Energy storage policy updates bishkek

IEA (2022), Strengthening Power System Security in Kyrgyzstan: A Roadmap, IEA, Paris https://, Licence: CC BY 4.0

Kyrgyzstan"s high dependence on hydropower exposes it to the risk of electricity shortages during periods of water scarcity. This risk is magnified by the growing fragility of the power system, which is in urgent need of generation and network investment to improve its operational reliability and to ensure that it has sufficient capacity to meet demand over time. The challenge is further amplified by rapidly growing electricity demand, fuelled by unsustainably low regulated electricity prices, which threatens to quickly outstrip domestic production capacity. Maintaining access to reliable electricity services is likely to become increasingly problematic in these circumstances, especially during periods of water shortage.

The government of the Kyrgyz Republic recognises these challenges and has initiated a range of investment initiatives to help address them. Policy responses to date have focused on addressing the longer-term adequacy dimensions of the power system reliability and resilience challenge. However, relatively little attention has been focused on the more immediate power system security challenges facing the Kyrgyz power system. Opportunities exist to implement a range of policies that could help to strengthen power system security in the shorter term, especially during periods of water shortage when power system reliability and resilience are likely to be under greatest stress.

A comprehensive and integrated policy framework will be needed to help strengthen power system security in a timely, efficient and cost-effective manner. This roadmap seeks to address this need. Its goal is to help improve power sector reliability and resilience in Kyrgyzstan in the short term by quickly strengthening power system security, especially during periods of water scarcity.

The roadmap seeks to deliver this goal by deploying an interrelated set of internationally proven and effective policy measures over the next decade that focus on achieving three strategic priorities:

Supply-side measures represent the backbone of the roadmap, providing the primary response and main resources for managing significant losses of hydropower during sustained water shortage events. However, analysis suggests that implementation of a sufficient contingency reservewould represent a considerable investment of capacity and financial resources. It would be unrealistic to expect this level of contingency reserve to be developed and deployed in the short term. Hence, the roadmap proposes a three-stage approach to its development.

The first stage would involve securing a working contingency reserve drawing from existing infrastructure. A potentially ideal source could be a portion of the underutilised generating capacity associated with the Bishkek Combined Heat and Power (CHP) plant. This plant represents a readily available source of thermal generation

that is strategically located close to major loads, with the potential to be quickly deployed as an effective source of emergency power to offset the loss of hydroelectric power for the duration of a periodic seasonal hydrological shortage.

The demand-side measures proposed have the potential to improve existing rationing arrangements and to unlock a range of resources that can complement and reinforce traditional supply-side responses to address sustained power system security events. For instance, the communications strategy measure has the potential to help harness considerable voluntary power savings during a hydrological emergency event, while the contractual mechanisms measure potentially provide a practical means for securing contingency reserves from non-traditional sources, such as distributed generators.

Similarly, energy efficiency and power consumption substitution measures have considerable potential to deliver substantial power savings in the longer term. Accordingly, it is proposed that measures be developed and implemented to incrementally harness these power savings, initially focusing on improving building energy efficiency, and the deployment of more efficient space heating and appliances.

Overall, the roadmap provides an integrated and comprehensive approach for pursuing power system security in Kyrgyzstan. It incorporates a range of practical measures focusing on the key areas of power system management, production and consumption that will determine power system reliability and resilience during a sustained water shortage event. The roadmap also recognises the interrelated nature of the power system security challenges facing Kyrgyzstan during these periods, and will support the development of a mutually reinforcing set of policies and programmes that can address these matters in a practical, timely and cost-effective manner.

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