

## Contents

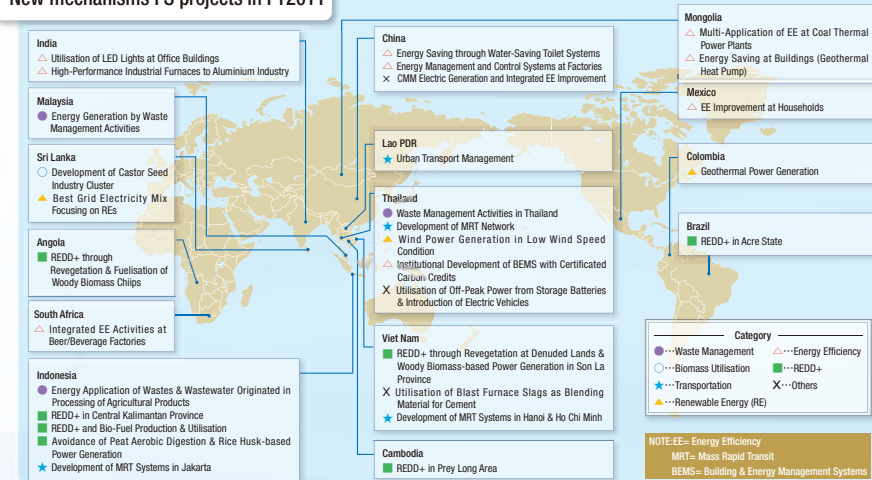
1. Feasibility studies (FS) on new mechanisms and model verification projects of measurement, reporting and verification (MRV) in the fiscal year (FY) of 2012  
— FS revision proposal by the Global Environment Centre Foundation (GEC) and Bilateral Offset Credit Mechanism (BOCM) methodology formats proposed by the Ministry of the Environment, Japan (MOEJ)—
2. Promoting the Bilateral Offset Credit Mechanism (BOCM) in Mongolia
3. Private Sector Initiatives in Mongolia (BOCM FS Cases)
4. News: A new page featuring Mongolia as a host country on the New Mechanisms Information Platform website

## 1 FS on new mechanisms and model verification projects of measurement, reporting and verification (MRV) in FY2012

### FS on new mechanisms in FY2011

MOEJ selected 29 new mechanisms FS projects in FY2011 and implemented them with a view to promoting activities that aim to reduce GHG emissions in host countries. MOEJ plans to invite applications for model verification projects of FS/MRV for FY2012. Building upon the knowledge obtained through these projects, the Government of Japan is in the process of preparing for launching the BOCM, by establishing an overall framework that encompasses procedures, rules and methodologies as well as having talks with other countries.

New mechanisms FS projects in FY2011



## Proposed improvement of new mechanisms FS (Summary of GEC proposal)

### Limitations of FY2011 FS

The FS conducted during FY2011 typically produced results on theoretical grounds – figures and estimates obtained under hypothetical conditions. It is therefore needed for implementation and promotion of the BOCM to accurately measure GHG emission reductions in host countries.

### Proposed “Upgraded FS”

To address the limitations of the FY2011 FS, GEC, the secretariat of the FS programme, proposed what it provisionally calls “Upgraded FS”.

The key components of the proposal are as follows:

#### ① Measurement and quantification of GHG emission reductions, and verification of the figures thus obtained

GHG emission reductions are measured and quantified while the project in question is in operation in order to accurately grasp the actual GHG emissions reduction effects. Then the figures thus obtained are verified.

#### ② Monitoring and verification by the host country

The host country's implementing entity is encouraged to monitor GHG emission reductions by itself while the results are verified by a local verification body.

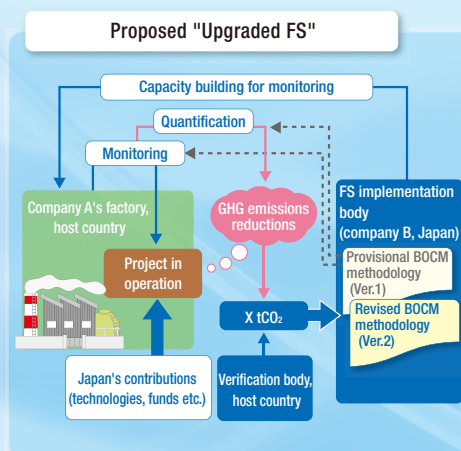
#### ③ Additional budget for FS expenses

Additional FS expenditures should be factored into the budget to make the local monitoring and verification possible.

#### ④ Submission of BOCM methodology

All applications for Upgraded FS should be accompanied by a BOCM methodology, which would provide guidelines for monitoring.

Additionally, GEC also proposes that (a) preliminary research be conducted to set default values that reflect local circumstances; (b) simple methodologies applicable to BOCM projects be developed; and (c) GHG emission reductions be measured, reported and verified based on such methodologies.



Source: “Proposed improvement of new mechanisms/CDM FS” published by GEC

URL: <http://gec.jp/gec/jp/Activities/gwsympo/2012/sympo2012-02-GEC.pdf>

—BOCM Methodology Formats Proposed by MOEJ—

The BOCM methodology formats should be designed in such a way that project proponents can use them easily, the data can be verified easily, the calculation logic is transparent, and monitoring burden is reduced. Before developing operational BOCM methodologies, “MOEJ Initiatives on Bilateral Offset Credit Mechanism for Mitigating Climate Change”, announced in March 2012 by MOEJ, proposed the following BOCM methodology formats.

## BOCM Methodology Formats ①

## Applicability

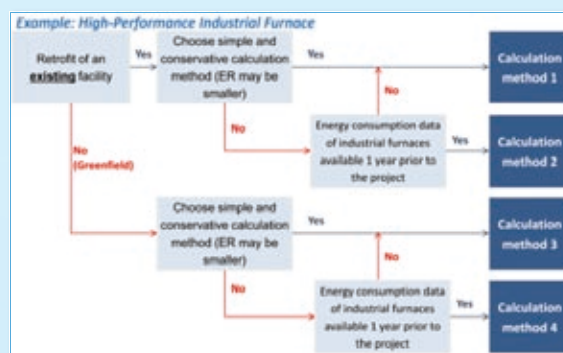
- Simple check list is provided for project proponents to determine the applicability of the methodology
- All conditions have to be met in order to apply a methodology

Example: High-Performance Industrial Furnace		
	Applicability	Check
Condition 1	• High-performance industrial furnaces implemented in the planned project are equipped with regenerative burners.	<input checked="" type="checkbox"/>
Condition 2	• High-performance industrial furnaces are implemented in the aluminum sector of the host country.	<input checked="" type="checkbox"/>
Condition 3	• The same heat source is used by the waste heat generating facility and the recipient facility of waste heat.	<input checked="" type="checkbox"/>
Condition 4	• Unused waste heat has to exist with in the project boundary prior to the planned project implementation.	<input checked="" type="checkbox"/>
Condition 5	• Fossil fuels and electricity consumption by the high-performance industrial furnaces have to be measurable after the project implementation.	<input checked="" type="checkbox"/>

## BOCM Methodology Formats ②

## Method

- Flow chart will guide project proponents to the most appropriate calculation method for the proposed project



## BOCM Methodology Formats ③

## Data Input

- Project proponents are requested to input data in the data sheet only.
- Spread sheets are prepared for different methods.

**Example: High-Performance Industrial Furnace**

The spreadsheet is organized into several sections:

- Greenfield & Project Specific Data:** This section at the top contains input data for a new project, including project name, location, and specific parameters.
- Greenfield & Default Data:** This section contains default values for the project, such as fuel type and efficiency.
- Replacement & Project Specific Data:** This section contains input data for a replacement project, including project name, location, and specific parameters.
- Replacement & Default Data:** This section contains default values for the replacement project, such as fuel type and efficiency.

**1. Input monitored data after implementation of the project**

This section contains a table for inputting monitored data after the project is implemented. The table has columns for 'Data description', 'Value', and 'Units'.

Data description	Value	Units
Project product output during the period of year 1	20000	ton
Project fuel consumption by High-Performance Industrial Furnace	300	ton
Project electricity consumption by High-Performance Industrial Furnace	500	MWh

**2. CO2 emission reductions**

This section contains a table for inputting CO2 emission reductions. The table has columns for 'CO2 emission reductions' and 'Value'.

CO2 emission reductions	Value
	12.85-10000

**Annotations:**

- Cells for data input:** Points to the input cells for the 'Value' column in the '1. Input monitored data' table.
- Pull-down menu allows a user to select types of fuel used in the project:** Points to the 'Fuel type' dropdown menu in the 'Replacement & Project Specific Data' section.

## BOCM Methodology Formats ④

### Calculation of Emission Reductions/Removals

- Spread sheets for calculation logic are provided in separate sheets and data input in the “data input sheet” automatically calculate emission reductions/removals.
- Default values should be widely used, in conservative manner, in order to reduce monitoring burden.

**Example: High-Performance Industrial Furnace**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	A. Evaluation of CO2 emissions index factor																									
2	CO2 emissions reductions		Energy type	Value	Units	Symbol																				
3																										
4	Default values of the collected energy																									
5	Net calorific value of fossil fuel																									
6	CO2 emissions factor of fossil fuel																									
7	CO2 emissions factor of electricity																									
8																										
9	B. Evaluation of reference emissions																									
10	Reference CO2 emissions																									
11	CO2 emissions per product unit in the reference scenario																									
12	Standardized output during the project stage																									
13																										
14	C. Evaluation of project emissions																									
15	Project CO2 emissions																									
16	Project heat consumption in high-Performance Industrial Furnace																									
17	Net calorific value of fossil fuel																									
18	CO2 emissions factor of fossil fuel																									
19	Project energy consumption in high-Performance Industrial Furnace																									
20	CO2 emissions factor of electricity																									
21																										
22	Default values																									
23	Net calorific value of fossil fuel																									
24	CO2 emissions factor of fossil fuel																									
25	CO2 emissions factor of electricity																									
26																										

Images of BOCM Methodology Formats (Source: "MOEJ Initiatives on Bilateral Offset Credit Mechanism for Mitigating Climate Change" published by MOEJ)  
URL : <http://www.mmechanisms.org/initiatives/index.html>

## Other Suggestions for Improvement

Further suggestions by GEC are:

- FS proposal/implementation by a joint venture (JV) should be approved in order to address wide-ranging research issues
- The selection priority for the FS should be given to the projects which its implementation is already approved, such as capital investment is already made.

In addition the governmental assistance not only on FS, but also further financial issues are expected by private entities due to the recent trend of yen appreciation and a drop of credit prices in carbon trading markets.

## Future Prospects

On top of the suggestions above, continuous improvements of the BOCM methodology formats are expected to enhance the FS outcomes. Furthermore, it is expected to accelerate international negotiations and early implements of the BOCM projects, by implementing FS and offering information on the BOCM framework and project cases to project proponents in order to encourage their understandings.



## 2 Promoting the Bilateral Offset Credit Mechanism (BOCM) in Mongolia

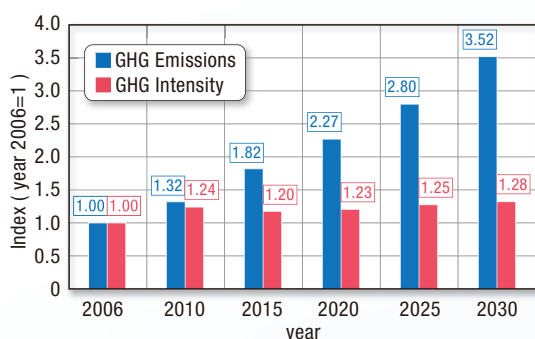
MOEJ and Overseas Environmental Cooperation Center, Japan (OECC) co-organized the New Mechanisms Seminar, “Promoting the New Mechanisms for Climate Change Mitigation in Mongolia” on 23 January 2012. Mongolian Government officials were invited to give lectures on its national policy on climate change and mitigation potentials in Mongolia.

A memorandum of environmental cooperation was signed by the Minister for Nature, Environment and Tourism of Mongolia and the Minister of the Environment, Japan during the COP17 in Durban, South Africa in December 2011. The memorandum is expected to boost efforts of both parties for climate change mitigation including the BOCM.

At the seminar, MOEJ reported on the outcomes of the negotiation at COP17 on a vast array of issues including the BOCM; and a number of questions were raised by participants regarding potentials of mitigation actions in Mongolia, reflecting their great deal of interest in this issue.



Projection of major GHG index (base 2006=1)



### BOCM Potentials in Mongolia

As Mongolia has a vast territory with low population density, one might suppose that its GHG emissions reduction potential is fairly limited. However, the country's annual GHG emissions per capita are almost twice as large as the world average due to its cold climate. This figure is estimated to be 2.3 times and 3.5 times larger in 2020 and 2030 respectively relative to the 2006 level. (See diagram below left)

Mongolia has been implementing a few CDM projects in the energy sector. But the requirements of the CDM are not necessarily compatible with the country's unique climatic conditions, legal system, and technologies, which has constituted a sort of obstacle to further promoting the CDM in Mongolia.

On the other hand, the BOCM is more flexible and can be customized according to any given country's national circumstance. The BOCM is therefore expected to promote in an effective manner a wide range of projects for GHG emission reductions that may not be achieved through the CDM. In more concrete terms, the BOCM in Mongolia is expected to contribute to the following: (1) Energy sector: utilization of renewable energy resources of Mongolia such as installation of large-scale photovoltaic power generation system in Gobi Desert for the effective use of the abundant sunshine; (2) Agriculture sector: limiting the number of livestock by enhancing the productivity; and (3) Transport sector: comprehensive improvement of the traffic situation in the capital city, Ulaanbaatar, which may include efficient traffic management, expansion of the public transport systems such as introduction of BRT (Bus rapid transit) and metro systems, fuel switch measures, and establishment of logistics centers and networks.

### Executive summary of presentations, “National Policy on Climate Change in Mongolia” and “Potential for GHG Mitigation in Mongolia: Possible Projects & Programs”



**Dr. Damdin Dagvadorj**  
Special Envoy on Climate Change,  
Ministry of Nature,  
Environment and Tourism,  
Mongolia (MNET)

#### The climate and measures to address climate change in Mongolia

Climate change has notably been affecting Mongolia. Its annual average air temperature increased by 2.14 degrees during the period from 1940 to 2008, which led to an overall precipitation decrease, higher average temperatures in summer, and an increased frequency of drought. And all these phenomena are now becoming acute concerns for the country.

In order to address these issues, the Government of Mongolia has been carrying out various measures such as the implementation of the UNFCCC. In addition, Mongolia submitted its Nationally Appropriate Mitigation Actions (NAMAs) to the UNFCCC secretariat pursuant to the Copenhagen Accord. Moreover, in 2011, the Government revised its National Action Program on Climate Change (NAPCC) established originally in 2000, thereby launching five strategies, including enhancement of the national climate monitoring mechanism, introduction of low-carbon technologies, and raising of public awareness.



**Ms. Tsendsuren Batsuuri**  
Head of CDM National Bureau,  
Climate Change  
Coordination Office, MNET

#### Expectations for the BOCM and Japan's contribution

Mongolia has been implementing three CDM projects, all of which were approved by its Designated National Authority (DNA) and registered at UNFCCC. Furthermore, the Government has also been promoting NAMAs to reduce GHG emissions.

As mentioned above, under the unique natural circumstance, the BOCM is considered particularly promising in that it allows for a bilateral framework for GHG emissions reduction projects tailored to the country's needs. The Ministry of Nature, Environment and Tourism, Mongolia (MNET) has been assessing technological needs to identify particular technologies that are useful for the country. Given the country's current development needs, climate situation and natural resource endowment, low carbon technologies that focus on heat generation and coal utilization are found to be crucial. For instance, the use of coal – one of Mongolia's key natural resources – needs to be comprehensively optimized in terms of GHG emissions, as coal is used across the country for diverse places and purposes, such as power generation, industries and residential and public facilities. As such, it is vital for Mongolia to introduce Japan's new low-carbon technologies that are compatible with national circumstances and needs in carrying out the measures for GHG emission reductions.

### ■ Contribution to Mongolia through advanced technologies in energy efficiency

Two Feasibility Studies (FS) of potential BOCM projects in Mongolia: Building energy saving and Energy efficiency coal-fired power plant were selected by MOEJ and implemented in FY2011. At a New Mechanisms seminar, "Promoting New Mechanisms for Climate Change Mitigation in Mongolia", Shimizu Corporation and Suuri-Keikaku Co. Ltd. gave presentations on their respective FS and future prospects of GHG emission reductions in Mongolia.

#### New Mechanism FS for Energy Saving at Buildings by Utilising Geothermal Heat Pump and Other Technologies in Mongolia [Shimizu Corporation]



**Mr. Hiroyuki Kurita**  
General Manager,  
GHG Project Department  
Shimizu Corporation

#### ■ Project Summary

The purpose of the study is to assess the feasibility of utilizing geothermal heat pump and solar power generation system on public buildings in provincial cities, in order to achieve energy saving. The heat only boilers (HOBs) fueled by coal with low (40-45%) thermal efficiency is currently installed; however its system updates are not making any progress.

#### ■ Future Prospects

The project aims to replace lowly efficient boilers into high efficient geothermal heat pumps. In addition, we are planning to make use of solar power generation in order to cover part of electricity needs for running geothermal heat pumps, whereby reducing further the overall GHG emissions. These technologies will reduce future coal usage, and contribute to GHG emission reductions as well as air pollutants such as PM, SOx.

#### New Mechanism FS for Multiple Application of Energy Efficiency Improvement Measures at Coal Thermal Power Plants in Mongolia [Suuri-Keikaku Co. Ltd.]



**Mr. Fumihiko Kuwahara**  
Engineer of Environment  
Division,  
Suuri-Keikaku Co. Ltd.

#### ■ Project Summary

The purpose of the study is to assess the feasibility of applying low carbon technology in order to improve energy efficiency of coal thermal power plants (CHP). The key findings from the CHP site visits were: introduction of more appropriate energy efficiency technologies was required; and the contaminants discharged from CHP needs to be effectively treated as it is causing air pollution in Ulaanbaatar.

#### ■ Future Prospects

The study determined the reference scenario based on the current condition of the CHP. The scenario examined the potential GHG emission reductions through applying energy efficiency technologies: high-efficiency turbine and improved combustion system, and introducing revised facility management skills. It is expected that these technologies will reduce GHG emissions and air pollutants, and lead to achieve co-benefit of improving air quality and combating climate change.

### 〈 New Mechanisms Information Platform Update : Host Country Information, Mongolia 〉

#### ◆ Visit our new webpage – Host Country Information: Mongolia –

Detailed information on Mongolia is now available on the New Mechanisms Information Platform website. The contents include; the summary of NAMA based on the Copenhagen Accord (in Japanese only), country's energy projects, the related organizations, policies and law.

#### ■ New Mechanisms Information Platform Host Country Information: Mongolia

<http://www.mmechanisms.org/country/MNG.html>

#### Key Contents of the Webpage

- GHG Emissions and its Projections
- The Mongolian Government Structure and its Responsibilities
- Policies and Measures to reduce GHG Emissions by Sector: Energy, Agriculture, Transportation, etc
- REDD+ Information including the Summary of Forestry Resources
- Further References and Links to the Original Documents/ Information



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