



MITIGATING SECURITY RISKS IN ENERGY; EXPERIENCE OF THE KYRGYZ REPUBLIC

Arslanbek OMURZAKOV

E-mail: omurzakov@gmail.com

General information



- Area: 199,9 thousand km²;
- Population: 6,2 mln.;
- Language: Kyrgyz, Russian;
- Currency: Som (KGS);
- Capital city: Bishkek;
- Bordering countries: China— 858 km, Kazakhstan – 1051 km, Tajikistan – 870 km, Uzbekistan— 1099 km



Characteristics of Kyrgyz economy



- GDP – 7,2 billion USD
- GDP per capita in 1200 dollars
- GDP growth rate – 4,5% (in 2017)



Characteristics of Kyrgyz economy



- Landlocked geographical location, the complex topography of the region, and distance from the main economic centers;
- Underdeveloped infrastructure (***old soviet infrastructure***)
- Service-agrarian structure of the economy;
- Lack of easily extractable energy and mineral resources;
- The dependence of the economy on the major mining company "Kumtor"
- Dependence on the "***Remittances from migrants***"
- Member of the Eurasian Economic Union since 2015
- Transitory nature of the economy etc.

Background



- It is vital to all countries that critical energy infrastructure is secure, resilient to threats, and also has the ability to recover from any incidents. With the increasing reliance of energy with sustainable economic development, it is extremely important to modernize the energy generation and energy consumption. This presentation will look at
 - Potential of green energy
 - Key risks
 - Strategy

Potential of renewable energy in the Kyrgyz Republic



- Hydropower energy - 140 billion kW/h per year
- Solar energy (heat) – 490 000 MWh
- Solar energy (electric) – 22 500 MWh
- Wind energy – 44 560 MWh
- Small streams - 8 billion kWh
- Biomass - 1300000 MWh

Practical use of renewable energy in the Kyrgyz Republic is 1%
(Except big HPPs)

Energy security risks



- Kyrgyz energy faces serious risks:
 - Natural hazards
 - Financial risks
 - Political risks (politicization, corruption)
 - Social risks
 - Carbonization in place of decarbonization
 - Orientation to traditional energy, limited strategy

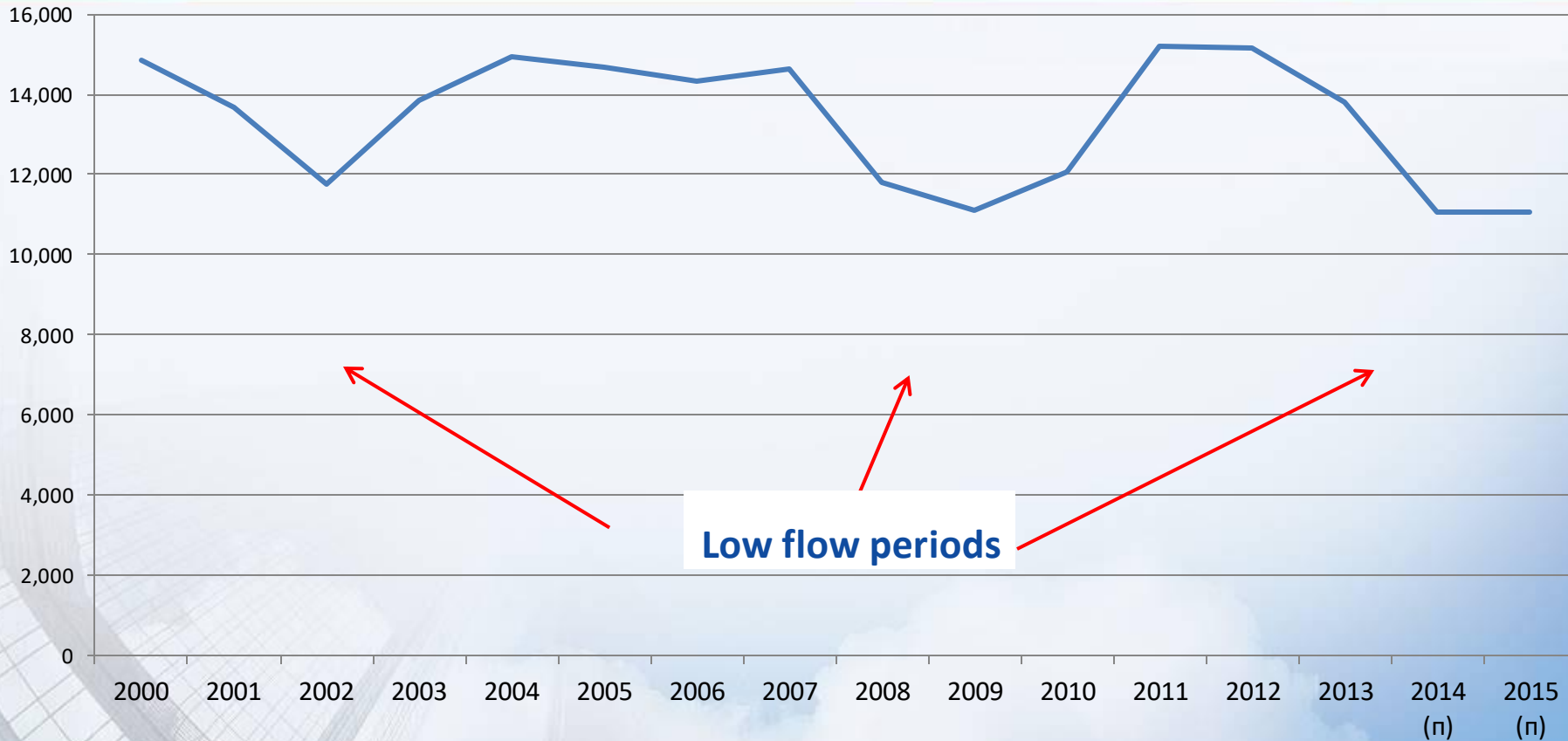
Current trends and situation



- Dependence on water flows and natural conditions
- Old approach to the design and energy supply
- 90% of electricity produced by means of HPPs
- Almost all main energy facilities are under government control
- Lowest tariffs
- Financial problems of energy companies
- High impact of National policy



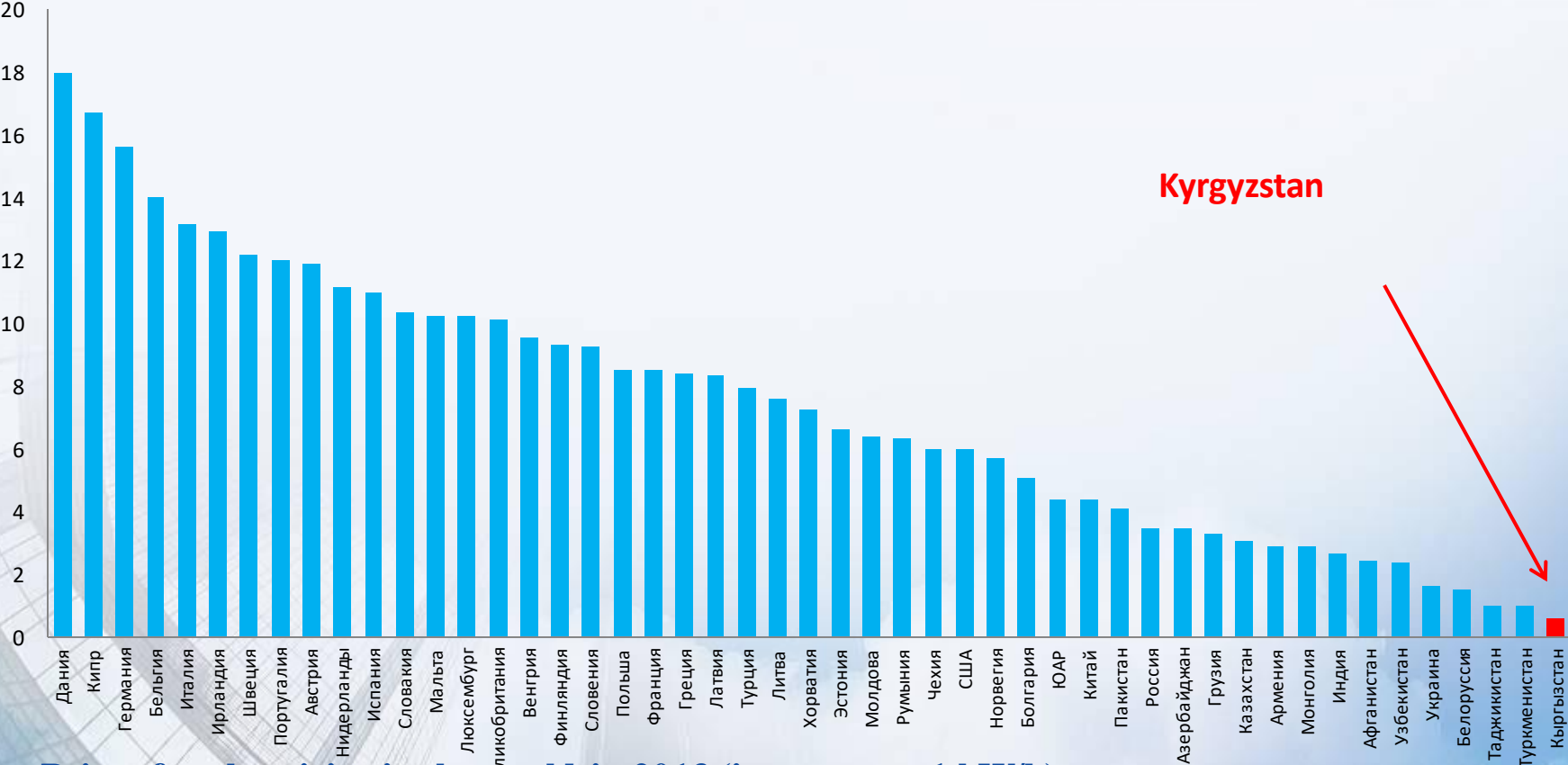
Electricity generation is volatile and depends on the volume of water (mln. KWh)



Low flow periods

Source: Ministry of Energy and Industry of the Kyrgyz Republic

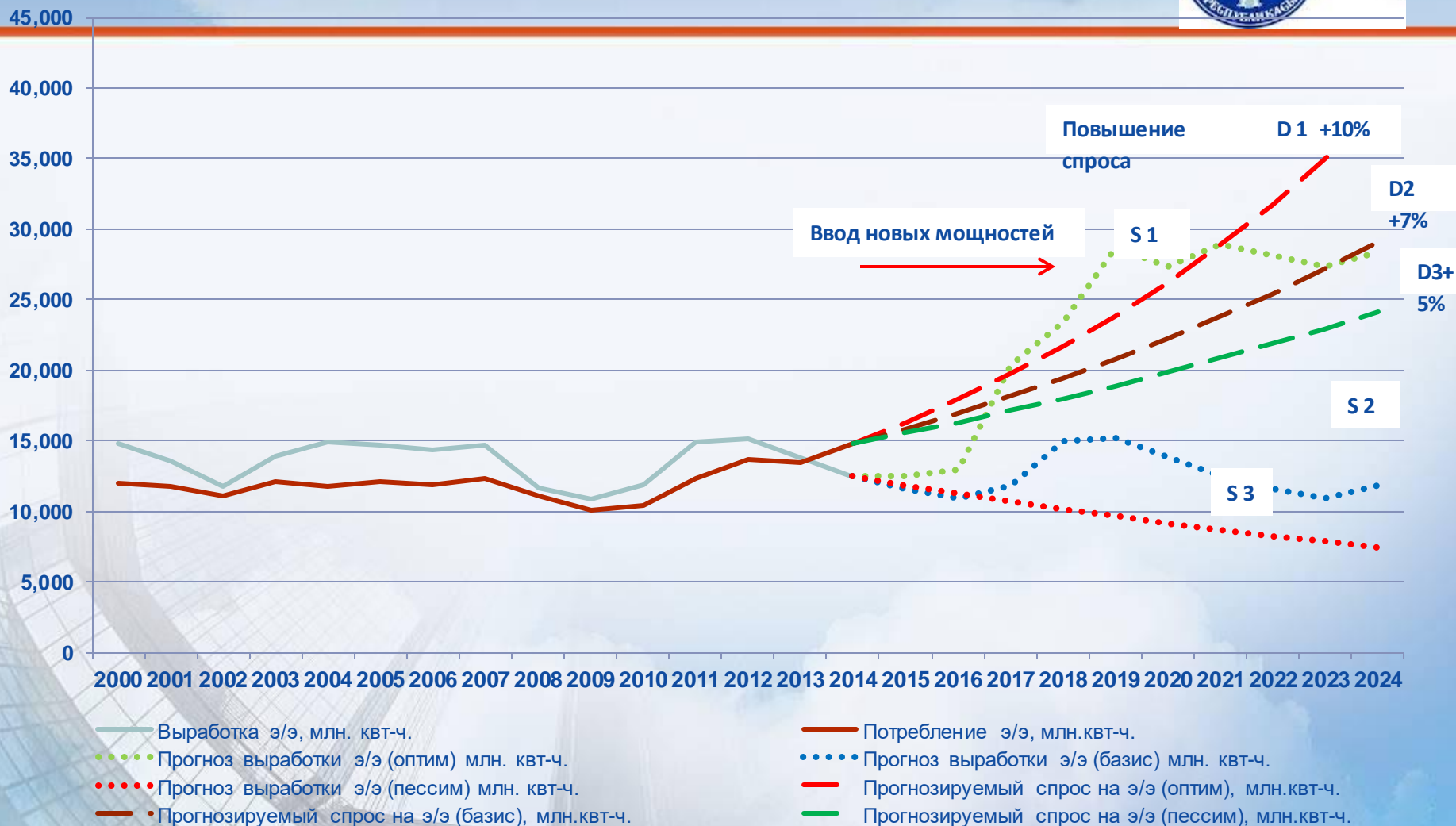
In Kyrgyzstan, the lowest electricity tariffs in the world



Prices for electricity in the world in 2013 (in soms per 1 kW/h)

Source: NISS KR

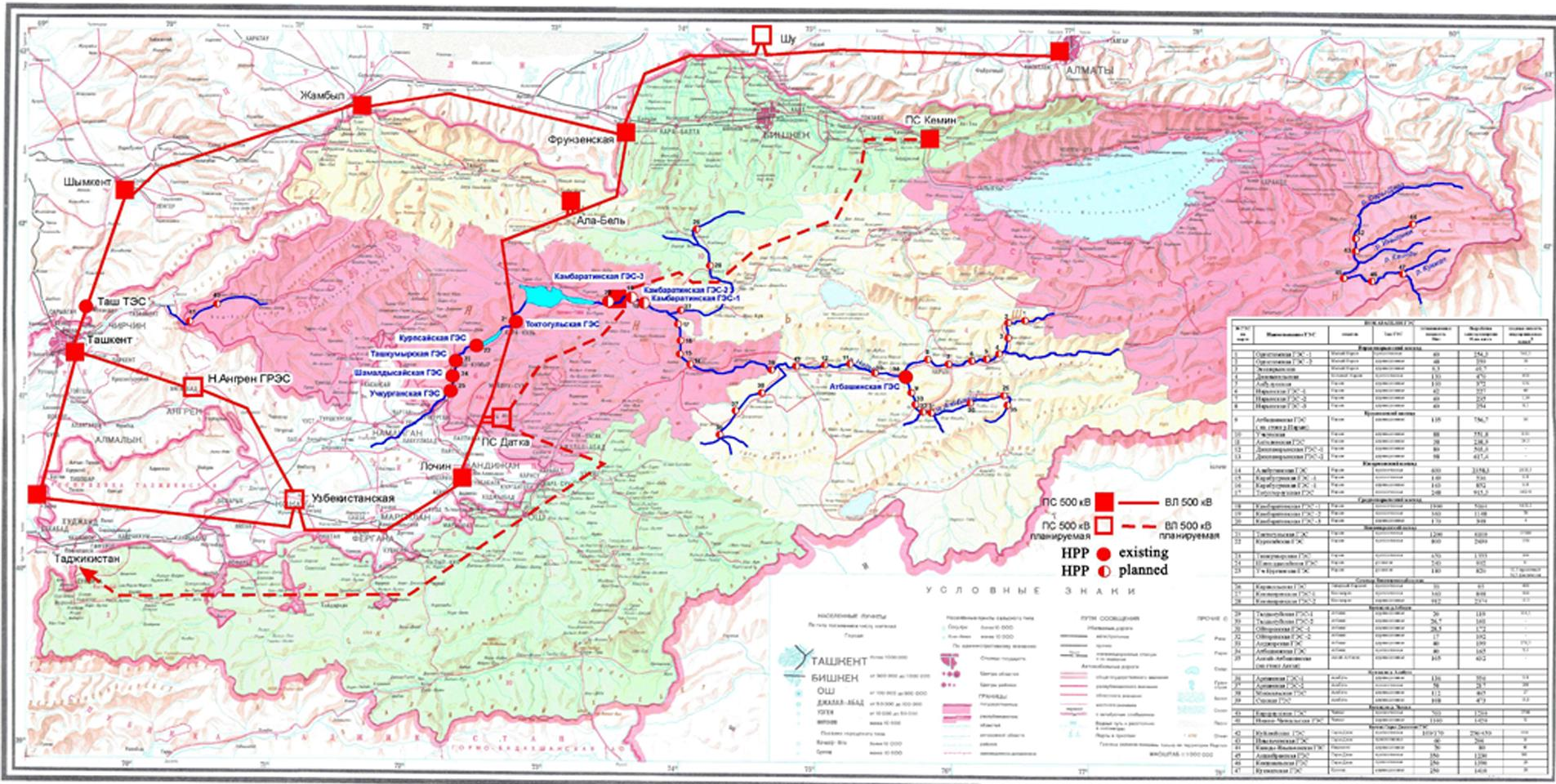
Different scenarios of Kyrgyz energy 2017-2024



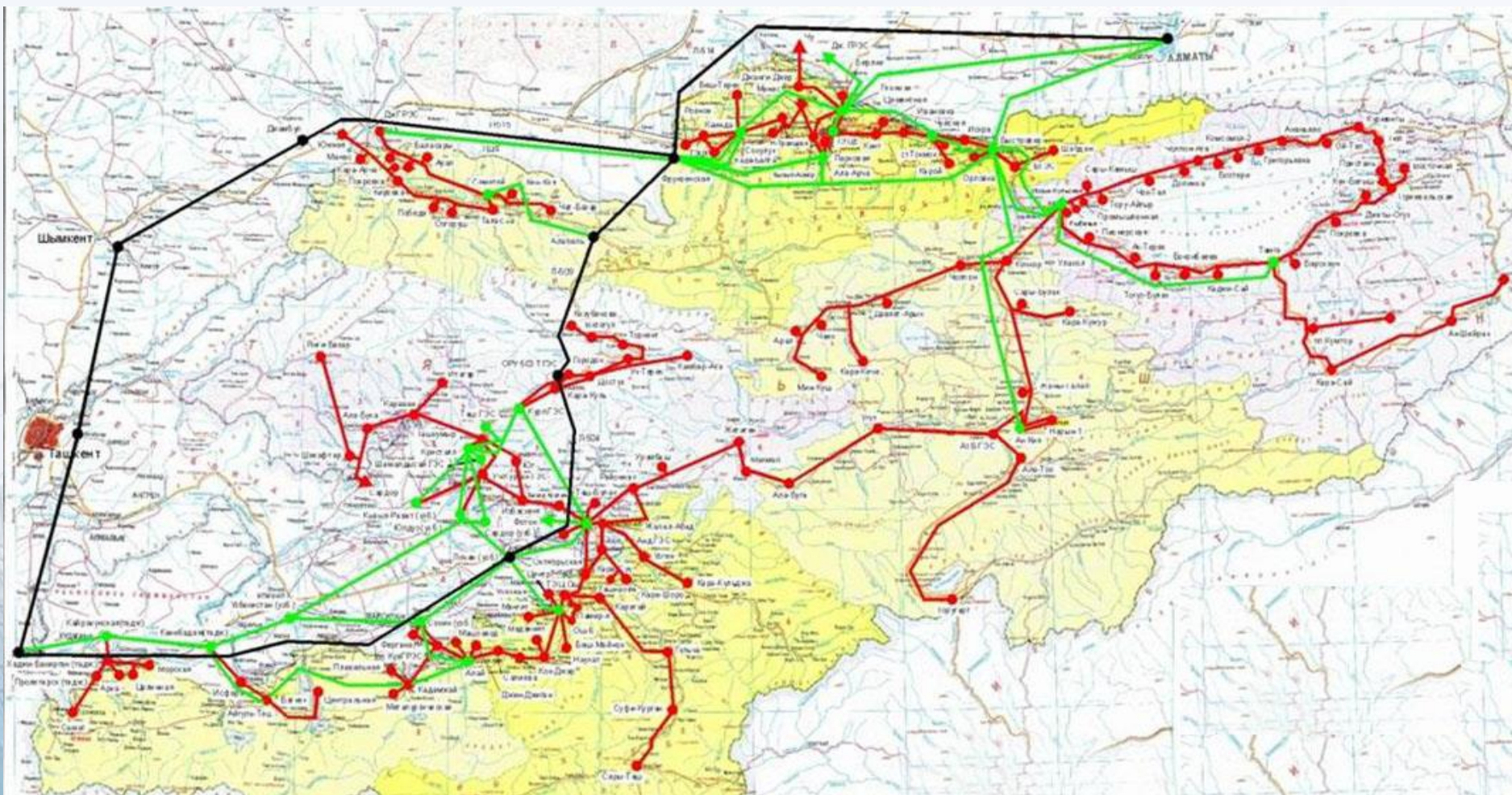
Источник: данные Министерства энергетики и промышленности Кыргызской Республики, расчетный прогноз НИСИ КР



Location scheme existing and perspective HPPs of Kyrgyz Republic.



Power grid system of Kyrgyz Republic



Barriers to the use of renewable energy



- Institutional barriers:
 - - Imperfect legislation in the field of renewable energy;
 - - Lack of qualified specialists in the field of renewable energy.
- Financial barriers (weak mechanisms for financial support).
- Poor information support for renewable energy.
- Low awareness of population, government agencies, organizations and agencies about the benefits of using renewable energy.

Identifying challenges and goals



Challenges:

- Modernization of energy infrastructure
- Increase the Energy efficiency
- Financial recovery of energy sector
- Realization of energy potential

Goals :

- Energy security
- Affordable energy
- Orientation to green energy – reach 50% in energy generation
- Diversification of generation sources and energy suppliers

Strategy



- New President; New Strategy
- Ensure energy policy improvements (New energy program)
- Create favorable conditions for the development of renewable energy sources
- Attracting FDIs in energy sector
- Development of the gas transmission system

Thank you for your attention!



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E-mail: omurzakov@gmail.com

