



Хөшгийн хөндий 15 МВт НЦС



118-р дунд сургууль, халаалтын зуух



Оюу толгой –Цагаан суварга дамжуулах шугам

JOINT CREDITING MECHANISM AND ITS BENEFIT FOR MONGOLIA

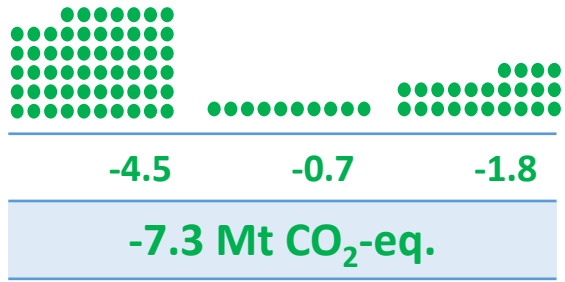
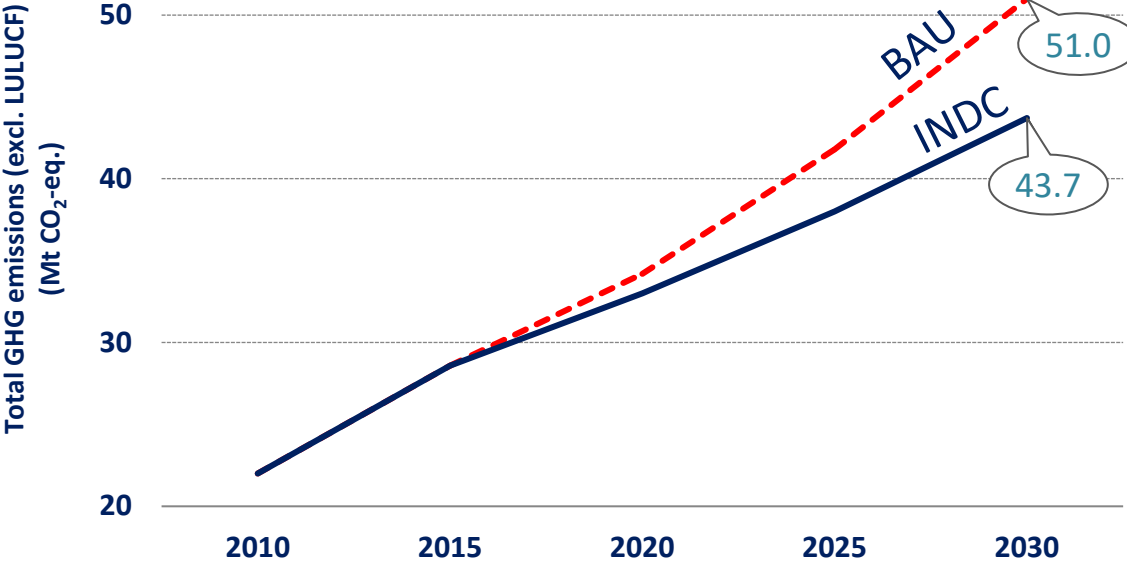
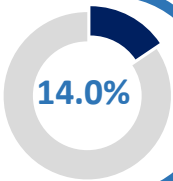


Дархан хот 10 МВт НЦС

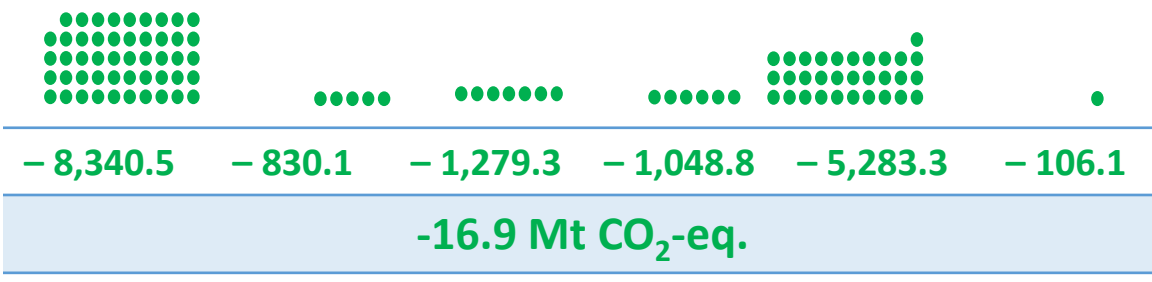
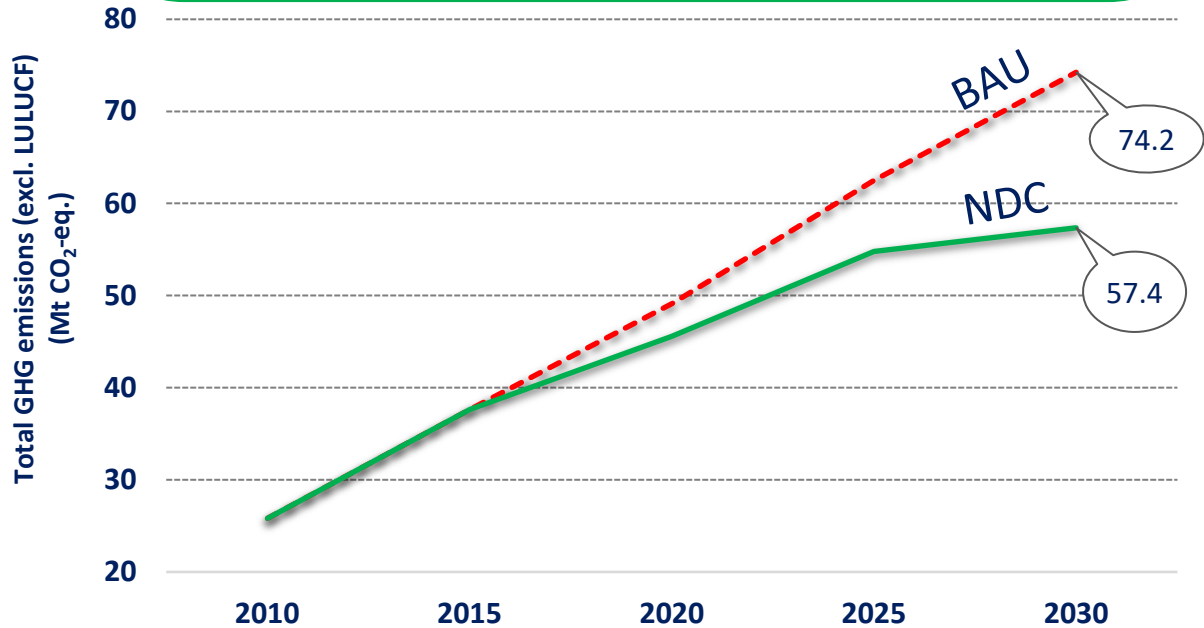
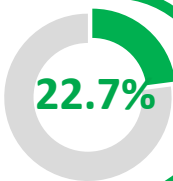


Эвэридэй Фарм 12.7 МВт НЦС

INDC TARGETS



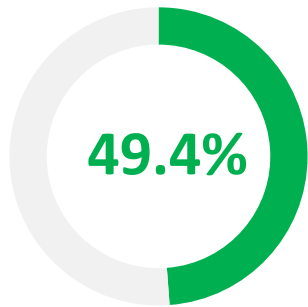
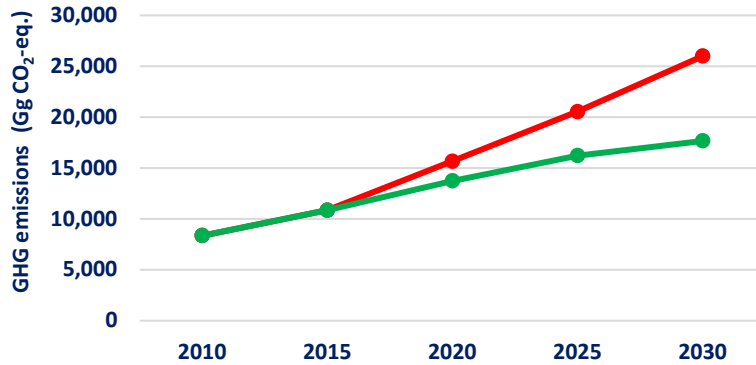
NDC TARGETS



Mitigation contribution by sectors

NDC

Energy production



– 8,340.5 Gg CO₂-eq.

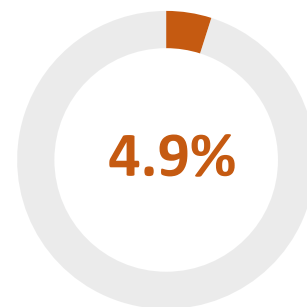
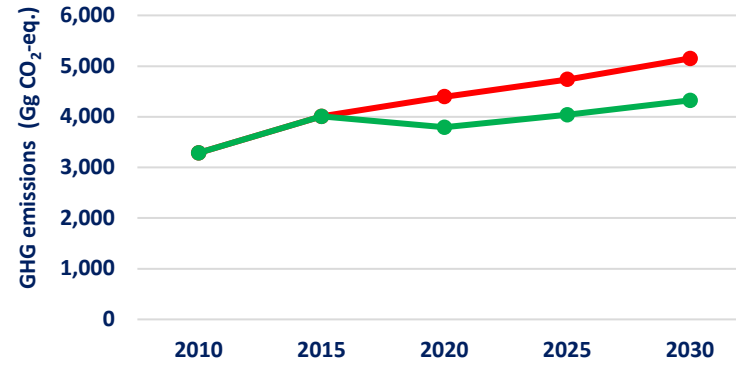
Utilization of renewable energy source

– 2,968.7 Gg CO₂-eq.

Improving the efficiency of energy production

– 5,371.8 Gg CO₂-eq.

Construction



– 830.1 Gg CO₂-eq.

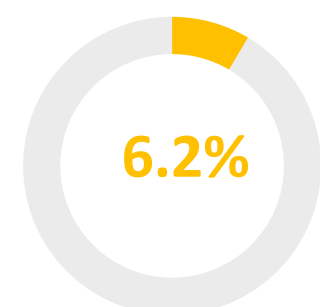
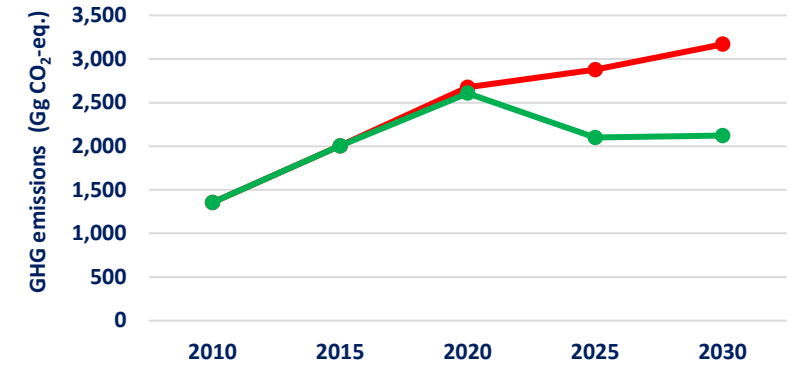
To utilize improved fuel for the ger district in UB

– 598.9 Gg CO₂-eq.

Insulation of pre-cast panel apartments in UB

– 231.2 Gg CO₂-eq.

Transport



– 1,048.8 Gg CO₂-eq.

Transition to Euro-5 standard fuel

– 456.8 Gg CO₂-eq.

Switch from automobile to railway in transportation of coal

– 576.0 Gg CO₂-eq.

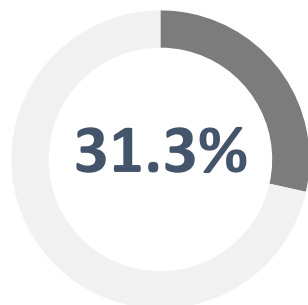
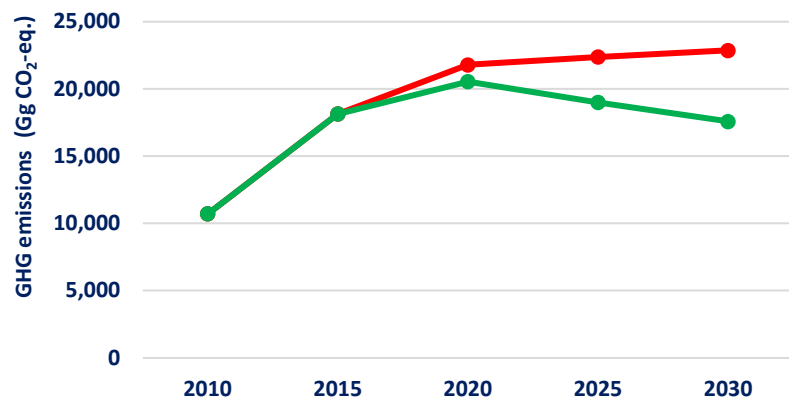
Installation of electric heating in trains

– 16.0 Gg CO₂-eq.

Mitigation contribution by sectors

NDC

Agriculture



– 5,283.4 Gg CO₂-eq.

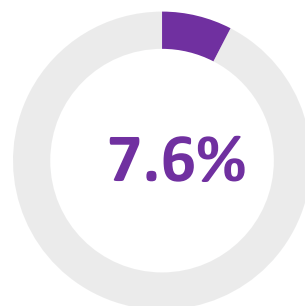
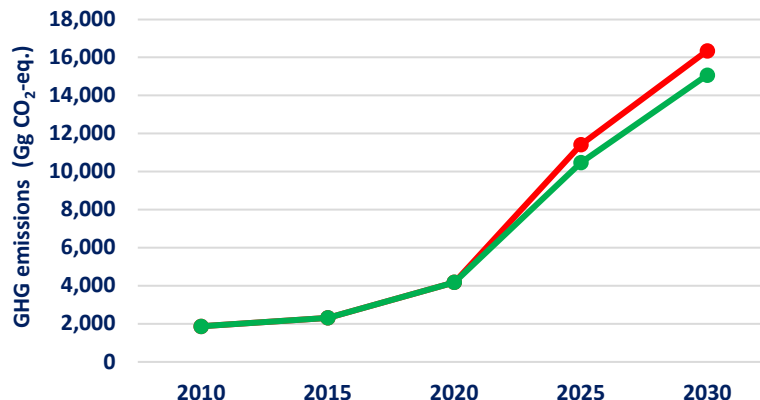
To regulate and reduce
the number of livestock

– 4,707.0 Gg CO₂-eq.

To upgrade the manure management

– 576.3 Gg CO₂-eq.

Industry



– 1,279.3 Gg CO₂-eq.

Energy saving of manufactures

– 1,045.2 Gg CO₂-eq.

To utilize the excess heat from the cement
productions

– 13.4 Gg CO₂-eq.

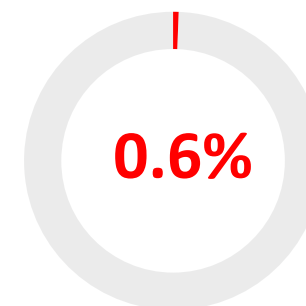
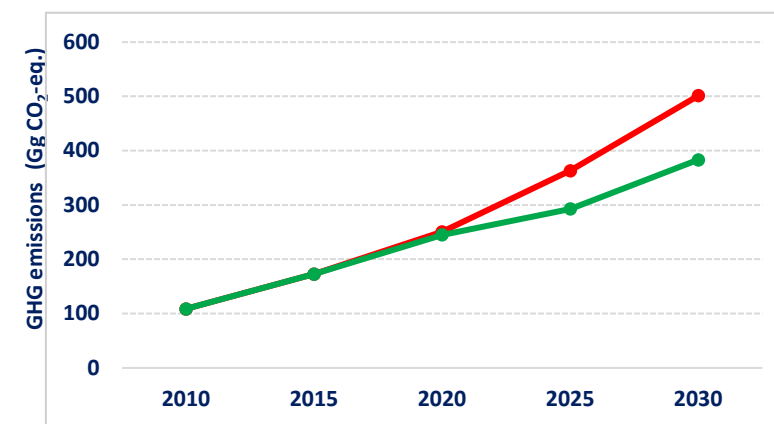
To use fly ash in the cement productions

– 86.0 Gg CO₂-eq.

To utilize coal bed methane in coal mining

– 134.7 Gg CO₂-eq.

Waste



– 106.1 Gg CO₂-eq.

Reduction of landfill disposed waste
volume

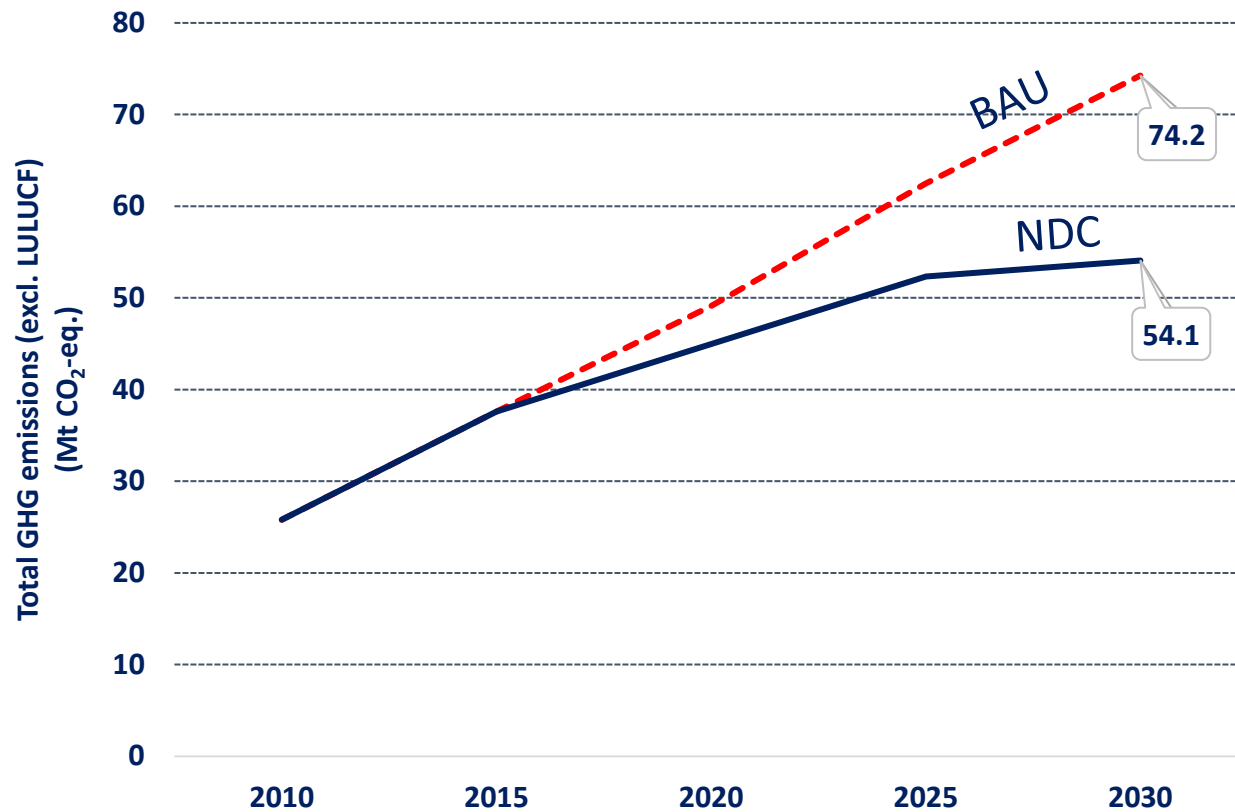
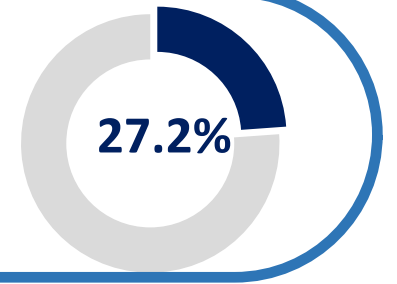
– 90.5 Gg CO₂-eq.

Improvement of waste water plant
capacity

– 15.6 Gg CO₂-eq.

NDC TARGETS

(Unconditional + Conditional measures)



**Total GHG mitigation potential
(including conditional measures)**

-20,188.1 Gg CO₂-eq.

Total GHG mitigation potential from unconditional measures

-16,888.1 Gg CO₂-eq.

Total GHG mitigation potential from conditional measures

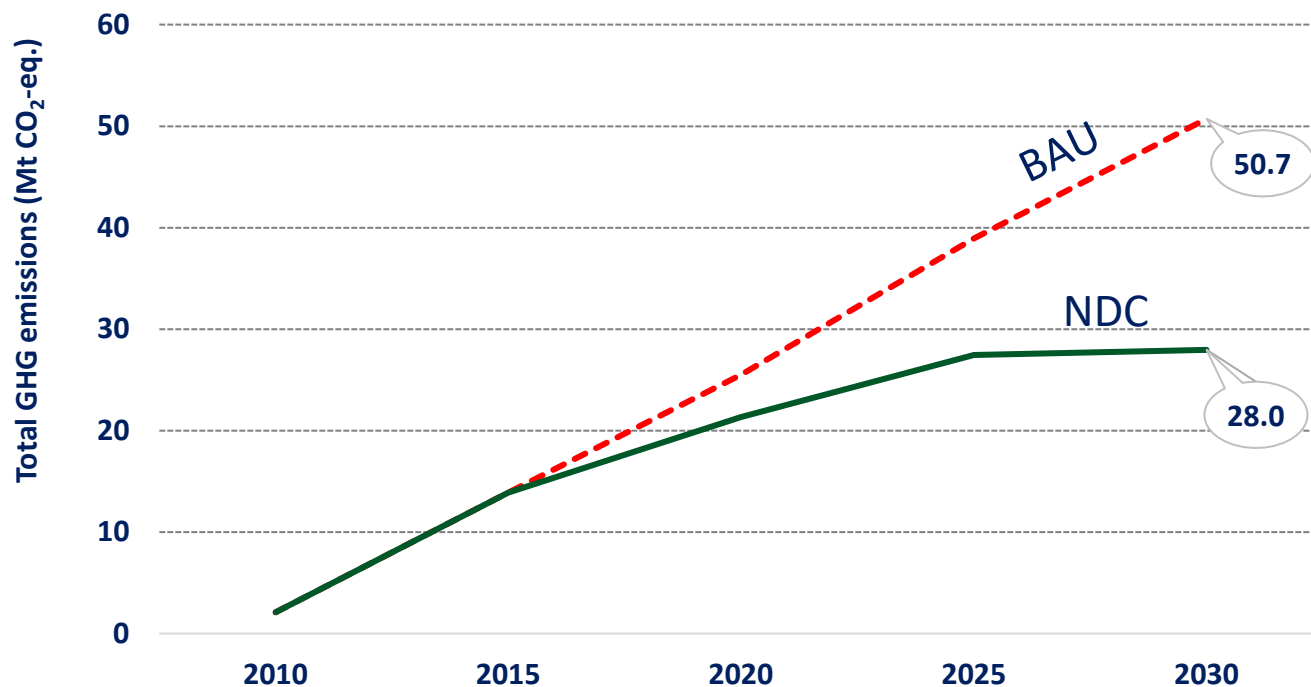
-3,300.0 Gg CO₂-eq.

- Deploy Carbon Capture and Storage (CCS) technology
 - Construct power plant to produce energy capturing and purifying landfill methane gas from the Narangiin enger waste disposal site in Ulaanbaatar city
- 3,288.0 Gg CO₂-eq.**
- 12.0 Gg CO₂-eq.**

NDC TARGETS

(Unconditional+ Conditional measures + Forest sink)

44.9%



**Total GHG mitigation potential
(including conditional measures and forest sink)**
-22,768.7 Gg CO₂-eq.

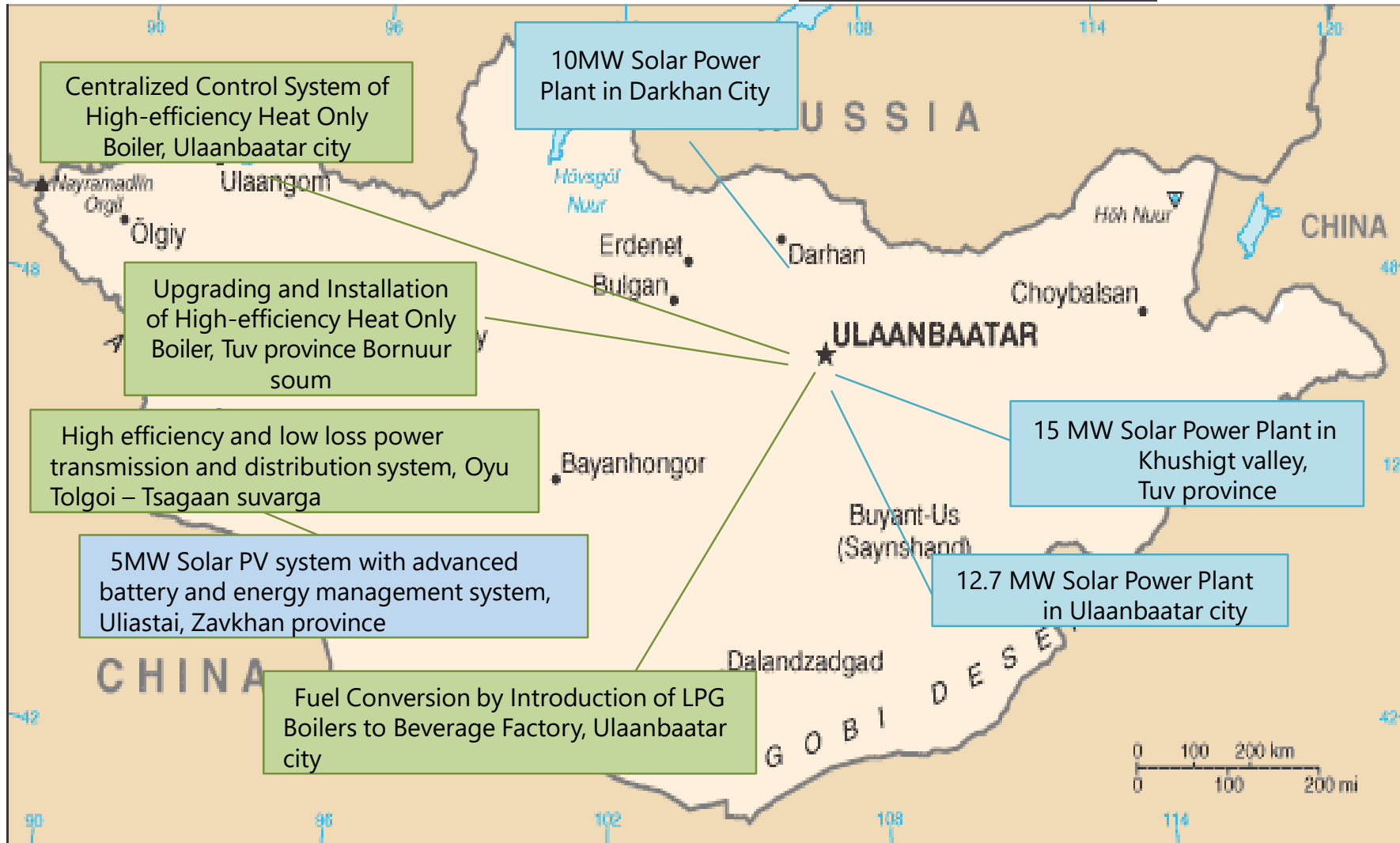
**Total GHG mitigation potential
from unconditional measures**
-16,888.1 Gg CO₂-eq.

**Total GHG mitigation potential
from conditional measures**
-3,300.0 Gg CO₂-eq.

Total enhancement of forest removal
- 2,580.6 Gg CO₂-eq.

- Sustained removals during the forest degradation reduction process **- 1,623.0 Gg CO₂-eq.**
- Sustained removals during the forest deforestation reduction process **- 908.3 Gg CO₂-eq.**
- Natural growth-related removals in the area prevented from forest degradation **- 49.3 Gg CO₂-eq.**

JCM PROJECTS ARE BEING IMPLEMENTING IN MONGOLIA



PROJECTS PLANNED TO BE IMPLEMENTED BY THE JCM:

Improving Access to Health Services for Disadvantaged Groups Investment Program at Khan-Uul district's general hospital, Ulaanbaatar city

- Energy efficiency projects
- Renewable energy projects

JCM PROJECTS EMISSION REDUCTION (AS OF 2020)

№	PROJECT NAME	STARTED DATE (year/month)	COMPLETED DATE (year/month)	TOTAL ENERGY PRODUCTION (Kw/h)	TOTAL POWER SUPPLY (Kw/h)	INTERNAL USE (Kw/h)	CO2 REDUCTION (T/CO2)
1	DARKHAN 10 MW SPP	2016/2	2017/1	15,850,138	15,736,419	113,719	12,850
2	MON NARAN 12.7 MW SOLAR FARM	2016/9	2017/8	16,493,078	15,246,752	244,013	12,507
3	KHUSHIG VALLEY 15 MW SPP	2017/6	2019/6	24,218,621	23,848,332	370,289	19,302
4	HOB - 118 TH SCHOOL OF ULAANBAATAR	2013/7	2014	19,581 GJ	19,581 GJ	None	62
5	Upgrading and Installation of Centralized Control System of High-efficiency HOB in Bornuur soum	2013/7	2014	39,211 GJ	39,211 GJ	None	102
6	Fuel Conversion by Introduction of LPG Boilers to Beverage Factory, Ulaanbaatar	2019/10 started construction	2020/8	By steam: 3589,7 GJ By water: 404.8 GJ	2195,3 GJ 404.8 GJ	1394,3 GJ	5781

JCM PROJECTS CREDIT ISSUANCE / CO2 REDUCTIONS

- JCM partnership document is signed by 17 countries. Currently, a total of **18,311 t-CO₂e** credits issued for Mongolia whereas so far **10** countries have been issued **90,710 t-CO₂e** credits for the **38** projects.

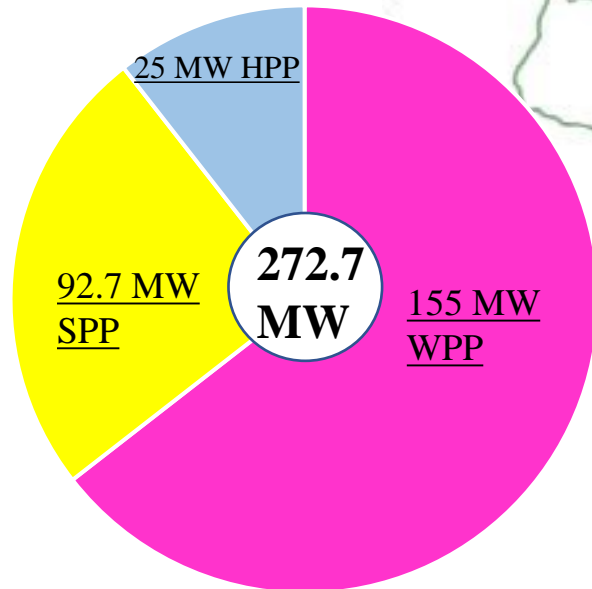
Country	Year	Credit issuance (1 credit =t-CO ₂ e)		
		Total	Japan	Project implementer (by country)
Indonesia	2016-2020	56,254	36,614	19,650
Mongolia	2016-2018	18,311	14,647	3,664
Vietnam	2017-2019	4,415	2,691	1,724
Palau	2016-2018	881	659	222
Thailand	2018-2020	4,032	2,017	2,015
Laos	2019	207	174	33
Maldives	2019	152	78	77
Kenya	2021	486	-	486
Cambodia	2020	92	92	-
Saudi Arabia	2020	3074	3074	-

RENEWABLE ENERGY DEVELOPMENT IN MONGOLIA

Wind PP

Solar PP

Hydro PP



Promoting renewable energy generation @Mongolia



Mongolia's renewable energy and mitigation targets

[Renewable energy target] Increasing renewable electricity capacity from 7.62% in 2014 to 25% by 2025 and to 30% by 2030.

*National Green Development Policy (2014), Sustainable Development Vision 2030 (2016)

[Mitigation target] Reducing 22.7% (16.9 MtCO₂) GHG emission by 2030 compared to the BAU scenario. (8.34 MtCO₂ reduction in energy production sector) *NDC (2020)



JCM is contributing to the renewable energy and mitigation target.

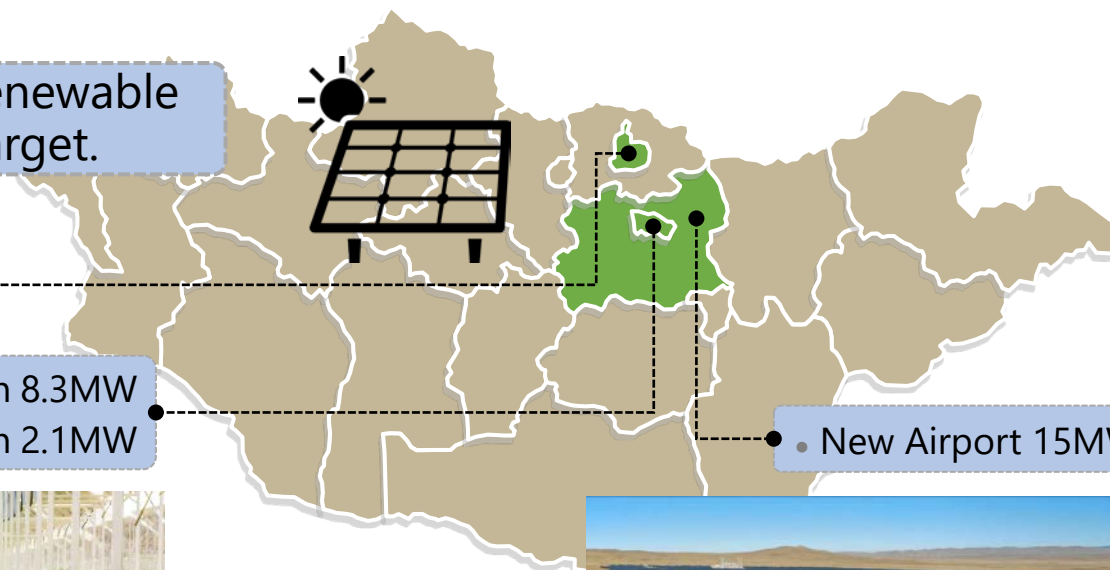
• Darkhan 10MW



• Monnaran 8.3MW
• Monnaran 2.1MW

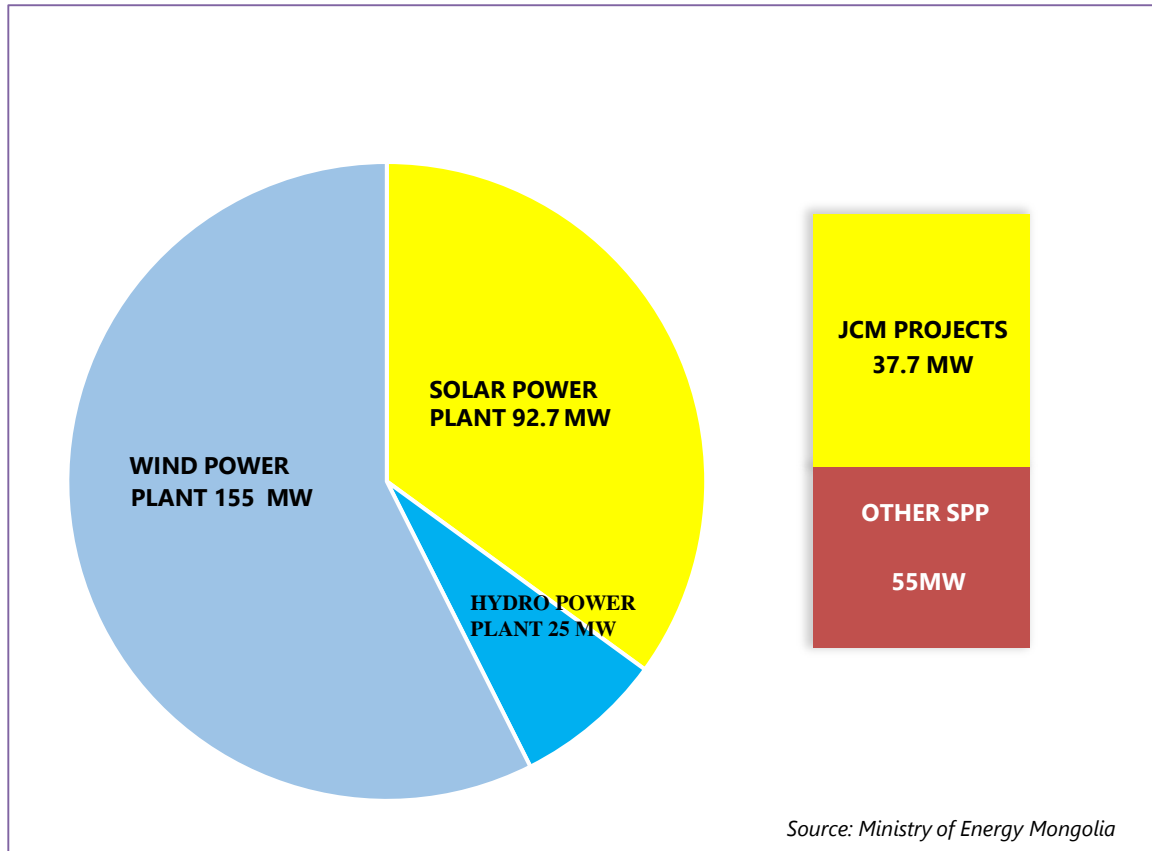


• New Airport 15MW



JCM CONTRIBUTION TO THE CLEAN ENERGY DEVELOPMENT

AS OF TODAY, TOTAL INSTALLED RENEWABLE ENERGY CAPACITY OF MONGOLIA IS 272.7 MW.



-HYDRO POWER PLANTS
25 MW



-SOLAR POWER PLANTS
92.7 MW



-WIND POWER PLANTS
155 MW

AS OF TODAY, 16 % of JCM FINANCED PROJECTS ARE CONTRIBUTING TO THE MONGOLIAN CLEAN ENERGY POWER PRODUCTION.

- MN004- 10MW Solar Power Plant project in Darkhan City:

Total amount of credits
issued in 2017

8947 T-CO₂



15 MW Solar Power Plant
project located in Khushig
Valley, Tuv province:

Expected GHG emission
reduction /per year/

18438 T-CO₂

Expected power
generation /per year/

30.1 million KWh



CONTRIBUTES TO SDG'S

“Sustainable Development Contribution Plan and Report” document is approved by the Joint Committee in 2018. All JCM projects must complete this document.

Case 2: 12.7 MW Solar Farm project.

The purpose of this project is to reduce CO₂ emission, mitigate air pollution and stabilize power supply in Mongolia by installing 12.7MW scale solar power plants in the suburbs of Ulaanbaatar.

GHG emission reduction is – 8880 t/CO₂. Credit issued in 2018.



Moreover, lots of achievements in daily life, mitigating air pollution, resolving power shortage, food supplying, etc., can be expected by synergy of agricultural and solar power generation technology.

- Introducing solar energy in the power system reduces GHG emission; and increasing clean, affordable, and sustainable energy in the country
- Building resilient and sustainable infrastructure in Mongolia; and strengthening developing country's technological capacity to move towards more sustainable production
- Increasing solar power generated electricity reduces coal consumption in a power plant; reducing air pollution
- Mobilizing financial and technical support from different sources and encourages public and private participation



- MN003- Installation of 12.7 MW Solar Power Plant in Ulaanbaatar suburb Farm:

Total amount of credits
issued in 2018

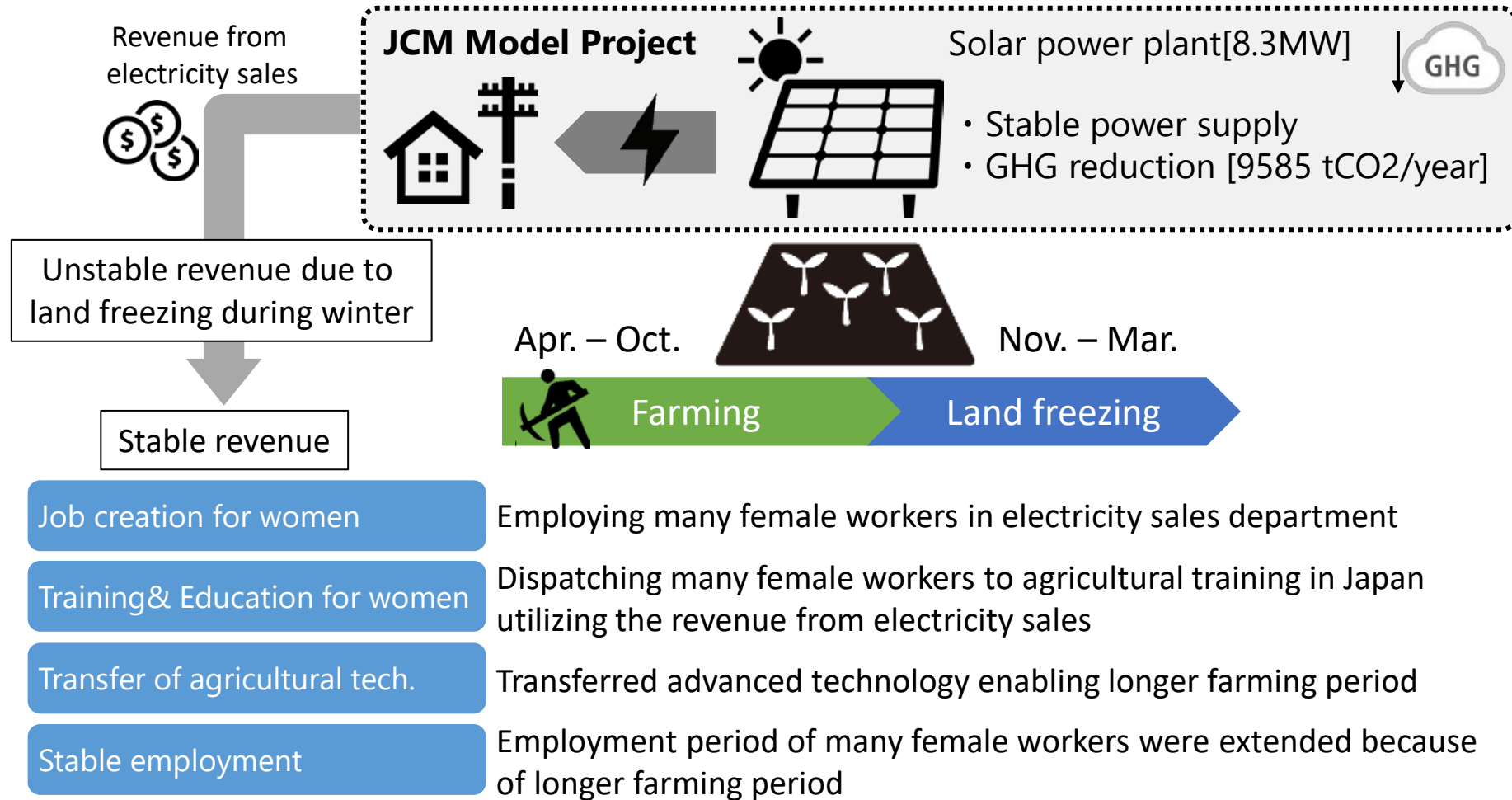
8880 T-CO₂



Solar panels in farm to empower women @Mongolia



Introducing solar power plant in Monnaran Farm (Ulaanbaatar suburbs)



Principles for achieving the sustainable social development: Ensure gender equality in social development, and create a pleasant environment for equal participation in social welfare. *Source: Mongolia Sustainable Development Vision 2030 (2016)

SUPPORTS MONGOLIA'S EFFORTS TO ADDRESS AIR POLLUTION

CASE 1: Upgrading and Installation of Centralized Control System of High-efficiency Heat Only Boiler in Bornuur soum



- Centralized control system
- High-efficiency heat only boilers
- Improvement of boiler efficiency reduces coal consumption, CO₂ emissions, and other air pollutants
- Lower emissions from heating system





Figure 3.
BEFORE: DZL (16 ton/hour
steam boiler)

The result of MCS Coca Cola boiler as of 2020:
Heat produced by steam 3589 GJ
Heat produced by hot water 409 GJ
CO2 emission reduction - 5781 tCO2e



Figure 4.
AFTER: DAEYEOL (4 boiler with a steam capacity of 3.4 tons), NTEC (8 boiler
with a heating capacity of 0.63 GCal/h)

GHG emissions reduction options in the energy supply sector

Use of renewable energy sources:

- Hydro energy - 686 MW
- Solar energy - 350 MW
- Wind energy - 320 MW

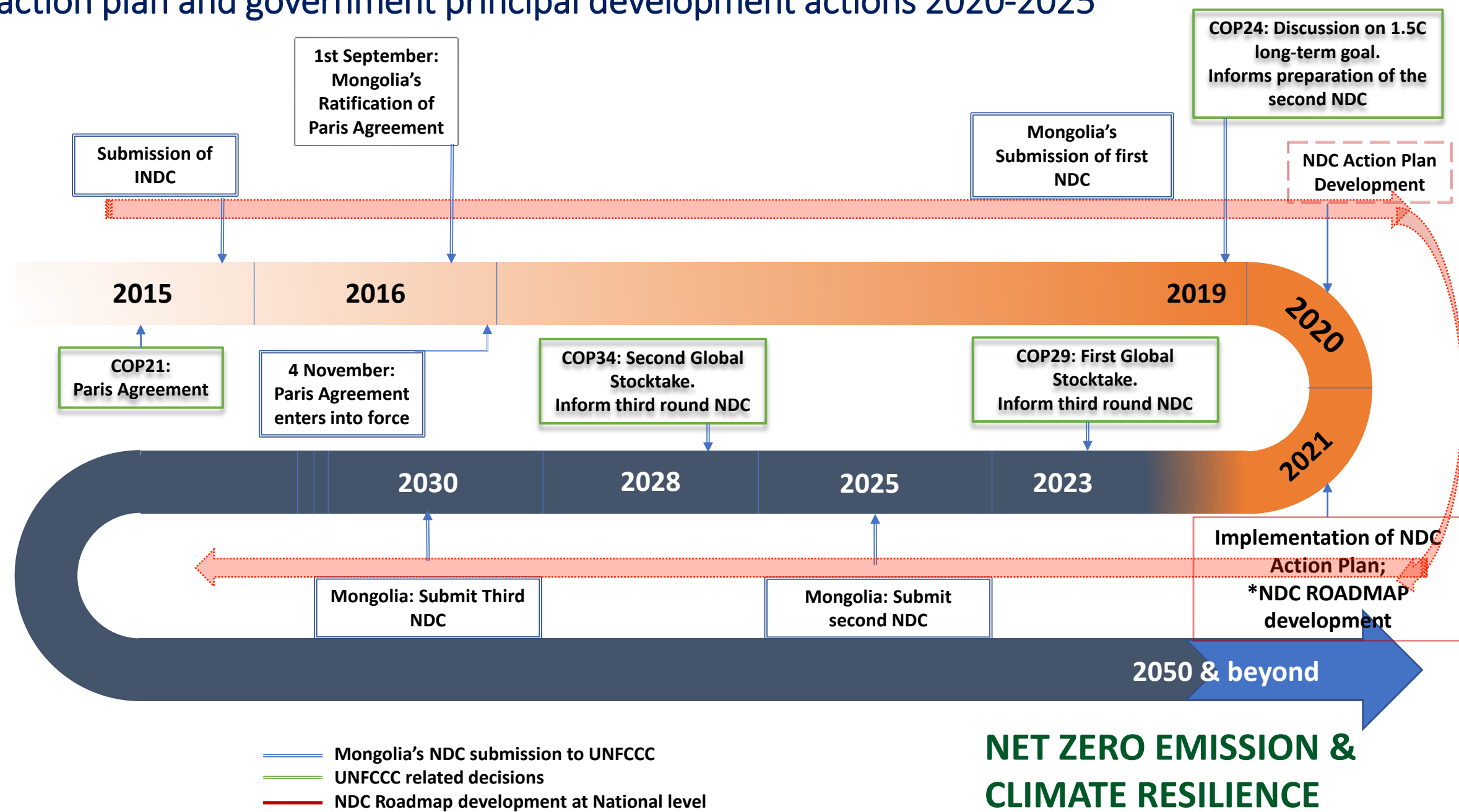
TOTAL - 1356 MW /in 2030 /

Efficiency improvement of electricity and heat production:

- Reduce the electricity and heat transmission and distribution grid losses
- Reduce the heat distribution losses of centralized heating system
- Reduce the internal use of thermal power plants
- Apply super critical and ultra-super critical pressure technology for the newly build coal combustion power plants;

National NDC Roadmap Development and National Long-term development Vision -2050

NDC action plan and government principal development actions 2020-2025



HIGH-LEVEL NATIONAL FORUM ON THE SUSTAINABLE DEVELOPMENT GOALS

4 OCTOBER 2021



PRE-COP26 WORKSHOP ON GREENING MONGOLIA'S DEVELOPMENT

21 OCTOBER 2021



CONCLUDING REMARKS

- JCM projects in Mongolia are contributing substantially to the implementation of the upgraded NDC in respect of mitigation by reducing GHG emission.
- Most of JCM projects in Mongolia have co-benefit effects contributing to the adaptation activities as well, including, for instance, abatement of air pollution and other negative human healthy factors.
- Almost every JCM project has a certain sustainable development element, promoting the preservation of precious resources like water and other nonrenewable resources.
- Improvement of the working environment at the JCM supported innovative heat and electricity producing facilities and more healthy living environment around those facilities, thanks to reduced ash, black carbon and other air and soil pollutants truly can be considered as an essential contribution to the quality of life of local communities.
- Added value of the JCM projects in Mongolia is more attributed to the technology transfer and know-how diffusion rather than financial support and in that sense a scope of JCM projects and field of cooperation within JCM can be extended, without complex decision making arrangements
- Coverage of the new field of cooperation within JCM scheme and engagement in an innovative technology development for transformative change, particularly in the energy sector (new energy source like green hydrogen or ultra high efficiency in distribution and use of energy etc.) can be initiated in cooperation with other multi and bi-lateral cooperation mechanisms on climate change.
- Well coordinated activities of the stakeholders engaged in the JCM scheme of cooperation, taking into account the limited human resource in countries like Mongolia would lead to a great synergy, yielding tangible outcomes.

THANK YOU!

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