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NATIONAL ENERGY COMPACT

FOR THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

Preamble

The Federal Democratic Republic of Ethiopia is proud to present its National Energy Compact, reaffirming its unwavering commitment to the Sustainable Development Goals (SDGs), especially SDG 7, which aims to ensure access to affordable, reliable, sustainable, and modern energy for all by 2030. This Compact serves as both a strategic blueprint and a call to action, mobilizing national leadership, local communities, development partners, and the private sector in a collective effort to transform Ethiopia's energy landscape and unlock its potential as a clean energy leader in Africa.

Ethiopia has made notable progress in expanding electricity access and enhancing renewable energy generation. According to the Ethiopian Energy Access Survey 2025, conducted in collaboration with the World Bank, as of January 2025, 65% of households across the country have access to at least one source of electricity. This includes 29.3% connected to the national grid and 35.7% relying on off-grid solar solutions. However, only 44% of the population benefit from a basic level of electricity service (Tier 1 and above).

This progress in access has been underpinned by Ethiopia's continued investment in clean energy production. The country has one of the cleanest power generation profiles in Africa, with more than **95% of installed capacity coming from renewable sources** such as hydropower, wind, and waste to energy. Flagship projects like the **Grand Ethiopian Renaissance Dam (GERD)**, along with emerging solar, wind, and geothermal initiatives, reflect Ethiopia's leadership in sustainable energy development.

Despite these achievements, nearly **56 percent** of the population still lacks access to basic electricity service. Furthermore, over **92 percent** of households continue to rely on traditional biomass for cooking, posing serious risks to **health, gender equality, forest preservation, and economic productivity. Reliability of supply** remains a major issue, particularly in rural areas and secondary towns, where aging infrastructure, weak voltage regulation, and technical losses affect service quality. The sector's strong dependence on hydropower also creates **climate-related vulnerabilities, while financial sustainability and utility performance** require close attention. Moreover, gaps in **planning, regulation, and institutional capacity** continue to limit the speed and quality of the sector's transformation.

To address these challenges, the Government of Ethiopia has launched a comprehensive reform agenda grounded in the **Homegrown Economic Reform (HGER)**, the **National Electrification Program (NEP)**, the **National Sustainable Energy Development Strategy** (NSEDS 2024 to 2030), and the **National Clean Cooking Roadmap** (2024 to 2034). These are complemented by the **Climate Resilient Green Economy (CRGE) Strategy** and the **Long Term Low Emission Development Strategy (LT-LEDS)**, which set a course toward **net zero emissions by 2050**. Through these frameworks, Ethiopia is pursuing a **phased, inclusive, and sustainable energy transition**, aimed at expanding access, diversifying energy sources, and strengthening financial and institutional resilience.

This Compact adopts a **holistic and integrated approach**, structured around five key pillars:

1. Achieve Last Mile Access to Electricity and Clean Cooking
2. Expand Clean Energy Infrastructure and Reduce Costs
3. Advance Regional Integration and Power Trade
4. Ensure Sector Financial Sustainability and Improve Utility Operational Performance
5. Unlock Private Investment and Strengthen Institutions

The Compact was developed through a broad consultative process involving national institutions, state-owned enterprises, regulators, civil society, and international partners. It sets out a bold yet achievable vision to reach **75% electricity access and 57.7% access to clean cooking solutions by 2030.**

The Government acknowledges that achieving this vision will require **sustained and coordinated action**, a strong public sector role, and significant private sector engagement. Ethiopia is implementing wide-ranging **macroeconomic reforms**, including foreign exchange liberalization, investment climate improvements, and better governance of state-owned enterprises. These reforms are expected to reduce key risks for investors and open up new financing opportunities for energy infrastructure.

The Government invites **development partners, financial institutions, and the private sector** to support this national effort by providing **concessional finance, blended capital, risk guarantees, and long-term partnerships.**

Together, we can realize a more inclusive, climate-smart, and resilient energy future for all Ethiopian.

Abbreviations

AMI	Advanced Metering Infrastructure
CMEU	Compact Monitoring and Evaluation Unit
CRGE	Climate Resilient Green Economy
DPO	Development Policy Operation
EAPP	Eastern Africa Power Pool
EEP	Ethiopian Electric Power
EEU	Ethiopian Electric Utility
EIH	Ethiopian Investment Holdings
ERP	Enterprise Resource Planning
E&S	Environmental and Social
GDP	Gross Domestic Product
GERD	Grand Ethiopian Renaissance Dam
GoE	Government of Ethiopia
GWh	Gigawatt Hour
IPP	Independent Power Producer
IRP	Integrated Resource Plan
KPI	Key Performance Indicator
LT-LEDS	Long-Term Low Emission Development Strategy
MoA	Ministry of Agriculture
MoF	Ministry of Finance
MoILL	Ministry of Irrigation and Low Lands
MoWE	Ministry of Water and Energy
$MtCO_2e$	Million tonnes of CO_2 equivalent
MTF	Multi-Tier Framework
MW	Megawatt
NCCS	National Clean Cooking Strategy
NECSC	National Energy Compact Steering Committee
NEP	National Electrification Program

N-SEDS	National Sustainable Energy Development Strategy
OPEX	Operating Expenditures
PEA	Petroleum and Energy Authority
PPA	Power Purchase Agreement
PPP	Public–Private Partnership
PSR	Power Sector Reform
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SDG	Sustainable Development Goal
SHS	Solar Home System
SOE	State-Owned Enterprise

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1

Declaration of Commitment

Through this **Declaration of Commitment**, the **Federal Democratic Republic of Ethiopia** reaffirms that achieving universal access to modern energy services is not just a national priority but a cornerstone of its strategy for economic transformation, social development, and climate resilience. Fully aligned with the ambitions of **Sustainable Development Goal 7** (SDG 7), this Compact outlines Ethiopia's strategic actions to **deliver affordable, reliable, and sustainable** energy for all.

Access to modern energy services remains one of the most **critical enablers** of Ethiopia's development. Over the past decade, significant progress has been made in expanding grid infrastructure, scaling up renewable energy generation, and launching ambitious national programs such as the **National Electrification Program (NEP)**. However, **millions of Ethiopians**, particularly in rural areas, still lack access to electricity, and **the vast majority of households** continue to rely on traditional biomass for cooking. In parallel, utilities face mounting **financial and operational challenges** that, if left unaddressed, will threaten the sector's ability to deliver reliable, affordable, and sustainable energy services.

This Compact represents Ethiopia's determination to move decisively from **incremental improvements** to **transformational results**. It is anchored in the **HGER**, aligned with the **National Clean Cooking Strategy (NCCS 2024 to 2034)**, and supported by structural reforms under the **Development Policy Operations (DPO)** and the **Power Sector Reform, Investment and Modernization in Ethiopia (PRIME)** program. It reflects a national consensus and vision for clean, inclusive, and financially viable energy development.

To this end, the Government of Ethiopia makes the following detailed commitments to be achieved by **2030**:

I. Achieve Last Mile Access to Electricity and Clean Cooking

Electricity Access

The Government of Ethiopia is committed to achieving last-mile basic electricity access, targeting **75 percent coverage by 2030** through a balanced approach of **grid expansion (70 percent)** and **off-grid solutions (30 percent with Tier 1 and above)**. This effort will provide electricity to more than **9.23 million additional households**, increasing the national access rate f**rom 44 percent to 75 percent**. Implementation will be guided by the **National Electrification Program (NEP)**, with a focus on reaching underserved and last-mile communities through the **extension of distribution infrastructure and the deployment of solar home systems and mini-grids** in remote areas. Special emphasis will be placed on ensuring that connections are **affordable, reliable, and of sufficient quality** to support productive uses.[1]

Clean Cooking

Ethiopia aims to reach at least **57.74 percent** of the population with **clean cooking solutions** by **2030**, up from the current **8 percent**. This will be pursued through the **National Clean Cooking Roadmap (2025 to 2035)**, which promotes **electric cooking, improved biomass stoves**, and cleaner fuels such as **bioethanol, biogas, liquefied petroleum gas, and briquettes**. The strategy includes **consumer awareness, financing mechanisms**, and support for **local manufacturing and distribution**.

II. Expand Clean Energy Infrastructure and Reduce Costs

Ethiopia will increase installed **generation capacity** from **9,761 megawatts** up to **14,000 megawatts**. The share of **non-hydro renewable energy sources** (solar, wind, biomass, geothermal) will rise from **5.6 percent to at least 15 percent**. This transition will be guided by the **Integrated Resource Plan (IRP)** and the **Renewable Energy IPP Procurement Framework**. The Government will continue **sustainable hydropower development** while diversifying the energy mix through **private sector participation** and **transparent procurement mechanisms**.

The transmission network will expand from **20,390 kilometers (2025)** to **30,000 kilometers (2030)**, and the number of transmission substations from **144 to 323**. The **distribution network** will grow from **179,000 kilometers (2025) to 456,000 kilometers**, with distribution substations increasing from **37 to 52**.

The Government will reduce:

- Transmission losses from 6 percent to 5.5 percent
- Distribution losses from 22 percent to 13 percent
- Commercial losses from 10 percent to 4.5 percent

These improvements will be supported by **modern grid technologies**, upgraded infrastructure, and a strong focus on **power quality** to support industrial and economic growth.

III. Advance Regional Integration and Power Trade

Ethiopia will strengthen its position as a **regional power exporter** through the **Eastern Africa Power Pool (EAPP)**. It will complete strategic **interconnection projects**, operationalize a dedicated trading unit within **Ethiopian Electric Power (EEP)**, and align **regulatory frameworks** and **transmission pricing** to enable **cross-border power trade and purchase agreements**.

[1] Reference (2025): Ethiopian Energy Access Survey: Insights into the energy access situation in Ethiopia based on the Multi-Tier Framework

IV. Ensure Sector Financial Sustainability and Improve Utility Operational Performance
The Government is committed to restoring the **financial viability** and **operational effectiveness of EEP** and **Ethiopian Electric Utility (EEU)**. Reform measures will include **tariff restructuring, performance-based accountability**, and improvements in **service delivery**.

Both utilities are implementing **reform roadmaps** aimed at achieving **full cost recovery by 2028** through phased **tariff adjustments**, enhanced **operational efficiency**, and better **customer service**.

A targeted **capital subsidy mechanism** will be introduced through a **Public Service Obligation (PSO)** to protect vulnerable households during the transition.

V. Unlock Private Sector Investment and Strengthen Institutions
Ethiopia will enhance **private sector engagement** across the energy value chain. This includes generation, transmission, distribution, **off-grid electrification**, and **clean cooking**. The Government will:

- Establish **a project preparation facility**
- Improve the **enabling environment (sub-sectoral and cross sectoral reforms)**
- Expand access to **blended finance, guarantees, and climate finance**

The goal is to **mobilize 3.06 billion USD** in private investment by 2030.

To improve governance, coordination and accountability, institutional roles within the energy sector and across related federal and state government agencies will be clarified. Legal, regulatory, and institutional reforms improve transparency in energy **planning** and **procurement**. Better coordination will be ensured between **EEP, EEU, the Ministry of Water and Energy (MoWE), Ethiopian Investment Holdings (EIH)**, and the **energy regulator Petroleum and Energy Authority (PEA).** Long-term energy planning and **regulatory oversight** will be core priorities, among others.

Call for Partnership
The Government of Ethiopia acknowledges that achieving the ambitious targets set forth in this National Energy Compact will require the mobilization of substantial resources and strong partnerships. This includes close collaboration with development partners, the private sector, and international climate finance institutions.

Priority Investment Areas
To support implementation, the Government has identified the following priority investment areas and corresponding types of support needed:

Priority Area	Type of Support Needed
Electricity Access	Investment financing, technical assistance, project preparation, private capital mobilization, results-based financing, risk mitigation instruments
Clean Cooking Solutions	Programmatic funding, innovation grants, consumer financing models
Capacity Expansion and Cost reduction	Transaction advisory services, blended finance, guarantees
Transmission and Regional Interconnection	Sovereign and concessional financing, feasibility studies, transaction support
Utility Financial Sustainability and Operational Reform	Policy-based financing, capacity building, performance-based incentives
Private Sector Participation and Institutional Reform	IPP scale-up support, transaction advisory, blended finance, guarantees, technical assistance, data systems development, regulatory strengthening

Indicative Funding Needs from 2026- 2030 (US$ million)

Source	Generation	Transmission	Distribution	Last-mile Grid	Off-grid	Clean cooking	Total
Public	28	1,597.64	3,144.7	406.7	807.2	600	6,584.24
Private	1,627	487	-	-	547.8	400	3,061.8
Total	1,655	2,084.64	3,144.7	406.7	1,355	1,000	9,646.04

(Off-grid private sector = SAS + SHS + Mini-grid 30%)

1.1
Compact Targets and Action Plan

Trajectory Targets

Indicator	Current Status (2021-2025)	Target (2026–2030)
Basic Electricity Access Rate (Tier 1 and above)	44 percent of the population	75 percent of the population, with at least 70 percent from grid and 30% off-grid
Clean Cooking Access Rate	8 percent of the population	57.74 percent of the population by 2030
Share of Non-Hydro Renewables	Approximately 5.6 percent of installed capacity	Increased to at least 15 percent through diversification
Generation Capacity	9,761 megawatts	Up to 14,000 megawatts
Transmission Network Length	20,390 kilometers	30,000 kilometers (23,601.64 kilometers already financed under existing programs and 6,398.36 kilometers to be financed through the Compact)
Distribution Network Length	179,000 kilometers	456,000 kilometers
Private Capital Mobilized	Low baseline of 0.5 billion USD	At least 3.06 billion USD mobilized across the energy sector

PILLAR I
ACHIEVE LAST MILE ACCESS TO ELECTRICITY AND CLEAN COOKING

Indicator / Reform Area	Baseline	Target (by 2030)	Key Actions & Timeline
Achieve Last mile Electricity Access	44 percent (29 percent from grid, 35 percent from off-grid)	75 percent (70 percent grid, 30 percent off-grid), Tier1 and above for off-grid.	Expand grid and off-grid electrification through NEP; Develop National Electrification Strategy and NEP 3.0 (2025)
Productive Use of Energy Penetration	<2% in 2025	At least 50% (transitioning small-scale irrigation from diesel pumps to solar pumps)	2026–2028: Scale up last-mile grid, mini-grid projects and introduce PUE pilots for irrigation 2028–2030: Significant coverage in remote areas, scale up PUE to national level
Clean Cooking Access Rate	Approximately 8 percent (2025 estimate) with fragmented supply chain	57.74 percent access with a functioning and growing national market	Adopt National Clean Cooking Roadmap (NCCP) and Clean Cooking Investment Plan (2025); Enforce standards and quality (2026 to 2027); Implement private sector incentives and consumer awareness programs (2025 to 2027)

PILLAR II
EXPAND CLEAN ENERGY INFRASTRUCTURE AND REDUCE COSTS

Indicator / Reform Area	Baseline	Target (by 2030)	Key Actions & Timeline
Expand Installed Capacity	9,761 MW (2025) *(Hydro: 9,212 MW* *Wind: 524 MW* *Waste to Energy: 25 MW)*	Up to 14,000 MW	Commission solar, wind, geothermal, hydro, and grid-scale batteries (2027 to 2030) Under construction and to be finalized before end 2028: Financially committed Hydro (Koysha): 1,800 MW Geothermal (Aluto) up to 70MW Wind (Aysha I): 300MW Solar (public) committed: 325 MW Planned and under procurement: Solar IPPP / PPP: 225 MW Planned but finance required: Wind: 802 MW

			Solar: 625 MW
Reduce Losses in the Power System (T&D)	Greater than 27 percent total losses	Less than 19 percent	Implement grid modernization and 200 Towns Rehabilitation Program. Smart metering and digitization (2025 to 2027); Revenue protection programs launched
Integrated Resource Planning (IRP)	Least-cost power system planning	IRP adopted and updated every 4 years	Finalize IRP by mid-2025; Institutionalize 4-year update cycle with stakeholder consultation
Share of Non-Hydro Renewables in Mix	Approximately 5.6 percent of total capacity	At least 15 percent through diversification	Launch competitive IPP framework (2025); Commission solar, wind, geothermal; IRP to guide diversification (2025 and beyond)
Transmission Capacity and Expansion	20,390 kilometers	30,000 kilometers (23,601.64 kilometers already financed under existing programs and 6,398.36 kilometers to be financed through the Compact)	Priority transmission line financing (2024 to 2028); Develop PPP framework for private transmission investment by 2027

PILLAR III
ADVANCE REGIONAL INTEGRATION AND POWER TRADE

Indicator / Reform Area	Baseline	Target (by 2030)	Key Actions & Timeline
Increase Power Export Volume	Approximately 1,500 GWh annually	More than 5,000 GWh annually	Continue exports to Kenya, Sudan, Djibouti & Tanzania finalize power purchase agreements with South Sudan and Somalia
Operationalize EAPP Market Rules	Not harmonized	Fully compliant and actively trading	Harmonize legal and regulatory instruments; implement EAPP market rules

PILLAR IV
ENSURE SECTOR FINANCIAL SUSTAINABILITY AND IMPROVE UTILITY OPERATIONAL PERFORMANCE

Indicator / Reform Area	Baseline	Target (by 2030)	Key Actions & Timeline

Utility Financial Viability (EEP & EEU)	Less than 60 percent cost recovery (OPEX + debt service)	100 percent cost recovery by 2028	Implement tariff reform, reduce losses, roll out advanced metering infrastructure (AMI); Implement DPO-supported Power Sector Reform (PSR) plan
Improve Utility Performance	Less than 10 percent metering coverage; low collection rates	More than 80 percent metering coverage; over 90 percent collection rate	Roll out ERP systems, AMI metering, and enforce performance contracts
Sector Fiscal Burden	High treasury transfers and financing gaps	No reliance on public budget support	Gradual shift to self-financing through improved tariffs and collection efficiency (2025 to 2028)

PILLAR V
ENHANCE PRIVATE SECTOR PARTICIPATION AND STRENGTHENING INSTITUTIONAL CAPACITY

Indicator / Reform Area	Baseline	Target (by 2030)	Key Actions & Timeline
Private Capital Mobilized	Low baseline (approximately 0.5 billion USD)	3.06 billion USD mobilized across the energy sector	Operationalize project preparation facility (2025); Develop pipeline of IPPs via REI4P (2025 to 2028); Scale blended finance; Re-establish Rural Electrification Fund, Develop Private Sector Participation Roadmap
Institutional Capacity (MoWE, EEP, EEU, EIH, PEA)	Capacity constraints	Strengthened and coordinated institutional governance	Regulatory strengthening; Capacity building partnerships (2025 to 2028)
Licensing, Permitting, and Transparency	Time-consuming, less coordinated with state government and other stakeholders, non-transparent processes	Simplified and investor-friendly regulatory environment	Reform licensing framework and streamline procurement processes (2024 to 2026); Introduce standardized procedures

1.2
Implementation Roadmap (2024–2030)

Pillar	2024–2025	2026–2027	2028–2030
I. Achieve Last Mile Access to Electricity and Clean Cooking	• Finalize National Electrification Strategy and NEP 3.0 • Launch the Clean Cooking Road-map and Investment Plan • Reform off-grid policies, standards, and subsidies	• Scale up electric and clean cooking programs • Roll out Multi-Tier Framework (MTF) • Promote consumer awareness and enforce quality standards	• Achieve Last Mile electricity access (75 percent grid and off-grid – Tier 1 and above) • Reach over 57 percent clean cooking coverage nationwide

II. Expand Clean Energy Infrastructure and Reduce Costs	• Finalize the updated IRP • Launch competitive procurement for renewable IPPs • Conduct feasibility studies for transmission and distribution expansion	• Commission solar, wind, and geothermal projects • Begin large-scale construction of transmission and distribution systems	• Complete major generation and network expansion projects • Improve system reliability, reduce technical losses, and enhance resilience
III. Advance Regional Integration and Power Trade	• Engage with EAPP to harmonize legal and regulatory frameworks • Prepare institutional arrangements for regional market participation	• Sign cross-border PPAs with South Sudan, Somalia, and others • Launch construction of strategic interconnectors	• Operationalize regional trade through EAPP platform • Scale up electricity exports beyond 1,500 GWh annually and to reach 5,000 GWh by 2030
IV. Ensure Sector Financial Sustainability and Improve Utility Operational Performance	• Sign performance-based contracts with EEP and EEU • Pursue phased tariff reform toward cost recovery • Launch smart metering and commercial loss reduction programs	• Expand AMI and ERP systems • Improve revenue collection and reduce technical losses • Reach full OPEX coverage	• Achieve full cost recovery including debt service • Ensure utilities operate under commercial and financially sustainable principles
V. Unlock Private Investment and Strengthen Institutions	• Establish project preparation and de-risking facilities • Reform licensing, procurement, and permitting processes • Launch institutional capacity-building programs	• Scale up blended finance and guarantees • Strengthen capacities of MoWE, PEA, EEP, EEU, and EIH • Improve sector governance and coordination	• Private sector leads new investment in generation, transmission, and distribution • Ethiopia positioned as a competitive energy investment destination in the region

2

Country, Sector Overview and Challenges

2.1
Country Overview

Ethiopia, home to over **110 million** people, is the second-most populous country in Africa. Over the past six years, the country has sustained an average annual GDP growth rate of **7.2 percent**, despite macroeconomic pressures and persistent foreign exchange constraints. In **2024**, According to the International Monetary Fund (IMF), GDP is estimated at **USD 156 billion**, reflecting continued gains across key sectors. The Government's Homegrown Economic Reform Agenda (HGER 2.0) remains central to driving structural transformation, improving public sector efficiency, and expanding private sector participation, particularly in the energy sector.

Energy demand is rising at an average annual rate of **12 percent**, driven by rapid urbanization, population growth, and industrialization. Historically, a one percent increase in GDP has required a **1.25 percent** increase in energy supply [2].

Access with one source of Electricity reached **65 percent** of the population in 2025, equivalent to 72 million people, up from **57 percent in 2018**. This growth is primarily due to off-grid solar expansion in rural areas. However, the basic electricity service access with Tier 1 and above is only **44**% where 56% remain without basic electricity service, underscoring the need to scale both grid and off-grid solutions.

Significant urban–rural disparities persist. In urban areas, **92 percent of electrified households are connected to the national grid**, often through shared meters. In contrast, **75 percent of rural households rely on solar lanterns and standalone solar home systems**. Rural access has improved steadily from **37 percent in 2019 to 57 percent in 2024** but substantial gaps remain, especially in remote and underserved communities.

Clean cooking remains one of the most pressing energy access challenges. As of 2024, **92 percent** of households continue to rely on firewood, including **91 percent in rural areas and 59 percent in urban centers**. Electricity accounts for **just 21 percent of cooking energy** in urban areas and remains almost nonexistent in rural ones, underscoring the need for a rapid scale-up of clean and affordable cooking alternatives.

Supply reliability remains a concern, especially in rural areas and secondary towns. Aging infrastructure, weak voltage regulation, and high technical losses affect service quality. Over-reliance on hydropower increases vulnerability to climate shocks.

To address these challenges, the Government has launched a comprehensive energy reform agenda under HGER 2.0, the NEP, the National Sustainable Energy Development Strategy (N-SEDS 2024–2030), and the National Clean Cooking Strategy (NCCS 2024–2034), supported by the Climate Resilient Green Economy (CRGE) strategy and the Long-Term Low Emission Development Strategy (LT-LEDS).

The power sector remains vertically unbundled and state-owned. Generation and transmission are managed by EEP, and distribution by EEU. Reform is underway to allow additional IPPs and PPPs. As of 2025, installed generation capacity stands at **9,761 MW**, over **95 percent from renewable sources**, predominantly hydropower.

Achieving the Compact's targets requires over **USD 9.6 billion** in investment by 2030, including **USD 4.9 billion** for distribution and access. The Government is implementing macroeconomic reforms, including foreign exchange liberalization, improved investment climate, and SOE governance reform, to attract concessional finance, blended capital, and private investment.

2.2
Energy Sector Overview

The energy sector is central to Ethiopia's development and climate goals. The updated Nationally Determined Contribution (NDC) and LT-LEDS aim to reduce greenhouse gas emissions by **68.8 percent** from business-as-usual levels by 2030, with over **30 MtCO2e** to be mitigated by the energy sector.

The NEP, N-SEDS, and NCCS provide the strategic foundation for scaling renewables, enhancing energy efficiency, and expanding access to clean cooking. The Government aims for nearly 100 percent renewable electricity by leveraging hydropower, solar, wind, and geothermal resources. It is also advancing electrification of transport, agriculture, and industries.

Key interventions include hydropower expansion, integration of variable renewables, grid-scale battery storage, clean electrification of households and industries,

[2] Ministry of Planning and Development. Annual Report, 2024.

and elimination of fossil fuel subsidies. The National Clean Cooking Roadmap targets **57.74 percent** access by **2030**, with an estimated reduction of **75 MtCO2e.**

Transitioning to clean cooking has significant health, gender, and environmental benefits. Affordability, limited awareness, and supply chain gaps remain major barriers. The roadmap promotes a phased approach using advanced biomass stoves, electric cooking appliances, biogas, and solar cookers. Reaching targets will reduce wood use, create jobs, and improve gender equity.

Environmental and social (E&S) safeguards are also critical to sustainable sector development. Infrastructure projects must integrate E&S impact assessments and community engagement mechanisms to identify and mitigate potential risks. Ensuring that large-scale projects are inclusive and locally accepted contributes to social cohesion and long-term viability.

Citizen engagement is an essential pillar of Ethiopia's energy transition. Public participation in planning, feedback loops during project implementation, and access to information are increasingly recognized as vital components of successful reforms. Strengthening transparency and accountability mechanisms will improve public trust, policy responsiveness, and the long-term success of energy programs.

Despite strong investments, the sector faces structural challenges. Technical and commercial losses remain above 25 percent. Much of the distribution infrastructure is outdated, particularly in secondary towns, leading to unreliable service and reduced consumer trust.

Ethiopia's generation mix remains over **95 percent hydro-based**, making the system vulnerable to climate variability. Diversification into solar, wind, and geothermal is accelerating under the IRP and new procurement frameworks.

The sector is publicly owned but reforming. EEP manages generation and transmission, EEU oversees distribution, and the Petroleum and Energy Authority regulates licensing and tariffs. EIH leads SOE reforms, while the Ministry of Finance (MoF) and the Ministry of Water and Energy (MOWE) provide fiscal oversight, coordinate donor engagement and provide policy insight through the Power Sector Reform (PSR) and DPO.

Challenges remain in planning, financial sustainability, and coordination. Utilities face cost recovery gaps, low collection rates, and outdated systems. Ongoing reforms aim to improve metering, billing, and performance tracking.

Private sector involvement is still limited. Although initial IPPs have launched, challenges with permitting, procurement, bankable PPAs, and currency risks persist. Project preparation and de-risking instruments need to be scaled.

Macroeconomic reforms under HGER 2.0 are gradually improving investor confidence through foreign exchange liberalization, regulatory clarity, and SOE restructuring.

Energy is also critical for development across sectors. It enables agricultural productivity, industrial competitiveness, clean transport, and better service delivery in health and education. Expanding clean energy access is therefore essential to inclusive growth and poverty reduction.

Ethiopia is positioning itself as a regional clean energy hub. Interconnections with Kenya, Djibouti, Sudan, and Tanzania are in place or progressing. With continued investment in grid stability and regulatory harmonization, Ethiopia can lead power trade in the Horn of Africa through the EAPP.

Looking ahead, the Compact also emphasizes the importance of jobs, gender, and digital transformation as cross-cutting commitments. Expanding energy infrastructure and services will generate thousands of direct and indirect jobs. Construction, engineering, and operations linked to large-scale projects will be complemented by employment opportunities in local manufacturing, installation, distribution, and after-sales services for off-grid solar and clean cooking solutions. Productive uses of energy in agriculture, irrigation, and agro-processing are expected to generate additional rural jobs, supporting food security and local economic development. In line with the Compact's objectives, new job creation will be linked to capacity building and skills development to ensure that employment benefits are sustainable and inclusive.

Gender equality is another core priority. Ethiopia ranks relatively low in global gender participation indexes, and women remain underrepresented in technical and leadership roles in the energy sector. The Compact seeks to reverse this trend by promoting women's participation across the energy value chain, from policy and planning to project implementation and entrepreneurship. Targets include expanding access to electricity and productive-use technologies for female-headed households and women-owned enterprises, alongside measures to increase the share of women employed in technical and managerial positions. These actions are expected to enhance women's economic empowerment, reduce time poverty linked to household energy burdens, and create a more inclusive workforce for the energy transition.

Digitalization is equally central to sector modernization. EEP and EEU have already begun deploying advanced tools such as enterprise resource planning systems, geospatial information systems, digital customer indexing, and National Load Dispatch Center upgrades. Looking forward, new investments will focus on digital twinning for real-time monitoring, smart grids for flexible and resilient operation, and wide-area measurement and control systems to strengthen system stability. The adoption of digital platforms for billing, outage management, and customer engagement will improve efficiency, transparency, and financial sustainability. Digitalization also opens space for cross-sector synergies, such as combining fiber and grid rollout, expanding smart metering, and supporting data-driven electrification planning.

By integrating job creation, gender equality, and digital transformation into the energy transition, the Compact ensures that Ethiopia's pathway is not only clean and sustainable, but also inclusive, technologically advanced, and socially transformative. These cross-cutting commitments strengthen the sector's role as a driver of equitable growth and long-term resilience.

2.3
Major Challenges and Opportunities

Despite promising strides, Ethiopia's energy sector continues to face major bottlenecks that constrain its contribution to national development.

PILLAR I
ACHIEVE UNIVERSAL ACCESS TO ELECTRICITY AND CLEAN COOKING SOLUTIONS

Electricity access in Ethiopia has improved steadily over the past decade, with grid infrastructure reaching most administrative centers. However, last-mile connectivity remains a persistent gap, especially in rural and emerging regions. While off-grid and mini-grid solutions are gaining ground, they continue to face regulatory, financing, and institutional challenges. The quality of access is also uneven, with frequent outages and substandard voltage in many connected areas. Clean cooking represents Ethiopia's most urgent access challenge: nearly nine out of ten households still rely on traditional biomass fuels, posing major health, environmental, and gender-related risks. The market remains fragmented, and clean cooking initiatives are yet to be fully integrated into national energy planning.

Challenge	Description
Unserved rural households	A big chunk of the population remains without electricity access, primarily in rural and emerging regions.
Low-quality access in connected zones	Many households fall below Tier 3 electricity access standards, facing frequent outages and voltage fluctuations.
Weak off-grid enabling environment	Licensing, quality standards, and subsidy mechanisms for solar home systems and mini-grids are still under development
Clean cooking access remains low	Access is around 8 percent; the market is fragmented, and consumer financing and supply chains remain underdeveloped
Limited coordination and policy enforcement	Clean cooking programs are largely donor-driven and not yet fully embedded in national energy planning and institutional systems

PILLAR II
EXPAND CLEAN ENERGY INFRASTRUCTURE AND REDUCE COSTS

Ethiopia has significantly expanded its electricity generation over the past two decades, primarily through large-scale hydropower projects. However, generation still lags behind demand, particularly in industrial zones, emerging towns, the new e-mobility transition and agricultural clusters. Transmission investments have not kept pace with generation capacity, and diversification into other renewable sources such as solar, wind, and geothermal remains limited relative to the country's vast potential. Planning systems are fragmented, and infrastructure losses remain high, increasing the cost of service delivery and undermining reliability.

Challenge	Description
Inadequate generation capacity vs. demand	Rapidly growing demand from industry, agriculture, households, and electric mobility is outpacing available supply. GERD is still being phased in

Over-reliance on hydropower	Over 95 percent of current electricity generation is hydro-based, leaving the system vulnerable to seasonal variability and climate shocks
Limited diversification into non-hydro	Solar, wind, and geothermal are underdeveloped despite strong potential. Delays in IPP implementation constrain diversification
Transmission infrastructure gaps	Lack of adequate investment in transmission expansion has led to delivery bottlenecks between generation sites and demand centers
Fragmented planning and data systems	Absence of an updated IRP and weak coordination between planning entities limit effective investment prioritization and system-wide optimization

PILLAR III
ADVANCE REGIONAL INTEGRATION AND POWER TRADE

Ethiopia is strategically positioned to become a clean energy exporter in the Horn of Africa. Interconnections with Djibouti, Kenya, and Sudan have been built or are under development. However, technical readiness, contractual frameworks, and institutional capacity for power trading remain underdeveloped. Regional trade is hampered by differing regulatory systems and limited demand readiness in neighboring countries.

Challenge	Description
Underutilized infrastructure	Export lines exist, but power flows remain low due to delays in PPAs and limited progress in operationalizing EAPP regional trading arrangements
Weak trading capacity	Limited institutional and technical readiness within EEP and sector institutions to manage complex regional power trade operations
Regulatory misalignment	Differences in tariff structures, legal agreements, and settlement procedures across countries complicate integration and slow PPA execution
Inadequate regional planning	Lack of coordinated planning between utilities and ministries in neighboring countries constrains effective development of a harmonized regional market

PILLAR IV
ENSURE SECTOR FINANCIAL SUSTAINABILITY AND IMPROVE UTILITY OPERATIONAL PERFORMANCE

Challenge	Description
Tariffs remain below cost recovery	Despite reforms, revenues do not yet cover OPEX and debt service; expected to recover costs by 2028
Accumulated arrears and low collection rates	Public and private customer arrears remain high; enforcement is weak
High technical and commercial losses	Estimated at over 20% across the system; AMI and ERP systems still scaling

Weak financial reporting and monitoring	Financial statements are often delayed; performance data not always transparent or shared
Fragmented accountability and legacy debts	EEP and EEU historically operated with limited fiscal discipline; reform ownership improving under EIH and MoF

PILLAR V
UNLOCK PRIVATE INVESTMENT AND STRENGTHEN INSTITUTIONS

Private sector participation in Ethiopia's energy sector has begun but remains limited in scale and scope. Early IPPs in geothermal and solar have been initiated, but permitting, risk management, and procurement remain cumbersome. Ethiopia's institutional capacity, particularly at MoWE, EEP, EEU, EIH and PEA, requires significant reinforcement to meet the demands of a modern, market-oriented energy system.

Challenge	Description
Complex and lengthy permitting processes	Project development timelines are extended by land, licensing, and approval delays
Currency convertibility and PPA bankability risks	Foreign Exchange risks limit private interest; payment guarantees are insufficient for many developers
Institutional capacity gaps	Sector institutions face shortages of qualified staff in planning, legal review, procurement, and regulatory oversight.
Weak uptake of blended finance and de-risking tools	Instruments such as guarantees, insurance, and results-based finance are underused

2.4
Risk Register and Mitigation Strategy

Risk Category	Key Risks	Mitigation Measures
Political & Governance	Coordination between MoF, MoWE, EIH, EEP, EEU	Empower PSR Task Force; high-level engagement (State Minister & Reform Steering Committee); DPO monitoring
Financial Sustainability	Non-cost recovery tariff; affordability	Indexed, phased reforms; subsidy targeting; strengthened PEA oversight & enforcement mandate
Institutional Capacity	Limited HR and IT systems at utilities and PEA	TA programs; ERP and AMI rollout; World Bank and AfDB support
Private Sector Risks	IPP delays; payment risk; FX availability concerns	Currency risk mitigation (MIGA, IDA guarantees); standardized PPA models; IPP helpdesk at MoF, internalize PPA economic costs and economic benefits in the decision matrix
Environmental & Climate	Hydrological risks; environmental impact and E&S compliance gaps	Diversification of RE mix; ESIAs; emergency planning; CRGE mainstreaming
Implementation Delays	Procurement complexity; weak project prep and contract execution	Procurement reform; EPC contracting; advance site identification

3

Monitoring and Evaluation

The Monitoring and Evaluation (M&E) framework of Ethiopia's National Energy Compact is grounded in results-based and adaptive management principles. It aims to promote transparency, accountability, continuous learning, and performance-driven implementation across all five pillars of the Compact.

3.1 Monitoring System

The monitoring system is structured around key indicators and real-time tools that track progress at national, utility, and project levels.

- **Key Performance Indicators (KPIs)**: Aligned with NEP, NCCS, N-SEDS, and international frameworks such as the Multi-Tier Framework (MTF). KPIs are defined at the output, outcome, and pillar levels.
- **Monitoring Tools:**
  - **National Energy Dashboard:** Hosted by MoWE, it tracks targets related to generation, access, financial performance, and gender-disaggregated uptake.
  - **Geospatial Monitoring Systems:** Used to oversee electrification rollout across the country.
  - **Utility-level MIS Systems:** Operated by EEP, EEU, and Regional Bureaus, linked to PEA oversight to monitor key operational metrics such as SAIDI/SAIFI, cost recovery, and collection efficiency.
  - **Data Disaggregation:** Required by gender, geographic area (urban/rural/remote), income quintile, and technology type (grid, off-grid, or clean cooking).
  - **Citizen Engagement Portal:** An interactive platform for the public and development partners to access dashboards, review scorecards, and provide feedback on Compact implementation.

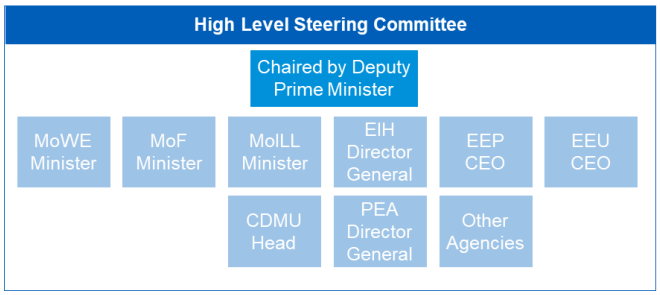
3.2 Evaluation

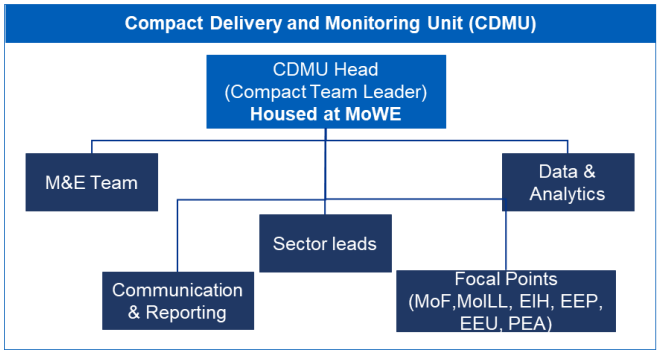
Evaluations will assess performance at strategic points in the Compact's lifecycle.

- **Baseline Studies (2025):** Based on MTF surveys, establishing benchmarks on access, affordability, and gender inclusion.
- **Midterm Evaluation (2027–2028):** Led by an independent evaluator to assess progress toward outcomes, institutional reform, and financial sustainability.
- **Final Evaluation (2030):** Will assess the achievement of universal access and clean cooking targets, and long-term transformation outcomes.
- **Evaluation Methods Include:**
  - Quantitative and qualitative assessments
  - Theory of Change reviews
  - Gender and climate impact analysis
  - Geospatial analysis of last-mile electrification and cooking interventions

3.3 Institutional Role & Governance

A Compact Delivery and Monitoring Unit (CDMU) will be set up to drive coordination, execution and oversight. The establishment and operation of the CDMU is contingent on Compact-related financing.





1. **High-Level Steering Committee – Strategic Oversight**

Functions:

- Approve strategic targets and implementation priorities
- Review performance and validate reports from the CDMU
- Mobilize resources and resolve high-level issues
- Meets twice a year and additionally at the Chair's request

On top of the core members other agencies can participate depending on the agenda (as relevant): implementing agencies, private sector, civil society organizations, development partners.

2. Compact Delivery and Monitoring Unit (CDMU) – Operational and Technical Core

Key Responsibilities:

- Day-to-day coordination of Compact implementation
- Liaison with focal points from EEP, EEU, MoWE, MoF,MoILL EIH, PEA, other agencies
- Track KPIs and implementation milestones
- Prepare reports for Steering Committee
- Facilitate bottleneck resolution and technical support

Institution	Role in M&E
MoWE	Leads national M&E coordination, publishes progress reports and dashboards
MoF	Tracks public financial flows and assesses the fiscal sustainability of regulated entities
MoILL, MoA	Lead and track PURE implementation
EIH	Oversees reform implementation in SOEs and supports financial and operational reporting
PEA	Monitors compliance and enforces performance targets for regulated utilities
EEP, EEU, Regional Energy Bureaus	Operate MIS platforms, submit regular performance reports
Development Partners	Support framework design and foster adaptive learning mechanisms
Civil Society	Participate in annual review forums and provide citizen feedback

3.4
Compact Delivery and Monitoring Unit (CDMU)

Key Roles within CDMU:	
Position	Role Core Functions
Head of CDMU	Strategic oversight, coordination with delivery teams and the High level Steering commitee

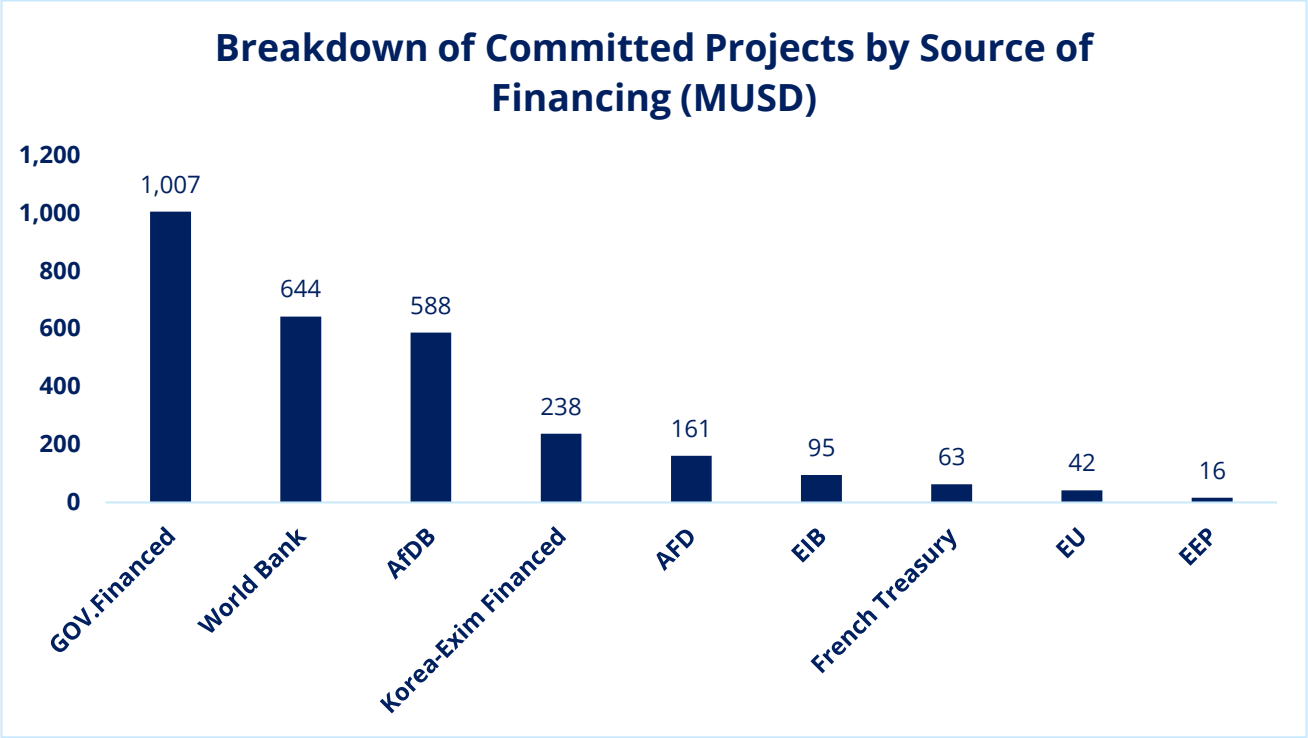
M&E Specialist (Grid/Access)	Tracks grid expansion, connections, and loss reduction
Safeguards M&E Lead	Oversees environmental and social compliance and grievance redress
Data Analyst	Manages the national dashboard and supports real-time analytics

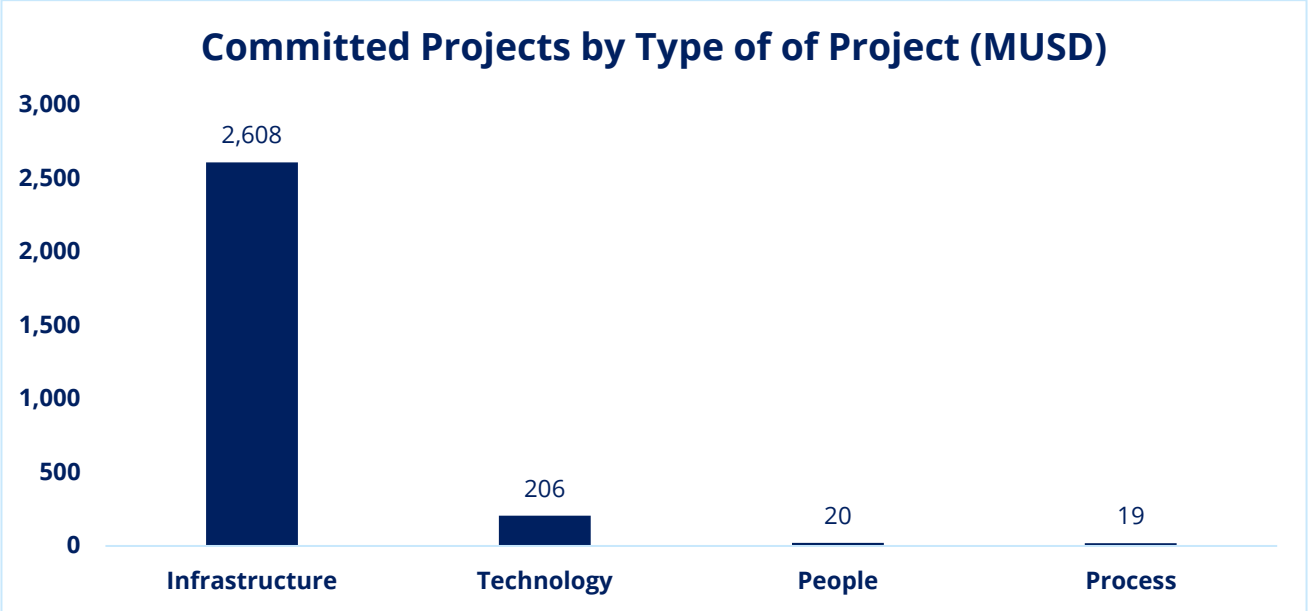
3.5
Reporting and Calendar

Report	Frequency	Prepared By	Recipients
Compact Progress Report	Quarterly	CDMU	NECSC, EIH, MoWE, MoF, Development Partners
Annual Compact Report	Annually	CDMU	MoWE, EIH, Parliament, Development Partners
Dashboard Updates	Monthly	CDMU Data Analyst	Public and Stakeholders
Evaluation Reports	Midterm & Final	Independent Evaluator	MoWE, EIH, Development Partners

The M&E system will be continuously strengthened to support learning, course correction, and alignment with the Compact's evolving priorities and results.

ANNEX I
ONGOING AND COMMITTED PROJECTS FOR GENERATION AND TRANSMISSION





Committed Projects for Generation and Transmission					
No	Development Partners	Project Name	Type of Project	Expected Completion Year	Investment costs (MUSD)
1	World Bank	Azezo-Chilga, Fincha-Shambu and Metu-Masha 230kV Power Transmission Project	Infrastructure	2025	51,80
2	GOV.Financed	Bahir Dar -Woldia II-Combolcha III 400kV Power Transmission Project	Infrastructure	2025	365,41
3	GOV.Financed	Debre Markos-Dejen, Ashegoda and Hormat PTP	Infrastructure	2025	45,85
4	GOV.Financed	Tarcha 132kV PTP (Relocation)	Infrastructure	2025	11,83
5	World Bank	Worabe 132kV PTP	Infrastructure	2025	19,91
6	World Bank	Bokoji Power Supply PTP	Infrastructure	2025	16,79
7	World Bank	Debre Tabor 230kV PTP	Infrastructure	2025	18,45
8	Korea-Exim Financed	Southern Extension of the National Electricity Grid PTP	Infrastructure	2025	238,33
9	GOV.Financed	Tulucapi Gold Mines 132kV PTP	Infrastructure	2025	18,00
10	GOV.Financed	Chaka Power Supply Project	Infrastructure	2025	61,98
11	GOV.Financed	System Voltage Regulation Project (Adigala, Alamata, Beles, Geb.G, Tekeze)	Infrastructure	2025	16,67
12	GOV.Financed	Awash-Woldia Rail Way PTP	Infrastructure	2026	145,49
13	AfDB	Combolcha - Milie - Semera 230kV PTP	Infrastructure	2026	70,97
14	AfDB	Ethiopia/Semera - Djibouti/Nagad 230kV PTP	Infrastructure	2026	58,18
15	GOV.Financed	Burie Agro Industry Park 230kV PTP	Infrastructure	2026	94,00
16	GOV.Financed	Gende Arba Integrated Agro Industry Power Supply Project	Infrastructure	2026	14,51
17	GOV.Financed	Weynenata Integrated Agro Industry PTP	Infrastructure	2026	10,96
18	World Bank	Shashemene II 230kV PTP	Infrastructure	2026	24,36
19	World Bank	Arsi Robe 132kV PTP	Infrastructure	2026	17,00
20	World Bank	Bale Robe II 132kV PTP	Infrastructure	2026	61,48

Committed Projects for Generation and Transmission					
21	World Bank	Bensa Daye 132kV PTP	Infrastructure	2026	14,41
22	World Bank	Wolkitie-Sebeta I 230kV Line LILO at Woliso	Infrastructure	2026	11,03
23	World Bank	Fitche 230kV PTP	Infrastructure	2026	27,97
24	World Bank	Limu 132kV PTP	Infrastructure	2026	22,11
25	World Bank	Durame and Halaba132kV PTP	Infrastructure	2026	93,70
26	World Bank	Ghimbi-Kamashi 132kV PTP	Infrastructure	2026	16,14
27	World Bank	Haromaya-Chelenko 132kV	Infrastructure	2026	24,49
28	AfDB	Hurso-Hara IV-Jijiga II and Fafem and Berkot PTP	Infrastructure	2026	187,75
29	World Bank	Addis Center Substation New	Infrastructure	2026	19,61
30	World Bank	Addis North Substation Transformer Upgrading	Infrastructure	2026	6,30
31	World Bank	Weregenu 132kV PTP	Infrastructure	2026	6,20
32	World Bank	AATDRU Project (Gurara, Gofa, Mekanisa, Kality North)	Infrastructure	2026	48,09
33	GOV.Financed	Gonder-Dansha-Humera Beaker Agro Industry	Infrastructure	2026	20,02
34	World Bank	Injibara 230kV PTP	Infrastructure	2027	20,26
35	World Bank	Debark 230kV PTP	Infrastructure	2027	31,59
36	World Bank	Mehal Meda 132kV PTP	Infrastructure	2027	25,86
37	World Bank	Wereilu 132kV PTP	Infrastructure	2027	44,79
38	AFD	Rehabilitation of North Region Electric Power Transmission Network	Infrastructure	2026	11,40
39	AfDB	Eastern Grid Reinforcement and Expansion Project	Infrastructure	2027	104,00
40	GOV.Financed	Ethiopia-Somaliland 230kV Power System Interconnection Project	Infrastructure	2028	50
41	GOV.Financed	Humora-Dansha-Gondar II 230kV PTP	Infrastructure	2029	79,89
42	AfDB	Dire Dawa II- Harar III 132kV LILO at Alemaya PTP	Infrastructure	2029	5,18

Committed Projects for Generation and Transmission					
43	GOV.Financed	Shashemene-Gende Arba 132kV Second Circuit	Infrastructure	2029	4,89
44	GOV.Financed	Dansha-Humera 230 kV Line	Infrastructure	2031	27,70
45	AfDB	Gambela-Malakal 230 kV Line (South Sudan)	Infrastructure	2032	161,70
46	GOV.Financed	Gondar-Dansha 230 kV Line	Infrastructure	2035	39,50
47	World Bank	Human Resource Development Strategy and Roadmap	People	2026	0,20
48	World Bank	ESRM and Gender Management Gap Analysis and Capacity Building	People	2026	0,29
49	AFD	Technical assistance for Transformer Maintenance & Protection Settings	People	2025	1,40
50	AFD	Rehabilitation of damaged OPGW in Northern regions	Infrastructure	2026	1,90
51	EIB	OPGW Extension	Infrastructure	2029	22,90
52	AFD	OPGW Extension	Infrastructure	2029	19,40
53	EU	OPGW Extension	Infrastructure	2029	8,00
54	EIB	Ashegoda Wind Farm Retrofitting	Infrastructure	2028	8,00
55	EU	Ashegoda Wind Farm Retrofitting	Infrastructure	2028	2,90
56	AFD	Ashegoda Wind Farm Retrofitting	Infrastructure	2028	1,00
57	EU	Support to IPP Development	People	2028	1,20
58	French Treasury	Grid Reliability and Infrastructure for Dispatching and Substations	Infrastructure	2028	62,50
59	AFD	Training center construction and capacity building	People	2030	17,40
60	EU	Training center construction and capacity building	Infrastructure	2030	14,90
61	EIB	Installation of new, upgrade and replacement of Substation Automation Systems	Technology	2030	61,70
62	World Bank	Technical Design, Procurement and Contract Management Gap	Process	2027	0,28

Committed Projects for Generation and Transmission					
		Analysis and Capacity Building Program			
63	EEP	Enterprise Resource Planning (ERP) phase 1 & 2 with ERP license	Process	2027	12,21
64	EEP	Spatial Energy Management System	Process	2026	4,06
65	World Bank	System Digital Twin	Process	2027	2,50
66	AFD	Procurement of Design, Supply, Installation, Testing and Commissioning of EEP National Load Dispatch Center	Technology	2027	90,30
67	World Bank	Protection refurbishment	Technology	2026	5,01
68	AFD	Installation of new, upgrade and replacement of Substation Automation Systems (SAS)	Technology	2030	5,50
69	EU	Installation of new, upgrade and replacement of Substation Automation Systems (SAS)	Technology	2030	2,90
70	AFD	STATCOM Installation	Technology	2028	12,00
71	EU	STATCOM Installation	Technology	2028	12,00
72	EIB	Support to Emergency Restoration Systems	Technology	2028	2,30
73	AFD	Support to Emergency Restoration Systems	Technology	2028	1,10
	Total				2 853,81

ANNEX II
PLANNED BUT UNFUNDED PROJECTS FOR GENERATION AND TRANSMISSION

Planned but Unfunded Projects for Transmission - Public					
No	Project Name	Type of Project	Expected Completion Year	Status	Investment costs (MUSD)
1	Beles Sugar-Pawie-Bulen PTP	Infrastructure	2027	Feasibility Study Done	45,61
2	Shukute 230kV PTP	Infrastructure	2027	Feasibility Study Done	38,42
3	Gashena-Lalibela 230kV and Lalibela-Sekota 132kV PTP - Lalibela SS	Substation Reinforcement	2027	Proposed	54,99
4	Shegole-Minilik TS 132 kV Line	Substation Reinforcement	2028	Feasibility Study Done	2
5	Addis North-Minilik TS 132 kV Line	Substation Reinforcement	2028	Feasibility Study Done	2,3
6	Adami Tulu-Alutu Langano	Substation Reinforcement	2028	Proposed	1,9
7	Guder Tap-Guder 132 kV Line	Substation Reinforcement	2028	Proposed	2,9
8	Gofa-Mekanisa 132 kV Line	Substation Reinforcement	2028	Feasibility Study Done	1,9
9	Dire Dawa 3-Dire Dawa 1 132 kV Line	Substation Reinforcement	2028	Proposed	2,3
10	Sebeta 1 - Black Lion 132 kV Line	Substation Reinforcement	2028	Feasibility Study Done	4,2
11	Tulefa 230kV PTP	Infrastructure	2028	Feasibility Study Done	11,07
12	Shakiso 230kV PTP	Infrastructure	2028	Feasibility Study Done	11,47
13	Ajebar 132kV PTP	Infrastructure	2028	Proposed	11,13
14	Konso 132kV PTP	Infrastructure	2028	Feasibility Study Done	17,31
15	Enticho 132kV PTP	Infrastructure	2028	Feasibility Study Done	26,52
16	Beyeda 230kV PTP	Infrastructure	2028	Feasibility Study Done	21,47

Planned but Unfunded Projects for Transmission - Public					
17	Mekane Selam 230kV PTP	Infrastructure	2028	Feasibility Study Done	55,98
18	Hargele 132kV PTP	Infrastructure	2028	Feasibility Study Done	34,72
19	Aluto Langano-II connection to grid	Infrastructure	2028	Proposed	9,08
20	GERD-Asosa 400kV PTP	Infrastructure	2028	Feasibility Study Done	102,01
21	Tatek 230kV PTP	Infrastructure	2028	Proposed	5,73
22	Kaliti 2-Kaliti 1 132 kV Line	Substation Reinforcement	2028	Feasibility Study Done	4,1
23	Kaliti-1-Mekanisa 132 kV Line	Substation Reinforcement	2028	Feasibility Study Done	4,9
24	Koka-Nazreth 132 kV Line	Substation Reinforcement	2028	Proposed	2,4
25	Dodola 132kV PTP	Infrastructure	2029	Proposed	14,26
26	key Afer-Tum 132kV PTP	Infrastructure	2029	Proposed	20,81
27	Awash 7Kilo-Dire Dawa III 230kV Line LILO at Nuraera PTP	Infrastructure	2029	Proposed	8,85
28	Arerti-Hurso 230kV LILO at Mieso PTP	Infrastructure	2029	Proposed	8,46
29	Mekele-Mesobo 132kV Transmission Line Reinforcement	Substation Reinforcement	2029	Proposed	1,75
30	Adama-Awash 7Kilo LILO at Metehara	Substation Reinforcement	2029	Proposed	0,79
31	Ayat GIS-Legetafo 132kV PTP	Substation Reinforcement	2029	Feasibility Study Done	1,32
32	Kaliti I-Kaliti GIS 132kV Line (Second Circuit)	Substation Reinforcement	2029	Proposed	1,36
33	Sebeta I-Gefersa 132kV Line (Second Circuit)	Substation Reinforcement	2029	Proposed	2,84
34	Gelan-Kaliti 230kV Double Circuit Line (3rd and 4th Circuit)	Substation Reinforcement	2029	Proposed	5,62
35	Debre Zeit 2 132 kV Substation	Substation Reinforcement	2029	Proposed	1,5
36	Gambela - Dembi Dolo PTP	Infrastructure	2029	Feasibility Study Done	38,9

Planned but Unfunded Projects for Transmission - Public					
37	Debre Birhane II-Debre Birhane I 132kV line	Substation Reinforcement	2029	Proposed	4,78
38	Wurgessa 230kV PTP	Infrastructure	2029	Feasibility Study Done	10,12
39	Bahir Dar II-Gondar II 230kV Line LILO at Bahir Dar III PTP	Substation Reinforcement	2029	Feasibility Study Done	6,1
40	Shawera 132kV PTP	Substation Reinforcement	2029	Feasibility Study Done	7,4
41	Alamata-Mychew 132kV PTP	Substation Reinforcement	2029	Proposed	13,34
42	Awash II-Awash III 132kV PTP	Substation Reinforcement	2029	Proposed	1,07
43	Jimma Old-Jimma New 132kV Line	Substation Reinforcement	2029	Proposed	2,25
44	Jijiga II-Jijig I 132kV Single circuit line	Substation Reinforcement	2030	Proposed	0,98
45	Koka-Debre Zeit Tap-Gelan Single Circuit Line	Substation Reinforcement	2030	Proposed	13,1
46	Kaliti II-Nifasilk 132kV Line	Substation Reinforcement	2030	Proposed	2,79
47	Axum-Endasilassie 230 kV Line	Substation Reinforcement	2030	Proposed	16,69
48	Wolaita Sodo I-Wolaita Sodo II 132kV Line	Substation Reinforcement	2030	Proposed	3,64
49	Debre Birhane II-Debre Birhane I 132kV Line (Reconductoring)	Substation Reinforcement	2030	Proposed	1,36
50	Melka-Wakena-Ramo 230 kV Line	Substation Reinforcement	2030	Feasibility Study Done	64,5
51	Ramo-Gode 230 kV Line	Substation Reinforcement	2030	Feasibility Study Done	85,2
52	Sebeta-1-Sebeta 2 230 kV Line	Substation Reinforcement	2030	Proposed	12,8
53	Kaliti-1-Gelan 230 kV Line	Substation Reinforcement	2030	Proposed	4
54	Omo-Kuraz 230 kV Substation	Substation Reinforcement	2030	Proposed	5
55	GERD-Beles 400 kV Line	Substation Reinforcement	2030	Proposed	102,2

Planned but Unfunded Projects for Transmission - Public					
56	Gibe II- Gibe New 400 kv Line	Substation Reinforcement	2030	Feasibility Study Done	17,2
57	Ayat-Legetafo 132 kV Line	Substation Reinforcement	2030	Feasibility Study Done	2,6
58	Cotobie-Ayat 132 kV Line	Substation Reinforcement	2030	Feasibility Study Done	3,5
59	Awassa-Awassa II 132 kV Line	Substation Reinforcement	2030	Proposed	2,5
60	Gode Petrochemical to Gode 230 kV Substation	Substation Reinforcement	2028	Feasibility Study Done	17,5
61	Degehabur-Birqod -Kebridehar	Substation Reinforcement	2028	Feasibility Study Done	25
62	Legetafo-Kality 230kV PTP LILO at Bolelemi	New	2027	Feasibility Study Done	7,8
63	Central Region Electric Power Transmission Network Reinforcement Project	Substation Reinforcement	2028	Feasibility Study Done	22,46
64	Wukiro Substation Capacity Addition/Upgrading Project	Substation Reinforcement	2028	Feasibility Study Done	0,25
65	Shire EndaSilassie Substation Capacity Addition/Upgrading	Substation Reinforcement	2028	Feasibility Study Done	5,90
66	Adwa 132 KV Substation	Substation Reinforcement	2028	Feasibility Study Done	4,45
67	COTEBIE to BOLE-LEMI-TP	Reconductoring	2028	Feasibility Study Done	3,90
68	SHEGOLE to GEFERSA	Reconductoring	2028	Feasibility Study Done	3,23
69	SHEGOLE to MINILIK-GIS	Reconductoring	2028	Feasibility Study Done	2,71
70	ADDIS-NORTH to MINILIK-GIS	Reconductoring	2028	Feasibility Study Done	3,09
71	KALITI-1 to KALTI-NOR-TP	Reconductoring	2028	Feasibility Study Done	2,41
72	KALITI-1 to MEKANISA	Reconductoring	2028	Feasibility Study Done	6,39
73	KALITI-1 to KALITI-GIS	Reconductoring	2028	Feasibility Study Done	2,82
74	KALITI-1 to AA AIR UG CA	Reconductoring	2028	Feasibility Study Done	6,08

Planned but Unfunded Projects for Transmission - Public					
75	SEBETA-1 to ADDIS-WEST	Reconductoring	2028	Feasibility Study Done	3,90
76	Dire Dawa-III	Substation Reinforcement	2028	Proposed	10,94
77	ADAMA-II	Substation Reinforcement	2028	Proposed	4,18
78	BAHIR DAR-II	Substation Reinforcement	2028	Proposed	4,18
79	AXUM	Substation Reinforcement	2028	Proposed	4,18
80	BOLE-LEMI	Substation Reinforcement	2028	Proposed	4,18
81	YIRGALEM-II	Substation Reinforcement	2028	Proposed	12,06
82	SEMERA	Substation Reinforcement	2028	Proposed	5,07
83	COMBOLCHA-I	Substation Reinforcement	2028	Proposed	4,18
84	MEKELE	Substation Reinforcement	2028	Proposed	4,18
85	COMBOLCHA-II	Substation Reinforcement	2028	Proposed	5,07
86	ASSOSA-I	Substation Reinforcement	2028	Proposed	4,99
87	DEBREBERHAN-I	Substation Reinforcement	2028	Proposed	4,70
88	DEBREBERHAN-II	Substation Reinforcement	2028	Proposed	6,90
89	NEKEMTE to DEDESSA 132 kV (reconductoring)	Reconductoring	2028	Proposed	19,71
90	Mizan Substation Upgrading	Substation Reinforcement	2029	Proposed	109,52
91	Durame to Wolayta-II 132 kV (reconductoring)	Reconductoring	2029	Proposed	19,72
92	Yirgalem-II to Hawassa-II 230 kV (reconductoring)	Reconductoring	2029	Proposed	26,37
93	Hawasaa-I	Substation Reinforcement	2029	Proposed	4,27

Planned but Unfunded Projects for Transmission - Public					
94	Hawassa-II	Substation Reinforcement	2029	Proposed	10,35
95	GERD Power Plant	Substation Reinforcement	2029	Proposed	18,12
96	Ayisha-2-Adigala 230 kV	Infrastructure	2029	Proposed	34,90
97	Sululta Substation	Substation Reinforcement	2029	Proposed	6,22
98	Shewa Robit Substation Upgrading	Substation Reinforcement	2030	Proposed	18,46
99	Durame to Alaba 132 kV (reconductoring)	Reconductoring	2030	Proposed	11,38
100	KALITI-1 to GELAN 230 kV (reconductoring)	Reconductoring	2030	Proposed	9,47
101	Sekoru -Wolkite 230 kV (reconductoring)	Reconductoring	2030	Proposed	44,35
102	Sekoru -Hosana-Alaba 132 kV (reconductoring)	Reconductoring	2030	Proposed	33,27
103	KALITI-2 to KALITI-GIS (reconductoring)	Reconductoring	2030	Proposed	3,22
104	Adamitulu to Assela 132 kV(reconductoring)	Reconductoring	2030	Proposed	16,51
105	Assela -Asella Wind 132kV PTP	Reconductoring	2030	Proposed	9,16
106	Hawassa 2 to Hawassa 1 132 kV(reconductoring)	Reconductoring	2030	Proposed	3,39
107	Yirgalem 2 to Yirgalem 1 132 kV(reconductoring)	Reconductoring	2030	Proposed	3,79
108	Sebeta-I - Sebeta II 230 kV (reconductoring)	Reconductoring	2030	Proposed	12,42
109	Kemissie Substation Upgrading	Substation Reinforcement	2030	Proposed	19,09
110	Yirgalem II Capacitor Bank	Substation Reinforcement	2030	Proposed	7,25
111	Dangila 230kV PTP	Infrastructure	2028	Proposed	29,41
112	Finote Selam 230kVPTP	Infrastructure	2028	Proposed	11,90
113	Gondar II-Dabat 230kV PTP	Infrastructure	2028	Proposed	40,41
114	Ethiopia(Genale Dawa III)- Somalia 230 KV Line	Infrastructure	2028	Proposed	137,70

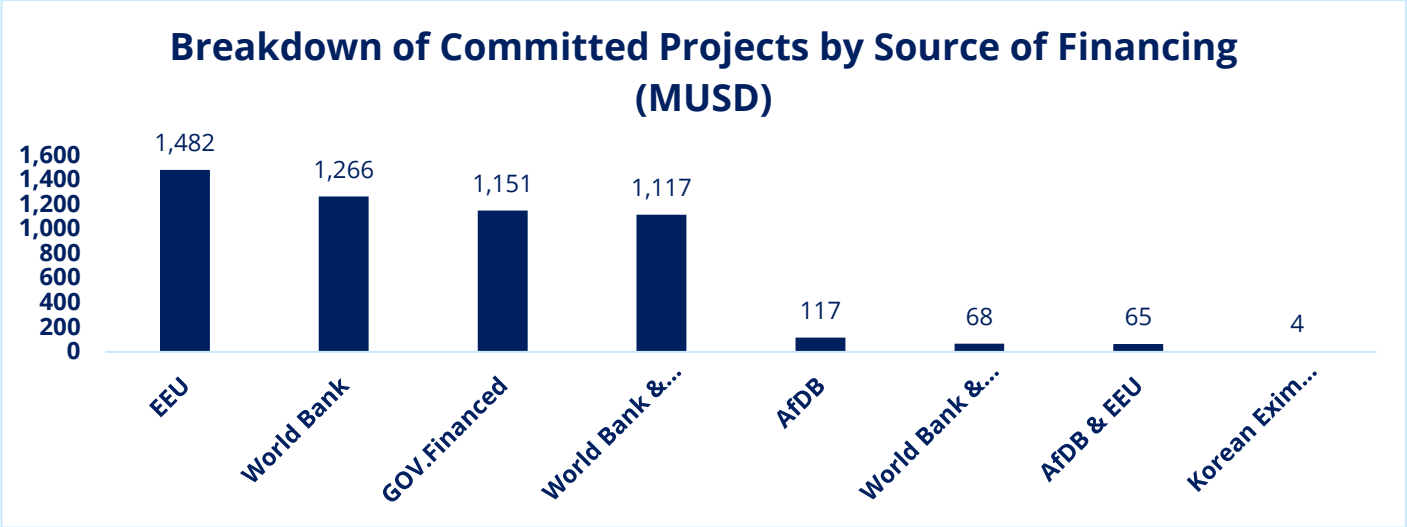
Planned but Unfunded Projects for Transmission - Public					
	Total				**1,817.06**

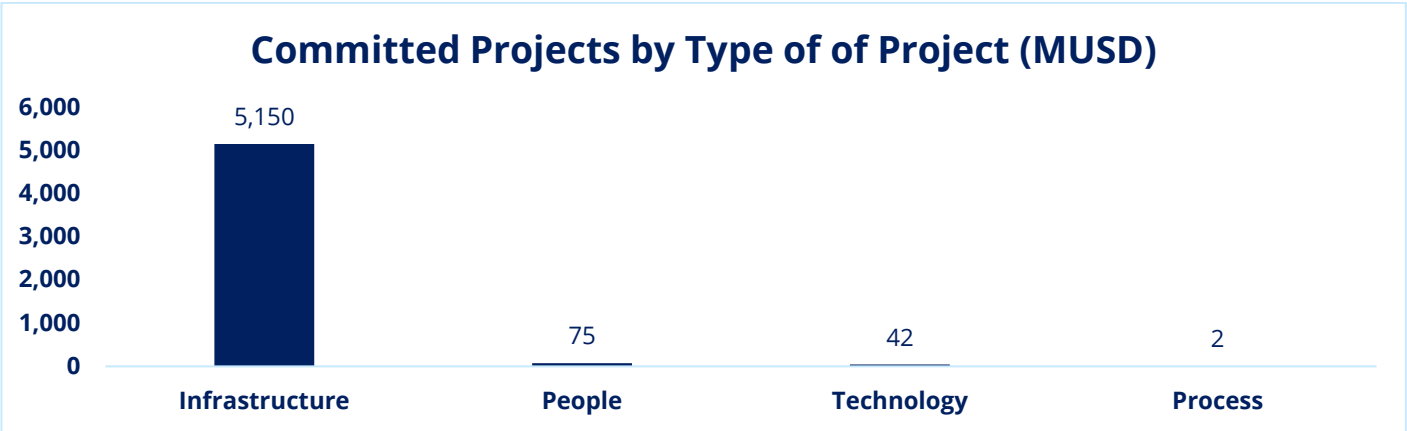
Planned but Unfunded Projects for Transmission - Private					
No	Project Name	Type of Project	Expected Completion Year	Status	Investment costs (MUSD)
1	Debre Zeit III-Hurso 400kV PTP	Infrastructure	2030	Feasibility Study Done	212
2	Hurso - Ayisha 400kV PTP	Infrastructure	2030	Proposed	275
	Total				**487**

Planned but Unfunded Projects for Generation					
No	Project Name	Capacity (MW)	Type of Project	Expected Completion Year	Investment costs (MUSD)
1	Rehabilitation Hydro Power Plants		Infrastructure	2028	28
2	Wind Projects				
	Adigala	150	Infrastructure	2030	973
	Tuli guled	202		2030	
	Batu-koshe	150		2030	
	Gode	150		2030	
	Ayisha III	150		2030	
3	Solar Projects			2028	
	Weranso	100	Infrastructure	2028	654
	Dichetto	125		2030	
	Gad I	125		2030	

Gad II	125	2028	
Awash Amibara	150	2030	
Awash Didub	125	2030	
Metehara	100	2030	
Total			**1,655**

ANNEX III
ONGOING AND COMMITTED PROJECTS FOR DISTRIBUTION





Committed Projects for Distribution

No	Development Partners	Project Name	Type of Project	Expected Completion Year	Investment costs (MUSD)
1	World Bank & EEU	AMI Project	Infrastructure	2025	12,62
2	World Bank & EEU	Distribution Rehabilitation and Capacity Building in 6 Cities	Infrastructure	2025	43,81
3	AfDB & EEU	Addis Ababa Transmission and Distribution Reconstruction and Capacity Building Project (AATDRUP)	Infrastructure	2025	43,58
4	AfDB & EEU	Light for All 25 Mini-Grid Cities Project	Infrastructure	2025	21,29
5	AfDB	Dalol Afdera Regional Project	Infrastructure	2025	16,75

Committed Projects for Distribution					
6	GOV.Financed	Connecting 140 Towns to the Main Grid	Infrastructure	2025	41,77
7	World Bank & EEU	Installation of 1,200 Smart Meters on Nationwide Substation Feeders	Infrastructure	2025	6,86
8	World Bank & EEU	Installation of 1,000 Smart Meters on Distribution Transformers	Infrastructure	2025	5,02
9	World Bank & EEU	Implementation of Unified Prepayment System	Infrastructure	2025	49,00
10	World Bank	Ethiopian Electrification Program (ELEAP)	Infrastructure	2025	625,00
11	GOV.Financed	Connecting 400 Towns to the Main Grid	Infrastructure	2026	109,95
12	World Bank	Access to Distributed Electricity & Lighting Ethiopia (ADELE), Network Strengthening in Addis Ababa (Phase 4)	Infrastructure	2027	69,41
13	World Bank	Access to Distributed Electricity & Lighting Ethiopia (ADELE), Network Strengthening in 10 Regional Capitals	Infrastructure	2027	61,34
14	World Bank	ADELE Component 2: Hybrid Solar Mini-Grid Project	Infrastructure	2027	270,00
15	World Bank	ADELE Component 4: Stand-Alone Solar System Project	Infrastructure	2027	55,00
16	GOV.Financed	Connecting 400 Towns to the Main Grid	Infrastructure	2027	166,12
17	World Bank	First Power Sector Reform Investment and Modernization in Ethiopia (PRIME I) (72 Towns) Distribution Line Rehabilitation Project	Infrastructure	2028	153,50
18	GOV.Financed	Connecting 400 Towns to the Main Grid	Infrastructure	2028	221,75
19	EEU	EEU Regions, Districts, and Service Centers Building Construction Project	Infrastructure	2029	24,10
20	GOV.Financed	Connecting 400 Towns to the Main Grid	Infrastructure	2029	277,70
21	GOV.Financed	Connecting 400 Towns to the Main Grid	Infrastructure	2030	333,24
22	World Bank & EEU	ACSENT/ELEAP	Infrastructure	2030	1 000,00
23	World Bank & AfDB	New Stand-Alone Solar System Project	Infrastructure	2030	67,50

Committed Projects for Distribution					
24	EEU	EEU Headquarters Building Construction Project	Infrastructure	2032	472,37
25	AfDB	Rehabilitation of Deteriorated Wooden Pole Distribution Networks in Rural Areas	Infrastructure	2026	50,00
26	AfDB	Solar Mini-Grid Project	Infrastructure	2026	50,00
27	Korean Exim Bank (KEXIM)	Technical Feasibility Study of 21 Rural Villages/Towns Distribution Network Expansion Project	Infrastructure	2025	3,89
28	EEU	Distribution MV line Rehabilitation, Distribution LV line Rehabilitation, Distribution Transformer Rehabilitation	Infrastructure	2026	316,45
29	EEU	Technical Feasibility Study of 123 Towns MV Distribution Network Rehabilitation Project	Infrastructure	2027	363,92
30	EEU	Technical Feasibility Study of 123 Towns MV Distribution Network Rehabilitation Project	Infrastructure	2028	217,93
31	EEU	Technology Excellence Center	People	2026	69,23
32	World Bank	Procurement of Consultancy Service for Capacity Building Support	People	2027	0,75
33	World Bank	Procurement of Consultancy Service for Environmental and Social Risk Management Capacity Strengthening Program	People	2027	0,75
34	World Bank	Procurement of Consultancy Service for Project Preparation	People	2027	2,00
35	World Bank	Procurement of Consultancy Service for Tariff Adjustment Preparation	People	2028	1,00
36	World Bank	Procurement of Consultancy Service for Fiduciary Capacity Building Program Design	People	2028	0,75
37	EEU	Human Resource Development Strategy and Roadmap	People	2026	0,00
38	EEU	Training of professionals in energy marketing, project management, project financing, financial management, FIDIC, and human resource management	People	2027	0,01
39	EEU	Technical Training Curriculum Design, Procurement, and Contract	People	2027	0,00

Committed Projects for Distribution					
		Management Gap Analysis and Capacity Building Program			
40	EEU	Comprehensive competency-based Human Resource Management System (Job Evaluation, Grading, Competency Frameworks, Salary Scale Construction, Benefit Schemes, Talent Management Framework)	People	2026	0,01
41	EEU	Leadership Training Program for Executive Management Team	People	2026	0,00
42	EEU	Technical Training Curriculum Design, Procurement, and Contract Management Gap Analysis and Capacity Building Program	People	2026	0,00
43	EEU	Performance Management System and Succession Planning Implementation Framework and Automation	People	2026	0,00
44	EEU	Performance Management System and Succession Planning Training	People	2026	0,00
45	EEU	Risk Management Gap Analysis and Training Program	People	2026	0,00
46	EEU	Automating HCM (Human Capital Management)	People	2026	0,03
47	EEU	Align All EEU Business Processes with the Latest APQC PCF Framework	Process	2025	0,10
48	EEU	Implement the New Organizational Structure and Develop 59 Pilot Test and Incubation Customer Service Centers	Process	2025	1,09
49	EEU	Build a Unified Branding and Organizational Culture	Process	2026	0,72
50	EEU	Align Selected 5 Functions with ISO Requirements	Process	2026	0,02
51	World Bank	SAP ERP Migration to S/4HANA	Technology	2026	20,00
52	World Bank	Meter Control Center (MCC) Implementation	Technology	2026	4,00
53	EEU	Outage Management System (OMS) & Crew Management System	Technology	2026	2,00
54	World Bank	Enterprise GIS & Asset Management System	Technology	2026	2,00

Committed Projects for Distribution					
55	EEU	Infrastructure Sizing	Technology	2025	2,00
56	EEU	Edge Computing Unit (ECU) Installation	Technology	2026	10,00
57	EEU	Upgrading IPCC to AICC	Technology	2025	1,78
58	EEU	EEU Website	Technology	2025	0,02
59	EEU	Corruption Reporting System	Technology	2025	0,01
60	EEU	EEU Mobile Application	Technology	2025	0,20
61	EEU	Transformer Monitoring (History Card Automation)	Technology	2025	0,01
62	EEU	Attendance Management System	Technology	2025	0,01
63	EEU	Employee Performance Management System	Technology	2025	0,01
64	EEU	Digital Fuel Management System	Technology	2025	0,00
65	EEU	Document Sharing Portal	Technology	2025	0,00
	Total				**5 268,40**

ANNEX IV
PLANNED BUT UNFUNDED PROJECTS FOR DISTRIBUTION

Planned but Unfunded Projects for Distribution				
No	Project Name	Type of Project	Expected Completion Year	Investment costs (MUSD)
1	100 Towns MV Distribution Network Rehabilitation Project	Infrastructure	2028	246,00
2	New Grid-Based Connections (Expansion Cost)	Infrastructure	2030	2,898.76
	Total			3,144.76

Annual Connection Targets (2026–2030)

A total of approximately **9.23 million new and regularized connections are targeted** over the next five years. **Existing programs** are expected to deliver around **2.98 million connections**, leaving a **financing gap for an additional 6.25 million connections** — or roughly **1.25 million per year** — covering both new grid connections and the regularization of informal ones.

	Year	New Grid Connections	Off-Grid Connections (Mini-grid + SHS)	Total New Connections
Total Targeted Connections by 2030	2026	1,800,000	305,600	2,536,600
	2027	2,000,000	305,600	2,736,600
	2028	2,200,000	305,600	2,936,600
	2029	2,000,000	305,600	2,736,600
	2030	2,000,000	305,600	2,736,600
	Total	**6,460,000**	**2,770,000**	**9,230,000**
Connections Through Existing Programs (ASCENT/PRIME for Grid and ADELE for Off-Grid)	2026	398,000	198,000	596,000
	2027	398,000	198,000	596,000
	2028	398,000	198,000	596,000
	2029	398,000	198,000	596,000

	2030	398,000	198,000	596,000
	Total	**1,990,000**	**990,000**	**2,980,000**
Additional Expected Connection through National Compact Program	2026	878,000	372,000	1,250,000
	2027	878,000	372,000	1,250,000
	2028	878,000	372,000	1,250,000
	2029	878,000	372,000	1,250,000
	2030	878,000	372,000	1,250,000
	Total	**4,390,000**	**1,860,000**	**6,250,000**

Additional Financial Investment Requirements (2026–2030) to connect 6.25 million customers

Access Component	Unit Cost per Household (USD)	Total Households Targeted	Total Investment Requirement (USD)
Customer Connection cost (New connection contribution)	77.33	5,260,000	406,755,800
New Grid-Based Connections (Expansion Cost)	660.31	4,390,000	2,898,760,900
100 Towns MV Distribution Network Rehabilitation Project			246,000,000
Off-Grid Mini-Grids	1,325.34	870,000	1,153,045,800
Off-Grid Solar Home Systems (SHS) (Tier 1 and 2)	204.0	990,000	201,960,000
Total Capital Requirement			**4,906,522,500**

Financing Sources and Strategy (2026–2030)

Source	Amount (USD)	Key Notes
Government of Ethiopia	163,300	PSO for Universal access and Clean Cooking
Customer Contribution	406,755,800	Customer Connection Fee
EEP/EEU Contribution	1,179,420,000	From Balance Sheet (USD 1bn from EEP and USD million 179 from EEU)

Development Partners (Grants/Loans)	4,997,900,900	Concessional loans and grants
Private Sector	3,061,800,000	
Total	**9,646,040,000**	

Indicative Funding Needs from 2026- 2030 (US$ million)

Source	Generation	Transmission	Distribution	Last-mile Grid	Off-grid	Clean cooking	Total
Public	28	1,597.64	3,144.7	406.7	807.2	600	6,584.24
Private	1,627	487	-	-	547.8	400	3,061.8
Total	1,655	2,084.64	3,144.7	406.7	1,355	1,000	9,646.04

(Off-grid private sector = SHS+ Mini-grid 30%)

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