RE technology Penetration

Small and Mid scale RE technology penetration to Mongolian Energy sector

Angarag Myagmar Ministry of Energy . Mongolia
Resources

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 ahs been identified.
Legal environment

- 2010 Renewable energy Law
- 2005 National Renewable energy program

- Distribution of 100,000 solar lights 30-80 W systems
- Installing 18 soums with Solar–Wind, Solar–Diesel hybrid systems 100-150Kwh
- 13 small hydropower 100Kwh - 10MW
## 100,000 Solar Program

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<tbody>
<tr>
<td><strong>Гэрийн нарны зайн систем</strong></td>
<td>1132 ширхэг (50Вт)</td>
<td>31790 ширхэг (25, 50, 75 Вт)</td>
<td>40400 ширхэг (50Вт)</td>
<td>6824 ширхэг (25, 50, 75 Вт)</td>
<td>20000 ширхэг (50Вт)</td>
<td>100146 ширхэг</td>
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<td><strong>Хоронго оруулалт</strong></td>
<td>Улсны төсөв</td>
<td>Япон, БНХАУ —ын тусламж</td>
<td>Улсны төсөв -16.4 тэрбум.Т</td>
<td>Дэлхийн банк -0.8 сая.$</td>
<td>Дэлхийн банк -5.4 сая.$</td>
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100,000 Solar program

- Overall every Nomad family uses Solar panels
- 174,000 solar panels provided by government
- Continue by private companies 13 distribution companies
Nomad life

• Uses:
  - Light
  - Mobile phone
  - Fell trimmer
  - Satellite TV
  - Refrigerator
Status Quo?

Needs on Electricity access:
- SME
- Agro irrigation systems
- Road construction
- Production units
- Dairy farm cooling systems
- Nature conservation units
- Border control
- Banking security UPS systems
- Hospital UPS backup systems
Test

- Mobile Container systems 20-100kwh
- Most equipment technologies uses 10kwh between 20kwh
- Some are season required
Test

- Batteries NAS
- Batteries Durathon
- High capacity storage
- Small size
- Harsh weather conditions
Thank you for your attention

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