Country scoping studies to support the Mobilising Private Investment for NDC implementation (MPI) project

Mobilising Private Investment Scoping Study ETHIOPIA

DRAFT VERSION 1

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Supported by:

Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

based on a decision of the German Bundestag

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Executive Summary

The ENDC contains quantified sectoral emission reduction targets that are calculated from the BAU scenario. The sectoral scope of ENDCs is elaborated in terms of its geographical boundary, sectors, entities, activities and GHGs.

The CRGE expects the establishment of a high-level setup to facilitate planning and execution. Overall, a space is created for domestic financial institutions and green developers to work together for the implementation of ENDC. Yet both green developers and financial institutions have not capitalized on the space created as much as it could have done.

Creating linkage between green developers and financial institutions is thus needed to mobilize private investment in the CRGE/ENDC sectors. Creating linkage entails matching the interest of financial institutions to generate credit with the interest of green developers to secure finance.

1. Brief overview of Ethiopia's Nationally Determined Contributions (ENDC)

Ethiopia has submitted its Nationally Determined Contributions (ENDC) to the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC). It has ratified the Doha Amendment to the Kyoto Protocol in 2015 and the Paris Agreement in 2017. The ENDC sets out the objective of lifting Ethiopia to middle income status by 2025 while reducing the sharp increase in GHG emissions and vulnerability to extreme weather events. 60 GHG abatement opportunities are identified for their potential to ensure that GHG emission levels in 2030 do not exceed 150 megatons of CO_{2e}. Of these emission abatement potentials, 80% are cost-efficient and feasible even at less than US$ 15/ton of CO_{2e}, which is lower than the majority of global opportunities to mitigate GHG emissions. Many of these GHG emission abatement opportunities offer positive returns on investment, thus directly promoting economic growth and creating additional high-quality jobs. Their development co-benefits include improved public health through better air and water quality and strengthened rural economic development.

1.1. The approach

The following four steps were followed to determine the content of the Green Economy Strategy:

1. The first step was to project the business-as-usual economic growth and associated GHG emissions on the basis of the Growth and Transformation Plan (GTP) targets and the long-term economic objectives of each priority sectors.
2. The second step was to identify and analyse the green economy initiatives based on their potential contribution to development and GHG emissions reduction goals.
3. The third step was to evaluate these initiatives against their abatement cost, investment requirements and their feasibility. Feasibility was evaluated with regard to technical, institutional and additional hindrances to implementation.

4. The fourth step was preparing the Green Economy Strategy; which is summarized and presented as ENDC.

1.2. Scope of ENDC

1.2.1. Geographical boundary

The geographical coverage of ENDC extends to the entire territory of Ethiopia. This wider geographical coverage helps to avoid carbon leakage; since carbon leakage is most often a result of a too narrow geographical coverage. The ENDC intends to reduce the aggregated GHG emission through a bottom-up approach.

1.2.2. Coverage of gases and sources of vulnerability

The ENDC aims to reduce two mutually supportive concerns: the cost of countering vulnerability and the quantity of GHG emissions. To this effect**, t**he ENDC covers, in principle, those GHGs specified under the Kyoto Protocol plus the three sources of vulnerability to climate change: flood, drought and diseases. Future baselines for the reduction of GHG emissions from each priority sectors are determined quantitatively while the climate resilient component of the Climate Resilient Green Economy Strategy (CRGE) is enunciating a qualitative target for the reduction of the cost of social, environmental and economic vulnerabilities.

1.2.3. Coverage of sectors

The economic sectors covered under ENDC are: agriculture, forest, transport, electric power, industry and buildings (including wastes and green cities). The sector definition adopted under the ENDC is consistent with the definition of sectors under the Country's First and the Second Five Year Growth and Transformation Plans.

1.2.4. Coverage of entities

The ENDC has broadly defined the participating entities that reduce GHG emissions from the sectoral GHG abatement targets. The definition of the term 'entity' covers government, the private sector, smallholder farmers and pastoralists and the civil society organizations.

1.2.5. Coverage of activities

A wide range of sectoral mitigation activities are prioritized. The listing of a wide range of mitigation activities allows to clearly differentiate those activities covered and those which are not covered for the attainment of the sectoral emission reduction targets. The prioritized GHG emission activities include:

1. Agriculture (improve animal husbandry, crop production practices and irrigation using lower-emitting techniques),
2. Forestry (protect and grow forests as carbon stocks, and reduce demand for fuel-wood via efficient stoves and alternative fuel),

3. Power (deploy renewable and clean power, build renewable power generation capacity, switch off fossil fuel power and export renewable power, and scale-up the use of efficient stoves and alternative fuels)
4. Industry, transport and buildings (use advanced technologies, improve industry energy efficiency, improve production processes, tighten cars' fuel efficiency, expand electric rail, substitute fossil fuel with biofuels and improve waste management)

1.2.6. Length of the ENDC period

The period allocated to meet the targets set under ENDC is 20 years. From private investment perspective this timeframe allows the inclusion of long-term infrastructural investments. This is particularly true for investors in the industry or energy sectors, which usually have a relatively longer economic lifetime.

1.2.7. Tracking and reporting

The Green Economy Strategy envisages a future work to elaborate reporting requirements and methodological approaches to support measurement, reporting and verification (MRV) of climate actions and outcomes. There is still less clarity and understanding on the i) type of data and procedures for data collection, ii) applicable measurement methods plus iii) quality assurance/control measures and equations needed to calculate and quantify GHG emissions because the said future work has not been yet accomplished.

1.2.8. Financing ENDC

The estimated expenditure for the implementation of ENDC is around US$ 150 billion; around US$ 80 billion is capital investment and the remaining US$ 70 billion is operating and program expenses. The methodology used for costing grouped the required types of financing into three categories based on their respective net present value (NPV). The NPV is calculated with 6% discount rate and takes into account all expenditures and benefits both economic and non-economic. Accordingly: Category A comprises initiatives that have positive return and only require short term financing. These are defined as yielding a positive NPV or cash flow in the first five years from the start of implementation of the initiative. Category B comprises initiatives that have a positive return but require long term financing. These are defined as yielding a positive NPV from start of implementation of the initiative up to 2030, but not during the first five years. Category C comprises initiatives that do not yield a positive financial return hence they require grants or performance payments. These are defined as yielding a negative NPV from the start of implementation of the initiative over 20 years.

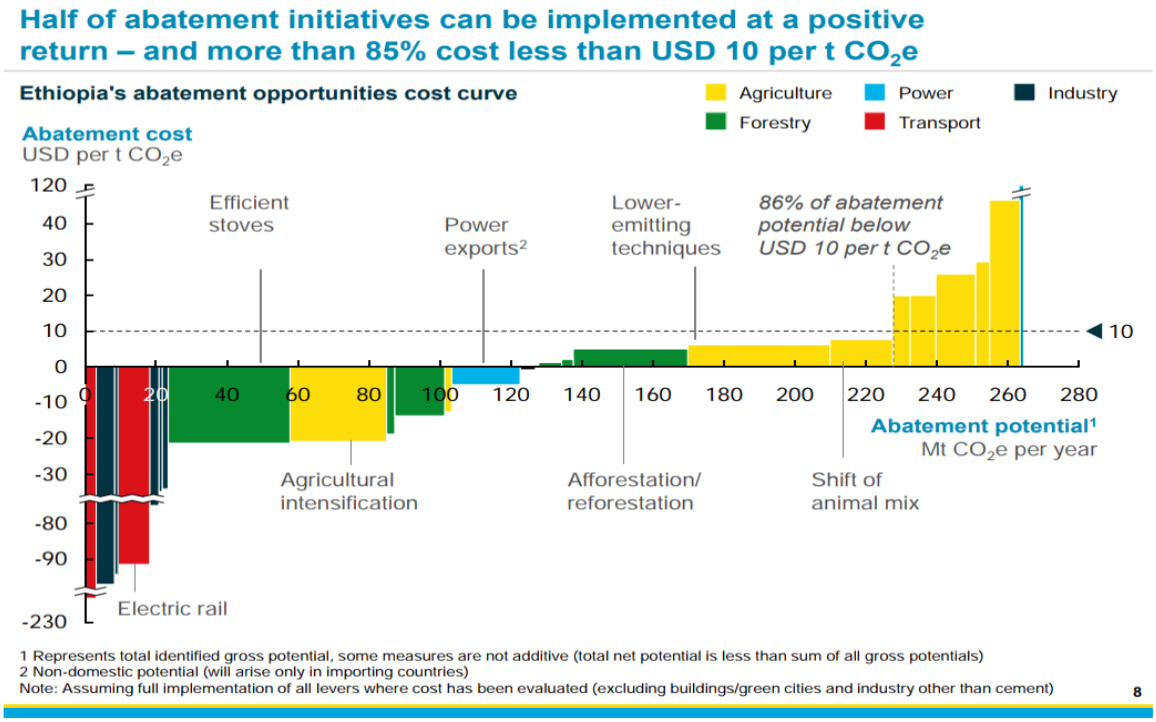

Figure 1: Ethiopia's abatement opportunities cost curve[1]

1.2.9. Governance arrangements

Effective implementation of the ENDC requires strong governance arrangement that drives implementation, and promotes the participation of a broad set of stakeholders. Without a strong governance, spearheading the implementation of ENDC effectively and effciently would remain challenging as it crosses sectors and governance levels and as it involves government, smallholder farmers and pastoralists, the private sector and the civil society organizations. To this effect, the Green Economy Strategy requires the conversion of the inter-minestrial approach into a permanent setup for horizontal coordination of sector ministries and relevant agencies at the Federal level. Although GHG emissions and vulnerability reduction policy measures and actions are first to be adopted at the Federal level; their implementation involves regions, cities and local administrations. Therefore, capacity for vertical coordination is needed to engage regions, cities and local administrations.

1.2.10. Implementation strategy

The strategy to implement the green economy initiatives is composed of three categories of actions: own action, supported and credited actions. Own actions are planned and fully funded by the government. Supported actions are planned by the government but require support in implementation. Supported actions are expected

[1] Federal Democratic Republic of Ethiopia: Ethiopia's Climate Resilient Economy. OECD/GGGI Joint forum, Green Growth Development Paths for a better future November Development Paths for a better future. November 22 2012, Paris.

to create an investment climate and incentive structure that makes the engines of green growth active in mitigation actions without selling carbon credit. Credited actions are planned to monetize carbon credits in exchange for GHG abatement.

The ENDC stated the need to undertake research to quantify and assign the share of own action, supported action and the technical support needed to introduce new and additional supportive environment to sustain investment in green economic growth. The Green Economy Strategy has also identified a future work on the elaboration of MRV and benefit sharing mechanism. MRV and benefit sharing mechanism are needed to provide proof of GHG emission abatement and to clearly specify stakeholders who will benefit from the proceedings of the sale of carbon credits.

1.2.11. Initiatives prioritized for fast-tracked implementation

The green economy strategy and its ENDC have identified four initiatives for fast-tracked implementation due to their potentials in promoting growth immediately, reducing or removing GHG emissions and attracting climate finance. Especially, the initiatives under the energy sector are prioritized because they are important enablers for fostering other sectoral GHG emission targets enunciated under the Green Economy Strategy. Deployment of renewable and energy-efficient technologies is thus ranked as a priority by the Green Economy Strategy and EINDC owing to its strategic contributions in the following core areas:

a. leapfrogging to modern and energy-efficient technologies in transport, industrial sectors, and buildings;
b. reducing deforestation and forest degradation while enhancing the economic and ecosystem services of forests,
c. boosting agricultural productivity and
d. fostering export growth.

The cross-sectoral benefits that would accrue through the deployment of modern and energy-efficient technologies also lies from fuelling major shifts towards building a resilient green economic growth to job creation and to improving the status of women by reducing the adverse health impacts that are likely to result from the traditional use of wood, charcoal, or dung to cook meals. On the other hand, investment in renewable energy, energy efficiency and energy access has remained below its potential due to various risks and barriers. The risks and barriers that have hindered private sector investment in renewable energy, energy efficiency and access to renewable energy are identified by the CRGE and related document.

These risks and barriers include i) low return on investment, ii) high investment risk iii) lack of access to capital, iv) lack of information. Therefore, the obstacles, which still need to be addressed includes promoting private investment in renewable energy. Overcoming these obstacles entails the issuance of appropriate government policies and actions that mobilize public and private investment in renewable energy, energy efficiency and access to energy. The Green Economy Strategy and its ENDC have also shown that technical and institutional strengthening for the adoption and implementation of the right policy measures and financial instruments as key

areas for enabling enhanced private sector investment in renewable energy generation, energy efficiency and access to energy above the current level.

1.3. Activities to link ENDC with private sector investment

The CRGE outlines a framework for the preparation of concrete investment proposals for facilitating the flow of finance from international and domestic and public and private sources. The Sectoral Reduction Mechanism (SRM), which is designed to implement the CRGE Strategy, has outlined the process for the preparation of investment proposals. The initiative on the preparation of pipeline investment proposals or projects under the SRM is anchored on the following major premises: i) without support, competitive and viable climate-compatible project pipelines are unlikely to come from green developers in adequate number and ii) without risk mitigation instruments, financial institutions may remain scared by potential risks associated with investment in net-zero emitting climate resilient actions.

The investment proposal preparation and implementation process under the SRM comprises the following three steps:

1. *Concept note preparation*: The activity envisaged under this stage is preparation of a concept note to facilitate discussion with and secure commitment of support providers from the outset. A concept note is expected to describe i) policy measures that will be employed for the reduction, avoidance or removal of GHG emissions or adaptation to climate change, ii) an outline of institutional and technical approaches, iii) the estimated cost to prepare a full investment proposal and iv) the funding sources available.

2. *Full investment proposal preparation*: The activity envisaged under this stage is preparation of a full investment proposal to secure adequate and predictable finance as well as technical and capacity building support. A full investment proposal should describe the expected impacts of proposed policy measure, MRV requirements and reporting periods so that the outcomes of the policy measures can be assessed over time.

3. *Catalytic financial support provision*: Because each sectoral investment proposal may face specific barriers, financing from the Facility is expected to address the specific barriers identified in each sectoral investment proposal. Therefore, the financial support of the Facility is expected to remove the identified barriers as an alternative to covering the full cost of climate projects.

In the absence of pipeline projects prepared in line with the SRM, the prioritized initiatives under the CRGE or the list of projects that the GoE submitted to the UNFCCC pursuant to the Copenhagen Accord may be taken as a starting point for the preparation of pipeline projects. The list of projects submitted by the GOE according to the Copenhagen Accord include: electricity generation from renewable energy for the grid; electricity generation from renewable energy for off-grid use; direct use of renewable energy; bio-fuel development for road transport and for household use; transport; forestry/forests and agriculture.

2. Priority Sectors Seeking Private Investment

In order to meet GTP-II energy targets and in line with the CRGE, the Government of Ethiopia (GoE) is pursuing multiple on grid and off grid technology sources that would allow Ethiopia to achieve high economic growth and propel it towards middle income status by 2025. While all of the energy sources have merits and will contribute in terms of achieving the GOE's objectives, they differ with regard to key metrics that are important to getting private sector investment in that particular subsector.

After developing a set of criteria that cover key areas of interest to the private sector, we have selected three priority subsectors that would be more attractive for investment. They are: Mini Grids; Solar Lanterns and Solar Home Systems (SHS); and Cook Stoves.

2.1. Mini-Grids

A mini-grid is a small, isolated electrical grid supplying a remote village, a rural town or a set of villages and towns. It is a self-contained grid system composed of one or more electricity generation plants of any technology (such as wind, solar or micro hydro) or combination of multiple technologies.

As mentioned above, the cost of technology for mini grids varies as mini grids can be sourced from various electricity sources including wind, solar, micro hydro and others. Although not preventive, initial technology costs for mini-grids may be higher as they may entail combining multiple sources. Still, compared to other technologies, we can determine the technology cost for mini-grids to be moderate.

When it comes to Rate of return, the tariff for mini grids in Ethiopia is high: between 20 and 30 US cents/kWh, compared to 2 to 3 US cents/kWh for grid electricity. However, it is still lower than the alternatives of kerosene lighting, dry cell batteries and diesel generation, not to mention cleaner as it comes from renewable sources.

The government of Ethiopia has identified 105 sites for potential mini-grid installation and plans to directly invest USD $3,875,000 on mini-grid projects. It is also expected that the GoE will introduce subsidies for private sector mini-grid generators.

MINI-GRIDS	Technology Cost	Rate of Return	Legal Framework	Impact on GHG	Growth / Expansion potential
Low					
Moderate	✓	✓	✓		
High				✓	✓

2.2. Solar Lanterns/Solar Home Systems

Solar lanterns are the most popular and widely distributed power systems used in rural Ethiopia. A typical kit contains the panel and battery, the light source and a power outlet to charge a mobile phone. While solar lanterns are mobile, Solar Home Systems (SHS) have a higher capacity to handle multiple led lights and can

power appliances such as TVs and refrigerators, generally in a rural household setting. According to the GTP II, Ethiopia plans to distribute 3,600,000 lanterns and 400,000 SHS by 2020.

In terms of technology cost, solar lanterns and solar home systems are the most accessible as they only entail import, distribution and installation. They are also relatively affordable from the consumer standpoint. It is estimated an investment of USD 200,000 is required to engage in the importation and distribution of Solar systems. However, regular access to foreign currency for importers and consumer financing remain a challenge and need to be addressed.

SOLAR LANTERNS/SOLAR HOME SYSTEMS	Technology Cost	Rate of Return	Legal Framework	Impact on GHG	Growth / Expansion potential
Low	✓				
Moderate		✓	✓		
High				✓	✓

2.3. Cook Stoves

In a country where fuel wood is a major source of household cooking, energy efficient cook stoves represent an alternative with a vast market and an opportunity to impact not only the energy sector but also public health and deforestation. It is estimated that more than 80% of energy supplied in the country is used for food preparation and approximately 140,000 HA of forest is lost every year for the production of firewood resulting in 62 million tons of wood used for cooking.

It is with this consideration that the GoE has targeted the distribution of 9 million cook stoves with an estimated investment of USD 100 million by 2020. The cook stoves will not only reduce GHG emissions caused by deforestation but will also use biogas produced by the waste of Ethiopia's cattle numbering in the tens of millions.

The private sector can take advantage of opportunities in the area of designing and manufacturing more efficient, innovative and affordable cook stoves, for which it can access additional financial support from the GoE and international development partners.

COOK STOVES	Technology Cost	Rate of Return	Legal Framework	Impact on GHG	Growth / Expansion potential
Low	✓				
Moderate		✓	✓		
High				✓	✓

3. Financing Mechanism

3.1. Investment Climate

Ethiopia's current development plan, the Growth and Transformation Plan 2010/11–2014/15 (MoFED 2011), explicitly embraces a "Green Development Strategy" that combines continued rapid economic growth with sustainability, aiming to move Ethiopia closer to its longer-term vision of becoming a middle-income country by 2020-2023. It builds on significant progress over the previous five years with 5,163 towns and villages connected to the grid and 3 million efficient biomass-burning stoves distributed in that period.

The new strategy sets ambitious new targets for the energy sector, including a five-fold Increase in hydropower capacity, to 10,000 MW; a near doubling of power distribution lines, a doubling of the number of consumers with electricity service, and 75% coverage of Electricity services, up from 41% at the beginning of the new five-year period.

To meet this demand, the Government's future outlook for the power market sector has been divided into short, medium and long term plans of 5, 10 and 25 year periods respectively. According to Ethiopian Electric Power Corporation (EEPCO), the opportunities in the power sector represent about US $3 to 4 billion per year. Of this, 65% is in generation, with the rest spread across transmission, universal access and engineering services. The long-term goal is to maximize the country's energy power potential, which is currently believed to be 45,000 MW hydropower, 10,000 MW geothermal, and 1.03 Million MW wind power, in addition to potential bio-fuel and alternative energy development.

3.1.1. The investment climate for domestic financial institutions

Various measures have been taken to improve the landscape under which a domestic financial institution operates. Laws on licensing and supervision of public and private banks, insurance companies, micro-financing institutions and other authorized dealers are issued and have been implemented. As a result, the number of public and private banks, insurance companies and microfinance institutions that finance both green and brown developers has increased. The estimated expenditure needs of green developers for the implementation of ENDC is estimated around US$ 150 billion. This huge investment needs combined with scarcity of public finance makes the engagement of private financial institutions more important.

As it stands now, a space is created for domestic financial institutions and green developers to work together for the implementation of the ENDC. Yet both green developers and domestic financial institutions have not capitalized on the space created for enhanced investment in climate change mitigation and climate change adaptation actions. Consequently, i) the flow of private finance does not match with the investment needs of ENDC, ii) the pre-investment and investment stage barriers that hold back green developers' investment in net-zero emitting climate resilient economy have persisted and iii) the engagement of green developers and financial institutions in climate actions has not been reached as much as it could have done. Therefore, creating linkage between green developers and financial institutions is needed for the implementation of ENDC to the fullest.

Creating linkage means matching the interest of financial institutions to generate credit with the interest of green developers to secure private finance.

In this regard, the ENDC has foreseen the preparation and implementation of a supportive environment to stimulate the participation of the private sector in green investment. On the other hand, the said policy measures and actions that help create an environment conducive for investment in limiting GHG emission to 145 Mt or lower have not been yet put in place. Due to this both private green developers and financial institutions are unlikely to find their way to a net-zero emitting climate resilient investment. As a result, the sectoral targets enunciated under ENDC may not be translated into concrete climate-compatible investment actions until such a time the supportive environment as envisaged under ENDC is prepared for implementation.

3.1.2. The Invest climate regarding green developers

3.1.2.1 Business friendly environment

Investment laws are issued both to delineate investment areas reserved for domestic and foreign investors and to promote domestic and foreign investments. An investment office is established to issue investment permits and business licenses. Procedural efficiency enhancement measures are in place to simplify business registration, acquisition of land, utilities and loan. Some experts in the field recommend further actions to reduce the licensing procedures and the cost of compliance thereof with a view to creating a more business friendly environment; thereby enhancing competitiveness and ultimately promoting economic growth across sectors and governance levels.

3.1.2.2 Investment incentives

The main types of taxes applicable in Ethiopia are: income tax on salaries and dividends, profit tax on business, custom duty, excise tax, turn over tax and value added tax. To encourage investment, customs duty is exempted for importation of: i) capital goods and construction materials for the establishment of an enterprise or expansion or upgrading of an existing one and ii) spare parts the value of which is not greater than 15% of the total value of the capital goods within five years from the start date of the investment. A manufacturing industry that has invested more than USD 200,000 and has created permanent employment for more than 50 Ethiopian nationals is entitled to import duty free capital goods up to 5 years from the date of acquiring a business license. An investor that expands or upgrades its enterprise and increases its capacity at a minimum by 50% or introduces a new production or service rendering line is exempted from income tax for a certain period. An investor that exports 60% of or supplies its products to an exporter is exempted from the payment of income tax for additional two years. On the other hand, the income tax exemption period for an investor that engages in the manufacturing, information or communication sector; without constructing its own building, is one year lesser than what is provided for that sector.

Industrial parks establishment law is issued to facilitate transition to an industry led economy. The establishment of industrial parks aims to ease access to the necessary services and facilities for industries operating within an industrial park. The priority sectors that are encouraged to participate in an industrial park are agro-processing; textile and garment; leather, sugar; chemical; pharmaceutical; metal and engineering industries. An investor

who invests within an industrial park and exports at least 80% of its product or supplies as input to an exporter is entitled for an additional exemption from income tax ranging from 2 to 4 years. Moreover, an investor that engages in the development of industrial park is exempted from an income tax from 10-15 years.

3.1.2.3 Regulatory measures

Environmental impact assessment, pollution control and prevention and environmental standards are issued. These laws and standards aim to foster an economically viable, socially acceptable and environmentally sound development by internalizing carbon externalities; thereby shifting incentives towards a net-zero emitting resilient economic growth. The Labour Proclamation has domesticated the conventions issued by the International Labour Organization. The maximum number of working hours/week is 48. There is no minimum wage under the law and the term “wage” excludes allowance, bonus or overtime pay. The pension proclamation covers private sector employees and the contribution to the Pension Fund comprises 7% from employees’ salary and 11% from employers.

Giving or receiving bribes is a crime. Ethiopia has ratified the UN Anti-Corruption Convention. The Anti-Corruption Commission leads the implementation of actions designed to combat corruption. The Proclamation on Prevention and Suppression of Money Laundering and the Financing of Terrorism is issued. Ethiopia is a member to the World Intellectual Property Organization. The Intellectual Property Rights Office administers patent, trademark, copyright and related matters. Ethiopia is also a member to the Multilateral Investment Guarantee Agency.

3.2. Legal Framework

Ethiopia has established an Investment Code to draw private investment and the inflow of capital and technology to the country. In the energy sector, the governing regulation for such undertakings is Electricity Proclamation N0.86/1997, which seeks to promote domestic and foreign private investment in power generation. According to the proclamation, independent power producers would be able to generate and sell electric power to EEPCo or establish independent distribution systems in areas not served by the grid.

The Ethiopian Energy Agency, under the Ministry of Water Irrigation and Energy, is the regulatory body mandated with issuing operational licenses in the power sector. The EEA issues investment permits pursuant to the Investment Proclamation No. 769/2012, which last 25 years for hydropower and geothermal, and 20 years for wind, solar, biomass and energy from waste technologies. It is expected that the EEA would also be tasked with approving tariffs for Off-grid energy producers, as well as providing overall supervision and issuing guidelines for that subsector.

In addition to the EEA, there are a number of agencies involved in regulating various facets of the energy sector. The roles and responsibilities of the relevant organizations can be found below:

	REGULATORY FUNCTIONS AND ENGAGEMENT AREAS FOR OFF-GRID ELECTRICITY OR SOLAR
ESA	The ESA has three core business areas which focus on standard formulation, training and Technical support and organizing and disseminating standards, conformity assessment procedures and Technical regulation for customers. The ESA has a National Standardization council which works together with the agency to review and approve national standards; members of the council are drawn from appropriate government agencies and other agencies designated by the government. The primary functions of ESA are to: 1. lead and coordinate national standardization; confirm and publish national Ethiopian Standards; 2. promote the implementation of standards; promote Ethiopian Standard Mark and authorize its use; 3. deliver services on standardization, conformity assessment guidelines and technical regulation; 4. assist technology transfer to Ethiopian industry by providing technical support, training and consultancy Services and assisting them in implementation of standards.
ECAE	ECAE's mission is to provide internationally accepted and recognized testing, inspection and certification services for exporters, producers, service providers, regulatory bodies, consumers and importers as well as the public through credible, effective, accessible and efficient conformity assessment services to ensure the availability of quality products and services. ECAE has 6 specialized testing laboratories operating at the head quarter, and 5 of them are accredited (Chemical, Electrical, Mechanical, Microbiology & textile). Products tested by ECAE'S Electrical laboratory include solar system components including solar battery charge controllers, solar panels, batteries, invertors, and lamps (fluorescent and LED). ECAE provides independent third-party and internationally accredited inspection services based on ISO/IEC 17020: a) factor manufacturing systems and processes, b) pre-production inspection for raw materials and component inputs, c) inspection of production for defects and deviation from quality parameters, d) pre-shipment inspection for products ready for shipment, and e) supervision of loading after pre-shipment inspection. ECAE also provides certification for products based on mandatory and voluntary Ethiopian and international standards.2Products certified by ECAE include food products, chemical and chemical

[2] Certification is a third party license given for a product, service, system and persons after proving their conformance with specified requirements. Product Certification (ISO/IEC 17065) is the process of certifying that a product conforms to the

	engineering products, textile and leather products, construction materials, cleaning plants for agricultural products and inputs, and electrical products.
MOT	The MOT has the mandate to regulate domestic and international trade. The MOT controls quality of goods imported into and exported from Ethiopia. It also houses the consumer protection agency known as the Ethiopian consumer protection and competition authority. It is mandated to 1. Control the qualities of export and import goods prohibit the importation and exportation of goods that do not conform with the required standards and work in collaboration with the concerned organs; 2. Control the compliance of goods and services with the requirements of mandatory Ethiopia standards and take measure against those found to be below the standards set for them; 3. Cause the coordinated enforcement of standards applied by other enforcement bodies organize and direct implementation review conferences
ERCA	ERCA is responsible for collecting revenue from customs duties and domestic taxes. ERCA has the following main objectives: 1. Establish modern revenue assessment and collection system; and render fair, efficient and quality service; 2. Assess, collect and account for all revenues in accordance with tax and customs laws set out in legislation; 3. Equitably enforce the tax and customs laws by preventing and controlling contraband as well as tax fraud and evasion

3.3. Financing sources

3.3.1. The Climate Resilient Green Economy Facility

To implement the green economy initiatives, the GoE has expressed its commitment to allocate its own finance, but it expects the support of international private and public partners. For this to happen, the GoE has set a plan to discuss with targeted development partners and establish a financial mechanism for receiving and distributing funds. Accordingly, the Climate Resilient Green Economy Facility (Facility) is established. T**he Facility** is expected to mobilize finance from the government, private sector, development partners, carbon trading schemes, and from multilateral source and channel to investors in a net-zero emitting climate resilient economic growth. The Facility is established to become a game-changer. As the premier channel for climate finance, it is conceived to become a unique enabler of climate-compatible economic growth. Given the scarcity of domestic and international public resource, it is expected to partner with others to maximize a broad-based investment.

requirements stipulated in the relevant local, national or international quality specifications or standards. (http://www.eca-e.com).

The Facility has the potential to become a powerful force in unlocking private investment in a climate-compatible economy if it takes the necessary additional steps to become a game-changer.

3.3.2. Rural Electrification Fund (REF)

Several financing mechanisms are already in place and could be replicated or expanded to support the private sector in the development of off-grid energy markets in Ethiopia. The Rural Electrification Fund is the main financial mechanism available in Ethiopia that could be used to expand off-grid electrification initiatives, as its chief mission is to support all off-grid rural electrification projects through government, NGO, and private sector channels. It is established as a permanent financial source for promoting investment in rural electrification activities through loan based finance and technical services. Its beneficiaries are rural electrification projects carried out by private operators, cooperatives and local communities. Its sources of finance include: public budget; loans and grants from international financial institutions; grants from non-governmental organizations and income from other sources. The REF has successfully pushed for duty exemption on PV systems and all other modern off-grid lighting products as well as lobbied the Rural Electrification Board (REB) to reduce the equity contribution of the private sector to only 5 percent. Furthermore, REF is also considering making the REF loan, which is currently administered by the Development Bank of Ethiopia (DBE), interest-free.

3.3.3. Participation Climate Investment Funds (CIF)

The CIF include four key programs that provide grant, concessional loan, risk mitigation instrument or equity for leveraging finance from the private sector and multilateral development banks. Ethiopia has participated in Reducing Emission from Deforestation and Forest Degradation (REDD+) and Scaling-up Renewable Energy Program (SREP).

3.3.4. Power Africa

Power Africa is a five-year initiative launched in 2013 by President Barack Obama with the aim of supporting economic growth and development in the continent by increasing access to reliable and affordable energy. Currently, Power Africa is supporting Ethiopia's energy development strategy through wide-ranging technical assistance in cooperation with Sweden, Norway, the World Bank including the International Finance Corporation, European Commission, the UN, DFID, and other development partners, by:

- Assisting with the development of new laws and regulations that will facilitate private-sector led independent power project investments in geothermal, solar, wind, hydro, and biomass projects;
- Assisting with negotiations and bring to financial closure the Government of Ethiopia's initial landmark independent power project for the Corbetti and Tulu Moye geothermal projects that will generate up to 1,000 MW;
- Assisting with new independent power projects and Government of Ethiopia's desire to transition to competitive tendering; assisting with the planning, operation, and maintenance of generation, transmission, and distribution systems as they are expanded;

- Developing the grid code that specifies the rules and responsibilities for all energy stakeholders

3.3.5. European Union

The European Union (EU) is the world's leading donor on energy. Over the past decade, it has spent approximately €1 billion on capacity-building and energy access expansion in developing countries. A new €55,000,000 call for proposals of the ACP-EU Energy Facility was open in early 2013 to support projects on increasing access to sustainable and affordable energy services for the poor living in rural and peri-urban areas, for this call the focus is decentralized solutions, grid development or extension projects are not accepted for this third round. Direct EU support for projects in Ethiopia have been limited over the past decade, but with the increase of private sector actors entering the energy space, particularly in the areas of off-grid lighting and improved cook stoves, there is an opportunity to take advantage of existing financing opportunities from the EU.

Other available financing mechanisms include indirect financing to grid electricity; payments for connection fees extended over a specific period of time; and pre-paid meter systems allowing consumers to recharge with amounts lower than US$0.4. In addition, some microfinance institutions (MFIs) have provided loans to households for fuel-efficient biomass stoves. Furthermore, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) EnDev Program, Rural Energy Foundation, and Solar Energy Foundation have also developed financing schemes that could be further investigated to determine how these mechanisms can be used for the diffusion of modern off-grid lighting products in Ethiopia.

3.4. The private sector engagement in climate finance

3.4.1. Definition of climate finance

The ENDC, which covers both mitigation and adaptation, has defined the scope of climate finance as comprising both public and private sources and both grants and loans. It also reaffirms that meeting the emission abatement targets only be successful if the private sector has strong incentives to reduce emissions. In the same vein, the SRM recognizes the importance of making possible domestic and international private investment flows so as to transit to a net-zero emitting climate-resilient future. It also suggests the use of public funding to utilize the large potential of private finance for the achievement of sectoral emission reduction targets.

3.4.2. Sources and composition of domestic climate finance

The financial institutions and thus the potential sources of climate finance in Ethiopia are composed of government owned and private banks, insurance companies and micro financing institutions.

1. *Micro-financing institutions* and cooperative societies: The Cooperative Societies Proclamation is enacted to enable the formation of cooperatives by individuals on voluntary basis to pool their resources, knowledge and property for the production of goods and services for markets. The Micro-

Financing Business Proclamation is also enacted for the provision of financial services to urban and rural micro and small scale cooperatives or operators.

2. *Insurance companies*: The insurance business is envisaged to contribute to economic development through the provision of a) insurance coverage against risks and b) alternative means for savings and mobilization of financial resources from both domestic and international. It is prohibited to transact in insurance business without obtaining an insurance business license from or the renewal of an insurance business license by the National Bank of Ethiopia. The principal activities of an insurer are a) to offer insurance as prescribed under a directive issued by the National Bank of Ethiopia and b) to indemnify the insured person against damage, destruction, loss or liability in connection to a risk to which the object of the insurance is exposed.

3. *Commercial banks*: The commercial banking business is envisaged to contribute to economic development through mobilizing finance from within and outside the country and channelling finance to various sectors. Commercial banking business includes: receiving and depositing funds; using the deposited fund for loan and investment; buying and selling foreign exchange; transferring funds to other domestic and foreign person and to do any other customary banking business. A foreign national or organization fully or partially owned by a foreign national is not allowed to open a bank or a branch office or a subsidiary foreign bank in Ethiopia or acquire share from Ethiopian banks. Operating a banking business without obtaining license from or renewal of a license by the National Bank of Ethiopia is illegal.

3.5. General Investment Incentives

The GoE has revised its investment law several times to ensure that it is more transparent and competitive, with appropriate institutional frameworks and additional incentives, so that there is a reliable structure in place for investment. Incentives available for foreign developers will include customs duty exemptions for plant and equipment and a tax holiday of up to five years for the project company

3.6. Risk mitigation instrument

The Ministry of Water Irrigation and Electricity in collaboration with UNDP and the Development Bank of Ethiopia is implementing a project entitled “Promoting Sustainable Rural Energy Technologies for Household and Productive Uses’’. The project aims to implement a private sector driven and market based approach to promote the use of rural energy technologies in rural communities. One component of this project aims to establish and run a credit risk guarantee fund for renewable energy lending.

3.7. Operational Modalities

3.7.1. From Procurement to IPP

Despite the advances being made by the GoE into various forms of power generation technology, all the operational power projects in Ethiopia to date have been developed by the GoE on a procurement basis. The US$2 billion 1000MW geothermal project (to be phased and built in two stages of 500MW) being developed by Reykjavik Geothermal at Corbetti is the first independent power project (IPP) in Ethiopia's history. The fact that negotiating this agreement has taken several years may indicate the GoE's overriding conservatism as it embarks in this new direction. However, representatives of the GoE have repeatedly made it clear to the private sector that there is no limit on the amount of power that could be generated by the private sector.

Moving forward, one can expect energy projects in Ethiopia to be structured as power purchase agreements with an implementation component. However, it is not yet clear what sort of Credit enhancement facilities would be provided by the GoE, although it appears that the Corbetti project will benefit from certain government guarantees that could also be applied to other future IPPs. This is particularly the case for smaller projects (under 10MW). To this end, the EEA is currently preparing project document templates for large and small scale projects in each energy subsector.

3.7.2. Areas of Improvement: Feed-in-Tariffs

The MoWIE is contemplating a draft feed-in-tariff proclamation, which has been submitted by the EEA. The draft recommends a small-scale feed-in-tariff for renewable projects equal to or less than 10MW in an aggregate amount of up to 300MW. The feed-in-tariff program would be accompanied by a standardized PPA. However, there is no fixed timeline for implementing the feed-in-tariff and as a result, we expect IPPs to continue to be bilaterally negotiated in the near term.

3.7.3. Off-taker

There has been some uncertainty as to whether the EEU or EEP is the off-taker for power purchase agreements in Ethiopia. Under Article 5(2) of EEU Regulation No. 303/2013 the EEU has the power to purchase bulk electric power and sell electrical energy to customers, and therefore it would seem more likely that the EEU should be the off-taker. However, the GoE has also advised that, in the usual course of events, a developer would enter into a memorandum of understanding (if a public private partnership project) or a heads of terms (if an IPP) with the EEP after submission of a letter of interest to the MoWIE. Still, there has not been a clear consensus in the industry on this issue. The fact that this current uncertainty exists reflects the necessary transition that is taking place in Ethiopia in order to facilitate and encourage IPPs.

4. Recommendations

Engaging the private sector within the framework of the ENDC depends upon the creation of further enabling grounds. Some of these have to do with operationalizing the existing framework further and engaging with the private sector itself to identify their specific requirements. One of the first steps in this regard is to launch readiness program to mobilize private investment. The readiness program may comprise the following elements:

1. Promoting private investment that can be implemented without requiring the issuance of new or change on the existing public documents.
2. A scoping study on new and additional supportive environment that helps to improve investment in a resilient green economic growth.
3. Research on matching the interest of financial institutions to generate credit with the interest of green developers to access private finance.
4. Strengthening the CRGE Facility to become a powerful force in unlocking private investment in a climate-compatible economy.