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# Streamlining NAMAs to Support INDCs

## Mongolia

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## **Section 1: General description of the process of NAMAs identification, development, and implementation**

*Mongolia has associated with the Copenhagen Accord and submitted the list of NAMAs to the Climate Change Secretariat according to the Appendix II of Copenhagen Accord in Jan. 2010. In its list of NAMAs, Mongolia submitted 22 mitigation options in six sectors towards reducing GHG emissions.*

Sectors	Actions
Energy supply	<ul style="list-style-type: none"> <li>• PV and Solar heating</li> <li>• Wind power generators and Wind farms</li> <li>• Hydropower plants</li> <li>• Coal beneficiation</li> <li>• Coal briquetting</li> <li>• Improve efficiency of existing HOBs and install boilers with new design and high efficiency</li> <li>• Convert hot water boilers into small capacity thermal power plants</li> <li>• Change fuels for household stoves and furnaces</li> <li>• Modernize existing and implement the new design for household stoves and furnaces</li> <li>• Improve efficiency and reduce internal use in CHPs</li> <li>• Use of electricity from grid for individual households for local heating in cities</li> </ul>
Building	<ul style="list-style-type: none"> <li>• Improve district heating system in buildings</li> <li>• Install heat and hot water meters in apartments</li> <li>• Make insulation improvements for existing buildings and implement new energy efficient standards for new buildings</li> <li>• Improve lighting efficiency in buildings</li> </ul>
Industry	<ul style="list-style-type: none"> <li>• Improve housekeeping practices</li> <li>• Implement motor efficiency improvements</li> <li>• Introducing dry-processing in cement industry</li> </ul>
Transport	<ul style="list-style-type: none"> <li>• Use more fuel efficient vehicles</li> </ul>
Agriculture	<ul style="list-style-type: none"> <li>• Limit the increase of the total number of livestock by increasing the productivity of each type of animal, especially cattle</li> </ul>
Forestry	<ul style="list-style-type: none"> <li>• Improve forest management</li> <li>• Reduce emissions from deforestation and forest degradation, improve sustainable management of forests and enhance forest carbon stocks</li> </ul>

Mongolia works toward to implement actions in the list of NAMAs via approaching to international financing mechanisms and to developing projects proposals and design ideas. Government has taking actions on following NAMA related activities into actual projects and actions:

- NAMA registry – 3 NAMAs;
- UN REDD+ The National RED+ Readiness Roadmap is completed by support of UNDP.
- GGGI prepared Strategy for development of Green energy systems in Mongolia project;
- NAMA Facility prepared 2 NAMA registry;
- Technology Needs Assessment

### **Joint Credit Mechanism (JCM) activities:**

- Model projects;
- Project planning activities;
- Feasibility studies;
- Demonstration project;
- Approved methodologies
- **Capacity building cooperation for implementing NAMAs in MRV manner (2012-2014)**

## Section 1: UNFCCC registered NAMAs of Mongolia

Title of Mitigation Action	Objective of the proposed NAMA	Estimated emission reductions, tCO <sub>2</sub> e/yr	Estimated full cost of implementation, Million USD	Amount of Financial support, USD	Type of required Financial support
<b>NS-90</b> <b>National Energy Efficient Lighting Program in Mongolia</b> <b>(NAMA Seeking Support for Implementation)</b>	<b>The outlined project will switch the inefficient lamps to energy efficient lighting to potentially save 100,306MWh in annual electricity consumption, which is equal to around 2.25% of total national electricity generation and 26.4% of electricity consumption for lighting.</b>	<b>110,638.00</b>	<b>7.50</b>	<b>7.00</b>	<b>Grant</b>
<b>NS-91</b> <b>Transforming construction in Mongolia using Supplementary Cementitious Materials</b> <b>(NAMA Seeking Support for Implementation)</b>	<b>The objective of the proposed NAMA is to initiate the transformation of Mongolia's construction sector towards a less carbon intensive development path through the introduction of supplementary cementitious materials (SCM) that can replace up to 70% of cement in concrete. SCM are produced by a mechanical process that consumes 90-95% less energy compared to cement manufacture.</b>	<b>420,000.00</b>	<b>15.00</b>	<b>15.00</b>	<b>Grant, Loan (Private), Equity</b>
<b>NS-242 - Nationally Appropriate Mitigation Actions in the Construction Sector in Mongolia (NAMA Seeking Support for Preparation)</b>	<b>The objective of the project is to facilitate market transformation for energy efficiency in the construction sector through the development and implementation of NAMA in Mongolia. This objective will be achieved by removing barriers to increased adoption of energy efficiency technology in construction sector through three components; i) establishment of baseline energy consumption and GHG emission in the construction sector ii) development and implementation of NAMA in the construction sector iii) measuring, reporting and verification (MRV) system for NAMA.</b>	<b>64,219.0</b>	<b>0.11</b>	<b>0.11</b>	<b>Grant</b>

## **Section 2: Brief description of one specific NAMA**

### **National Energy Efficient Lighting Program in Mongolia**

<b>Sector/ Technology/ Type of action</b>	<b>Energy supply/ Energy Efficiency/ National or Sectoral policy or program</b>
<b>Estimated emission reductions</b>	110,638tCO <sub>2</sub> e per year
<b>National Implementing Entity</b>	Ministry of Environment and Green Development and Tourism
<b>Estimated full cost of implementation</b>	7,500,000 USD
<b>Amount and type of required Financial support</b>	7,000,000 USD Grant

<b>Description of mitigation action</b>	<p>Mongolian government approved the National Action Programme on Climate Change (NAPCC) to meet the UNFCCC obligations and set priorities to mitigate climate change. “Reduces the consumption of electricity for lighting” was identified as one of GHG mitigation actions of NAPCC. In addition, the Copenhagen Accord indicated that “improve lighting efficiency in buildings” is one of nationally appropriate mitigation actions of Mongolia.</p> <p>The outlined project will switch the inefficient lamps to energy efficient lighting to potentially save 100,306MWh in annual electricity consumption, which is equal to around 2.25% of total national electricity generation and 26.4% of electricity consumption for lighting. In addition to the energy savings, the outlined project will reduce 110,638 tCO<sub>2</sub>e emission reductions</p>
<b>Co-benefits for local sustainable development</b>	<ol style="list-style-type: none"> <li>1. Financial benefits: the project will allow energy costs savings for the residential, commercial/industrial and outdoor lighting sectors in Mongolia;</li> <li>2. Energy benefits: the project will result in energy savings in total national electricity consumption and individual electricity consumption for lighting. In addition, energy savings will reduce the imported fossil fuels to strengthen the energy security in Mongolia;</li> <li>3. Environmental benefits: the project will reduce air pollution by reducing lighting electricity consumptions from fossil fuel power generation;</li> <li>4. Societal benefits: the project will raise public awareness on climate change, and contribute to substantial and sustainable improvements to the society in the long-run. The project will also provide job opportunities to the local people and create business opportunities to private enterprises</li> </ol>

## ***Section 2: NAMA related activities, lesson learned and success factors***

### **❖ NAMA related activities**

<b>Sectors</b>	<b>Project name/duration</b>	<b>Objective</b>	<b>Partners /</b>
Construction	Building Energy Efficiency/2009-2013	The goal is the reduction in the annual growth rate of greenhouse gas (GHG) emissions from the buildings sector in Mongolia	UNDP/Ministry of Construction and Urban Development
Transport	Green Public Transport /2012-2013	The project focuses on the viability of converting diesel engine buses to eco-friendly engines in an effort to reduce GHG emissions and to improve air quality	GGGI/MEGD
Forestry-REDD+	Biodiversity and Adaptation of Key Forest Ecosystems to Climate Change/2012-2022	To conserve biodiversity by protecting important ecological areas and managing these in a sustainable manner which is adapted to meet the needs of climate change, while ensuring an improvement in living conditions for rural populations	GIZ & UNDP/MEGD
Livestock and grassland	Strengthening Carbon Financing for Regional Grassland Management in NE Asia/2011-2013	NAMA aims to limit the increase of the total number of livestock by increasing the productivity of each type of animal, especially cattle	ADB/Ministry of Industry & Agriculture
Energy	Strategies for Development of Green Energy Systems	Assist in providing tools, training and ideas to help Mongolia to grow its economy with substantially less growth in GHG and other pollutant emissions	GGGI/Stockholm Environment Institute /MEGD
	Joint study in Mongolia energy supply-improve CHP Plant	Identify BAU and NAMA scenario in the Energy Supply Sector	OECC/Ministry of Environment & Green Development

## Section 2: NAMA related activities, lesson learned and success factors

### ❖ Law on renewable energy

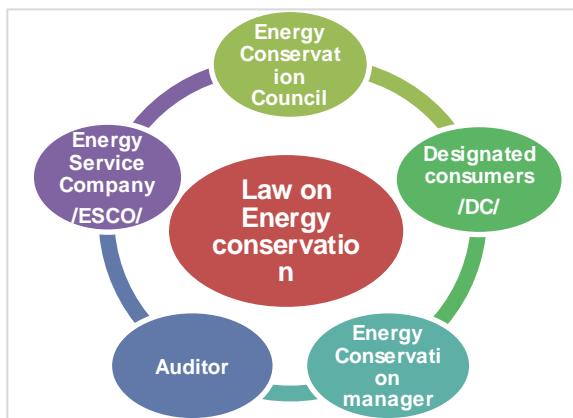
- **Feed-in tariffs, USD/kWh:**

Type of renewable energy generation	Connected to transmission grid	Independent power generation		
		Up to 500 kW	5001-2000 kW	2001-5000 kW
Hydropower station (up to 5000 kW)	0.045-0.06	0.08-0.10	0.05-0.06	0.045-0.050
Wind power source	0.08-0.095	0.10-0.15		
Solar power source	0.15-0.18	0.20-0.30		

Feed-in tariffs (FIT) for renewable power sources promotes, incentives and supports the production of energy from renewable sources. **As result 15 private project developers has received Licenses for implementation of renewable energy (wind, solar, hydro) projects with total capacity 675 MW for last 3 years**

- **Supporting tariff or green tariff:** which is designated to compensate the tariff difference between conventional and renewable energy resources.

### ❖ law on Energy conservation (November 26, 2015)



- The Government **determines annual energy consumption thresholds** that define designated consumers.
- First auditing within 12 months and then **once every 3 years** on designated consumers.
- DC has to have **ESCO's professional services** by a contract in order to implement activities on auditing recommendation.

### ❖ Japanese Mongolian Joint Credit Mechanism

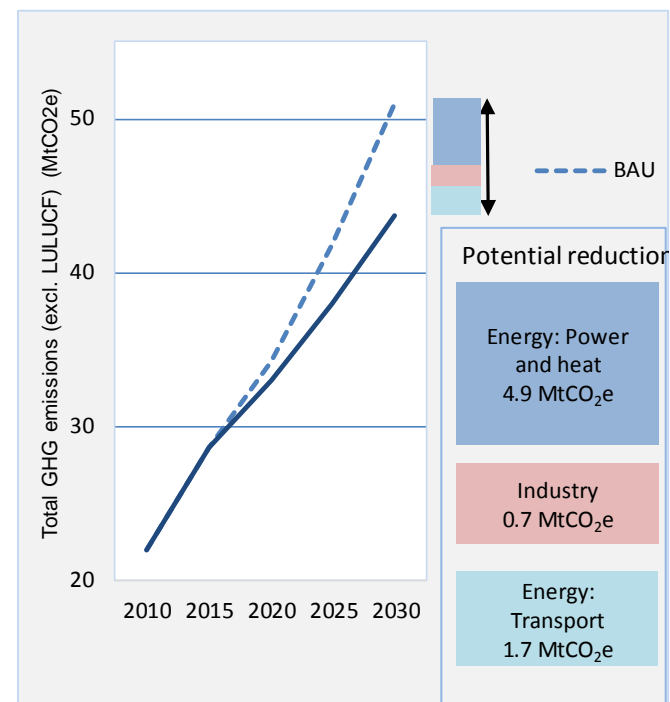
Under the partnership, capacity building projects has been taken in NAMA. Those capacity building projects are considering to develop detailed NAMAs implementation plan, identify methods to quantify emission reductions to be achieved, look into possibilities of establishing domestic MRV system, to identify BAU and NAMA scenario in the energy supply sector, to calculate grid emission factors, training for validation & verification bodies of Mongolia.

## Section 3: INDC of country in brief

### Proposed policies and measures for Mongolia's INDC

Sector	Measure	Policy/strategy document
Energy (power and heat)	Increase renewable electricity capacity from 7.62% in 2014 to 20% by 2020 and to 30% by 2030 as a share of total electricity generation capacity.	State policy on energy (Parliament resolution No. 63, 2015), Green development policy, 2014
	Reduce electricity transmission losses from 13.7% in 2014 to 10.8% by 2020 and to 7.8% by 2030.	
	Reduce building heat loss by 20% by 2020 and by 40% by 2030, compared to 2014 levels.	
	Reduce internal energy use of Combined Heat and Power plants (improved plant efficiency) from 14.4% in 2014 to 11.2% by 2020 and 9.14% by 2030.	
	Implement advanced technology in energy production such as super critical pressure coal combustion technology by 2030.	
Energy (Transport)	Improve national paved road network. Upgrading/Paving 8000 km by 2016, 11000 km by 2021.	(NAPCC), 2011; Urban public transport investment programme, 2015; (NAMAs), 2010; Mid-term new development programme, 2010
	Improve Ulaanbaatar city road network to decrease all traffic by 30-40% by 2023.	
	Increase the share of private hybrid road vehicles from approximately 6.5% in 2014 to approximately 13% by 2030.	
	Shift from liquid fuel to LPG for vehicles in Ulaanbaatar and <i>aimag</i> (province) centres by improving taxation and environmental fee system.	
	Improve enforcement mechanism of standards for road vehicles and non-road based transport.	
Industrial sector	Reduce emissions in the cement industry through upgrading the processing technology from wet- to dry- processing and through the construction of a new cement plant with dry processing up to 2030.	NAMAs, 2010; NAPCC, 2012: Building materials programme
Agriculture	Maintain livestock population at appropriate levels according to the pasture carrying capacity.	Mongolian national livestock programme, 2010

The cumulative impact of the measures listed in Table, are estimated to result in approximately an annual reduction of **7.3 Mt CO<sub>2</sub>-eq.** of economy-wide emissions in 2030, corresponding to a **14% reduction** compared to a business-as-usual scenario, excluding LULUCF. Emission reduction in agriculture sector is not also included.



## Section 4: NAMA supporting INDC

### Specific measures or projects for Mongolia's INDC for implementation up to 2030

<i>State policy</i>	<i>NAMA list</i>	<i>INDC</i>	
		<i>Implementation measures</i>	<i>Investment, million USD</i>
Increase the share of renewable electricity capacity to 30% of total electricity generation capacity by 2030, from 7.62% in 2014.	Hydropower plants	Installation of 675 MW capacity large hydro power facilities.	1,350.0
	Wind power generators and Wind farms	Installation of 354 MW wind power facilities.	584.0
	PV and Solar heating	Installation of 145 MW solar PV power facilities.	573.0
Reduce building heat loss by 40% by 2030, compared to 2010 levels.	Make insulation improvements for existing buildings and implement new energy efficient standards for new buildings	Improved insulation for existing panel apartment buildings of 18,184 households in Ulaanbaatar.	90.0
Improved efficiency of coal fired heating plants and thermal power plants.	Improve efficiency and reduce internal use in CHPs	Improved efficiency of coal fired plants.	900.0



## ***Section 5: Where can you find more about our NAMA?***

### **Links to website, reports, articles where can you find more about our NAMA**

- Copenhagen Accord APPENDIX II Mongolia: Nationally appropriate mitigation actions of developing country Parties  
[http://unfccc.int/files/meetings/cop\\_15/copenhagen\\_accord/application/pdf/mongoliacphaccord\\_app2.pdf](http://unfccc.int/files/meetings/cop_15/copenhagen_accord/application/pdf/mongoliacphaccord_app2.pdf)
- Intended Nationally Determined Contribution (INDC) Submission by Mongolia to the Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP)  
[http://www4.unfccc.int/submissions/INDC/Published%20Documents/Mongolia/1/150924\\_INDCs%20of%20Mongolia.pdf](http://www4.unfccc.int/submissions/INDC/Published%20Documents/Mongolia/1/150924_INDCs%20of%20Mongolia.pdf)
- National action program on climate change of Mongolia  
[www.legalinfo.mn/annex/details/3357?lawid=6709](http://www.legalinfo.mn/annex/details/3357?lawid=6709)
- Law of Mongolia on Renewable energy <http://energy.gov.mn/web/index.php/en/law-of-mongolia.html>
- NS-90 - National Energy Efficient Lighting Program in Mongolia  
<http://www4.unfccc.int/sites/nama/layouts/unfccc/nama/NamaSeekingSupportForImplementation.aspx?ID=54&viewOnly=1>
- NS-91 - Transforming construction in Mongolia using Supplementary Cementitious Materials  
<http://www4.unfccc.int/sites/nama/layouts/unfccc/nama/NamaSeekingSupportForImplementation.aspx?ID=80&viewOnly=1>
- NS-242 - Nationally Appropriate Mitigation Actions in the Construction Sector in Mongolia  
<http://www4.unfccc.int/sites/nama/layouts/unfccc/nama/NamaSeekingSupportForPreparation.aspx?ID=164&viewOnly=1>
- Mongolia Second National communication under the UNFCCC  
<http://unfccc.int/resource/docs/natc/mongnc2.pdf>
- Mongolia's national strategy on green development  
<http://www.undp.org/content/dam/mongolia/DevelopmentDialogues/DD2013/DD4/dialogue4eng.pdf>

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