Introducing Renewable Energy To Mongolia

Overview

1. Mongolian power system
2. State policy about renewable energy
3. Renewable energy potential
4. Challenges
5. Opportunities
6. Future of renewable energy

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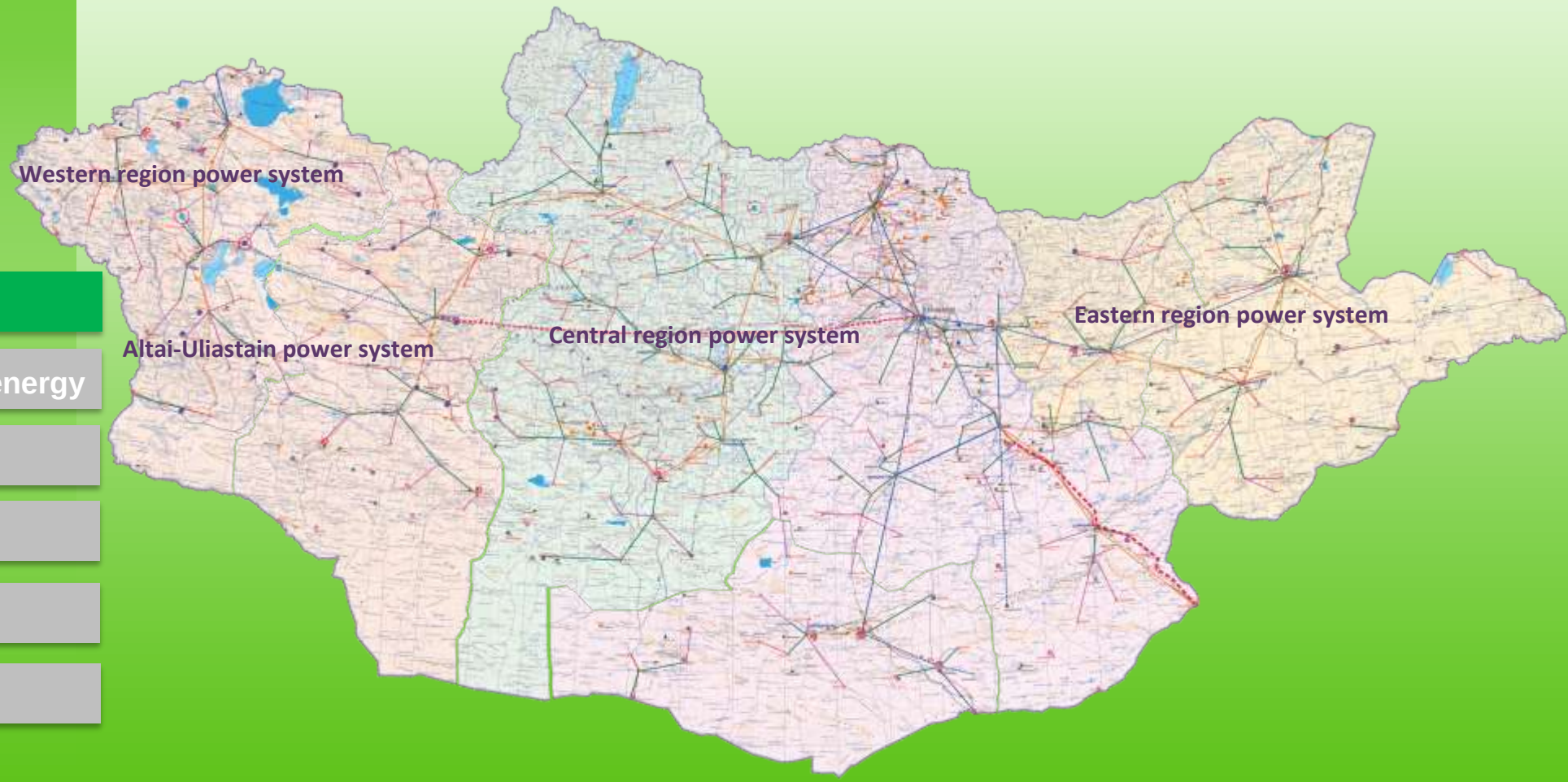

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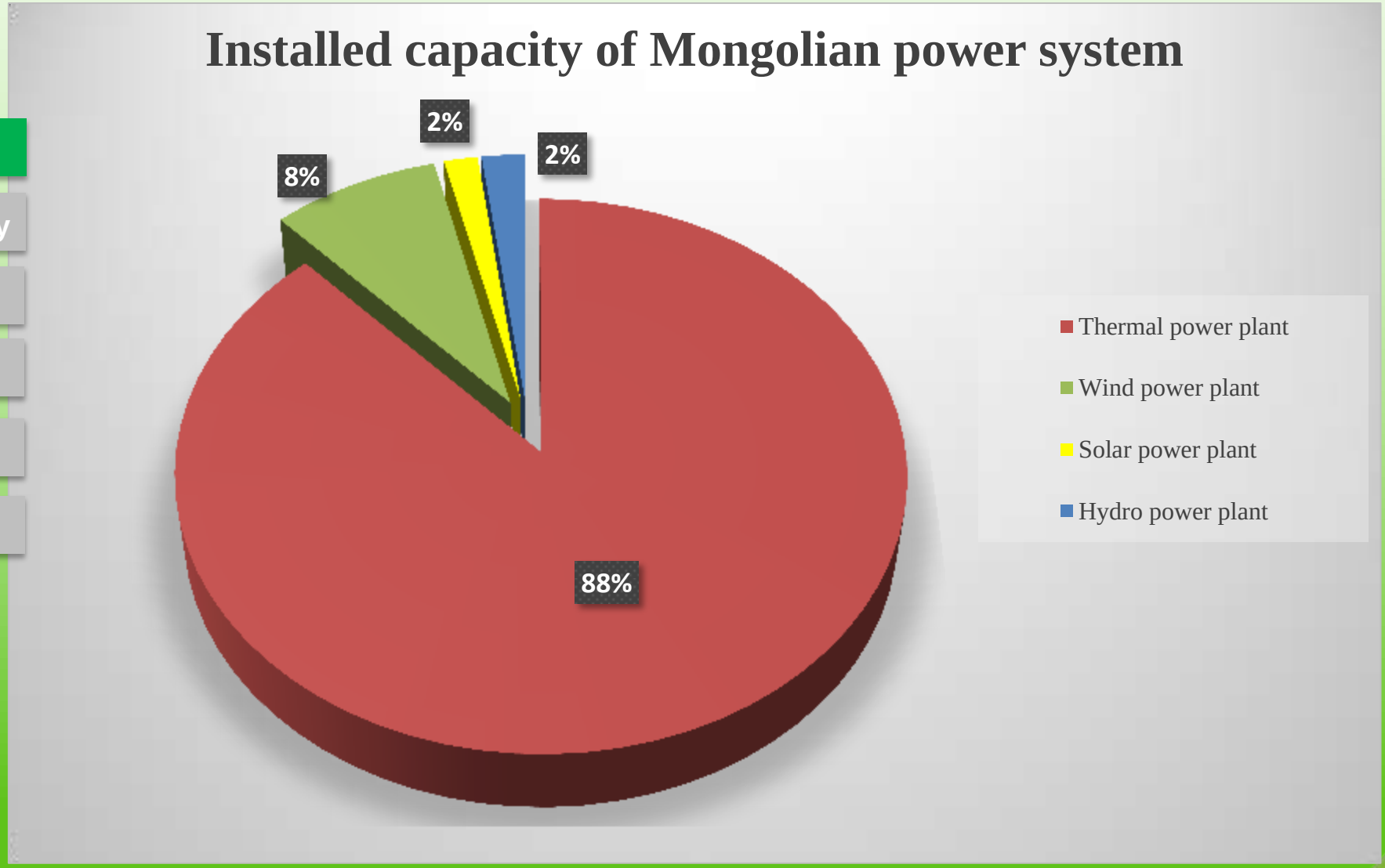

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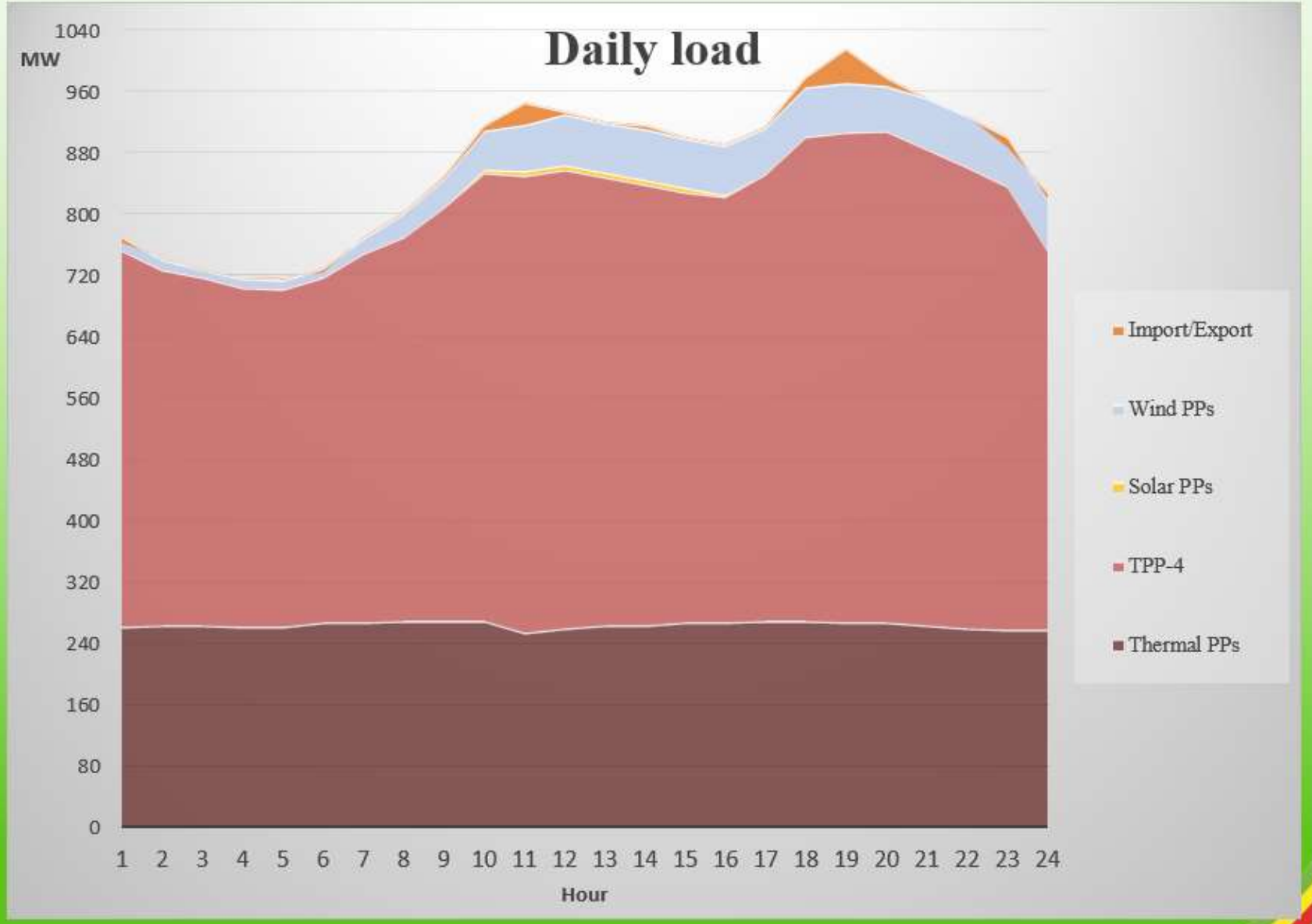

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- The Parliament of Mongolia approved following laws and programs related to renewable energy.
  - In *Article 11.1*, Energy Regulatory Authority shall set tariffs and prices of energy generated and supplied by renewable energy power source connected to a transmission network within the following tariff range/2007, amended in 2015/:
    - US$ 0.08-0.095 per kWh of electricity generated and delivered by a wind power source
    - US$ 0.15-0.18 per kWh of electricity generated and delivered by a solar power source
    - US$ 0.045-0.06 per kWh of electricity generated and delivered by a hydro power plant with capacity of less than 5000 kW;
  - In *Article 11.2*, price difference of electricity generated by a power source set forth in *Article 11.1* of this law shall be reimbursed by the supporting tariff/2015/.
  - In both state policy of Mongolian energy and Sustainable development policy are stated that Mongolian total renewable energy generation will reach 20% in 2020 and 30% in 2030 /2015,2016/.
  - “National Renewable energy program” in June 2005 to promote and extend renewable energy development in Mongolia. Program shall be implemented in two stages /2005-2020/.

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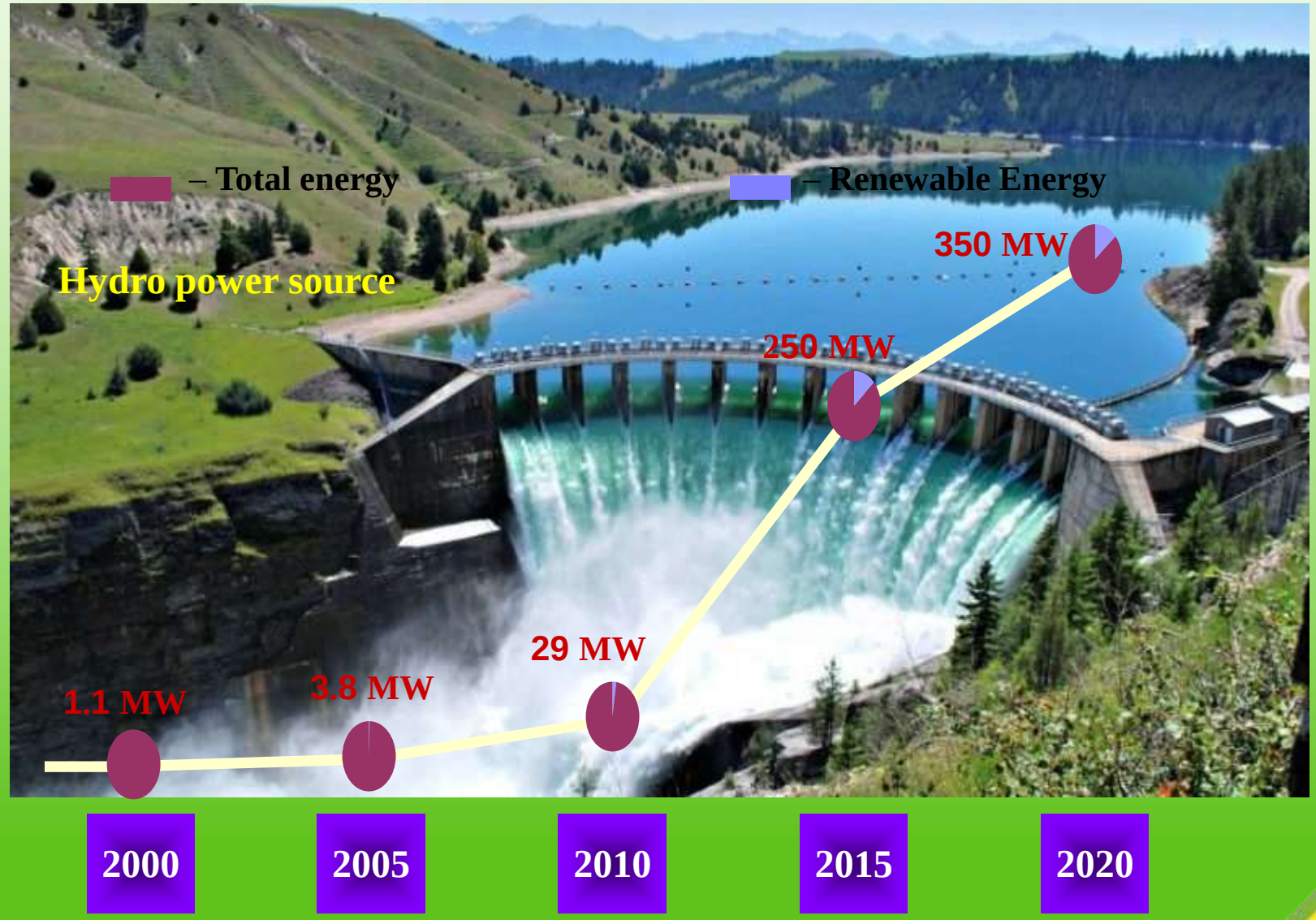

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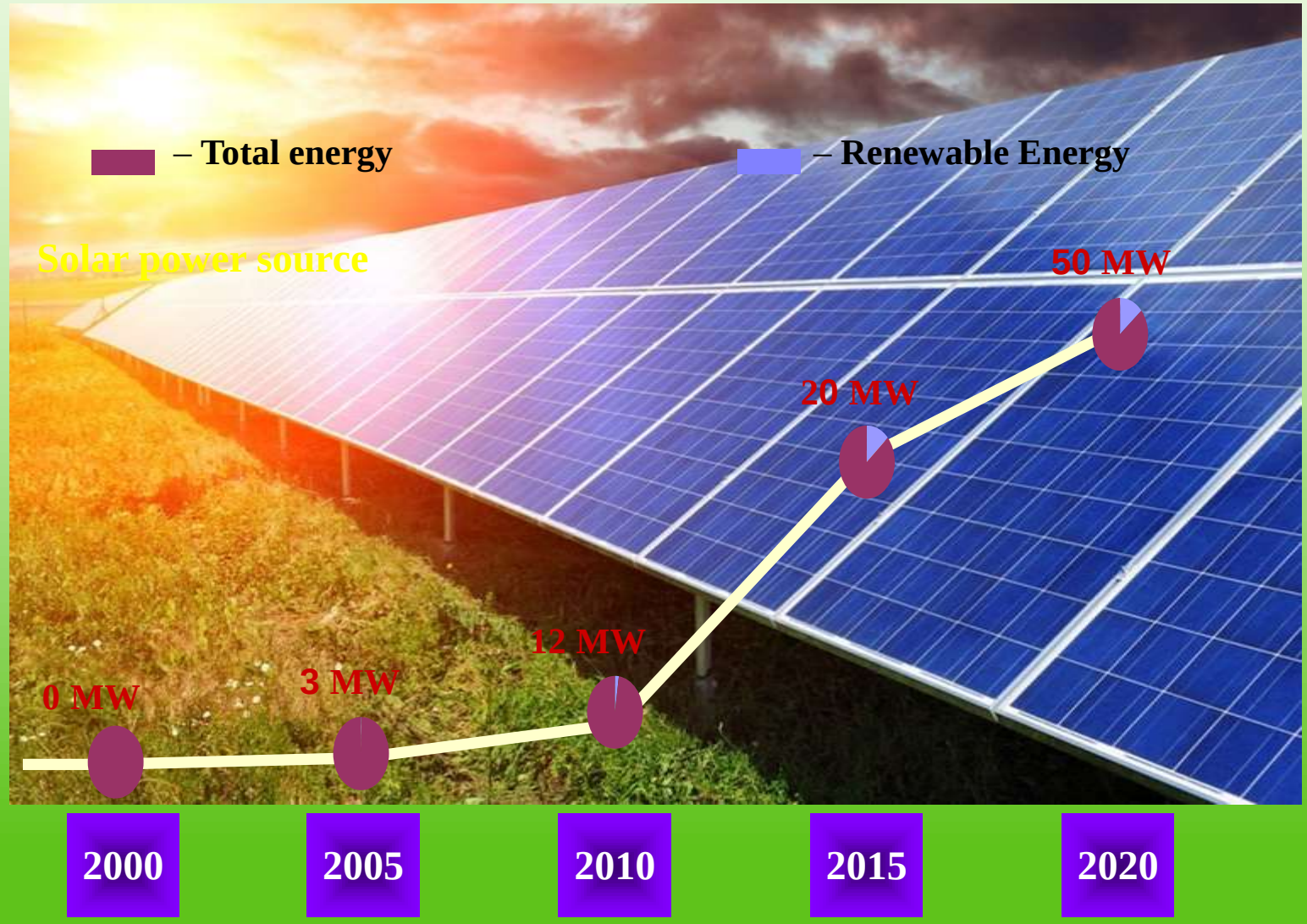

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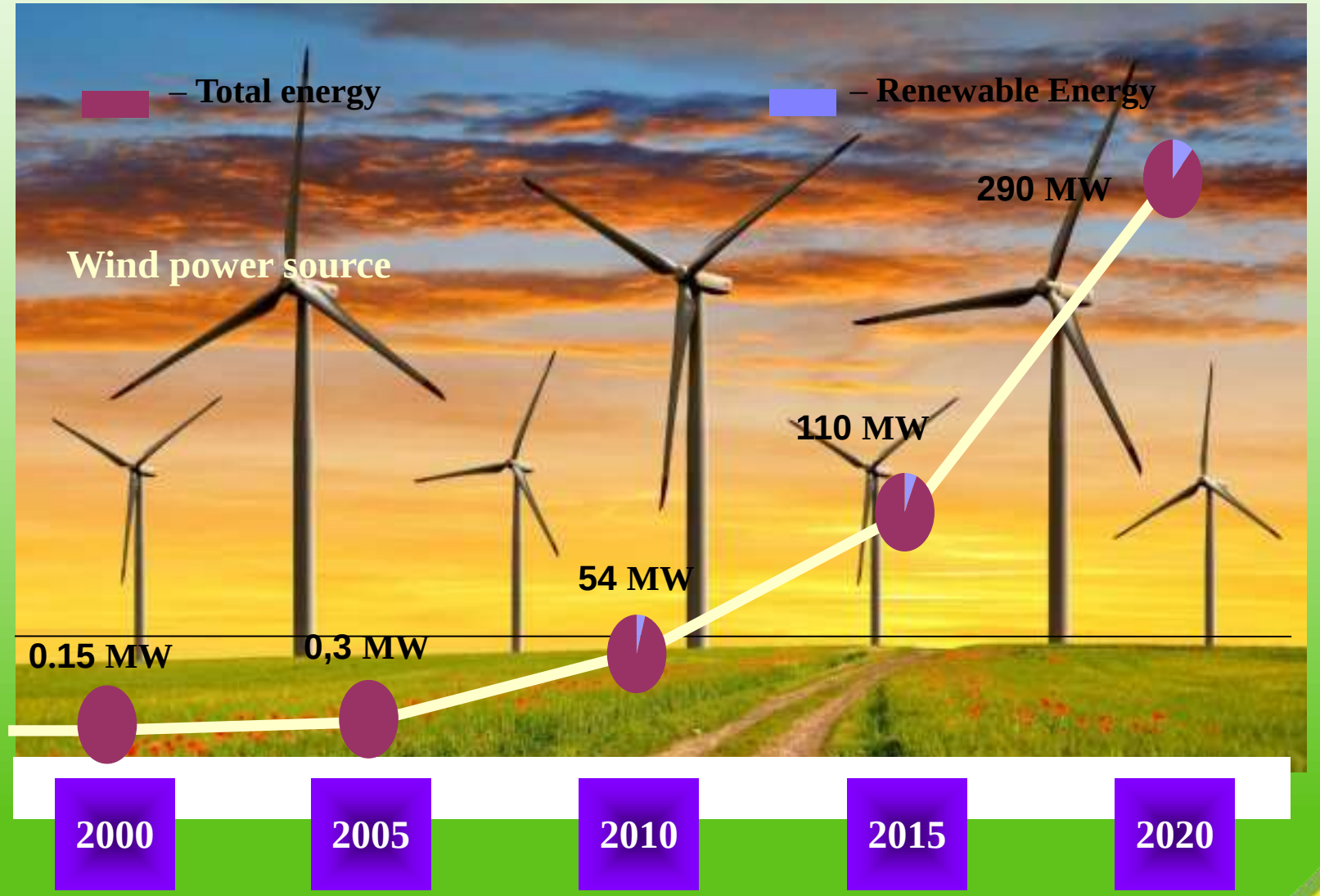

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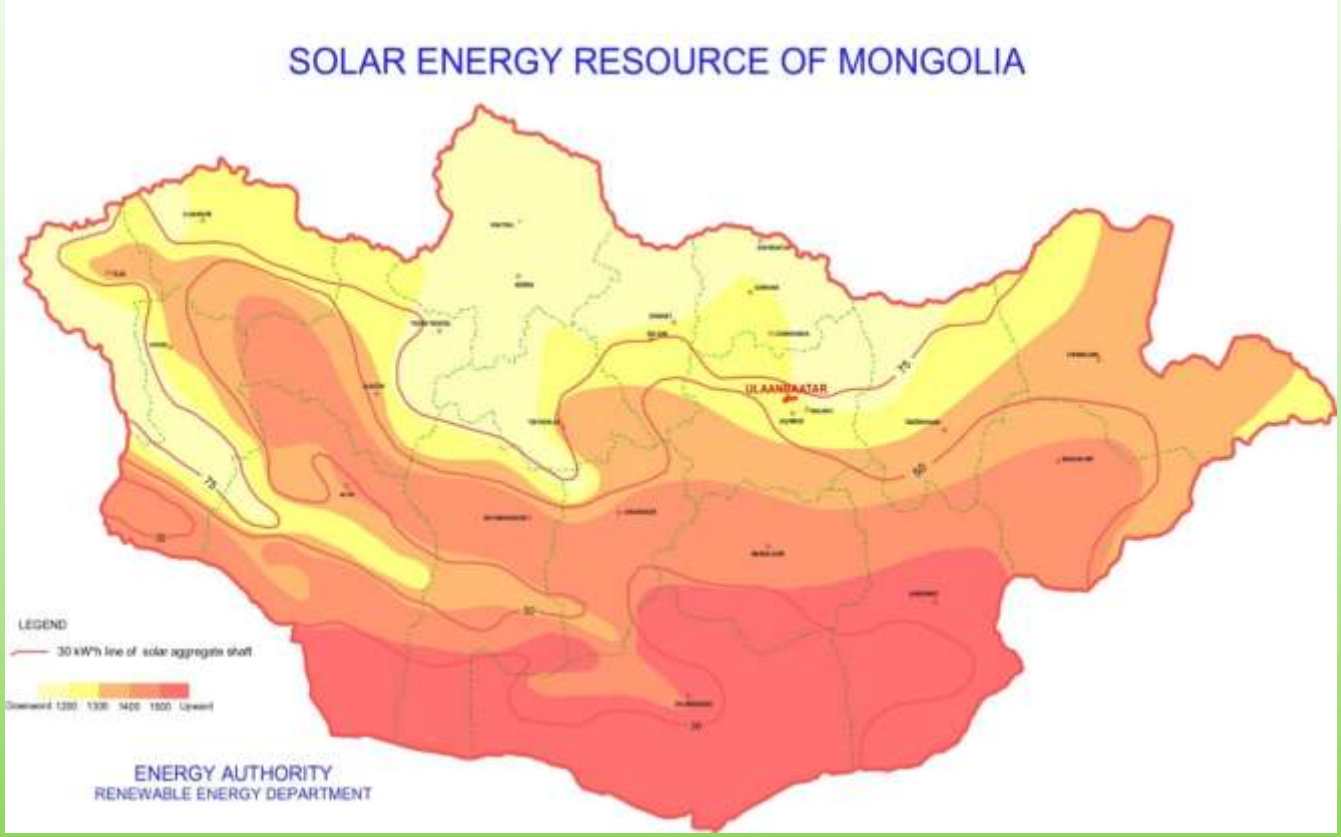

- The entire territory of the country is estimated to be sunny in 270 to 300 days in a year. Yearly average daylight time is estimated as 2250-3300 hours.
- The yearly radiation is estimated as 1200-1600 kW per square meter and its intensity is estimated as more than 4.3-4.7 kW/h

Source: International Renewable Energy Agency /IRENA/

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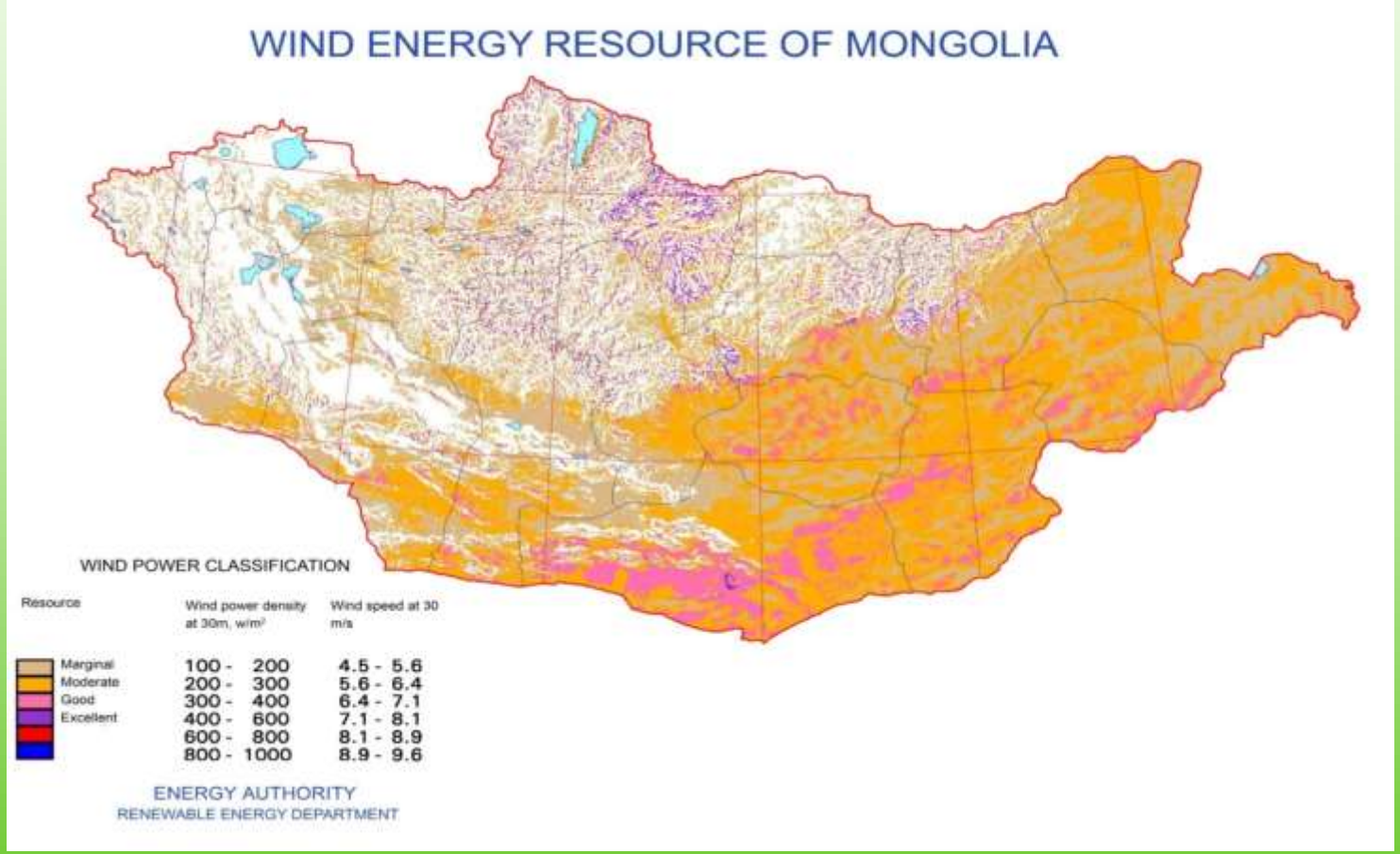

- As it is pointed out in wind energy atlas of Mongolia, the 10 percent of the total territory or 160’000 square kilometer area is estimated as suitable for wind energy application.
- It is estimated that 13 provinces have more than **20’000MW** and 9 provinces have more than **50’000MW** and Umnugobi province alone has wind energy potential of over **300’000MW.**

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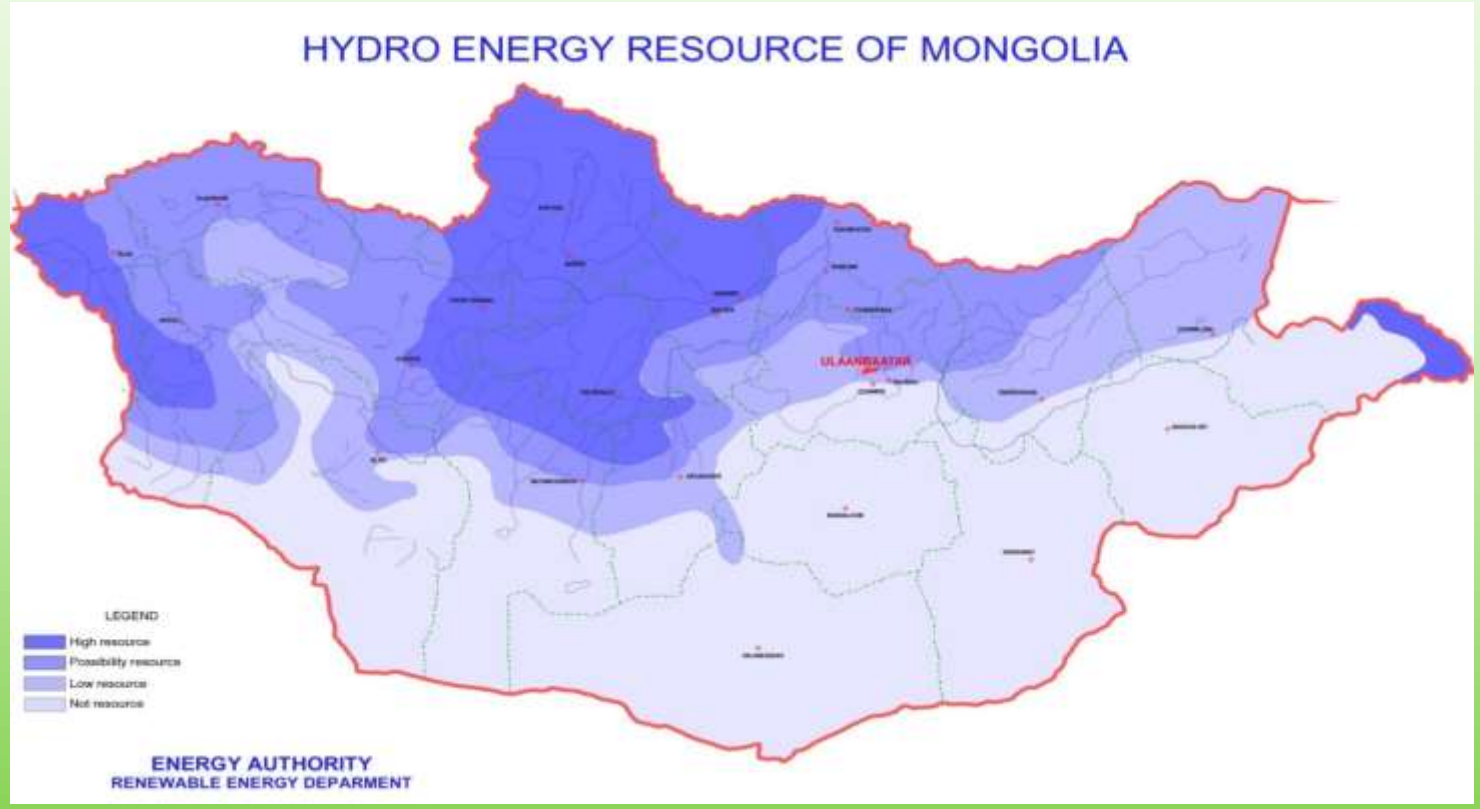

- There are 3800 small and big streams and rivers in Mongolia, which could support 6417.7 MW of power and deliver 56.2 billion kWh of electric energy in a year.
- The first type of renewable energy was a hydro power plant. The very first one with capacity of 560kW was established in Kharkhorin city in 1959.
- As of now, 13 hydro power plant is operating in Mongolia

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- Lack of maneuvering capability
- Planning for renewable energy generations
- Connection point of renewable energy
- Economical

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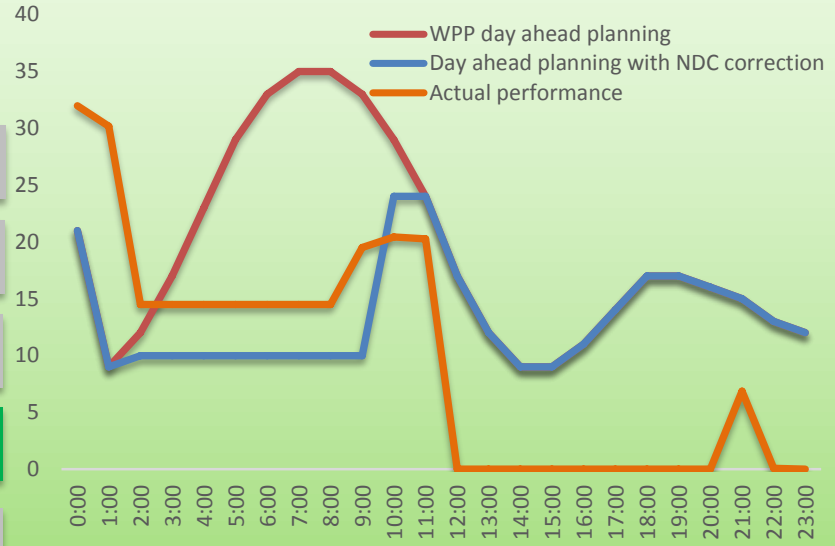

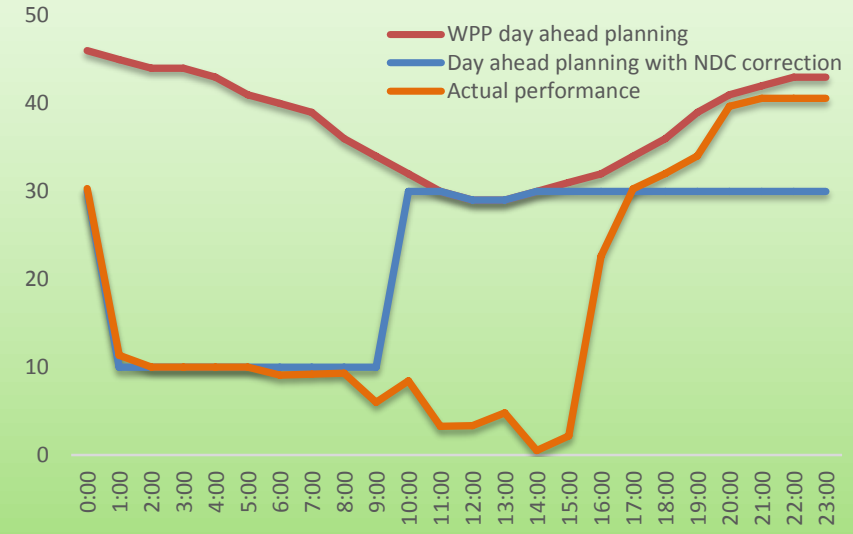

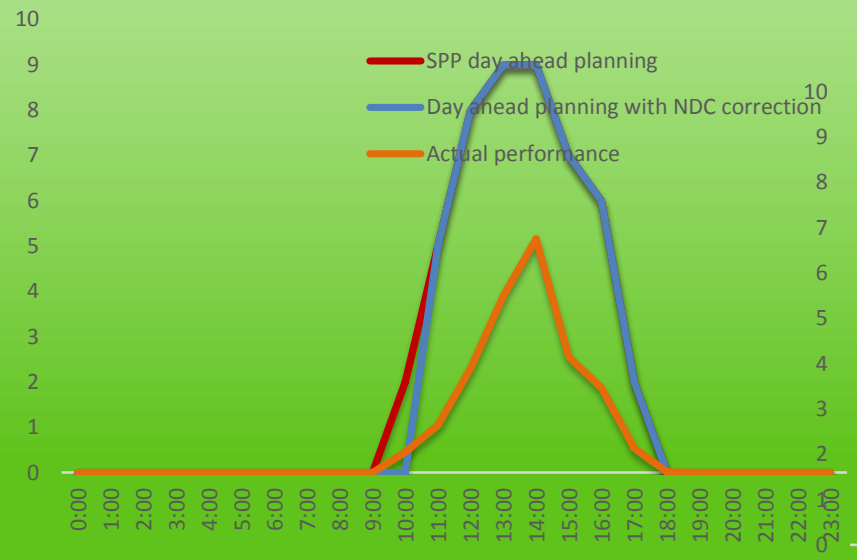

Overview

- Eco-friendly clean energy, REDUCES CO2 emissions
- Free energy generation, EVENTUALLY
- Distributed system

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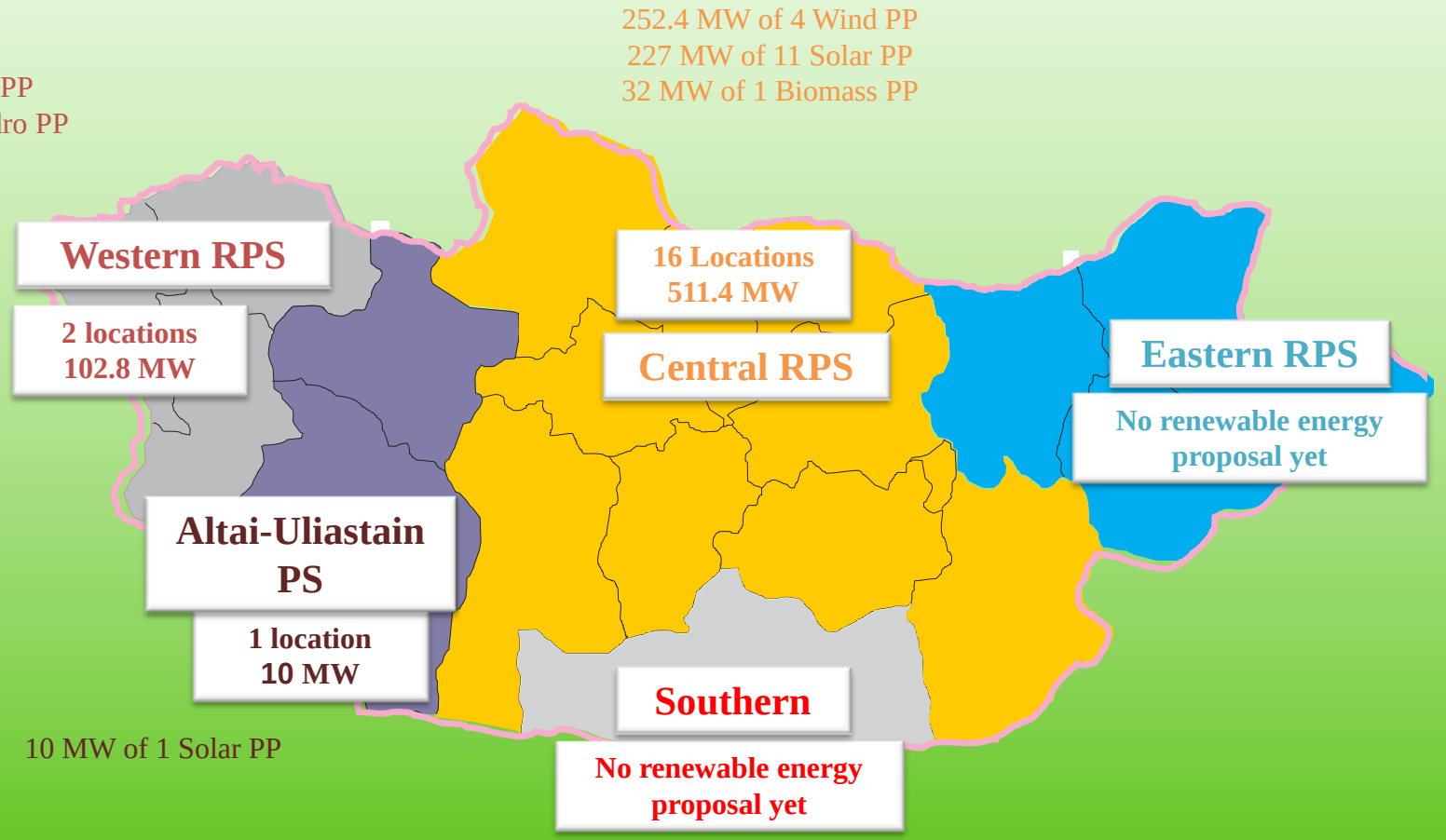

Thank you for your attention!