



SDG7 Energy Compact of Ethiopia

A next Decade Action Agenda to advance SDG7 on sustainable energy for all, in line with the goals of the Paris Agreement on Climate Change

SECTION 1: AMBITION

1.1. Ambitions to achieve SDG7 by 2030. [Please select all that apply, and make sure to state the baseline of each target]

(Member States targets could be based on their NDCs, energy policies, national five-year plans etc. targets for companies/organizations could be based on their corporate strategy)

<input checked="" type="checkbox"/> 7.1. By 2030, ensure universal access to affordable, reliable and modern energy services.	<p>Target(s): 100% quality, Secure and Reliable Electricity Supply within the country Time frame: 2019-2030 Context for the ambition(s): The Government of Ethiopia (GoE) has achieved significant milestones in connecting 33 percent of its population with on-grid electrification and 11 percent with off-grid pre-electrification, with the combined achievement of 44 percent of electricity access by 2019. Ethiopia's electrification needs are still significant. More than half of Ethiopia's population (56 percent) still does not have access to electricity. By 2025, Ethiopia desires to attain middle-income country status, rural and urban electricity access is targeted to achieve 100 percent.</p>
<input checked="" type="checkbox"/> 7.2. By 2030, increase substantially the share of renewable energy in the global energy mix.	<p>Target(s): Additional 6 million beneficiaries of RE users. Time frame: 2019-2025 Context for the ambition(s): By 2025, the GoE will implement 6 million beneficiaries will have access to off-grid solutions through stand-alone solar solutions and mini-grids technologies,</p>
<input checked="" type="checkbox"/> 7.3. By 2030, double the global rate of improvement in energy efficiency.	<p>Target(s): Expansion of Affordable and Modern Bioenergy sources and technologies (31 million clean cook stove dissemination) Time frame: 2019-2030 Context for the ambition(s): The household sector is the major consumer of energy, biomass accounted for over 91% of the total primary energy consumed in the country in 2016. In rural areas where approx. 80% of Ethiopia's population lives, almost all of the household energy demand for cooking is met by solid biomass fuels. Hence, the GoE has a plan to disseminate 31 million ICST by 2030 to alleviate this heavy dependence on woody biomass fuels and the inefficient energy utilization from a traditional open-fire stove with low thermal efficiency (13-15%).</p>
<input type="checkbox"/> 7.a. By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology.	<p>Target(s): Time frame: Context for the ambition(s):</p>
<input checked="" type="checkbox"/> 7.b. By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programs of support.	<p>Target(s): Additional 8 million HHs grid connection Time frame: 2019-2030 Context for the ambition(s): From the existing grid between 1– 2.5 km the intensification will serve about 3.7 million HHs by 2025 and almost 4 million households ranging from 2.5 and 25 km from the existing grid will be located with a total of 8 million HHs by 2030.</p>

1.2. Other ambitions in support of SDG7 by 2030 and net-zero emissions by 2050. [Please describe below e.g., coal phase out or reforming fossil fuel subsidies etc.]

Target(s): Time frame: Context for the ambition(s):

SECTION 2: ACTIONS TO ACHIEVE THE AMBITION

2.1. Please add at least one key action for each of the elaborated ambition(s) from section 1. [Please add rows as needed].

<p><i>Description of action (please specify for which ambition from Section 1)</i> For ambition 7.1 EEU (Ethiopian Electric Utility) is a responsible Government body will work for network planning, design, and implementation of the grid component & prepare an operations program manual as the umbrella framework to plan, procure, organize, construct, and connect new customers to the distribution network, while proceeding with the extension of the grid. Regional Energy Bureaus are will continue providing bottom-up information for ensuring the harmonization of least-cost technical targets (for grid and off-grid rollouts) with the Government’s regional socioeconomic priorities, for a combined data-driven and equitable approach to electrification. The GoE will also pursue synergies with the Federal Cooperative Agency (FCA) in Ethiopia, which supervises the large number of Savings and Credit Cooperative Organizations (SACCOs) within Ethiopia, to expand financial sector support for electrification.</p>	<p><i>Start and end date</i> 2019-2030</p>
<p><i>Description of action (please specify for which ambition from Section 1)</i> Ambition 7.2 Off-grid program—through public and private sector agents, encompassing:</p> <ul style="list-style-type: none"> • Ethiopian Electric Utility (EEU) service delivery in commercially attractive areas, and with a focus on supporting productive uses and access to basic education and health services; • Minimum Subsidy Tender (MST) system with EEU as the Contracting Authority and service provision in case of nonperformance of private sector enterprises within and/or after the MST time frame; • Public sector support for the mini-grids program—EEU is already operating 31 diesel mini-grids and has established a mini-grids unit for the scale-up of efforts starting from the most remote communities and in support of social and productive uses, including for pre-electrification. All new mini-grids will be at least hybrids and on par with the most up to-date technologies and standards for long-term functioning as well as integration to the main grid; • Private sector market-based supply, delivery and, aftersales service chains in proximate/commercially attractive rural areas for beneficiaries that are not located “under the wire,” with focus on solar systems and in close collaboration with Micro Financial Institutions (MFIs) and Regional Energy Bureaus (REBs); and • Private sector and cooperatives mini/micro grids for deep rural and pre-electrification. The Government intends to apply uniform network design and equipment standards, appropriate for rural areas mini/micro grids, to ensure their technical integration into the network when the grid arrives. The Government will also address explicitly in the regulatory framework the adequate provisions to address in a fair, equitable, and transparent manner any “stranded assets” of private operators, should that circumstance occur. 	<p><i>Start and end date</i> 2019 -2030</p>
<p><i>Description of action (please specify for which ambition from Section 1)</i></p>	<p><i>Start and end date</i></p>
<p><i>Description of action (please specify for which ambition from Section 1)</i></p>	<p><i>Start and end date</i></p>

SECTION 3: OUTCOMES

3.1. Please add at least one measurable and time-based outcome for **each** of the actions from section 2. *[Please add rows as needed].*

<i>Outcome</i>	<i>Date</i>
By 2030, rural and urban electricity access for lighting is targeted to achieve 100 percent.	2030
By 2030, affordable, clean and modern energy access for cooking of rural population coverage 50 percent.	2030
Increase sustainability of biomass utilization, biodiversity conservation, and climate resilience of the country.	2030

SECTION 4: REQUIRED RESOURCES AND SUPPORT

4.1. Please specify required finance and investments for **each** of the actions in section 2.

For the grid and off-grid programs of total investment requirements and related investment financing gaps. As indicated, the achievement of universal access will require about US\$5.7 billion in investments. The NEP adopts a sector-wide approach for the design, implementation, and syndication of financing requirements. It intends to coordinate activities and investments leveraging on public, private, and DP support. The private sector will have a key role to play for the development of the off-grid program, and comprehensive consultations with local and international private sector enterprises also serve the purpose of ensuring their increased participation to the call for action embedded in the universal access efforts. Development partner activities have been strongly coordinated after launching the first NEP, and the design of the off-grid program in partnership and dialogue with all DPs reflect the intention of the Government to ensure buy-in and support to the electricity access effort.

Grid program

Overall grid investment requirements constitute the most up-to-date information about the investment requirements and already syndicated financing, and reflect the latest information provided by the geo-spatial analysis. Table 6.3 provides the breakdown. The total investments in new connections account for US\$3.2 billion for densification and intensification at an average connection cost of US\$370. In addition, about US\$380 million are expected in investments to regularize about 3.8 million current consumers without an official account with EEU (meter-loading). In addition, investment requirements reflect the successful syndication of US\$375 million in 2018.¹¹⁰ Therefore, the overall investment gap for the achievement of universal access by 2025 is of US\$2.1 billion, out of which the public share is expected to be about US\$480 and syndication through public and DPs sources will be required for the remaining US\$1.6 billion.

Off-grid program

The newly designed off-grid program is expected to require for its implementation a total of about US\$2.5 billion. These investments reflect the urgency of providing access to services in coordination with and complementing grid developments. By 2025, it is expected that about 35 percent of the population will be provided with mid-term-pre-electrification or long-term off-grid solutions. The overwhelming majority of these beneficiaries will be connected through the grid after 2025, whereas a small segment (about 1 million) are not expected to see a grid connection in the foreseeable future. In addition, about 3.3 million beneficiaries are considered candidates for short-term pre-electrification solutions, as they are expected to be connected through the grid program only during its last phases of implementation (by 2025) and are hence candidates for interim solutions. These beneficiaries could then use the off-grid solar systems as a back-up solution—as is already happening in several urban and peri-urban areas of the country—in case of grid unreliability. Cumulatively, the NPE off-grid program targets offgrid access of about 9.2 million beneficiaries by 2025, across the different segments described and serving different purposes: short-term pre-electrification, midterm pre-electrification, and long-term off-grid access. The design of the NEP off-grid implementation took into account the best practices as well as the most recent experiences (positive and negative) in the off-grid space. This approach has led to a thorough assessment of the country challenges and opportunities, and a systemic analysis of both at every individual step of the trading market for off-grid solutions. The investment requirements and the program implementation support activities reflect the professional assessment of immediate interventions required to serve the Ethiopian market at a steep acceleration.

Investments and program implementation support activities recognize the need to support both market supply and demand for service provision. Based on private sector consultations and the technical assessment conducted over 2018, they include access to finance investment requirements encompassing forex, working capital, and capex, and operating expenses associated with customer outreach; as well as financial support to the poorest of the poor. An MST mechanism is in place for deep rural areas (mostly long-term off-beneficiaries) to ensure the country is served nationwide, regardless of the cost associated with service delivery. The MST establishes a competitive mechanism for service delivery in deep rural areas covering for the capex and operating expenditures, as well as for the additional working capital required for reaching out to these areas. Mini grid developments will be pursued when adequate, based on further assessments of the territory. The funding reflects an average among the business models identified in Chapter 4 for public contribution. A tailored social institutions investment program has been identified, to be further designed in collaboration with relevant ministries. The investment prospectus for social institutions is based on priority given to those locations that are not expected to receive a grid connection by 2025, and the estimates are cash based. Based on the social institutions demand assessment provided for under the NEP, the figures will be updated, including potential for PAYGo systems and inclusion in the public grant funding mechanism for operational expenses already ongoing. Program implementation support activities also support both sides of the market and provide for the required capacity building that sector institutions would need to become a skilled ally in the achievement of universal access, as well as to support the job creation potential in the country associated with serving the off-grid market.

4.2. [For countries only] In case support is required for the actions in section 2, please select from below and describe the required support and specify for which action.

[Examples of support for Member States could include: Access to low-cost affordable debt through strategic de-risking instruments, capacity building in data collection; development of integrated energy plans and energy transition pathways; technical assistance, etc.]

<input checked="" type="checkbox"/> Financing	Description

	Grid and off-grid investments and syndication scenarios for universal access by 2025 total Syndication \$1,620 million (Access to finance (with a revolving fund) - \$1,240m, Social institutions – \$160m, MST off-grid solar -\$ 92m, Mini-grids (MST and EPC) - \$20m, Program implementation support- \$30M).
<input checked="" type="checkbox"/> In-Kind contribution	<i>Description</i> Vehicles for field work in all points of actions.
<input checked="" type="checkbox"/> Technical Support	<i>Description</i> Climate finance and MRV system development and new or advanced technology development, promotion and adoption mechanism for large community in the country
<input checked="" type="checkbox"/> Other/Please specify	<i>Description</i> The country has a significant comparative advantage for attracting climate financing, of which it is already a recipient. Given the scale of financing requirements for the achievement of the targets set in the NEP-IRM, the Government strongly intends to also pursue climate funds, building on and expanding the partnerships already established. Ethiopia is already participating in the Pilot Program for Climate Resilience (PPCR) and the Scaling Renewable Energy in Low Income Countries Program (SREP) launched under the Climate Investment Funds (CIFs), Certified Emission Reduction Purchase Agreements for a total amount of US\$20.17 million (2016–2024) were signed. Preliminary estimates indicate significant emission-saving potential associated with the off-grid program, with related potential for Construction Design and Management (CDM) credits to be attracted for syndication of the NEP off-grid program. Hence the GoE is seeking potential buyer for the carbon with long term agreement.

SECTION 5: IMPACT

5.1. Countries planned for implementation including number of people potentially impacted.

Ethiopia is a land-locked country located in the horn of Africa and also one of the least developed countries in the world and is the second-most populous country in Africa with a population of more than 100 million (CSA, 2013). With respect to the population growth and demand in energy, Ethiopia plan to work to address energy demand of the community by 50% by 2025 and 100% by 2030.

5.2. Alignment with the 2030 Agenda for Sustainable Development – Please describe how **each** of the actions from section 2 impact advancing the SDGs by 2030.

[up to 500 words, please upload supporting strategy documents as needed]

Adequate, affordable, and reliable access (connectivity) to electricity is vital for enabling structural transformation of Ethiopia's economy and society, including further poverty reduction and a shift toward higher productivity rates and industrialization. Simply put, without electricity Ethiopia cannot develop a domestic manufacturing capacity adequate for local needs and exports, industrial parks, private sector entrepreneurship, the information and communication technology (ICT), and financial sectors nor graduate to a middle-income country. Indeed, the highly correlated and mutually reinforcing relationship between electricity use, economic growth, and human development is widely accepted from irrefutable established worldwide experience. Directly or indirectly, electricity is central to achieving progress on almost all dimensions of human welfare and development. Electricity access is crucial for achieving almost all of the Sustainable Development Goals (SDGs), from its role in the eradication of poverty through advancements in health, education, water supply, and industrialization, to mitigating climate change. The Government's commitment to the provision of electricity services dates back to the launching of the Universal Electricity Access Program (UEAP) in 2005. The UEAP now ranks among the most successful grid electrification programs in Africa, with the extension of the MV grid network to about 60 percent of towns and villages in the country (2005–2015), and an estimated 87 percent of the national population spatially located within 60 km of the existing 'MV grid radius'. The UEAP program investments undertaken have set the stage for technically enabling the major shift in strategic priority going forward under the NEP-IRM: from infrastructure development to service delivery (implementing electricity connectivity in all Ethiopian homes, businesses, and social institutions, and fast). Specifically toward realizing this shift, the GoE has undertaken the following key steps for setting the stage for preparation of Ethiopia's National Electrification Program-Implementation Road Map (NEPIRM), for implementing the goal of universal access (connectivity) by 2025:

- Ethiopia joined the Sustainable Energy for All (SE4ALL) Initiative in 2011, and the Ministry of Water, Irrigation, and Energy (MoWIE), with support from the European Union and in consultation with key stakeholders, **prepared 'The Ethiopia SE4ALL National Action Plan' (2012–2013)**, for achieving universal electricity access by 2025.
- **National Electrification Strategy (NES) issued June 2016**—which formally shifted the strategic focus and priority of the Government from the development and expansion of the network distribution infrastructure to last-mile delivery and connections for all. Specifically, the NES broadly identifies the three key categories of challenges in the sector— Institutional and Policy, Planning and Technical, and Financial—and recommends strategic direction(s) to inform preparation of Ethiopia's National Electrification Program (NEP).
- **Multi-Tier Framework (MTF) for measuring and tracking access connectivity indicators on-grid and off-grid.** The Government launched the nationwide MTF Energy Access Survey, being implemented by the World Bank in its partnership role under the SE4ALL Initiative. The MTF instrument provides a more granular baseline measurement of electricity access differentiated by "tiers" representative of the range of delivery modalities on-grid and off-grid (solar products, solar systems, mini-grids, and main grid).
- **National Electrification Program—Implementation Roadmap**, launched by the Government in November 2017 as the first programmatic approach to electrification, now updated by this version of the Program.

5.3. Alignment with Paris Agreement and net-zero by 2050 - Please describe how **each** of the actions from section 2 align with the Paris Agreement and national NDCs (if applicable) and support the net-zero emissions by 2050.

[up to 500 words, please upload supporting strategy documents as needed]

The energy sector has huge mitigation potential in the updated NDC next to livestock and LUCF. The lion's share of the grid connection electricity generation comes from renewable sources. Moreover, the contribution from reducing biomass energy emissions has been already accounted for LUCF. The energy sector contributes 5% of total BAU emissions in 2030. Policy interventions in this sector will also reduce the emission level in 2030 to 9.5 Mt CO₂ eq in the conditional pathway. This equals a relative reduction of emission of 52.5 % (-10.5 Mt CO₂ eq) compared to BAU emission in the energy sector. The unconditional pathway foresees a reduction of emission levels to 15 Mt CO₂ eq, which represents a relative reduction of 25.5 % of sectoral BAU emission in 2030 (-5.1 Mt CO₂ eq). Policy interventions in the energy sectors investments in the energy efficiency (economy-wide improvements of energy efficiency of appliances, machinery and other capital assets) by the Ministry of Water, Irrigation and Energy (MoWIE).

SECTION 6: MONITORING AND REPORTING

6.1. Please describe how you intend to track the progress of the proposed outcomes in section 3. Please also describe if you intend to use other existing reporting frameworks to track progress on the proposed outcomes.

By applying Quarterly Performance Reports (QPRs) monitoring will conduct in four main dimensions: (i) the overall performance in the last quarter and cumulative performance trends since program start (dashboard indicators); (ii) overall performance (and other sector indicators deemed relevant for implementation) in the last quarter and cumulative performance trends since program start (dashboard indicators); (iii) performance tracking under the three components (grid, off-grid, and TA) against approved targets during the last quarter as well as cumulative performance since program start (other sector KPIs as deemed necessary); and (iv) adequacy of power supply (demand and energy balance projections by quarter for the next two quarters; and by year for the following two years), as well as other main sector KPIs critical for the successful implementation of the program. The M&E guidelines reflect broader sector monitoring of KPIs, also in line with GTP reporting duties. In 2019, the DoE aims at further detailing the M&E system established to ensure its comprehensive and standard operating reporting procedures. The guidelines have been developed taking into account the MTF multidimensional approach to electricity service delivery, and hence the adequacy, quality, reliability, and affordability of electricity services. The quarterly and annual reporting guidelines include program progress, analyses of impacts, and the creation of a performance-based dashboard with inputs from relevant ministries (e.g., health or education). The establishment of a comprehensive M&E system for the monitoring of key performance indicators for efficiency, effectiveness, and progress against grid and off-grid targets and for course adjustments as and when appropriate by relevant actors (e.g., EEU, DoE, REBs) will further integrate GIS and the MIS information based on the platform already established. This will be done so that progress—or potential lack thereof—can be monitored on a local basis and tackled specifically when appropriate. The development of a digital payment system for EEU bill collection will also become part of the overall monitoring system for the grid program, as well as customer care and commercial performance. Indeed, while there is a culture of payment in the country, there is still space for improvement that would be leveraged, starting with bigger customers. This is also in line with the sector reform requirements for improved performance efficiency. For the off-grid program specifically, an M&E system will be developed to ensure integration of progress into the overall program targets, allowing the SC and MoWIE to have a comprehensive view and dashboard of on-the-ground developments for the integrated achievement of the grid and the off-grid targets. The monitoring and reporting of the off-grid program will learn from the warranty tracking service piloted under the DBE while ensuring the integration into the GIS and MIS systems. The tracking system does not require SIM cards, hence would not increase the costs of off-grid technologies and is less dependent on network quality. The monitoring system will be developed in collaboration with PSEs, which would be requested to provide information on customer services, where the information required for reporting will be agreed upon in consultation and become part of the PSEs licensing requirements. The reporting requirements will also involve MFIs on a similar basis, and the progressive transition to digital solutions will support increased data collection as well as its efficiency. The monitoring system will also keep track of consumer complaints under the grievance redressing system and of private sector performance linked to the system of licensing. In addition, the system will be linked to the establishment of the customer database under the warranty scheme and monitoring quality of services under the DBE, and will be expanded to relevant public institutions.

SECTION 7: GUIDING PRINCIPLES CHECK LIST

Please use the checklist below to validate that the proposed Energy Compact is aligned with the guiding principles.

I. Stepping up ambition and accelerating action - Increase contribution of and accelerate the implementation of the SDG7 targets in support of the 2030 Agenda for Sustainable Development for Paris Agreement

I. 1. Does the Energy Compact strengthen and/or add a target, commitment, policy, action related to SDG7 and its linkages to the other SDGs that results in a higher cumulative impact compared to existing frameworks?

Yes No

I.2. Does the Energy Compact increase the geographical and/or sectoral coverage of SDG7 related efforts? Yes No

I.3. Does the Energy Compact consider inclusion of key priority issues towards achieving SDG7 by 2030 and the net-zero emission goal of the Paris Agreement by 2050 - as defined by latest global analysis and data including the outcome of the Technical Working Groups? Yes No

II. Alignment with the 2030 agenda on Sustainable Development Goals – Ensure coherence and alignment with SDG implementation plans and strategies by 2030 as well as national development plans and priorities.

II.1. Has the Energy Compact considered enabling actions of SDG7 to reach the other sustainable development goals by 2030? Yes No

II.2. Does the Energy Compact align with national, sectoral, and/or sub-national sustainable development strategies/plans, including SDG implementation plans/roadmaps? Yes No

II.3. Has the Energy Compact considered a timeframe in line with the Decade of Action? Yes No

III. Alignment with Paris Agreement and net-zero by 2050 - Ensure coherence and alignment with the Nationally Determined Contributions, long term net zero emission strategies.

III.1. Has the Energy Compact considered a timeframe in line with the net-zero goal of the Paris Agreement by 2050? Yes No

III.2. Has the Energy Compact considered energy-related targets and information in the updated/enhanced NDCs? Yes No

III.3. Has the Energy Compact considered alignment with reaching the net-zero emissions goal set by many countries by 2050? Yes No

IV. Leaving no one behind, strengthening inclusion, interlinkages, and synergies - Enabling the achievement of SDGs and just transition by reflecting interlinkages with other SDGs.

IV.1. Does the Energy Compact include socio-economic impacts of measures being considered? Yes No

IV.2. Does the Energy Compact identify steps towards an inclusive, just energy transition? Yes No

IV.3. Does the Energy Compact consider measures that address the needs of the most vulnerable groups (e.g. those impacted the most by energy transitions, lack of energy access)? Yes No

V. Feasibility and Robustness - Commitments and measures are technically sound, feasible, and verifiable based a set of objectives with specific performance indicators, baselines, targets and data sources as needed.

V.1. Is the information included in the Energy Compact based on updated quality data and sectoral assessments, with clear and transparent methodologies related to the proposed measures? Yes No

V.2. Has the Energy Compact considered inclusion of a set of SMART (specific, measurable, achievable, resource-based and time based) objectives? Yes No

V.3. Has the Energy Compact considered issues related to means of implementation to ensure feasibility of measures proposed (e.g. cost and financing strategy, technical assistant needs and partnerships, policy and regulatory gaps, data and technology)? Yes No

SECTION 8: ENERGY COMPACT GENERAL INFORMATION

8.1. Title/name of the Energy Compact

Ethiopia Energy Compact

8.2. Lead entity name (for joint Energy Compacts please list all parties and include, in parenthesis, its entity type, using entity type from below)

Ethiopia Rural Energy Development & Promotion Center (EREDPC), Ministry of Water, Irrigation and Energy (MoWIE), Environment, Forest and Climate Change Commission (EFCCC).

8.3. Lead entity type

Government

Local/Regional Government

Multilateral body /Intergovernmental Organization

Non-Governmental Organization (NGO)

Civil Society organization/Youth

Academic Institution /Scientific Community

Private Sector

Philanthropic Organization

Other relevant actor

8.4. Contact Information

Dawit Tibebu, +251912197713, dtibebu@gmail.com Addis Ababa, Ethiopia

8.5. Please select the geographical coverage of the Energy Compact

Africa Asia and Pacific Europe Latin America and Caribbean North America West Asia Global

8.6. Please select the Energy Compact thematic focus area(s)

Energy Access Energy Transition Enabling SDGs through inclusive just Energy Transitions Innovation, Technology and Data Finance and Investment.

SECTION 9: ADDITIONAL INFORMATION (IF REQUIRED)

Please provide additional website link(s) on your Energy Compact, which may contain relevant key documents, photos, short video clips etc.