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NATIONAL ENERGY COMPACT
FOR THE REPUBLIC OF GHANA

REPUBLIC OF GHANA

Preamble

The Republic of Ghana's National Energy Compact represents a strategic commitment to advance sustainable energy development. With an electricity access rate of 89% (2024), Ghana stands at a critical juncture to achieve universal energy access by 2030 through targeted grid expansion, distributed renewable energy (DRE), and clean cooking solutions.

By addressing systemic bottlenecks across the energy value chain, Ghana aims to deliver reliable, affordable, and sustainable energy. This Compact that is aligned with its Energy Transition Plan (ETP), the World Bank/African Development Bank "big push" to electrify 300 million Africans by 2030 (Mission 300), the UN Sustainable Development Goal 7 (SDG7), African Union's Agenda 2063, the Paris Agreement, and the West African Power Pool (WAPP) objectives, serves as a blueprint to harmonize economic growth, social and gender equity, and environmental sustainability while addressing persistent disparities in energy access across urban and rural communities.

Endowed with renewable energy resources, including wind, biomass, solar and moderate hydropower potential, and bolstered by a dynamic public and private sector, Ghana is uniquely positioned to accelerate energy access for millions. Ghana has a population of 34.4 million (2024) and a GDP of US$82.83 billion (2024) which underscores the urgency of leveraging its energy potential to drive inclusive development.

The Compact that has been developed in consultation with energy sector stakeholders, development partners, private sector and civil society outlines four transformative objectives:

1. Increasing the share of renewable energy in the generation mix by prioritizing solar, wind, biomass medium hydropower, battery energy storage, and hydrogen integration.
2. Mobilizing public funds, concessional financing, and private investment to modernize energy infrastructure and scale last-mile electrification.
3. Promoting the gradual transition from rudimentary stoves for cooking towards cleaner and more efficient alternatives, in order to mitigate greenhouse gas emissions and reduce public health risks.
4. Promoting productive use of energy to enhance job creation.

The Compact's Action Plan is structured around five strategic pillars. Aligned with key national policies including the National Electrification Scheme (NES), the National Mini Grid Policy, Renewable Energy Master Plan, and Integrated Power Sector Master Plan.

The Compact's action plan emphasizes:

1. **Enhancing Power System Efficiency:** Optimizing planning, procurement, and infrastructure to balance supply-demand dynamics.
2. **Strengthening Regional Integration:** Harmonizing transmission planning and pricing within Ghana and the West African Power Pool (WAPP).
3. **Increasing Electricity Access, Promoting Distributed Renewable Energy and Improved Access to Clean Cooking:** Increasing adoption of solar, wind, and hydro resources as well as clean cooking solutions.
4. **Boosting Private Sector Participation:** Mobilizing investments through transparent frameworks.
5. **Optimizing Utility Financial Viability:** Improving utility commercial and operational performance to enable cost recovery.
6. **Improving Gender Diversity in Energy:** Increasing women's representation in public energy utilities.

To accelerate energy access in Ghana, an investment of US$4.4 billion is required during 2025 to 2030. It is expected that of this amount, US$2.6 billion in financing will be private sector led, thereby requiring an additional investment of US$1.8 billion from donor and public finance among others. The Government of Ghana is calling on the collaborative efforts of Development Partners, philanthropies, the private sector, and civil society for meeting this target.

Abbreviations

ATC&C	Aggregate Technical, Commercial, and Collection
BESS	Battery Energy Storage System
BOOT	Build Own Operate and Transfer
CHPS	Community Health Planning and Services
CWM	Cash Waterfall Mechanism
DHS	Demographic and Health Survey
DISCOs	Distribution Companies
DRE	Distributed Renewable Energy
DSM	Demand side management
EC	Energy Commission
ECG	Electricity Company of Ghana, Ltd.
ECOWAS	Economic Community of West African States
ERERA	ECOWAS Regional Electricity Regulatory Authority
ESIA	Environmental and Social Impact Assessment
ESRP	Energy Sector Recovery Program
GDP	Gross Domestic Product
GRIDCo	Ghana Grid Company, Ltd.
ICS	Improved Cookstoves
IMF	International Monetary Fund
IPPs	Independent Power Producers
IPSMP	Integrated Power Sector Masterplan
KPIs	Key Performance Indicators
kWh	Kilowatt-hour
LEAP	Livelihood Empowerment Against Poverty
LI	Legislative Instrument
LPG	Liquefied Petroleum Gas
M&E	Monitoring and Evaluation
MoEnGT	Ministry of Energy and Green Transition

MW	Megawatts
MYTO	Multi-year Tariff Order
NDCs	Nationally Determined Contributions
NEDCo	Northern Electricity Distribution Company
NES	National Electrification Scheme
NGC	Natural Gas Clearinghouse
PforR	World Bank Energy Sector Recovery Program for Results
PIPs	Performance Improvement Plans
PPA	Power Purchase Agreement
PUE	Productive use of energy
PPTC	Power Planning Technical Committee
PSP	Private Sector Participation
PURC	Public Utilities Regulatory Commission
RE	Renewable Energy
RESCO	Renewable energy service company
REGTIF	Renewable Energy and Green Transition Investment Fund
REMP	Renewable Energy Master Plan
IPSMP	Integrated Power Sector Master Plan
SCADA	Supervisory Control and Data Acquisition
SDG	Sustainable Development Goal
SHEP	Self-Help Electrification Programme
SHS	Solar Home Systems
SPV	Special Purpose Vehicle
SREP	Scaling-up Renewable Energy Program
T&D	Transmission and Distribution
VRE	Variable renewable energy
WAPP	West African Power Pool

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Declaration of Commitment

The Republic of Ghana is committed to achieving universal access to reliable, affordable, and sustainable energy by 2030, recognizing electricity as a catalyst for social equity, economic growth, and environmental stewardship. Through significant progress under the National Electrification Scheme (NES), Ghana has achieved an 89% electricity access rate. Despite this achievement, 11% of the population (~3.7 million Ghanaians) remains unelectrified.

The Government of Ghana is committed to accelerating electricity access to 99% of the population by 2030 through the following actions:

- **Increasing renewable energy generation from 4% to 10% by 2030 thereby reducing the cost of generation:** Utility scale solar, wind and hydro capacity additions combined with distributed renewable energy solutions will be required to meet this target. This transition to renewable energy will contribute to the reduction in the overall cost of generation, translating into more affordable electricity tariffs to the end user, and promoting increased access. Achieving this benefit is hinged on the creation of an enabling environment which allows for competitively procured renewable energy generation, least cost power planning, and the economic dispatch of power generation.
- **Expanding the distribution grid network, and incorporating mini grid systems:** Rural Ghana represents a significant part of the 11 percent unelectrified community with limited access to the national grid. Achieving the wider electrification access target requires investment towards the extension of the national grid to unserved rural communities and for financing distributed renewable energy systems.
- **Transmission network strengthening and promoting regional integration:** The existing transmission infrastructure needs upgrading to strengthen the National Interconnected Transmission System (NITS), support the deployment of new generation, and minimize transmission losses. The strengthening of regional interconnection networks also plays a key role in creating a more robust transmission network and an avenue for the evacuation of renewable energy across the region. Advancing regional integration reduces the overall cost of electricity supply due to economies of scale of a larger unified market and sets the stage for standardized electricity prices across the region. Ghana aims to achieve these targets by introducing robust grid codes and standards, domestic cost reflective transmission tariffs, and by adopting harmonized regional prices.
- **Strengthening the commercial and technical performance of distribution utilities for loss reduction and improved financial sustainability.** Commercial and technical performance improvements of distribution utilities translate into lower and affordable cost of electricity supply. Improved financial viability of distribution utilities improves borrowing capacity and access to financing for critical distribution investments toward achieving universal access. This action is aligned with the Energy Sector Recovery Program (ESRP), which is government's primary initiative to put the sector on a path to full financial recovery. The ESRP provides a timebound plan to reduce or clear the sector's financial deficit. Ghana aims to track the achievement of utility commercial and financial sustainability targets by monitoring their compliance with annual performance improvement plans as submitted to the regulators for tariff determination. In addition, Ghana aims to introduce private sector participation in electricity distribution including performance-based loss reduction and financial improvement targets.
- **Private sector mobilization for investments in utility-scale solar generation** The Government is aiming to scale-up the development of grid-connected solar PV capacity (850 MW by 2030) mainly through private investment. For achieving these targets Ghana aims to strengthen the sector's regulatory framework, introduce competitive procurement regulations and processes, and improve the economic and financial viability of the sector.
- **Increasing access to clean cooking solutions from 36.9% to 50% by 2030 driven primarily by LPG adoption.** The clean cookstoves program supports the rollout of five million modern biomass, LPG and electric cookstoves through 2030 to caterers, schools, and households in rural, peri-urban, and urban areas. Various ongoing Government initiatives like the National LPG Promotion Program, and Cylinder Recirculation Model support the achievement of the clean cookstoves program targets and are already receiving funding from donor partners. The clean cookstoves program aims to improve efficiency in energy for cooking, reduce greenhouse gas (GHG) emissions, mitigate climate change, slow deforestation and forest degradation, protect biodiversity, improve health and well-being, reduce poverty, and improve livelihoods. The program further aims to address barriers to affordability, and it provides improved business models, technology, and access to finance for rapid cookstoves rollout. Finally, the program supports policy formulation and regulation, capacity additions, and institutional strengthening, research and development for improved sector governance and coordination.

Actionable Commitments

In order to achieve these strategic targets, the Government has defined six broad actionable commitments categorized as the Compact pillars as follows:

PILLAR I
ENHANCING POWER SYSTEM EFFICIENCY - LEAST COST POWER SYSTEM PLANNING

- **Update and implement the Integrated Power Sector Masterplan (IPSMP), to reduce system costs and strengthen supply reliability:** The revised IPSMP will focus on optimizing the generation mix, prioritizing indigenous resources, and ensuring alignment with the country's climate commitments under the NDCs. This action is critical to address the high cost of energy acquisition that makes up nearly 80% of the electricity tariff, mainly due to more than 60% of the generation mix being gas-based.
  In addition, by integrating real-time economic dispatch mechanisms, the fast tracking of the Wholesale Electricity Market (WEM), and accelerating the transition towards renewable energy, the government will reduce inefficiencies in plant scheduling and dispatch, lower overall system costs, and improve supply reliability.
- **Improve the regulatory framework for transparency and competition in procuring new generation capacity:** A Legislative Instrument (L.I.) for competitive procurement of new power generation projects has been approved by Parliament. The regulators, i.e. the Energy Commission (EC) and the Public Utilities Regulatory Commission (PURC) will issue implementation guidelines governing competitive power procurement, supported by standard procurement documents and model Power Purchase Agreements (PPAs). These guidelines and standardized documents will be applied by distribution licensees, concessionaires, and private operators of energy assets to structure and negotiate contracts with counterpart agencies. Project financing plans will include provisions for lowering investment costs by accommodating mechanisms to de-risk investments, potentially including government guarantees, concessional and blended finance options, and other risk-mitigation measures. The investors will also benefit from additional protections resulting from sector reform measures including transparent funds flows under the revised Cash Waterfall Mechanism (CWM), a single collections account; regular CWM and offtaker entity audits, quarterly tariff adjustments, and approval of the next Multi Year Tariff Order (MYTO) by December 2025.
  To enhance transparency in procurement, Ghana will develop a digital procurement platform where all tenders, guidelines, bidding results, and signed PPAs will be published. Finally, the tendering process will specify land availability, and transmission capacity for power evacuation to improve project bankability and timely execution.
- **Separation of system and market operations:** Ghana will develop a framework for the separation of market operations from system operations currently under the transmission utility, Ghana Grid Company, Ltd. (GRIDCo). Clear guidelines will be established to govern the roles of each entity, with the system operator focusing on transmission planning and grid reliability, while the market operator will manage market balancing and the settlement of payments.

  Transmission planning will be fully integrated with generation planning to ensure coordinated investments.

  To strengthen grid stability, the government will upgrade the SCADA system and deploy 200MW of battery energy storage capacity by 2030 at critical grid locations.
- **Capacity building & sector modernization:** The Government will launch sector-wide skills development programs through the Energy Commission, focusing on DRE deployment, grid management, system planning, demand forecasting and financial modeling. The skills-development programs will also establish partnerships with technical institutions to train professionals in renewable energy systems.
- **Regional energy planning:** Ghana will strengthen cross-border power trade partnerships through regional planning under WAPP, enhancing grid stability, reducing generation costs, and contributing to regional energy security by continuing to export excess generation capacity.

PILLAR II
STRENGTHENING REGIONAL INTEGRATION - HARMONIZING TRANSMISSION PRICING, STANDARDS & GRID CODES

Ghana's energy ambitions are inextricably linked to regional collaboration and institutional resilience. This Compact prioritizes cross border grid synchronization, capacity strengthening, and data-driven governance to align national progress with broader West African energy integration goals.

- **Advancing West African Power Pool (WAPP) Integration:** The targets Ghana sets are primarily

infrastructure-based and technical, requiring extensive negotiations and collaboration with WAPP and its member states. These efforts demand coordinated planning and shared commitments to maintain seamless grid integration and market harmonization across the region. Ghana will maintain and expand its interconnections with WAPP by implementing several strategic actions.

First, Ghana will upgrade its grid infrastructure to synchronize frequency control and voltage stability with neighboring grids, supported by SCADA upgrades and enhanced system protection schemes. These investments will secure bidirectional power flows and ensure efficient import and export of electricity.

Second, Ghana will collaborate closely with Côte d'Ivoire and Burkina Faso to co-develop cross-border transmission corridors, with feasibility studies, financing plans and clearly defined construction milestones to ensure timely delivery.

Third, to further optimize the power market, Ghana will advocate for harmonized WAPP regulations, including standardized tariffs, wheeling charges, and dispute resolution frameworks to provide certainty for both public utilities and private investors. These market harmonization efforts will unlock economies of scale and promote efficient regional electricity trade.

Fourth, private sector participation will be expanded by enabling IPPs to trade bilaterally across borders and by creating regulatory incentives for private offtakers to engage in regional transactions. The EC and PURC will oversee the development of transparent trading guidelines to ensure fair competition, safeguard financial settlements, and attract long-term private investment into regional power markets.

By 2030, these combined measures will position Ghana as a reliable anchor in the WAPP, helping to lower electricity cost and strengthen regional energy security.

- **Building Institutional Capacity:** Ghana recognizes that robust institutional capacity is essential to realize these regional integration goals. The government will implement a Sector-Wide Capacity Development Plan led by the Ministry of Energy and Green Transition in collaboration with the EC, ECG, NEDCo GRIDCo and PURC. The plan will target critical human resource gaps across four key dimensions: technical, regulatory, managerial and financial. By 2030, at least 200 engineers will be trained in grid modernization, renewable energy integration, and cybersecurity through partnerships with the ECOWAS Centre for Renewable Energy, and Energy Efficiency (ECREEE), local universities and international partners. Simultaneously, Ghana will strengthen regulatory expertise through annual training programs for at least 100 regulatory staff from PURC and EC, focusing on energy law, tariff modeling, system planning, demand side management and public-private partnership (PPP) management.
- **Strengthening WAPP's role and introducing green financing for transmission:** Ghana aims to position WAPP as the central regional coordinator for projects that facilitate the evacuation of Renewable Energy Sources (RES) across interconnected transmission networks. Recognizing a current gap in green financing, Ghana will advocate for the classification of transmission infrastructure as eligible for green finance. This advocacy is critical to mobilize investment needed for clean energy expansion and to ensure that transmission projects align with sustainability goals.
- **Ensuring commercial viability and quality of supply:** To attract private sector investment and ensure long-term sustainability, Ghana will prioritize transmission projects that demonstrate strong commercial viability. While Ghana has achieved an impressive 89% electricity access rate, the government will shift its focus toward improving the reliability and stability of electricity delivery through the upgrade of over-aged transmission infrastructure such as the western corridor and middle corridor transmission lines. Enhancing the quality of supply is essential to support economic growth and improve the quality of life for all citizens.
- **Leveraging the Green Grids Initiative (GGI):** Ghana will utilize the Green Grids Initiative (GGI) as a strategic platform to consolidate projects that focus on renewable energy evacuation, including hydropower. The GGI will guide the identification and prioritization of projects that enhance the integration of Variable Renewable Energy (VRE) sources into the grid. Furthermore, Ghana will work to establish a clear and consistent framework for defining "green" energy sources by 2030, which will support transparent project classification and financing.

PILLAR III
INCREASING ELECTRICITY ACCESS, PROMOTING DISTRIBUTED RENEWABLE ENERGY & CLEAN COOKING

Ghana's pursuit of universal electricity access by 2030 demands a harmonized strategy that integrates grid expansion, decentralized solutions, and regulatory agility. This Compact outlines an approach to bridge the "last mile" gap, ensuring equitable energy access while fostering private sector participation and institutional accountability. The Government of Ghana will implement

strategic actions across five priority areas to accelerate its energy transition while balancing grid expansion with decentralized solutions.

- **Grid intensification to achieve grid-based electricity access of 95 percent by 2030:** To achieve this target, Ghana will review and implement a country-level policy framework to support the deployment of 3,185 grid expansion projects to connect 660,000 rural consumers by 2030. To support the same, a geospatial planning platform will be launched by the end of 2026 to monitor implementation progress. In addition, the EC will approve lower cost design standards for grid extension for residential consumers by end 2027.

  Prioritize inclusive electrification by maintaining grid connections for low-consumption households, especially lifeline customers, given Ghana's high national access rate, eliminating arbitrary cut-offs that violate social equity principles.
- **Advance mini-grid deployment:** Secure concessional funding to leverage public finance to develop 400 mini-grid sites. Collaborate with development partners to complete feasibility studies to enable investment financing to complement the grid-based electrification drive to achieve universal access to electricity.
- **Light for Life: I**n remote rural communities where Community Health Planning and Services facilities (CHPS compounds) are prevalent, lack of access to electricity worsens the plight of community members, and widens the health delivery gap. Overall, unavailability of electricity in health facilities puts lives at risk, and prevents people from accessing holistic health care. The Light for Life (L4L) initiative, presents a sustainable solution through rooftop solar projects to address electrification of rural health care facilities in deprived communities.
- **Energy for Education:** Some schools in rural communities remain without electricity or efficient lighting systems to make teaching and learning effective. The negative impact of lack of electricity supply on education in these communities is reduced teaching and classroom hours. due to which students are deprived of online resources for research and learning.
- **Reform financing mechanisms:** Reforming financing mechanisms would entail (i) publishing granular investment blueprints for grid upgrades and mini and off-grid complement renewable energy projects, (ii) establishing the Renewable Energy and Green Transition Investment Fund (REGTIF) to support research and development into energy transition projects - designed to provide dedicated, blended financing for the country's comprehensive energy transition agenda for 2025–2030. The REGTIF is structured to accelerate investment, de-risk private capital, and ensure financial sustainability for high-impact green initiatives across the energy value chain; (iii) providing subsidies as a market development incentive; and (iv) promoting productive energy uses through circularity and inclusive development models.
- **Increase Access through Solar Home Systems (SHS)** The provision of Solar Home Systems through both public and private models have been identified as efficient ways of providing access to these communities.
  Public off-grid SHS component This model, which will be fully publicly funded, will provide electricity access to public educational and health facilities in un-electrified communities across the country. It is expected that the implementation of this component will improve the quality of service in over 2000 health and educational facilities, which will benefit over 500,000 rural dwellers across the country.
  Private off-grid SHS component This model will help to develop a commercially oriented and sustainable framework for increasing access to electricity through solar energy in un-electrified communities. The goal of this component is to enable the rural dwellers in un-electrified communities to have access to electricity for residential and commercial activities using solar PV systems. The rural dwellers will secure the solar system from an accredited solar vendor under a hire purchase arrangement supported by a subsidy of up to fifty percent. The partial subsidy is to improve SHS affordability by reducing the amount to be repaid directly to the solar vendors during the agreed six to eighteen month repayment period The private SHS Component will focus on households and SMEs.

- **Strengthen regulatory and institutional frameworks** through four synchronized interventions: (i) establish technical standards for future grid interconnections creating bankable DRE asset classes; (ii) standardize prosumer (producer-consumer) contracts for grid-tied projects, defining rights and obligations among producers and consumers, renewable energy service companies (RESCOs), and distribution utilities (DUs); (iii) streamline permitting through centralized processing units to reduce approval timelines; and (iv) establish the Renewable Energy Authority.
- **Increase Access to Clean Cooking:** The Governments' commitment on clean cooking is to promote and expand the adoption of clean cooking solutions by (i) scaling up the adoption of LPG as primary fuel for cooking by 50% of the population by 2030 - this is being driven through the implementation of the National LPG Promotion Programme (NLPGPP) and the LPG Cylinder Recirculation Model (CRM); (ii) scaling up access and adoption of three million efficient biomass cookstoves by 2030; and (iii)

integration of electric cooking (eCooking) as a vital component of demand enhancement for the electricity grid.

Ghana's approach to clean cooking is guided by policy directives embedded within broader national policies. The Government will finalize and issue a dedicated national clean cooking policy, strategy, investment prospectus and regulations on performance standards consistent with the nationally determined contributions (NDCs), to demonstrate how the goal of universal access to clean cooking by 2030 can be achieved.

Working together with the Energy Commission, Ghana Alliance for Clean Cooking(GHACCO - the private sector trade organization), and local governance institutions, the Government's strategies towards achieving a thriving clean cooking market and increased access by 2030 are (i) improving product quality and standards; (ii) building capacity of sector actors; (iii) end-user education/awareness creation; (iv) developing innovative financing schemes to strengthen product demand and supply; (v) closing supply chain gaps – including gender inclusion; (vi) strengthening the enabling environment for policies and regulations; (vii) strengthening sector governance, planning and institutional frameworks; and (viii) enhancing monitoring and evaluation/learning. Ghana will also integrate energy access metrics into national poverty reduction strategies to ensure alignment with national targets, the M300 objectives, and the SDGs.

- **Productive Uses of Electricity (PUEs):** The Government intends to use energy as a catalyst for economic transformation and as a means to formalize the informal sector. The government has identified the following productive use areas.

Energy-Water-Food Nexus: Agriculture, the mainstay of most rural and some peri-urban populations in Ghana is seasonal. Rainfall patterns determine the planting and cultivation of crops. While some existing irrigation dams are connected to the national grid, the cost of electricity discourages many smallholder farmers from using it. The Government plans to commit funds to finance solar-powered irrigation and solar water to promote year-round agriculture. This will increase job creation and achieve food security.

Energy for Small Scale Businesses: Businesses in remote communities, islands and other parts of the country are struggling to enhance productivity due to lack of electricity access or limited supply. Through this partnership, the Government and its partners will fund 80% of the solar PV projects for the businesses to cover the balance 20% over a 12-month duration.

PILLAR IV
BOOSTING PRIVATE SECTOR PARTICIPATION (PSP)

Ghana's energy transition hinges on strategic collaboration with the private sector to mobilize capital, innovation, and technical expertise. The objective of Private Sector Participation (PSP) is to engage experienced PSPs through concessions to improve the operational and financial performance of distribution utilities in Ghana - by addressing high losses, low revenue collection, and cost recovery challenges, thereby supporting the delivery of reliable, efficient, and sustainable electricity distribution and retail services in Ghana. This pillar outlines the following frameworks to de-risk investments, align financing with national priorities, and create an enabling ecosystem for sustainable energy infrastructure development.

- **Catalyzing Project Development:** A Project Preparation and Financing Facility will be established by the end of 2025 to address critical bottlenecks across the Compact lifecycle. This facility will provide end-to-end support, including feasibility studies, environmental impact assessments, and financial structuring for distributed renewable energy (DRE) and grid-scale initiatives. Post-financial close, it will focus on human capital development through partnerships with technical institutes.
- **Conducting solar auctions:** Grid-connected solar PV projects for two tranches of 200 MW each will be prepared of which first phase preparation is expected to be completed by Q1 2026, with the contract to be awarded by end Q2, 2027.
- **Optimizing private sector participation for access expansion through dual pathways:** This includes (i) leveraging distributed solar via PSP-driven models for businesses/homes e.g., solar home systems while reserving public solar investments for critical infrastructure like hospitals and schools; and (ii) aligning MoEnGT's grid intensification programs with new settlement development and net-metering DRE schemes.
- **Local currency financing for decentralized solutions:** To mitigate foreign exchange volatility and stimulate domestic capital markets, Ghana will deploy US$40 million equivalent in long-term local currency financing by 2026. This initiative will prioritize off-grid solar mini-grids and standalone systems, utilizing blended finance instruments such as concessional loans, green bonds, and partial risk guarantees.
- **Modernizing hydropower and storage networks:** Strategic private investments will expand hydropower capacity through variable renewable energy (vRE) hybridization models and deploy grid-scale battery

energy storage systems (BESS) to address variability issues and enhance energy security. Funding will focus on hybridizing legacy hydro assets with vRE technologies where necessary, constructing small and medium hydropower resources and developing a model pumped-storage project to balance vRE generation.

- **Innovating and expanding transmission infrastructure financing:** The government will pursue public-private partnership financing models for expansion of the transmission networks, including build-own-operate-transfer (BOOT) agreements and infrastructure trusts. A Transmission Innovation Hub, operational by 2026, will incubate smart grid technologies and demand-response systems while fostering regional interconnection projects under WAPP.

PILLAR V
OPTIMIZING UTILITY FINANCIAL VIABILITY - FINANCIALLY SUSTAINABLE AND WELL GOVERNED UTILITIES

The government recognizes that achieving financially sustainable utilities is pivotal to delivering reliable, equitable, and modern energy services. To achieve this, the Compact will continue its phased reforms to modernize infrastructure, improve accountability, and reduce electricity subsidies.

- **Tariff Reforms:** To address the 18% tariff gap Ghana will implement quarterly adjustments that account for fuel cost fluctuations and reserve margin requirements. In addition, Ghana will accelerate the path to full cost-recovery tariffs by 2027 through the implementation of the Multi-Year Tariff Order (MYTO) framework. MYTO provides a systematic methodology for setting tariffs that cover utility revenue requirements, including quarterly adjustments for macroeconomic changes. Its implementation increases predictability for all stakeholders and it will be supported by comprehensive cost-of-service studies by 2026. Ghana will also introduce dynamic pricing models enabled by smart meter deployment while phasing out blanket lifeline subsidies in favor of targeted Livelihood Empowerment Against Poverty (LEAP) program expansions for vulnerable households.
- **Loss Reduction: Enforcing binding Performance Improvement Plans (PIPs) for utilities with quarterly progress reviews.** A key feature of this strategy is to progressively review and increase the loss reduction benchmarks to drive continuous improvement. This effort is supported by carrying out independent loss studies to accurately establish baselines and set realistic yet ambitious future targets. The government aims to launch a five-year smart meter rollout (2.9 million meters by 2029) prioritizing high-loss areas, coupled with real-time monitoring systems to curb unmetered consumption.
  Upgrade commercial management systems and undertake SCADA modernization projects for distribution utilities: Ghana will implement enhancements in ECG's meter management system along with the installation of a modern CMS at ECG. The same will be supplemented by the implementation of a real-time interruption monitoring system.
- **Financial audit of distribution utility along with energy sector validation audit:** Ghana will conduct an audit of the financial statements of all energy sector state owned entities annually to identify systemic revenue leakage points. In addition, the energy sector validation audit for 2022 shall be updated to arrive at a payment plan for covering the sector's net financial obligation.
- **Regulatory Modernization:** The government aims to strengthen Energy Commission's oversight of the sector through automated compliance tracking systems and public utility scorecards. It also aims to develop competitive procurement frameworks for renewable energy integration supported by time-of-use tariff guidelines. To improve service quality metrics tied to tariff approvals the Government plans to modernize SCADA systems. Finally, the EC aims to introduce EV charging infrastructure standards by 2026.
- **Subsidy Restructuring:** The commercial regulator PURC is exploring the potential of replacing the ineffective lifeline tariff with means-tested subsidies (0-30 kWh/month) funded through redirected cross-subsidy savings. The related studies are to be carried out to quantify the impact of these changes on vulnerable households and mitigate the social cost of these reforms. The social protection measures need to be aligned with LEAP program expansions, using smart meter data to verify eligibility and prevent subsidy misallocation.
- **Strategy for Integration of Digital Development in Energy:** The Government will launch an energy sector digitalization strategy which will examine entry points for increasing energy access through effective use of digital enablers, and technologies while enhancing cross sector deployment synergies between energy and digital to accelerate service delivery in both sectors. A core pillar will be a data sharing Digital Public Infrastructure (DPI) that enables secure, standards-based exchange of energy data (assets, connections, metering, customer identifiers) via interoperable registries and open APIs. By making data reusable across ministries, regulators, utilities, ISPs, and innovators, the DPI will reduce time to connect customers, improve outage detection and demand

response, reduce losses, and derisk private investment.

It will also streamline permitting through a single window interface and machine-readable workflows (e.g., rights of way, grid extensions, and interconnection), with status tracking and SLA enforcement; and enable automated compliance systems that turn regulatory rules into testable logic, support near-real-time reporting, and maintain auditable data provenance, alerts, and role-based oversight. The strategy will integrate connectivity and digital solutions across M300 Energy Compact interventions, including smart grids and AMI/IoT telemetry, geospatial planning that fuses energy and connectivity datasets, and utility digitalization (MDM, SCADA/DERMS, CRM/ERP), with governance, consent and role-based access controls, cybersecurity and privacy-by-design, and capacity building to ensure sustainable adoption.

PILLAR VI
IMPROVING GENDER DIVERSITY IN THE ENERGY SECTOR

Ghana is ranked 100 out of 146 countries in the World Economic Forum 2023 Global Gender Gap Report scoring a total of 0.688. Persistent gender gaps in energy access continue to exist particularly in the use of clean cooking technologies and fuels. In Ghana, 34.8 percent of households are run by women. According to the Demographic and Health (DHS, 2022) survey for Ghana, nationwide, slightly more female headed households have access to electricity than male headed households (83.9 percent vs 83.2 percent). However, female-headed households are more often prone to using unclean (charcoal) cooking solutions than male-headed households, (41.9 percent vs. 34.4 percent) (DHS,2019). In addition, only 25 percent of energy jobs in public energy utilities are taken by women at all levels. To contribute to close the gender gap in Ghana, the proposed reforms include: (a) strengthening institutionalization of gender equality in public energy institutions by gathering and presenting data and information by gender and monitoring the inclusion of women in energy utilities, (b) increasing reliable and affordable clean cooking solutions for female-headed households, and businesses, and (c) creating a gender-supportive enabling environment, including shifting gender roles and social norms that hinder women's safety and economic potential. Under the Compact the Government aims to increase the representation of women in energysector public utilities from 25 to 30 percent by 2030.

MONITORING, EVALUATION & ADAPTIVE GOVERNANCE

The Government undertakes to ensure rigorous and transparent monitoring of the National Energy Compact through a structured M&E framework including a detailed geographic information system. Emphasis will be placed on institutional capacity-building, the active participation of local communities and the use of information and communication technologies. The MoEnGT, supported by relevant stakeholders, will lead data collection, and regular feedback will help to adjust policies and targets as needed. Monitoring efforts will be integrated into the program budget to ensure alignment with national and international energy goals. A Compact Delivery Monitoring Unit (CDMU) has been formally constituted to undertake comprehensive monitoring and evaluation responsibilities for all projects delineated in the action plan.

CALL FOR PARTNERSHIP

Ghana seeks $4.4 Billion in public and private funding to achieve universal energy access by 2030. Development partners, investors and philanthropies are invited to support these priorities:

US$ millions

	Generation	Transmission	Distribution	Last-mile	Off-grid	Clean cooking	Capacity Building	Total
Public	200	155	294	717	167	200	60	1,793
Private	1,800	330	116		65	300		2,611
Total	2,000	485	410	717	232	500	60	4,404

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Compact Targets and Action Plan

COMPACT TARGET

This Energy Compact presents high-level commitment actions with specific targets and timelines to drive progress toward the achievement of universal access to energy in a reliable, affordable, and sustainable manner.

Indicator	Baseline	Targeted Pace Between 2025 and 2030
Increase electricity access rate	Access rate is 89%.	Achieve 99% through: Grid extension covering 660,000 new households 400 mini-grids for 250,000 households
Improve access to clean cooking by 2030	2 million improved cookstoves distributed. National LPG Promotion Program and Cylinder Recirculation Model launched	Facilitate the distribution of 5 million ICS.
Increase Share of renewables in generation mix	4% as of 2024	Achieve 10% RE in the generation mix by 2030. Solar - 850 MW Hydro - 150 MW Wind - 200 MW
Expand Demand Side Management (DSM)	None	Implement DSM to cut annual peak demand by 2.5% by 2030
Amount of Private Capital Mobilized		USD 2 Billion

ACTION PLAN

Pillar	Indicators	Baseline	Target Year & Detailed Actions Needed to Achieve Goal (including timelines)
A. PILLAR I: ENHANCING POWER SYSTEM EFFICIENCY - LEAST COST POWER SYSTEM PLANNING & TRANSPARENT PROCUREMENT	Published IPSMP update	The 2023 IPSMP document has been developed and published	• Update and maintain IPSMP including stakeholder validation reports, regularly by developing – 2026 IPSMP Document by December 2025 – 2029 IPSMP Document by December 2028 • Maintain a functional Power Planning Technical Committee (PPTC) throughout the Energy Compact implementation period
	Competitive procurement for new generation capacity	Legislative Instrument (LI) mandating competitive procurement of new generation capacity and signing new PPAs, approved by the Parliament	• Energy Commission and PURC to issue implementing guidelines by March 2026 for the mechanism for competitive power procurement and issue standard procurement documents and power purchase agreements, including for renewable energy, to be used by the distribution licenses for procuring new generation or signing new power purchase agreements • RE and conventional generation capacities have been competitively procured 2027-2030
	Share of renewables in power generation mix increases to 10% by 2030	4% as of 2024	The RE capacities have been commissioned according to the following schedule: • Solar - 850 MW COD – 200 MW – 2027 – 150 MW – 2026 – 200 MW 2028 – 300 MW - 2029 • Hydro - 150 MW – 2030 COD • Wind - 200 MW – 2029 COD
	Introduce regulation to encourage DSM	None	Promote demand-side management to shave off peak demand by introducing Time of Use tariff by 2027.

B. PILLAR 2: STRENGTHENING REGIONAL INTEGRATION - HARMONIZING TRANSMISSION, PRICING, STANDARDS & GRID CODES	Increase transmission capacity between Ghana and its neighbors	1386 MVA	The regional transmission capacity has been increased by 1000 MVA through commissioning the following interconnectors: • Ghana – CIV interconnection project by 2030 • Complete feasibility study for Ghana – Mali – Burkina Faso interconnector by 2028
	Harmonize transmission pricing across WAPP	None	Ghana has adopted the regional transmission wheeling price framework
	Upgrade existing transmission infrastructure		Commission the upgrade of the following transmission lines: • Middle corridor transmission line • Western Corridor transmission line • Accra-Kumasi transmission line • Coastal Corridor transmission line
	Installed DRE capacity in MW	60.8MW DRE installed capacity	Install additional 120MW DRE by 2030
		0 NMPV	Install 12,000 NMPV
		Net-metering tariff policy/ methodology	Fully implement the net-metering tariff policy/ methodology by end of 2026 to incentivize DRE investment
C. PILLAR 3: INCREASING ELECTRICITY ACCESS, PROMOTING DISTRIBUTED RENEWABLE ENERGY (DRE) & CLEAN COOKING	Increase access to clean cooking by 2030	No CC policy strategy, and investment prospectus	Publish National Clean Cooking Policy, Strategy and investment prospectus which is consistent with the updated NDC by 2026
		No performance standards and labeling regulations for improved cookstoves	Support the Energy Commission and Ghana Standards Authority to develop and implement performance standards and labeling regulations for improved cookstoves
		No results-based carbon incentives for cookstove distribution	
		National LPG program and Cylinder Recirculation Model launched	Facilitate – through results-based carbon incentives and an enabling environment, the participation of private sector players in the manufacturing and distribution of 5 million additional ICS (biomass, LPG and e-Cookstoves) for household cooking and productive use of energy (PUE) by 2030
		2 million improved cookstoves distributed	

	Grid intensification to achieve grid-based electricity access by 95% of the population	Access rate is 89%	Review and implement a country-level policy framework to support the execution of 3,185 grid expansion projects aimed at connecting approximately 660,000 rural consumers by 2030.
		Geospatial study conducted for last mile electrification to be undertaken	Implement a geospatial planning platform to monitor implementation progress by end-2026
		Lower cost design standards for residential customers to be approved by EC	Energy Commission has approved lower-cost design standards (single phase) for grid extension for residential consumers by end-2027
	Increase access through mini grid-based electrification in rural areas	8 mini grids in operation serving over 10,000 population	400 mini grids commissioned to electrify about 250,000 people by 2030
		Additional 35 mini grids awarded under SREP to provide electricity to over 70,000 population.	MoEn&GT has developed an approach to enhance productive uses of energy (PUE) by end-2026
		Mini grid policy developed and mainstreamed into the NES.	PURC has implemented the mini-grid tariff policy to address the operational expenditure (OPEX) viability gap and enhance the overall financial sustainability of mini-grid systems by end-2026.
		Feasibility completed for over 150 island and lakeside communities	
	Increase access through Solar home systems for households, SMEs, and public facilities.	Installed capacity of about 20,000 (7.4MW) SHS in operation serving over 80,990 population	Install 1,450 additional SHS by 2028
		Procurement completed for 350 out of 1,450 SHS under SREP	
	PSP implemented in electricity distribution	None	Initiate process to select private concessionaires for electricity distribution by January 2026
			PSP Contract(s) awarded by Q4 2026 for operating and maintaining electricity distribution
D. PILLAR 4: BOOSTING PRIVATE SECTOR PARTICIPATION (PSP)	Solar Auctions implemented for 400 MW utility scale capacity	Site for 1st phase auctions (200 MW) identified and grid impact study conducted	Engage Transaction Advisor to prepare the solar auctions for 1st Phase by Q1 2026
			Establish SPV for shared solar park assets for Phase 1 by Q3 2026

			The contract for commissioning Phase -1 solar plant awarded by Q2 2027
	Enforce compliance with Performance Improvement Plan (PIP) implementation for DISCOs to achieve loss reduction targets	PIPs developed for implementation	Implementation of Performance Improvement Projects (PIPs) by distribution utilities started by Q1 2026
			The sector regulators (PURC & Energy Commission) have put in a system to monitor the progress of PIPs by 2027
		Distribution system losses in ECG are 27% (2024)	Distribution system losses in ECG reduced to 23% by 2030
		ECG's collection efficiency is 86% (2023)	ECG's collection efficiency improved to 93% by 2028
E. PILLAR 5: OPTIMIZING UTILITY FINANCIAL VIABILITY - FINANCIALLY SUSTAINABLE AND WELL GOVERNED UTILITIES			
	Continue Implementation of tariff adjustments for cost recovery of capital and operational costs	Tariff Decision Papers published upon review of tariffs	Issuance of 2025 MYTO by December 2025
			Implementation of quarterly tariff adjustments for the MYTO period
	Introduce targeted subsidies for lifeline customers (0–30 kWh/month).	Subsidized tariffs for life-line customers (0–30 kWh/month) implemented	Evaluation of Lifeline Tariff to re-establish or re-calibrate a baseline for the Lifeline threshold by 2027
	Upgrade commercial management systems and SCADA modernization projects for electricity distribution	Pilot Phase of Real Time Monitoring Project implemented in selected ECG areas	Implement a modern Commercial Management System in ECG by 2028
			Implement enhancements to ECG's meter management systems by end-2026
			Implementation of a Real-time Interruption Monitoring system for distribution utilities in 2028
	Implement economic dispatch to reduce power purchases	A dispatch protocol has been implemented by GRIDCo	GRIDCo has implemented an automated security constrained economic dispatch by end 2028
	Financial audit of utilities	Financial audits of ECG conducted	Undertake audit of the financial statements for all SoEs within 6 months of the close of the financial year
		Cash waterfall Mechanism established	Undertake quarterly CWM Audits for each calendar year through2030

		Draft reports of sector debt prepared for 2023 and 2025	Undertake audit of the intra sectoral debt for 2023, 2024, and 2025 by end of 2026
	Strategy for integration of Digital Development in Energy	Currently no integrated strategy for digital development in Energy	Strategy for integration of Digital Development in Energy by December 2026.
F. PILLAR 6: IMPROVING GENDER DIVERSITY IN ENERGY		Percent of women employed in the workforce, in leadership, and in technical positions in the energy sector is 25 percent.	Percent of women employed in the workforce, in leadership, and in technical positions in the energy sector, to increase to 30 percent by 2030.

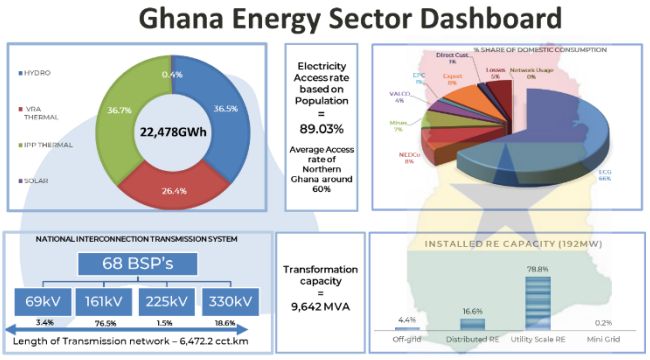
3

Energy Sector Overview

Ghana's energy sector is a cornerstone of the nation's economic development, providing the foundation for industrial growth, service delivery, and improved livelihoods. The sector is built on a diverse energy mix, with electricity generated from hydro, thermal (natural gas and oil), and a growing share of renewables. Ghana is also a producer of oil and gas, which contributes significantly to national revenues. In recent years, the sector has faced serious challenges, particularly in terms of financial sustainability, operational inefficiencies, and governance. These issues have contributed to persistent sector deficits, the accumulation of arrears, and significant fiscal risks that have threatened macroeconomic stability and reliable energy supply.

The energy sector involves a range of key stakeholders. The Volta River Authority (VRA) is the main state-owned hydro and thermal power generator, while Independent Power Producers (IPPs) account for a significant portion of thermal generation. The Electricity Company of Ghana (ECG) is the primary distributor of electricity in southern Ghana, with the Northern Electricity Distribution Company (NEDCo) serving the northern regions. The Ghana National Petroleum Corporation (GNPC) oversees oil and gas exploration and production. The Energy Commission is the technical regulator of the Power and Natural gas sector, while the Public Utilities Regulatory Commission (PURC) regulates tariffs and consumer protection. The Ministry of Energy and Green Transition and Ministry of Finance play crucial policy and oversight roles.

Market performance in the energy sector has shown both resilience and vulnerabilities. Economic growth rebounded to 4.0% in 2024 and it is projected to reach 4.4% in 2025, supported by strong oil and gas exports and robust remittance inflows. However, the sector's fiscal burden remains substantial, with the energy sector shortfall, where revenues do not cover costs, estimated at 2.2% of GDP in 2024. Legacy arrears to IPPs and fuel suppliers stood at $2.1 billion (2.8% of GDP) at the end of 2023. While reforms have supported macroeconomic stabilization and improved debt sustainability, the sector's financial weaknesses continue to weigh on public finances and investor confidence.



Ghana's energy sector has achieved a national electricity access rate of 89.03%, meaning that almost nine out of every ten people in the country can use electricity. However, access remains uneven across regions. In Northern Ghana, only about 60% of the population has access to electricity, which highlights a significant gap compared to the national average. The country's transmission infrastructure supports this widespread access. Ghana's national interconnection transmission system currently operates with a transformation capacity of 9,642 MVA. This capacity allows the grid to handle large volumes of electricity efficiently. The transmission network itself spans 6,472.2 circuit-kilometers, enabling the delivery of electricity across vast distances and connecting different regions to the national grid. These figures demonstrate Ghana's progress in expanding electricity access and strengthening its transmission infrastructure, while also revealing the ongoing need to address regional disparities in access.

Several longstanding issues have undermined the sector's financial health. Electricity tariffs have often been set below cost-recovery levels, resulting in persistent deficits. Operational inefficiencies, such as high technical and commercial losses and weak revenue collection, particularly at ECG, have further strained the sector. Governance and transparency challenges, including delays in implementing the Cash Waterfall Mechanism (CWM) and weak procurement practices, have contributed to the accumulation of arrears. Additionally, increased reliance on expensive liquid fuels due to natural gas supply constraints has raised generation costs and exacerbated financial pressures.

In response, the Energy Sector Recovery Program (ESRP) was instituted to address Ghana's energy sector debt crisis, restore financial equilibrium, and improve the operational efficiency of State-Owned Enterprises (SOEs). Core action items include introducing and institutionalizing a framework for inter-utility debt reconciliation, enforcing the CWM and Natural Gas Clearinghouse (NGC) for equitable revenue allocation, renegotiating costly take-or-pay power purchase agreements (PPAs), and advancing regulatory frameworks

for transparent utility financial reporting. Additional measures involve reforming electricity tariffs, optimizing subsidy policies, restructuring non-residential tariffs, and escalating performance improvement plans for distribution utilities. These steps are underpinned by strong technical assistance, regular audits, and integration of international best practices, all aimed at enhancing transparency, efficiency, and collection performance across the sector.

Significant progress has been made, notably in operationalizing the CWM and NGC. CWM now governs the transparent allocation of revenue to sector stakeholders, while the NGC aggregates all gas sector revenues and clarifies the sector's true financial shortfalls. These mechanisms have helped to improve liquidity, reduce the accumulation of new debt, and increase transparency in sector finance. Renegotiation of PPAs has advanced to reduce fixed capacity charges and reduce the overall cost burden. Regulatory reforms led by PURC, such as the roll-out of new financial reporting frameworks, more cost-reflective tariff adjustments, review of non-residential tariffs, targeted investment hearings, and establishment of performance-based utility benchmarks, have started to shift the sector towards greater financial discipline and sustainability. Despite achievements, challenges persist, with significant payment gaps and collection inefficiencies, especially at ECG and NEDCo, stressing the need for continued reforms and strict enforcement.

A major structural reform underway in 2025 is the preparation of a comprehensive technical and financial audit of ECG, with the explicit goal of opening its operations to private sector participation. The restructuring strategy, developed in consultation with the World Bank and IMF, is expected to be completed by early-2026 and adopted by Cabinet. Private sector involvement is seen as essential for improving efficiency, reducing operational costs, and enhancing collections. The government is also finalizing audits of 2023 and 2024 energy sector arrears to validate debts and establish a clear repayment plan,.

The outlook for Ghana's energy sector is increasingly positive. In addition, economic growth is projected to accelerate, inflation is moderating, and the fiscal and external positions are improving. The government's steadfast commitment to reform, including before and after the 2024 elections, provides strong policy continuity and predictability. The comprehensive reform agenda, focus on transparency, and opening of ECG to private sector participation create a more attractive environment for private investment. International partners such as the IMF, World Bank and African Development Bank continue to provide financial and technical support, and the authorities' engagement with creditors and development partners further bolsters investor confidence. With these reforms, Ghana's energy sector is on a path to financial sustainability, operational efficiency, and enhanced private sector participation offering a compelling case for new investment and long-term growth.

On clean cooking, over 60% of Ghana's population still depends on solid fuels (charcoal and wood) for meeting their energy needs. The continued use of these fuels with inefficient cooking technologies has far-reaching consequences on health; on the environment through forest degradation and climate change; and on gender and socio-economic outcomes. According to the World Bank, about 11,803 premature deaths that occur each year in Ghana are attributable to household air pollution[1] – to which women and children are the most exposed. Clean cooking interventions are therefore most beneficial for women even in situations where the households are headed by men, as women still retain the primary responsibility of fuel sourcing and cooking. Because of these cross-cutting impacts, the economic cost of not transitioning to clean cooking is estimated at US$19 billion for Ghana, of which US$13.7 billion is attributable to the health impacts of HAP, while the remainder arises from other impact areas such as climate and environmental degradation[2].

[1] The Global Health Cost of Ambient $PM_{2.5}$ Air Pollution, PMEH-WBG, 2020
[2] World Bank, Ghana Energy Sector Recovery Program PAD, 2024

4

Current Status and Challenges

PILLAR I
LEAST COST POWER SYSTEM PLANNING

Ghana's energy sector faces a complex interplay of challenges, particularly within its Transmission and Distribution (T&D) infrastructure, which significantly impacts the efficient delivery and financial viability of power despite substantial generation capacity.

Generation Capacity Context: Over the past decade, Ghana has seen a rapid expansion in installed power generation capacity, primarily through various Power Purchase Agreements (PPAs) with Independent Power Producers (IPPs). This capacity has grown significantly from 2,170 MW in 2011 to approximately 5,641 MW in 2024. While this expansion has provided a robust supply, the growth in peak demand has lagged, resulting in significant excess capacity. Most of this capacity is contracted through "take-or-pay" clauses in existing PPAs, obligating the government to pay IPPs for power even when it is not consumed. This situation creates a substantial fiscal and financial burden on the state, draining public finances by hundreds of millions of dollars annually for unused capacity and hindering resource allocation to other critical development areas.

State of Transmission and Distribution (T&D) Infrastructure: Despite the ample generation, the T&D network struggles with pervasive challenges. The transmission network, managed by the Ghana Grid Company (GRIDCo), is plagued by aging infrastructure, with some obsolete equipment dating back to the 1960s. This contributes to transmission losses of about 4-5%. When combined with high distribution losses, efficiency drops significantly, reducing delivered power to approximately 70% of the total generation.

Distribution losses remain particularly high, with the primary utilities, Electricity Company of Ghana (ECG) and Northern Electricity Distribution Company (NEDCo), reporting Aggregate Technical, Commercial, and Collection (ATC&C) losses of about 25%. High distribution losses and low collection rates have not only affected the financial viability of the utilities, but they have also increased the fiscal burden to subsidize utility operations. Persistent financial underperformance has affected the utilities' ability to raise capital to invest in system upgrades that has impaired quality of service provision.

Efforts and Plans for Improvement: Recognizing these critical challenges, significant efforts are underway:

- **Transmission Upgrades:** GRIDCo is actively pursuing transmission infrastructure upgrades, supported by initiatives such as the World Bank's 2024-2027 Energy Sector Recovery Program-for-Results (PforR), targeting improved efficiency within the transmission network.
- **Distribution Loss Reduction:** To combat high ATC&C losses, ECG and NEDCo are implementing smart meter rollouts with public and donor finance. The government is accelerating a metering program to install 0.5 million smart meters by 2025 and enforcing Performance Improvement Plan (PIP) compliance to further reduce losses. The PforR is financing the procurement of smart prepaid meters, and upgrading ECG's customer and meter management systems. The Distribution Sector Plan (2024-2028) also aims to systematically reduce these losses.
- **Cost-Reflective Tariffs:** A crucial goal is the transition to cost-reflective tariffs by 2027. This reform is deemed essential for ensuring the fiscal sustainability of utilities and promoting equitable access, moving away from historical subsidies that have disproportionately benefited higher-income groups and placed a significant burden on the national budget. Limited investment in the T&D sector since the commencement of reforms in 1997 has hindered progress, making these current and planned investments even more critical.

Conclusion: Ghana's energy sector is at a pivotal juncture. While the nation has successfully built substantial generation capacity, the full benefits are curtailed by an aging T&D infrastructure and a challenging financial landscape heavily impacted by legacy PPA arrangements and high system losses. The ongoing and planned infrastructure upgrades, coupled with tariff reforms and loss reduction strategies, are vital steps towards achieving a truly efficient, financially viable, and reliable power supply for the nation.

PILLAR II
HARMONIZE TRANSMISSION, PRICING, STANDARDS & GRID CODES

Ghana is a key player in the West African Power Pool (WAPP), leveraging its robust transmission infrastructure and excess power generation to enhance regional power pooling. The WAPP aims to provide stable, reliable, and affordable electricity across ECOWAS countries. Ghana has strengthened its transmission network with new 330kV lines and substations, positioning itself to expand its share in the regional electricity market through interconnection projects with neighboring countries. It currently exports power to Côte d'Ivoire, (since 1982, 225kV), Togo/Benin (161kV and 330kV), and Burkina Faso (225kV). Future interconnections with Côte d'Ivoire and Burkina Faso are planned at 330kV for improved power transmission and voltage stability. Ghana is also exploring power exports to Liberia, Sierra Leone, and Guinea via the CLSG interconnection with Côte d'Ivoire.

PILLAR III
INCREASE ELECTRICITY ACCESS, DISTRIBUTED RENEWABLE ENERGY & CLEAN COOKING

The Rural Electrification Program has connected 15,000 people via mini-grids and 300,000 via solar home systems since 2018. Public funding of US$50 million has leveraged US$60 million in private capital.

Like electricity, the national estimates of clean cooking access mask significant disparities across geographies, regions, and socio-economic status. For instance, while 31% of urban households use LPG as their primary cooking fuel, only 5% of rural households report LPG as primary cooking fuel. Conversely, while 73% of rural households use wood as their primary cooking fuel, in urban areas it accounts for 14% of primary cooking energy. Except for electricity whose use for cooking is negligible in both rural and urban households, there is a common pattern of higher income urban households using higher grade fuels and technologies for cooking relative to rural households. The use of charcoal in urban households is more than twice that of rural households. This segmentation is critical in ensuring that strategies developed respond to the different consumer segments, habits, needs, and expectations. Overall, clean cooking access remains low, with only 3 percent average annual growth, necessitating the need for a dedicated national clean cooking policy, strategy and investment prospectus by the 1st half of 2026 to strengthen the enabling environment needed to address existing gaps, and increase access.

PILLAR IV
PRIVATE SECTOR PARTICIPATION (PSP)

State of Private Sector Participation. Private Sector Participation of ECG and NEDCo has attracted limited investment. The Renewable Energy Fund supports early-stage projects, but high ATC&C losses deter further engagement.

Mobilizing Private Capital. Barriers include exchange rate risks and limited long-term local currency financing. The government aims to deploy US$40 million in DRE by 2026, requiring enhanced regulatory support. Key obstacles include high import duties and insufficient working capital for smaller firms, with plans to establish a financing facility by 2025.

PILLAR V
FINANCIALLY SUSTAINABLE AND WELL GOVERNED UTILITIES

Tariffs in Ghana have historically been subsidized, with the government covering shortfalls via budget transfers. The 2023 tariff adjustment reduced subsidies from GHS 2.5 billion (US$200 million) in 2022 to GHS 1.2 billion (US$100 million) in 2023, but currency devaluation increased costs, projecting a 2024 shortfall of GHS 3 billion. Subsidies disproportionately benefit higher-income groups. The 2011 Energy Commission Act decentralizes some regulatory functions to regional bodies, posing coordination challenges.

Non-tariff shortfalls, driven by collection inefficiencies, add pressure. The government is accelerating a metering program to install 0.5 million smart meters by 2025 and enforcing PIP compliance to reduce losses. Financial viability remains a challenge, with a target to achieve full cost recovery by 2027 through phased tariff reforms.

PILLAR VI
IMPROVED GENDER DIVERSITY IN THE ENERGY SECTOR

Persistent gender gaps in energy access continue to exist particularly in the use of clean cooking technologies and fuels. Nationwide, slightly more female headed households have access to electricity than male headed households (83.9 percent vs 83.2 percent). However, female-headed households are more often prone to using unclean (charcoal) cooking solutions than male-headed households, (41.9 percent vs. 34.4 percent) (DHS,2019). Finally, only 25 percent of energy jobs in public energy utilities are taken by women at all levels.

ANNEX I
ONGOING AND COMITTED PROJECTS

Funding Needs (US$ Million)					
Focus Area	PROJECTS	PROJECT COST	COMMITTED	Public Finance Need	Private Finance Need
Generation		2,000		200	1800
Transmission	Middle Corridor	50	50		
	Western Corridor	100	0	0	100
	Coastal Corridor	130	0		130
	Accra-Kumasi	200	100		100
Distribution	NEDCo	294	0	294	0
	ECG (Distribution Network projects + PforR)	216	100		116
Interconnection Infrastructure	330kV Ghana-Côte d'Ivoire Line	150		150	
	330kV Ghana-Burkina Faso-Mali Line (Feasibility Studies)	5	0	5	
Electricity Access	Rural Energy Support Projects (Last Mile)	717		717	
	Mini Grids (Off-grid)	203	36	167	
	DRE Systems	46			46
	Net Metering + BESS	50	39		11
	Solar Home Systems	8			8
Clean Cooking	Clean cook stoves	500		200	300

Performance and financial improvement programs	150	90	0	60
Grand Total	4,819	415	1,733	2,671

ANNEX II
KEY METRICS

Pillar	Indicator	2024 Baseline	2030 Target	Validation Status	Supporting Projects	Gap Analysis
Generation	Renewable Energy Share	2.30%	10%	On Track	Scaling up RE Program (SREP): $85M (120MW) DRE Expansion: $46M (120MW) Solar Home Systems: $8M (5MW) Net Metering Implementation: $50M	Requires additional 255MW RE capacity to meet target (current pipeline: 245MW)
	Conventional Capacity	5,300 MW	6,100 MW	Moderate Progress	Private Gas Projects: $300M (250MW)	550MW gap in planned capacity additions
Access	Electricity Coverage	89%	99.8%	Needs Boost	Grid Upgrades: $480M Mini Grids: $203.94M (400 systems) Solar Home Systems: $8M (10,000 systems) Rural Energy Support: $717M	Last mile access requires additional $120M for remote communities
Private Investment	Mobilized Capital	$0	$1.5B	Improving	Transmission Lines: $710M (GhanaCI/Burkina) Private Generation: $480M (Gas/Solar) PforR: $260M (WB) SREP: $85M (AfDB)	$265M funding gap for PSP in distribution utilities

ANNEX III
METRICS OF KEY INDICATORS

Pillar	Metrics/Indicators	Data (2024)	2030 Target	Alignment with Projects	Validation Notes
Pillar 1: Generation & T&D	Installed/Available Capacity	4.8 GW (70% available)	6.2 GW (85% available)	- 330kV lines ($710M) will add 1,500MW transfer capacity - SREP adds 150MW RE	Growth rate (2.5%) too low for 2030 target. Needs 4.5%+ annual growth.
	Generation Mix (Thermal/RE)	62% thermal, 36% hydro, 2% solar	50% thermal, 40% hydro, 10% RE	- SREP ($85M) boosts solar share - No new hydro projects in pipeline	RE target achievable only if 400MW solar/wind added by 2030 (gap: 250MW).
	Annual Energy Production	18,000 GWh	24,000 GWh	- DSM tech ($100K) to reduce peak demand by 2.5%/year	Requires 5% annual growth (current: 2.5%). Northern upgrades ($480M) critical.
Pillar 2: Regional Integration	Energy Exported	1,314,000 MWh	3,000,000 MWh	- 330kV lines ($710M) will triple export capacity to 600MW	Target achievable if Ghana-Burkina line is completed by 2027.
Pillar 3: Private Participation	Mini-Grid Connections	50,000 (2019–2023)	200,000	- Mini-grid regulations ($55K) enable private sector - No construction projects funded	Needs $155M mini-grid investment (per Compact). Current funding: $0.
	Solar Home Systems (SHS)	300,000	1,000,000	- Net-metering ($45K) supports SHS growth	Requires 140K SHS/year (current: 60K/year).
Pillar 4: DRE/Clean Cooking	Clean Cooking Connections	3.1 million (2022)	5 million	- No clean cooking projects in files	Major gap. Requires $650M (per Compact) for LPG/electric solutions.

Pillar 5: Utility Viability	ECG Net Income	-$50 million	Break-even	- Audits ($1.2M) and tariff reforms ($500K) aim to reduce losses	Tariff adjustments (+15%/year) and smart meters ($100M) needed to close gap.

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