

Strategic Sector Cooperation in the Energy sector between Denmark and Ethiopia, Phase I

Key results: The Strategic Sector Cooperation on energy in Ethiopia aims at improving the framework conditions of the Ethiopian Energy sector in general and improving the long-term renewable energy planning at national level. The cooperation is expected to contribute to the following outcomes:

- Improved national planning of energy consumption and supply
- Improvement of national regulatory frameworks for energy management
- Advisory support (platform) to stakeholders and mandated bodies on management of energy
- Add regulatory framework to the technical expertise provided by the long term energy advisor (Climate envelope project)

Justification for support: Ethiopia faces growing demands to manage environmental, social and economic challenges in a holistic and sustainable manner. One of the key challenges is sustainable management of the energy sector. Ethiopia has immense potential for production of renewable energy based upon its natural resources ([hydro](#), wind, solar and geothermal) but climate change (e.g. causing severe periods of drought) is calling for a sustainable way of planning the energy consumption from administrative hold. Today the majority of administrative decisions for the Ethiopian energy sector are based on externally developed reports causing a lack of understanding of the reasoning behind the reports within the local authority. The Strategic Sector Cooperation aims at providing the authority with tools to support transparent and knowledge based decision-making by building up capacity in the Ethiopian Ministry of Energy. On the technical level a modelling team consisting of Danish and Ethiopian experts will form a working group focusing on how to forecast (by computer modelling) different energy scenarios that support the transition to a sustainable and modern energy system. **Major risks and challenges:** Continued availability of financial and staff resources within key Danish and Ethiopian partners is a key assumption for successful implementation. Steering Committee meetings and annual strategic meetings between the Ethiopian partners and the Danish partners will mitigate these risks. Availability of data can affect the quality of the technical assistance provided. All ready exiting good relations with the partner organizations however reduce this risk.

File No.	2020-7551				
Country	Ethiopia				
Responsible Unit	GDI				
Sector	23110, Energy policy and administrative management				
Partner	Danish Energy Agency (DEA)				
DKK mill	2020	2021	2022	Tot.	
Commitment	10			10	
Projected ann. disb.	3.9	3.05	3.05	10	
Duration	2020-2023				
Previous grants	982,216 DKK (inception phase 2018)				
Finance Act code	§06.38.02.14				
Head of unit	Ole Thonke				
Desk officer	Tilde Hellsten /Jakob Haugaard				
Reviewed by CFO	Christina Hedegård Hyttel				
Relevant SDGs					
 No Poverty	 No Hunger	 Good Health, Wellbeing	 Quality Education	 Gender Equality	 Clean Water, Sanitation
 Affordable Clean Energy	 Decent Jobs, Econ. Growth	 Industry, Innovation, Infrastructure	 Reduced Inequalities	 Sustainable Cities, Communities	 Responsible Consumption & Production
 Climate Action	 Life below Water	 Life on Land	 Peace & Justice, strong Inst.	 Partnerships for Goals	

Strategic objectives:

The Strategic Sector Cooperation on energy in Ethiopia aims at improving the framework conditions of the Ethiopian energy sector in general and improve a sustainable planning of energy consumption.

Justification for choice of partner:

The Danish partners was identified through a strategic match making process in 2018 where local demands were matched with Danish competencies in public authorities. The local partners were identified during the inception phase of the Strategic Sector Collaboration project, which commenced in 2018. Typically, the Danish authority works with its “sister and affiliated organisations”. This is also the case in this SSC on energy in Ethiopia.

Summary:

The Ethiopian energy system is 96% based on hydropower generation with only limited variable renewable energy such as wind and solar in the system. The target is to increase the wind power capacity. With high dependency on hydropower, the country is very vulnerable to climate changes, limited water resources and geo-political disputes over the Nile. This is why the integration of variable renewable energy into the Ethiopian energy system is central for the continued development. The Danish Energy Agency will contribute to reach this goal.

Budget:

Personnel – Danish Authority	4,754,674
Reimbursable costs for Danish Authority Staff	1,356,575
Activities, including Capacity development	774,000
Consultancies (max. 30% of grand total)	2,200,000
Unallocated funds (max. 20% of grand total)	914,751
Total DKK	10,000,000

Project Document for Strategic Sector Co-operation in the Energy sector

between

Ethiopia and Denmark

2019 12 05

General information		MFA File no. 2018-46818
Project Title	Ethiopian-Danish Strategic Energy Sector Cooperation	
Partner Country	Ethiopia	
Project duration	36 months from 01 January 2020	
Total budget (DKK)	10 million DKK	
Thematic focus	Long-term planning and modelling in the energy and power sector to support security of supply and an increase in electrification (SDG 7) with least cost development.	
Partner Public Authority Contact person and contact details	<p>Ministry of Water, Irrigation and Energy (MoWIE) Yiheyis Eshetu, A/Director for Energy policy, Strategy and Info Directorate, yiheyise@yahoo.com</p> <p>Comprising relevant organisations under the auspices of MoWIE, particularly Ethiopian Electric Power (EEP) and the expected Energy Development Commission (EDC).</p>	
Responsible Danish Public Authority Contact person and contact data	<p>Danish Energy Agency (DEA)</p> <ul style="list-style-type: none"> • Ole Emmik Sørensen, Deputy Director • Cecilie Buch Thomsen, Advisor, cebt@ens.dk <p>Ministry for Climate, Energy and Utilities</p> <ul style="list-style-type: none"> • Anne Marx Lorenzen, Advisor 	
Danish Embassy Head of Representation Sector Counsellor	<p>Embassy of Denmark in Ethiopia</p> <ul style="list-style-type: none"> • Karin Poulsen, Ambassador • Jens Skov-Spilling, Counsellor, Head of Energy Cooperation 	
Summary of background analysis and key strategic choices	<p>Ethiopia has immense renewable energy generation potential based upon its natural resources (hydro, wind, solar and geothermal). The vast majority of the current electricity generation in Ethiopia is sourced from hydropower, however with more and more frequent and recurrent drought, the stability of supply is affected with major outages in the dry season as a result – latest experienced in the spring of 2019.</p> <p>The government has established a range of ambitious policy goals related to economic and low-carbon development set forward in their five-year Growth and Transformation Plan II 2015/16-2019/20. This includes the target of becoming a lower middle-income country by 2025 while increasing the access to energy from 44% to 100% - 65% on grid and 35% off grid.</p>	

Ethiopia intends to reduce their carbon emissions by 64% compared to the business-as-usual scenario by 2030. The energy sector is only responsible for 3% of the total current CO₂ emissions, but with a rapidly increasing population with a yearly growth rate of 2.5% and the goal to become a lower middle-income economy through industrialisation, the demand for electricity will increase rapidly. The Ethiopian power system will need to undertake extensive developments to meet the increased demand in a cost efficient and sustainable way.

Current demand side models predicts a five-fold increase in electricity demand in 2030, which includes a significant increase in export. Ethiopia is determined to become an African Power Hub and has already made obligations to export 400 MW to Kenya by 2019, but is yet to be completed.

It is a high priority for the Government of Ethiopia (GoE) to expand the electricity generation capacity to cover national demand, as well as being able to export electricity to neighboring countries. The planned capacity expansion will be more diversified and geographical distributed, with an expected significant share of wind, solar and geothermal power generation.

The current Accelerating Wind Power Generation in Ethiopia programme (AWPGE) with Ethiopia has supported the GoE in wind power expansion and integration of variable renewable energy. The strong partnership has created a trust-based relation between the Ethiopian and Danish partners, which has spurred the request for a broadened scope of cooperation. Following cooperation on wind power expansion and system integration a natural next step is energy planning and modelling. Integration of fluctuating renewable energy – like wind – into the system, demands good planning to secure that the system is in balance. As the energy mix in Ethiopia broadens, planning of the system is needed but also modelling on how the system will evolve if different options are pursued. Therefore, as the Ethiopian/Danish activities on accelerating wind power is advanced the subsequent steps on planning and modelling follows naturally.

The Danish approach to energy planning has shown that through persistent, active and cost-effective policies with ambitious renewable energy goals, it is possible to sustain significant economic growth, a high standard of living and a secure energy supply. Energy planning and modelling has for many years been a central element in energy system and policy development in Denmark.

In Ethiopia, the key institutions in the development of the power sector are Ministry of Water, Irrigation and Energy and the state owned transmission system operator and power company, Ethiopian Electric Power. Thus, these institutions are key players in the development of policies and regulatory framework conditions. In addition, it is expected that the announced Energy Development Commission (EDC), within MoWIE, responding directly to the Prime Ministers' office, can in the coming years become the key institution

	<p>with respect to planning and development of the Ethiopian Energy sector. The announcement of the EDC is yet another evidence for the burning platform and critical need for energy planning in Ethiopia for reaching the GoE targets.</p>
<p>Linkages to UN Sustainable Development Goals</p>	<p>Ethiopia has very ambitious goals in becoming a lower-middle income country by 2025. The development plan consists of 9 pillars. Of these can be mentioned 'Building climate resilient green economy'. This illustrates that the SDG's are central to Ethiopia. This is also illustrated by the Denmark and Ethiopia mutual commitment to the global agenda on climate change and economic growth, where the program will focus on SDG 7 – ensuring access to affordable and clean energy in Ethiopia. The joint leadership on SDG 7 during the New York Climate Action Summit is evident for a strong partnership.</p> <p>The SSC programme will support the following SDGs:</p> <ul style="list-style-type: none"> • SDG 7: Affordable and Clean Energy • SDG 13: Climate Action • SDG 17: Partnerships for the goals <p>Through capacity building, the Ethiopian partners are enabled to plan long-term through modelling and scenarios – delivering sustainable and modern energy with an increased security of supply. With the close linkage between the Ethiopian power system and effects from climate change, increasing climate action and SDG 13 will further be an integral aspect of the partnership.</p>
<p>Project logic (Theory of Change)</p>	<p>The SSC project will support the GoE in the ambitious goal of becoming a lower middle-income country by 2025 – where access to a stable and affordable energy supply stands as central elements in order to follow the development in industry and job creations to the fast growing population.</p> <p>To make this change and facilitate a diversified power system the Ethiopian authorities must be able to conduct long-term energy planning based on least cost development of energy to support important policy decisions, regulatory frameworks and a prioritization of public and private funding on an informed basis. Thereby the path towards transforming the power system and using the beneficial natural resources in expanding the power supply will be made possible, taking advantage of the abundant hydropower resources in balancing the overall Ethiopian power system and the interaction with neighbouring countries.</p> <p>Today most of the GoE decisions on the planning of the energy system are based upon external reports. These reports do not enable the GoE to make their own conclusions, as the underlying assumptions are unavailable to them. The fundamental change will be the establishment of dedicated modelling teams. This will be a significant change to the foundation of policy development, bringing choice awareness to the decision-makers. But also providing the government administration with the tools needed to develop the regulatory</p>

framework for the energy sector development in addition to delivering needed input to the country's future development plans like the next five year Growth and Transformation Plan III, planned for 2021-2026. The ability to conduct planning and modelling of the energy sector is central for the ability to carry out appropriate sector regulation and legislation.

The modelling team will consist of both engineers and economists from MoWIE and EEP respectively and also including the newly announced EDC. Thereby creating a joint Ethiopian planning platform with the staff trained to use energy modelling tools on a continued basis in order to deeply root the capacity in the institutions. To further enhance the transfer of knowledge between the national institutions, the aim is to engage the universities by demonstration of gained knowledge and continued involvement.

As the project evolves and relevant input to policy developments is developed, it is the ambition to also involve the National Planning Commission as planning and modelling of the energy sector is important for the country's development. The National Planning Commission has the overall responsibility for the development and evaluation of the Growth and Transformation Plans and also conducting long-term perspective plans of fifteen years.

Based on this, a result will be the first long-term analysis conducted in house, by MoWIE, EDC and EEP, feeding into policy development in the GoE's next five year Growth and Transformation Plan III, planned for 2021-2026 and ensuring that short-term policies does not conflict with long-term perspectives. It is expected that the EDC will be the main driver for new planning regulations, thus the above mentioned partners will be central actors in the development.

The project will emphasise on transferring technical studies into policy development and/or policy implementation. Solid energy sector modelling is central for conducting sector regulation. Therefore, the project will create the foundation for all future discussions and decisions on energy sector regulation. In order to support the change, it is necessary to engage in a true partnership, where the Ethiopian partners are actively involved and reserve the required resources for capacity building. The aim is therefore to create an energy planning platform anchored in MoWIE as the coordinating body for planning efforts in Ethiopia. Thereby, the partnership between Ethiopian and Danish government officials will lay the foundation for a sustainable future, bearing in mind that energy planning is a craft that will be refined over time as data is collected and knowledge is developed.

Energy planning is a natural next step in the fruitful Ethiopian-Danish government-to-government cooperation on energy. The Ethiopian minister for MoWIE has clearly stated that there is a strong need for the GoE to obtain choice awareness in its energy policy and directly requested Danish support. The minister strongly backs the establishment of dedicated modelling teams and believes

	that long-term energy planning is vital for policy changes, needed to conduct the transformation of the Ethiopian power system and thereby contribute to reaching the development goals of Ethiopia.
Main objective of SSC project	<p>The objective of the partnership with Ethiopia is to support the development of cost efficient long-term modelling and energy planning.</p> <p>Thereby creating choice awareness on the government's long-term energy objectives and subsequent regulations and legal processes of the energy sector to reach the national targets of security of supply and improvement of the electrification rate as stated in the Growth and Transformation Plan II.</p>
Outcome A	Increased awareness and enhanced national capacities of MoWIE, the expected EDC and EEP on energy modelling, hereby enabling an institutional coordination of national cross-sectoral planning efforts to support decision-making and energy sector regulation.
Output A.1	<p>Support development of an Ethiopian energy planning platform</p> <p>Enhancement of the institutional setup and development of a self-driven and supportive environment for decision making based on long-term planning and modelling within MoWIE, expected EDC and EEP.</p>
Output A.2	<p>Long-term energy modelling and planning</p> <p>Continuous cooperation on enhancing and developing long-term energy modelling and planning capacities within MoWIE, EEP and the expected EDC.</p> <p>Selected models and tools based on preliminary analysis are transferred to MoWIE, expected EDC and EEP.</p>
Output A.3	<p>Ethiopian Energy Outlook</p> <p>In cooperation with the modelling team from MoWIE, the expected EDC and EEP, the partnership will develop an Ethiopian Energy Outlook with a special focus on the power sector aiming at supporting development of Ethiopian energy policies and strategies.</p>
Output A.4	<p>Security of supply</p> <p>Support EEP in the transmission system network expansion regarding security of supply allowing the country to reach national electrification targets stated in National Electrification Programme 2.0.</p>
Assumptions and risks	<p>The overall theory of change and areas for cooperation is exposed to a number of assumptions and risks that must be assessed.</p> <p>Continued engagement from partner organisations: The interest to engage in collaboration is clearly expressed by the minister and his request to extend the current partnership. It stipulates the strong</p>

	<p>political buy-in and engagement also from staff level in partner organisations. The high level of engagement must be continued in the future cooperation by involving a broadened spectre of relevant institutions from GoE. The Danish experiences and expertise within development of renewable energy is highly valued by the Ethiopian partners.</p> <p><u>Maintaining capacity and personnel in partner organisations:</u> The partnership is based on the assumption that it is a mutual cooperation where resources for knowledge transfer is available. The partner organisations must ensure sufficient capacity to receive technical assistance in order to create sustainable results.</p> <p><u>Availability of data:</u> Efficient capacity building in energy planning and modelling requires detailed information and data from the Ethiopian energy and especially power sector. Lack of willingness to share the available data can affect the quality of the technical assistance provided. The risk is however reduced by the existing collaboration where a great deal of trust has been built with the partner organisations.</p>
Management set-up	<p>The SSC project is anchored at the following Ethiopian institutions:</p> <ul style="list-style-type: none"> • Ministry for Water, Irrigation and Energy (MoWIE) • Ethiopian Electric Power (EEP) • And when commissioned, the Energy Development Commission (EDC) <p>A Steering Committee is established with the participating institutions led by Minister for Water, Irrigation and Energy. The members will include:</p> <ul style="list-style-type: none"> • Minister, MoWIE • CEO, EEP • Deputy Director, DEA • Ambassador, Embassy of Denmark <p>The SC meetings will be the forum for overall strategic dialogue between Ethiopia and Denmark for the energy sector, where dialogue and decisions in relation to the implementation of the SSC program will be made. The steering committee meetings will be held bi-annually. At the first annual meetings, the yearly work plans and progress reports will be approved. All bi-annual meetings will be used to follow progress in the SSC implementation and decide on adjustments, if needed. The SC will in its implementation of the programme take into account the work done within this field by other international partners.</p> <p>A management group will be established for the general operations and preparations of the SC meetings, consisting of members from relevant partner institutions.</p>
Contributions from Danish Public Authority	<p>DEA will coordinate the SSC program – led by a project coordinator. The role of the coordinator is to:</p> <ul style="list-style-type: none"> • Coordinate activities within DEA

	<ul style="list-style-type: none"> Identify and prepare Danish experts and stakeholders Follow, evaluate and adjust activities in the work plan with MoWIE, expected EDC and EEP Supervise and manage project budget, reporting and monitoring & evaluation <p>DEA will contribute with:</p> <ul style="list-style-type: none"> Danish experts Costs of Danish experts including local transport and accommodation. Costs for study tours (airfare, hotel, visa, per diem, local transport, on a case by case basis). Contracting consultancy services. Costs of special arrangements such as seminars, work-shops etc. <p>The Embassy of Denmark to Ethiopia will host the Sector Counsellor. The counsellor will be the daily contact to the Ethiopian partners and will drive progress on daily project activities in close coordination with DEA's project team.</p>
Dispute resolution	The Parties should settle any dispute relating to this Agreement amicably.
Entry into force and termination	<p>The Agreement shall enter into force upon signature by both Parties.</p> <p>Each Party may terminate the Agreement upon 3 months written notice.</p>

Authorised Signatures:

Dr. Seleshi Bekele, 5th of December 2019
Minister,
Ministry for Water, Irrigation and Energy

Karin Poulsen, 5th of December 2019

Ambassador to Ethiopia

On behalf of the Danish Energy Agency



Annex 9 - Quality Assurance checklist for appraisal of programmes and projects¹

File number/F2 reference: [2020-7551]

Programme/Project name: “Ethiopia – Danish Strategic Energy Sector Cooperation ” (phase I)

Programme/Project period: February 2020 – February 2023

Budget: 10 mio. DKK

Presentation of quality assurance process:

The preparation of Phase I projects under the Strategic Sector Cooperation Facility follows the SSC guidelines. The preparation and decision making process consists of three steps:

- 1) Formulation and implementation of an inception phase project. During this process, the partners and areas of cooperation are identified;
- 2) Preparation of the required project document, annual work plans, budget and an updated background study, which includes a context analysis and a basic base line assessment. Prior to the official submission of the signed project document, a quality assessment dialogue takes place between the Secretariat for Strategic Sector Cooperation and the Danish authority;
- 3) Approval of the project document, which is signed by the local and Danish partner. The Secretariat for Strategic Sector Cooperation validates that the required information and analysis is included as per the SSC guidelines. Projects with a total value of 10 million DKK or above are approved by the Minister for Development Cooperation.

- The design of the programme/project has been appraised by someone independent who has not been involved in the development of the programme/project.**

The SSC guidelines does not include an independent appraisal. However, there was a review of the overall Strategic Sector Cooperation Facility Initiative in 2017 and an evaluation is on-going (2019-2020). Two persons in the Secretariat assess the draft project documents. Subsequently, the project leader in the Danish authority makes the necessary adjustments.

- The recommendations of the appraisal has been reflected upon in the final design of the programme/project.**

¹ This Quality Assurance Checklist should be used by the responsible MFA unit to document the quality assurance process of appropriations where TQS is not involved. The checklist does not replace an appraisal, but aims to help the responsible MFA unit ensure that key questions regarding the quality of the programme/project are asked and that the answers to these questions are properly documented and communicated to the approving authority.

N/a (see above).

The programme/project complies with Danida policies and Aid Management Guidelines.

The SSC project complies with the SSC guidelines and Danida policies. The SSC guidelines draw on the overall principles and concepts of the Aid Management Guidelines.

The programme/project addresses relevant challenges and provides adequate responses.

Yes.

Issues related to HRBA/Gender, Green Growth and Environment have been addressed sufficiently.

The SSC guidelines doesn't include issues related to HRBA and gender directly. Green Growth and environment issues are often covered by the SSC projects.

Comments from the Danida Programme Committee have been addressed (if applicable).

N/a.

The programme/project outcome(s) are found to be sustainable and is in line with the partner's development policies and strategies. Implementation modalities are well described and justified.

The focus areas are defined and the project document is elaborated in collaboration between the Danish authority and its key partner, and finally agreed at management level before submitting to the SSC Secretariat. Basic project outcomes are described in the project document.

The results framework, indicators and monitoring framework of the programme/project provide an adequate basis for monitoring results and outcome.

Considering the nature of the partnership between Danish and local authorities the results framework in the project document is considered adequate.

The programme/project is found sound budget-wise.

Yes. The SSC project budget follows the SSC guidelines and budget templates complying with the budget guidelines issued by the Ministry of Finance (budgetvejledningen) and the

principles for the calculation of overhead for state agencies (vejledning om prisfastsættelse) from the Agency for Modernisation.

□ The programme/project is found realistic in its time-schedule.

Flexibility in the design and implementation modalities are important features of the SSC projects, and is one of the prerequisites of the SSC approach for relevance and results. Hence, changes in the actual implementation is frequent.

□ Other donors involved in the same programme/project have been consulted, and possible harmonised common procedures for funding and monitoring have been explored.

As part of the inception phase and phase I other donors are often consulted.

□ Key programme/project stakeholders have been identified, the choice of partner has been justified and criteria for selection have been documented.

The Strategic Sector Cooperation Facility has many similarities with a traditional twinning scheme, which explains the partner choice.

The Danish partner was identified through a strategic match making process in 2016-17 where local demands were matched with Danish competencies in public authorities. The local partner was identified during the inception phase of the Strategic Sector Collaboration project in 2018. Typically, the Danish authority works with its “sister organisation”. This is also the case in Ethiopia.

□ The executing partner(s) is/are found to have the capacity to properly manage, implement and report on the funds for the programme/project and lines of management responsibility are clear.

The SSC projects are implemented directly by the Danish partner.

□ Risks involved have been considered and risk management integrated in the programme/project document.

A basic risk assessment is included in the project document.

□ In conclusion, the programme/project can be recommended for approval: yes

Date and signature of desk officer: [February 2020] Tilde Hellsten

Date and signature of management: [February 2020] Ole Thonke