The State of the Kyrgyz Energy Sector

Bishkek, December 2018
Helped by recent exports, 2017 average tariff revenues were closer to cash needs

- The electricity sector performed better in 2017, compared to recent years, due primarily to high exports.
  - Without exports in 2017, the electricity sector deficit would have been 2.6 billion KGS
- 2017 energy sector revenue was 7% below the cost of service** (cost recovery gap in 2014 was 32%)
- Overall energy sector deficit has decreased from KGS 9.3 billion in 2015 to KGS 1.5 billion at the end of 2017*

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**Cost of service represents annual cash requirements only, and includes debt service on CAPEX and excludes depreciation or other non-cash items. It may not reflect needed expenditure on OPEX and CAPEX.

***Due to a methodology change (discussed on slide 6), we can only compare total sector results across years.
Yet, these net electricity exports are temporary.

- The positive effect of a high-export year on cost of service recovery is only short-term. According to forecasts, net exports are expected to decline again.*

Chart 1 Sources: Historical data provided by the State Regulatory Agency; Forecasts are from the “Electricity Balance in the Power System 2017-2023” as provided by the State Regulatory Agency; Note: Exports to Kazakhstan in 2017 totaled 354.7 thousand kWh (reflected in the figure, but too small to see on this scale).

Chart 2 Note: This forecast is based on an energy balance forecast provided by the regulator, and our own estimate of costs going forward, based on actual costs in 2017 (as indicated in the Techno-Economic Indicators 2017, as provided by the State Regulatory Agency).

Lower exports forecasted through 2023 mean the electricity sector deficit will grow.

- Without a change in tariffs, deficits forecasted:
  - heating sector: KGS 1.3 billion by 2023 (a 61% increase from the 2017 heating deficit level).

- 2023 overall deficit forecasted at KGS 8.4 billion (CASA revenues estimated at KGS 1.7bn)
Currently, sector deficit subsidized by a mix of budget support and erosion of assets

- Energy sector companies’ cumulative debt reached KGS 96.7 billion at the end of December 2017 (19.6 percent of GDP).* This debt has grown quickly (compared to KGS 200 million in 2010), due to large projects (incl. the Datka-Kemin transmission line and Toktogul rehabilitation). Without tariff increases, repayment of these loans appears unlikely.**

![Cumulative Energy Sector Debt](image)

- Significant under-spending on maintenance and capital improvements, as well as accumulation of accounts payable, implicitly subsidize the sector.

*Ministry of Finance  
An increasing debt repayment schedule will drive up costs in 2018-2023.

- Loan repayment is scheduled to jump 47% from KGS 3.87 billion in 2018 to KGS 5.69 billion in 2019. Annual payments are expected to keep increasing until they peak in 2025 at KGS 11.8 billion.*
- NESK has the largest share of repayment obligations in 2023, followed by EPP. The distribution companies and BTS all make up a small share (3 percent or less each) of the total debt repayment in 2023.

The energy system is still in dire need of investments.

- **To keep the system from breaking down:**
  - **OLD ASSETS:** 45% of generation capacity beyond useful life | Depreciation of sector equipment at 70-80%* | 700+ electricity towers in critical condition**
  - **Lack of maintenance/rehab. = risk of breakdowns**
    - Spare parts no longer manufactured in Russia
    - Breakdowns: Bishkek Heat and Power Plant (Jan 2018); Toktogul (winters 2015 and 2016)

- **To meet growing consumption, export potential, & manage demand seasonality:**
  - Consumption is growing [2015: 9,362 GWh; 2017: 10,035 GWh]
  - Efforts being made to expand supply and allow for exports* (e.g. plans for 690 MW of new generation by 2023 → leading to reserves of 500mln KWh)
  - Seasonality of demand is high

**Age of Generation Assets**

<table>
<thead>
<tr>
<th>Years</th>
<th>Utch-kurgan HPP</th>
<th>At-baschi HPP</th>
<th>Bishkek CHPP</th>
<th>Toktogul HPP</th>
<th>Kurpsai HPP</th>
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**Seasonal Residential Consumption**

- **June**
- **December**

Source: Techno-Economic Indicators (2017), as provided by the State Regulatory Agency
Managing these dynamics implies tariffs have to be raised.

- Residential electricity tariffs below 700kWh drive the average tariff below cost of service recovery.
  - Residential tariffs for consumption below 700kWh (53% of total consumption), were only 40% of cost of service level in 2017.

- Heating and hot water tariffs are below the cost of service for residential customers, as tariffs have not kept up with increasing costs.
Even moderate tariff increases could reduce total sector deficit by 51%

- A moderate tariff adjustment plan (10-15% residential tariff increase every second year for electricity and heating tariffs) would reduce total sector deficit by 51% (KGS 4.1 billion in 2023) compared to no tariff increases.

*The baseline forecast is based on no tariff changes in 2018-2023*