



MINISTRY OF ENVIRONMENT  
AND TOURISM

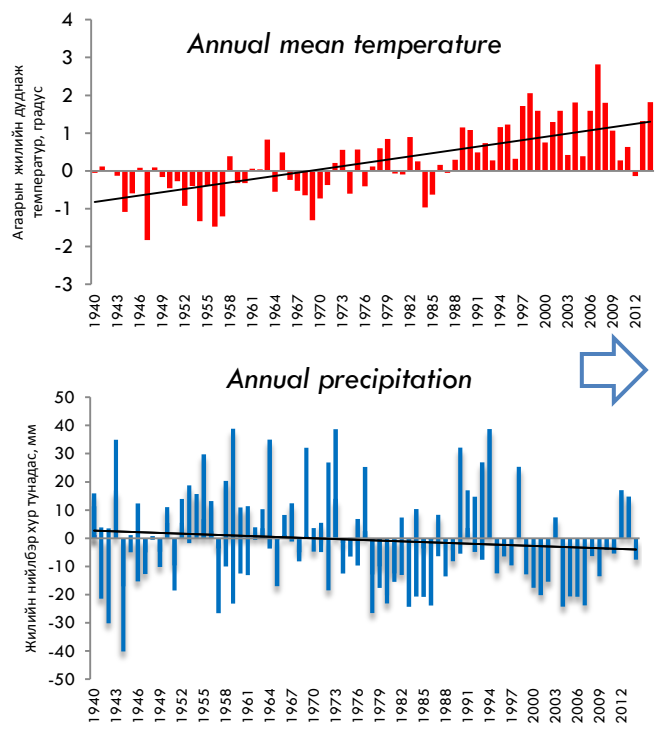
# CLIMATE CHANGE POLICIES IN MONGOLIA AND IT'S POTENTIAL FOR JCM

Workshop on the Joint Crediting Mechanism  
JCM for Climate Change Mitigation and  
Sustainable Development, 14<sup>th</sup> Dec,  
Ulaanbaatar, Mongolia

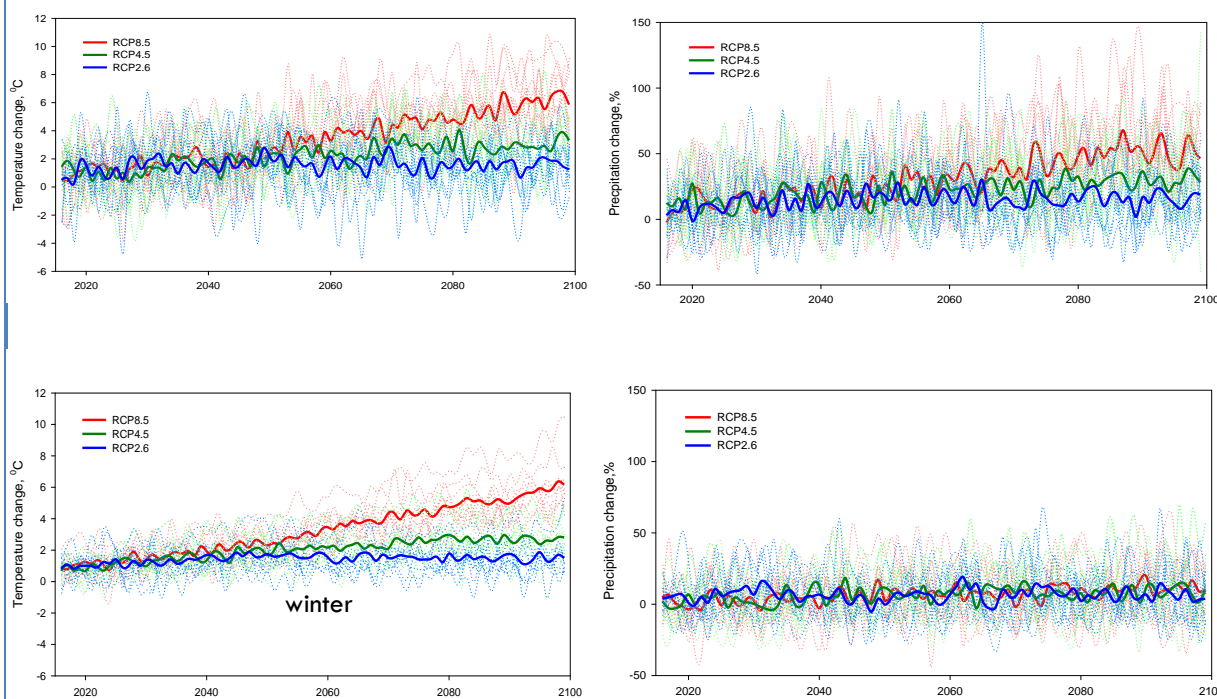
GERELT-OD Tsogtbaatar,  
Climate Change and International Cooperation Division, MET

# Climate Change in Mongolia

## Present change and trends



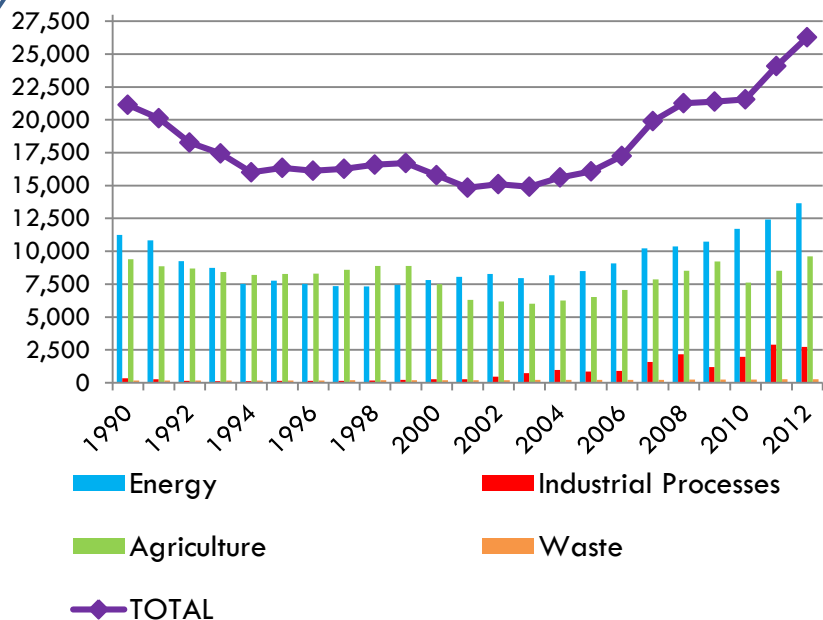
## Future projection



- According to the records at 48 meteorological stations which are distributed evenly over the territory of Mongolia, the annual mean temperature of Mongolia increased by  $2.07^{\circ}\text{C}$  during the last 70 years.
- Temperature in all four seasons continue to increase. Precipitation will increase in winter and keep in summer

(Source: MARCC 14).

## GHG EMISSIONS IN MONGOLIA

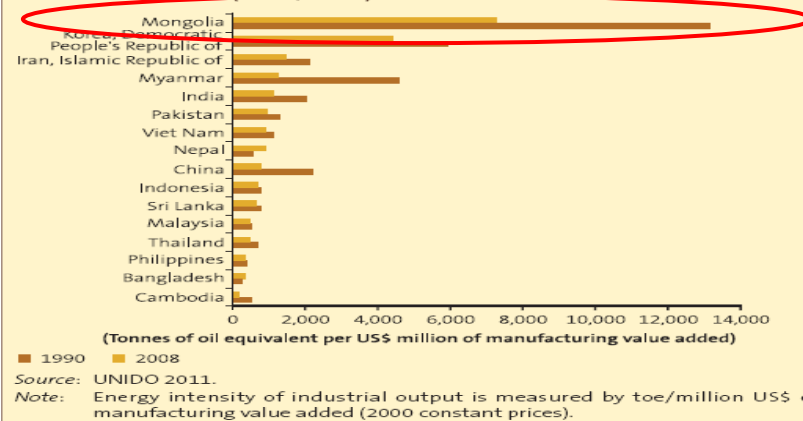


The total GHG emissions in Mongolia excluding the Land Use Change and Forestry sector and including Energy, Industrial Processes, Agriculture and Waste sectors in Gigagram Carbon dioxide equivalent unit for from 1990 to 2012 are presented in this figure. In 1990, the net GHG emissions were 21,146 Gigagram Carbon dioxide equivalent and reduced to 14,827 Gg CO<sub>2</sub>-eq in 2001. The reduction mostly due to a socio-economic slowdown during the transition period from centrally planned to a market economy.

Source: MARCC, 2014

FIGURE 2.4 ASIA-PACIFIC COUNTRIES DIFFER WIDELY IN INDUSTRIAL ENERGY INTENSITY

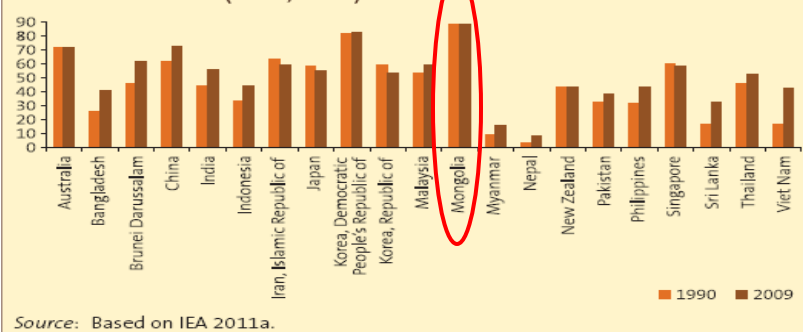
Energy Intensity of Industrial Output, Tonnes of Oil Equivalent, for Selected Countries (1990, 2008)



**Energy intensity** of industrial production in Mongolia is several times higher than other countries in the region.

FIGURE 2.9 DEVELOPING COUNTRIES ARE BECOMING MORE CARBON-INTENSIVE

Carbon Intensity of Energy, Tonnes of CO<sub>2</sub> per Terajoule of TPES, for Selected Countries (1990, 2009)



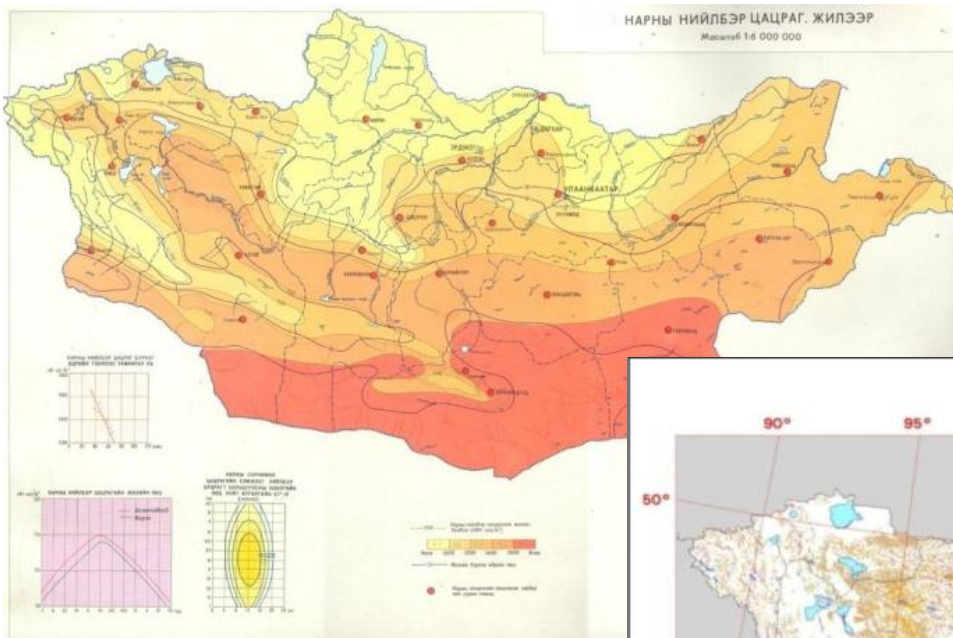
**Carbon intensity** of Mongolian energy sector is highest among regional countries due to extensive use of coal for electricity and heat production.

Source: Asia Pacific HDR, 2012

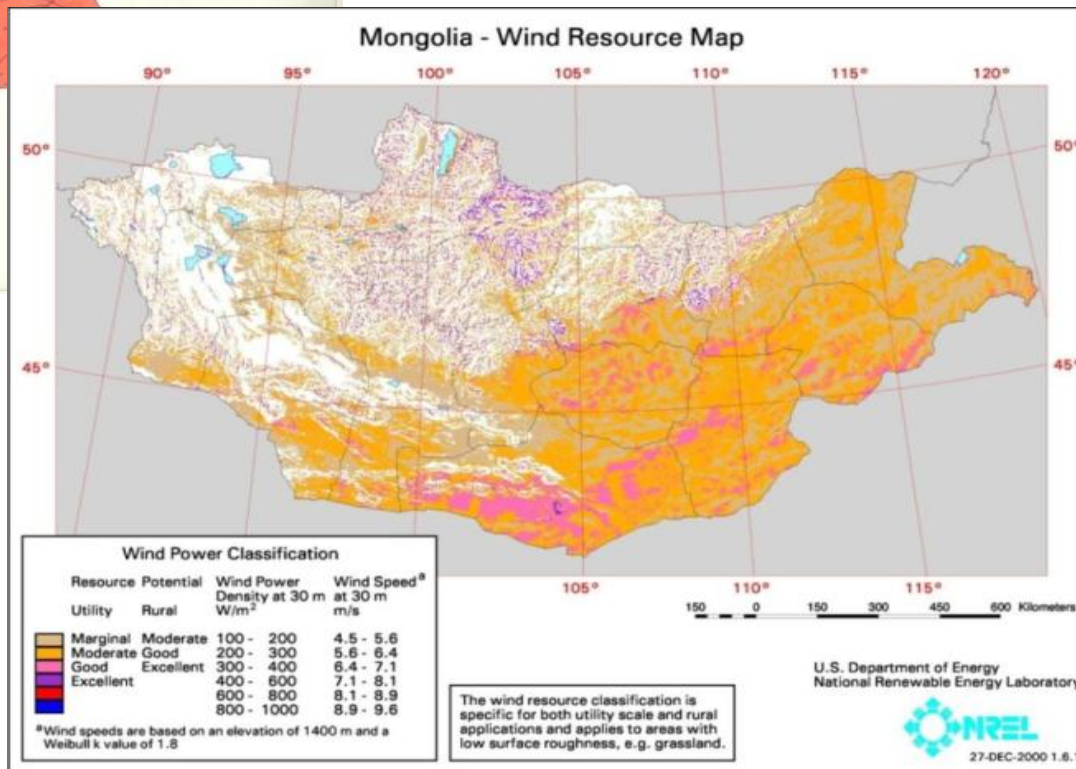
## INCREASE UTILIZATION OF RENEWABLE ENERGY

Mongolia has extensive renewable energy resources (solar, wind ...) yet to be utilized.

An annual average amount of solar energy is 1,400 kWh/m<sup>2</sup>/y with solar intensity of 4.3-4.7 kWh/m<sup>2</sup> per day.



Source: Ministry of Energy, Mongolia



Mongolia has potential to be a major wind power producer. Mongolia has enormous wind power resources; Good-to-excellent wind resources equivalent to **1,100 GW of wind electric potential.**

Source: U.S Department of Energy

# Legal background



**Group of  
environmental  
laws /more than 30/**

**Law on Environmental Protection**

**Law on Water**

**Law on Forest**

**Law on Special Protected Areas**

**Law on Air**

**Law on Environmental Impact assessment**

**Law on Soil protection and combat desertification**

**Others**

No	Name of program	Time frame	No	Name of program	Time frame
1.	State Policy on Ecology /1997/	1997-	10.	Water national program /2010/	2010-2015 2016-2021
2.	The Mongolia Action Programme for the 21 <sup>st</sup> Century	1998-	11.	National program on combat desertification /2010/	2010-2015 2016-2020
3.	State Policy on Food and Agriculture /2003/	2003-	12.	National action programme on Climate change /2011/	2011-2016 2017-2021
4.	National Renewable Energy Program /2005/	2005-2020	13.	Green development action plan /2014/	2016-2030
5.	Green belt national program /2005/	2005-2035	14.	National program on Waste management /2014/	2014-2020
6.	Master Plan on Development of Science and Technology /2007/	2007-2020	15.	National program on biodiversity /2015/	2015-2030
7.	The Millennium Development Goals-based Comprehensive National Development Strategy of Mongolia /2008/	2008-2015	16.	National program on tourism /2015 /	2016-2020 2021-2025
8.	State Policy on Herders /2009/	2009-	17.	Forest Policy /2015/	2015-2020 2021-2030
9.	New Reconstruction midterm Development Program /2010/	2010-2016	18.	State Policy on Energy /2015/	2015-2030
			19.	Mongolian Sustainable Development Vision /2016/	2016-2030

# Key Policy Documents

## CHRONOLOGY OF SUSTAINABLE DEVELOPMENT AND GREEN DEVELOPMENT



National sustainable development program of the 21<sup>st</sup> century

National comprehensive policy

Green Development Policy

Sustainable development vision of Mongolia-2030

MDGs-9 goals

National Action Programme on Climate Change



1992

1998

2000

2005

2008

2011

2012

2014

2015

2016

# National Action Programme on Climate Change

- ✓ NAPCC was approved by the State Great Khural (Parliament) in 2000 and upgraded in 2011.
- ✓ The main goals of the program are to ensure environmental sustainability, development of socio-economic sectors adapted to climate change, reduction of vulnerabilities and risks, and mitigation of GHG emissions as well as promoting economic effectiveness and efficiency and implementation of 'green growth' policies.
- ✓ The implementation of the NAPCC will help Mongolia to create the capacity to adapt to climate change and establish a foundation for green economic growth and development.
- ✓ NAPCC includes both Adaptation and Mitigation strategies and measures for key socio-economic sectors of the country.

# National Action Programme on Climate Change

## Strategic Objectives



“Set up legal, structural and management systems that support measures against climate change”



“Ensure ecological balances and reduce socio economic vulnerabilities and risks step by step through strengthening of national adaptation capacity to climate change”



“Mitigate GHG emission step by step and set up low carbon economy through introduction of environment friendly technologies and improvement of effectiveness and efficiency”



“Enhance national climate observation network, research and assessment ”



“Conduct public awareness and support citizen and community participation in actions against climate change”

## First Phase Implementation Plan Of The National Action Program On Climate Change

### First phase

- national capacities
- legal, structural systems will be set up
- community and public participation will be improved.

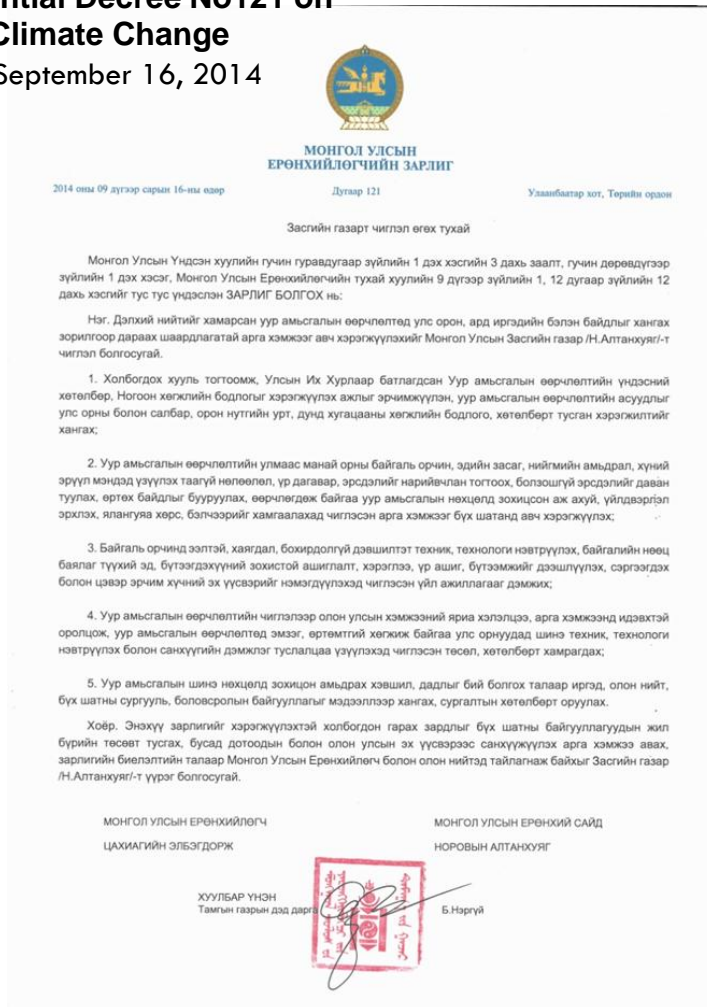
### Second phase (2016-2021)

- climate change adaptation and mitigation measures will be started up to implement.



# Presidential Decree on Climate Change

## Presidential Decree No121 on Climate Change as September 16, 2014



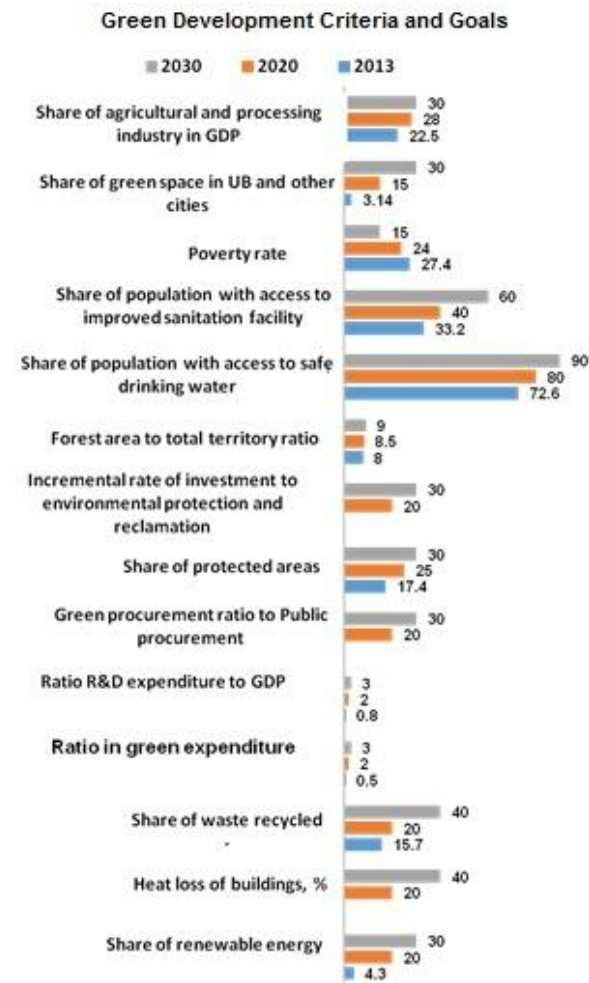
- 1.1 To intensify the implementation of the National Action Plan on Climate change and other climate change related policies
- 1.2 To take actions on adaptation counter measures at any levels
- 1.3 To introduce environmentally friendly and zero waste technologies, to increase efficient use of natural resources and raw materials, and to support actions to increase Renewable Energy and clean energy sources
- 1.4 To activate the participation for international negotiations and get financial and technological support via implementing projects
- 1.5 To increase awareness for citizens and develop curriculum for schools

2. To issue budget for each fiscal year to implement this decree , take actions to get internal and external financial support and the government is obligated to fulfill and report the implementation of this decree for president and public.

# Green Development Policy

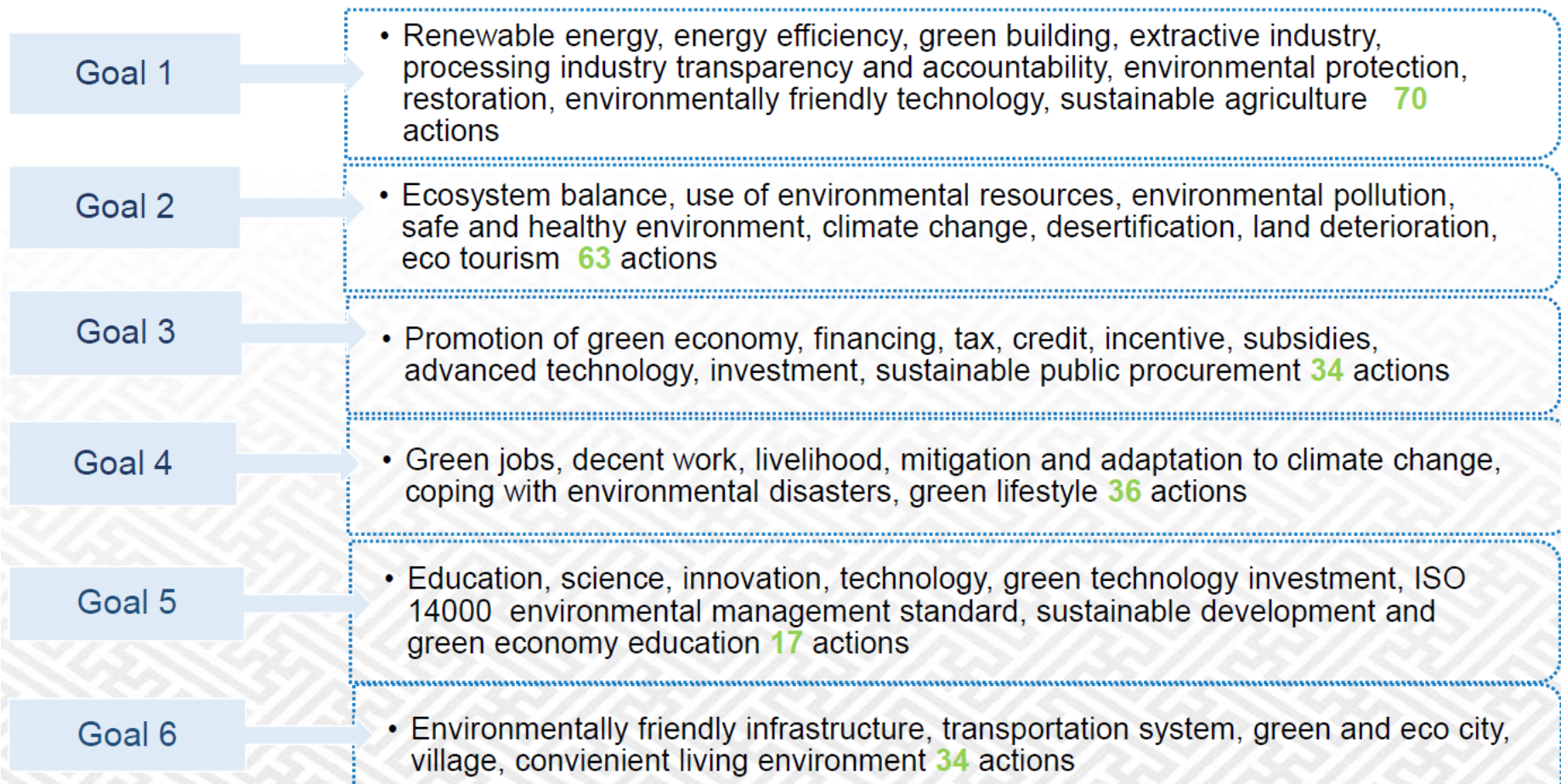
Resolution No43 by the Parliament, 2014

The goal of the Green Development Policy is to advance Mongolia's national development in an environmentally sustainable manner, building the conditions for future generations to benefit and gain in the long term and to ensure environmental sustainability through creation of growth based on green development concepts and through citizens' participation and inclusiveness.



# Green Development Policy

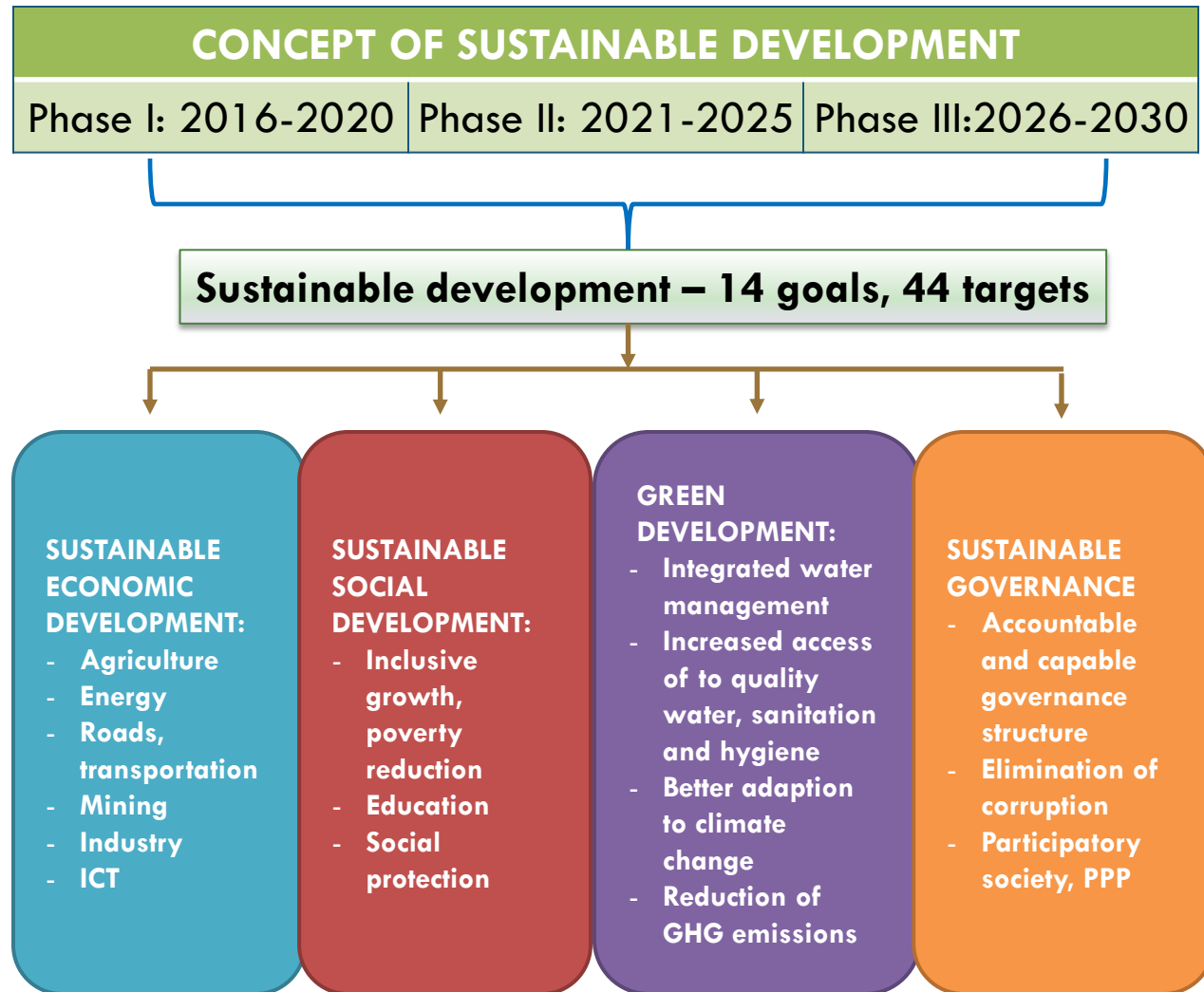
## The Action plan for implementation of the Green Development Policy



# Mongolian Sustainable Development Vision - 2030

## BY 2030, MONGOLIA WILL

- ✓ Become one of the leading MICs by per capita income;
- ✓ Have a diversified sustainable economy;
- ✓ Eradicate income inequality and have a majority of its population with average and higher levels of income;
- ✓ Maintain its pristine natural environment and sustainable ecology; and
- ✓ Promote sustainable democratic governance.



# Current status of Mongolia under the UNFCCC

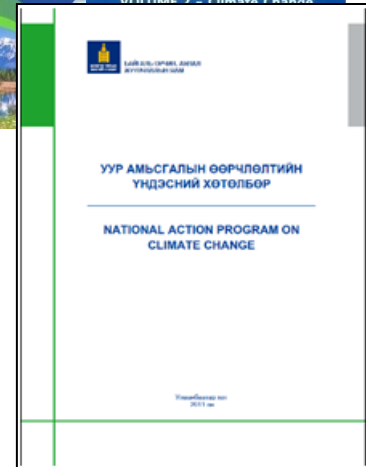
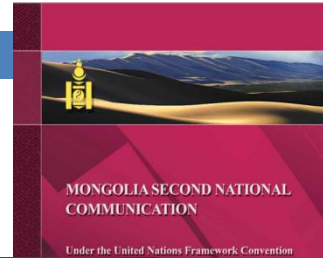
- Ratification of the UNFCCC (1993)
- Ratification of the Kyoto Protocol (1999)

## Undertaken steps to implement UNFCCC's goal

- Initial national communication (1<sup>st</sup> November 2001)
- Submission on NAMAs (28<sup>th</sup> January 2010)
- Second national communication (10<sup>th</sup> December 2010)
- National Action Program on Climate Change (6<sup>th</sup> January 2011)
- Technology Needs Assessment (2013)
- Intended Nationally Determined Contributions (September 2015)
- Preparation of NAP (2016)

## Upcoming steps to implement UNFCCC's goal

- Ratification of the Paris Agreement
- Ratification of the Doha Amendment
- Preparation of first Biennial Update Report (BUR)
- Preparation of Third National Communication (TNC)



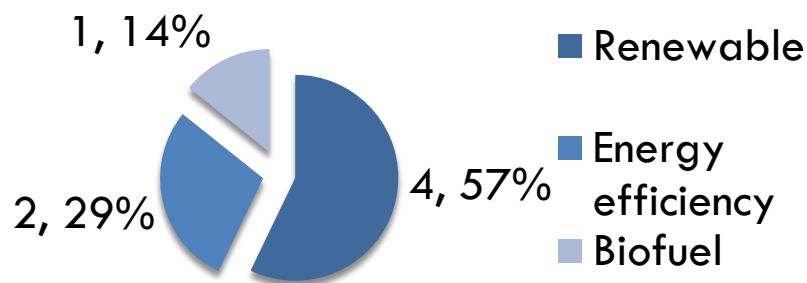
# NAMA submission list

Publication date: 28<sup>th</sup> January 2010

No	Sector and Actions
1	Energy supply: Increase renewable options
2	Energy supply - Improve coal quality
3	Energy supply - Improve efficiency of heating boilers
4	Energy supply - Improving household stoves and furnaces
5	Energy supply - Improve CHP plants
6	Energy supply – Increase use of electricity for local heating in cities
7	Building – Building energy efficiency improvement
8	Industry – Energy efficiency improvement in industry
9	Transport –Use more efficient cars
10	Agriculture- Limit the increase of the total number of livestock by increasing the productivity of each type of animal, especially cattle
11	Forestry –Improve forest management

# Current status of Clean Development Mechanism/CDM/ under Kyoto Protocol

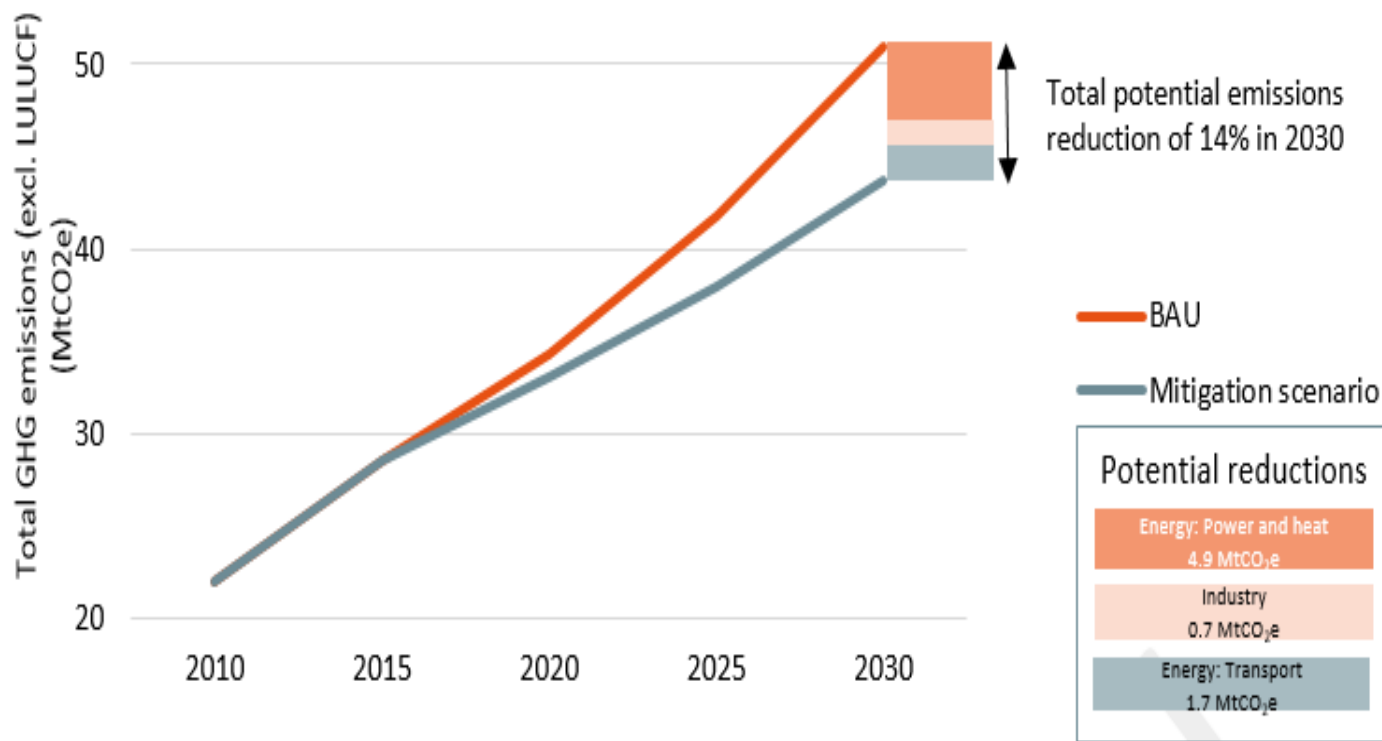
## Approved project type



Project Status	Num.
CDM projects registered at CDM executive board	5
CDM projects approved by DNA	7
CDM projects at or after the validation stage	2

	Registered CDM Projects					Rejected
	Num. of projects	Average annual emission reduction(tCO <sub>2</sub> )	Total ERs by (tCO <sub>2</sub> )	Amount of issued CERs (tCO <sub>2</sub> )	Review Conducted	
Hydro Power	2	30,000	302,173	51,269	0	0
Wind Power	1	178,778	0	0	0	0
Energy Efficiency	1	11,904	83,328	0	0	0
Total	4	62,670	385,501	51,269	0	0

# Intended Nationally Determined Contribution/INDC

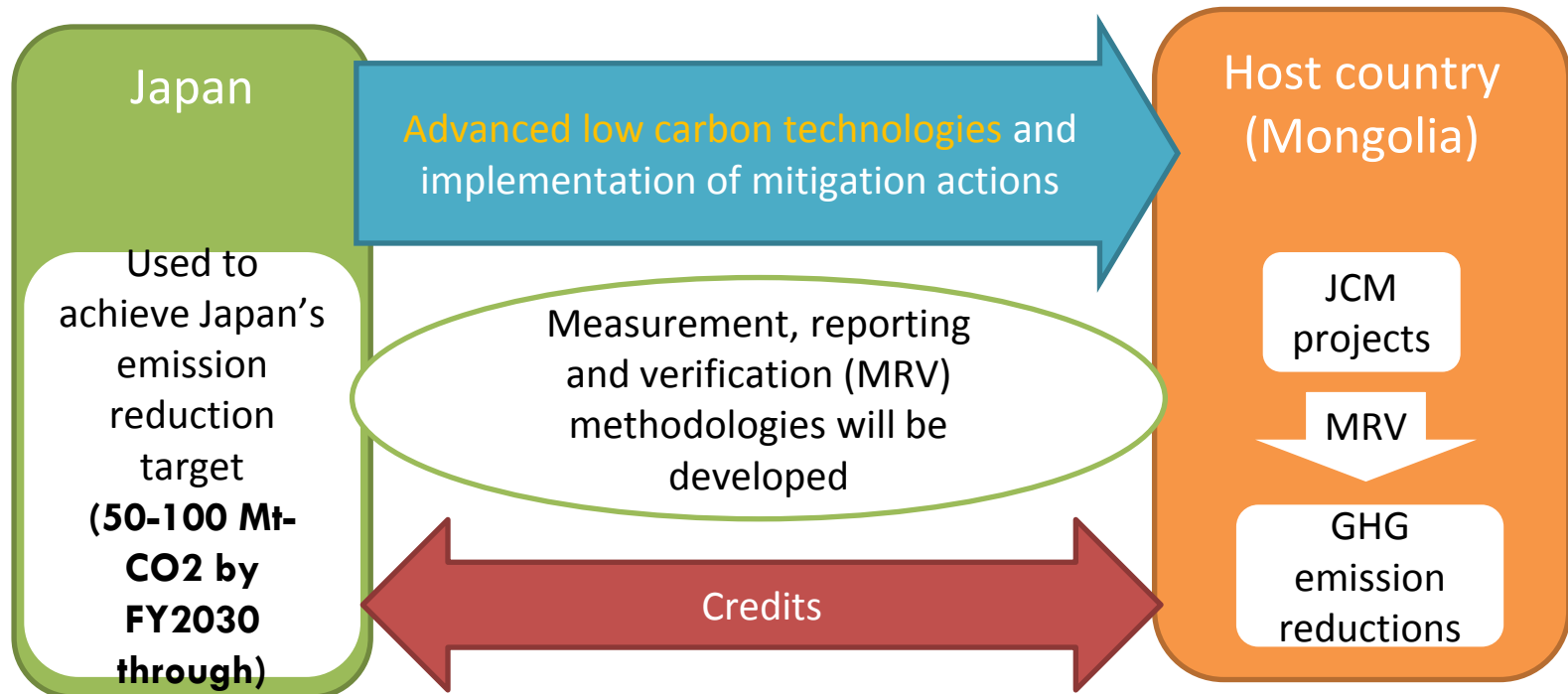


- Mongolia submitted its INDC to UNFCCC in September, 2015
- Main goal is reduce GHG emission by 14% in 2030 comparing to 2010



# The Joint Crediting Mechanism (JCM)

- Implemented jointly by two countries, Japanese and Mongolia government started the JCM cooperation in January 2013
- Promote advanced low carbon technologies and products through JCM projects
- Require measurement, reporting and verification (MRV) and methodologies for GHG emission reduction activities
- Produce non-tradable credits that can be used as a part of Japan and Mongolian internationally pledged greenhouse gases mitigation efforts.



## Road to LCDP

Governmental consultation  
(Ulaanbaatar -3 July 2012 )

Governmental consultation  
(Tokyo -1 November 2012 )

Governmental consultation  
(Doha -30 November 2012 )

Joint Statement  
(Doha -6 December 2012)

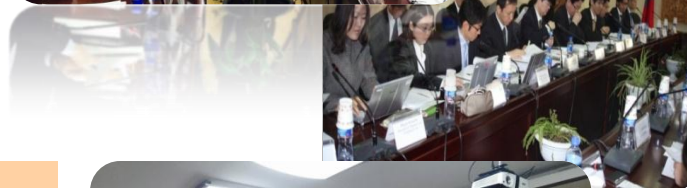
Signing of the “Low Carbon Development Partnership”  
(bilateral document for the JCM)  
(Ulaanbaatar- 8 January 2013 )

## Start of “JCM”

**JCM first** Joint Committee meeting  
(Ulaanbaatar - 11 April 2013 )

**JCM second** Joint Committee meeting  
(Ulaanbaatar - 20 February 2014 )

**JCM third** Joint Committee meeting  
(Ulaanbaatar - 30 June 2015 )



### Joint Committee

Mongolia

Co-Chair

Members  
(7 Ministries and  
UB City Authority)

Secretariat

Japan

Co-Chair

Members  
(2 Ministries and  
Japanese Embassy  
in Mongolia)

Secretariat

# JCM PROJECTS in MONGOLIA (2013-2014)

Project type	Project title	Sector scope	Support
Model project	Upgrading and Installation of Centralized Control System of High-Efficiency Heat Only Boiler	Energy (EE)	MoEJ/GEC
Project Planning Study (PS)	10MW-scale Solar Power Plant and Rooftop Solar Power Generation System	Energy (RE)	MoEJ/GEC
Feasibility Study (FS)	Improvement of Thermal Insulation and Water Cleaning/Air Purge at Power Plant	Energy (EE)	MoEJ/GEC
	10MW-scale Solar Power Generation for Stable Power Supply	Energy (RE)	MoEJ/GEC
	Energy conservation at cement plant	Energy (EE)	MoEJ/GEC
	GHG emission reduction by introducing an energy-efficient complex in Ger area of Ulaanbaatar	Energy (EE)	METI/NEDO
	Research on developing projects on wind power generation	Energy (RE)	METI/NEDO
Demonstration and verification project	High efficiency and low loss power transmission and distribution system in Mongolia	Energy (EE)	METI/NEDO

# JCM PROJECTS in MONGOLIA (2014-2015)

Project type	Project title	Sector scope	Supporter
JCM Project Planning Study (PS)	10MW-scale Solar Power Generation for Stable Power Supply - Taishir	Energy (RE)	MoEJ/GEC
Large Scale JCM Feasibility Study	Study for the development of JCM projects for comprehensive improvements in the power generation, transmission and distribution systems in Ulaanbaatar City and on the possibility of nationwide horizontal application of the same improvement model in Mongolia	Energy (EE)	MoEJ/GEC
	Feasibility study on a programme-type finance scheme for the JCM in Mongolia	-	MoEJ/IGES
JCM Feasibility Study (FS)	Efficiency Improvement of Combined Heat and Power Plant by Thermal Insulation	Energy (EE)	MoEJ/GEC
	Reduction of CO2 emission by utilizing fly ash as cement substitute in Mongol	Waste handling and disposal	METI/NEDO
	GHG reduction by methane fermentation of sewage sludge and food waste in Ulaanbaatar	Waste handling and disposal	MoEJ/Waste management and recycling department
FS and Demo project	Co-benefit project for Heat Only Boiler	Energy (EE)	MoEJ/International Cooperation Office/OECC

# JCM PROJECTS in MONGOLIA (2015-2016)

Project type	Project title	Sector scope	Support
Model project	10MW Solar Power Project in Darkhan City	Energy (EE)	MoEJ/GEC
Model project	Installation of 2.1MW Solar Power Plant for Power Supply in Ulaanbaatar Suburb	Energy (RE)	MoEJ/GEC
Feasibility Study (FS)	Distributed heat supply system using biomass and coal mixture combustion type boiler	Waste Management /Biomass Utilisation	MoEJ/GEC



# Approved documents for the JCM by JC

## Rules and Guidelines

Overall		<ul style="list-style-type: none"><li>•Rules of Implementation</li><li>•Project Cycle Procedure</li><li>•Glossary of Terms</li><li>•Guidelines for Designation as a Third Party Entity (TPE guidelines)</li></ul>
Joint Committee		<ul style="list-style-type: none"><li>•Rules of Procedures for Joint Committee (JC rules)</li></ul>
Methodology		<ul style="list-style-type: none"><li>•Guidelines for Developing Proposed Methodology (methodology guidelines)</li></ul>
Project procedure	Developing a PDD	<ul style="list-style-type: none"><li>•Guidelines for Developing Project Design Document and Monitoring Report (PDD and monitoring guidelines)</li></ul>
	Monitoring	<ul style="list-style-type: none"><li>•Guidelines for Validation and Verification (VV guidelines)</li></ul>
	Validation	
	Verification	

# Approved templates for the JCM by JC

## Templates

### Methodology

- Proposed Methodology Form
- Approved Methodology Revision Request Form

### Project Planning

- Project Design Document Form
- Project Registration Request Form
- Proposed Methodology Spreadsheet Form
- Modalities of Communication Statement Form

### Project Implementation

- Post-Registration Changes Request Form
- Registration Request Withdrawal Form
- Project Withdrawal Request Form
- Credits Issuance Request Form
- Issuance Request Withdrawal Form

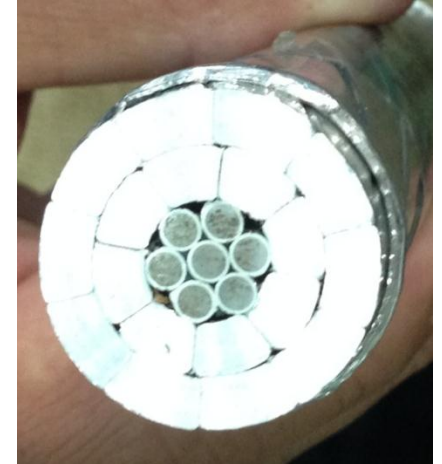
### TPE

- Application Form for Designation as a Third Party Entity
- Validation Report Form
- Verification Report Form

## Approved Methodology

**MN\_AM001** (20 Feb, 2014)

Installation of energy-saving transmission lines in the Mongolian Grid“



**MN\_AM002** (30 Jan, 2015)

Replacement and Installation of High-Efficient Heat Only Boilers (HOBs) for Hot Water Supply Systems





## Registered projects

**MN001** (30 Jun, 2015)

Installation of high-efficiency Heat Only Boilers in 118th School of Ulaanbaatar City Project

**MN002** (30 Jun, 2015)

Centralization of heat supply system by installation of high-efficiency Heat Only Boilers in Bornuur soum Project

**MN003** (29 Sep, 2016)

Installation of Solar PV System



# Designated Third Party Entities (TPEs)

Number	Name	Sectoral scopes for validation	Sectoral scopes for verification	Designated date	Comments
TPE-MN-014	ERM Certification and Verification Services Limited	1, 2, 3, 4, 5, 8, 9, 10, 13, 15	1, 2, 3, 4, 5, 8, 9, 10, 13, 15	26 Sep 15	
TPE-MN-013	National Renewable Energy Center	1, 2, 3	1, 2, 3	27 Apr 15	
TPE-MN-012	EPIC Sustainability Services Private Limited (EPIC)	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15	05 Apr 15	
TPE-MN-011	TUV Rheinland (China) Ltd	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15	09 Sep 14	
TPE-MN-010	KBS Certification Services Pvt. Ltd.	1, 3, 4, 5, 7, 12, 13, 15	1, 3, 4, 5, 7, 12, 13, 15	15 Jan 14	
TPE-MN-009	SGS United Kingdom Limited	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15	15 Jan 14	
TPE-MN-008	TÜV SÜD South Asia Private Limited	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15	24 Dec 13	
TPE-MN-007	Lloyd's Register Quality Assurance Limited	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	05 Dec 13	
TPE-MN-006	Deloitte Tohmatsu Evaluation and Certification Organization Co., Ltd	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 15	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 15	05 Dec 13	
TPE-MN-005	JACO CDM., LTD	1, 3, 13, 14	1, 3, 13, 14	16 Oct 13	<b>withdrawn</b>
TPE-MN-004	Japan Management Association	1, 2, 3, 4, 6, 8, 9, 14	1, 2, 3, 4, 6, 8, 9, 14	24 Sep 13	
TPE-MN-003	Japan Quality Assurance Organization	1, 3, 4, 5, 11, 13, 14	1, 3, 4, 5, 11, 13, 14	24 Sep 13	
TPE-MN-002	Japan Consulting Institute	1,2,4,5,9,10,13	1,2,4,5,9,10,13	24 Sep 13	<b>withdrawn</b>
TPE-MN-001	URS Verification Private Limited	1, 13	1, 13	24 Sep 13	

# National TPE development

Capacity buildings are organized by MEGDT and IGES for potential TPE candidates in Mongolia

Instructor	Title	Date
Shigenari Yamamoto (JQA)	Seminar on “Required competences for self-implementation of JCM Validation/verification activities by Mongolian people “	28 Oct 2013
Kenta Usui (IGES)	Training on “Validation for JCM “	22 Jan 2014
Tsuyoshi Nakao (ERM)	Training on “Validation/verification for JCM”	3-5 Mar 2015
Tsuyoshi Nakao (ERM)	Training on “Validation/verification for JCM”	10-11 Nov 2015

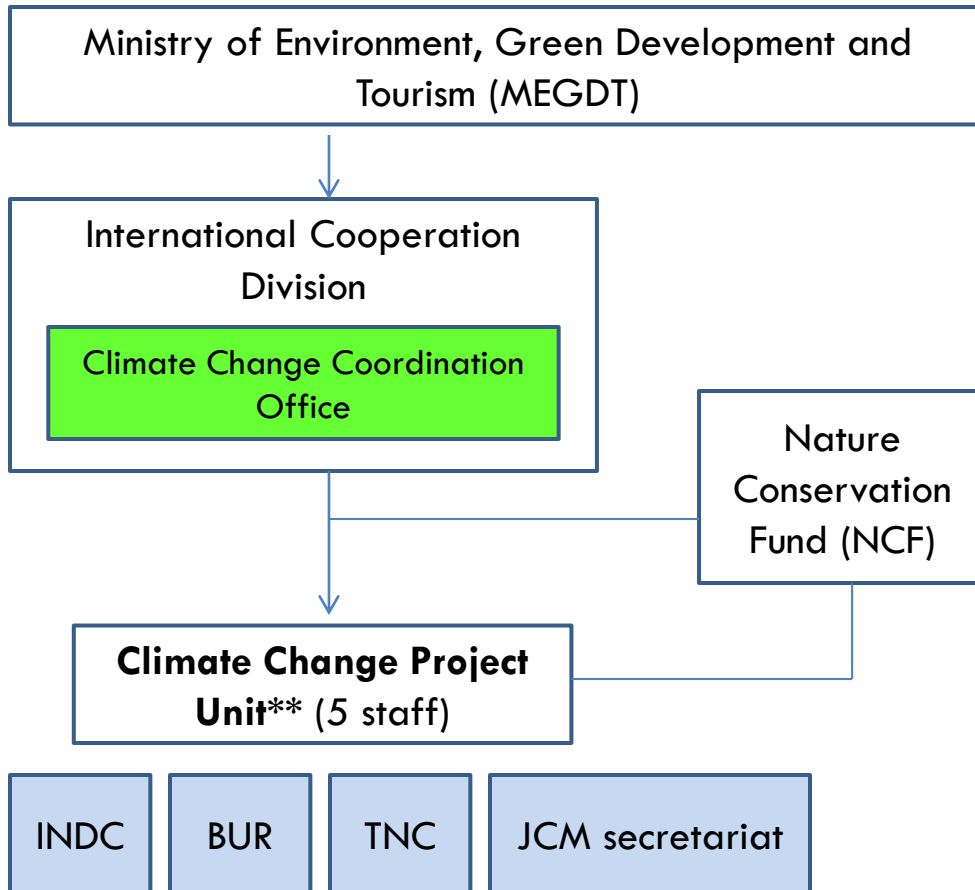
## Initial result

National Renewable Energy Center is accredited under ISO 14065 by an accreditation body (MASM) based on ISO14064-2. Accredited sector scopes are energy industries, energy distribution and energy demand.

## Advantages

Cost, time, local circumstances knowledge etc.,

# JCM secretariat



## JCM secretariat daily tasks

- ✓ Working closely with Japanese JCM secretariat on the all JCM related issues
- ✓ Support the Mongolian Joint Committee and JCM related stakeholders
- ✓ Organize seminars and workshops
- ✓ Provide information and cooperate with JCM project developers of Mongolia and Japan
- ✓ Implement joint studies

# Financing

## JCM Model Projects by MOE

The draft budget for projects starting from FY 2016 is **6.7 billion JPY (approx. USD 56 million)** in total by FY2018

※Budget will be fixed after approval by the Parliament

Finance part of an investment cost (**less than half**)

Government of Japan

※Includes collaboration with projects supported by JICA and other governmental-affiliated financial institute.

Conduct MRV and expected to deliver at least half of JCM credits issued

International consortiums (which include Japanese entities)



- Scope of the financing: facilities, equipment, vehicles, etc. which reduce CO<sub>2</sub> from fossil fuel combustion as well as construction cost for installing those facilities, etc.
- Eligible Projects : starting installation after the adoption of the financing and finishing installation within three years.

# Financing

## ADB Trust Fund: Japan Fund for Joint Crediting Mechanism (JFJCM)

### Draft Budget for FY2016

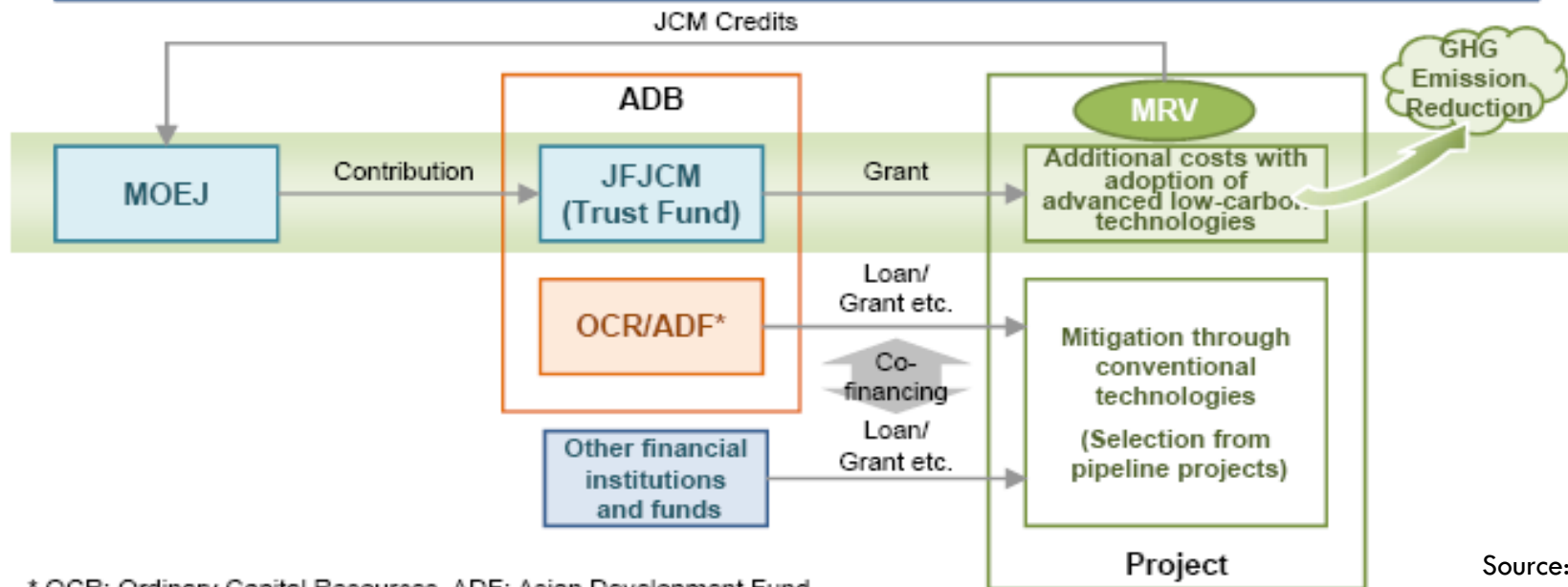
1.2 billion JPY (approx. USD 10 million)

### Scheme

To provide the financial incentives for the adoption of advanced low-carbon technologies which are superior in GHG emission reduction but expensive in Asian Development Bank (ADB)-financed projects.

### Purpose

To develop ADB projects as the "Leapfrog" developments by the advanced technologies and to show the effectiveness of the JCM scheme by the acquisition of credits of the JCM.

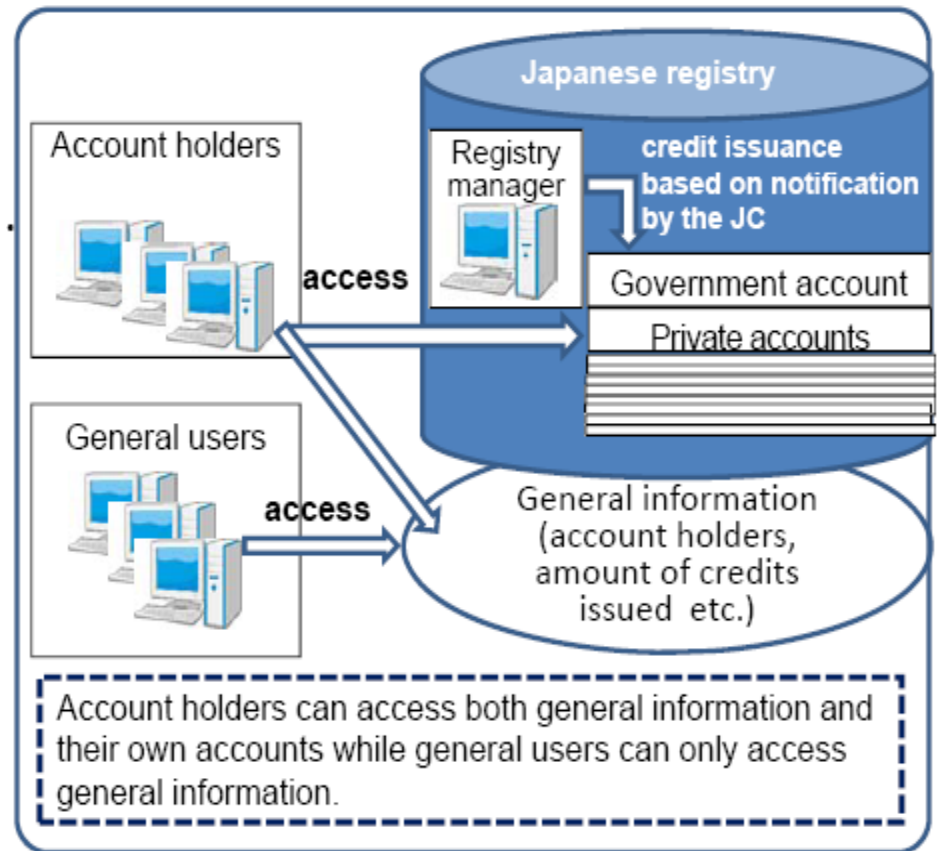


\* OCR: Ordinary Capital Resources, ADF: Asian Development Fund

Source: Ministry of Environment of Japan

# Upcoming activities

- Preparation of the verification stage of 2 registered projects under the JCM
- Japan has established its registry and started operation in Nov. 2015.
- Establishment of JCM registry system in Mongolia is under the process. (link between JCM registry and national accounting, avoidance of doublecounting)
- Credit issuance to the projects
- Allocation of the credits (possible contribution to achieve expected mitigation reduction amount (14% by 2030) within NDC?)



Source: Ministry of Environment of Japan

Currently Japan Government proposed registry system regarding the credit issuance for the registered projects under the JCM. As shown above.



**Thank you for your attention!**