



GOVERNMENT OF MONGOLIA
MINISTRY OF ENERGY

**ENERGY SECTOR OF MONGOLIA,
COUNTRY REPORT**

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- **Reserves of Energy Mineral Resources**
- **Current Energy Policy and Measures**
- **Current Situation of Mongolian Energy Sector**
- **Electric and Heat Demand Increase**
- **Government action plan**





1. General information



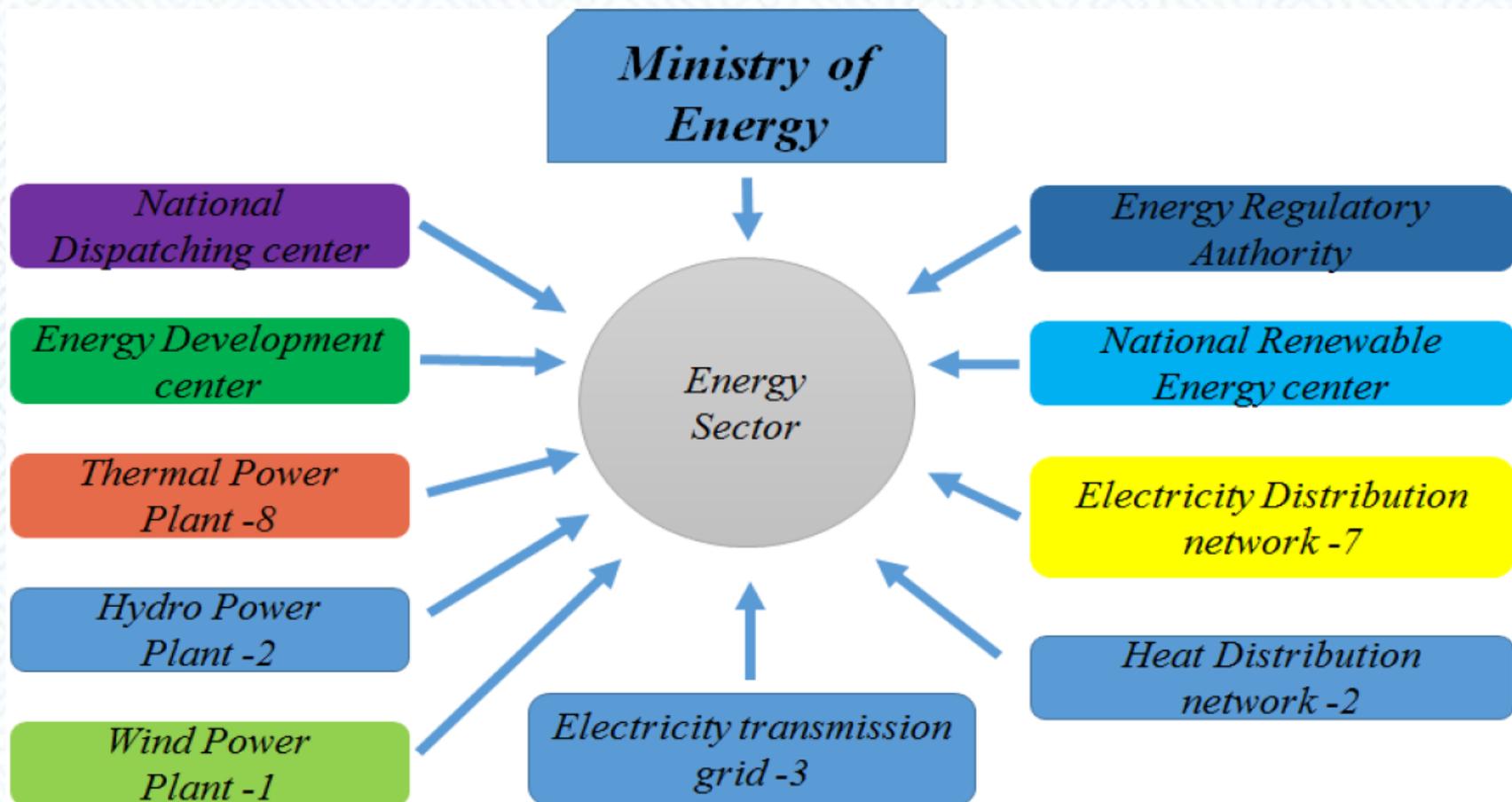
- Area: 1.564 million square km
- Population: 3,026,102.0 (2016)
- Government Type: Semi-presidential republic
- Capital city: Ulaanbaatar (approx. 1.2 million)
- GDP: 11,2 billion USD (2017)
- GDP per capita: 3,651.1 USD
- Real GDP growth: 1 % (2017)
- Unemployment rate: 8%
- Inflation: 6.7
- Exports: 4.3 billion USD
- Imports: 3.0 billion USD



Chinggis Khaan

- Number of state households: 859106
- In capital city: 376 419 households
- Official language: Khalkha Mongol 90% (official), Turkic, Russian 10 %
- Official script: Mongolian Cyrillic, Mongolian Script
- Ethnic groups: 96% Mongolians, 4% Khazakhs
- Religions: Buddhist 53%, Muslim 3%, Christian 2.2%, Shamanist 2.9%, other 0.4%, none 38.6% (2010 est.)
- Lowest annual average temperature: -33° C (-50° C)
- Highest annual average temperature: +23° C (+35.8° C)

Structure of Energy sector



Western Energy System
 Hydro PP-1, electricity
 transmission and distribution

Central Energy System
 Thermal PP-7, Wind PP-1, National Power
 Transmission Grid, Electricity Distribution Network-
 7, Heating Distribution Network-2



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Altai-Uliastain Energy System
 Hydro PP-1, electricity
 transmission and distribution

Eastern Energy System
 Thermal PP-1, electricity
 transmission and distribution

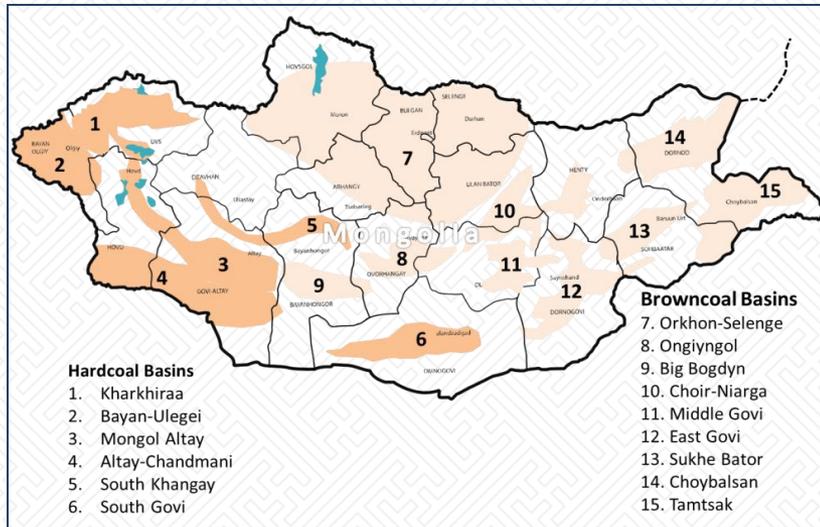
- 220 кВ-ын нэг хэлхээт ЦДАШ. Төлөвлөлт
- 110 кВ-ын хоёр хэлхээт ЦДАШ. Одоо байгаа
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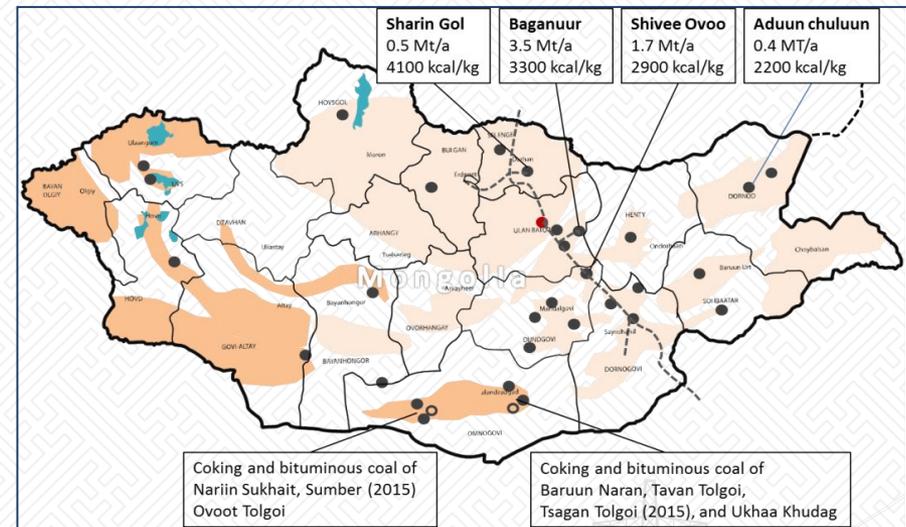
2. Reserves of Energy Mineral Resources

COAL

Coal Basins



Key Mines

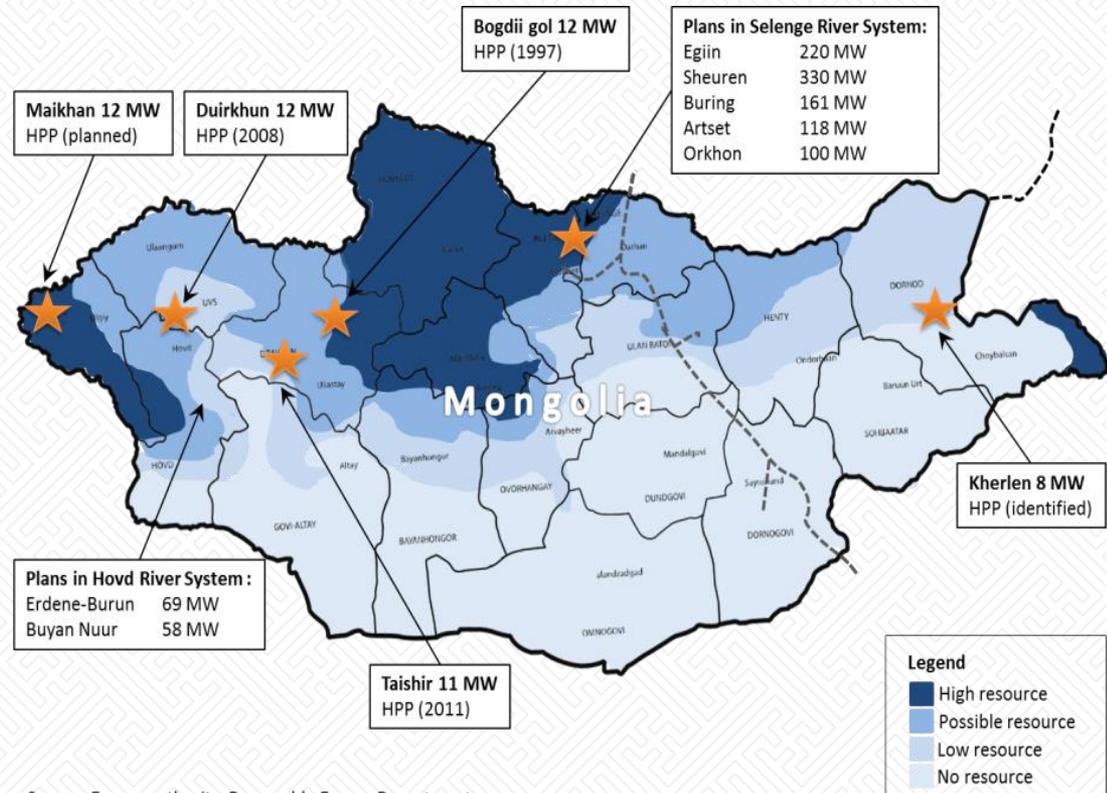


- Estimated total resources ~ 173 billion ton in 15 coal basins
- Over 370 identified occurrence in 85 deposits
- Proven Reserves 12 billion ton, of which 2 billion is coking coal
- Around 1/3 in Gobi Region
- Around 1/3 in Eastern Region

- Mines in Gobi area are for export /18 million in 2013/
 - Nariin Sulhait
 - Tavan tolgoi
- Mines in other region are for power production and household heating /12 million in 2013/
 - Baganuur, Shivee-Ovoo, Shariin Gol, Aduunchuluun etc.,

RENEWABLES

- Rich resources of Solar, Wind and Hydro in Mongolia:
- **Solar:** 270-300 sunny days in a year, 4.3-4.7 kWh/meter or higher per day
- **Wind:** 10 % of the total land area can be classified as excellent for utility scale applications, Power density 400-600 W/m², the resource could potentially supply over 1100 GW of installed capacity.
- **Hydro:** Theoretical potential 6.2 GW, more than 1 GW of these has been identified



Source: Energy authority, Renewable Energy Department



3. CURRENT ENERGY POLICY AND MEASURES

PRIORITY AREAS AND STRATEGIC GOALS

SAFETY

- Transfer the state dominated energy sector into private based competitive market
- Support innovation and advanced technology in energy sector, and implement conservation policy

- Ensure energy safety and reliable supply
- Develop mutually beneficial cooperation with regional countries
- Develop a human resource

STATE POLICY
ON ENERGY

EFFICIENCY

ENVIRONMENT

- Increase the production share of renewables and reduce negative environmental impact from traditional power generation and greenhouse gas

“State Policy on Energy” 2015-2030

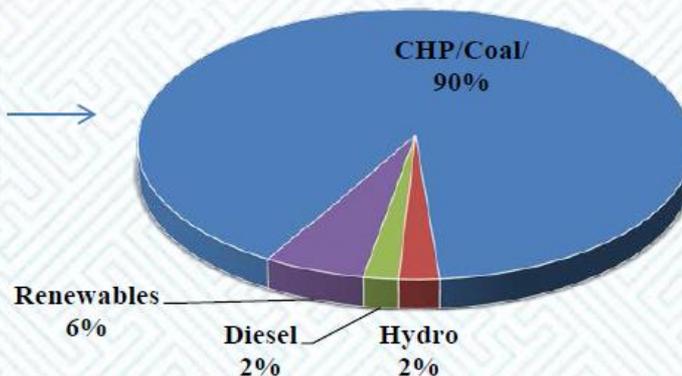
The Government of Mongolia has developed the following policies in the energy sector

1. Energy Law of Mongolia 2001
2. Mongolian Coal Sector Master plan 1995-2014
3. Mongolian Energy Sector Master plan 2000-2020
4. Oil Law of Mongolia 2002
5. Mongolia's Sustainable Energy Strategy 2002-2010
6. National Program of Renewable Energy 2005-2020
7. Mongolian Integrated Power System program 2007-2040
8. Renewable Energy Law 2007
9. Coal Program 2008
9. Energy efficiency law is expected to be approved in 2014

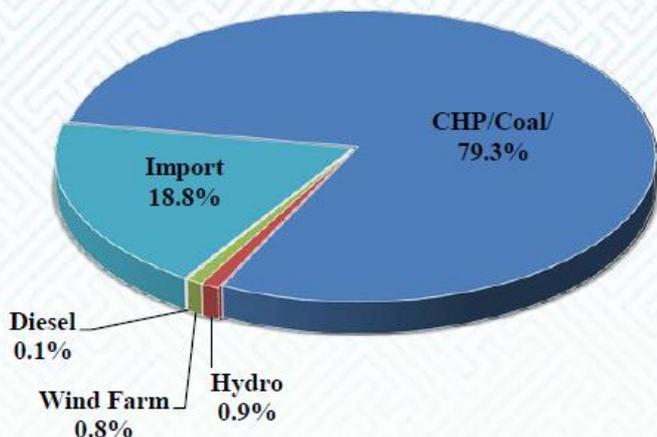
4. CURRENT SITUATION OF MONGOLIAN ENERGY SECTOR

The majority of our heating and electrical energy is being generated by coal fired thermal power plants and the remaining small amount is from hydro, wind, solar and diesel stations.

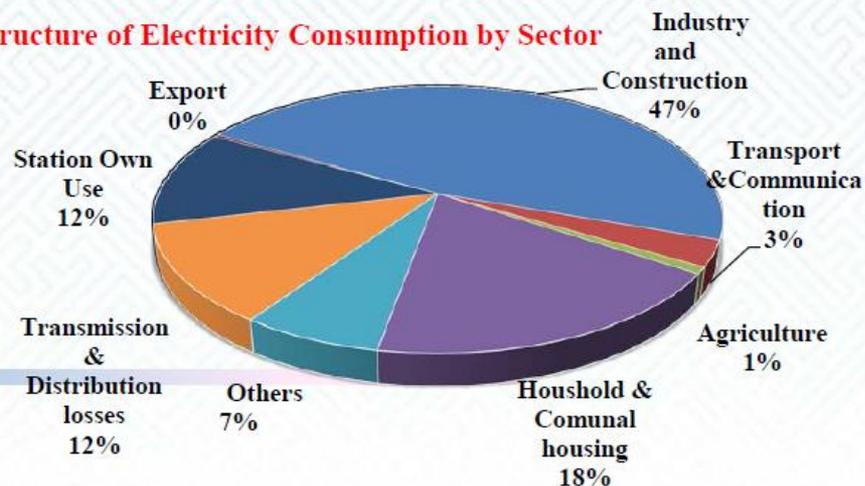
**Total Installed Capacity
of Power Plants: 1122 MW**



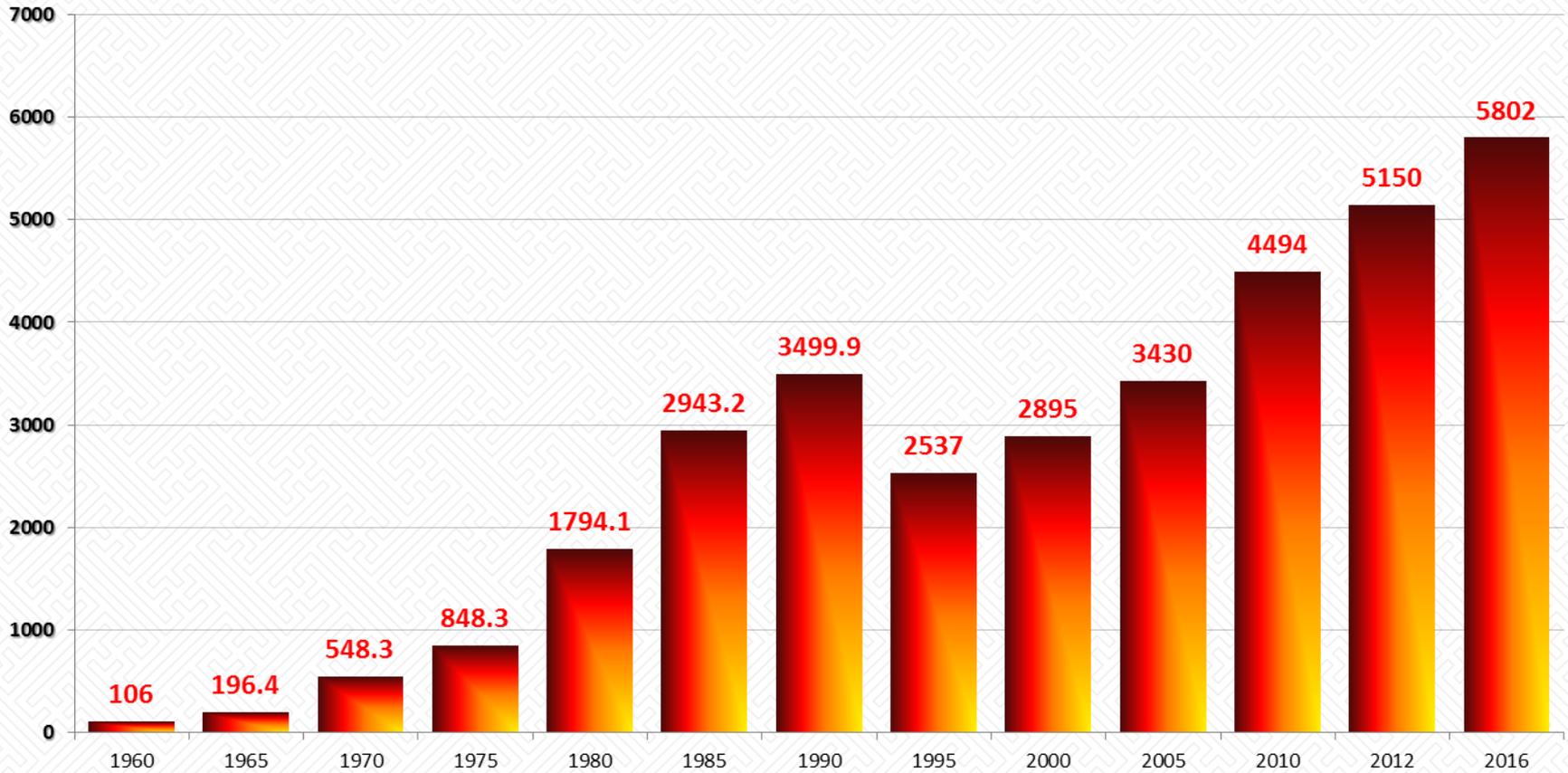
**Electricity Production + Import
by type of sources, total 6.3 bln.kWh**



Structure of Electricity Consumption by Sector



ELECTRICITY GENERATION mln.kw.h





CO2 EMISSION:

Energy sectors CO2 emission rate /portion/ to total emission of Mongolia is too high compared to the other sectors. /Mongolian power generation sectors CO2 emission (6399g) has high volume compared to other sectors as follows, industrial and construction sectors CO2 emission is 356g, agriculture, commercial and domestic CO2 emission 1181g, transport sectors CO2 emission 1887g according to the report ministry of environment and green development, 2012/

Over 160 thousand ger areas residents polluting air by firing 200 thousand tons raw coals and 160 thousand m3 woods annually;



Electricity tariff for residential

No	Classification	Unit	Tariff
1	<i>Simple meter</i>		
a	Monthly consumption under 150 kWh	USA \$/ kWh	0.041
b	Monthly consumption over 150 kWh	USA \$/ kWh	0.049
2	<i>Time use of meter /2 parts/</i>		
a	Daytime consumption /06.00 am~21.00 pm/	USA \$/ kWh	0.043
b	Evening and nighttime consumption / 21.00 pm~ 06.00 am /	USA \$/ kWh	0.032
3	<i>Monthly base tariff</i>	USA \$/ kWh	0.828

Remark: Daytime, evening and nighttime tariff will apply duration of the meter hours.



TARIFF FOR INDUSTRIAL ELECTRICITY CONSUMPTION

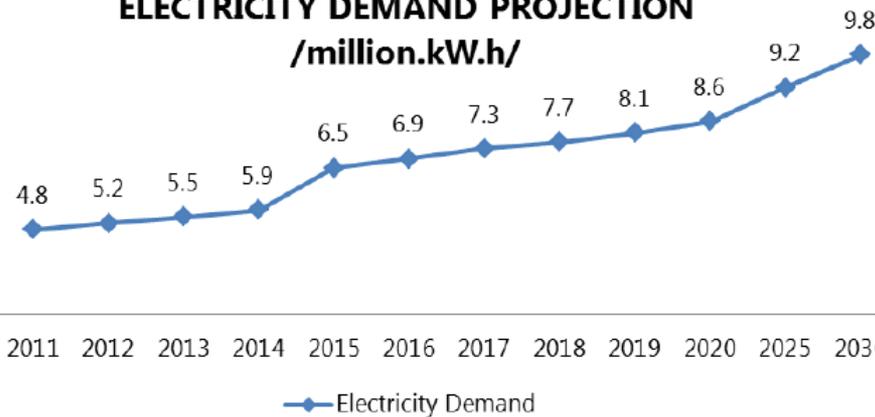
The tariff (VAT excluded) for industrial electricity shall be determined depending on the its classification of units of indicators as follows:

No	Classification	Unit	Tariff
1	<i>Mining industries</i>		
	<i>These : Coal mining exploration and cultivation</i>		
	<i>Oil and gas mining exploration and cultivation</i>		
	<i>Iron Mining exploration and cultivation</i>		
	<i>Other mining exploration and cultivation</i>		
1.1	Simple meter	USA \$/ kWh	0.065
1.2	Time use of meter /3 parts/		
a	Daytime consumption (06.00 am ~17.00 pm)	USA \$/ kWh	0.065
b	Evening consumption (17.00 pm ~ 22.00 pm)	USA \$/ kWh	0.011
c	Nighttime consumption (22.00 pm~06.00 am)	USA \$/ kWh	0.032

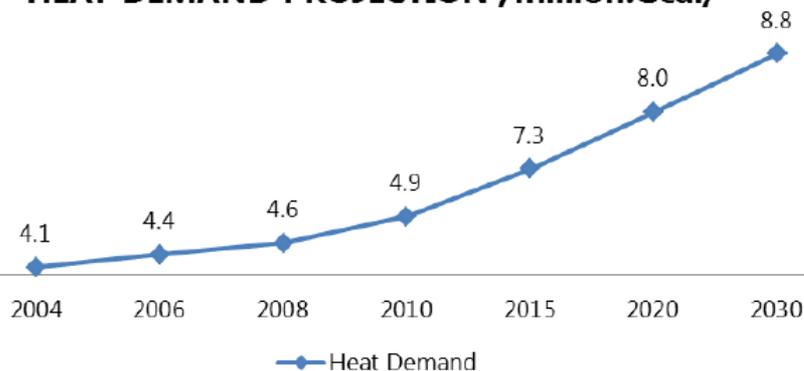


5. ELECTRICITY AND HEAT DEMAND INCREASE

ELECTRICITY DEMAND PROJECTION
 /million.kW.h/



HEAT DEMAND PROJECTION /million.Gcal/



- ❖ Heat and electricity demand expected to grow due to the economic development
- ❖ Need to secure reliable energy supply which will ensure other sectors development
- ❖ Demand increase creates the revenue growth of energy sector

5. GOVERNMENT ACTION PLAN 2016-2020

Power Sector Main Objectives /Power Plant, Hydro, Renewables /

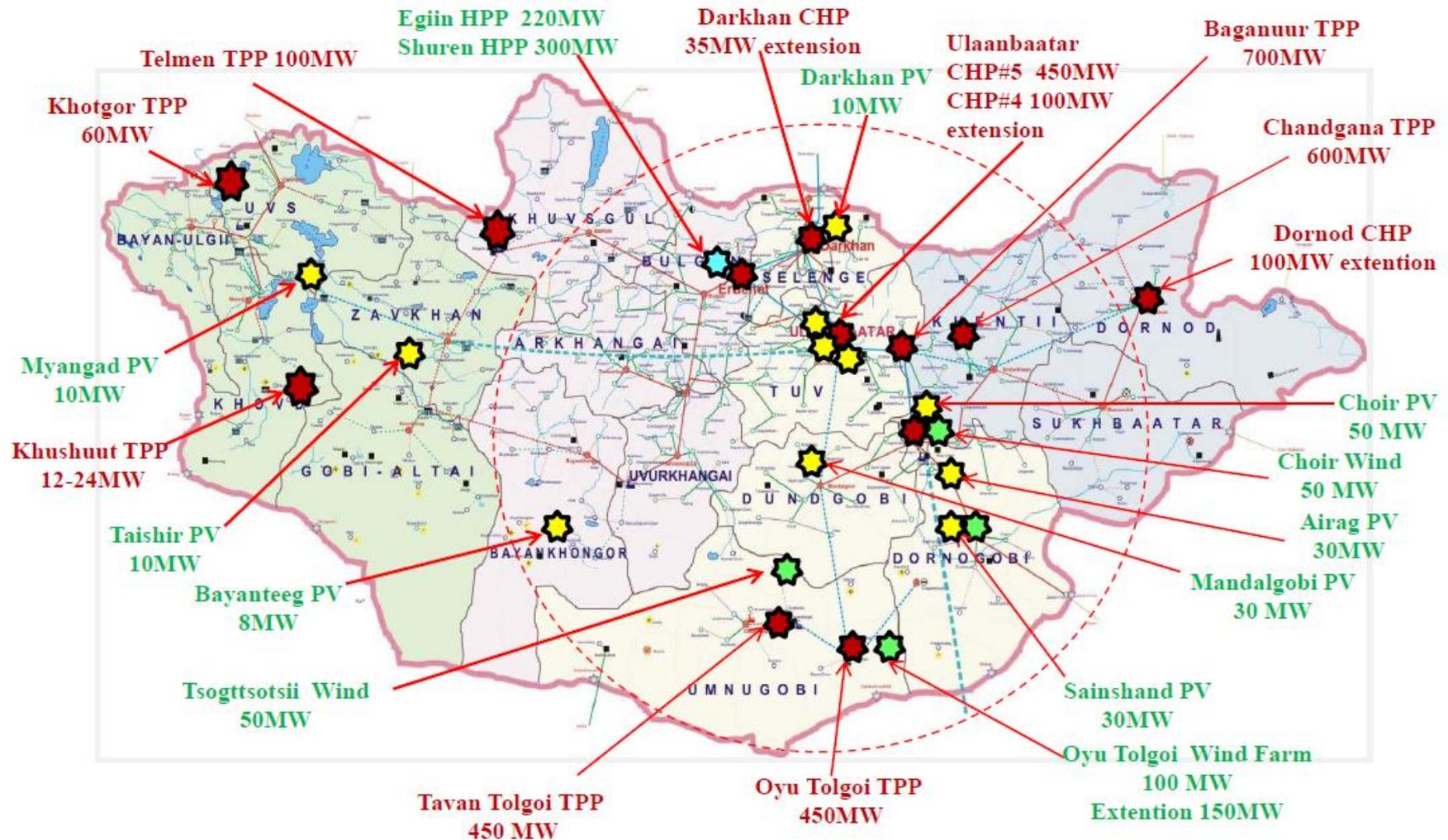
#	Objective	Action	Investment	
			Budget, million USD	Source
1	Extend installed capacity of existing Combined Heat and Power Plants	Extend Capacity of CHP Plant #3 in Ulaanbaatar by 250 MW	300	Government soft loan
2		Extend Capacity of Choibalsan CHP Plant by 50 MW	90	Government soft loan
3		Extend Capacity of Erdenet CHP Plant by 35 MW	54	Government soft loan
4	Build new Power plants in central region	Tavantolgoi 450 MW Power Plant Project	2000	Private Investment IPP
5		New Power Plant in Central region Project	2000	Private Investment Concession
6	Increase share of Renewable generation	Eg 315 MW Hydro Power Plant	824	Government soft loan
7		Khovd 260 MW Hydro Power Plant	824	Private Investment Concession
8		Implement Solar Plant Projects, Sum-30 MW	60	Private Sector
9		Implement Wind Farm Projects, Sum-100 MW	250	Private Sector
10		Develop Solar heating in district heating in rural towns	20	State budget and Private Sector

Power Sector Main Objectives /Transmission lines, District heating, Efficiency /

#	Objective	Action	Investment	
			Budget, million USD	Source
11	Extend power transmission network	Baganuur-Choir 220 kV 178 km OHTL and extension of the substations	40	Government soft loan
12		Baganuur-Undurkhaan 220 kV 202 km OHTL and substations	53	Government soft loan
13		Choir-Sainshand 220 kV 216 km OHTL and substations	55	Government soft loan
14	Renew heat supply systems in province centers	Build new Heat Plant with centralized heating system in 10 province center	130	Government soft loan
15		Rehabilitate district heating system in Darkhan city	2000	Government soft loan
16		Improve efficiency of CHP#4 Plant of Ulaanbaatar	46	Government soft loan
17	Enhance efficiency and introduce advanced technology	Expand SCADA system in Central Transmission System	8	State budget and Company
18		Domesticate new voltage level in electricity distribution networks	20	Private sector and Company
19		Built Semi-coke oven based on CHP#2 Plant in UB	15	State budget and Company
20		Install 3 MW Heat Pump system based on cooling tower heat source of CHP#3 Plant in UB	11	Private sector and Company



PLANNED PROJECTS



A number of private developers are currently working on several coal-fired power plants and a number of Wind and Solar power which are mostly in the feasibility stage



THANK YOU FOR YOUR ATTENTION

Website: <http://www.energy.gov.mn/>

