



Ulaanbaatar City Heating Supply Current Status and Future Trends

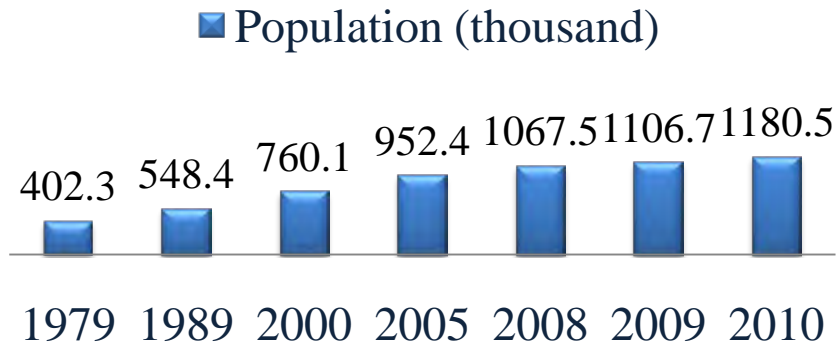
Gankhuu Tsevelsodnom, Chief Engineer of Ulaanbaatar city and Head of Investment Department, Municipality of Ulaanbaatar city, Mongolia

UN-HABITAT Environmental Technology Expert Group Meeting II
“Technical Cooperation for Sustainable Environmental Development in the Asia-Pacific Region”
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Ulaanbaatar City

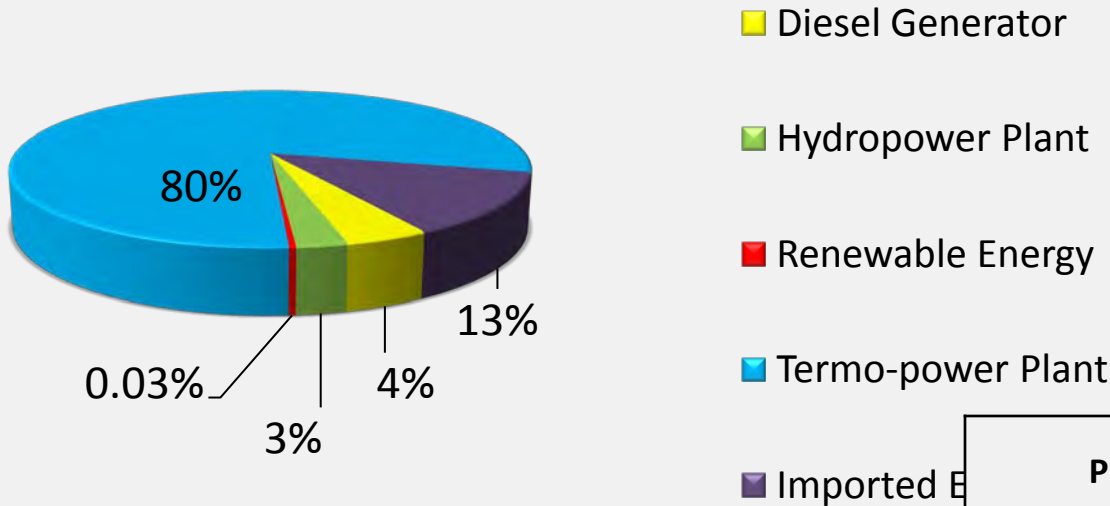


- Ulaanbaatar is Capital city of Mongolia
- Total area is 470'444 hectares
- Built-up area is 10.2440 hectares
- The coldest capital in the world, highest winter temperature is -40°C
- Long heating season- 8 months
- Heating season starts on 15 Sep and ends on 15 May
- Population of Mongolia 2.7 million, of them around 1.1 million reside in the capital city Ulaanbaatar
- In Ulaanbaatar, 40% of the population live in apartments, while 60 % in ger areas
- From total household energy consumption costs, 60% is spent for heating, the rest for electricity



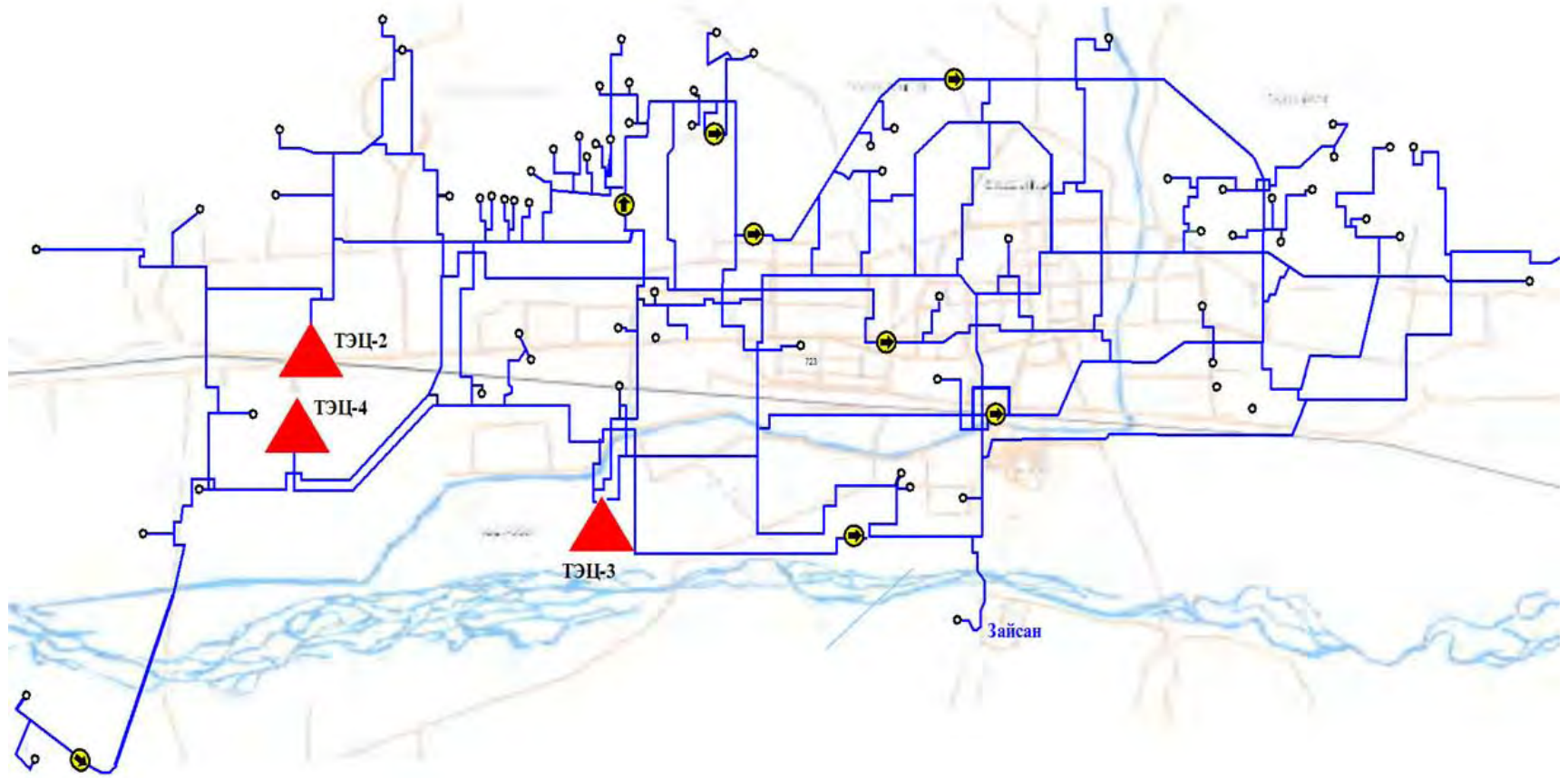
Energy Production of Mongolia

Total Consumption -1047.55 MW



Production	State wise /MW/	Ulaanbaatar /MW/
Diesel Generator	46.00	-
Hydropower Plant	27.75	-
Renewable Energy	3.70	-
Termo-Power Plant	835.7	712.0
Imported Energy	134.4	134.4

Central Heating System of the City



- 3 Termo-Power Plants
- Transfer stations with capacity of 220/110 KÂ
- Transfer stations with capacity of 35/6, 35/10 KB
- Distrubitor Stations with capacity of 10, 6KÂ

Resources of Heating Supply



3 Termo Power Plants with total capacity of 1849.04 MW provide energy for over 4200 buildings



1093 Heat only Boilers provide 24.824 MW energy to over 1500 facilities

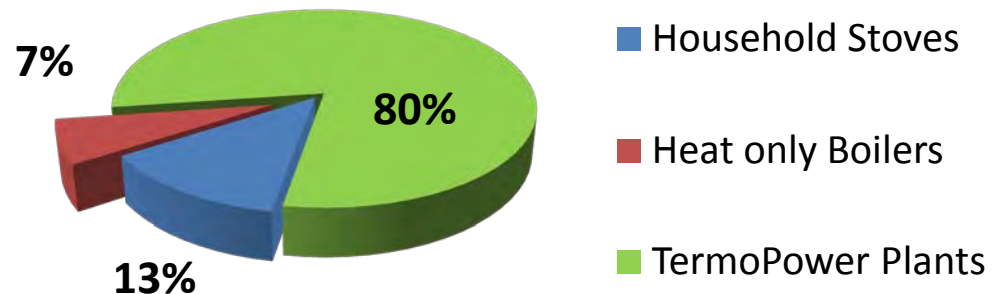


Common household stoves provide 46.1MW for 145 000 Households

Capacity of TermoPower Plants

Termo-power Station	Capacity /MW/
TPP № 4	1090.4
TPP № 3	535,92
TPP №2	32.48

Heating Supply Composition



Resources Ulaanbaatar City Energy



Coal

5.9 Million ton per year



Wood

178.0 thousand ton per year for 145000 households use



Briquette

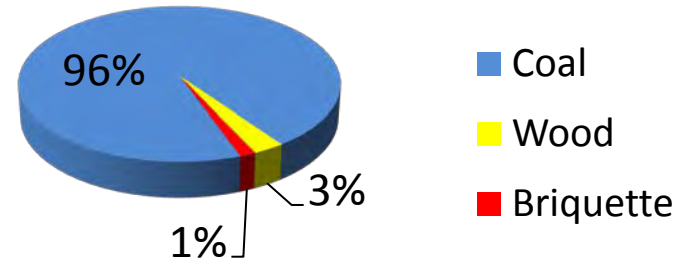
92.3 thousand ton per year



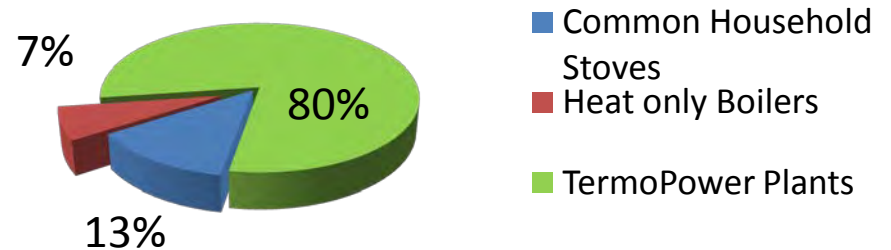
Gas

for household use

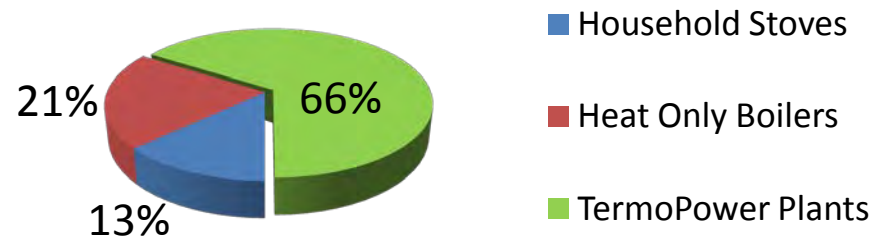
Constituents of total fuel



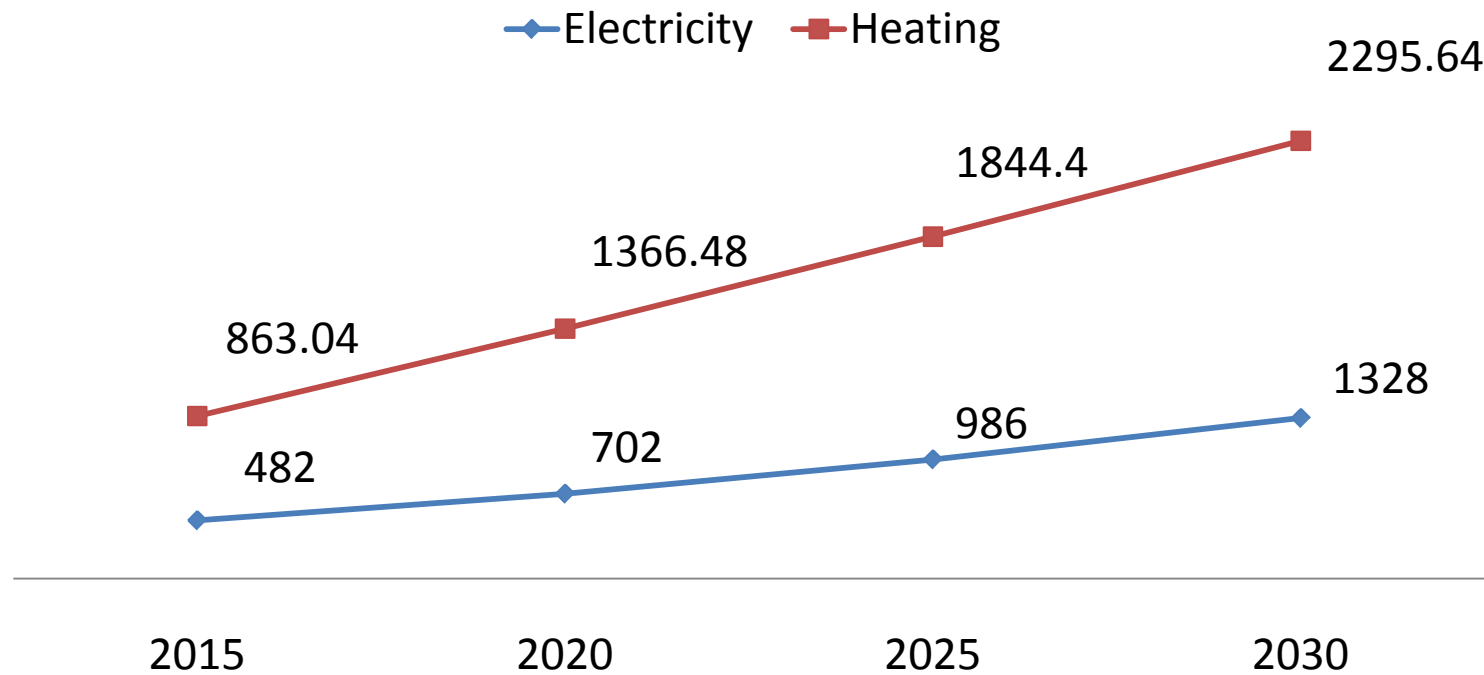
Energy Supply Constituents



Coal Consumption



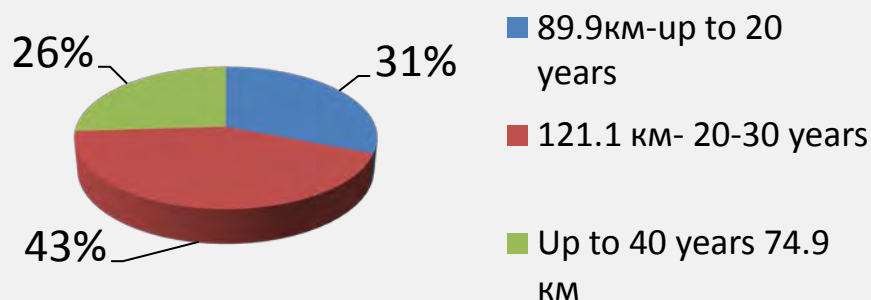
Trends in UB Energy Consumption Growth



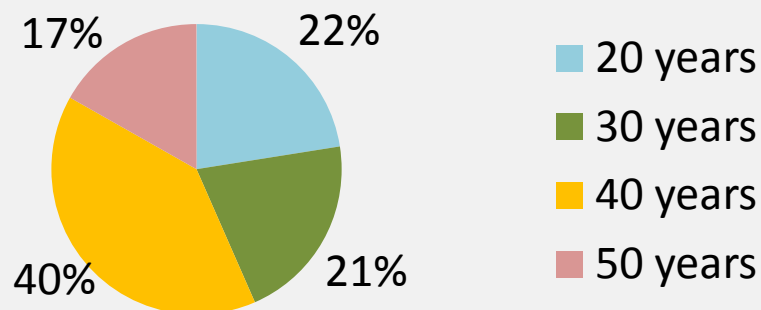
Challenges for Energy Sector

- Introduction of advanced coal modification technology for environment friendly fuel production in order to reduce winter air pollution in Ulaanbaatar city
- Outdated and deteriorated heating lines and facilities need to be changed and maintained
- Increased energy demand due to population growth need expansion of the existing capacity
- Increase energy efficiency of heating supply system
- Introduction of new advanced technologies
- Installation of heat meters for the consumers
- Research and Development for additional and alternative energy resources

Aging of facilities of central heating system



Aging of 0.4, 6-10 kV electricity lines



Planned Actions

- Local heating centers to be established in peri-urban areas where central heating system hasn't reached yet
- Redevelopment of informal settlement areas
- New Thermo-Power Plant construction in order to meet increased energy demand
- Upgrading of the central heating system through expansion and maintenance of the existing engineering network
- Technology renovation for reduction of energy loss of the engineering network
- Control population growth of the city through improvement of the suburb and remote area energy supply

Projects in Energy Sector of Mongolia (1990-2010)

Total number of projects completed and on-going: 67

Total budget of the projects: 575.3 Million USD

from which loan: 347.9 Million USD

Grant aid: 227.4 Million USD

Successful Projects:

- Reduction of energy loss in the distribution network
23.400.000 USD (Loan) from 2004
- Energy Efficiency Project
1.875.000 EU from 2008
- Thermal-technical rehabilitation of panel building
200.000USD 2007

Thank you for your attention!