



## **MARSHALLING MONGOLIAN WIND**

B. Byambasaikhan Chief Executive Officer

March 10, 2012

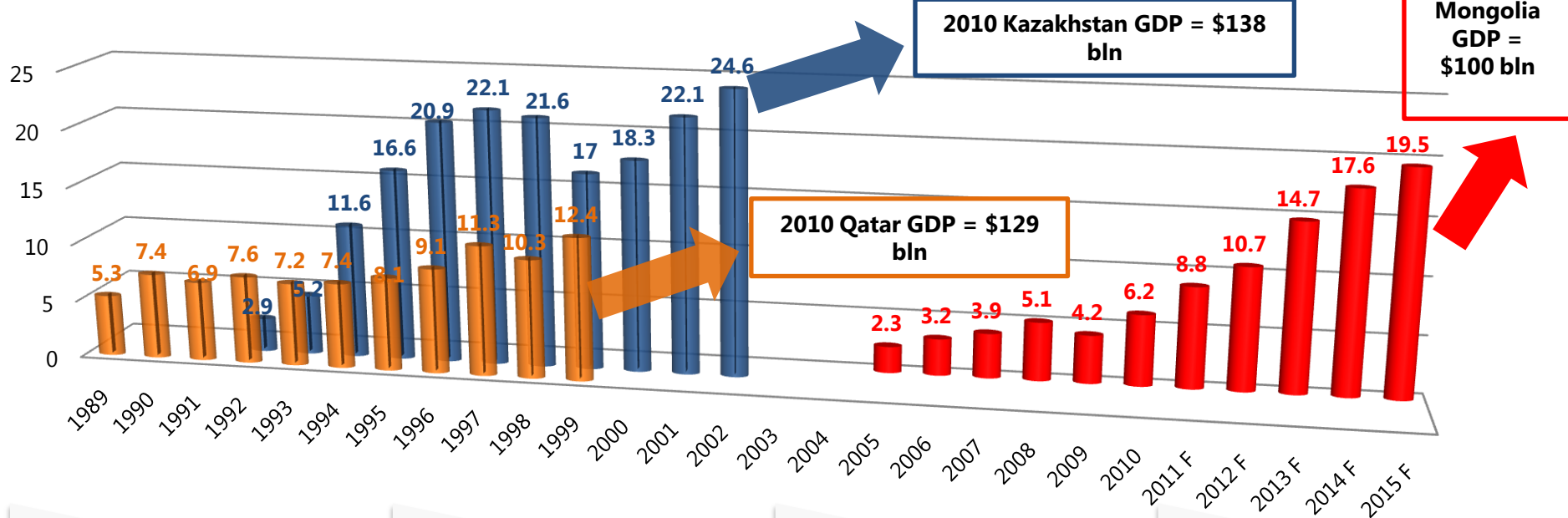




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GDP in USD Billions

Source: IMF



■ Qatar 1989-1999

**Oyu Tolgoi: Copper & Gold**

- Oyu Tolgoi alone will bring in \$5 bln in investments by 2013
- Over the next 27 years the mine will generate \$51 bln

■ Kazakhstan 1992-2002

**Tavan Tolgoi: Coking Coal**

- Estimated to operate for 200+ years
- Over the next 29 years the mine will generate \$87 bln

■ Mongolia 2005-2015

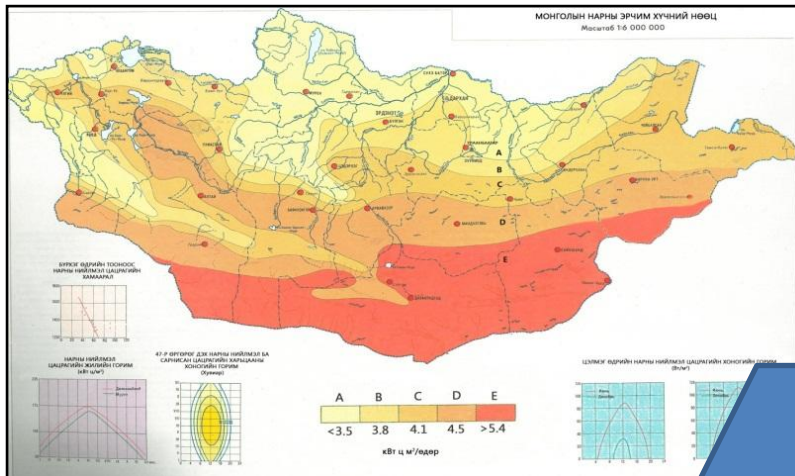
**Other mineral resources:**

- 15 Strategic Deposits with estimated resources valued at over \$1.2 trn
- Yet to be tapped resources include Silver, Uranium, Gold, Phosphates, Iron ore and Zinc
- Only 30% of the country is prospected

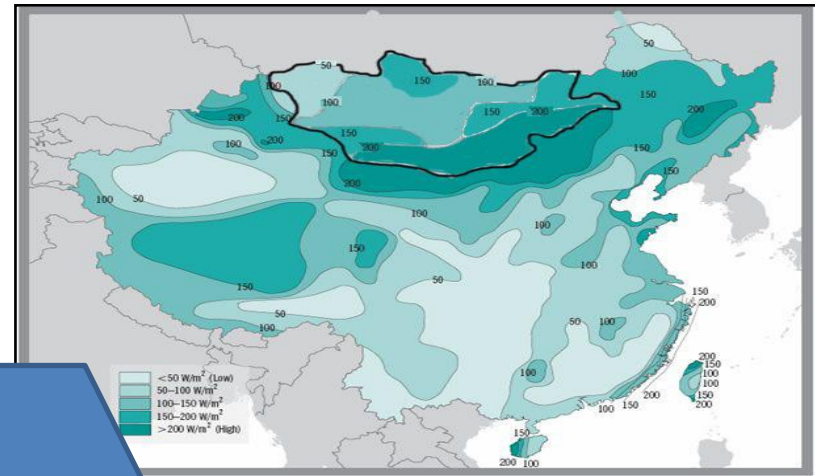
**Infrastructure:**

- Infrastructure investments to further boost GDP
- Pipeline investments needed to build/update infrastructure through 2015: \$8.4 bln

Solar: 66 MW/km<sup>2</sup>

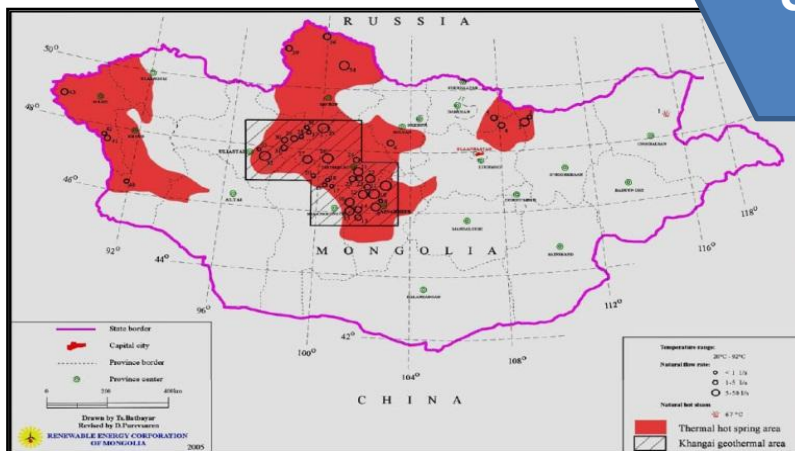


Wind: 7 MW/km<sup>2</sup>

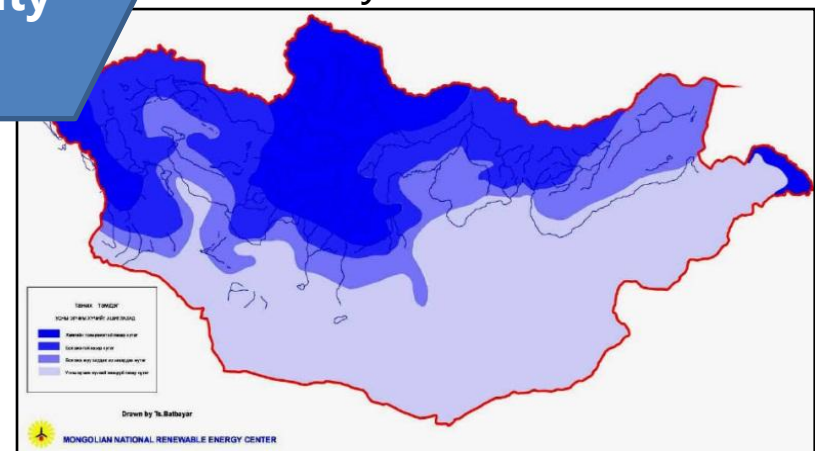


2.6 TW  
generation  
capacity

Geothermal



Hydro



## Legal foundation

- Feed-in tariff in place to enable private investment
- The Renewable Energy Law which was passed by the Mongolian parliament with Newcom undertaking major role in educating the government and public

## Future outlook

- Mongolia Economic Forum 2012 was held on March 5-6
- Government, business, NGO, science leaders
  - Green growth and Innovation
- **Transform Mongolia into Asian Energy Leader in the next 10 years**



## Mongolia - Wind Resource Map

- The annual technical wind energy resource in Mongolia is estimated at 2,550 billion kWh\* based on good-excellent wind resource
- 8,123 billion kWh when including moderate wind resource

### Future Newcom plan

- By ~2025 build a wind park with total capacity of 20 GW in Gobi

• 682 billion KWh of resource is located in south Gobi

### Wind Power Classification

Resource Potential		Wind Power Density at 30 m W/m <sup>2</sup>	Wind Speed <sup>a</sup> at 30 m m/s
Utility	Rural		
Marginal	Moderate	100 - 200	4.5 - 5.6
Moderate	Good	200 - 300	5.6 - 6.4
Good	Excellent	300 - 400	6.4 - 7.1
Excellent		400 - 600	7.1 - 8.1
		600 - 800	8.1 - 8.9
		800 - 1000	8.9 - 9.6

<sup>a</sup>Wind speeds are based on an elevation of 1400 m and a Weibull k value of 1.8

The wind resource classification is specific for both utility scale and rural applications and applies to areas with low surface roughness, e.g. grassland.

U.S. Department of Energy  
National Renewable Energy Laboratory



27-DEC-2000 1.6.1

\* Source: US National Renewable Energy Laboratory

## Salkhit Wind Farm

- First wind farm in Mongolia
  - First IPP
  - First PPA
  - First new power generation since 1985
  - Located 70 km southeast of Ulaanbaatar at Salkhit Uul (Windy Mountain)
  - GE wind turbine generators
- 
- Total capacity of wind farm: **50 MW**
  - Operation start: **2012**
  - Average wind speed: **8.3 m/s**
  - Annual energy production: **168 GWh**

### Every year Salkhit Wind Farm will:

- **Cut CO<sub>2</sub> emissions by 200 thousand tons**
- **Reduce coal burning by 160.5 thousand tons**
- **Save 2 million tons of fresh water**



- **BRIDGING DISTANCES AND CONNECTING PEOPLE**

- Introduced cell phones to Mongolia with Japanese partners
- Launched first jet aircrafts for the domestic air market
- First wind power plant builder
- 2200 energetic, talented and motivated people

- **CURRENT SUBSIDIARIES & AFFILIATES**



**INTRODUCING NEW TECHNOLOGIES**



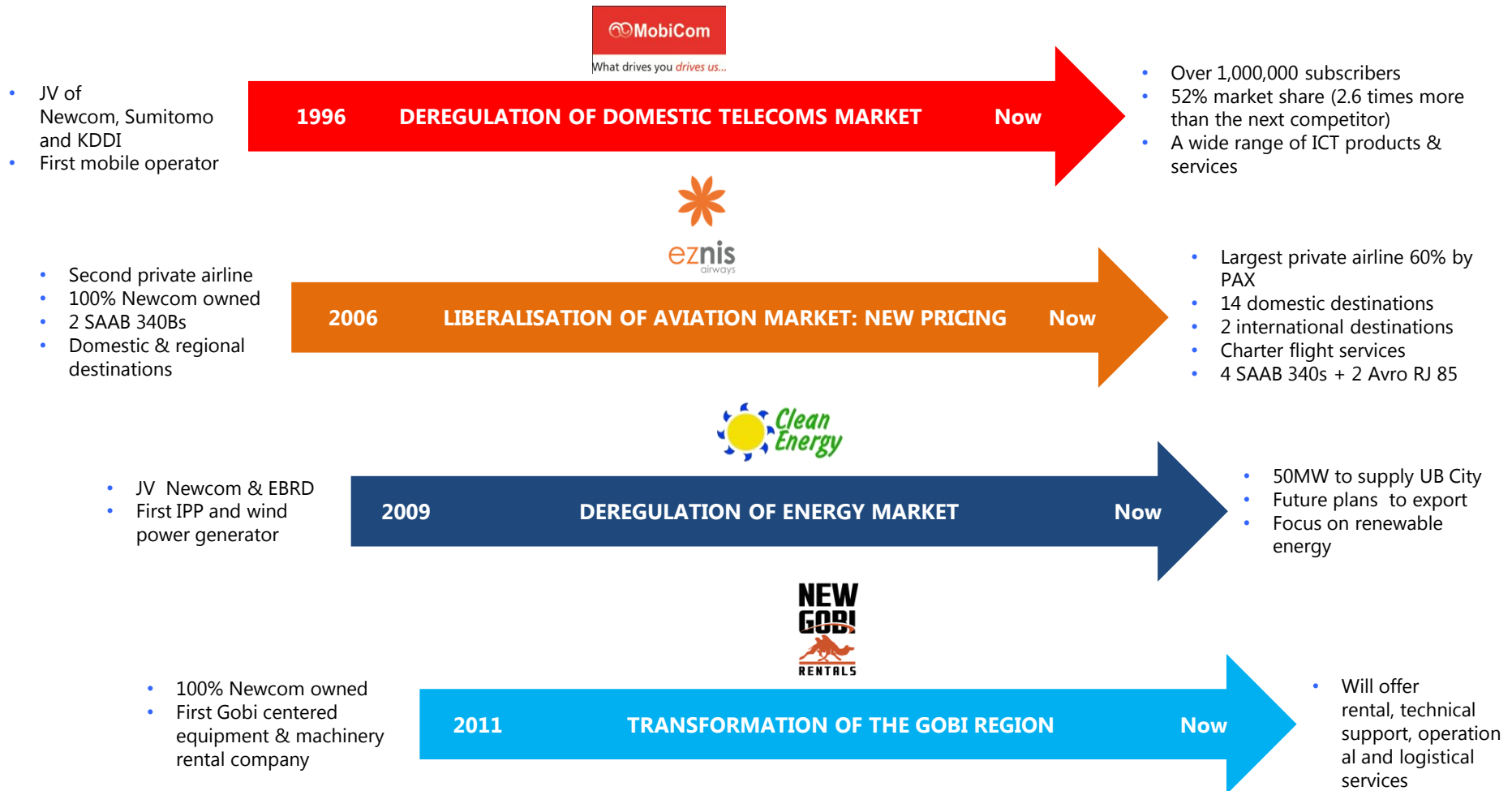
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