

# NS-168 - Ethiopia Railways - Establishment of Climate Vulnerability Infrastructure Investment Framework NAMA

## Ethiopia

### NAMA Seeking Support for Implementation

#### A Overview

A.1 Party

Ethiopia

A.2 Title of Mitigation Action

Ethiopia Railways - Establishment of Climate Vulnerability Infrastructure Investment Framework NAMA

A.3 Description of mitigation action

A main pillar of Ethiopia's Climate Resilient Green Growth (CRGE) strategy is to avoid emissions in the transport sector through a shift of freight and passenger transport from road to rail. The Ethiopian Railways Corporation (ERC) was set up in 2007 with the mandate to construct railway infrastructure and provide passenger and freight rail transport services in Ethiopia. The envisaged infrastructure consists of two railway project components, namely the Addis Ababa Light Rail Transit (LRT) and the Nationwide Railway Network Development Programme.

Infrastructure projects in Ethiopia and everywhere else in the world can be vulnerable to the changing weather patterns attributed to global climate change. Possible impacts include:

- Deterioration and permanent damage to roads and railway lines by floods;
- Damage to drainage (culvert and bridge) infrastructure by floods;
- Rail surface melting because of high temperature;
- Erosion and landslides.

The Ethiopian Railway Corporation (ERC) therefore seeks assistance to enhance its understanding of likely impacts of climate change on its envisioned infrastructure, which will enable ERC to integrate these impacts in crucial long-term investment decisions. More specifically, the program seeks to:

- Determine the future climate change pattern;
- Identify detailed topographic and hydro-meteorological information along railway networks;

- Map the climate change vulnerability of the rail networks;
- Evaluate a range of impacts of climate change on railway infrastructures over a range of climate scenarios;
- Develop and test a framework for investment decision-- making that can be 'robust' under a wide range of climate outcomes; and
- Formulate actionable recommendations for decision makers on how to enhance the climate resilience of infrastructure development

A.4 Sector

<input type="checkbox"/> Energy supply	<input checked="" type="checkbox"/> Transport and its Infrastructure
<input type="checkbox"/> Residential and Commercial buildings	<input type="checkbox"/> Industry
<input type="checkbox"/> Agriculture	<input type="checkbox"/> Forestry
<input type="checkbox"/> Waste management	

Other

A.5 Technology

<input type="checkbox"/> Bioenergy	<input type="checkbox"/> Cleaner Fuels
<input type="checkbox"/> Energy Efficiency	<input type="checkbox"/> Geothermal energy
<input type="checkbox"/> Hydropower	<input type="checkbox"/> Solar energy
<input type="checkbox"/> Wind energy	<input type="checkbox"/> Ocean energy
<input type="checkbox"/> Carbon Capture and Storage	<input type="checkbox"/> Low till / No till
<input type="checkbox"/> Land fill gas collection	

Other

A.6 Type of action

<input type="checkbox"/> National/ Sectoral goal	<input type="checkbox"/> Project: Investment in machinery
<input type="checkbox"/> Strategy	<input type="checkbox"/> Project: Investment in infrastructure
<input type="checkbox"/> National/Sectoral policy or program	<input checked="" type="checkbox"/> Project: Other

Other

A.7 Greenhouse gases covered by the action

<input checked="" type="checkbox"/> CO2	<input type="checkbox"/> CH4
<input type="checkbox"/> N2O	<input type="checkbox"/> HFCs
<input type="checkbox"/> PFCs	<input type="checkbox"/> SF6

Other

### B National Implementing Entity

B.1.0	Name	Ethiopian Railway Corporation (ERC)
B.1.1	Contact Person 1	Mr. Shewangizaw Kifle
B.1.2	Address	P.O.Box 27558/1000 Addis Ababa, Ethiopia
B.1.3	Phone	00251 911 226 816 or 00251 114 70-21-90
B.1.4	Email	kidusshk@gmail.com
B.1.5	Contact Person 2	
B.1.6	Address	
B.1.7	Phone	
B.1.8	Email	
B.1.9	Contact Person 3	
B.1.10	Address	

- B.1.11 Phone
- B.1.12 Email
- B.1.13 Comments

C Expected timeframe for the implementation of the mitigation action

C.1	Number of years for completion	1
C.2	Expected start year of implementation	2015

D Currency

D.1	Used Currency	<input type="text" value="AED"/>
		Conversion to USD: 1

E Cost

E.1.1	Estimated full cost of implementation	350000
E.1.2	Comments on full cost of implementation	The total costs of implementation will include the engagement of an experienced consulting firm to assess the climate vulnerability of ERC implementation plan as well as to create a tool to include climate vulnerability impacts into investment decisions. Individual and institutional capacity building measures are also included into this NAMA
E.2.1	Estimated incremental cost of implementation	200000
E.2.2	Comments on estimated incremental cost of implementation	

F Support required for the implementation the mitigation action

F.1.1	Amount of Financial support	150000
F.1.2	Type of required Financial support	<input checked="" type="checkbox"/> Grant <input type="checkbox"/> Loan (sovereign) <input type="checkbox"/> Loan (Private) <input type="checkbox"/> Concessional loan <input type="checkbox"/> Other <input type="text"/>
		<input type="checkbox"/> Guarantee <input type="checkbox"/> Equity <input type="checkbox"/> Carbon finance
F.1.3	Comments on Financial support	Ethiopian Railway Corporation (ERC) is seeking the assistance from an experienced consultant to carry out the climate vulnerability mapping. ERC is thereby proposing activities to be carried out as per the attached project brief but is open to any amendment recommended by an experienced consultant.
F.2.1	Amount of Technological support	-
F.2.2	Comments on Technological support	-
F.3.1	Amount of capacity building support	
F.3.2	Type of required capacity building support	<input checked="" type="checkbox"/> Individual level <input checked="" type="checkbox"/> Institutional level <input type="checkbox"/> Systemic level <input type="checkbox"/> Other <input type="text"/>
F.3.3	Comments on Capacity Building support	ERC is furthermore seeking institutional and individual capacity building to assure the integration of expected long--term climate change impacts in its

investment decision. ERC's infrastructure asset department shall therefore be enabled to understand the likely impacts mapped by the consultant while the individuals shall also be enabled to operate an evaluation tool developed by the consultant. Capacity building on an institutional level shall assure that these tools will be incorporated in all future investment decisions, requiring awareness and commitment by the ERC top management and the formulation of relevant processes.

F.4 Financial support for implementation required

F.5 Technological support for implementation required

F.6 Capacity Building support for implementation required

#### G Estimated emission reductions

G.1 Amount

0

G.2 Unit

MtCO<sub>2</sub>e

G.3 Additional information (e.g. if available, information on the methodological approach followed)

The implementation of the infrastructure climate change vulnerability mapping will assure durability of the emission reductions attributed to the implementation of Ethiopia's National Railway Network and the Addis Ababa Light Railway Transit (LRT) project

#### H Other indicators

H.1 Other indicators of implementation

-Number of people trained;

-Number and type of investment decisions that have been affected by the vulnerability assessment.

#### I Other relevant information

I.1 Other relevant information including co-benefits for local sustainable development

The activity will contribute to achieving the co-benefits of the railway implementation in Ethiopia: Shifting transport from road to rail would not only decrease transport costs and improve the trade balance through reduced import of fossil fuels and reduce road maintenance (economic benefits), but would lower congestion, air pollution (NO<sub>x</sub>), noise and vibration pollution, traffic accidents and will increase employment, social equity and tax revenues. Additional macro-economic benefits are the enhanced integration of Ethiopia with its East African neighbours as well as enhanced access to sea ports.

#### J Relevant National Policies strategies, plans and programmes and/or other mitigation action

J.1 Relevant National Policies A main pillar of Ethiopia's Climate Resilient Green Growth (CRGE) strategy is to avoid emissions in the transport sector through shift of freight and passenger transport from road to rail. The Ethiopian Railways Corporation (ERC) was set up in 2007 with the mandate to construct railway infrastructure and provide

passenger and freight rail transport services in Ethiopia. The envisaged infrastructure consists of two railway project components, namely the Addis Ababa Light Rail Transit (LRT) and the Nationwide Railway Network Development Programme. The first phase of the LRT project is planned to be 35 km long, its construction started in 2012 and is planned to be finalised before the end of 2014. The second phase of the LRT will be an extension of the first line of ~ 54.91 km, leading to a total length of 89 km. The Nationwide Railway programme, on its part, consists of eight corridors of varying lengths in diversified strategic routes that will be realised in two phases, covering over 5,000 km in distance.

J.2 Link to other NAMAs

Ethiopia Railway's Addis Ababa Light Rail Transit (LRT) Transit Oriented Development (TOD) NAMA

#### K Attachments

K Attachments  
 K.1 Attachment description  
 K.2 File

**Title Description**

Browse...

#### L Support received

L.1 Outside the Registry  
 L.2 Within the Registry

**Support provided SupportType Amount Comment Date**