



5 ENERGY SYSTEMS IN MONGOLIA

In Mongolia, 330 soums, towns and capital cities are supplied with electricity through 5 systems: CES, WES, AUES, EES and SES.

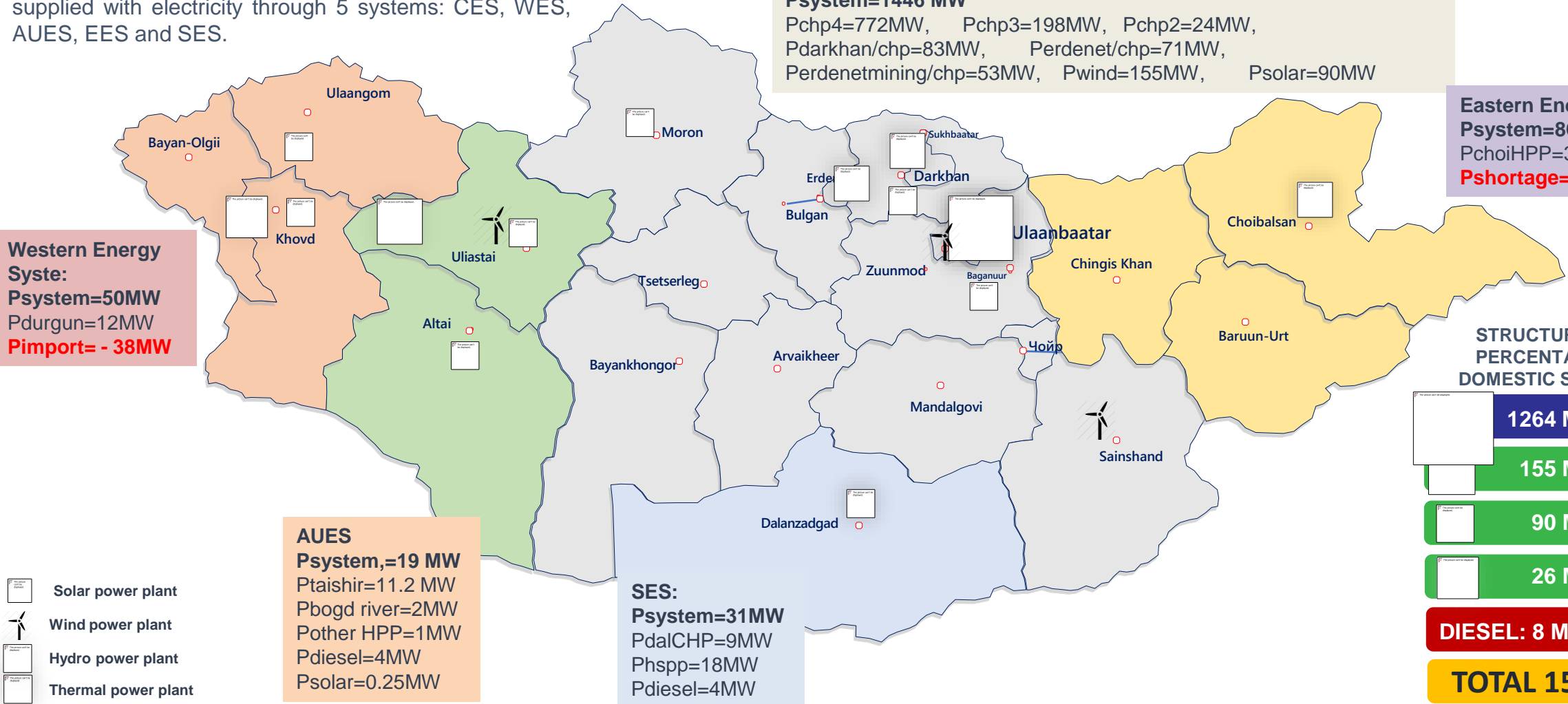
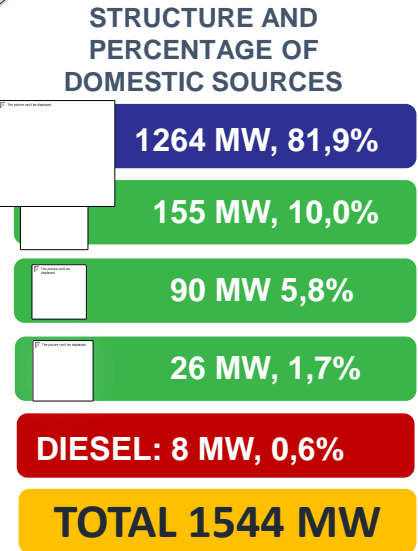
Central Energy System:
Psystem=1446 MW
 Pchp4=772MW, Pchp3=198MW, Pchp2=24MW,
 Pdarkhan/chp=83MW, Perdenet/chp=71MW,
 Perdenetmining/chp=53MW, Pwind=155MW, Psolar=90MW





Eastern Energy System:
Psystem=86 MW
 PchoiHPP=36 MW
Pshortage= - 50 MW

Western Energy System:
Psystem=50MW
 Pdurgun=12MW
Pimport= - 38MW

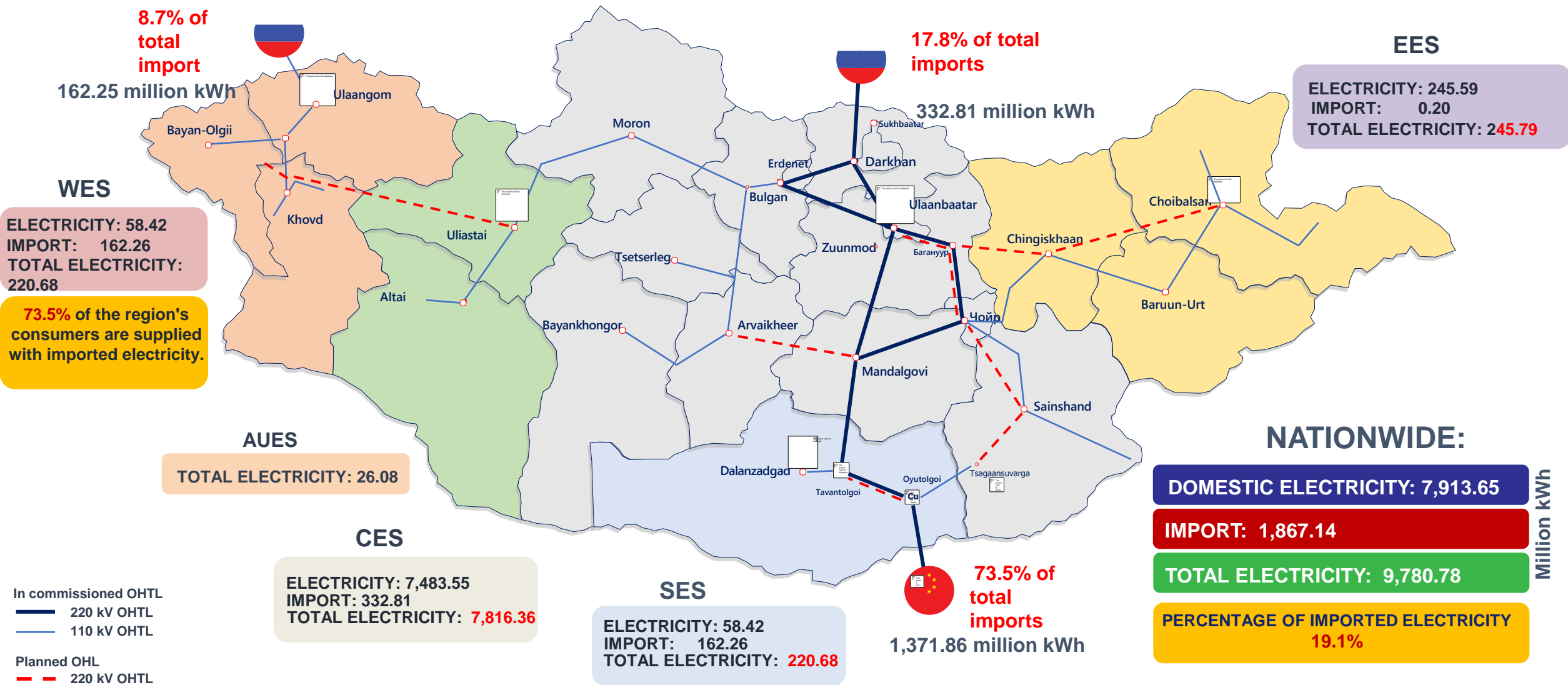
AUES
Psystem,=19 MW
 Ptaishir=11.2 MW
 Pbogd river=2MW
 Pother HPP=1MW
 Pdiesel=4MW
 Psolar=0.25MW

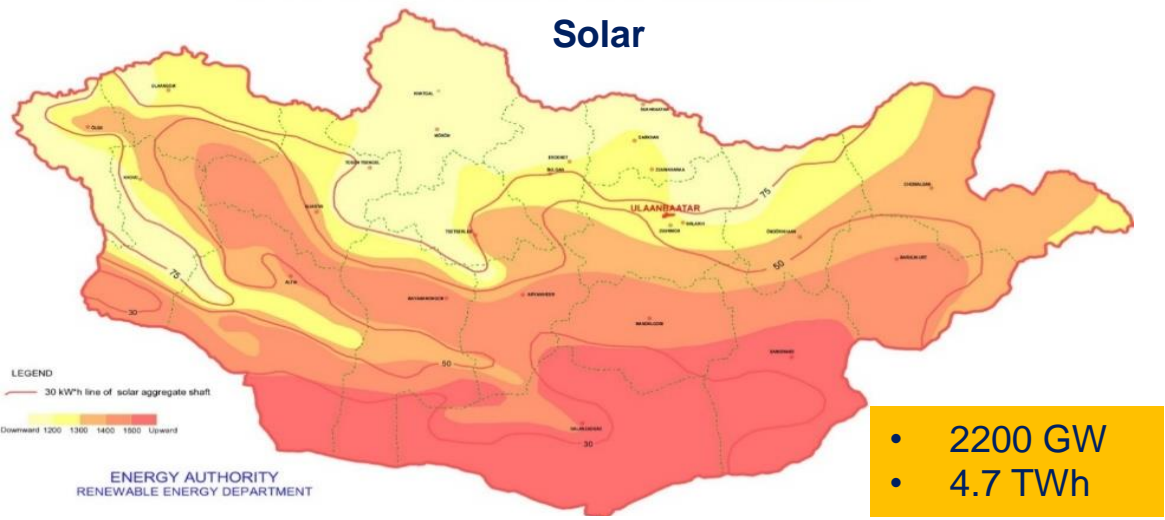
SES:
Psystem=31MW
 PdaiCHP=9MW
 Phspp=18MW
 Pdiesel=4MW



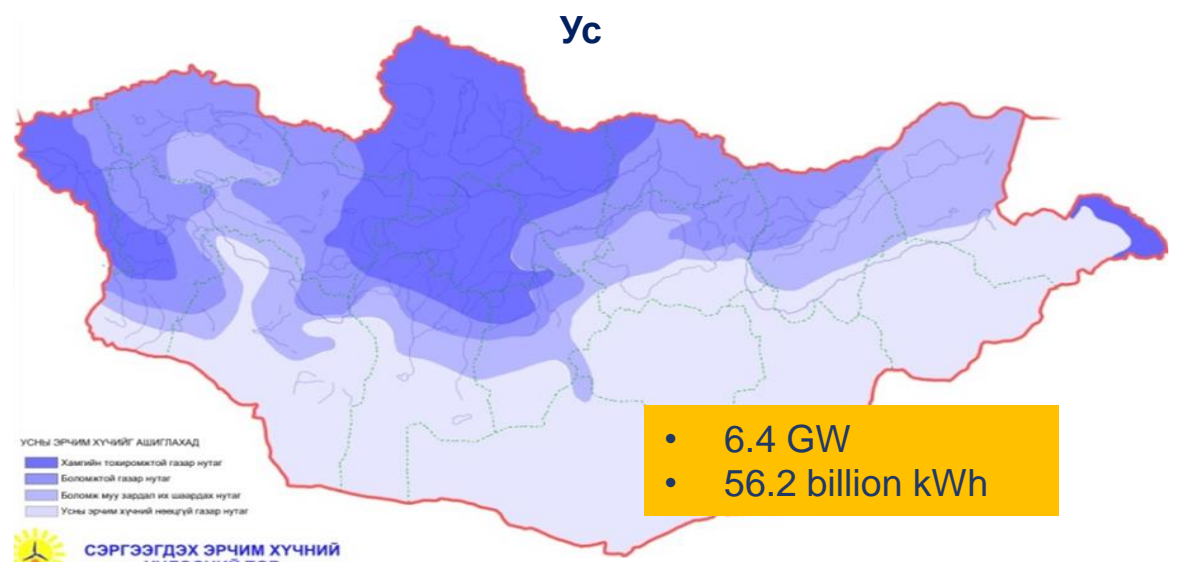
-  Solar power plant
-  Wind power plant
-  Hydro power plant
-  Thermal power plant

NATIONAL ENERGY PRODUCTION AND IMPORT IN 2021, / million kWh /

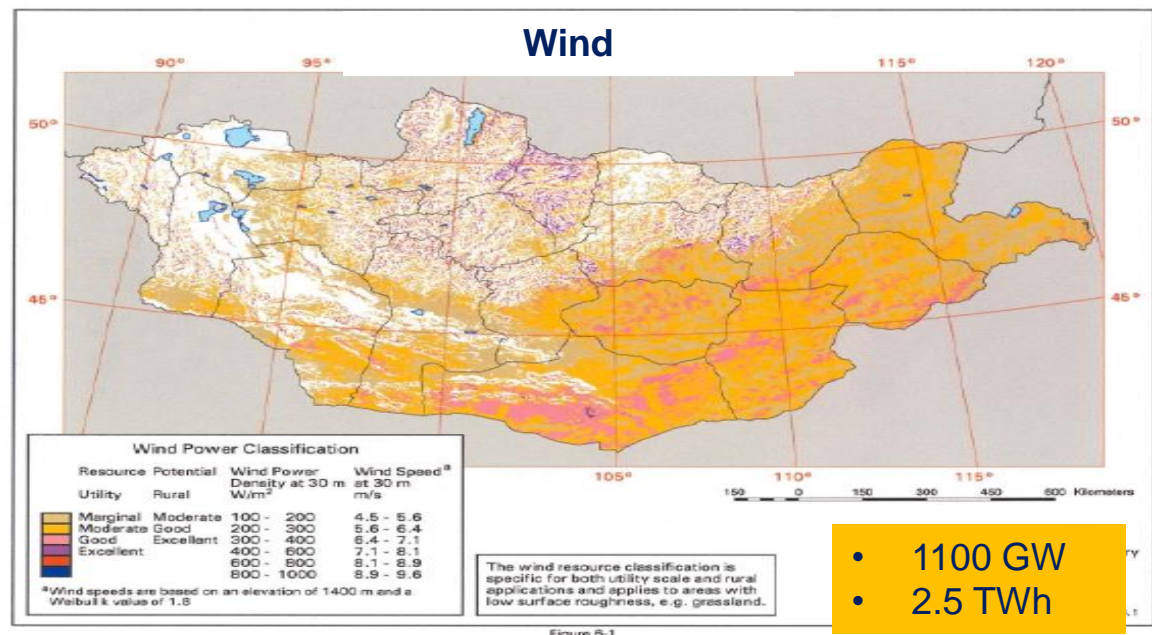




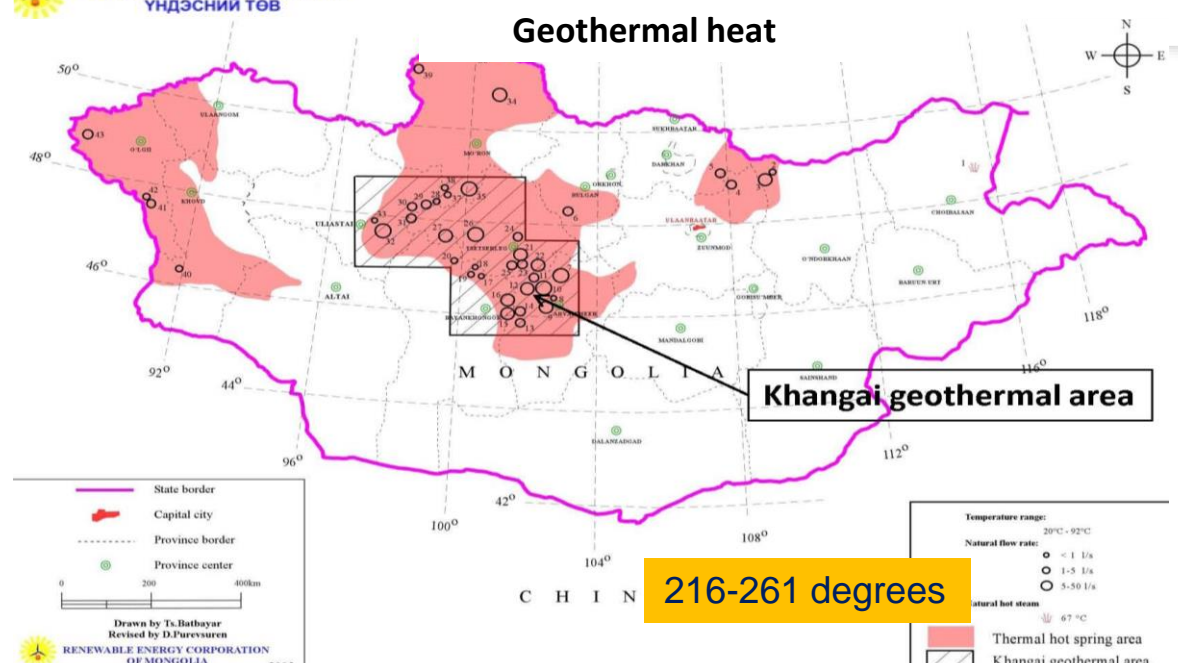
- 2200 GW
- 4.7 TWh



- 6.4 GW
- 56.2 billion kWh



- 1100 GW
- 2.5 TWh



- 216-261 degrees

"Solar energy atlas". Global atlas. IRENA. <https://irena.masdar.ac.ae/GIS/?map=318>

THE PURPOSE OF NEW RECOVERY POLICY



Reduce the negative impact of the coronavirus infection pandemic on the economy



Promptly address development barriers and expanding economic foundation



Effectively implementing the “Vision-2050” long-term development policy of Mongolia



RECOVERY OF BORDER PORT



ENERGY RECOVERY



INDUSTRIAL RECOVERY



URBAN AND RURAL RECOVERY



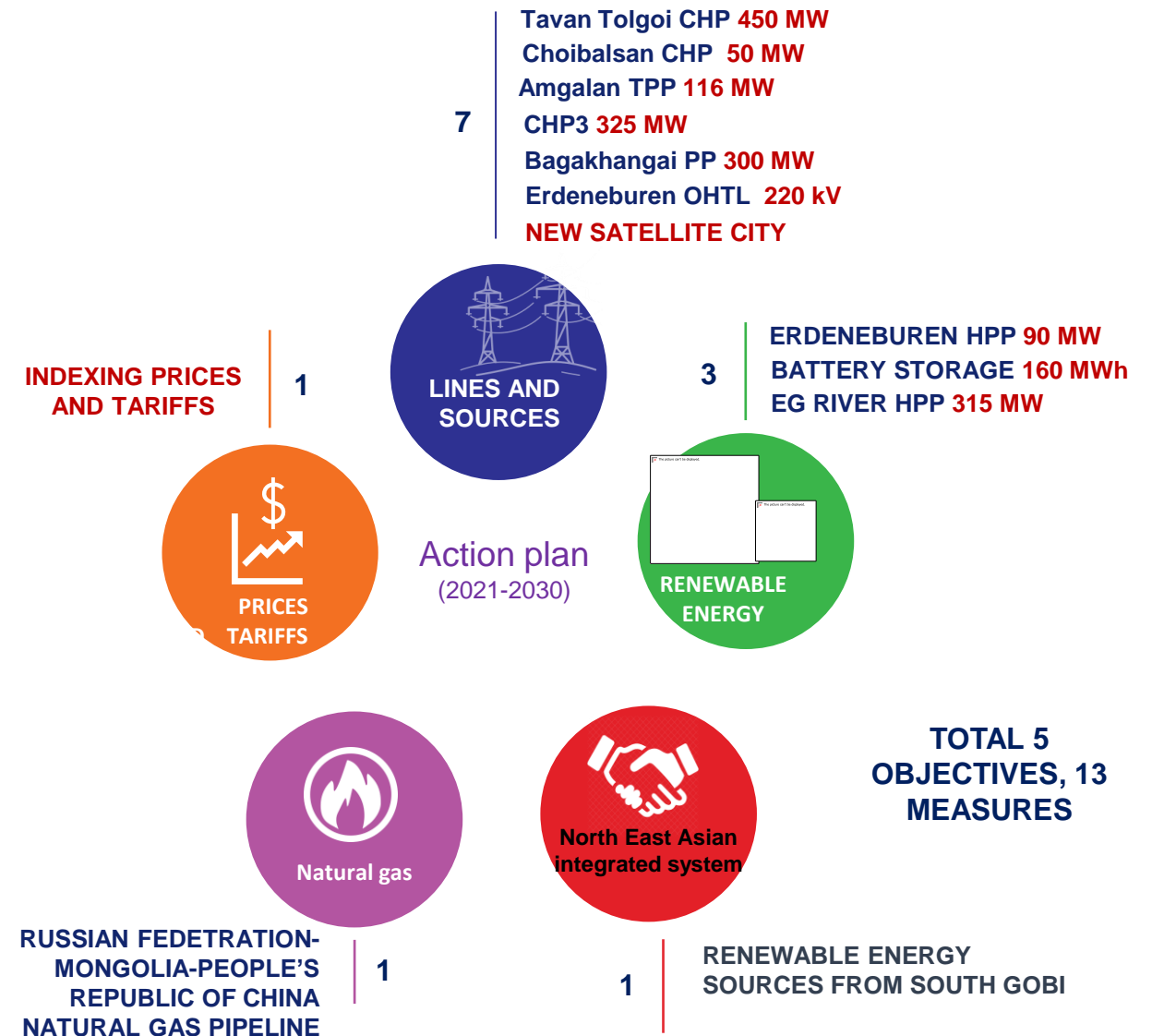
RECOVERY THROUGH GREEN DEVELOPMENT



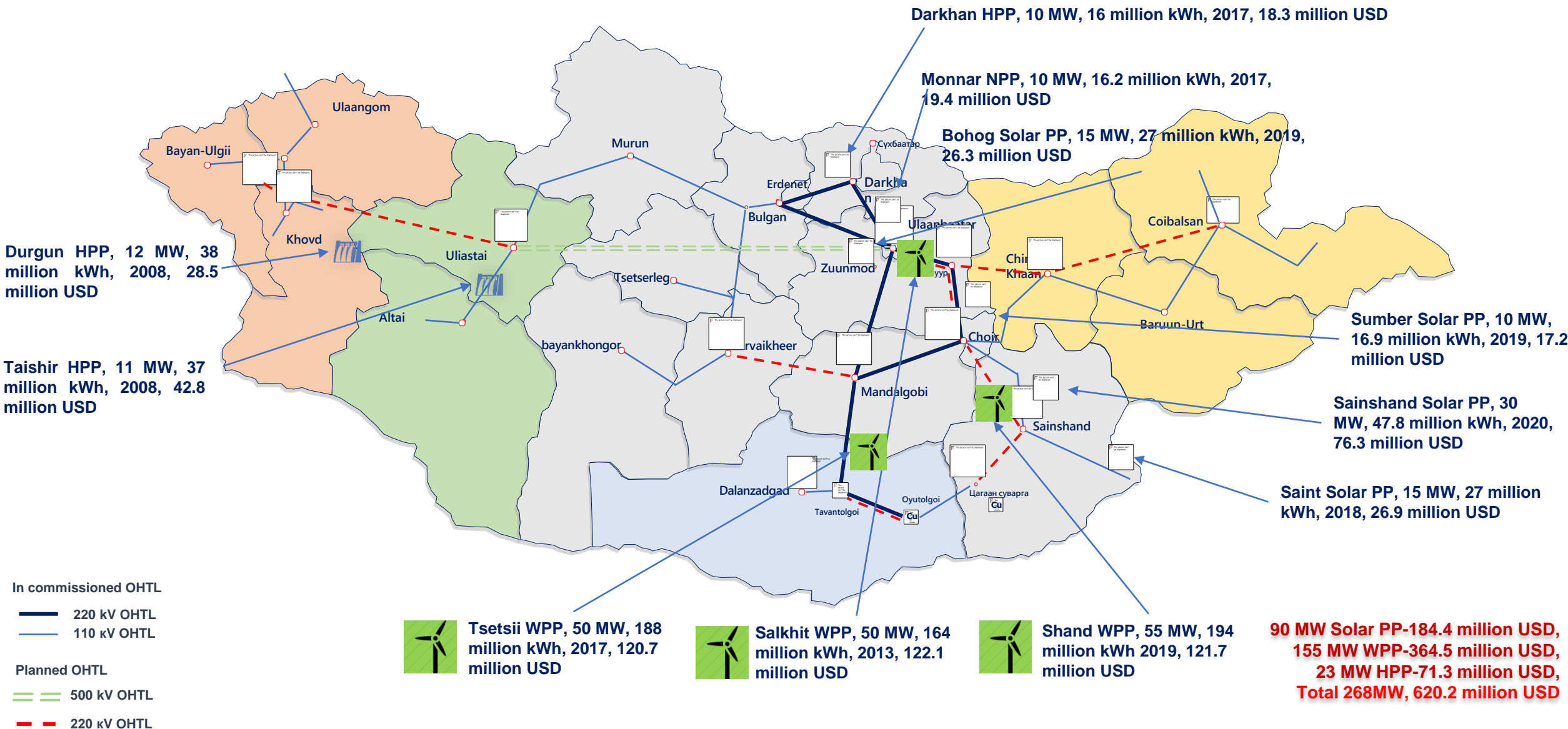
RECOVERY OF THE PUBLIC PRODUCTIVITY

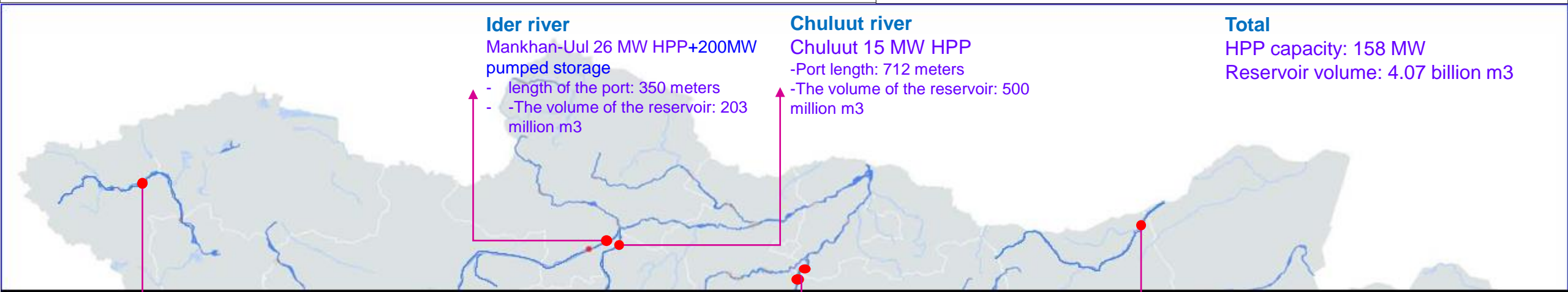
THE PURPOSE OF ENERGY RECOVERY

- ❖ New energy sources and transmission and distribution networks shall be established and their existing capacity shall be enhanced, and the reliability of energy production and supply shall be improved.
- ❖ Renewable energy facilities shall be developed in an appropriate ratio where the water facilities and stored resource stations shall be built for ensuring the reliability and stability of the integrated energy system.
- ❖ In certain phases, the energy sector shall be transferred into an independent financial and economic system.
- ❖ Actions shall be taken to ensure the preparation of the high voltage aerial transmission lines and substations for connecting to the renewable energy source and network within the Northeast Asian integrated energy grid.
- ❖ The construction of a natural gas pipeline from the Russian Federation to the People's Republic of China through the territory of Mongolia shall be boosted.



Law	Year	Content
Law		
Renewable energy law	2007	Tariffs for the purchase of energy produced by renewable energy sources in the transmission network are set in accordance with international standards.
	2015	Provisions for calculating the support tariff in addition to the consumer's electricity tariff, Customs and VAT have been exempted.
	2019	Setting the upper limit of support tariffs for connecting solar and wind sources to the grid, introducing a competitive auction system at low prices, and establishing procedures for the purchase of electricity from small-scale consumer sources to be supplied to the grid.
Policy document		
Government action program (2020-2024)	2020	It is planned to develop renewable energy production in a reasonable ratio and implement green production projects to reduce greenhouse gas emissions. 4 solar, 2 wind sources, 1 HPP, and 1 charge storage project were included.
Procedures for the supply of energy produced by the consumer's renewable energy generators to the distribution network	2020	A citizen can install renewable energy sources up to 20 kW, not exceeding 50 percent of the capacity set by the Enterprise's technical conditions.
Policy document of the government on energy /expired in 2021/	2015	Increase the share of renewable energy in installed energy capacity to 20 percent in 2020 and 30 percent in 2030
Mongolia joined the Paris and Glasgow Agreements of the United Nations Framework Convention on Climate Change	2015, 2021	Mongolia has set a goal to reduce greenhouse gas emissions by 22.7 percent or 16.89 million tons of CO2 by 2030, and to reduce greenhouse gas emissions in the energy production and supply sector by 8.34 million tons by 2030.
"Vision-2050" Mongolia's long-term development policy document	2020	Develop a low-carbon, productive and inclusive green economy and contribute to international efforts to mitigate climate change.
New Revival Policy-Energy Revival	2021	Erdeneburen 90 MW HPP, Aegean River 315 MW HPP, Renewable energy increase project / CHP-25MW, CHP-15MW, combined-0.5MW, geothermal-5 locations/, Green hydrogen, nuclear power projects





Ider river

Mankhan-Uul 26 MW HPP+200MW pumped storage
 - length of the port: 350 meters
 - The volume of the reservoir: 203 million m3

Chuluut river

Chuluut 15 MW HPP
 -Port length: 712 meters
 -The volume of the reservoir: 500 million m3

Total

HPP capacity: 158 MW
 Reservoir volume: 4.07 billion m3

Ulaanbaatar

Khovd river

Ulgii 50 MW HPP
 -length of the port: 500 meters
 -The volume of the reservoir 1074 million m3

Baidrag river

Baidrag 8 MW HPP,
 100 MW pumped storage
 - length of the port: 550 meters
 -The volume of the reservoir: 278 million m3

Baidrag river

Baidrag 11 MW HPP
 -length of the port: 600 meters-
 The volume of the reservoir: 264 million m3

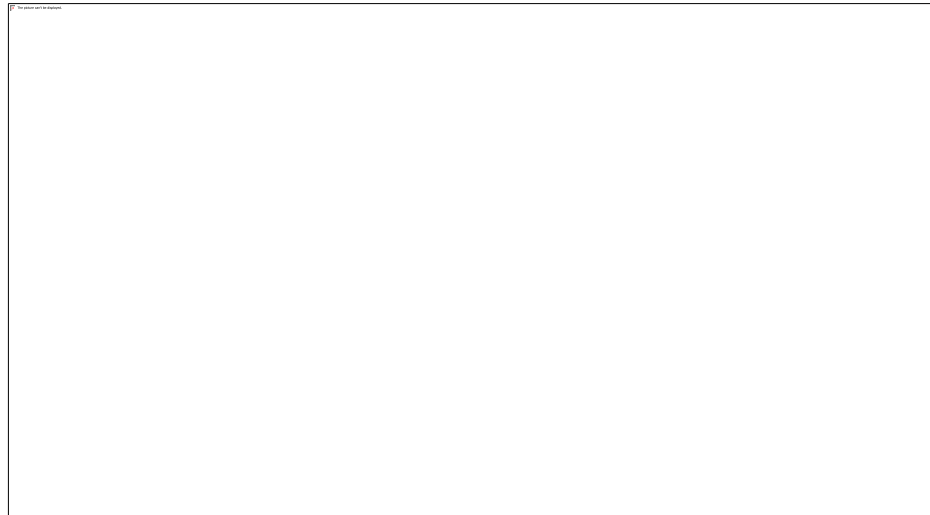
Tuul river

Mandal 20 MW HPP
 -Long length of the port: 800 meters
 -The volume of the reservoir: 1422 million m3
 Orkhon-Tuul 10 MW HPP+ 100 MW pumped storage
 -Long length of the port: 400 meters
 Reservoir volume: 49.5 million m3

Oon river

Delen-Uul 18 MW HPP
 -length of the port: 490 meters
 -The volume of the reservoir: 247 million m3

The implementation of the 100 MW hydro pumped storage project will provide an opportunity to build a solar and wind power plant with a capacity of 150-200 MW.



Socio-economic significance:

- ❖ In the southern region, It will provide electricity to 1,403 businesses and 11,890 households and support the region's economic development.
- ❖ Sainshand industrial complex, Zamiin-Uud free economic zone and strategically important mine palaces will be supplied with electricity.
- ❖ The quality and reliability of regional power supply will improve.
- ❖ The current consumption of Khar-Airag, Sainshand and Zamyn-Uud regions is 25.6 MW, and the project will increase the capacity of the line up to 250 MW.

Project overview

Ministry	Ministry
Implementation period	2021-2023
Project capacity	220 kV, 230 km long transmission line, 220 kV substation
Location	Dornogovi, Govisumber aimag
Total funding	180.0 тэрбум төгрөг
Source of funding	EBRD soft loan
included in the public investment program or not	Article 130 of Chapter 8

It is reflected in the government's action plan or 3.5.5. The regional power grid will be connected to high-voltage transmission lines, and the power supply for mining and heavy industry

Project progress

Feasibility study, design and detailed environmental assessment were conducted. The route of the 230 km line passing through the territory of the two aimags was agreed upon and confirmed. Design amendments are being made. An environmental assessment is under discussion.

TЭЗҮС, Feasibility study ✓

Design ✓

Environmental Assessment

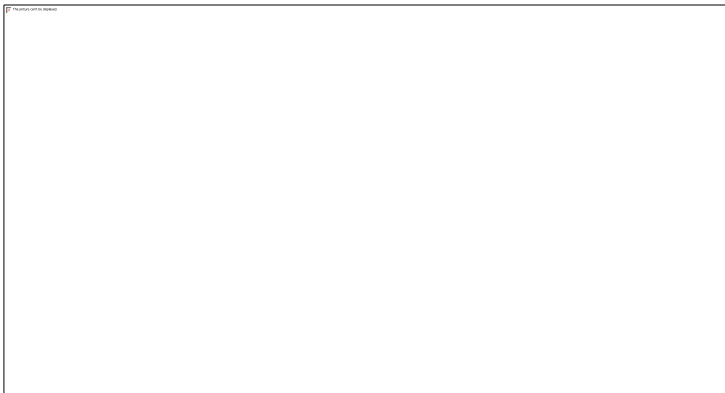
Land permit ✓

Other relevant permissions

Construction permit

Funding is fully resolved or not ✓

Contract of the general construction contractor



Socio-economic significance:

- ❖ By adjusting the flow of the Baidrag River for many years and building a hydroelectric power plant with an installed capacity of 30 MW, will reliably meet the electricity needs of Bayankhongor and Uvurkhangai provinces and the center of Sums, and create an opportunity to increase the renewable energy sources in the Central energy system. Baidrag HPP will participate in the adjustment role and new sources of renewable energy will be created to reduce energy imports..
- ❖ In this region, hydropower can work more efficiently in the form of cascades and in combination with solar and wind renewable energy sources. The technical potential to increase the production of renewable energy will be improved and the use of green energy will be increased.

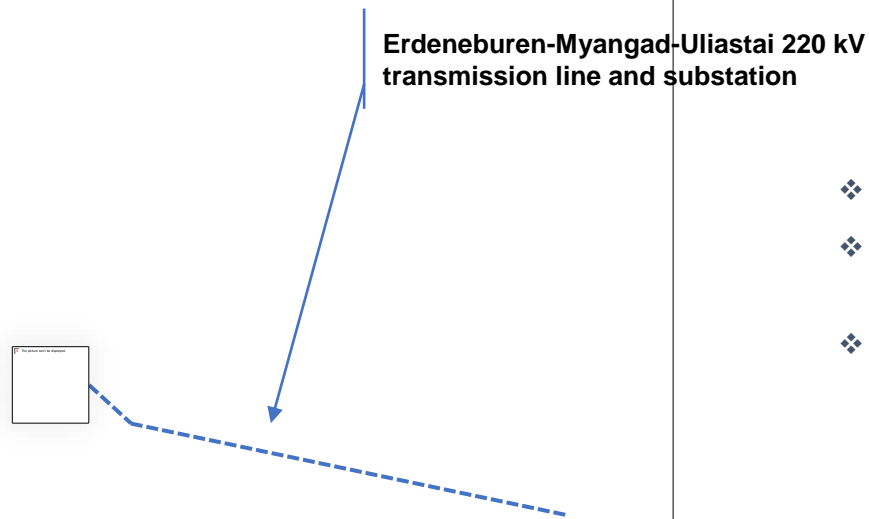
Project overview

Ministry	Ministry of Energy
Implementation period	2023-2027
Project capacity	30 MW
Location	Ulaanbaatar
Total funding	53.3 million dollars
Source of funding	-
included in the public investment program or not	-
It is reflected in the government's action plan or not	-

Project progress

Technical and economic feasibility studies are ready	
Feasibility study	✓
Design	
Environmental Assessment	✓
Land permit	
Other relevant permissions	
Construction permit	
Funding is fully resolved or not	
Contract of the general construction contractor	

CONSTRUCTION OF 220 KV 2-CIRCUIT POWER TRANSMISSION LINE AND SUBSTATION IN ERDENEUREN-MYANGAD AND MYANGAD-ULIASTAI DIRECTIONS



Socio-economic significance:

- ❖ Erdeneburen HPP will fully meet the growing demand of 5 western aimags.
- ❖ 41813 households, 4430 business entities and organizations of Bayan-Ulgii, Khovd and Uvs aimags,
- ❖ 21,113 households and 2008 businesses in Gobi-Altai and Zavkhan aimags will be fully supplied with domestic electricity.

Project overview

Ministry	Ministry of energy
Implementation period	2022-2025
Project capacity	440 km 220 kV transmission line, 220 kV Myangad, Uliastai 220 kV substation. Erdeneburen HPP will fully meet the growing demand of 5 western aimags.
Location	Bayan-Ulgii, Khovd and Uvs aimags
Total funding	300.0 billion MNT
Source of funding	State budget
included in the public investment program or not	No. 42 on the Feasibility Study List

It is reflected in the government's action plan or 3.5.1.7. Construction of the Erdeneburen 90 MW hydropower plant will begin, and the Erdeneburen-Myangad-Uliastai 220 kV transmission line and

Project progress

Feasibility study completed. This will be done in accordance with the terms of the turnkey contract. An environmental assessment is underway.

TЭЗҮС, Feasibility study



Design

Environmental Assessment

Land permit



Other relevant permissions

Construction permit

Funding is fully resolved or not

Contract of the general construction contractor

THANK YOU FOR YOUR ATTENTION