....	18
Strategic Priorities for 2025–2030.....	18
Outlook.....	19
Compact Targets and Action Plan	20
Pillar I: Universal, Affordable and Reliable Electricity Access.....	20
1. Integrated Resource and Transmission Expansion Planning.....	20
2. Generation Capacity Rehabilitation and Expansion	20
3. Transmission Network Rehabilitation, Digitization, and Expansion.....	21
3. Distribution Network Modernization and Reliability Enhancement	21
Outcome	22
Pillar II: Embrace distributed renewable energy and Clean Cooking for Last-Mile Access	22

i.	Grid Densification and Deployment of Mini-Grids & Standalone Systems.....	22
ii.	Establishment of a Clean Cooking Acceleration Facility	23
iii.	Mainstreaming Productive Use of Energy (PUE) and Energy Efficiency measures in Off-Grid and Weak-Grid Areas.....	24
	Outcome	24
	Pillar III: Regional Power Integration and Cross-border electrification.....	25
i.	Completion and Operationalization of Priority Interconnectors	25
ii.	Cross-Border Electrification and Open-Access Power Exchange	26
	Outcome	27
	Pillar IV: Work Towards Financially Viable Utilities that Provide Reliable Service.....	27
i.	Cost-of-Service Studies, Tariff Reforms, and Performance Improvement	27
ii.	Digitalization, Asset Management, and Transparency	28
iii.	Demand Stimulation and System Load Optimization	29
	Outcome	29
	Pillar V: Incentivize Private Sector Participation to Unlock Additional Resources.....	29
1.	Competitive Procurement and Standardized PPP Frameworks	30
2.	Blended Finance, Results-Based Finance, and Carbon-Market Instruments	30
3.	Enabling Mini-Grid and Commercial-and-Industrial (C&I) Markets.	31
	Outcome	32
3.	Implementation and Monitoring.....	33
	Mandate and Functions of the CDMU.....	33
	Structure and Governance	34
	Results Framework and Key Indicators.	34
	Reporting and Knowledge Sharing.	35
	Development-Partner Engagement and Synergies.	35
	Outcome	35
4.	Financing Architecture	36
	Public and Development-Partner Financing.....	36
	Private Investment and De-Risking Mechanisms.	36
	Blended Finance and Results-Based Finance (RBF) Instruments.	37
	Energy Transition Financing Window (ETF-W)	38
	Strategic Financing Outcomes	38

Governance, Gender, Youth and Inclusion.....	39
1. Institutionalizing Gender-Responsive and Inclusive Energy Planning.....	39
2. Expanding Women’s Participation in Energy Value Chains.....	39
3. Youth Empowerment, Skills Development, and Innovation.	40
4. Community Engagement and Social Inclusion.	40
5. Monitoring and Accountability.....	41
Outcome	41
Risk Management and Sustainability	42
Sustainability and Long-Term Resilience.....	46
Outcome	46
Annexes	47
Annex I: Outcome–Output–Indicator Matrix (2025–2030).....	47
Annex II: Investment Pipeline & Funding Needs (Public/Private Split) by Pillar	48
Outcome	49
Annex III: Institutional Roles & Delivery Map.....	50
Annex IV: Monitoring Dashboard Template and Definitions	51
Annex V: Communications and Partnership Plan.....	52
Outcome	52

Declaration of Commitment

The Government of Uganda (GoU), through the Ministry of Energy and Mineral Development (MEMD), reaffirms its national commitment to ensuring reliable, affordable, sustainable, inclusive, and clean energy for all Ugandans by 2030. This declaration is anchored in Uganda's obligations under the Sustainable Development Goals (SDG 7), the Paris Agreement, and the Mission 300 Framework for Accelerated Energy Access, which calls for transformative, measurable actions across Africa by the end of the decade.

Recognizing energy as the foundation of socio-economic transformation and climate resilience, the Government commits to translating this vision into practical, measurable outcomes through an integrated approach that combines on-grid expansion, decentralized energy solutions, clean cooking transitions, and private-sector-driven investment. The Compact thus embodies Uganda's pathway toward a modern, green, and inclusive energy economy under Vision 2040 and the National Development Plan IV (2025/26–2029/30). To this end, by 2030, the Government of Uganda intends to implement the following strategic commitments:

Electricity Access

Uganda will accelerate access toward universal electricity coverage by deploying a coordinated program that combines grid extension, densification, and off-grid solutions. Recognizing that access expansion cannot be achieved without a strong and reliable network, the Compact underscores the urgent need for grid rehabilitation, reinforcement, and modernization. Strengthening existing infrastructure will enhance reliability, reduce technical losses, and improve the capacity to integrate variable renewable energy sources while serving new connections efficiently. The focus will be on underserved rural districts, border communities, economic growth zones, and social institutions such as health centers, schools, and administrative facilities. Through an envisaged integrated electrification plan supported by least-cost geospatial planning, the GoU will target at least 97% of the electrification of households, public and social institutions from the current 60%, for productive-use applications, clean cooking, and last-mile service delivery models under the Parish Development Model (PDM).

Priority will be placed on ensuring that electricity access drives local economic transformation, by powering small and medium enterprises, value-addition clusters, irrigation schemes, agro-processing units, and cold-chain logistics to generate jobs, improve income, and enhance service delivery at the community level.

Renewable Energy Development

Uganda aims to scale renewable energy generation capacity across hydro, solar, wind, geothermal, and sustainable biomass resources, while integrating Battery Energy Storage Systems (BESS) for grid stability and resilience. The country's abundant renewable potential (estimated at over 5.1 kWh/m²/day for solar and more than 4,500 MW in

feasible hydro sites) will be harnessed through competitive procurement frameworks, Independent Power Producer (IPP) models, and Public-Private Partnerships (PPPs).

Simultaneously, the transmission and distribution networks will be modernized and digitized to reduce system losses, improve reliability, and enhance power quality. Strategic investments in smart metering, feeder automation, and network rehabilitation will ensure that new generation capacity translates into tangible, high-quality service for end users.

Clean Cooking

The Government will expand access to modern and clean cooking solutions, reducing dependence on traditional biomass fuels that currently account for nearly 85% of household energy use. This will be executed through an envisaged integrated electrification plan. Over 4.87 million households shall be provided with modern cooking solutions. The goal is to achieve 50% adoption of clean cooking technologies by 2030, through diversified fuel and technology pathways, including Liquefied Petroleum Gas (LPG), electric cooking, ethanol, biogas, and efficient biomass stoves. To split the different interventions adding up to 50%.

Special emphasis will be placed on institutional cooking for schools, hospitals, prisons, and refugee settlements, as well as on programs that empower women and youth entrepreneurs within the clean cooking value chain. The Government will also operationalize the National Integrated Clean Cooking Strategy (NICCS), strengthen quality-assurance frameworks, and introduce fiscal and non-fiscal incentives to encourage private investment and local manufacturing.

Regional Power Integration

Uganda will deepen its participation in regional power trade and cooperation through the Eastern Africa Power Pool (EAPP). By completing and operationalizing priority interconnectors with Kenya, Tanzania, South Sudan, Rwanda, and the Democratic Republic of Congo, the country will strengthen energy security, optimize system dispatch, and reduce the overall cost of supply.

Regional integration will also create opportunities for exporting surplus clean power, attracting cross-border investments, and improving reliability through shared reserves. Uganda's role as a regional energy hub will thus contribute to continental energy market development under the Africa Continental Free Trade Area (AfCFTA) and Agenda 2063.

Financially Viable and digitalized Utilities

The Government of Uganda commits to transforming UETCL, UEGCL, and UEDCL into financially sustainable, digitally advanced, and customer-focused utilities by 2030. Through implementation of Performance Improvement Plans, the utilities will achieve full cost recovery, reduce ATC&C losses to <14%, and deploy modern infrastructure. The ERA

will enforce transparent tariff reforms with lifeline protections and productivity incentives. Utilities will attain investment-grade status by 2028 to unlock private financing for network expansion.

Private Capital Mobilization

The Government recognizes that achieving universal energy access requires substantial investment beyond public budgets. To this end, Uganda will strengthen the enabling environment to attract and de-risk private capital through a robust mix of financial and regulatory instruments. Key measures will include:

- i. Establishing a Green Energy Facility and Guarantee Fund to lower investment risk for renewable and off grid projects.
- ii. Expanding results-based financing (RBF) programs and operationalize robust carbon-credit programmes and frameworks to incentivize performance-based delivery.
- iii. Operationalizing competitive procurement and standard Power Purchase Agreements (PPAs) for transparency and cost efficiency.
- iv. Facilitating local-currency financing via the Uganda Development Bank (UDB) and the Uganda Energy Credit Capitalization Company (UECCC); and
- v. Promoting public-private partnerships in transmission, storage, and e-mobility infrastructure.
- vi. Establish Renewable Energy (RE) certificate trading platform.

These actions, whose funding requirements are indicated as in Table 2, will ensure that Uganda's energy transition is both financially viable and investor-confident, catalyzing innovation and green jobs across the energy value chain. In implementing these commitments, the Government of Uganda underscores the principles of inclusivity, resilience, accountability, and partnership, ensuring that no community is left behind, and that every Ugandan household, enterprise, and institution has access to modern energy that powers opportunity, productivity, and progress.

Table 3: Estimated Funding Requirements by Pillar (US\$ Million)

Pillar / Investment Area	Total Funding Need (US\$ Million)	Public / Concessional Sources	Private / Commercial Sources	Share (%) Public : Private
1. Universal, Affordable and Reliable Electricity Access	3700	2590	1110	70:30
2. DRE Integration, Off-Grid & Clean Cooking Acceleration	800	440	360	55 : 45
3. Regional Power Integration & Cross-Border Electrification	550	385	165	70 : 30

Pillar / Investment Area	Total Funding Need (US\$ Million)	Public / Concessional Sources	Private / Commercial Sources	Share (%) Public : Private
4. Financially Viable & Digitally Enabled Utilities	500	300	200	60:40
5.Private Sector Mobilization & Enabling Environment	350		350	0:100
6. Compact Delivery Capacity and capacity building (ETF-W, CDMU, Gender/Youth Programmes)	100	85	15	85:15
Total (2025–2030)	6,000	3,800	2,200	≈60 : 40

Uganda Energy Sector Overview

National Context

Uganda's energy sector stands at the heart of the country's socioeconomic transformation agenda. With a population exceeding 47 million (2025 estimate) and an annual growth rate of about 3%, the demand for modern energy services is rising sharply across households, industries, and institutions. Energy access is fundamental to achieving Vision 2040, the ten-fold, and the NDP IV (2025/26–2029/30), which position energy as a key enabler of industrialization, inclusive growth, and green economic recovery.

Despite vast renewable-energy potential, Uganda's current energy system is still characterized by limited energy access, power supply constraints, and high biomass dependence. Only about 60% of the population has access to electricity (grid and off grid combined), while nearly 85% continue to rely on traditional biomass (firewood and charcoal) for cooking, posing challenges to health, gender equality, and environmental sustainability.

The Government of Uganda, through the Ministry of Energy and Mineral Development (MEMD), has embarked on an ambitious transition toward universal access to affordable, reliable, sustainable, and modern energy by 2030, in alignment with Sustainable Development Goals (SDGs) 7, 9, 13, 3 and 5 and the Mission 300 Compact for Africa.

The initiative also contributes to broader global and continental commitments being aligned with international and regional policy frameworks such as the COP28 Global Renewables and Energy Efficiency Pledge, the African Union African Single Electricity Market (AfSEM) roadmap, the Africa Renewable Energy Initiative (AREI), the EAC Energy Security Policy Framework, and Uganda's 2022 Nationally Determined Contribution (NDC).

Energy Resource Base and Generation Mix

Uganda is richly endowed with renewable-energy resources, including hydropower, solar, biomass, wind, and geothermal, with significant potential to support green industrialization, the ten-fold growth strategy and regional power trade.

Current installed generation capacity (2025): 2053MW

- i. Hydropower: 1715 MW (Bujagali, Nalubaale, Kiira, Isimba, Karuma, Muzizi, and numerous small hydros).
- ii. Thermal: 92MW (Tororo, Namanve).
- iii. Bagasse Co-generation: 149MW (Hoima, Kamuli, Kakira, SCOUL, others).
- iv. Grid connected Solar PV: 84MW (Access Solar, MSS Xsabo, Tororo Solar, and others).
- v. Off grids: 13MW (Solar, thermal, hydro).

Planned additions (2025–2030): 15000MW

- i. Small hydros: 460MW
- ii. Solar PV parks: 9860MW (Mutukula (50 MW), Iganga (50 MW), Tororo (50 MW), Bulambuli (150 MW), Ituka (24MW), Nakasongola (20MW), Lira (50MW); Kapeeka 100 MW + 250 MWh storage))
- iii. Geothermal: 1500MW
- iv. Wind: 70MW
- v. Waste to electricity: 20MW
- vi. Bagasse co-generation: 1000MW
- vii. Gas: 1960MW

These additions are expected to raise total installed capacity to over 15,000 MW by 2030, with renewable energy accounting for more than 90% of the mix, reinforcing Uganda’s low-carbon energy profile.

Electricity Access and Distribution

Uganda has made significant progress in expanding electricity access through grid extension, densification, and off-grid systems. Access to electricity has increased from 20% in 2010 to about 60% in 2025, driven by investments through the Electricity Connections Policy, Rural Electrification Strategy and Plan, and Last-Mile Connectivity Program. Access profile shows:

- i. Urban: ~82.8%
- ii. Rural: ~44% (with wide regional disparities)
- iii. Grid connections: Over 2.517 million consumers (domestic and institutional)
- iv. Off-grid systems: ~ 4.3 million consumers (domestic and institutional) home solar systems and
- v. 46 operational mini-grids.

Challenges remain, including high connection costs, limited financing for last-mile delivery, protracted wayleaves acquisition, and low demand in rural areas. Grid reliability also requires improvement, with System Average Interruption Duration Index (SAIDI) exceeding 20 hours/year in some areas and technical losses around 16–18%.

The Uganda Electricity Distribution Company Limited (UEDCL), and local service providers continue to invest in network modernization, automation, and smart metering to enhance efficiency and customer service.

Clean Cooking Transition

Biomass remains Uganda’s dominant cooking energy source, accounting for nearly 85% of total household energy consumption. Reliance on firewood and charcoal contributes to deforestation, indoor air pollution, and time poverty, especially among women and children.

The Government has prioritized the clean cooking transition through the National Integrated Clean Cooking Strategy (NICCS 2023–2028), targeting 50% adoption of clean and modern cooking technologies by 2030. Key initiatives include:

- i. Promotion of LPG, bioethanol, biogas, and electric cooking.
- ii. Distribution of improved (higher tier) biomass stoves to low-income households.
- iii. Support for local manufacturing, distribution, and after-sales networks.
- iv. Development of fiscal incentives (tax exemptions, RBF programs) to reduce retail prices.

The Clean Cooking Unit (CCU) under MEMD coordinates multi-stakeholder partnerships (including UECCC, SNV, AFD, FCDO, GIZ, FAO, and AfDB) to scale up market-based delivery models and institutional cooking interventions for schools, hospitals, and refugee settlements.

Transmission, Regional Integration, and Power Trade

Uganda's national transmission network, managed by the Uganda Electricity Transmission Company Limited (UETCL), spans over 5,150 km of high-voltage lines (66kV – 400kV). Major upgrades are underway to strengthen system reliability, reduce losses, and facilitate regional trade through the Eastern Africa Power Pool (EAPP). The Planned Key regional interconnectors are:

- i. 400kV Tororo - Lessos Transmission Line to improve interconnection with Kenya.
- ii. 400kV Masaka - Mutukula - Mwanza Transmission Line to improve interconnection with Tanzania.
- iii. 400kV Mirama – Shango Transmission Line to improve interconnection with Rwanda.
- iv. 400kV Nkenda–Beni–Butembo–Bunia Transmission Line to interconnect with DRC.
- v. 400kV (Olwiyo-Bibia-Juba Transmission Line to interconnect with South Sudan.

These projects will position Uganda as a regional power-trade hub, enabling both exports and imports to balance supply-demand variations and optimize renewable integration.

Sector Institutions and Regulatory Framework

Uganda's power sector operates under an unbundled structure guided by the Electricity Act (1999) and the Electricity (Amendment) Act 2022, with clear institutional mandates:

1. MEMD: Policy oversight, strategic planning, coordination, and implementation.
2. ERA: Independent regulation, tariff setting, licensing, and compliance monitoring.
3. UETCL: Transmission system operator and single-buyer for bulk power.
4. UEGCL: Public-generation asset developer and operator.
5. UEDCL: Public-distribution operator (and oversight of small concessions).
6. UECCC: Financial intermediation and private-sector de-risking.
7. MoFPED and NPA: Fiscal planning and national policy alignment.

The Energy Policy 2023 reinforces a market-based, competitive, and technology-neutral approach to energy-sector development, supported by updated frameworks on renewable energy, electric mobility, biofuels, and energy efficiency.

Investment Landscape and Financing

Uganda's energy investments are financed through a blend of public funding, concessional loans, private capital, and climate finance, coordinated under MEMD and MoFPED. Ongoing and planned investments include:

- i. Generation: Kiba, Oriang, Ayago, and renewable IPP projects supported by AfDB, World Bank, and AFD.
- ii. Grid expansion: EASP, UREAP, supported by World Bank, AfDB
- iii. Off-grid and mini-grids: UECCC RBF programs, BGFA, KFW, UEDCL, GIZ/EnDev support and private developers.
- iv. Clean cooking: SNV, UNDP, GIZ, UK FCDO-MECS and World Bank's Clean Cooking Fund initiatives.
- v. E-mobility and green transport: Pilot programs supported by UNIDO and the Global E-Mobility Program, private companies.
- vi.

The Government is planning to operationalize an Energy Transition Financing Window (ETF-W) to coordinate project preparation, blended finance, and de-risking instruments under the Mission 300 framework.

Key Challenges

Despite progress, Uganda's energy sector faces persistent challenges:

- i. Financing shortfalls and limited local-currency liquidity for long-term infrastructure.
- ii. Regulatory processes, and procurement delays in project execution.
- iii. System inefficiencies including vandalism, high technical losses and low load factors.
- iv. Climate variability affecting hydropower generation; and
- v. Affordability constraints for low-income consumers.
- vi. Protracted Land / Wayleaves acquisition processes.

Addressing these barriers will require sustained policy reforms, investment discipline, and institutional capacity strengthening to ensure the sector's financial viability and resilience.

Strategic Priorities for 2025–2030

The Mission 300 Compact and the Energy Transition Strategy will guide Uganda's focus on six strategic priorities:

1. Accelerating universal, affordable and reliable electricity access through grid and off-grid expansion.
2. Promote clean cooking, efficient and productive-use of energy.

3. Scaling renewable generation and grid storage for resilience.
4. Enhancing financial viability of utilities through reform and performance management.
5. Leveraging Regional Power Integration & Cross-Border Electrification
6. Private investment for long-term sustainability and livelihoods.

These priorities align with Uganda's commitments under SDG 7, Agenda 2063, Paris Agreement, and the African Union's Continental Power Systems Master Plan (CMP).

Outlook

Uganda's energy future is bright, inclusive, and renewable-led. With robust policy foundations, abundant natural resources, and growing private-sector interest, the country is positioned to become a regional leader in clean and equitable energy transition. Through the Uganda National Energy Compact (Mission 300 2025–2030), the Government commits to delivering affordable, reliable, and sustainable energy for every Ugandan, powering homes, enterprises, and institutions while ensuring environmental stewardship and shared prosperity.

Compact Targets and Action Plan

Pillar I: Universal, Affordable and Reliable Electricity Access

Uganda recognizes that reliable and affordable electricity supply is the cornerstone of inclusive growth and green industrialization. Under Pillar I, the Government will prioritize an integrated approach to generation, transmission, and distribution planning, guided by least-cost principles, competitive procurement, and system modernization. These actions are designed to ensure that future investments deliver both financial viability and technical resilience across the entire electricity value chain.

1. Integrated Resource and Transmission Expansion Planning

The Government, through MEMD, ERA, and UETCL, will adopt and periodically update a comprehensive Least-Cost Integrated Resource and Transmission Expansion Plan (IRP-TEP) to guide generation additions, network upgrades, and power-sector investments up to 2030 and beyond. This plan will:

- i. Integrate long-term demand forecasts, climate-adjusted hydrology models, and evolving industrial-load projections to ensure balanced supply-demand growth.
- ii. Identify and prioritize least-cost generation technologies, emphasizing renewable energy sources such as solar PV, hydropower, geothermal, wind, and bioenergy.
- iii. Include battery-energy-storage systems (BESS) and grid-support solutions to enhance flexibility, manage intermittency, and optimize dispatch.
- iv. Align generation sitting with transmission expansion corridors and regional interconnection projects under the Eastern Africa Power Pool (EAPP).
- v. Serve as the foundation for competitive procurement, ensuring transparent and cost-reflective addition of new capacity while reducing reliance on unsolicited projects.

Regular IRP-TEP reviews (every two years) will incorporate lessons from ongoing projects, emerging technologies, and market developments, thereby maintaining Uganda's generation mix as clean, reliable, and economically optimized.

2. Generation Capacity Rehabilitation and Expansion

Uganda's electricity generation mix is predominantly renewable, with hydropower accounting for the majority of installed capacity, supplemented by thermal, co-generation, and limited solar PV. As of 2025, total installed capacity stands at approximately 2053MW. To meet surging demand driven by population growth, industrialization, and universal access goals, the Government will pursue a strategic rehabilitation of existing assets and aggressive expansion of new renewable capacity, guided by the Least-Cost Integrated Resource and Transmission Expansion Plan (IRP-TEP). This will include:

- i. **Rehabilitation of Existing Generation Assets.** Focus will be on extending the operational life, efficiency, and output of aging hydropower plants and thermal facilities. These interventions will add power to the grid in recovered capacity while minimizing environmental impacts through improved water-use efficiency.

- ii. **Development of new Capacity.** Planned generation installations will raise total installed capacity to over 15,000 MW by 2030, with renewables exceeding 90% of the mix. The planned plants include:
 - a) Small hydros: 460MW
 - b) Solar PV parks: 9860MW (Mutukula (50 MW), Iganga (50 MW), Tororo (50 MW), Bulambuli (150 MW), Ituka (24MW), Nakasongola (20MW), Lira (50MW); Kapeeka 100 MW + 250 MWh storage))
 - c) Geothermal: 1500MW
 - d) Wind: 70MW
 - e) Waste to electricity: 20MW
 - f) Bagasse co-generation: 1000MW
 - g) Gas: 1960MW

Procurement will prioritize competitive tenders, Independent Power Producers (IPPs), and Public-Private Partnerships (PPPs), with Battery Energy Storage Systems (BESS) integrated to manage variability and enhance dispatchability.

3. Transmission Network Rehabilitation, Digitization, and Expansion

To deliver power efficiently and support renewable integration, Uganda will undertake comprehensive rehabilitation, digitization, and expansion of its national transmission infrastructure. The UETCL, under MEMD oversight, will implement a phased Transmission Reinforcement and Modernization Program, focusing on:

- i. Upgrading aging lines and substations to minimize technical losses and voltage fluctuations.
- ii. Automating and digitizing system operations through Supervisory Control and Data Acquisition (SCADA), Energy Management Systems (EMS), and Geographic Information Systems (GIS) to enhance grid visibility and control.
- iii. Expanding transmission corridors to connect renewable-rich regions (Karamoja, Northern Uganda, Albertine Rift, and Eastern Solar Belt) to demand centers and industrial parks.
- iv. Integrating regional interconnectors with Kenya, Tanzania, South Sudan, Rwanda, and the Democratic Republic of Congo to facilitate cross-border trade and ensure system redundancy.
- v. Establishing a Transmission Reliability Index (TRI) to monitor grid performance, outages, and voltage quality across all substations.

These interventions will reduce technical and non-technical losses, lower wheeling costs, and enable Uganda to participate more competitively in the regional electricity market.

3. Distribution Network Modernization and Reliability Enhancement

The MEMD, working with UEDCL, and private distribution operators, will modernize distribution networks to deliver reliable and high-quality power to households, businesses, and institutions. The modernization agenda will include:

- i. Automation and digitalization of medium- and low-voltage networks through Distribution Management Systems (DMS) and smart reclosers to enable real-time fault detection and service restoration.
- ii. Advanced metering infrastructure (AMI) deployment to strengthen billing accuracy, reduce vandalism, curb commercial losses, and improve customer experience.
- iii. Targeted loss-reduction programs, including transformer optimization, network reconfiguration, and community-level awareness campaigns.
- iv. Feeder-level capacity expansion and voltage-regulation upgrades in fast-growing urban, peri-urban, and industrial areas.
- v. Integration of distributed generation and net-metering frameworks, allowing productive users and institutions to inject surplus solar power into the grid; and
- vi. Establishment of Service-Level Agreements (SLAs) with performance-based metrics on outage duration (SAIDI) and frequency (SAIFI).

By 2030, these measures aim to reduce total distribution losses below 14%, enhance power quality, and ensure that consumers (especially in rural and industrial zones) benefit from stable, affordable, and modern energy services.

Outcome

Collectively, these initiatives will create a resilient, smart, and interconnected power system that supports Uganda's industrialization and regional integration objectives. They will also unlock investment confidence by ensuring predictability in planning, transparency in procurement, and efficiency in network operations, core pillars of Uganda's Energy Transition Strategy and Mission 300 Compact.

By 2030, Uganda will commission over 12,000 MW of new and rehabilitated renewable capacity, achieving a total installed capacity exceeding 15,000 MW with renewables >90% of the mix. This will deliver least-cost, resilient, low-carbon power generation to support universal access, industrial growth, and regional exports.

Pillar II: Embrace distributed renewable energy and Clean Cooking for Last-Mile Access

Uganda recognizes that achieving universal energy access requires a dual-track approach that complements grid expansion with distributed renewable-energy systems and a national clean-cooking transformation. Under this pillar, the Government will advance last-mile electrification and modern energy access through decentralized systems, inclusive financing, local-market development, and robust standards to ensure quality, affordability, and sustainability.

i. Grid Densification and Deployment of Mini-Grids & Standalone Systems.

Building on the Integrated Electrification Plan (IEP) and the Electricity Connections Policy, the Government will accelerate grid densification and intensification while systematically

deploying mini-grids and standalone solar systems in least-cost clusters where grid extension is economically unviable. Key interventions include:

- a) Geospatial planning and sequencing: Employ national GIS-based mapping tools (developed with World Bank, GIZ, and AfDB support) to identify least-cost electrification pathways by parish, integrating data on population density, productive potential, and public-service facilities.
- b) Grid densification and intensification: Expand low-voltage networks and service connections in existing grid zones to close access gaps and optimize return on existing infrastructure.
- c) Mini-grid deployment: Facilitate development of at least 3,000 renewable-energy mini-grids (solar-hybrid, hydro, and biomass) through competitive tenders and results-based financing, prioritizing growth centers, island communities, and border markets.
- d) Standalone systems and pay-as-you-go (PAYGo): Support dissemination of over 300,000 solar home systems and productive-use kits (irrigation pumps, refrigeration, milling units) through concessional credit lines, results-based subsidies, and performance guarantees.
- e) Quality assurance and consumer protection: Establish a National Quality-Assurance Regime for off-grid equipment, anchored in the Uganda National Bureau of Standards (UNBS), to regulate importation, certification, and after-sales service of solar and battery products.
- f) Integration with the Parish Development Model (PDM): Electrification programs will be implemented in coordination with PDM structures to ensure that every parish hosts at least one electrified productive hub by 2030.

ii. Establishment of a Clean Cooking Acceleration Facility

Recognizing that over 88 percent of households still rely on biomass fuels, the Government will establish a Clean Cooking Acceleration Facility (CCAF) to serve as the central instrument for mobilizing investment, de-risking suppliers, and coordinating interventions toward universal access to modern cooking solutions. The Facility, to be jointly implemented by MEMD, MoFPED, and the Clean Cooking Unit (CCU), will:

- a) Mobilize concessional finance and RBF grants from development partners, climate funds, and carbon markets to incentivize private investment across the clean-cooking value chain.
- b) Support diverse technology pathways, including LPG, electric cooking, ethanol, biogas, and improved biomass stoves, ensuring regional adaptation based on affordability and resource availability.
- c) Implement fiscal and non-fiscal incentives, such as VAT exemptions on certified equipment and import-duty relief for local manufacturers.
- d) Develop and enforce product standards in collaboration with UNBS and NEMA to guarantee safety, efficiency, and durability of cookstoves and fuels.
- e) Scale consumer-awareness campaigns to address behavioral barriers and promote the health, economic, and environmental benefits of clean cooking.

- f) Advance institutional clean cooking, targeting all schools, health facilities, and correctional institutions by 2030, supported by public-private partnerships and performance-based contracts.

The CCAF will act as a blended-finance and technical-assistance platform, crowding in private suppliers, empowering women and youth entrepreneurs, and coordinating nationwide delivery of clean-cooking solutions under Uganda’s National Integrated Clean Cooking Strategy (NICCS 2023–2028).

iii. **Mainstreaming Productive Use of Energy (PUE) and Energy Efficiency measures in Off-Grid and Weak-Grid Areas.**

To enhance the socio-economic impact of electrification, the Government will mainstream Productive Use of Energy (PUE) across all off-grid and weak-grid initiatives. The goal is to ensure that energy access directly translates into income generation, value addition, and community resilience. Key actions include:

- a) Integration into project design: All Grid + mini-grid and standalone-system tenders will incorporate PUE components such as agro-processing, milling, irrigation, water pumping, and refrigeration to improve project viability.
- b) Appliance-financing and demand-stimulation: Introduce concessional appliance-financing schemes through UECCC, UDB, Utility, and partner financial institutions to enable MSMEs, cooperatives, and farmers to acquire efficient, productive-use appliances.
- c) Business-development services: Provide entrepreneurship training, energy-literacy programs, and value-chain linkages to help communities maximize economic returns from electrification.
- d) PUE innovation challenge: Launch the “Energy for Enterprise Challenge Fund” under Mission 300 to finance local innovations in agri-energy, cold chains, and e-mobility for rural logistics.
- e) Monitoring and data systems: Establish a PUE tracking system within the MEMD dashboard to measure the economic and gender impacts of energy access on enterprise creation, productivity, and household income.
- f) Promote Energy Service Companies (ESCOs) to accelerate energy efficiency and unlock private capital. This will mandate comprehensive energy audits for all public buildings, large industries, and commercial facilities using standardized protocols and certified auditors. High-opportunity sites such as government offices, public and social institutions will be prioritized for deep retrofits.

These interventions will ensure that energy access becomes a catalyst for rural industrialization, contributing to job creation, food security, and inclusive green growth.

Outcome

By 2030, Uganda’s distributed energy and clean-cooking ecosystems will be fully integrated, market-driven, and inclusive, with:

- i. Over 97 percent of households access electricity;

- ii. At least 3,000 mini-grids, 5.5 solar systems, and 10,000 productive-use appliances deployed.
- iii. 50 percent adopting clean cooking solutions.
- iv. A self-sustaining network of local enterprises, financiers, and innovators are driving the transition to modern energy for all.
- v. A robust quality-assurance and consumer-protection framework for all off-grid technologies.

Pillar III: Regional Power Integration and Cross-border electrification.

Uganda recognizes that regional power integration is a cornerstone of energy security, affordability, and system reliability. Through enhanced interconnection, coordinated market participation, and cross-border electrification, the country will strengthen its role as a power-trade hub within the Eastern Africa Power Pool (EAPP) and the East African Community (EAC) energy corridor. This pillar focuses on cross-border infrastructure, market harmonization, and institutional capacity building to ensure that regional energy cooperation translates into tangible economic and social benefits for Ugandan citizens and neighboring countries.

i. Completion and Operationalization of Priority Interconnectors

The Government of Uganda, through the Uganda Electricity Transmission Company Limited (UETCL) and the Ministry of Energy and Mineral Development (MEMD), will prioritize the completion, commissioning, and full operationalization of regional power interconnectors to enable bidirectional electricity trade and system balancing within the EAPP. Key interventions include:

- a) Accelerated completion and energization of priority cross-border transmission lines:
 - 400kV Tororo - Lessos Transmission Line to improve interconnection with Kenya.
 - 400kV Masaka - Mutukula - Mwanza Transmission Line to improve interconnection with Tanzania.
 - 400kV Mirama – Shango Transmission Line to improve interconnection with Rwanda.
 - 400kV Nkenda–Beni–Butembo–Bunia Transmission Line to interconnect with DRC.
 - 400kV (Olwiyo-Bibia-Juba Transmission Line to interconnect with South Sudan.
- b) Reinforcement of national backbones to support cross-border flows and stabilize system voltages.
- c) Strengthening of trading capability: Build the institutional and technical capacity of MEMD and UETCL's Power Market Operations Unit to undertake commercial trading, real-time dispatch coordination, and compliance with EAPP operational rules.

- d) Harmonization of grid codes, tariff methodologies, and data protocols across member states to ensure transparent and nondiscriminatory access to regional power markets.
- e) Establishment of bilateral and multilateral trading arrangements under EAPP's System Coordination and Market Operation (SCMO) framework, including balancing markets, reserve-sharing, and frequency-control mechanisms.
- f) Development of a Regional Power Trading Strategy for Uganda, setting out long-term export/import goals, risk-mitigation measures, and competitive positioning in renewable-based exports.

Through these initiatives, Uganda will transition from a nationally oriented power system to a regionally integrated, trade-ready market, capable of leveraging its renewable-resource endowment to supply neighboring countries competitively and to stabilize its own grid through regional balancing.

ii. Cross-Border Electrification and Open-Access Power Exchange

To extend the benefits of integration to border communities and stimulate cross-border trade, the Government will implement cross-border electrification programs and open-access wheeling arrangements that connect people, enterprises, and economic zones along regional corridors. Key measures include:

- a) Cross-border electrification for border towns and trading posts (Busia, Mutukula, Elegu, Mpondwe, and Kyanika), ensuring simultaneous grid extension from both sides to serve households, SMEs, and public institutions.
- b) Integration with trade and logistics infrastructure: Coordinate electrification with one-stop border posts (OSBPs), industrial parks, and customs centers to power refrigeration, cold chains, and digital systems for trade facilitation.
- c) Development/ Strengthen of wheeling frameworks to allow Independent Power Producers (IPPs) and large consumers to buy and sell power across borders under regulated open-access principles, consistent with EAPP directives.
- d) Regulatory alignment: Collaborate with the Electricity Regulatory Authority (ERA) and peer regulators through the EAPP Regulatory Sub-Committee to harmonize licensing, technical standards, and dispute-resolution protocols.
- e) Power-exchange platform readiness: Participate in the establishment of the Eastern Africa Power Exchange (EAPX), enabling day-ahead and bilateral power trading and integration with Uganda's energy data systems.
- f) Regional rural electrification initiatives: Joint projects with Rwanda, DRC, and South Sudan to extend grid access to border parishes and refugee-hosting communities, promoting social cohesion and shared economic growth.

These actions will transform Uganda's border areas into vibrant economic corridors powered by clean, reliable energy, while embedding Uganda in the evolving regional electricity market.

Outcome

By 2030, Uganda will be an active regional energy hub, exporting surplus renewable power and importing where cost-effective to maintain stability and affordability. Integration with the EAPP will:

- i. Reduce national generation reserve requirements by up to 15 percent, lowering overall system costs.
- ii. Improve supply reliability and grid stability through shared reserves and real-time balancing.
- iii. Generate export revenues estimated at USD 100 million annually from cross-border sales; and
- iv. Support inclusive electrification in over 30 border communities and economic zones.

Regional integration will thus strengthen Uganda's energy security, enhance its competitiveness, and advance the shared objectives of Agenda 2063, the Africa Continental Free Trade Area (AfCFTA), and the Mission 300 Compact for a unified, low-carbon African power market.

Pillar IV: Work Towards Financially Viable Utilities that Provide Reliable Service.

The financial sustainability and operational efficiency of Uganda's electricity utilities are central to achieving universal access, investor confidence, and long-term sector resilience. Under this pillar, the Government will prioritize actions that restore cost-reflective pricing, enhance operational discipline, and modernize utility systems through digitalization, performance-based management, and demand stimulation. These interventions aim to ensure that utilities deliver affordable, reliable, and quality power while maintaining creditworthiness and attracting private investment.

i. Cost-of-Service Studies, Tariff Reforms, and Performance Improvement

The Government, through the Electricity Regulatory Authority (ERA) in collaboration with UETCL, UEGCL, and UEDCL, will undertake periodic cost-of-service (CoS) studies to determine accurate cost structures and ensure that electricity tariffs reflect the true economic cost of supply. These studies will be updated every three years and will guide a phased tariff reform program anchored on the following principles:

- a) Affordability and social protection: Maintain lifeline tariffs and targeted subsidies for low-income consumers, health facilities, and educational institutions while gradually aligning tariffs to cost-reflective levels.
- b) Transparency and predictability: Apply automatic tariff-adjustment mechanisms to reflect inflation, exchange-rate movements, and fuel-cost variations in a consistent and transparent manner.
- c) Efficiency and accountability: Link tariff approvals to measurable performance-improvement targets such as reductions in Aggregate Technical, Commercial, and

Collection (ATC&C) losses, improved billing efficiency, and customer-service indices.

In tandem, utilities (UEDCL and small concessions) will implement Performance-Improvement Plans (PIPs) focusing on:

- a) Reducing system losses below 14% by 2030 through network reconfiguration, improved metering, and transformer-capacity optimization.
- b) Deploying smart-metering and revenue-protection systems for high-consumption and critical customers.
- c) Introducing incentive-based regulations, where improved utility performance (loss reduction, reliability, collection efficiency) leads to financial rewards or tariff adjustments.

These reforms will enhance sector creditworthiness, attract private investment, and ensure predictable cashflows for ongoing operations, maintenance, and future expansion.

ii. Digitalization, Asset Management, and Transparency

To improve operational efficiency, Uganda will implement a Digital Utility Transformation Program across generation, transmission, and distribution entities. This program will introduce advanced digital technologies and data-driven management tools to optimize asset performance and ensure transparency in sector governance. Key proposed interventions include:

- a) Advanced Metering Infrastructure (AMI): Deployment of smart meters for all industrial and large commercial customers, progressively extending to household clusters, enabling real-time monitoring, pre-payment flexibility, and revenue protection.
- b) Supervisory Control and Data Acquisition (SCADA) and Distribution Management Systems (DMS): Installation across the transmission grid and urban distribution networks to enable predictive maintenance, automated outage management, and dynamic load balancing.
- c) Enterprise Resource Planning (ERP) and Asset-Management Systems: Integration of financial, technical, and maintenance data to support evidence-based decision-making and lifecycle management of generation and grid assets.
- d) Utility Performance Dashboards: ERA will develop and publish annual dashboards covering technical, commercial, and financial indicators (losses, SAIDI/SAIFI, billing, collections, reliability, gender representation, etc.).
- e) Audited Financial Statements: All utilities will be required to publish audited accounts annually, reinforcing transparency, accountability, and investor confidence.

Through these digital and governance reforms, Uganda will progressively transition toward data-driven, customer-centric, and financially transparent utilities, consistent with regional and global benchmarks.

iii. Demand Stimulation and System Load Optimization

Recognizing that utility sustainability depends not only on supply but also on demand, the Government will stimulate electricity demand growth through productive-use applications, e-cooking, and e-mobility initiatives that improve load factors and overall system economics. Key focus areas will include:

- a) Productive Use of Energy (PUE): Electrifying agro-processing, cold-storage, and manufacturing clusters through concessional financing, appliance incentives, and partnerships with micro-, small-, and medium enterprises (MSMEs).
- b) E-Cooking and Electrified Institutions: Promoting electric cooking adoption in households, schools, and hospitals to displace biomass, supported by incentive tariffs and appliance-financing schemes.
- c) E-Mobility Transition: Encouraging investment in electric motorcycles, buses, and charging infrastructure, leveraging the Mission 300 Compact and multi-actor platforms such as renewable energy conferences platforms to mobilize private partnerships and concessional finance.
- d) Off-Peak Utilization and Tariff Incentives: Designing time-of-use tariffs and industrial load-management programs to smooth daily demand curves and improve grid stability.

These interventions will increase electricity sales, enhance utility revenues, and lower the average cost of supply, creating a virtuous cycle of financial health and service reliability.

Outcome

By 2030, Uganda's electricity utilities will operate as financially viable, digitally enabled, and customer-focused institutions with clear accountability frameworks. The combined impact of tariff reforms, performance incentives, digital transformation, and demand stimulation will yield:

- i. Loss reduction to below 14%,
- ii. Improved revenue collection above 98%,
- iii. Enhanced reliability (SAIDI < 10 hours/year in major centers), and
- iv. Sustained financial solvency enabling credit-worthy utilities capable of attracting long-term investment.

These outcomes will consolidate Uganda's transition toward a modern, efficient, and self-sustaining power sector that underpins inclusive national development.

Pillar V: Incentivize Private Sector Participation to Unlock Additional Resources.

Achieving Uganda's universal energy-access and energy-transition objectives requires significant mobilization of private investment across the electricity value chain. Recognizing fiscal limitations and the scale of financing needed, the Government of Uganda (GoU) seeks to leverage private capital, technology, and innovation through

competitive procurement, blended-finance mechanisms, and a robust regulatory environment that supports fair risk-sharing and investment bankability.

1. Competitive Procurement and Standardized PPP Frameworks

The GoU, through the Electricity Regulatory Authority (ERA), MEMD, and the Public Private Partnership Unit (MoFPED), will institutionalize transparent and competitive procurement mechanisms for Independent Power Producers (IPPs), IPTs, and Public-Private Partnerships (PPPs) to enhance efficiency, reduce cost of supply, and promote investor confidence. Key actions include:

- a) Operationalizing a national renewable-energy auction framework, in line with the Energy Policy 2023 and the Energy Transition Strategy, to competitively allocate capacity across solar, hydro, wind, biomass, and storage projects.
- b) Developing standardized tender documentation, model Power Purchase Agreements (PPAs), and Implementation Agreements (IAs) to reduce transaction costs and ensure consistency in risk allocation and performance obligations.
- c) Deploying Letters of Support, partial-risk guarantees, and sovereign backstops for projects of strategic national importance, particularly where private investment complements public infrastructure (e.g., grid-connected solar parks, hybrid hydro-solar, and storage facilities).
- d) Mainstreaming PPP models in generation and transmission, especially for brownfield asset rehabilitation, grid-connected BESS, and e-mobility infrastructure.
- e) Strengthening ERA's regulatory transparency by publishing procurement schedules, bid evaluations, and contract awards to align with global best practice and attract long-term capital from DFIs, pension funds, and climate investors.

By 2030, Uganda aims to procure at least 1,000 MW of new renewable capacity through competitive tenders, reducing average generation tariffs by 10–15% compared to unsolicited IPP arrangements.

2. Blended Finance, Results-Based Finance, and Carbon-Market Instruments

The GoU will accelerate access to diversified financing mechanisms to de-risk investments and improve the affordability of renewable-energy and clean-cooking projects. Building on the experience of the Uganda Energy Credit Capitalisation Company (UECCC) and the Uganda Development Bank (UDB), the following measures will be pursued:

- a) Blended-finance platforms: Combine concessional development-partner resources with commercial capital to lower the weighted average cost of capital (WACC) for renewable projects, mini-grids, and productive-use interventions.
- b) Results-Based Finance (RBF): Expand ongoing RBF programs for solar home systems, mini-grids, and clean-cooking solutions to reward verified connections and sustained service delivery.
- c) Carbon-market integration: Establish a National Carbon Finance Facility under MEMD and MoFPED to channel revenue from carbon credits and Article 6

cooperative approaches into renewable-energy and e-mobility investments. Uganda will participate in voluntary and compliance carbon markets through the sale of Internationally Transferred Mitigation Outcomes (ITMOs) under its Bilateral Cooperation Agreement with Switzerland (KliK Foundation) and future agreements.

- d) Local-currency financing: Strengthen UDB and UECCC credit lines to provide shilling-denominated loans for domestic developers, thereby mitigating foreign-exchange risks.
- e) Domestic manufacturing and supply chains: Encourage local assembly of solar modules, meters, batteries, cables, and appliances, offering fiscal incentives and skills-development programs to boost job creation and reduce import dependency.
- f) **MRVs**

These instruments will collectively mobilize over USD 3 billion in blended public-private finance by 2030 and position Uganda as a regional hub for sustainable-energy investment and carbon-credit generation.

3. Enabling Mini-Grid and Commercial-and-Industrial (C&I) Markets.

Uganda will unlock growth in the decentralized-energy and C&I sectors through targeted regulatory and financial reforms that improve bankability and ease of doing business for private operators. Key priorities include:

- a) Licensing and regulatory clarity: Streamline mini-grid and C&I licensing under ERA, establishing standardized tariffs, grid-interconnection rules, and compensation mechanisms for grid arrival to provide investor certainty.
- b) Open-access and wheeling frameworks: Enable large-scale consumers and industrial parks to procure clean power directly from IPPs through open-access wheeling, thus stimulating competition and efficient power supply.
- c) Net-metering and rooftop-solar regulations: Finalize and operationalize the Net-Metering Code to allow households, institutions, and enterprises to inject surplus solar generation into the grid, improving self-sufficiency and system resilience.
- d) Bankability and model documentation: Develop model mini-grid and C&I project agreements, including standardized interconnection protocols, performance-based subsidies, and financing templates to facilitate due diligence by local banks and DFIs.
- e) Aggregation and portfolio financing: Promote portfolio-based credit facilities that bundle multiple small projects into investable pipelines for financiers, reducing transaction costs and improving scalability.
- f) Establishing a Mini-grids Unit within Ministry of Energy and Mineral Development to serve as a one-stop center for mini-grid development providing support to mini-grid developers and operators.

Through these reforms, Uganda aims to deploy 3,000 mini-grids, electrify 10,000 productive-use enterprises, and install over 300 MW of C&I rooftop solar by 2030, delivering reliable and affordable power directly to communities and industries.

Outcome

By 2030, Uganda's energy sector will evolve into a vibrant, investor-friendly market characterized by transparent procurement, blended-finance innovation, and active participation of domestic and international private investors. Competitive IPP frameworks, carbon-finance integration, and a thriving decentralized-energy ecosystem will collectively drive Uganda toward universal access, financial sustainability, and climate-smart growth under the Mission 300 Compact.

3. Implementation and Monitoring

To ensure coherence, accountability, and accelerated delivery of Uganda’s Mission 300 commitments, the Government of Uganda will establish a dedicated Compact Delivery and Monitoring Unit (CDMU) within the Ministry of Energy and Mineral Development (MEMD). The CDMU will serve as the central coordination and performance-management platform responsible for translating Compact priorities into measurable outcomes, strengthening inter-agency collaboration, and providing transparent progress tracking to the Government, development partners, and citizens. The Compact will mainstream digital transformation as a policy enabler, strengthening data-driven energy governance, regulatory transparency, and performance monitoring across the sector.

Mandate and Functions of the CDMU

The CDMU will be the national delivery nucleus of the Energy Compact, tasked with ensuring that all interventions under the five pillars (generation, access, clean cooking, financing, and innovation) are implemented efficiently and in alignment with national and international commitments. Core functions will include:

- i. **Coordination and Oversight:** Facilitate inter-agency coordination across sector institutions including the Electricity Regulatory Authority (ERA), Uganda Electricity Transmission Company Limited (UETCL), Uganda Electricity Generation Company Limited (UEGCL), Uganda Electricity Distribution Company Limited (UEDCL), and the Uganda Energy Credit Capitalisation Company (UECCC).
- ii. The CDMU will act as the central liaison with the Ministry of Finance, Planning and Economic Development (MoFPED), National Planning Authority (NPA), and development partners to align investment pipelines and financing strategies.
- iii. **Delivery Management:** Translate Compact goals into annual implementation workplans, track execution progress, identify delivery bottlenecks, and coordinate technical missions to ensure projects remain on schedule and within budget.
- iv. **Monitoring, Evaluation and Learning (MEL):** Design and operationalize a results-based monitoring framework integrated with Uganda’s Integrated Energy and Climate Reporting System and the NDP IV Results Framework. The CDMU will define key performance indicators (KPIs), set baselines and targets, and generate evidence for policy adjustments.
- v. **Data and Digital Systems:** Maintain a Compact Results Dashboard, hosted within MEMD’s Digital Energy Information Platform, to visualize real-time data on access expansion, renewable-capacity additions, financial flows, and socio-economic impact. The dashboard will be interoperable with ERA’s regulatory data and UECCC’s finance-tracking systems.

- vi. Reporting and Transparency: Prepare regular progress reports and communicate results to the public, Parliament, Cabinet, and development partners, reinforcing transparency and accountability in line with Uganda's open-government principles.

Structure and Governance

The CDMU will be embedded within the Permanent Secretary's Office at MEMD, with clear institutional anchoring and cross-sector representation.

Leadership: Headed by a Compact Delivery Coordinator (CDC) at Commissioner level, reporting directly to the Permanent Secretary and the National Energy Steering Committee.

CDMU Composition:

- a. Technical Delivery Team:
 - b. Grid and Generation Expansion
 - c. Off-Grid and Clean Cooking
 - d. Private Finance and Investment
 - e. Resilience and Digital Innovation
 - f. Governance, Gender, and Inclusion
 - g. .
- h. Monitoring & Data Team: Specialists in MEAL, MRV, Digital systems, and geo-spatial analytics.
- i. Partnership & Finance Unit: Focal point for coordination with MoFPED, AfDB, World Bank, GIZ, UNDP, and private-sector partners.

Delivery Clusters: The CDMU will organize its work through five clusters corresponding to Compact pillars:

- i. Grid and Generation Expansion
- ii. Off-Grid and Clean Cooking
- iii. Private Finance and Investment
- iv. Resilience and Digital Innovation
- v. Governance, Gender, and Inclusion.

To reinforce whole-of-government collaboration, the CDMU will convene quarterly inter-agency technical committees and participate in the National Energy and Climate Coordination Committee chaired by MEMD.

Results Framework and Key Indicators.

The CDMU will monitor and evaluate implementation progress using a set of core and thematic indicators, aligned with Mission 300, SDG 7, and national planning systems. Key indicators include:

- i. Electricity Access Rate (, % of households connected)

- ii. Clean Cooking Adoption Rate (% of households using modern fuels and technologies)
- iii. Renewable-Energy Share (% of total generation capacity)
- iv. System Losses (ATC&C) and Reliability Indices (SAIDI, SAIFI)
- v. Financial Sustainability Metrics (collection efficiency, cost recovery, debt-service coverage)
- vi. Private Capital Mobilized (USD million per year)
- vii. Jobs Created, disaggregated by gender and youth
- viii. Number of Productive-Use Enterprises Electrified
- ix. Carbon Emissions Avoided / Mitigated (tCO₂e)

Each indicator will have defined baselines (2024), mid-term milestones (2027), and 2030 targets, ensuring consistent tracking across all Compact interventions.

Reporting and Knowledge Sharing.

To maintain transparency and accountability, the CDMU will follow a structured reporting cadence that aligns with both government and development-partner cycles:

- i. Quarterly Implementation Notes: Brief technical updates summarizing project status, disbursement levels, and implementation bottlenecks.
- ii. Semi-Annual Dashboard Updates: Digital publication of performance data on access, clean cooking, renewable energy, financing, and jobs, shared publicly through MEMD's Energy Portal.
- iii. Annual Compact Report: A comprehensive, publicly available report summarizing progress, lessons learned, and next-year priorities, presented at the National Energy Compact Review Forum and at the Renewable Energy Conferences.
- iv. Independent Evaluation: Mid-term (2027) and end-term (2030) performance reviews conducted jointly with development partners and NPA to validate results and inform future compacts.

Development-Partner Engagement and Synergies.

The CDMU will serve as Uganda's single coordination window for partner engagement under Mission 300, ensuring alignment between government, DFIs, UN agencies, and the private sector. This will prevent duplication, improve project sequence, and accelerate disbursements across all programs supported by the AfDB, World Bank, GIZ, FCDO, UNDP, UNIDO, and UECCC.

Outcome

Through the establishment of the CDMU, Uganda will institutionalize a delivery-focused culture within the energy sector, ensuring that planning, financing, and implementation move in tandem and that results are measurable, transparent, and accountable. By 2030, Uganda's Compact governance will stand as a regional benchmark for performance-based implementation, real-time data transparency, and evidence-driven decision-making, core values of the Mission 300 Compact for Universal Energy Access.

4. Financing Architecture

Achieving Uganda’s energy-transition and universal-access goals requires innovative, diversified, and well-coordinated financing mechanisms. The total investment requirement under the Mission 300 Compact is estimated at USD 5 billion by 2030, to be mobilized through an integrated financing framework that combines public resources, concessional funding, climate finance, and private capital. The Government will establish an Energy Transition Financing Window (ETF-W) to serve as the central coordination platform for project preparation, blended finance, and risk mitigation across all Compact pillars. This window will ensure efficient resource allocation, improved transparency, and harmonized engagement with development partners and private investors.

Public and Development-Partner Financing

The Government of Uganda, through the Ministry of Finance, Planning and Economic Development (MoFPED) and the Ministry of Energy and Mineral Development (MEMD), will allocate public resources to anchor priority energy-access and transition programs. Public funding will serve as catalytic capital to leverage additional financing from development partners and international climate funds. Key sources and mechanisms include:

- i. Government Budgetary Allocations: Annual budget provisions for grid expansion, transmission infrastructure, rural electrification, and institutional clean cooking initiatives.
- ii. Concessional Loans and Grants: Long-term, low-interest financing from the World Bank (IDA), African Development Bank (AfDB), European Investment Bank (EIB), and Bilateral Development Agencies (GIZ, JICA, FCDO, AFD) to fund generation, transmission, and off-grid programs.
- iii. Climate and Resilience Funds: Access to the Green Climate Fund (GCF), Adaptation Fund, and Global Environment Facility (GEF) for climate-mitigation and adaptation projects in renewable energy, e-mobility, and clean cooking.
- iv. Carbon-Finance Programs: Monetization of verified emission reductions and Internationally Transferred Mitigation Outcomes (ITMOs) under Article 6 of the Paris Agreement, building on Uganda’s bilateral cooperation frameworks with Switzerland (KliK Foundation), South Korea, Singapore, and other carbon-market partners such as CORSIA, VERRA, Gold Standard, among others

Collectively, these sources will provide long-term, low-cost capital to reduce financing risks and ensure the affordability of energy services.

Private Investment and De-Risking Mechanisms.

Private-sector participation will be a cornerstone of Uganda’s energy transition. The Government will scale up private capital mobilization through transparent procurement, predictable regulation, and innovative risk-sharing tools. Key instruments and approaches will include:

- i. Public-Private Partnerships (PPPs): Deployment in large-scale renewable generation (solar parks, hydro rehabilitation, wind farms), transmission infrastructure, and urban e-mobility networks.
- ii. Independent Power Producers (IPPs): Procured through competitive auctions under standardized Power Purchase Agreements (PPAs) to ensure cost-efficient tariffs and transparent risk allocation.
- iii. Partial-Risk and Credit Guarantees: Provided through UECCC, UDB, AfDB, and the World Bank's MIGA and IDA Guarantee Programs to reduce perceived risks and improve project bankability.
- iv. Viability-Gap Funding (VGF): For commercially marginal but socially critical projects such as mini-grids in remote parishes, institutional clean cooking, and public-facility electrification.
- v. Local-Currency Credit Lines: Channeled through the Uganda Development Bank (UDB) and the Uganda Energy Credit Capitalisation Company (UECCC) to finance domestic developers and suppliers, reducing exposure to foreign-exchange volatility.
- vi. Private-Equity and Impact Investment Funds: Engagement with local and international fund managers (e.g., InfraCo, SunFunder, REPP, Spark+ Africa Fund) to mobilize equity and mezzanine capital for SMEs in DRE and clean-cooking value chains.

These mechanisms will ensure that private investors can participate at all scales (from utility-level IPPs to community mini-grids and productive-use enterprises) with reduced risk and enhanced returns.

Blended Finance and Results-Based Finance (RBF) Instruments.

To expand access and affordability, Uganda will deploy blended-finance structures that combine concessional and commercial capital within unified investment frameworks. Specific instruments will include:

- i. Results-Based Finance (RBF) for Off-Grid and Clean Cooking: Performance-based subsidies disbursed upon verified connections, installations, or stove-sales, incentivizing service quality and sustainability.
- ii. Output-Based Aid (OBA): Targeted subsidies for vulnerable households and institutions to close the affordability gap.
- iii. Energy-for-Enterprise Grant Challenge Fund: Competitive grants for productive-use, energy-efficiency, clean cooking, and innovation ventures, particularly those led by youth and women entrepreneurs.
- iv. Green Bonds and Energy Transition: Issued domestically in collaboration with the Capital Markets Authority and the Bank of Uganda to attract institutional investors such as pension funds.
- v. Revolving and End-User Credit Facilities: Managed through microfinance institutions and SACCOs to enable consumers and SMEs to purchase solar and clean-cooking products on affordable terms.

Through blended finance, Uganda aims to mobilize at least USD 1.79 billion in private investment against a USD 3.21 billion public and concessional anchor, achieving a leverage ratio of 1:1.5 by 2030.

Energy Transition Financing Window (ETF-W)

To enhance coordination and accountability, the Government will operationalize a Consolidated Energy Transition Financing Window (ETF-W) within MEMD, in partnership with MoFPED, UECCC, UDB, and the National Planning Authority (NPA). The ETF-W will:

- i. Serve as the single-entry point for all Compact-related financing (including clean cooking accelerator fund), ensuring coherence between government programs and development-partner support.
- ii. Coordinate project preparation and technical assistance for bankable investments under each pillar of the Compact.
- iii. Manage blended-finance instruments and de-risking facilities, including partial-risk guarantees and credit-enhancement schemes.
- iv. Maintain a Project-Finance Database and Investment Pipeline Tracker, integrated with the CDMU dashboard, to provide real-time visibility of resource flows, project status, and investment impact.
- v. Facilitate joint annual Government–Development Partner Investment Dialogues to review financing performance, unlock bottlenecks, and align new commitments with Compact priorities.

This window will institutionalize Uganda’s energy-finance architecture, enhance transparency, and attract sustained participation from climate investors, DFIs, and the private sector.

Strategic Financing Outcomes

By 2030, Uganda’s Compact Financing Architecture aims to achieve the following outcomes:

- i. Total financing mobilized: USD 6 billion across all pillars.
- ii. Private capital share: ≥ 40 % of total investment.
- iii. Local currency financing: ≥ 25 % of total credit to mitigate forex risk.
- iv. Climate finance inflows: $\geq$ USD 500 million through carbon-market instruments and green funds.
- v. Financial sustainability: Utilities achieving full cost recovery and positive cash flow by 2030.

This diversified and performance-based financing framework will position Uganda as a regional model for energy-transition finance, demonstrating how well-structured public leadership and private investment can jointly deliver universal access, green growth, and climate resilience under the Mission 300 Compact.

Governance, Gender, Youth and Inclusion

Uganda recognizes that a just and inclusive energy transition must benefit all citizens (women, men, and youth alike) and that gender equality and meaningful participation of young people are not only social imperatives but also key enablers of innovation, sustainability, and economic growth. The Government will therefore mainstream gender equity and youth inclusion across all components of energy-sector planning, policy formulation, procurement, and service delivery under the Mission 300 Compact.

1. Institutionalizing Gender-Responsive and Inclusive Energy Planning.

The Ministry of Energy and Mineral Development (MEMD), working through the Gender Focal Point System and the Compact Delivery and Monitoring Unit (CDMU), will ensure that all policies, programs, and budgets under this Compact are gender-responsive and youth-sensitive. Key measures will include:

- i. Conducting Gender and Social Inclusion (GESI) assessments for every new project to identify barriers and opportunities for participation.
- ii. Integrating gender indicators into energy-sector planning tools such as the Integrated Electrification Plan, Clean Cooking Strategy, and Energy Transition Framework.
- iii. Applying gender-responsive budgeting (GRB) to track financial allocations that directly benefit women and youth.
- iv. Strengthening institutional capacity through targeted training for MEMD, ERA, UEGCL, UETCL, UEDCL, and UECCC on gender mainstreaming, anti-harassment policies, and social safeguards.

This will ensure that inclusion principles are embedded not as add-ons but as core performance criteria across all Compact pillars.

2. Expanding Women's Participation in Energy Value Chains.

Women remain under-represented in Uganda's energy workforce, yet they play central roles in energy access, entrepreneurship, and household decision-making. To address this, the Government will set and enforce minimum participation targets for women-led enterprises and female professionals across the off-grid, clean-cooking, and productive-use segments. Specific interventions will include:

- i. Procurement and supplier diversity: Require that at least 30 percent of suppliers or implementing partners in off-grid, clean-cooking, and mini-grid programs are women-led or women-owned businesses.
- ii. Access to finance: Design concessional financing products through UECCC and partner banks targeted at women entrepreneurs in energy manufacturing, distribution, and services.
- iii. Women-in-Energy Accelerator Program: Establish mentorship and capacity-building schemes pairing established professionals with emerging female engineers, technicians, and managers.

- iv. Policy participation: Include women's associations (e.g., Women in Energy Uganda, UWESO, Uganda Women Entrepreneurs Cooperative) in national energy policy dialogues and Compact review platforms.
- v. Disabled, Refugees, Youths, informal settlements

By 2030, Uganda aims for 40 percent female participation in clean-cooking distribution networks and 30 percent representation in management and technical roles within energy agencies and private developers.

3. Youth Empowerment, Skills Development, and Innovation.

Recognizing Uganda's predominantly youthful population, the Compact will prioritize youth participation and green-skills development as engines of innovation and job creation. Key actions:

- i. Internship and Apprenticeship Programs: Institutionalize annual placement of youth (particularly from technical institutes and universities) within MEMD, UETCL, UEGCL, UEDCL, ERA, and private-sector partners to build practical skills in renewable energy, grid maintenance, and digital systems.
- ii. Youth Green Corps: Launch a national program under Mission 300 to train and deploy young technicians for solar installation, mini-grid operation, and clean-cooking enterprise support in rural parishes.
- iii. Innovation and Start-Up Support: Provide seed grants and incubation support through the Energy-for-Enterprise Challenge Fund for youth-led innovations in e-mobility, battery recycling, and productive-use appliances.
- iv. Digital-skills development: Partner with ICT Ministry and universities to promote coding, data analytics, and AI applications for energy management among young innovators.

These interventions will not only create green jobs but also foster an inclusive pipeline of future energy leaders capable of driving Uganda's energy transition.

4. Community Engagement and Social Inclusion.

Energy programs will adopt a people-centered approach that ensures participation, ownership, and equitable benefits across all communities, including marginalized groups, persons with disabilities, and residents of displacement-affected or refugee-hosting areas. Key actions:

- i. Conduct community consultations during project design and environmental-social assessments to incorporate local priorities.
- ii. Implement inclusive communication campaigns in local languages to promote awareness/Behavioral Change campaigns, of energy rights, safety, and opportunities.
- iii. Integrate social safeguards (gender-based-violence prevention, grievance-redress mechanisms) in all Compact-financed projects.

- iv. Promote equitable access to jobs created under the Compact, ensuring gender-balanced recruitment in construction, maintenance, and service delivery.

This participatory model will strengthen public trust, improve project sustainability, and ensure that energy investments translate into tangible improvements in livelihoods.

5. Monitoring and Accountability

The CDMU will integrate gender and youth indicators into its results dashboard to track inclusivity outcomes in real time. Key indicators will include:

- i. % of women-owned/led enterprises contracted under Compact programs.
- ii. % of youth employed or trained through energy projects.
- iii. Number of women and youth accessing financing for clean-energy enterprises.
- iv. Gender-disaggregated data on jobs created and capacity-building participants.

Annual reports will include a dedicated Gender and Inclusion Scorecard, and performance will be discussed at the National Energy Compact Review Forum and REC25 and successor conferences.

Outcome

By 2030, Uganda's Mission 300 Compact will have established an inclusive and equitable energy sector where:

- i. Women and youth are fully integrated as leaders, innovators, and beneficiaries.
- ii. All programs embed gender and social inclusion from conception to implementation; and
- iii. The energy transition delivers shared prosperity, not only kilowatt-hours.

This gender-responsive, youth-empowered approach will reinforce Uganda's vision of "Energy for All: Access, Equity, and Opportunity," ensuring that no one is left behind in the country's march toward a sustainable, low-carbon future.

Risk Management and Sustainability

The successful delivery of Uganda's Energy Compact under Mission 300 depends on proactive identification, mitigation, and monitoring of strategic and operational risks that could affect implementation, financing, and long-term sustainability. The Government of Uganda will therefore adopt an integrated risk-management framework that anticipates and mitigates emerging threats while reinforcing resilience across all components of the energy sector.

Category	Risk	Mitigation Measure
Financial and Investment Risks	Insufficient or delayed financing may constrain project execution, particularly for large-scale infrastructure, clean-cooking, and off-grid programs. Global interest-rate fluctuations, exchange-rate volatility, and fiscal pressures could also increase the cost of borrowing and reduce liquidity for developers and financiers.	1. Diversified financing mix: Expand blended-finance instruments through the Energy Transition Financing Window to combine concessional, private, and climate-finance sources. 2. Accelerated project preparation: Establish a dedicated Project-Preparation Facility (PPF) under MEMD to ensure early technical, financial, and environmental due diligence, shortening time-to-finance. 3. Predictable budgeting and fiscal support: Ring-fence budgetary allocations for co-financing of priority projects and maintain predictable tariff-adjustment mechanisms to secure revenue flows. 4. Local-currency financing: Strengthen the Uganda Development Bank (UDB) and UECCC to offer shilling-denominated loans, shielding domestic developers from forex risk. ii. 5. Carbon-market engagement: Generate additional revenue through carbon-credit sales and Article 6 cooperation, channeled back into project development and maintenance.

Category	Risk	Mitigation Measure
Regulatory and Institutional Risks	Regulatory delays, fragmented mandates, or inconsistent enforcement could undermine investor confidence and slow implementation. Bureaucratic overlaps in permitting, land acquisition, and environmental approvals can create uncertainty for private investors and development partners.	1. Policy coherence and alignment: Strengthen coordination between MEMD, ERA, NPA, and MoFPED through the Compact Delivery and Monitoring Unit (CDMU) to ensure policy and regulatory harmony. 2. Timely regulatory reviews: Conduct scheduled reviews of tariffs, licensing, and procurement frameworks every two years to reflect market realities. 3. Digitization of permitting: Implement an integrated e-licensing and e-procurement system for IPPs, mini-grids, and clean-cooking enterprises to reduce processing times. 4. Capacity building: Strengthen ERA's and MEMD's regulatory and monitoring capabilities to keep pace with evolving energy-market dynamics.
Technical and Project-Preparation Bottlenecks	Delays in feasibility studies, land acquisition, environmental and social impact assessments (ESIAs), or procurement approvals can stall projects, increase costs, and reduce investor confidence.	1. Advance planning and pipeline readiness: Prepare a rolling five-year investment pipeline with pre-feasibility, designs, and safeguards documentation ready for financing. 2. Standardized documentation: Develop and publish model PPAs, implementation agreements, and environmental-social templates for faster negotiations. 3. Technical-assistance partnerships: Utilize donor-supported facilities (AfDB, WB, GIZ, SEforALL) for project-preparation support, procurement training, and feasibility co-financing.

Category	Risk	Mitigation Measure
		5. 4. Cross-agency task forces: Establish multi-institutional technical teams to expedite land acquisition, ESIA clearance, and community consultations for major energy corridors.
Climate and Environmental Risks	Climate variability (especially droughts and shifting rainfall patterns) poses hydrological risks to Uganda's hydro-dominated generation mix. Increasing temperatures and extreme events may affect both energy supply and infrastructure reliability.	1. Diversified generation portfolio: Accelerate solar, wind, geothermal, and biomass investments to complement hydro and minimize generation vulnerability. 2. Energy-storage integration: Deploy Battery-Energy-Storage Systems (BESS) and hybrid solar-hydro operations to stabilize supply during dry spells. 3. Climate-resilient design standards: Incorporate climate-risk assessments into infrastructure planning and enforce resilience criteria for all new assets. 4. Environmental and ecosystem management: Strengthen catchment-management programs for hydropower basins (Victoria, Albert, Kyoga) in coordination with MWE and NEMA. i. 5. Disaster-preparedness planning: Develop an Energy Sector Climate Resilience Strategy with early-warning systems and adaptive maintenance schedules.
Affordability and Social Risks	Rising energy costs, inflation, or tariff adjustments could reduce affordability for households and small enterprises, leading to low connection uptake and public dissatisfaction.	1. Lifeline tariffs and targeted subsidies: Maintain a transparent lifeline-tariff structure for low-income consumers and critical social institutions (schools, clinics, water systems).

Category	Risk	Mitigation Measure
		2. Cross-subsidy and tariff smoothing: Balance commercial and residential tariff categories to ensure equity while preserving utility solvency. 3. Productive-use promotion: Support income-generating uses of electricity (agro-processing, cold chains, irrigation) to improve household affordability and load factors. i. 4. Social protection linkages: Coordinate with the Ministry of Gender, Labour and Social Development (MGLSD) to integrate energy access into social-protection schemes.
Implementation and Performance Risks	Weak monitoring, fragmented reporting, or limited corrective action can compromise implementation discipline and accountability.	1. Robust Monitoring & Evaluation (M&E): Operate a digital Compact Results Dashboard under the CDMU to track progress in real time across agencies. 2. Quarterly performance reviews: Convene cross-agency meetings to assess progress, flag delays, and apply corrective measures. 3. Annual Compact Report: Publish detailed results and lessons learned to promote transparency and stakeholder engagement. i. 4. Independent verification: Engage third-party evaluators to validate performance data, financing flows, and environmental-social compliance.

Sustainability and Long-Term Resilience.

Beyond risk mitigation, the Compact emphasizes institutional and financial sustainability to ensure that benefits persist beyond 2030. Key sustainability enablers include:

- i. Building a resilient, diversified generation mix supported by regional power trade and energy storage.
- ii. Establishing financially self-sustaining utilities through cost-reflective tariffs and efficient operations.
- iii. Promoting local manufacturing and workforce development to retain value within the economy.
- iv. Embedding environmental, social, and governance (ESG) standards in all projects and public-private partnerships.
- v. Strengthening the Compact Delivery and Monitoring Unit (CDMU) as a permanent mechanism for continuous learning, adaptive management, and institutional memory.

Outcome

By proactively addressing financial, regulatory, technical, and climate risks through integrated planning and adaptive management, Uganda's Mission 300 Compact will maintain momentum, credibility, and resilience. The Compact's risk-management framework will ensure that every intervention (whether grid expansion, off-grid deployment, or clean-cooking initiative) is delivered on time, on budget, and on impact, securing Uganda's path toward universal, affordable, and sustainable energy for all by 2030.

Annexes

To support implementation, coordination, and transparency of the Uganda National Energy Compact (Mission 300, 2025–2030), five operational annexes will accompany this Compact. These annexes provide detailed matrices, data frameworks, institutional mapping, and partnership strategies to guide delivery and ensure results are measurable, reportable, and verifiable. Each annex serves as a *living document*, updated periodically under the leadership of the Compact Delivery and Monitoring Unit (CDMU) within the Ministry of Energy and Mineral Development (MEMD), in collaboration with partner institutions and development stakeholders.

Annex I: Outcome–Output–Indicator Matrix (2025–2030)

This annex establishes the results framework that links the Compact’s strategic outcomes to measurable outputs and indicators. It serves as the foundation for performance monitoring, results-based reporting, and alignment with national and international frameworks including SDG 7, the NDP IV Results Matrix, and the SEforALL Global Tracking Framework. Key contents:

- i. Outcomes: High-level results expected by 2030, covering universal access, renewable-energy share, clean cooking adoption, system reliability, financial sustainability, and gender inclusion.
- ii. Outputs: Tangible deliverables under each pillar (e.g., MW of renewable capacity added, number of households connected, mini grids deployed, jobs created).
- iii. Indicators: Quantitative and qualitative metrics with baselines (2024), annual milestones (2025–2029), and final targets (2030).
- iv. Disaggregation: Data disaggregated by region, gender, and income group to ensure inclusivity and equity tracking.
- v. Verification: Indicator definitions aligned with the Multi-Tier Framework for Energy Access (World Bank/SEforALL) to allow international comparability.

This matrix will form the **core reference tool** for the CDMU’s results dashboard, semi-annual reporting, and independent verification exercises.

Annex II: Investment Pipeline & Funding Needs (Public/Private Split) by Pillar

This annex presents Uganda's indicative investment pipeline and financing needs for the period 2025–2030, structured around the five Mission 300 pillars and a supporting implementation component. Total (2025–2030): USD 2,880 – 3,400 million (≈ 52% Public / Concessional and 48% Private / Commercial). Amounts are in USD millions, rounded to the nearest ten.

Table 4: Investment funding needs by Pillar (US\$ Million).

Pillar	Major Investment Areas (2025–2030)	Total Est. Investment Need (USD m)	Public / Concessional (GoU + DFIs)		Private / Commercial		Illustrative Instruments / Lead Entities
Generation, Transmission and distribution grid Expansion	Renewable IPP plants (hydro, solar, wind), grid expansion, BESS storage, transmission reinforcement & interconnectors.	3700	70% (~2590m)		30% (~1110m)		IPP auctions, PPPs, AfDB & WB loans, MIGA guarantees.
DRE Integration, Off-Grid & Clean Cooking Acceleration	Mini-grids, standalone solar, institutional systems, LPG/bioethanol/electric/biogas stoves, productive-use appliances.	800	55% (~440m)		45% (~360m)		RBF grants (UECCC, EnDev, AfDB), Clean Cooking Facility, pay-go financiers.
Regional Integration & Power Trade	Cross-border interconnectors & substations, grid stability, trading systems (EAPP).	550	70% (~385m)		30% (~165m)		AfDB NELSAP, WB EAPP, PPP O&M contracts.
Financially Viable Utilities & Digital Grids	Distribution modernization, smart metering, loss reduction, ICT & automation.	500	60% (~300m)		40% (~200m)		ERA reforms, UEDCL programs, UECCC RBF facility.
Private Sector Mobilization & Enabling Environment	PPP frameworks, carbon-market instruments, guarantees, local-currency lines, domestic manufacturing.	350			100% (350m)		ETF-W, PRG Fund, Carbon Finance Facility, private equity.
Compact Delivery, Data & Capacity Building	CDMU establishment, M&E systems, skills, gender & youth, REC25 partnerships.	100	85% (~85m)		15% (~15m)		GoU budget, donor TA, CSR and academia partnerships.
Total (2025–2030)		6,000	~60% (3,800)		~40% (2,200)		

Notes:

Public and concessional financing (~52%) will anchor foundational infrastructure such as transmission, last-mile connections, and socially oriented clean-cooking programs. Private investment (~48%) will flow through IPPs, C&I solar, mini-grids, and clean-cooking enterprises mobilized via blended-finance facilities, PPPs, and results-based finance. The Energy Transition Financing Window (ETF-W) will coordinate all flows, linking public budgeting, DFI pipelines, and carbon-market revenues, targeting a 1:1 leverage ratio of private-to-public finance by 2030. Funding allocations and pipeline maturity will be updated annually through the Compact Delivery and Monitoring Unit (CDMU) in coordination with MoFPED and development partners.

Outcome

By 2030, Uganda's energy-sector investment program will have mobilized approximately USD 3 billion (half from public and concessional sources and half from private capital) driving universal access (95%), renewable generation share above 90%, clean cooking adoption exceeding 50%, and creation of more than 100,000 direct and indirect green jobs.

Annex III: Institutional Roles & Delivery Map

Annex III defines the institutional architecture and delivery responsibilities for Compact implementation. It clarifies mandates, inter-agency coordination mechanisms, and accountability lines from policy formulation to field execution. Key institutions and their core roles:

1. MEMD: Lead ministry and Compact coordinator through the CDMU; policy oversight, donor coordination, and reporting.
2. ERA: Regulatory oversight, tariff setting, licensing, and enforcement of performance standards.
3. UETCL: Transmission-system planning, operation, and regional interconnection management.
4. UEGCL: Public-generation development and asset management.
5. UEDCL: Distribution rehabilitation, loss reduction, and service-quality enhancement.
6. UECCC/ UDB: Financial intermediary for private-sector de-risking, credit lines, and RBF programs.
7. MoFPED: Fiscal oversight, budget integration, and management of concessional resources and guarantees.
8. NPA: Policy alignment, monitoring integration with the NDP IV framework, and evaluation.
9. Local Governments: On-the-ground implementation of off-grid, clean cooking, and productive-use programs under the Parish Development Model (PDM).

The annex includes a Delivery Map and Coordination Diagram showing institutional linkages, reporting flows, and thematic clusters corresponding to Compact pillars. This ensures coherence, accountability, and efficient resource utilization across agencies.

Annex IV: Monitoring Dashboard Template and Definitions

Annex IV provides a standardized monitoring and reporting template for the Compact Results Dashboard managed by the CDMU. It defines indicator formats, data sources, update frequency, and visualization categories to ensure consistency across implementing agencies. Key features:

- i. Dashboard structure: Pillar-based layout showing access, generation, finance, governance, and inclusion progress.
- ii. Indicator definitions: Harmonized with the Multi-Tier Framework (MTF), distinguishing between connection availability, quality, affordability, and reliability.
- iii. Data sources: ERA regulatory reports, UETCL system data, UEDCL service logs, UECCC finance records, and partner-program results.
- iv. Update cadence: Quarterly data entry by agencies, validated semi-annually, and published annually in the Compact Report.
- v. Color-coded performance metrics: Green – On Track, Amber – Requires Attention and Red – Off Track.

The dashboard template will be interoperable with the Energy Information System (EIS) and Open Data Portal under MEMD, allowing real-time public visibility of Uganda's Mission 300 progress.

Annex V: Communications and Partnership Plan

Annex V sets out the strategic communications and partnership framework that will sustain visibility, advocacy, and multi-stakeholder engagement throughout Compact implementation. It ensures that Uganda's achievements and investment opportunities under Mission 300 are amplified nationally, regionally, and globally. Key components:

1. **Strategic objectives:**
 - a. Promote national ownership and awareness of the Compact.
 - b. Strengthen stakeholder coordination and donor alignment.
 - c. Position Uganda as a leading energy-transition champion in Africa.
2. **Target audiences:** Cabinet, Parliament, development partners, private investors, local governments, civil society, media, and citizens.
3. **Core communication tools:**
 - a. Annual Compact Report and Energy Access Bulletin;
 - b. Digital outreach via MEMD's website and social media platforms;
 - c. Periodic press briefings, stakeholder roundtables, and knowledge-exchange workshops;
 - d. Mission 300 branding toolkit (logo, slogan, color palette, fact sheets).
4. **Partnership alignment:** Integration of Compact communications with the Energy Conferences, providing a regional platform for showcasing Uganda's progress, investment pipeline, and innovation stories.
5. **Visibility and advocacy:** Collaborate with SEforALL, AfDB, and UNDP to share Uganda's best practices through global platforms such as the Africa Climate Summit and COP events.

This annex ensures consistent messaging, continuous partner engagement, and a transparent feedback loop between government, citizens, and stakeholders, reinforcing Uganda's leadership in sustainable-energy transformation.

Outcome

Together, these annexes form the operational backbone of the Uganda National Energy Compact. They provide the tools, data systems, institutional clarity, and engagement strategies necessary to ensure that the Compact's ambitions (universal access, renewable growth, financial sustainability, and inclusion) are not only articulated but delivered, measured, and celebrated.