CLEAN FUEL PERSPECTIVES

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CONTENT:

• Coal reserves
• COP 15 Accord
• Challenges and Opportunities
• Measures taken by the Government
• Cooperation perspectives and Future actions
**PRIMARY ENERGY RESOURCES**

**Coal**
Most electricity (~ 95 % in 2009) is generated from coal-fired power plants. In 2009, more than 70 % of domestic coal consumption have been used for electricity and heat generation.

**Petroleum**
In Mongolia, the petroleum is totally consumed as fuel for cars, buses, trucks, airplanes and locomotives (in the form of gasoline, diesel and jet fuel).

**Renewable energy**
Renewable energy accounted for more than 3 % of the domestically produced energy used in Mongolia. The Mongolia’s hydroelectric plants produce 28.3 MW, making the largest contribution to the country’s renewable energy.
Mongolian Coal Resources by Regions

Total Reserves 162.3 BLN Tons

Central: 26.5
Mountainous: 7.7
Gobi: 49.7
Western: 27.1
Eastern: 51.1
Distribution of Large-Scale Coal-Bearing Basins

Mongolia
Land: 1.57 million km$^2$, 3,500 lakes and 7,000 rivers, average height: 1,580 m above the sea level

- Coking coal
- Bituminous coal
- Subbituminous coal
- Lignite

1: Kharkhiraa
2: Mongol Altay
3: South Khangay
4: Ikh Bogd
5: Ongiyngol
6: South Govi
7: Choir-Nyalga
8: Middle Govi
9: Choybalsan
10: Sukhe-Bator
11: East Govi
12: Tamsag
13: Orkhon-Selenge
14: Altay-Chandmani
15: Bayan-Ulgii
### COAL DEPOSITS BY REGIONS

<table>
<thead>
<tr>
<th>№</th>
<th>Descriptions</th>
<th>Central area</th>
<th>Mountain ous area</th>
<th>Gobi area</th>
<th>Western area</th>
<th>Eastern area</th>
<th>Total</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Aimak</td>
<td>Төв Сэлэнгэ Булган Дархан уул Орхон</td>
<td>Хөвсгөл Архангай Сөвөрхэнтай Баянхонгор</td>
<td>Сөмөгтөн Дорноговь Дундговь Говьсємбэрр</td>
<td>Баян-Сэлэн Увс өвөрхэнтай Говь-Алтай Завхан</td>
<td>Дорнод Сэлэнгэ Булган Дархан уул Орхон</td>
<td>21</td>
</tr>
<tr>
<td>3</td>
<td>Number of deposits</td>
<td>13</td>
<td>13</td>
<td>20</td>
<td>23</td>
<td>16</td>
<td>85</td>
</tr>
<tr>
<td>4</td>
<td>Reserves (mln tn)</td>
<td>26528.1</td>
<td>7704.1</td>
<td>49785.3</td>
<td>27157.9</td>
<td>51165.1</td>
<td>162340.5</td>
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<tr>
<td>5</td>
<td>Percentage in total reserves</td>
<td>16.5</td>
<td>4.7</td>
<td>30.6</td>
<td>16.7</td>
<td>31.5</td>
<td>100</td>
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• **Industrialization policy:**
  – Take multi-step measures to supply households with smokeless fuel
  – Implement renovation projects of Baganuur and Shivee Ovoo coal mines to stable coal supply to power plants
  – Implement projects to provide stable coal supply to Darkhan and Erdenet power plants
  – Implement projects on the geological survey of coal mine methane gas and create a legal environment for a wide use of gaseous fuel
• Mongolia: Nationally appropriate mitigation actions of developing country Parties:
  – ... 2. Energy supply: Improve coal quality:
    • A. Coal beneficiation
    • B. Coal briquetting
• **Coal beneficiation:**

Coal washing can be introduced at the biggest coal mines in Mongolia, such as Baganuur, Shivee-Ovoo and Tavantolgoi. This option is technically feasible; there are low institutional barriers. This option is already included in the Mongolian Action Plan.
Coal briquetting:
Coal is one of the significant sources of environmental pollutions, especially air pollution. Therefore, to introduce the coal briquetting technology may well be an efficient way to mitigate GHG emissions and reduce air pollution. Some studies and investigations on conventional formed coal briquettes have been carried out by several Mongolian organizations. But the quality of coal briquettes does not meet standards.
Coal briquetting: (Continued)

Feasibility study on production of conventional coal briquettes which carried out by the Mining Institute of Mongolia with support of UNDP, shows that production cost was estimated at 14000 tug/tonne i.e. 13.5 US$/tonne.

According to estimations by Hashimoto Sangyo Company of Japan in Mongolia, the initial capital cost for small scale (5-6 thousand tons per year) coal briquetting plant runs about 9.6 million US$. Compared with other technologies (e.g. liquidification and gasification) for production of clean fuel from coal, the coal briquetting technology has several advantages such as less investment is required and lower life cycle cost.
DRAWBACKS:

- General level of Research and study is low
- Lack of infrastructure
- Lack of investment
- Low level of competitiveness of the local companies
- Instability of legal environment
- Different or divergent opinions on creating national welfare and distribution of it
OPPORTUNITIES:

• Research results and Database created before
• Major deposits with favorable conditions revealed
• Greater potential to increase current reserves
• Steady increase in Commodity prices on the world markets
• Increase in demand for minerals in the region
• Increase of interest to invest into the sector from international potential investors
OBJECTIVES:

1. Improve legal environment
2. Intensify research and study works on the mineral sector
3. Create Geo-information database
4. Define strategy of scientific and technological development for the Mineral sector and action plan accordingly
5. Identify main directions of mining production
6. Mining rehabilitation
7. Main directions of Development of heavy industrial sector
8. Environmental issues and regional development
9. Health issues and natural environment
10. Re-processing of minerals and other raw materials
11. Human resources development
• Drafting a program “Introduction of clean fuel into domestic consumption”. Financial support from the EBRD UK.
• “Semi coke processing plant based on the PP -2 with capacity of 210000 tons”.
• “Smokeless Ulaanbaatar” program
• New law just approved: “Fee on air pollution”
THANK YOU FOR YOUR ATTENTION

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