Ministry of Industry, Energy and Fuel Resources of the Kyrgyz Republic

Development of the Renewable Energy Sector in the Russian Federation and in CIS countries

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General Information about Kyrgystan

Population – 5,2 Mln. Inhabitants (Bishkek:1 Mln.)

Area: 200.000 km² (95% consists of mountains)

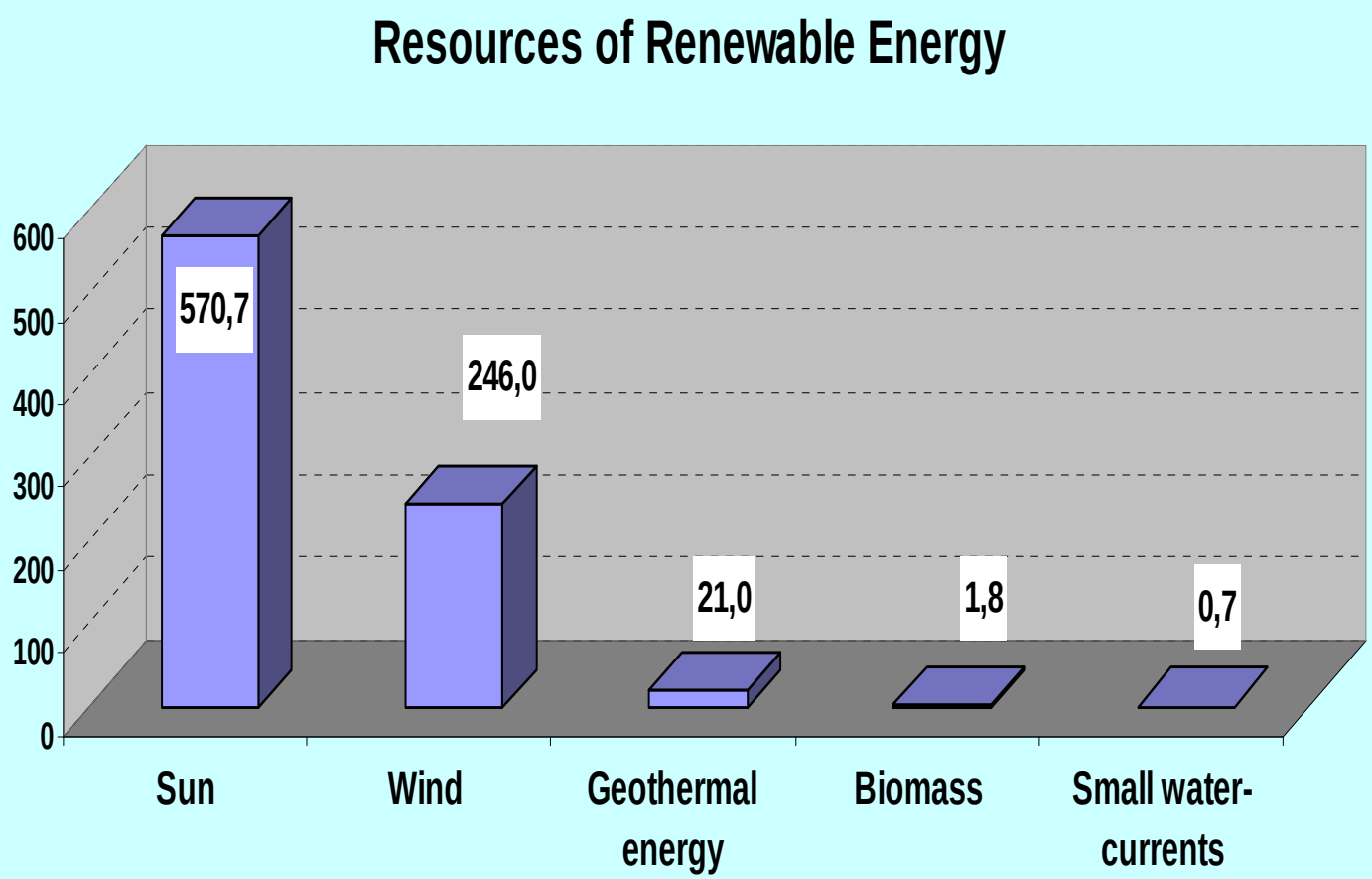
Bishkek -capital of Kyrgystan

Power potential of Kyrgyz Republic

- Kyrgyzstan has a 2% of the energy resources of Central Asia, large reserves of coal and 30% of hydropower resources, of which only a tenth of undomesticated
- Hydropower - the basic direction of development of power branch of Kyrgyzstan
- Hydropower potential of Kyrgyzstan – 18,5 mln.kW and more than 160 billion kWh (The third place in the CIS countries after Russia and Tadjikistan)
- Only on r. Naryn can be constructed 33 HPP with the established capacity 6450 MW with annual generation more than 22 billion kWh the electricity

Potential of Renewable energy resources in Kyrgyz Republic

- Potential of Renewable energy resources - 840,2 million tons of standard coal in year



Potential of Renewable energy sources in Kyrgyz Republic

Can cover up to 50 % of required thermal energy
Technically feasible - 25-30 %
Feasible the nearest 5-10 years - 5-6 %
Practical use RES in republic is less 1 %

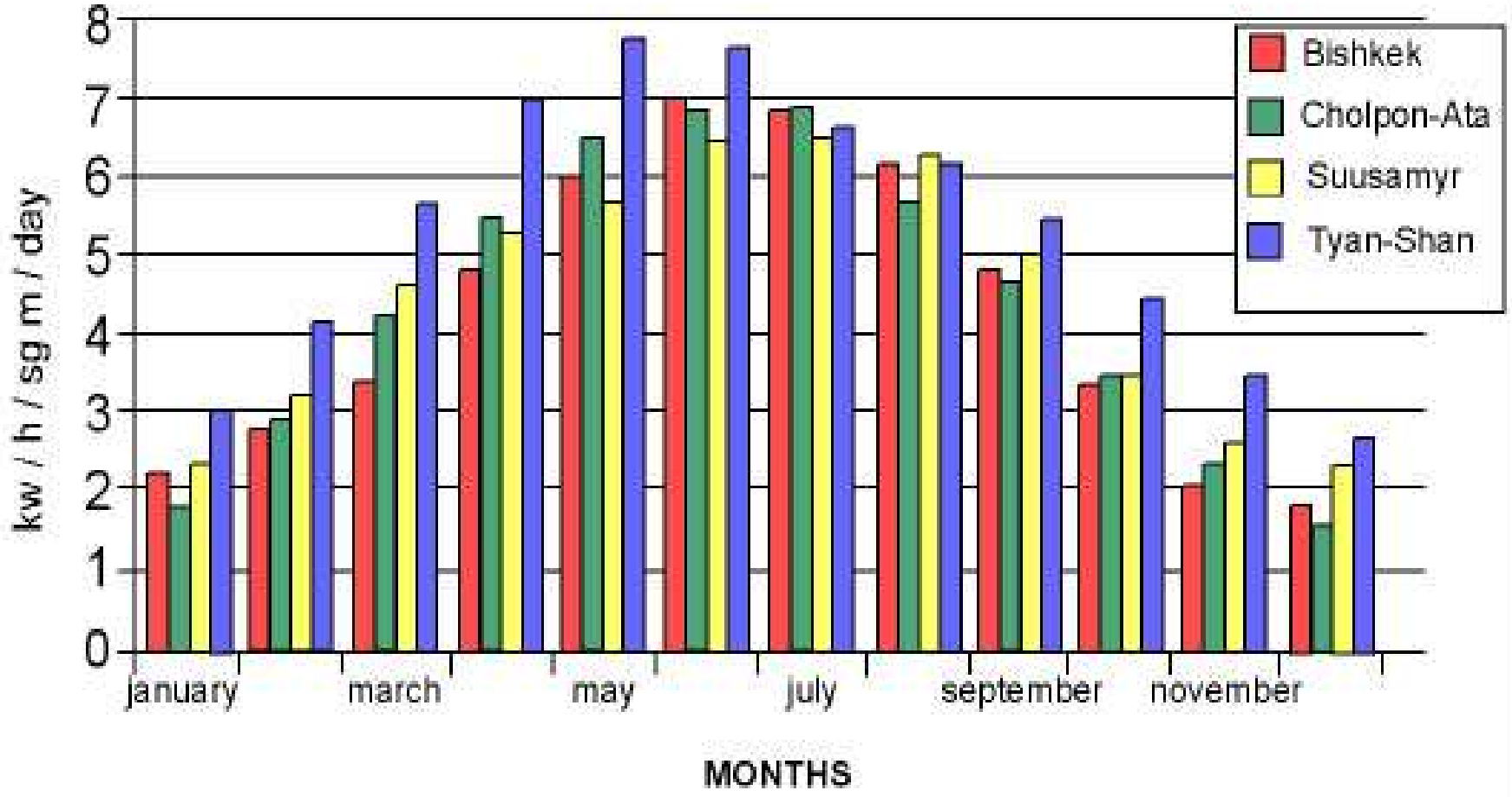
In Kyrgyzstan it is possible to produce in year:

- Solar collectors - 100-150 thousand sq. m
- Micro HPP - 2-2,5 MW
- Wind power units - 250-300 kW
- Photo-electric converters up to 2-3 MW
- Biogas installations 70-100 million m3

Solar energy

- Sunshine duration in Kyrgyzstan exceeds 2800 hours
- Annual sum of solar radiation on horisontal surface 1000 – 1700 kWh/m2year
- More then 50% direct solar radiation

Solar irradiance



What the solar energy can give

- Covering hot water demand for 90 % during 8-9 months
- Covering space heating demand up to 50%
- Electro supply of consumers located in the decentralized Zone (foresters, hydrometeorological posts, livestock systems, beekeepers).
- Saving of traditional fuel

Biomass

- Production of 1.6 bln.m3 of Biogas
- Demand covering with gas up to 30% of rural population
- Fertilizing of 1.3 mln. Hectare of arable fields
- Reduction of CO_2 , CH_4 emissions for 100 mln. m3
- Increasing the crop capacity of the field for 15-20 %
- Consumption decreasing of traditional fuel

Geothermal sources

- The resources with annual temperature of 40-60 °C about 613 000 GJ per year
- More then 70% located in the north part of the country
- The possible occupation of geothermal sources about 170 000 GJ per year

Small hydropower engineering

- The energy potential of 172 rivers and water-currents exceeds 80 billion kWh in year
- Technically feasible potential 5-8 billion kWh in year
- Construction 92 SHPP capacity 178 MW and produce up to 1.0 billion kWh is possible
- To restore 39 SHPP capacity 22 MW and produce up to 100 million kWh
- Construction 7 HPP on irrigational water basins capacity 75 MW will give generation about 220 million kWh

Wind resources

- Wind resources – 400 mln.kW
- Yearly duration of powerful wind 5000-7000 hours
- The energy density of winds – up to 2000 kWh/m2 per year
- 2 bln. MWh per year in ground layer up to 100 m

RES ensure:

- Improving the environment by reducing harmful emissions into the atmosphere
- Enhance energy security
- The improvement of a social and economic standard of living of the rural population
- Reduction of traditional fuel (coal, oil, gas) consumption

Legal base for RES promotion

- The national energy promotion program of the Kyrgyz Republic for 2008-2010 and strategy for development of fuel and energy complex till 2025
- The law of the Kyrgyz Republic « Renewable energy law »
- The law of the Kyrgyz Republic «energy saving »
- Intermediate term tariff policy for electric and thermal energy for 2008-2012

RES obstacles

- The low prices for traditional energy, in particular for current
- Lack of knowledge of the population about RES technologies
- Low financial support from the state
- Absence of personnel potential, in particular maintenance service
- The low organization of the market
- Imperfect legislative base
- Lack of public institutions (Agency RES) is responsible for this area

What should we do?

- To create the State Agency responsibly for RES field
- Improving of legislative base for RES promotion in republic (To develop and realize the program on development RES in KG)
- Establish mechanisms of financial support for renewable energy for practical implementation of these technologies (by creating a revolving fund)
- To increase awareness of the population about RES potential and technologies and strengthen the training of specialists in the field of renewable energy

Thank you for your attention!