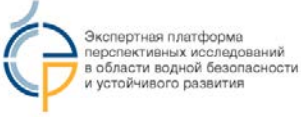


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## Water - Energy coordination in the riparian countries of the Syr Darya River Basin: Hierarchies, Networks and Economic Mechanisms

Discussion paper



**The purpose of this document** is to provide analytical support to the riparian countries of the Syr Darya River Basin in identifying and implementing mutually beneficial water-energy coordination mechanisms by demonstrating a combination of administrative solutions, network partnerships, and economic incentives for sustainable development.

The document was prepared in collaboration with members of the *Expert platform on Water Security, Sustainable Development and Future Studies*. It provides an integrated synthesis of country-level reviews prepared by experts:

*Dzhailoobaev A.Sh.*- Report on the activities of key organizations in the water and hydropower sector of the Kyrgyz Republic (September 2024).

*Prof. Pulatov Ya.E., Umarov D.M., Kholikzoda M.* - Report on the activities of key organizations in the water and hydropower sector in the Republic of Tajikistan (September 2024).

*Zhuraev E.A., Mustafoev K.M., Mukhiddinov F.Hk.* - Report on the activities of key organizations in the water and hydropower sector in the Republic of Uzbekistan (September 2024).

The Kazakhstan section was prepared by the author based on independent desk research and consultations with Prof. Ibatullin S.R. and Ryabtsev A.D.

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**More information about the Expert Platform on Water Security, Sustainable Development and Future Studies is available on the website:** <http://cawater-info.net/expert-platform/index.htm>

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## ABBREVIATIONS

<b>AIIB</b>	Asian Infrastructure Investment Bank
<b>ADB</b>	Asian Development Bank
<b>JSC</b>	Joint Stock Company
<b>BISA</b>	Basin Irrigation Systems Administration (Uzbekistan)
<b>WB</b>	World Bank
<b>RES</b>	Renewable energy sources
<b>CASA</b>	Central Asia–South Asia Electricity Transmission and Trade Project (CASA-1000)
<b>EBRD</b>	European Bank for Reconstruction and Development
<b>HES</b>	Hydraulic engineering structure
<b>PPPs</b>	Public-Private Partnership
<b>HPP</b>	Hydro Power Plant
<b>IDB</b>	Islamic Development Bank
<b>KEGOC</b>	Kazakhstan Electricity Grid Operating Company
<b>KGS</b>	Kyrgyz soms
<b>KZT</b>	Kazakhstani tenge
<b>MWRI</b>	Ministry of Water Resources and Irrigation (Kazakhstan)
<b>MWRAPI</b>	Ministry of Water Resources, Agriculture and Processing Industry (Kyrgyzstan)
<b>MWR</b>	Ministry of Water Resources (Uzbekistan)
<b>MEWR</b>	Ministry of Energy and Water Resources (Tajikistan)
<b>ICWC</b>	Interstate Commission for Water Coordination
<b>MoA</b>	Ministry of Agriculture
<b>IFIs</b>	International Financial Institutions
<b>IFAS</b>	International Fund for Saving the Aral Sea
<b>RLA</b>	Regulatory legal acts
<b>OJSC</b>	Open Joint-Stock Company
<b>UPS</b>	Unified Power System
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>RSE</b>	Republican State Enterprise
<b>JV</b>	Joint venture
<b>TJS</b>	Tajik somoni
<b>LLP</b>	Limited Liability Partnership
<b>FS</b>	Feasibility study
<b>UZS</b>	Uzbek sums
<b>SDC</b>	Swiss Agency for Development and Cooperation

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## EXECUTIVE SUMMARY

This review aims to **provide analytical support** to the countries of the Syr Darya River Basin in identifying and implementing mutually beneficial mechanisms for water and energy coordination by demonstrating a combination of administrative decisions, network partnerships and economic incentives for sustainable development.

Effective coordination in the water and energy sector is a cornerstone of sustainable development and stability for the riparian countries of the Syr Darya River basin. Effective coordination **cannot be built on a single approach**. It is always **hybrid in nature**, combining the following elements:

- **Hierarchy:** government regulations, strategic planning, control;
- **Networks:** partnership dialogue, interagency and interstate commissions, joint planning;
- **Economic mechanisms:** domestic tariffs, public–private partnerships (PPPs), investments.

The key to resilience is a “**dual-track**” approach: simultaneously strengthening national institutions and developing regional mechanisms.

**National reforms lay the foundation (Section I).** What is changing within the countries: strengthening the vertical structure of governance in the water and energy sectors, and separating the functions of policy-making, regulation, and operations; corporatization in the energy sector while maintaining administrative models in the water management; gradual tariff increases, targeted subsidies, and the development of PPPs and project financing as a response to chronic underfunding; formation of multi-level intersectoral coordination: from presidential administrations to specialized councils, commissions, and digital dispatch systems. Conclusion: A hybrid governance architecture is emerging, in which hierarchy remains dominant, but the role of networks and markets is increasing. For water-energy coordination to work in practice, it is important to connect water and energy through “bridges” represented by harmonized data, shared scenarios, and intersectoral powers and responsibilities.

**Kambarata-1 HPP as a pilot of a hybrid model (Section II).** The Kambarata-1 HPP Project could serve as an illustrative example at the interstate level, where Kyrgyzstan, Kazakhstan, and Uzbekistan are joining forces: political agreements establish a common goal, a joint company is being established, and economic mechanisms attract financing and enable the distribution of benefits.

**Recommendations for consolidating these reforms (Section III):** clearly distinguish between policy, regulatory and operational functions, where applicable; develop regulations for interaction at the strategic, operational, and financial levels; introduce independent assessment of coordination; strengthen corporate governance in line with OECD and ISO standards; make tariff policies predictable and linked to social and climate goals; accelerate digital integration and introduce a consolidated balance of financial flows in the water and energy sectors.

**Conclusion.** The future of the Syr Darya River basin depends on the skilful combination of the strengths of all three coordination mechanisms. The sustainable governance system of the future will use “Hierarchy” to ensure social guarantees and strategic state control; “Networks” to strengthen trust, distribute risks, and enable coordinated resource management; and “Economic Mechanisms” to improve efficiency and attract investment.

## INTRODUCTION: COORDINATION AS A HYBRID SYSTEM

Effective coordination in the water and energy sector is the basis for sustainable development and stability for the countries of the Syr Darya River Basin. It is important to understand that, in essence, any coordination cannot be one-dimensional or a one-time exercise - it is a continuous process inherently combining administrative decisions and horizontal linkages, formal agreements and informal practices, commercial interests and politico-technical compromises. **A governance system (and, accordingly, coordination) is hybrid by definition:** it is precisely the combination of hierarchical elements, network-based interaction, and economic mechanisms that enables the maintenance of a balance of interests and ensures resilience in a constantly changing reality.

In this hybrid model:

- **Hierarchy** is an administrative vertical, legislative framework, strategies, and state guarantees.
- **Networks** are horizontal interactions between experts, operators, agencies, and countries; horizontal coordination channels such as intersectoral working groups, data-sharing platforms, and technical dialogue.
- **Economic mechanisms** – commercial contracts, tariff pricing, concessions, and public-private partnership (PPPS), investment incentives, and other financial instruments.

Thus, the hierarchical mechanism relies on the authority of state bodies through top-down orders and regulations. This is a traditional administrative lever. The **network** mechanism operates through horizontal connections, partnership, and consensus among participants on equal footing – for example, the work of intersectoral commissions or expert groups. It is a mechanism for cooperation and dialogue. Economic mechanisms are based on incentives, prices, and contracts, and coordination of interests is achieved through mutual benefit rather than administrative means.

In reality, these three mechanisms do not exist in isolation; rather, they complement each other, creating **hybrid models of governance and coordination**. The state vertical ensures control over strategic resources underpinned by an inter-agency working network, while market transactions take place within the state-defined frameworks. Understanding how hierarchy, networks, and economic mechanisms interact, conflict, and mutually reinforce each other allows us to identify systemic gaps and find more sustainable solutions.

Thus, for this report, coordination is understood as:

*a resilient combination of hierarchical, network, and economic mechanisms through which different authorities, sectors, and countries establish coordinated rules, actions, and investments in the water-energy sector while maintaining their autonomy.*

This understanding of coordination is applicable both **within countries** (between institutions and levels of governance) and at the **interstate level**. Therefore, it is clear that its resilience is determined by the quality of linkages at both levels, and effective coordination in the Syr Darya River basin requires the **simultaneous strengthening of national institutions and the development of regional mechanisms**. Only such a "double track" ensures the enforceability of agreements and creates incentives for further reforms. Regional cooperation is shaped and sustained primarily by national structures and is often the product of complex domestic reforms. At the same time, interstate cooperation can, in turn, stimulate domestic reforms - examples from the EU, ASEAN, and several Central Asian initiatives confirm this. Strong national institutions make regional agreements enforceable, and effective regional platforms motivate and guide the further development of these institutions.

While the literature and expert discussions have traditionally focused on regional cooperation mechanisms in the Syr Darya River Basin, **this report deliberately emphasizes national institutions and internal reforms**. They form the basis for sustainable coordination, without which any regional agreements remain fragile. At the same time, it is important to show that national efforts can generate new forms of regional interaction. An example is the Kamarata-1 HPP Project, where national priorities and resources have been transformed into the basis of a hybrid model of interstate cooperation, combining elements of hierarchy, network interaction, and economic mechanisms.

The structure of the report reflects this approach: first, key institutional and financial transformations within the basin countries are analysed (**Section I**), and then, using the example of Kamarata-1 HPP Project, it demonstrates how national potential becomes the basis for a new hybrid model of interstate cooperation (**Section II**). In the conclusion, recommendations are presented to consolidate and further develop the emerging positive reforms (**Section III**).

# SECTION I. NATIONAL FOUNDATION: TRANSFORMATION OF THE INSTITUTIONAL AND FINANCIAL LANDSCAPE

This Section summarizes the key directions in the development of the institutional and financial foundation of water management and hydropower in the countries of the Syr Darya River Basin in recent years. The directions are identified based on an analysis of (a) the institutional and legal forms and mandates of key national water and energy authorities, (b) the sources and mechanisms of financing in these sectors, and (c) the prevailing coordination mechanisms. Annex 1 provides a summary of country-level information, and the general directions of transformation are presented below.

## 1. INSTITUTIONAL TRANSFORMATION

Based on a comparison of the legal and institutional frameworks for water and energy management in the four basin countries, this chapter presents the following main directions in institutional changes: strengthening the administrative vertical of power, separation of regulatory and operational functions, corporatization in hydropower, and the continued use of administrative models in water management.

### STRENGTHENING THE VERTICAL OF POWER IN WATER MANAGEMENT AND ENERGY

The basin countries have taken steps to strengthen specialized water sector management authorities, restoring or elevating the **status of water management agencies**. A new Ministry of Water Resources and Irrigation (MWRI) was established in Kazakhstan in 2023. In Uzbekistan, an independent Ministry of Water Resources was re-established in 2018 (previously, these functions were assigned to the Ministry of Agriculture and Water Resources (“Minselvodkhoz”). In Kyrgyzstan, water resource management functions were integrated into the structure of the Ministry of Agriculture, expanding its mandate (currently the Ministry of Water Resources, Agriculture and Processing Industry (MWRAPI)). In Tajikistan, the Ministry of Energy and Water Resources performs coordination and policy functions in the management of water resources; operational activities - namely, land reclamation and irrigation - have been separated into an independent Agency for Land Reclamation and Irrigation (ALRI), reporting directly to the Government.

In addition to the lining ministry, other agencies are involved in various aspects of water management, including environmental authorities (permits, water quality monitoring, environmental impact assessment (EIA), and others); drinking water quality - sanitary and epidemiological services/Ministry of Health; groundwater - geology/subsoil services; monitoring and forecasting - national hydrometeorological services; disaster risk reduction, floods, and emergencies - emergency management agencies; public utilities (drinking water supply, sanitation) - housing and public utilities agencies and local authorities; irrigation - ministries of agriculture.

A strong state vertical remains in the energy sector as well. All countries have a **centralized energy administration** in the form of ministries. In energy ministries, functions are concentrated on strategic planning, coordination of state-owned energy companies, implementation of interstate agreements, and management of investment projects, including hydropower development.

Thus, the region shows a steady **strengthening of the vertical governance structure** in both the water and energy sectors. This strengthening reflects awareness of the critical importance of water and energy for sustainable development, food, and energy security. At the same time, it is important to emphasize that despite the establishment of dedicated water ministries in the countries, water issues are inherently cross-sectoral and interagency; therefore, water–energy coordination will never be limited to coordination

between only two ministries or agencies. This highlights the need to develop **effective mechanisms for interagency and cross-sectoral coordination**.

## FUNCTIONAL SEPARATION: POLICY - OPERATIONS

One indicator of institutional maturity is a clear separation between policy-making/regulatory functions and the operation of infrastructure and service delivery functions. A shift in this direction can be observed in all countries: ministries and committees focus on policy formulation, strategic planning, regulation, and oversight, while operational functions are delegated to separate agencies, state-owned companies/enterprises, or joint-stock companies. This approach allows ministries or committees to set strategic directions and rules from the top, while operators independently handle day-to-day tasks such as managing infrastructure and delivering services. The key aspect of this separation is not merely dividing the functions, but establishing clear rules for performance monitoring: transparent performance indicators and contractual obligations. It is also important to understand that such a separation does not always strengthen the ministry; it may result in the loss of some resources and powers.

**Policy development and monitoring**, by definition, remain primarily a hierarchical function. It is dealt with by state bodies - relevant ministries (water, energy) and their subdivisions (committees, inspections). They centrally develop rules, set limits and standards, issue licenses, and ensure compliance with legislation.

**The operation of infrastructure** (dams, reservoirs, canals, pumping stations, power lines, etc.) in countries is often entrusted to special agencies or state-owned companies. Within these organizations, there is **an hierarchy** (management's orders are mandatory for branches and sites). However, the operation of multipurpose facilities or facilities affecting other sectors also requires **network coordination**—alignment of operating regimes through commissions, working groups, and regular information exchange. Examples include any HPPs in the countries of the region. If such impacts also affect other countries, then network coordination must likewise be interstate or regional (transboundary).

**Service delivery to consumers** (irrigation water for farmers, electricity for household and industrial users) is currently based on a **mix of mechanisms**. On the one hand, providing farmers with irrigation water is explained by the state as fulfilling a social public mandate—i.e., a hierarchical mechanism (directive allocation and subsidization combined with water supply contracts). On the other hand, the supply of electricity, especially on commercial terms or for export, is carried out through contracts. A balance is being sought in all countries: through **corporatization** (establishment of joint-stock operating companies), authorities introduce fiscal discipline and sound asset management into the sphere of public services, while maintaining control over strategic decisions (tariffs and obligations to ensure provision of resources to the population).

**Development and approval of tariffs** – a complex function; its implementation requires a combination of different approaches. The final decision on water or electricity tariffs is made, as a rule, by a state body (the government or the regulator – **an act of hierarchy**). However, the process of preparing a tariff decision includes consultations and examinations: discussions of tariff proposals with producers and consumers, preparation of economic feasibility calculations (**market principles**), coordination of tariff parameters among different agencies, and consideration of social, environmental, and other factors (**network elements**). Thus, tariff regulation is a vivid example of a hybrid mechanism: The outcome is a decision by a state authority, but it is prepared on the basis of network interaction and market-based analysis of financial viability (in the energy sector).

**A clear distribution of functional roles** helps to identify who is responsible for what in the governance system: policy-making, operational management, service delivery, and financial regulation. This is

important for **coordination** - interaction should occur not merely “ministry to ministry,” **but across functions**. For example, effective reservoir management requires coordination between those responsible for day-to-day operations (water and energy dispatch services), while long-term decisions on tariffs and investments require alignment between the government’s financial and economic units and sectoral ministries.

In general, the trend towards functional separation creates a more streamlined and transparent management architecture. Ministries set rules and targets, and operators put them into practice. However, this same division has revealed differences between the water and energy sectors.

**Table 1. Allocation of functions among Water sector institutions**

Country	Policy and governance	Infrastructure Operations and Services	Development/approval of tariffs
Kazakhstan	MWRI	RSE «Kazvodkhoz»	Committee for Regulation of Natural Monopolies of the Ministry of National Economy (MNE)
Kyrgyzstan	MWRAPI	Water Resources Service, WUA	The Cabinet of Ministers / State Regulator
Tajikistan	MEWR	ALRI, WUA	Government / MEWR / Antimonopoly Service
Uzbekistan	MWR	Operation Agency, BISA, Services	The Cabinet of Ministers / Ministry of Finance (Regulator)

## SERVICE DELIVERY AND OPERATOR MODELS IN THE WATER AND ENERGY SECTORS

Syr Darya River Basin countries have fundamentally different approaches to operating infrastructure and providing services in the water and energy sectors.

*Operation and service delivery in the water sector: predominance of public sector entities.*

**In the water sector**, operational organizations remain **state institutions** with limited managerial autonomy and a high dependence on the state budget. This is due to the fact that water is treated as a public good: tariffs and user charges cover only part of the costs, while reliable water supply and irrigation are critical for food security and social stability; therefore, the state maintains direct financing and control.

The following models of managing the operation of water infrastructure and service delivery can be identified in the Syr Darya River basin countries:

**Kazakhstan:** *The model of a commercialized state-owned enterprise.* Operational functions are performed by the RSE "Kazvodkhoz" (Republican State Enterprise on the right of economic management). Legally, it is a commercial organization that operates on a cost-recovery basis and generates revenue. However, it remains 100% state-owned and is directly hierarchically dependent on the MWRI. This is a hybrid model in which the state implements market principles without losing direct control.

**Kyrgyzstan:** *Civil service model.* In Kyrgyzstan, operational functions, including infrastructure maintenance and repair, are assigned to the Water Resources Service under the MWRAPI. This is a classic model of a public institution fully integrated into the administrative hierarchy and financed from the budget. Commercial activity is not its primary objective.

**Tajikistan:** *Autonomous government agency model.* The operation of irrigation systems is carried out by the Agency for Land Reclamation and Irrigation (ALRI), which reports directly to the Government. As in Kyrgyzstan, ALRI is a state institution, not a commercial company.

**Uzbekistan:** *Intra-ministerial operator model.* In Uzbekistan, a model has been established in which functions are institutionally separated within a single state authority (the Ministry of Water Resources). **Policy-making and oversight** remain with the central administration and inspectorate (the classic hierarchical function). **Operational responsibilities** have been transferred to a specialized Agency and its local units (the managerial/economic function). In addition, **certain service functions** at the local level may be delegated to the private sector (PPP's market-based mechanism). This vertically integrated yet functionally differentiated structure is intended to combine state control over a strategic resource with greater operational efficiency and the creation of conditions to attract private investments.

### ***Electricity-supply sector operators: the shift toward corporatization***

The electric power systems of the four Syr Darya River basin countries have undergone reforms in recent years and have converged toward a similar functional structure: generation, transmission/dispatch, sales, and distribution.

**Generation.** The largest owners and operators of HPPs remain state-owned companies – “Samruk-Energy” JSC (Kazakhstan), “Electric Power Plants” OJSC (Kyrgyzstan), “Barki Tojik” OJSC (Tajikistan), and “Uzbekhydroenergo” JSC.

**Transmission and system operation.** The functions of managing the transmission networks and dispatching functions for balancing the system are performed by system operators: Kazakhstan Electricity Grid Operating Company (KEGOC, **Қазақстан**), “National Electric Grid of Kyrgyzstan” OJSC (NESK, Kyrgyzstan), “Shabaqahoi Intiqoli Barq” OJSC (Shlb, Tajikistan), and «National Electric Grid of Uzbekistan» JSC, and a Dispatch Centre under the Ministry of Energy of Uzbekistan.

**Sales / wholesale/ single buyer.** On the electricity consumer side, specialized operators are in place. In Kazakhstan, the bulk of electricity is sold through the Financial Settlement Centre for Support of Renewable Energy Sources (FSC, following the restructuring of the functions of regional energy supply companies of “Samruk-Energy”); the freely tradable portion is brought to the KOREM exchange. In Kyrgyzstan, the role of a single buyer and export counterparty is performed by the system operator itself – “NESK” OJSC. In Tajikistan, electricity distribution and consumer service functions are performed by the “Shabaqahoi Taqsimoti Barq” (ShTB) OJSC. Its tariffs include the cost of electricity purchased at the national level. “Barki Tojik” OJSC handles the signing and implementation of international electricity export and import agreements. In Uzbekistan, wholesale electricity operations and settlements have been carried out by “Uzenergotsotish” JSC since 1 July 2024. From 1 January 2025, it has also been assigned all import and export contracts, including hydropower transactions.

**Distribution networks.** Regional energy supply companies are responsible for the distribution and maintenance of regional networks in Kazakhstan; in Kyrgyzstan, this function is implemented by the distribution companies within the NESK; in Tajikistan - by “Shabaqahoi Taqsimoti Barq” (ShTB) OJSC, in GBAO - «Pamir Energy»,<sup>1</sup>; and in Uzbekistan- by «Regional Electric Networks» JSC.

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<sup>1</sup> Pamir Energy produces, distributes and sells electricity generated by a series of small and medium-sized hydropower plants with a total installed capacity of about 44 MW (11 stations).

Although there are differences, the overall approaches to functional separation and sector corporatization are similar: a state-owned or publicly listed company owns generation assets; a separate operator manages the transmission network, balances the system, and ensures transit; traders aggregate and sell electricity on a wholesale basis; and distribution companies' network delivers electricity to end consumers.

**Table 2. Allocation of functions of Hydropower institutions**

Country	Regulation (policy)	Generation	System Operator and Transmission (Grid)	Distribution	Supply	Development/approval of tariffs
Kazakhstan	Ministry of Energy	JSC "Samruk-Energy",	JSC «KEGOC»	Regional energy supply companies (RES)	LLP «Financial Settlement Centre» for RES/HPP; Exchange-based and bilateral transactions — via KOREM	Committee for Regulation of Natural Monopolies of the Ministry of National Economy (MNE)
Kyrgyzstan	Ministry of Energy	«Electrical Power Stations» OJSC	«NESK» OJSC	«NESK» OJSC through distribution companies	"NESK" – Single Wholesale Buyer; RECs (Regional Electricity Distribution Companies) -retail	Department for Regulation of the Fuel and Energy Complex (FEC) under the Ministry of Energy
Tajikistan	Ministry of Energy and Water Resources (MEWR)	«Barki Tojik» OJSC, «Pamir Energy», Roghun, Sangtuda-1,2	"Shabakahoi Intikoli Barq" (ShIB) OJSC Transmission networks	Shabakahoi Intikoli Barq" (ShIB) OJSC «Pamir Energy» in GBAO	ShIB OJSC "Barki Tojik" OJSC (Export/import) «Pamir Energy» in GBAO	Government MEWR / Antimonopoly Service
Uzbekistan	Ministry of Energy	«Uzbekhydro energo» JSC	«NESU» JSC (National Electric Grid of Uzbekistan)	«RES» JSC (Regional Electric Networks)	«Uzenergosotish» JSC (Purchase and sale to large consumers, import-export)	Cabinet of Ministers / Ministry of Finance / Ministry of Energy

**Different operational models in the water and energy sectors imply different incentives and governance frameworks.** Energy companies (JSCs), operating under conditions of commercialization, function based on concepts such as tariffs, profitability, and return on investment. Water management agencies (state institutions) operate using concepts such as limits, state orders, and disbursement of budget funds. This makes direct understanding and collaboration difficult: industries largely live by their own rules.

**Table 3. Comparison of Operators in the Water and Energy Sectors**

Comparison criterion	Water management operating organizations	Energy companies (hydropower)
Institutional and Legal form	Predominantly government institutions (services, agencies, and departments), with the exception of Republican state-owned enterprises (RSE) in Kazakhstan.	Joint-stock companies (JSC/ OJSC).
Legal autonomy	Low. They are part of the state administrative apparatus.	High. They are legally separated from the state, operate on the basis of corporate law and charter.
Financial model	Budget Financing. Cost-Based Model. The	Commercial activity. Business model. The task is to

	objective is the timely utilization of allocated funds.	generate income from the sale of electricity and the provision of services.
Investment attractiveness	Low. They cannot independently raise commercial loans or issue bonds. They depend on the state budget and sovereign borrowing from international financial institutions (IFIs).	High. They can attract project financing, loans, and direct investment, including through public-private partnerships (PPPs). They serve as a clear and well-structured investment vehicle.
Main Incentive	Execution of state assignments and utilization of budget funds.	Maximization of revenue and profit (within tariff constraints).

Thus, the primary task for coordination is to establish effective **coordination mechanisms and “linking” institutions**. These include, for example, intersectoral commissions (bringing together representatives of different ministries and agencies), joint projects (where water and energy specialists work together toward shared goals), and integrated information systems. Section 3 examines the steps taken at the national level to create such bridges between the two sectors.

## 2. FINANCIAL FRAMEWORK: BUDGETS, TARIFFS, AND INVESTMENTS

Financial and economic mechanisms in the water and energy sectors largely determine the possibilities of coordination. In the Syr Darya River Basin countries, a situation has historically developed in which the state has borne the main costs of constructing and maintaining key infrastructure, while setting subsidized tariffs for the population. This ensured social stability, but led to systemic underfunding of industries. Below, the key aspects of financial policy and reforms aimed at improving sustainability are reviewed: budget financing and subsidies, tariff policy, investment attraction, and efficiency improvements.

### *STATE BUDGETS AND SUBSIDIES*

In all Syr Darya River Basin countries, **the state budget remains the main source of financing for water management**. Budget funds are allocated for capital investments in the water sector — including the construction and modernization of hydraulic structures, canals, and pumping stations — as well as for the partial coverage of operating costs of sectoral organizations. Loans from international financial institutions are used for individual large projects, but their servicing is usually provided by the budget as well. In the electricity sector, retail tariffs were kept below cost-reflective levels for decades, while the resulting revenue shortfalls for generation companies were compensated either through direct transfers or through the accumulation of debt later restructured via the state budget.

Such a policy helped mitigate social tensions but led to chronic underfunding and the **deterioration of infrastructure**. By the early 2020s, it became obvious that it was impossible to continue like this - networks and facilities were aging, and accidents were becoming more frequent. According to some estimates, in Tajikistan, annual investments in irrigation in recent years have amounted to less than USD 10 million, whereas the required amount to maintain the system exceeds USD 125 million per year.<sup>2</sup> A vicious circle arises: lack of funds leads to the fact that canals are not repaired, up to 50% of water is lost when delivered to the fields; farmers do not receive enough water - yields fall, which hits the economy and does not allow increasing payments for resources. Similarly, in the energy sector, hydropower and grid infrastructure is significantly worn out, electricity losses are high, yet tariffs remain low, and company profits are minimal. As a result, modernization progresses slowly, and the state is forced to urgently mobilize funds to keep the sector operational. As a result, **the share of the fiscal burden** on budgets is very high, and dependence

<sup>2</sup> Pulatov Ya.E., Umarov D.M., Kholikzoda M. Report on the activities of key organizations in the water and hydropower sector in the Republic of Tajikistan (September 2024). [Unpublished internal document].

on concessional loans and International Financial Institutions' grants (IFIs) has become structural: without them, the launch of most projects is impossible.

### *TARIFF REFORMS*

Awareness of the problem of underfunding led the governments of all four countries to gradually **revise their tariff policies**. The current strategic objective is to gradually bring electricity and water service tariffs to a level that ensures cost recovery, while the state assumes the costs of maintaining “public goods” and mitigates the impact on the population through targeted social assistance. In almost all cases, programs or roadmaps for tariff increases have been adopted alongside **reforms of the subsidy system**: a shift from implicit subsidies (through universally low prices) to **targeted subsidies** for the most vulnerable groups of the population.

For example, in Kazakhstan, social consumption norms with reduced tariffs have been introduced: households pay lower prices for electricity and water up to a certain consumption threshold, while usage above the norm is charged at full cost-recovery rates. Kyrgyzstan raised electricity and water prices in 2021-2023, reducing hidden cross-subsidies; Tajikistan plans to bring electricity tariffs to economically feasible levels by mid-decade. In Uzbekistan, in the electricity sector in 2024–2025, a block tariff system has been introduced with a social consumption norm priced at a preferential rate and a progressive scale for above-norm usage. In irrigation, the service fee has been replaced by a water resources use tax (100 UZS/m<sup>3</sup>), the rate of which depends on the application of water-saving technologies, thereby directly incentivizing consumers to improve efficiency (see Appendix 2 for more details on tariff reforms in the countries). Apparently, all these measures to increase tariffs will be combined with measures to maintain socially significant goods that the state must provide.

**Table 4. Tariff Reforms across the countries (as of June 2025)**

Country	Electricity: key measures	Irrigation/water: key measures	Subsidy model
Kazakhstan	- Capacity market since 2019 - Since 2024, ceiling prices have been introduced along with a separate "capacity payment"; - Tariffs are differentiated, with an average of \$0.015/kWh <sup>3</sup>	- Weighted average tariff of the «Kazvodkhoz» RSE for 202: 7 KZT/m <sup>3</sup> (0.015 \$/m <sup>3</sup> ) - Range: 0.97–288 KZT/m <sup>3</sup> (0.002–0.61 \$/m <sup>3</sup> )	Social norms + targeted subsidies
Kyrgyzstan	- Policy 2025-2030: Gradual increase - Tariff range: 1,37–6,06 KGS/kWh (0.016–0.070 \$/kWh)	- Fixed rates (2025): 250–500 KGS/ha ≈ 0.23–0.45 KGS/m <sup>3</sup> (0.0026–0.0052 \$/m <sup>3</sup> ) - Shift to unified pricing rates	Indexing + transition to targeted assistance
Tajikistan	- Tariffs from 2025: Population – 35.36 dirams (0.032 \$/kWh); Industrial consumers – up to 80.9 dirams (0.073 \$/kWh)	- Increase to 5 dirams/m <sup>3</sup> ≈ 0.00051 \$/m <sup>3</sup> - Covering only 8-10% of costs; further increases in 2027.	Cross-subsidies and massive subsidies persist
Uzbekistan	Block tariff system from 2025: 0–200 kWh – preferential rate, 201–500 kWh – 800 UZS/kWh (0.067 \$/kWh); Basic – 600 UZS (0.050 \$/kWh), indexing to 10%	- From 2024, the rate is 100 UZS/m <sup>3</sup> (0.0083 \$/m <sup>3</sup> ). With the use of coefficients: from 0.0042 up to 0.0092 \$/m <sup>3</sup> - Excess limit: ×5 rate	Tax model with a social block

Note: Conversion of key rates into US dollars at approximate exchange rates: 1 USD ≈ 470 KZT, 87 KGS, 11.1 TJS, 12,000 UZS

In all countries, tariff increases are a **politically sensitive process**; therefore, governments accompany them with public awareness campaigns and support measures. In addition to targeted subsidies, technologies and measures are being introduced to increase the collection of payments and reduce losses. For example, meters are being actively installed throughout the region, automated payment systems are being introduced, and work with debtors is being strengthened. In Tajikistan, the level of payment of drinking water bills by the population increased to 70% after the mass installation of meters. Such measures effectively increase payment collection rates, even without an immediate increase in tariffs. Taken together, a clear pattern is emerging: the share of non-recoverable costs is gradually decreasing. In the future, this should reduce the burden on budgets (including loan and borrowing repayments) and open the way for private investment, which flows only where there is a guaranteed return on capital.

### ***INVESTMENT ATTRACTION, CORPORATIZATION, AND PPP MECHANISMS***

Given limited budget resources, countries seek to attract **off-budget investments**, including private capital, foreign investment, and funding from international financial institutions (IFIs) for infrastructure development. At the same time, the key tools are **public-private partnerships (PPPs) and the corporatization of state assets**, which are mutually reinforcing.

**PPPs.** The first examples of PPPs can be seen in the electricity sector. In Tajikistan, two Sangtuda hydroelectric power plants (HPPs) were built with the participation of Russian and Iranian investors (PPPS). In the Gorno-Badakhshan Autonomous Region (GBAO) of Tajikistan, electricity supply is provided by "Pamir Energy" Company, established in 2002 as a public-private partnership under a concession agreement with the Government of Tajikistan and the Aga Khan Fund for Economic Development (AKFED). The Company itself produces, distributes, and sells electricity generated by a series of small and

<sup>3</sup> Price caps on electricity in the Republic of Kazakhstan, Source: cdb.kz: <https://cdb.kz/sistema/pravovaya-baza/o-vnesenii-izmeneniya-v-prikaz-ministra-energetiki-respubliki-kazakhstan-ot-14-dekabrya-2018-goda-51-378/#%D0%9F%D1%80%D0%B8%D0%BB%D0%BE%D0%B6%D0%B5%D0%BD%D0%B8%D0%B5>

medium-sized hydropower plants with a total installed capacity of about 44 MW (11 stations).<sup>4</sup> In 2025, the “Sebzor” HPP (11 MW) was commissioned, which will help to bring electrification close to 100% and improve the reliability of electricity supply. The “Pamir Energy” example is often considered a successful PPPS in the energy sector in mountainous regions: the private operator is fully responsible for generation, distribution, and supply, while the state provides institutional and policy support. In the water supply sector, concession agreements have been concluded: in the 2010s, water utilities in Kazakhstan were transferred to private operators, while in Uzbekistan, Veolia and Suez were awarded contracts to manage the water systems of Tashkent and Samarkand. There is no massive inflow of private capital yet - low payback and tariff risks are still deterring investors.

Realizing this, **governments are improving the investment climate**: PPPs legislation is being improved, more flexible tender conditions are being introduced, and guarantees are being issued. For example, guarantees may be provided for the state purchase of generated electricity at a fixed price, or guarantees of a minimum level of service consumption, so that investors have confidence in their revenues. Kyrgyzstan has adopted a new version of the PPPs law, based on which projects are already being implemented (construction of small hydropower plants with the participation of private companies). In 2021–2022, Uzbekistan updated its legislation, allowing private owners to enter water supply and energy projects based on concessions; several tenders have been announced, including solar generation projects and renewable energy (RES) auctions. However, when developing PPP mechanisms, it would be very important to simultaneously strengthen the system for assessing fiscal risks. Projects should be assessed in advance for potential fiscal liabilities and systematically monitored to avoid the hidden accumulation of debt. This is particularly important in the context of increasing the private sector’s participation in infrastructure<sup>5</sup>.

**Corporatization as a “bridge” for investment.** The second, no less important reform component was the corporatization of the hydropower sector. In all countries, key power generation entities have been established as joint-stock companies with 100% (or controlling) state ownership: “Samruk-Energy” JSC (Kazakhstan), “Electric Power Plants” OJSC (Kyrgyzstan), “Barki Tojik” OJSC (Tajikistan), “Uzbekhydroenergo” JSC (Uzbekistan). The purpose of establishing such structures was to maintain state control over strategic assets, improve operational efficiency, create corporate mechanisms to attract investments and ensure their return, and conduct business activities. State-owned joint-stock companies can take loans from international financial institutions, conclude international contracts, publish financial statements – in other words, act more flexibly than traditional budgetary organizations. Corporatization thus lowers barriers for investors: the project gains a clearly defined counterparty with a balance sheet, audited accounts, and the legal authority to enter into long-term contracts.

**The financial condition and quality of companies’ corporate governance** will directly determine the success of this model. Lack of transparency or low efficiency forces the government to increase administrative control (which stifles market incentives) and, at the same time, discourages private capital. Therefore, a key condition for further progress is the adoption of best practices in corporate governance — transparency, accountability, and compliance with international standards such as ISO (International Organization for Standardization) standards<sup>6</sup> and the OECD Guidelines for Public Sector Enterprises (See *Box 1*). This strengthens the trust of the state, partners, and potential investors.

### **Box 1. OECD Guidelines on Corporate Governance of State-Owned Enterprises: Key Provisions.**

These principles constitute an international standard aimed at improving efficiency, transparency, and accountability in the public sector.

1. **Rationale and objectives:** The state should define the rationales for owning individual SOEs. The ultimate purpose of state ownership of enterprises should be “the interests of the general public».

2. **The state’s role as an owner:**

**Active and informed ownership:** The state should act as an informed and active owner, ensuring a high degree of professionalism in management.

**Centralization:** The exercise of ownership rights should be centralized in a single state ownership entity or, at a minimum, coordinated by a designated body.

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The financial sustainability of state-owned companies also affects the reliability of commercial agreements between the countries of the Syr Darya River Basin. Among regional players, two state-owned companies are particularly financially robust: “Samruk-Energy” JSC (Kazakhstan) continues to demonstrate steady growth, with revenues reaching KZT 573.5 billion in 2024 and a net profit of KZT 112.5 billion<sup>7</sup>; «Uzbekhydroenergo» (Uzbekistan) remains a dynamically developing entity, with record electricity generation of 8.2 billion kWh in 2024 and revenues exceeding UZS 4 trillion<sup>8</sup>. Both companies have sufficient liquidity and creditworthiness to attract large external financing and fulfil long-term commercial obligations within the framework of regional projects. In Kyrgyzstan and Tajikistan, national energy companies still face budget constraints but continue to improve their financial sustainability, which makes issues of tariff policy and corporate governance in these countries particularly relevant.

**Overall, the share of private capital in infrastructure remains modest, especially in the water sector.** According to expert estimates, direct private investment in Tajikistan’s irrigation sector remains virtually non-existent.<sup>9</sup> The main “investors” are international development banks - the World Bank, ADB, EBRD, Islamic Development Bank, and other banks, which provide loans and grants under sovereign guarantees of states. This helps sustain projects today, but in the long term, all countries need to more actively mobilize commercial financing, especially in the energy sector, where projects can be made financially viable through the sale of output. This requires consistent implementation of tariff reforms that ensure a return on investment, the creation of transparent corporate structures, and a stable and predictable regulatory environment. The private sector requires **not only favourable but also stable rules of the game** — frequent changes in tariff or regulatory policy increase investment risks and reduce interest in long-term projects.

In both sectors, the scale and time horizons of investments are often incompatible with the capacities of private capital. Public-private companies remain an effective tool, and they are also widely used in Europe and other regions of the world to overcome market failures.

### *EFFICIENCY IMPROVEMENT AND NEW TECHNOLOGIES*

One of the key areas for improving financial sustainability is **reducing costs and increasing water and energy efficiency**. Limited investment resources should be directed toward technologies and projects that deliver the greatest economic impact — reducing losses, improving resource efficiency, and lowering operating costs.

Countries in the region are already beginning to implement such solutions. **Energy saving and modernization of pumping stations** is a vivid example. Energy service contracts are being introduced in Uzbekistan: a private contractor modernizes pumping equipment at its own expense, achieves energy savings, and receives remuneration from the saved funds. This mechanism allows infrastructure to be upgraded without creating a one-off fiscal burden on the budget, as payback is achieved through future savings (lower electricity bills). President of Uzbekistan Shavkat Mirziyoyev declared 2025 the “Year of Improving Pumping Station Efficiency,” emphasizing the priority of cooperation with the private sector and the deployment of solar panels to reduce electricity consumption by 20%<sup>10</sup>. There is already a targeted support: in June 2025, the EBRD allocated a loan of 240 million euros to modernize 110 pumping stations

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<sup>7</sup> Report of the management of “Samruk-Energy” JSC on the results of activities for 2024. [https://www.samruk-energy.kz/images/documents/2025/rez\\_deyatelnosti\\_SE\\_2024\\_ru.pdf](https://www.samruk-energy.kz/images/documents/2025/rez_deyatelnosti_SE_2024_ru.pdf)

<sup>8</sup> «Uzbekhydroenergo» JSC increased electricity generation and plans new large-scale projects. “UzDaily”, 27.03.2025. <https://www.uzdaily.uz/ru/ao-uzbekgidroenergo-uvelichilo-vyrabotku-elektroenergii-i-planiruet-novye-masshtabnye-proekty/>

<sup>9</sup> Pulatov Ya.E., Umarov D.M., Kholiqzoda M.: Report on the activities of key organizations in the water and hydropower sector in the Republic of Tajikistan (September, 2024). [Unpublished internal document].

<sup>10</sup> <https://president.uz/en/lists/view/7676>

in 10 regions of Uzbekistan, which should significantly reduce energy consumption and operating costs<sup>11</sup>. Private initiatives are also developing: in the Khorezm Region of Uzbekistan, farmers install solar panels to power pumps and even sell surplus electricity back to the grid, generating additional income. Another example is a **smart water supply**. In many cities of Kazakhstan and Uzbekistan, projects are being implemented for the widespread installation of water meters, leak detection, and modernization of pipelines. Water saving directly saves energy on pumping and reduces water utility costs.

In the energy sector, Kazakhstan introduced a capacity market in 2019 — a mechanism under which generators are paid not only for the electricity produced, but also for maintaining a certain level of available capacity that can be dispatched whenever the power system requires it. This “capacity payment” provides a guaranteed source of revenue for power plants, enabling them to plan long-term investments in the modernization and construction of generation capacity. Thus, the “missing money” problem is addressed: when electricity market prices are too low to cover capital costs, the capacity market provides power plants with a stable revenue stream to maintain reliability.

The development of renewable energy sources (**RES**) – **solar and wind power plants** – is being stimulated throughout the region. This is also important for water and energy coordination: if it is possible to reduce electricity consumption in the autumn-winter period due to renewable energy sources, the pressure on reservoirs in the off-season will decrease, and it will be easier to coordinate the regimes. On the other hand, the mobility of hydroelectric power plants allows for reducing power imbalances caused by the variability of renewable energy sources. The first major solar and wind projects are being implemented in Kazakhstan and Uzbekistan with the participation of private investors and IFIs, which is a positive signal. This tendency is emerging in other countries as well.

In general, new technologies and **efficiency improvements** are a hidden **reserve of financial stability**. They allow achieving more with the same resources, thus reducing competition between the water and energy sectors for budget funding and water resources. However, it requires initial capital investments and competencies, so their promotion is often associated with external support (loans, grants, donor expertise).

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<sup>11</sup> [www.gazeta.uz/en/2025/06/14/ebrd/](http://www.gazeta.uz/en/2025/06/14/ebrd/)

### 3. INTERSECTORAL COORDINATION

For effective management of the water–energy sector, having an appropriate institutional structure and sufficient funding is not enough — coordination **between different agencies and sectors within the country is also essential**. Each of the four countries of the Syr Darya River Basin has its own mechanisms of intersectoral cooperation. The main ones are outlined below: vertical coordination; strategic coordination (the development and implementation of strategies and regulatory acts); cross-cutting mandates (enshrined in the statutes of ministries); consultative mechanisms (councils and commissions); operational and technical coordination (digital dispatch and control systems); and expert and financial coordination (procedures for approving tariffs and investment programs).

#### *VERTICAL COORDINATION*

Effective management of the water and energy complex is ensured by a well-built decision-making vertical. Critical cross-sectoral decisions in all countries are made at the level of **government and/or presidential administration**. In almost all countries of the basin, responsibility for implementing a unified state policy in the field of water use, water protection, and the electricity sector is assigned to the Cabinet of Ministers. Such cross-sectoral coordination ensures political and financial alignment between the sectors.

#### **Coordination at the strategic level and drafting of regulatory legal acts (RLAs).**

At the strategic level, all countries in the Basin show a **conceptual convergence of water and energy policy**. Coordination is anchored in long-term national and sectoral documents through specific cross-sectoral goals.

**Kazakhstan**, in its new “Concept for the Development of the Water Management System for 2024–2030”, emphasizes the construction of reservoirs capable of simultaneously ensuring agricultural water supply and the stable operation of hydropower plants, thereby addressing both food and energy security objectives.<sup>12</sup>

**Kyrgyzstan**, in its “National Water Strategy until 2040,” explicitly links water management with increasing the share of hydropower.<sup>13</sup> Thus, the goals of energy security and water supply are enshrined in a single program document, which institutionally brings together the country's water and energy policy.

**Tajikistan**, in its “National Water Strategy until 2040,” defines the principles and objectives of long-term integrated water management, links the water sector with the National Development Strategy to 2030 and the SDGs, and provides for improvements in legislation and institutions, increased investment activity, the safety of hydraulic structures, as well as the development of hydropower and the multipurpose use of reservoirs (including for electricity generation, irrigation, and flood risk

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<sup>12</sup> Decree of the Government of the Republic of Kazakhstan dated February 5, 2024, № 66.  
<https://adilet.zan.kz/rus/docs/P2400000066>

<sup>13</sup> “National Water Strategy of the Kyrgyz Republic until 2040”. Approved by the Decree of the President of the Kyrgyz Republic dated February 10, 2023, № 23.  
[https://mnr.gov.kg/storage/npa/files/10/%D0%9D%D0%B0%D1%86%D0%B8%D0%BE%D0%BD%D0%B0%D0%BB%D1%8C%D0%BD%D0%B0%D1%8F\\_%D0%B2%D0%BE%D0%B4%D0%BD%D0%B0%D1%8F\\_%D1%81%D1%82%D1%80%D0%B0%D1%82%D0%B5%D0%B3%D0%B8%D1%8F\\_%D0%9A%D0%A0\\_%D0%B4%D0%BE\\_2040\\_%D0%B3%D0%BE%D0%B4%D0%B0-64883a3ee3f27.pdf](https://mnr.gov.kg/storage/npa/files/10/%D0%9D%D0%B0%D1%86%D0%B8%D0%BE%D0%BD%D0%B0%D0%BB%D1%8C%D0%BD%D0%B0%D1%8F_%D0%B2%D0%BE%D0%B4%D0%BD%D0%B0%D1%8F_%D1%81%D1%82%D1%80%D0%B0%D1%82%D0%B5%D0%B3%D0%B8%D1%8F_%D0%9A%D0%A0_%D0%B4%D0%BE_2040_%D0%B3%D0%BE%D0%B4%D0%B0-64883a3ee3f27.pdf)

reduction). This bundle brings water to the macroeconomic agenda through energy independence and climate adaptation.<sup>14</sup>

**Tajikistan**, in its “National Development Strategy until 2030”<sup>15</sup> sets the goal of achieving energy independence through the development of hydropower potential as one of three key objectives, thereby making water management part of the macroeconomic agenda. This approach is further reinforced by the “Green Economy Development Strategy for 2023–2037,”<sup>16</sup> where priorities such as renewable energy, energy efficiency, and sustainable water use are considered within a unified framework.

**Uzbekistan**, in its “Strategy for the Transition to a Green Economy,” explicitly sets the objective of “reducing the specific energy consumption of pumping stations within the system of the Ministry of Water Resources,” thereby linking the Ministry of Energy’s energy efficiency goals with the operational activities of the Ministry of Water Resources.<sup>17</sup>

Thus, strategic documents are no longer isolated and sector-specific; instead, they are becoming integrated and comprehensive, reflecting the fundamental interdependence of water and energy in the region. This indicates that cross-cutting issues are no longer secondary and have become central to long-term planning, as the link between water and energy is regarded as fundamental to economic resilience and national security. Although there are no “joint strategies” on water and energy yet, the inclusion of cross-cutting goals and targets in national and sectoral documents has become the de facto main mechanism for strategic coordination. This allows for a more sustainable and balanced development of the entire region.

During the preparation of these strategic documents and other regulatory legal acts, intersectoral coordination occurs within dedicated **working groups** set up for their drafting (see Box 2). It then moves into a **formal approval process**, often supported by **digital public consultation platforms** and the regulatory impact analysis/assessment (Regulatory Impact Analysis / Regulatory Impact Assessment). An important role in this process is played by portals such as “Open regulatory legal acts” in Kazakhstan (<https://legalacts.egov.kz/>) or “Portal for discussion of draft regulatory legal acts” in Uzbekistan (<https://regulation.gov.uz/ru>), where draft documents undergo not only public consultation, but also mandatory discussion with stakeholders (sectors) and coordination with authorized government bodies. In Kazakhstan<sup>18</sup> and Uzbekistan<sup>19</sup> the RIA procedures establish the requirement for cross-sectoral analysis in the development of regulatory legal acts and their submission. Until the conclusions of the relevant agencies and the authorized legal body (the Ministry of Justice in Uzbekistan and the Intersectoral Commission under the Government in Kazakhstan) are obtained, the draft cannot proceed further in the legislative process. Thus, intersectoral coordination has been transformed from a formal approval procedure into a requirement for substantive analytical justification of public regulatory policy.

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<sup>14</sup> National Water Strategy until 2040 (Decree of the Government of the Republic of Tatarstan dated November 29, 2024, № 627).

<sup>15</sup> [www.mfa.tj/uploads/main/2013/03/strategiya-rusi-15-08-2016\\_badi-takhrir.pdf](http://www.mfa.tj/uploads/main/2013/03/strategiya-rusi-15-08-2016_badi-takhrir.pdf)

<sup>16</sup> Decree of the Government of the Republic of Tajikistan dated September 30, 2022, №482. <https://faolex.fao.org/docs/pdf/taj221507.pdf>

<sup>17</sup> Decree of the President of the Republic of Uzbekistan, dated 04.10.2019, № ПП-4477. <https://lex.uz/docs/4539506>

<sup>18</sup> Rules for Conducting and Using Regulatory Impact Analysis approved by the order of the Minister of National Economy of the Republic of Kazakhstan, dated NOVEMBER 20, 2015, № 748 <https://adilet.zan.kz/rus/docs/V1500012517>

<sup>19</sup> Regulation on the procedure for assessing the regulatory impact of draft regulatory legal acts and adopted regulatory legal acts, approved by the Decree of the President of the Republic of Uzbekistan, on 16.08.2024, № AB-111 <https://lex.uz/ru/docs/7070079>

## Box 2. Intersectoral working groups for the drafting of regulatory legal acts (RLA)

The drafting of Kazakhstan's new Water Code was carried out in an **intersectoral** format pursuant to a directive from the President issued in February 2022. The draft was developed under the leadership of the Ministry of Water Resources and Irrigation in close coordination with the Committee for Construction and Housing and Communal Services, and with the active participation of relevant line ministries, research institutions, and civil society organizations. Working group meetings were held in both offline and online formats, which made it possible to engage a wide range of specialists from across the country. After a series of intersectoral approvals and public discussions, the Code was approved by the Parliament and signed by the President on April 9, 2025.

**In Uzbekistan**, the preparation of the draft Water Code, which was approved by the Senate of the Oliy Majlis on 17 March 2025, was carried out within an intersectoral working group established by the Ministry of Water Resources in May 2021. The group included representatives of key ministries and agencies, including agriculture, economy, innovative development, the tax service, hydrometeorology, and sanitary and epidemiological control, as well as "Uzbekhydroenergo" and other relevant institutions. The work was supported by international partners (SDC), ADB, and the Scientific-Information Centre of the Interstate Commission for Water Coordination (SIC ICWC), with detailed discussions and revisions of proposals from more than 40 organizations, including the Council of Ministers of the Republic of Karakalpakstan and regional hokimiyats. The project was approved through the national electronic platform (project.gov.uz), demonstrating an example of interagency cooperation.

The preparation of the National Water Strategy **of the Republic of Tajikistan** until 2040 has been carried out since 2016 under the leadership of the Ministry of Energy and Water Resources. It involved representatives of key ministries, committees, and agencies — including those responsible for the economy, health, environment, agriculture, irrigation, and land reclamation — as well as local executive authorities, the scientific community, and civil society organizations. The work was supported by international partners (the EU, UNDP, and GIZ). The draft document and the broader water sector reform programme in Tajikistan were presented as an example of an intersectoral and climate-oriented approach at COP-28 (Conference of the Parties) in Dubai. The government approved the National Water Strategy (NWS) by a Resolution dated 29 November 2024, designating the Ministry of Energy and Water Resources as the lead coordinating body for its implementation, together with other relevant institutions and local authorities.

## FINANCIAL AND ECONOMIC COORDINATION

The financial and economic sphere is a key area for intersectoral coordination. Economic and financial agencies act as focal points in this policy framework, ensuring the allocation of funding, overseeing strategies for the transition to a green economy, managing concessions for infrastructure assets, assessing the fiscal risks of PPPs and project viability, and coordinating the approval of investment initiatives. *Coordination in this area, for example, includes tariff approval, the endorsement of investment programs, and the development of co-financing programmes.*

Any change in water or electricity tariffs requires complex expert analysis and coordination involving financial authorities, antimonopoly bodies, regulators, and relevant line ministries. In **Kazakhstan**, the key body responsible for approving tariffs is the Committee on Regulation of Natural Monopolies under the Ministry of National Economy. Although the tariff calculations and justifications are prepared by the relevant line agencies, the final decision is made by the Committee. At the same time, discussions of tariff parameters are often brought to specialized platforms—such as the Tariff Policy Council under the Ministry of National Economy and Public Councils under the Committee—where a coordinated position is formed through intersectoral dialogue and consultations with stakeholders. Tariff decisions are then coordinated with the government's economic division. This approach ensures institutional coordination across sectors and takes macroeconomic priorities into account in the formulation of tariff policy. In **Uzbekistan**, tariff proposals are also subject to mandatory intersectoral coordination. Relevant authorities (the Ministry of Finance, the Ministry of Economy, the Antimonopoly Committee, etc.) publish draft tariffs on a portal, where they undergo intersectoral coordination and public consultation. After that, the documents are sent to the Intersectoral Tariff Commission under the Cabinet of Ministers, which reviews and approves tariffs for

electricity, gas, thermal energy, and other services.<sup>20</sup> The decisions taken come into force after approval by the Cabinet of Ministers. Similar mechanisms are in place in other countries, where tariffs are reviewed through inter-ministerial procedures involving socio-economic and environmental agencies to ensure an integrated approach to regulation.

Similarly, investment programs undergo a multi-stage review to ensure that they are feasible and in line with national priorities. All countries have legally established that every major investment project (such as the construction of a reservoir, a hydropower plant, or a large-scale irrigation system) must undergo **intersectoral review**. In practice, the level of development of these procedures varies across countries, and comprehensive cross-cutting mechanisms for expert analysis still need to be institutionalized—so far, these processes are more often ad hoc or project-based in nature (with working groups convened for specific tasks).

A particularly important and increasingly significant instrument of such coordination is the **principle of targeted joint financing**. It enables a shift from simple coordination to the practical implementation of projects that serve the interests of multiple sectors, and strengthens mutual accountability. Although the establishment of formal inter-ministerial funds is not yet practiced in Central Asian countries, the principle itself is implemented through other mechanisms:

**In Kazakhstan**, individual components of investment programs for water and energy infrastructure are implemented on a co-financing basis—particularly in regions where pumping stations or hydraulic facilities serve a dual function for both water supply and energy provision. For example, through the investment subsidy programme, farmers receive partial reimbursement for the purchase of modern irrigation equipment, which simultaneously addresses water, food, and energy efficiency objectives.

**In Tajikistan and Kyrgyzstan**, this mechanism is often implemented within large-scale projects co-financed by international partners (such as the World Bank, the Asian Development Bank, etc.), where a mandatory requirement is the establishment of intersectoral supervision committees for joint management and monitoring.

**In Uzbekistan**, subsidy and credit programmes for water-saving technologies, such as those implemented through the [suvkredit.uz](http://suvkredit.uz) platform, are coordinated and financed with the participation of the Ministry of Water Resources, the Ministry of Energy, the Ministry of Agriculture, and the Ministry of Finance.<sup>21</sup> This allows balancing the goals of water conservation, sustainable production, and energy efficiency in the agricultural sector.

Thus, joint financing turns coordination into a practical mechanism with shared responsibility for the outcome, directly linking financial flows to the achievement of cross-sectoral strategic objectives.

## CROSS-SECTORAL MANDATES

**Cross-sectoral mandates** refer to situations where a relevant agency is granted the authority to review or approve decisions in a related or adjacent policy area. This tool allows embedding coordination directly into public administration processes (within the governmental hierarchy). In all countries of the region, obligations to take into account the interests of related sectors are established in one form or another.

**Kazakhstan:** The establishment of the Ministry of Water Resources and Irrigation (MWRI) in 2023 was accompanied by a direct provision requiring the mandatory consideration of the Ministry of

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<sup>20</sup> By Resolution No. 964 of the Cabinet of Ministers dated 3 December 2019, and the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated 15 June 2024 № 337.

<sup>21</sup> within the framework of the Presidential Decree № УП-74

Energy's proposals when approving reservoir operating regimes<sup>22</sup>. However, no corresponding reciprocal obligation is established in the regulations of the Ministry of Energy. As a result, **cross-cutting arrangements are one-sided** in nature and rely more on political and administrative agreements.

**Kyrgyzstan:** Although the functions of the Ministry of Energy and the MWRAPI partially overlap (for example, the Ministry of Energy includes “rational use of water and energy resources,” while the MWRAPI includes coordination of activities in the field of water resources), **there are no cross-cutting obligations** in their respective mandates. Coordination is possible, but not mandated. In fact, issues are resolved through working contacts or brought to the level of the government.

**Tajikistan:** A radically different solution has been chosen here—the integration of sectors. The MEWR brings both sectors together, so core coordination is carried out within a single institution, bypassing bureaucratic barriers. This reduces the transaction costs of coordination, although it places a heavier burden on the MEWR itself, requiring comprehensive expertise across both sectors simultaneously.

**Uzbekistan:** There are likewise **no cross-cutting obligations** in the mandates of the Ministry of Water Resources and the Ministry of Energy. Coordination is ensured through the establishment of shared objectives in legislation<sup>23</sup> and through mandatory technical integration at the operational level, which obliges the agencies to maintain continuous working interaction.

## INTERSECTORAL COUNCILS AND COORDINATION PLATFORMS

Another mechanism of network-based coordination is the establishment of intersectoral **Councils, Committees, or Commissions** under the highest bodies of state authority. These platforms bring together representatives of various ministries and stakeholders to discuss and pre-agree on decisions.

Examples of such Councils in the region include: The Interdepartmental Council on Water Management of Kazakhstan (Kazakhstan), the National Council on Water and Land Resources under the President of the Kyrgyz Republic (Kyrgyzstan), the National Water Council under the Government of the Republic of Tajikistan (Tajikistan),<sup>24</sup> Coordinating Council on Water Sector Reform under the Government (Uzbekistan), the Interdepartmental Council on “Green” Economy (Uzbekistan), and the Republican Water Council (Uzbekistan).

**The primary purpose** of such Councils is to ensure preliminary cross-sectoral review of decisions before they are approved by a government authority. The council helps to identify disagreements, take into account the positions of all agencies, and find compromise solutions. This improves the quality and legitimacy of the final decision, as it has already undergone expert review. In addition, Basin Councils are also being established, bringing together experts from agriculture, industry, municipal utilities, and environmental organizations. Their recommendations help incorporate a wide range of perspectives when planning the allocation of water resources (as seen in the experience of Kazakhstan and Tajikistan).

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<sup>22</sup> Decree of the Government of the Republic of Kazakhstan dated 4th of October 2023, № 863, Paragraph 83 of the Regulation on the MWRI.

<sup>23</sup> For example, the Law of the Republic of Uzbekistan “On Water and Water Use” (1993) stipulates that the use of water facilities for hydropower purposes is carried out in coordination with water management authorities, taking into account the interests of other sectors of the economy.

<sup>24</sup> In 2025, in Tajikistan, in accordance with Article 20 of the Water Code of the Republic of Tajikistan, the National Water Council was established as a consultative and advisory body under the Government of the Republic of Tajikistan.

However, **the existence of a council in itself does not guarantee effective coordination**. Many of these bodies have consultative and advisory status. Their decisions are advisory and not binding on line ministries. If there is no political will at the highest level of leadership to support the council's decisions, or if participants lack real leverage to implement the agreements, then the execution of the recommendations depends entirely on the goodwill of the agencies involved. Often, councils can turn into platforms for exchanging opinions without real consequences, or into instruments for legitimizing decisions already made at the top, or a way to postpone the resolution of difficult issues by shifting them into the realm of prolonged discussions.

Thus, interagency councils are a necessary but insufficient element. They create a space for dialogue and trust (which is important in itself), but for them to become a truly effective coordination tool, they require a stronger linkage to the joint decision-making process and resource allocation.

## **DIGITAL DISPATCHING: OPERATIONAL COORDINATION AT THE TECHNICAL LEVEL**

A growing contemporary trend is the shift from episodic meetings to **continuous coordination based on data**. This involves the development of integrated information and dispatch systems that connect the water and energy sectors in real time. This represents a fundamentally new level of interaction, which helps to move beyond reliance on meetings and instead synchronize actions on a daily, real-time operational basis.

All countries have begun developing national **digital platforms** for monitoring and managing water resources, many of them linked with energy dispatch systems:

The National Water Resources Information System (NWRIS) is being implemented in **Kazakhstan**. Being at the pilot stage, it already covers several key modules, including "Administration," "Water Use," "Transboundary Waters," and "Cartography."<sup>25</sup> The system collects data from 86 major reservoirs and hydrological posts, including those on transboundary rivers, and is integrated with the energy dispatch system ("KEGOC" JSC). In fact, this helps to link the schedules of water discharges from reservoirs with the needs of the energy system and irrigation in an operational mode.

**Kyrgyzstan:** With the support of the EBRD and other partners, SCADA systems are being implemented at hydraulic infrastructure facilities. Real-time data on water discharge is transmitted to the dispatch centres of the Water Resources Service and the Ministry of Energy. This enhances transparency and speeds up information exchange between the agencies.

**Tajikistan:** A National Water Information System (WIS) is being established under the Ministry of Energy and Water Resources (MEWR). It includes a geoportal, databases on the water balance of each basin, and other tools to improve data collection and analysis. The objective is to provide a centralized repository and information-sharing platform for decision-making within the merged ministry and with external partners.

**Uzbekistan:** In 2024, by Presidential Decree, a Central Dispatch and Water Balance Service was established under the Ministry of Water Resources. Based on this Service, the Centre for Digital Water Management Platform of Uzbekistan is being developed, including components such as water use accounting and control, pumping stations, the water cadastre, monitoring of land reclamation conditions, water infrastructure facilities, and reservoirs. The system is designed to

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<sup>25</sup> <https://www.gov.kz/memleket/entities/water/press/news/details/1008715?lang=ru>

integrate with a range of agencies, including geology, hydrometeorology, cadastre, energy, and tax authorities. These processes provide the foundation for the digital transformation of the sector and for intersectoral coordination in water and energy management.

The growth of such systems means that real-time coordination is reaching a new level. However, greater information transparency between agencies is still required, including the monitoring of shared cross-sector indicators. In the future, such digitalization could significantly depoliticize issues of operational regulation.

The analysis conducted reveals a complex, multi-level, and dynamically evolving system of cross-sector coordination in countries. It is far from ideal models and represents a hybrid in which the logics of hierarchical control, network interaction, and economic incentives coexist. These coordination mechanisms appear to be shaped not as an end in themselves (with the exception of councils), but as a means of addressing specific tasks.

## FINDINGS

The analysis of institutional and financial mechanisms in the countries of the Syr Darya Basin shows that a new hybrid governance architecture is emerging in the fields of water and energy. **The state hierarchy still plays a dominant role**—the state retains control over water allocation (there are no water markets, and water supply services are subsidized) and steers the development of the energy sector (competitive electricity markets are beginning to emerge). Vertical power structures are strengthening, especially in the water sector, reflecting the government's priority of food and water security.

At the same time, **elements of network and market-based governance** are being introduced in all countries. The traditional model (ministries and subordinate agencies) is gradually being supplemented by new forms: intersectoral councils and expert platforms for consultation. In parallel, market transformation processes are underway: corporatized state-owned companies are being established, private partners are being engaged, and cost-recovery principles are being implemented through tariffs. The pace of this transition varies, with Kazakhstan and Uzbekistan moving further in separating commercial functions and creating an attractive environment for investors.

These differences in the institutional framework also influence the **nature of coordination**. In areas with a higher concentration of economic factors (for example, in the energy sectors of Kazakhstan and Uzbekistan), there arises the challenge of adaptation through the use of administrative mechanisms in the water sector. Where state governance prevails (Kyrgyzstan, Tajikistan), on the contrary, the challenge is to introduce more flexible forms of cooperation and attract additional resources. In financial terms, the energy sector is gradually becoming corporatized and investment-attractive, while the water sector remains subsidized and unattractive for business.

Countries are attempting to address asymmetries in sectoral development by creating bridges and establishing common rules of the game. *First*, national energy companies (“Uzbekhydroenergo,” “Samruk-Energy,” etc.) operate not merely as commercial entities but as hybrid institutions that understand the hierarchy (state objectives) and the market (profit), which enables them to act as intermediaries. *Second*, tariff reform is aimed at introducing cost-reflective tariffs for water and energy, sending a signal to all actors to reduce losses and improve efficiency. *Third*, digitalization creates a common technical platform that forces agencies to work with a single set of data.

Thus, the countries of the Syr Darya River Basin, by building effective mechanisms of cross-sector cooperation, are effectively laying the foundation for robust regional interaction: professional actors, shared financial incentives, and a unified information environment are emerging. These three elements create the necessary potential for moving to a transboundary/interstate level. The new governance architecture—where the strengthening of vertical control is combined with the development of network institutions, and

public financing is complemented by investments—is intended to ensure resilience in the face of common challenges (rising demand, climate change) and the mutually beneficial use of the shared resources of the Syr Darya River. In the next section, we will look at how this national capacity translates into a specific transboundary project.

## SECTION II. HYBRID MODEL OF COOPERATION AT THE INTERSTATE LEVEL: KAMBARATA-1 HPP PROJECT

Historically, water and energy management in Central Asia was based on a command-and-hierarchical model—decisions, financing, and planning were imposed “from above.” In the new realities of independence, this mechanism proved non-functional: no interstate structure had sufficient authority to compel states to comply with limits or schedule.

Central Asian countries have pursued a path of dialogue and the creation of joint bodies, such as the International Fund for Saving the Aral Sea (IFAS) and the Interstate Commission for Water Coordination (ICWC). These structures and agreements played a positive role, helping to avoid acute crises following the collapse of the centralized system. Nevertheless, their capabilities were limited: cooperation was often expressed in prolonged negotiations and compromises, and did not resolve fundamental contradictions. The key problems—lack of coordination between water release regimes and electricity generation, and disputes over the construction of new hydropower plants—remained unresolved.

It was assumed that economic mechanisms, such as providing irrigation water releases in exchange for energy resources and electricity trade, would become drivers of cooperation. Bilateral water-for-gas/electricity barter agreements began to be applied, which gave a temporary effect of stability, but the agreements were often disrupted. As a result, such quasi-market relations proved unreliable—without institutional guarantees and political will, they did not ensure a stable balance of interests.

Thus, there have never been separate and “pure” forms of interaction in the region, such as hierarchy, network, or economic mechanisms. From the very beginning, they were intertwined: elements of command-based regulation were combined with negotiations and network-based formats, while barter and trade schemes emerged alongside political agreements. But in practice, without a proper balance between them and adequate enforcement mechanisms for various forms of interaction, they remained fragile and insufficient.

A viable model must combine the strengths of each mechanism: clear rules and institutional support (hierarchy), equal partnership dialogue (networking), and mutually beneficial economic incentives. An example of such interweaving is the trilateral agreement between Kazakhstan, Kyrgyzstan, and Uzbekistan on the construction of the Kambarata-1 HPP.

Today, the Kambarata-1 HPP is being discussed as a regional initiative that transforms a long-standing source of disagreement into a symbol of cooperation. This shift in perception became possible due to a new atmosphere of pragmatic cooperation that emerged in the region after 2016, as well as the successful “rebranding” of the Project from a purely national one into a regional initiative beneficial to all.

For Kyrgyzstan, this Project is a cornerstone of the national strategy for achieving energy security. It is intended to reduce electricity shortages in the winter period and become a source of significant export revenues (estimated at around \$234 million per year) through electricity supplies via the CASA-1000 corridor. For the downstream countries, Kazakhstan and Uzbekistan, the Project is important as it improves the regulation of the Naryn–Syr Darya cascade flow, making summer water releases more predictable.

If the Project is agreed in this format, the management and financing structure of the Kambarata-1 HPP can become a textbook example of a hybrid model.

### **Management (Network Hierarchy)**

It is planned that the project will be implemented through a trilateral joint-stock company, with Kyrgyzstan holding a controlling stake of 34%, and Kazakhstan and Uzbekistan each holding 33%. According to the initially discussed draft of the intergovernmental agreement, it was envisaged that, upon completion of the

Project implementation period, the shares and assets of the Kambarata-1 HPP would be fully transferred to Kyrgyz ownership. The implementation period and cooperation mechanisms were to be agreed upon at a later stage.<sup>26</sup> The draft intergovernmental agreement is still under discussion. Nevertheless, Kazakhstan and Uzbekistan act not merely as creditors, but as co-owners with seats on the board of directors. Thus, a network of three sovereign states is using a market instrument (a joint-stock company) that is owned by their hierarchical state structures (national energy companies).

## Financing

At a preliminary cost of \$3.5–6 billion<sup>27</sup>, financing represents a complex mix of equity, debt, and cost recovery. The World Bank envisages funding the project in three phases, with an estimated total financing of \$1.5 billion, including \$500 million for the first phase for Kyrgyzstan, Uzbekistan, and Kazakhstan.<sup>28</sup>

**Equity capital** is formed from contributions by the founders—three state-owned energy companies: “Samruk-Energy” JSC,<sup>29</sup> “Electric Power Plants” OJSC, and “Uzbekhydroenergo” JSC.<sup>30</sup> Kyrgyzstan has already allocated more than \$46 million from the state budget for preparatory work, demonstrating the seriousness of its intentions<sup>31</sup>.

**Borrowed funds and grants.** To attract international financing, a *Donor Coordination Committee* was established, bringing together the World Bank, the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), the Asian Infrastructure Investment Bank (AIIB), and other international financial institutions (IFIs). This networked structure allows pooling resources and aligning the requirements of different lenders. The World Bank provides the financial foundation for preparing the Kambarata-1 HPP project, allocating \$18.6 million in technical assistance to update the feasibility study, develop the financial plan, and establish the project framework<sup>32</sup>.

**Profitability and payback:** The project’s financial model provides for several revenue streams:

- *Domestic Electricity Sales:* Kyrgyzstan plans to buy part of the generated electricity to cover domestic demand, especially in the winter period.

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<sup>26</sup> Agreement between the Cabinet of Ministers of the Kyrgyz Republic, the Government of the Republic of Kazakhstan, and the Government of the Republic of Uzbekistan on the joint implementation of the Project for the construction and operation of the Kambarata-1 HPP. Draft 1 dated 12/04/2024 <https://legalacts.egov.kz/npa/view?id=15015564>

<sup>27</sup> On April 13, 2024, the President of Kyrgyzstan announced that the cost of the Project will be \$ 56 billion, and the payback period will be 13-15 years. <https://centralasianlight.org/ru/news/koordinatsionnyi-donorskii-komitet-budet-kurirovat-stroitel-stvo-ges-kambar-ata-1-v-kyrgyzstane/>. Later, it was reported that the cost of the budget is estimated at \$3.5 billion. Feasibility study “Kambar-Ata-1” will be ready by May, Ministry of Energy. April 3, 2025 <https://24.kg/ekonomika/324783>. The World Bank document calls for a preliminary cost of \$4 billion. World Bank. Kambarata-1 HPP: Sustainable and Transformational Energy Program (P509251). Jan 02, 2025. Concept Environmental and Social Review Summary (ESRS Concept Stage). Date Prepared/Updated: 12/30/2024 | Report No: ESRSC04690.

<https://documents1.worldbank.org/curated/en/099010225101035821/pdf/P509251-81fe6d88-f3e4-42a3-b4f8-8b874288946f.pdf>

<sup>28</sup> <https://documents1.worldbank.org/curated/en/099010325014512681/pdf/P5092511b629510d197721f8d68e0f8094.pdf>

<sup>29</sup> “Samruk-Energy”. (2023, Oct 3). “Samruk-Energy” was designated as the authorized organization for the Kambarata-1 HPP Project [Press release]. <https://www.samruk-energy.kz/ru/press-center/company-news?catid=0&id=1436&view=article>

<sup>30</sup> “Uzbekhydroenergo” JSC, which includes hydroelectric power plants of the Republic, plans to take part in the construction of the Kambarata-1 HPP in Kyrgyzstan. This was reported by the press service of the Ministry of Foreign Affairs of Uzbekistan. <https://ekonomika.media/ges-v-kyrgyzstane-budet-postroen-vse-resheno/>

<sup>31</sup> Feasibility study “Kambar-Ata-1” will be ready by May — Ministry of Energy. 3d April 2025. <https://24.kg/ekonomika/324783>.

<sup>32</sup> A \$14 million concessional loan from the International Development Association; \$2 million in grant funding from the ESMAP program (Energy Sector Management Assistance Program); and a \$2.6 million grant from the regional CAWEP program (Central Asia Water and Energy Program»).

<https://documents1.worldbank.org/curated/en/099010325014512681/pdf/P5092511b629510d197721f8d68e0f8094.pdf>

- *Export of electricity.* A significant share of the generated electricity will be exported. Priority is given to regional neighbours—Uzbekistan and Kazakhstan—with whom power purchase agreements are being discussed. In addition, surplus electricity may be exported to South Asia via the CASA-1000 transmission line. Long-term power purchase agreements can minimize market risks. Export revenues will be received by the joint-stock company and, after deducting operating expenses, distributed among shareholders in proportion to their stakes or reinvested to service debt. According to the President of Kyrgyzstan, the Project is expected to pay back through export revenues and domestic sales in approximately 15–20 years, at a weighted average electricity price of about 5.15 US cents per kWh<sup>33</sup>.

Taken together, this scheme illustrates a complex multi-level architecture of the project, integrating three logics—political (hierarchical), collective (network-based), and economic—into a unified system. The countries provide a political mandate and assume key obligations (a networked hierarchy through intergovernmental agreements). The joint-stock company (an economic instrument owned by hierarchical state structures—national energy companies) serves as the operational core, with the parties' interests converging into a unified whole. International partners facilitate implementation by providing resources and technical assistance. Economic mechanisms ensure long-term viability and promote operational efficiency. This complex structure allows risks and benefits to be distributed, satisfying the political requirements of sovereignty, the commercial requirements of investors, and the cooperative requirements of a transboundary project, making it feasible.

Thus, the architecture of the Kambarata-1 HPP Project demonstrates what a hybrid model can look like at the intergovernmental level, as well as how reformed national institutions can jointly apply economic, network-based, and hierarchical mechanisms to implement a mutually beneficial transboundary project. Successful implementation of the hybrid model in the case of Kambarata-1 would represent the proper fulfilment of the heads of state's mandate to develop "mutually beneficial mechanisms," as well as a ready-made framework for Kazakhstan's proposed water and energy consortium.

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<sup>33</sup> <https://24.kg/vlast/236225/> , <https://uz.kursiv.media/2023-03-16/uzbekistan-odobril-podgotovku-k-stroitelstvu-ges-kambar-ata-1>

## SECTION III. CONSOLIDATION OF EMERGING PATTERNS: RECOMMENDATIONS FOR STRENGTHENING WATER–ENERGY COORDINATION

The analysis showed that a new, hybrid architecture of interaction is being formed in the region within countries at the interstate level. However, this process is still at the initial stage and faces some challenges. To consolidate positive trends and ensure the long-term sustainability of water–energy coordination, a set of targeted measures can be proposed, structured around strengthening a hybrid governance model.

### RECOMMENDATIONS

**Recommendation 1.** Where appropriate, complete the institutional separation of political, regulatory, and operational functions in the water and energy sectors, and develop coordination mechanisms that take into account their respective functional roles:

- hierarchical — for regulatory decision-making and compliance with obligations;
- network — for interdepartmental and interstate planning;
- economic — to increase the efficiency of services, investment attractiveness and distribution of benefits.

**Recommendation 2. Develop regulations for functional interaction:** It is proposed that ministries develop and approve coordination protocols for each level of governance: strategic (policy), operational (implementation), and financial (investment). These protocols should specify which agencies are required to interact, how, and at what stage. For example, an operational reservoir management protocol may define procedures for daily communication between water and energy authorities, data exchange, and joint decision-making on flow regimes. An investment coordination protocol should set out procedures for interagency project review and project evaluation criteria. Such documents would make the interaction process clear, transparent, and binding. It would also be useful to develop cross-sectoral coordination protocols for each ministry, tailored to its specific functional responsibilities.

**Recommendation 3. Introduce regular independent coordination evaluation:** Every 2–3 years, an independent audit or assessment of coordination mechanisms should be conducted, potentially involving international experts and think tanks. The findings should be submitted to the government along with specific recommendations. This would help track progress, facilitate the exchange of best practices between countries, and attract external support for priority areas to improve coordination.

**Recommendation 4. To develop targeted financing of joint projects as a form of investment coordination.** While formal inter-ministerial funds do not yet exist in the region, the principle of targeted financing is already being successfully implemented. The establishment of dedicated budget programmes or funds jointly financed by relevant ministries (water, energy, agriculture, and environment) would help to channel resources into projects with demonstrated cross-sectoral impact, whether this involves the modernization of pumping stations or the introduction of water-saving technologies.

**Recommendation 5. Continue to strengthen the corporate governance of state-owned enterprises.** Building on the ongoing efforts to modernise state-owned enterprises in the water and energy sectors, it is recommended to further develop corporate governance practices based on OECD and ISO standards. It is important to clearly distinguish the roles of the owner, regulator, and operator; to strengthen professional and independent expertise on boards of directors; and to enhance the transparency of management

decisions as well as the resilience of business models. This will increase the efficiency of enterprises and their readiness to participate in cross-border projects and partnerships.

**Recommendation 6. Develop a tariff policy based on independence and predictability.** Given the ongoing efforts to reform tariff setting, it is proposed to strengthen the institutional framework through establishing, or functionally reinforcing, independent regulators in the water and energy sectors. In parallel, multi-tier tariff methodologies with a long-term horizon should be introduced, taking into account actual costs, the needs of vulnerable groups, and sustainable development objectives. This approach will create an enabling environment for investment and increase the alignment of tariff policy with the objectives of economic, social, and climate sustainability.

**Recommendation 7. Accelerate the implementation of digital platforms for water and energy coordination.** Building on the experience gained in individual countries, it is recommended to accelerate the development and integration of digital platforms for the exchange of telemetry data between water and energy authorities. Such solutions would enable real-time operational coordination; synchronize the functioning of hydropower facilities, reservoirs, and energy systems; and enhance the transparency and predictability of transboundary water and electricity supply regimes.

**Recommendation 8: Expand financial instruments to stimulate investment in the water sector.** Following the growing need to modernise water infrastructure, it is recommended to more proactively develop mechanisms for attracting private investment in the water sector. This includes expanding state guarantees and dedicated credit lines; improving PPPs legislation as it applies to water projects; strengthening the preparation of “bankable” projects that meet international investor requirements; and establishing inter-ministerial investment councils or high-level working groups to select and support water–energy projects. Such steps would enhance the sector’s investment attractiveness and help ensure sustainable financing for long-term solutions.

**Recommendation 9. Introduce a consolidated balance of financial flows of water management and hydropower.** This balance should reflect the volume and source of each participant’s contributions (state budget funds, own resources, tariff revenues, loans from international financial institutions, and private capital), as well as funding priorities and gaps by category (capital investment, operations, and debt servicing). Such an instrument would serve as a basis for optimising investment decisions, increasing the predictability of investments, helping avoid duplication of projects, and acting as a shared “financial dashboard” for the sustainable development of the Syr Darya Basin’s water–energy complex.

## OPPORTUNITIES FOR FURTHER ANALYSIS OF COORDINATION

The findings of this report not only allow to formulate practical recommendations, but also to refine approaches to assessing interagency and cross-sectoral coordination in the water–energy complex. In particular, it would be advisable to conduct a more in-depth analysis, taking into consideration the following directions:

1. **Diagnosis of institutional gaps** — Assessment of the consistency between the objectives of the coordination mechanisms/functions and the availability of financial and administrative resources for their implementation.
2. **Focus on precedents, not only on formal documents** — examining real cases of intersectoral cooperation, implemented projects, and procedures to understand how coordination is functioning in practice.
3. **Analysis of monitoring and accountability mechanisms** – identification of systems for tracking the implementation of decisions and procedures, as well as the presence of incentives and sanctions.

4. **Monitoring of financial flows** – analysis of budgetary and extra-budgetary financing mechanisms, including the role of tariffs, subsidies, export revenues and external financing conditions.
5. **Analysis of the role of state-owned companies** – study of their dual status as agents of state policy and participants of market processes.
6. **Assessing the quality of digital coordination** is not only the availability of digital platforms, but the level of their integration, data availability and their applicability for joint operational planning.

This approach will allow moving from a descriptive to a functional assessment of coordination and use it as a tool for a more sustainable and integrated resource management in the region.

## INFORMING IFAS REFORM EFFORTS

The proposed understanding of the **hybrid nature of coordination** makes it possible to take a new look at potential pathways for improving the IFAS. A hybrid model that combines hierarchical, network, and economic mechanisms can be used as a methodological basis for designing an updated IFAS architecture, as it helps to:

- distinguish between political, administrative and technical levels of decision-making;
- distribute roles among institutions depending on their functions and resources;
- build a more predictable and mutually beneficial model of water-energy, water-food and water-environmental interaction.

The concept of hybrid coordination provides IFAS with a diagnostic tool for analysing current weaknesses and thinking about future development. It allows understanding why traditional approaches are not working and offers a realistic way forward: without abandoning hierarchical structures (interstate agreements and institutions), to develop network and economic mechanisms, while also focusing on strengthening national institutions.

For example, in addition to high-level meetings, IFAS could purposefully create and maintain horizontal networks, including permanent technical cross-sectoral expert groups; platforms for direct exchange of operational data between national operators (such as dispatch centres) and sectors; and joint interagency working groups (water, energy, agriculture, and environment). This would facilitate the development of coordinated and evidence-based decisions at the operational level, rather than solely at the political one.

The renewed IFAS could also serve as a catalyst and facilitator of domestic reforms in member countries. For example, the Fund's activities could focus on harmonising national legislation and institutions so that they are capable of effectively implementing regional agreements; supporting the strengthening of national capacities (expert, technical, and institutional); and promoting the development of transparent tariff systems, the establishment of PPPs frameworks, and the attraction of investment into water-energy projects.

The application of such a model will allow IFAS to move from an administrative coordination approach to a more functional, flexible and investment-oriented structure.

## CONCLUSION

The analysis conducted demonstrates the strengthening of a hybrid governance architecture in the water and energy sectors across the countries of the Syr Darya River Basin. The dominant hierarchical model (ministries, agencies) in the region is gradually being complemented by network-based structures (joint

committees, councils, associations) and economic elements (corporate entities, contracts). These differences in the institutional framework also affect the nature of coordination between agencies and countries, as well as the financial sustainability of the sectors.

However, this process is not yet complete. Financial and institutional asymmetry persists between the more profitable energy sector and the subsidized, socially oriented water sector. The effectiveness of both domestic and interstate coordination will depend on the ability to establish effective “bridges” of interaction between them.

The key conclusion of the analysis is that interstate coordination and national reforms must evolve in parallel and mutually reinforce one another. On the one hand, well-designed regional mechanisms provide guidance, create external pressure, and attract resources, thereby accelerating domestic transformations. On the other hand, it is difficult to build a sustainable and effective regional coordination mechanism on the foundation of incompatible, non-transparent, and financially unstable national systems. Strengthening national institutions, enhancing their professionalism, and pursuing sound commercialization create reliable and predictable actors capable of engaging in complex international partnerships. If successfully implemented, the Kamarata-1 HPP Project will serve as the confirmation of this thesis, demonstrating how modernized national companies can jointly build a complex hybrid structure to achieve a common goal. The better countries understand each other’s internal rules of the game, the more accurately they will be able to identify effective instruments for cooperation at the basin level.

There is no single “magic” solution. The future of the Syr Darya River Basin depends on the skilful combination of the strengths of all three coordination mechanisms. A sustainable governance system of the future will use “Hierarchy” to ensure social guarantees and strategic state control; “Networks” to strengthen trust, share risks, and coordinate resource management; and “Economic Mechanisms” to enhance efficiency and attract investment.

# ANNEXES

## ANNEX 1. KEY ORGANIZATIONS IN THE WATER AND HYDROPOWER SECTOR IN THE SYR DARYA BASIN COUNTRIES.

### ANNEX 1-A. KAZAKHSTAN

**Water management:** In Kazakhstan, water management has long been carried out through the Committee of Water Resources, which at different times was under the structure of the Ministries of Agriculture, Energy, or Ecology. In 2023, the **Ministry of Water Resources and Irrigation of the Republic of Kazakhstan (MWRI)**<sup>34</sup> was established to strengthen governance in the water sector. The MWRI is a state body of the Republic of Kazakhstan responsible for leading the formulation and implementation of public policy, as well as coordinating management processes in supervision over the use and protection of water resources, water supply, wastewater management, and irrigation. It includes two committees: the Committee for Regulation, Protection, and Use of Water Resources under the MWRI, and the Water Resources Committee under the MWRI.

**The Committee for Regulation, Protection and Use of Water Resources** is a department within the competence of the MWRI that carries out strategic, regulatory, implementation, and supervisory functions in the area of water resource use and protection.<sup>35</sup> The territorial bodies of the Committee include eight Basin Inspections (for example, the Aralo–Syr Darya Basin Inspection and the Balkhash–Alakol' Basin Inspection and others), which are legal entities that serve as its regional subdivisions. Neither the Committee nor its Inspections may engage in economic activity; they operate exclusively within the framework of state authority.

**The Water Resources Committee** is a department within the competence of the MWRI that performs regulatory and implementation functions in the field of water management<sup>36</sup>.

The main operational entity within the MWRI system is the Republican State Enterprise “Kazvodkhoz,” which is responsible for the maintenance, operation, and safety of water management systems and infrastructure under state ownership, as well as for the supply of drinking and irrigation water.<sup>37</sup> Among other functions, the “Kazvodkhoz” RSE carries out interstate, interregional, and inter-district allocation of water resources, provides services for flow regulation and associated electricity generation, and, together

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<sup>34</sup> Presidential Decree of the RK dated 01.09.2023 № 318. <https://adilet.zan.kz/rus/docs/U2300000318>. Regulations on the Ministry of Water Resources and Irrigation of the Republic of Kazakhstan, approved by the Decree of the Government of the Republic of Kazakhstan dated October 4, 2023, № 863.

[www.gov.kz/api/v1/public/assets/2024/10/30/ea137feb7da2fe903cd99f5f143dc3b6\\_original.138609.pdf](http://www.gov.kz/api/v1/public/assets/2024/10/30/ea137feb7da2fe903cd99f5f143dc3b6_original.138609.pdf)

<sup>35</sup> Regulations on the Committee for Regulation, Protection and Use of Water Resources of the Ministry of Water Resources and Irrigation of the Republic of Kazakhstan, approved by Order of the Minister of Water Resources and Irrigation of the Republic of Kazakhstan dated 16 July 2024 No. 115-NҚ (registered with the Ministry of Justice of the Republic of Kazakhstan on 18 July 2024 under No. 35184). [www.gov.kz/api/v1/public/assets/2024/8/29/aed42994ff9189525b2e044c4a502b7f\\_original.23169.docx](http://www.gov.kz/api/v1/public/assets/2024/8/29/aed42994ff9189525b2e044c4a502b7f_original.23169.docx)

legal entity in the institutional and legal form of a state institution

<sup>36</sup> Regulations on the Water Resources Committee of the Ministry of Water Resources and Irrigation of the Republic of Kazakhstan, approved by the Order of the Minister of Water Resources and Irrigation of the Republic of Kazakhstan dated August 5, 2024 No 129-HҚ

[https://www.gov.kz/api/v1/public/assets/2024/12/11/cfb3c101990c2981d5fa9006f0088a9c\\_original.66116.pdf](https://www.gov.kz/api/v1/public/assets/2024/12/11/cfb3c101990c2981d5fa9006f0088a9c_original.66116.pdf)

<sup>37</sup> Charter of the “Kazvodkhoz,” RSE approved by Order of the Chairman of the Committee for State Property and Privatization of the Ministry of Finance of the Republic of Uzbekistan 12.07.2024, №507.

<https://opi.dfo.kz/p/ru/DossierDownload/DfoObjects/1974811/%D0%9A%D0%90%D0%B7%D0%B2%D0%BE%D0%B4%D1%85%D0%BE%D0%B7.pdf>

with water management organizations of neighbouring countries, ensures the interstate operation, repair and rehabilitation of jointly used water infrastructure on transboundary rivers. It also conducts mutual settlements with neighbouring countries for water deliveries.

The “Kazvodkhoz” as a Republican State Enterprise, operating based on the right of economic management, is a **commercial organization** in accordance with the legislation of the Republic of Kazakhstan.<sup>38</sup> The activities of such enterprises are aimed at generating income, albeit in the interests of the state and society. They operate on the principles of self-financing, maintain an independent balance sheet, may enter into transactions in their own name, and are liable for their obligations with all property belonging to them. The property of RSE is state-owned and is assigned to the enterprise under the right of economic management (Article 193 of the Civil Code of the Republic of Kazakhstan). The state, acting through an authorized body, retains key rights over the management of this property, including the appointment of management and the approval of the charter. A Republican State Enterprise operating under the right of economic management has a special institutional status: it operates on market principles and provides paid services, while its activities are strictly regulated by the state, and the profits generated are distributed in accordance with established procedures. The enterprise performs state functions using economic mechanisms, which nevertheless do not deprive it of its status as a commercial organization under the legislation of the Republic of Kazakhstan. However, unlike classical commercial organizations (such as joint-stock companies or limited liability partnerships), the primary objective of an RSE is the implementation of state tasks and the provision of public services, rather than the maximization of profit in the interests of private owners.

**Hydropower:** Kazakhstan's energy sector is supervised by the **Ministry of Energy**<sup>39</sup>. Thermal power plants play the main role in electricity generation; however, there are several large HPPs operating on the Syr Darya and its tributaries. The key facilities include the Shardara HPP (126 MW after modernization) on the Syr Darya itself, and a cascade of HPPs on the Chirchik River (partly located in Uzbekistan). The generation assets are mainly owned by the state holding company “Samruk-Energy” JSC (through its subsidiaries) and several private companies. Thus, the Shardara HPP is operated by “Shardara HPP” JSC (a subsidiary of “Samruk-Energy”). A recent major reconstruction of the facility was completed at approximately 38 billion KZT (around USD 100 million), with 68% of the financing provided through borrowed funds<sup>40</sup>. Electricity transmission and dispatching are carried out by the national grid operator “KEGOC” JSC, which is part of the “Samruk-Kazyna” Joint Stock Company Sovereign Wealth Fund (SWF), with minority shares in free float<sup>41</sup>. Tariffs and electricity markets are regulated by the Committee for Regulation of Natural Monopolies.

**Sources of Financing.** Financing of water management organizations in Kazakhstan is mainly provided from the state budget. The MWRI receives budget allocations for the maintenance of Committees and Basin administrations, as well as for projects related to canal reconstruction, the introduction of digital water accounting systems, and other initiatives. Part of the funding is attracted from international partners (the World Bank, EBRD, ADB, and IDB) in the form of loans and grants for improving irrigation and water supply systems. Water tariffs for irrigation have been introduced, but the rates remain insufficiently high and cover only a portion of operational costs. Water users pay for water supply services at tariffs that do not cover all costs, with the remaining expenses subsidized. In the hydropower sector, hydropower plants sell electricity

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<sup>38</sup> Article 34 of the Civil Code of the Republic of Kazakhstan dated December 27, 1994 No 268-XII and Article 51 of the Entrepreneurial Code of the Republic of Kazakhstan dated October 29, 2015 No 375-V (with amendments and additions as of 01.07.2025 r.)

<sup>39</sup> <https://www.gov.kz/memleket/entities/energo/about?lang=ru>

<sup>40</sup> <https://www.samruk-energy.kz/en/press-center/company-news?view=article&id=274:na-shardarinskoj-ges-zapushchen-vtoroj-gidroagregat-2&catid=51>

<sup>41</sup> <https://www.kegoc.kz/ru/about/struktura-aktivov/>

on the market (or at tariffs set by the regulator), and therefore generate their own revenues. Large-scale projects (such as the modernization of the Shardara HPP) are financed through a combination of sources: state investment (via “Samruk-Energy”, a Sovereign Fund), loans from international banks, and companies’ own funds.

**Intersectoral Coordination:** Water-energy coordination occurs regularly, although it is fixed unilaterally in the regulations of the ministries (the MWRI must take into account the opinion of the Ministry of Energy when managing reservoirs). Issues of water security are addressed at the cluster level, coordinated by the Deputy Prime Minister responsible for environmental protection and the economy. Key network platforms include the Interdepartmental Council on Water Management under the Government<sup>42</sup>, which serves as a platform for coordinating positions among ministries before final decisions are made at the government level, as well as Basin Councils at the territorial level. The main role of the Council is to serve as a platform for coordinating the positions of various ministries (water resources, energy, agriculture, ecology) before final decisions are made at the government level. At the lower level, Basin Councils operate to reconcile the interests of different groups of water users, including the agricultural sector, industry, public utilities, and environmental specialists. Their decisions are predominantly advisory in nature, which allows for identifying and taking into account the views of stakeholders, while leaving the final decision to the state hierarchy. As a result, network structures in Kazakhstan are deeply integrated into the hierarchical system and serve more as its complement and reinforcement rather than as an alternative. The digital platform National Water Resources Information System (NWRIS) will be integrated with hydropower data.

## ANNEX 1-B. KYRGYZSTAN

**Water management:** The water management system in Kyrgyzstan has undergone changes in recent years as part of the consolidation of government agencies. Since 2024, the **Ministry of Water Resources, Agriculture and Processing Industry of the Kyrgyz Republic (MWRAPI)**<sup>43</sup> has been designated as the authorized body responsible for developing and implementing state policy in the area of water management, as well as the rational use and protection of water resources. Its functions include planning the interstate allocation of water resources, developing integrated water use and protection plans, issuing water use licenses, carrying out state supervision, and coordinating activities in the field of water resources. **The Water Resources Service** under the MWRAPI performs operational functions in regulating state relations in the area of water management and use. These include the development and implementation of state water policy, regulation of water use and management activities, monitoring of water use, concluding agreements with water users, economic regulation of water-related relations, as well as the operation and maintenance of infrastructure, including hydraulic engineering structures. Territorially, the Water Resources Service is divided into basin administrations and district water management authorities. Also, the Ministry includes the **Service for Land and Water Supervision**, which carries out oversight and control over compliance with land and water legislation and technical standards. In addition, **Water User Associations (WUAs)** have been established at the grassroots level.

**Hydropower:** The **Ministry of Energy of the Kyrgyz Republic** regulates the energy sector, develops mechanisms for the rational use of water and energy resources, and monitors their accumulation and

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<sup>42</sup> <https://adilet.zan.kz/rus/docs/R1500000141>

<sup>43</sup> The Regulation on the Ministry of Water Resources, Agriculture and Processing Industry of the Kyrgyz Republic was approved by the Resolution of the Cabinet of Ministers of the Kyrgyz Republic dated March 7, 2024, №98. <https://cbd.minjust.gov.kg/230004108/edition/5875/ru>

use<sup>44</sup>. This is explained by the fact that about 90% of electricity in Kyrgyzstan is generated by hydropower plants. The Ministry of Energy coordinates and supervises the activities of “Electric Power Plants” JSC in relation to the implementation of intergovernmental agreements on the use of water and energy resources, as well as the construction of the Kambarata HPPs. State-owned electricity generation is concentrated in “**Electric Power Plants**” JSC, which is under the supervision of the Ministry of Energy. Transmission networks are managed by the “**National Electric Grid of Kyrgyzstan**” JSC, while distribution companies are organized at the regional level. Both joint-stock companies are 100% state-owned. State-owned energy companies—particularly OJSC “Electric Power Plants”—operate as natural monopolies and are required to publish reports on their financial and economic activities in accordance with Resolution of the Government of the Kyrgyz Republic No. 518 dated 18 August 2017. The company’s revenues are generated through the sale of electricity to domestic consumers and for export. HPP produce 92% of all electricity in the country, ensuring a low production cost of around 0.21 KGS per 1 kWh<sup>45</sup>.

Thus, in Kyrgyzstan, water and energy functions, despite their close interconnection, are distributed among separate government bodies. Although the mandates of the Ministry of Energy and the MWRAPPI partially overlap in wording (for example, the Ministry of Energy is tasked with the “rational use of water and energy resources”), in reality, they serve different governance objectives. **The Ministry of Energy** focuses on **ensuring energy security**, where water is considered a resource for electricity generation and for maintaining the balance of the unified power system. **The MWRAPPI and the Water Resources Service** operate within **the framework of the integrated use and protection of water resources**, including planning the interstate allocation of water resources and regulating interstate water relations.

**Source of Financing:** The water sector is financed through budget allocations (Article 47 of the Water Code of the Kyrgyz Republic), charges for the use of water as a natural resource (Article 48),<sup>46</sup> fees for water supply services (Article 82), and foreign investment. Kyrgyzstan was one of the first countries in the region to introduce fees for water supply services in 1996; however, the tariffs cover only a small share of operational costs (the remainder is subsidized by the state). Chronic underfunding leads to infrastructure deterioration, with water losses reaching 40–50%. For new projects (construction or modernization of water infrastructure facilities), grants and loans are attracted (for example, from the Asian Development Bank for the Orto-Tokoy reservoir). In 2017–2020, the State Irrigation Development Program was implemented, including the construction of new and the rehabilitation of existing irrigation systems. Within its framework, the development of tens of thousands of hectares of newly irrigated land was planned, with loans and grants attracted from China, the Islamic Development Bank, the World Bank, and other donors. For example, under the first phase of the program, approximately 4.895 billion KGS (USD 70.5 million) were allocated for 17 projects, enabling the commissioning of 8,965 hectares of new land and improving water supply for 29.5 thousand hectares<sup>47</sup>. In 2022, with the support of the World Bank, the project “Climate-Resilient Water Services Project was launched with a total budget of USD 100 million (equally split between a loan and a grant). The project covers the rehabilitation of water supply systems in 38 villages, as well as the modernization of irrigation and drainage networks in the Kara Darya, Syr Darya, and Amu Darya Basins.<sup>48</sup> This indicates the high dependence of the water sector on external financing.

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<sup>44</sup> Regulations on the Ministry of Energy of the Kyrgyz Republic, approved by the Resolution of the Cabinet of Ministers of the Kyrgyz Republic dated November 15, 2021 №247 <https://cbd.minjust.gov.kg/158683/edition/30481/ru>

<sup>45</sup> Dzhailoobaev A.Sh. (2024). Report on the activities of key organizations in the water and hydropower sector in the Kyrgyz Republic (September 2024). [Unpublished internal document].

<sup>46</sup> Approved by the Government of the Kyrgyz Republic for each main basin based on actual costs of study, assessment, and protection of water resources, as well as costs of measures for the functioning of the State Water Administration.

<sup>47</sup> Dzhailoobaev A.Sh. (2024). Report on the activities of key organizations in the water and hydropower sector in the Kyrgyz Republic (September 2024). [Unpublished internal document].

<sup>48</sup> Ibid.

**Financing of hydropower** in the Kyrgyz Republic is based on a combination of budget funds, tariff revenues and foreign investment, but in recent years the industry has been chronically short of financial resources. This is primarily due to an insufficiently effective tariff policy, which does not cover operational and investment needs. Expenditures in the energy sector significantly exceed its revenues, leading to unprofitability and an energy crisis. To address this crisis, a state of emergency in the energy sector was declared by the Presidential Decree No. 178 dated 24 July 2023<sup>49</sup>. In conditions of limited tariff-based funding sources, particular importance is attached to investment projects. The Cabinet of Ministers of the Kyrgyz Republic has developed plans for the construction of 18 new HPPs and 63 small HPPs, including projects on the Naryn River. Priority is given to the Kambarata-1 and Kambarata-2 HPPs, as well as the modernization of the Uch-Kurgan and Toktogul HPPs, which is expected to increase their capacity and extend their service life by 35–40 years. Financing is also provided through international assistance, investment agreements, and loan-and-grant programs. In the long term, the country aims to shift from loan-and-grant support to direct investment, particularly in the context of electricity exports to third countries—for example, under the CASA-1000 projects and cooperation with China, Pakistan, and Afghanistan. Thus, the financial sustainability of hydropower in the Kyrgyz Republic directly depends on reforms in tariff policy, the effectiveness of corporate governance, as well as the successful attraction of long-term investments and infrastructure modernization.<sup>50</sup>

**Intersectoral Coordination:** There is no permanent, formalized mechanism of interaction between the water and energy institutions. The water and energy sectors are institutionally separated and are coordinated mainly at the level of the Government or the Presidential Administration. For cross-sectoral issues, the National Council on Water and Land Resources has been established under the Government of the country, functioning as an advisory body that compensates for the lack of formal links through direct intervention by top leadership. Its main function is not only horizontal coordination but also overcoming intersectoral barriers and institutional inertia through direct hierarchical intervention by the highest political leadership. At the technical level, the country has begun to implement SCADA at hydroelectric facilities with data transmission to both ministries.

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<sup>49</sup> Ibid.

<sup>50</sup> Ibid.

## ANNEX 1-C. TAJIKISTAN

**Water resources and energy:** In Tajikistan, water management is institutionally linked to the energy sector. The **Ministry of Energy and Water Resources (MEWR)** of the Republic of Tajikistan is the central executive authority responsible for developing and implementing state policy in the energy and water resources sectors. Its functions include strategic planning, regulatory and legal supervision, as well as the control and coordination of activities in the above-mentioned sectors. MEWR also plays a key role in coordinating the implementation of the Water Sector Reform Program of the Republic of Tajikistan for 2016–2025. As structural units of the MEWR, River Basin organizations have been established in five zones: Syr Darya, Zeravshan, Panj, Vakhsh, and Kafirnigan. Within the respective basin zones, River Basin Councils have been established as consultative and advisory bodies.

**Agency for Land Reclamation and Irrigation (ALRI)** under the Government of the Republic of Tajikistan, established in 2013, is responsible for the operation and maintenance of irrigation and drainage systems, as well as the provision of related services in agriculture. The Agency manages subordinate organizations in the regions and districts (irrigation system departments, operational expeditions, etc.).

“Barki Tojik” Open Joint-Stock Company (OJSC) is the national energy company responsible for electricity generation in the country. “Barki Tojik” manages the Vakhsh cascade of HPPs (including the Nurek, Baipaza, Golovnaya, and other HPPs).<sup>51</sup> In 2013, as part of an institutional reform, “Barki Tojik” was removed from the structure of the MEWR and became an independent economic entity. “Barki Tojik” is subject to general regulatory and legal acts and strategic decisions developed by the MEWR, particularly with regard to compliance with energy policy and standards. In June 2019, following the restructuring of the energy holding, the Government of the Republic of Tajikistan established new state-owned companies for electricity transmission and distribution— “Shabaqahoi Intiqoli Barq”, (SHIB) OJSC and “Shabaqahoi Taksimoti Barq” (SHTB) OJSC, respectively.

At the same time, some **large projects** are being implemented in the country through specially established joint-stock companies with a state stake. In particular, “Roghun HPP” OJSC is building the Roghun HPP. To attract investment, international partnerships were concluded: for example, the Sangtuda-1 HPP (670 MW) was built with the participation of Russia’s Inter RAO UES. The plant was commissioned in 2008–2009, and its electricity generation amounted to 2.3 billion kWh in 2019,<sup>52</sup> and Sangtuda-2 HPP (220 MW) was built with Iran’s participation. It was commissioned in 2014, and its electricity generation amounted to 858 million kWh in 2019.<sup>53</sup> These HPPs are not legally part of «Barki Tojik», but operate in parallel with the unified energy system of the country, selling electricity to the national operator. As a market operator, «Barki Tojik» keeps records of cross-border electricity flows with the regional power systems.

**Financing of the water sector** comes primarily from the state budget, as well as through payments for services by water users. The state budget of Tajikistan allocates funds to support irrigation (particularly energy-intensive pumping stations), land reclamation, and the maintenance of hydraulic structures. However, the scale of required investments (such as pump replacement and canal lining) is substantial, so the country relies on external sources, such as World Bank and EU projects aimed at improving water management. Charges collected from agricultural water users remain low, but the government is gradually increasing fees for water delivery services based on the actual costs of electricity for pumping and asset depreciation. However, existing water tariffs often fail to cover costs, and state subsidies are insufficient,

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<sup>51</sup> Charter of “Barqi Tojik” OJSC, approved by the Decree of the Government of the Republic of Tajikistan dated January 18, 2023, [Ne18. http://www.portali-huquqi.tj/publicadliya/view\\_qonunhoview.php?showdetail=&asosi\\_id=27058](http://www.portali-huquqi.tj/publicadliya/view_qonunhoview.php?showdetail=&asosi_id=27058)

<sup>52</sup> Pulatov Ya.E., Umarov D.M., Kholikzoda M. Report on the activities of key organizations in the water and hydropower sector in the Republic of Tajikistan (September 2024). [Unpublished internal document]

<sup>53</sup> Ibid.

leading to debt accumulation and a deterioration in service quality<sup>54</sup>. According to estimates by the parliamentary Committee on Economy and Finance, in 1990, the equivalent of \$160 million was allocated to land reclamation and irrigation in Tajikistan. In contrast, in recent years, state investments in this sector have amounted to just over \$10 million per year (around 0.4% of the budget)<sup>55</sup>. Due to such underfunding, the infrastructure has significantly deteriorated; ensuring stable operation of systems requires at least **\$75 million annually for maintenance and \$50 million for modernization**<sup>56</sup>. The government recognizes these problems - it is necessary to improve the system of payment and subsidies, to create incentives to attract private investment<sup>57</sup>.

**Hydropower Financing.** «Barki Tojik» had long operated at a loss due to low tariffs and system losses, but the government subsidized the sector. Reforms are now underway, including unbundling operations (generation and networks) and attracting investment into HPP, including foreign financing such as support from the Asian Development Bank for the Sarband Hydropower Plant. The largest Project, the Roghun Hydropower Plant, is financed primarily from the Tajikistan state budget, placing a significant burden on the country's public finances. However, since December 2024, the Project has received international support: WB, ADB, EU and other partners agreed to participate in long-term financing. After commissioning all generating units, the Roghun will become the largest HPP in the region (3,600 MW), with expected annual generation of up to 17 billion kWh and a key role in regulating the flow of the Vakhsh River.

Elements of economic relations in Tajikistan's hydropower sector exist in the form of concessions and joint ventures with foreign investors. Electricity transmission is carried out through the Central Asian Unified Power System. In recent years, as a result of improved regional relations, Tajikistan has resumed electricity exports to Uzbekistan during the summer period (more than 1.5 billion kWh annually). This helps relieve pressure on reservoirs during periods of high inflow and generates revenue for the power sector. Nevertheless, the financial situation of «Barki Tojik» remains difficult. Due to long-term tariff suppression and accumulated debts, the company has repeatedly received budgetary support. A financial recovery plan is being implemented with the involvement of the World Bank. Electricity tariffs for the population remain low, and they still do not cover the full costs of operating hydropower plants and maintaining the transmission and distribution networks. Tajik experts note the need to switch to economically justified tariffs and reduce losses; without this, the energy sector remains unprofitable.

**Intersectoral Coordination:** The establishment of the Ministry of Energy and Water Resources (MEWR) has simplified many aspects of water–energy coordination within the country, but it does not resolve all issues, as other government agencies are also involved in these processes. Tariffs and investment projects pass through the Antimonopoly Service and the Ministry of Finance, where areas of alignment are identified. Digital coordination is also developing: a National Water Resources System is being created, with plans to link it to the energy dispatch system. In the country, network mechanisms also exist, such as the Coordination Council under the Government on water and energy issues and the National Water Council. Their role in this model is auxiliary. They serve as platforms for aligning the policy of the Ministry of Energy and Water Resources with other sectors of the economy (agriculture, environment, industry). These councils do not have the authority to make binding decisions and cannot challenge strategic directives formulated within the Ministry of Energy and Water Resources. Thus, the model of Tajikistan demonstrates that hierarchical integration can be seen as an alternative to complex and costly network coordination, although it carries the risk of excessive centralization.

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<sup>54</sup> Pulatov Y.E., Umarov D.M., Kholikzoda M. Report on the activities of key organizations in the water and hydropower sector in the Republic of Tajikistan (September 2024). [Unpublished internal document]

<sup>55</sup> Ibid.

<sup>56</sup> Ibid.

<sup>57</sup> Ibid.

## ANNEX 1-D. UZBEKISTAN

**Water sector:** In Uzbekistan, in 2018, an independent governance structure for the water sector was re-established with the establishment of the Ministry of Water Resources (Minvodkhov). It is responsible for irrigation, land reclamation, and the rational use of water resources. Its system includes the Agency for the Operation of Water Management Facilities, territorial administrations in the Republic of Karakalpakstan and the regions, and Basin Irrigation System Administrations (BISAs).<sup>58</sup> This extensive structure operates under a strict hierarchy, ranging from the central apparatus of the ministry down to district departments and canal-level units.

**Hydropower:** Uzbekistan's energy sector is coordinated by the Ministry of Energy, which formulates policy and regulates the industry. Until 2018, all electricity generation and grid infrastructure were part of the monopoly company "Uzbekenergo". After the reform, thermal power plants were separated into the joint-stock company "Thermal Power Plants" JSC, transmission networks were placed under the "National Electric Grids of Uzbekistan" JSC, and regional electricity supply (sales) companies were also established at the regional level. For hydropower management, a separate joint-stock company "Uzbekhydroenergo" was established by Presidential Decree No. UP-5044 dated 18 May 2017. It is a national hydropower company fully owned by the state through the Ministry of Energy. This company consolidated all existing HPPs in the country and is responsible for constructing new ones. It includes more than a dozen branches and subsidiaries, covering HPP cascades such as the Chirchik, Nizhne-Bozsuy, and Samarkand Cascades, as well as the Farkhad HPP, the Andijan HPPs, and others<sup>59</sup>. In total, they generate about 6.8 billion kWh per year: in 2023, the company's hydroelectric power plants supplied 6782.4 million kWh to the grid, and electricity was sold for 2462.2 billion UZS (equivalent to about \$230 million).<sup>60</sup> Hydropower covers about 12% of the country's total electricity generation. In recent years, "Uzbekhydroenergo" has been implementing a capacity expansion program: new hydropower plants are being constructed on small rivers (including the Zarafshan and Akhangaran Rivers, among others), while existing facilities are being upgraded and expanded. The company's investment volume in 2023 exceeded \$149 million, including \$94.5 million of its own funds and \$54.5 million in borrowed financing.<sup>61</sup> Among the major projects are the construction of small hydropower plants in the Andijan Region, the Pskem HPP on a tributary of the Chirchik River, and the modernization of the Farkhad HPP Cascade. "Uzbekhydroenergo" attracts financing from international financial institutions such as the Asian Development Bank and the World Bank, and is also exploring public-private partnerships (PPPS) opportunities. Agreements have been signed with foreign companies for the joint implementation of several small hydropower projects. However, there are still no private hydropower generation companies in the country—the sector remains fully under state control. National Electric Grids of Uzbekistan is responsible for the operation and development of the main (transmission) electric grids, and it also combines the functions of the transmission system operator and the single electricity purchaser.<sup>62</sup> In 2023, "Uzenergosotish" JSC was established, which now performs the

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<sup>58</sup> Zhuraev Y.A., Mustafoev K.M., Mukhiddinov F.Kh. Report on the activities of key organizations in the water and hydropower sector in the Republic of Uzbekistan (September 2024). [Unpublished internal document]

<sup>59</sup> Ibid.

<sup>60</sup> Ibid.

<sup>61</sup> Ibid.

<sup>62</sup> Resolution of the President of the Republic of Uzbekistan, dated 27.03.2019, № ПП-4249 «On the Strategy for the Further Development and Reform of the Electric Power Sector of the Republic of Uzbekistan» <https://lex.uz/docs/4257085>, Decree of the President of the Republic of Uzbekistan, dated 28.09.2023, № УП-166 «On measures to implement the next stage of reforms in the energy sector» <https://lex.uz/ru/docs/6624455#6627778>

function of centralized purchase and sale of electricity<sup>63</sup>, and from July 1, 2024, “Uzenergosotish” JSC purchases electricity generated by enterprises of the “Uzbekhydroenergo” JSC system.

**Financing of the water sector in Uzbekistan** is carried out mainly from the state budget. In addition to significant budget funds for the modernization of the water sector, loans from IFIs are being attracted. In recent years, Uzbekistan has been taking steps to introduce economic mechanisms and optimize costs: PPPs are being established in irrigation management. In 2023, it was announced that **32 water infrastructure facilities** would be transferred to private sector management under PPPS terms, along with the implementation of pilot projects in 7 districts<sup>64</sup>. This should increase efficiency and reduce the burden on the budget. A tax is levied **for water use**<sup>65</sup>. Among the problems are the deterioration of irrigation networks, the high energy intensity of pumping stations, and the lack of economic incentives to save water. At the same time, the state is implementing large-scale investment programs: for example, in 2020-2023, many pumps were modernized at the expense of the budget and external loans, and automated water metering is being introduced. For example, optimizing the operation of pumping stations helped to save 100 million kWh of electricity in 2023<sup>66</sup>. With the support of foreign loans (for over \$343 million), projects for the development of water management are being implemented in several areas<sup>67</sup>. Despite this, according to experts, the old model of financing needs to be reformed, including the development of new approaches to tariff setting and subsidies, and the strengthening of human resources at the local level<sup>68</sup>.

**Hydropower Financing.** The establishment of JSC “Uzbekhydroenergo” was accompanied by the attraction of funding: the Asian Infrastructure Investment Bank (AIIB) is financing a cascade of hydropower plants, while Chinese companies are participating under the EPC+F scheme (construction with financing). The Government of Uzbekistan has set a goal to increase hydropower generation, and funding comes partly from foreign loans and partly from the company's own funds (generated from electricity sales). Electricity tariffs are increasing (as part of energy price reform), which improves the return on investment. In addition, Uzbekistan receives grants for the development of renewable energy sources (RES), which include small HPPs.

**Intersectoral Coordination:** In Uzbekistan, a cross-sector system for linking water and electricity is in place: its upper level is set by the relevant Information and Analytical Department of the Cabinet of Ministers. The strategic framework is provided by the Concept of Water Sector Development in the Republic of Uzbekistan until 2030 (Decree No. UP-6024), together with the Interdepartmental Council for the Coordination of Measures for Transition to a Green Economy in Uzbekistan (Resolution No. PP-436 dated 02.12.2022), which includes, among others, the Ministry of Water Resources, the Ministry of Agriculture, and the Ministry of Energy, where long-term goals for water management, agricultural production, and energy are coordinated. The Coordinating Council for implementation of the Concept for the Development of the Water Sector of Uzbekistan for 2020-2030 (established upon approval of the Concept-2030) and the Interdepartmental Council for the Promotion and Implementation of a “Green” Economy in Uzbekistan have been established. Draft regulatory legal acts (RLAs) are published on the *regulation.uz* portal for public and intersectoral discussion, which enhances transparency and allows for the consideration of different stakeholders’ views. At the operational level, daily releases from hydraulic

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<sup>63</sup> Decree of the President of the Republic of Uzbekistan, dated 28.09.2023, № УП-166 «On measures to implement the next stage of reforms in the energy sector» <https://lex.uz/ru/docs/6624455#6627778>

<sup>64</sup> Zhuraev E.A., Mustafoev K.M., Mukhiddinov F.Kh. Report on the activities of key organizations in the water and hydropower sector of the Republic of Uzbekistan (September 2024). [Unpublished internal document]

<sup>65</sup> Ibid.

<sup>66</sup> Ibid.

<sup>67</sup> Ibid.

<sup>68</sup> Ibid.

structures and peak hydropower generation will be coordinated by the Central Dispatch and Water Balance Service of the Ministry of Water Resources (Presidential Decree, УП-74, dated 07.05.2024).

## ANNEX 2. TARIFF REFORM IN THE SYR DARYA RIVER BASIN COUNTRIES

Recognition of the problem of low tariffs has led all four countries to plan gradual tariff reform. The goal is to bring electricity tariffs to a full cost-recovery level while avoiding adverse impacts on the population. The water sector also provides for tariff revisions, although achieving full cost recovery is more difficult in this area. Development strategies envisage the introduction of targeted subsidies instead of universal ones—that is, protecting vulnerable groups through social support rather than by keeping prices artificially low for everyone. Practical steps are already being taken.

**Kazakhstan** is conducting a comprehensive tariff revision to eliminate the chronic gap between revenues and the actual expenditures of sectoral organizations, thereby ensuring the financial self-sufficiency of both the power and water management sectors. In the electricity sector, a capacity market based on the “single buyer” model has been in operation since 1 January 2019, while another package of reforms entered into force on 1 January 2024: Order of the Ministry of Energy No. 479 increased the ceiling prices for 25 groups of power plants and expanded the list by six additional groups, while simultaneously requiring suppliers to charge a separate “capacity fee” through the Settlement and Financial Centre—a funding source for generation modernization.<sup>69</sup>

In the water sector, the new Water Code (9 April 2025) for the first time established the principle of gradually covering operating and investment costs through tariffs, while transferring regulation of irrigation water to the line Ministry of Water Resources and Irrigation (MWRI). In 2023, the weighted average tariff of “Kazvodkhoz” RSE for water delivery through canals amounted to KZT 2.455 per m<sup>3</sup>, which was significantly below the net cost<sup>70</sup>. Therefore, the enterprise submitted a five-year application (2024–2028) for a tariff increase. In the company's application submitted for public hearings, the weighted average tariff for water supply through canals for the entire network for 2025 is about 7,082 KZT/m<sup>3</sup> (excluding VAT)<sup>71</sup>. At the same time, the range of tariffs across regions remains extremely wide: the highest approved tariff is KZT 288.11 per m<sup>3</sup> (excluding VAT) for pumped water supply provided by the Kanysh Satpayev Canal branch in Pavlodar Region;<sup>72</sup> while the lowest tariff is KZT 0.97 per m<sup>3</sup> (excluding VAT) for the service of regulating surface runoff through retaining hydraulic structures provided by the North Kazakhstan branch<sup>73</sup>. Thus, in 2025, the tariff range of «Kazvodkhoz» varies from KZT 0.97 to KZT 288.11 per m<sup>3</sup>, while the average level for the entire national network, as set out in the five-year tariff estimate, is approximately KZT 7 per m<sup>3</sup>. This confirms the strategy of the MWRI: to gradually bring regional tariffs closer to economically justified cost levels and thereby eliminate the sector's funding deficit.

**Kyrgyzstan** is reforming both tariff systems according to the same logic—to eliminate hidden subsidies and bring prices closer to actual cost. In the electricity sector, a step-by-step tariff reform has been underway since 2021, the essence of which is not the complete elimination of subsidies, but their conversion into a targeted preferential tariff and the annual indexation of other rates<sup>74</sup>. The Resolution of the Cabinet of

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<sup>69</sup> Order of the Minister of Energy of the Republic of Kazakhstan dated December 28, 2023, No 479 “On Amendments to the Order of the Minister of Energy of the Republic of Kazakhstan” dated December 14, 2018, No 514 “On Approval of Electricity Tariffs ceiling prices”. Source: cdb.kz: <https://cdb.kz/sistema/pravovaya-baza/o-vnesenii-izmeneniya-v-prikaz-ministra-energetiki-respubliki-kazakhstan-ot-14-dekabrya-2018-goda-51-479/>

<sup>70</sup> <https://ztqzt.kz/78092/nachalsya-polivnoy-sezon-podacha-vody-v-rayony-dolzhna-proyti-bez-pomeh>

<sup>71</sup> <https://inbusiness.kz/ru/news/kazvodhoz-zaprosil-novye-tarify-na-podachu-vody-po-kanalam>

<sup>72</sup> Order of the Department of the Committee for Regulation of Natural Monopolies (DKREM) and Protection of Competition for Pavlodar Region No. 23-NK dated 17 March 2025. <https://qazsu.kz/gallery/23.pdf>

<sup>73</sup> Order of the DKREM for North Kazakhstan No 24-OD dated March 3, 2025, entered into force on March 10, 2025 <https://zangazet.kz/wp-content/uploads/2025/03/yug2025-17.pdf>

<sup>74</sup> Resolution of the Cabinet of Ministers of the Kyrgyz Republic dated September 30, 2021 No 192 “On Approval of the Medium-Term Tariff Policy of the Kyrgyz Republic for Electricity for 2021-2025”» <https://www.gov.kg/ru/npa/s/3327>.

Ministers of the Kyrgyz Republic dated April 24, 2025 No 227 approved the Medium-Term Tariff Policy for Electricity for 2025-2030, the purpose of which is to ensure reliable electricity supply and financial stability of energy supply organizations in conditions of shortage<sup>75</sup>. Thus, as of 1 May 2025, the base household electricity tariff was increased to 1.37 KZS per kWh with a consumption limit of 700 kWh; consumption above the limit is charged at 2.60 KZS per kWh. Industrial consumers already pay 3.34 KZS per kWh, while energy-intensive industries pay 6.06 KZS per kWh, with annual indexation through 2030 clearly set out in the Tariff Policy for 2025–2030. According to the Ministry of Energy, tariffs for large non-residential and energy-intensive consumers already cover full cost, whereas in the household sector, cross-subsidization is still maintained<sup>76</sup>.

In the water sector, differentiated tariffs for the supply of irrigation water were introduced in 1999, ranging from 0.2 tyiyn to 3 tyiyns per cubic meter of water, depending on the season and the climatic conditions of the given region<sup>77</sup>. In April 2025, two fixed tariffs were established for the supply of irrigation water collected by WUAs: 250 KGS per hectare for areas with limited access to water, and 500 KZS per hectare for areas favourable for irrigation, which is equivalent to approximately 0.23–0.45 KGS/m<sup>3</sup> and replaces previously inconsistent charges of up to 2,000 KGS/ha<sup>78</sup>. Payment will be charged based on the cultivated area and the actual volume of water supplied. The MWRAPI, in coordination with the antimonopoly authorities, approved the tariffs for a period of one year. These powers were delegated to the Ministry by the Cabinet of Ministers of the Kyrgyz Republic. Experts consider this a step backward, since the area-based tariff method does not encourage the rational use of water. Thus, both the electricity and irrigation sectors are moving toward a model in which targeted subsidies are preserved only for socially vulnerable groups, while the majority of consumers pay the economically justified cost of services.

**Tajikistan** is also gradually raising tariffs for both electricity and irrigation water, but both rates are still subsidized. Since April 2025, electricity tariffs in Tajikistan have been increased: for households by approximately 14%, to 35.36 dirams (\$0.032) per kWh compared to the previous 30.75 dirams (\$0.027), and for other consumers to 80.90 dirams (\$0.073) instead of the former 70.35 dirams (\$0.064). Tariffs for large consumers increased but remained preferential: for the Tajik Metallurgical Plant, by 33%: up to 14.19 dirams/kWh in summer and 80.90 dirams/kWh in winter – increased from 10.64 dirams (\$0.001) to 14.19 dirams (\$0.013) per kWh in summer, and from 60.65 dirams (\$0.056) to 80.90 dirams (\$0.074) in winter; for TALCO, from 15.57 dirams (\$0.014) to 20.77 dirams (\$0.019) per kWh; for “Azot” Plant and textile enterprises, to 35.36–40.45 dirams (\$0.032–0.037) respectively<sup>79</sup>. The increase is aimed at reducing subsidies and bringing tariffs closer to real costs.

The basic “flat” tariff for irrigation water delivery, introduced by an order of the Antimonopoly Service in 2018, was set at 2 dirams/m<sup>3</sup> (0.02 somoni), with collected payments covering only 8–10% of the actual operating costs of water management bodies. From January 1, 2024, the rate for farmers was increased by 150% to 5 dirams/m<sup>3</sup> (\$0.00051/m<sup>3</sup>), which remains several times below the real cost of water delivery.

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<sup>75</sup> Resolution of the Cabinet of Ministers of the Kyrgyz Republic № 227 dated 24.04.2025 “On approval of the Medium-Term Tariff Policy of the Kyrgyz Republic for Electricity for 2025-2030” <https://www.gov.kg/ru/npa/s/4644>

<sup>76</sup> <https://www.akchabar.kg/en/article/otrasli-rtxderlqtljimo/ot-dotatsij-k-modernizatsii-cto-novaya-tarifnaya-politika-dast-ekonomike-kr-freytdshajilhtae>

<sup>77</sup> Law of the Kyrgyz Republic “On Establishment of Tariffs for Irrigation Water Supply Services for 1999”, No 32 dated March 24 1999 <[www.water.gov.kg/materials/zakon/02.pdf](http://www.water.gov.kg/materials/zakon/02.pdf)>.

<sup>78</sup> [https://kg.mir24.tv/news/16633828/v-kyrgyzstane-vveli-novye-tarify-na-polivnuyu-vodu?utm\\_source=chatgpt.com](https://kg.mir24.tv/news/16633828/v-kyrgyzstane-vveli-novye-tarify-na-polivnuyu-vodu?utm_source=chatgpt.com)

<sup>79</sup> Government Decree № 165 dated 11 March 2025 <https://jumhuriyat.tj/5431-arori-ukumati-umurii-toikiston-az-11-marti-soli-2025-165-sh-dushanbe-dar-borai-tarifo-nerui-bar-va-garm.html>; <https://en.kabar.kg/news/tajikistan-set-to-tighten-purse-strings-on-electricity-tariffs/>

After two consecutive increases (January 2024 and April 2025), electricity tariffs rose to approximately 3.2–8.2¢/kWh, but they still do not fully cover the sector's total costs, as confirmed by the government's stated policy of annual indexation. In irrigation, the increase amounted to 150%; however, even the new charge—around 0.05¢ per m<sup>3</sup>—remains largely symbolic and covers only a fraction of the actual operating costs of water management organizations. Further increases are planned through 2027, alongside the expansion of targeted aid for low-income households and measures to reduce losses.<sup>80</sup>

Pricing policy in **Uzbekistan** is also being reformed. After the tariff freeze during 2019–2023, from May 1, 2024, Uzbekistan introduced a block tariff system for household electricity: a preferential “social norm” (up to 200 kWh depending on the season) is charged at the previous rates, while consumption above the norm is billed at a higher price;<sup>81</sup> From May 1, 2025, the structure was refined: a 201–500 kWh block was added at 800 UZS, the base tariff was raised to 600 UZS/kWh, and annual indexation linked to inflation was introduced, capped at 10% per year<sup>82</sup>.

The fee for irrigation water delivery functions not as a service tariff, but as a tax for the use of water resources:<sup>83</sup> from January 1, 2024, the rate is 100 UZS per m<sup>3</sup> (USD 0.008/m<sup>3</sup>),<sup>84</sup> but incentive coefficients are applied – 0,5 when metering devices and water-saving technologies are in place, 0,7 when only one of the devices is available, and 1,1 when neither is available, while water withdrawal above the limit is charged at a fivefold rate. At the same time, previous payments to water management organizations were abolished, and 40% of water tax revenues were directed to financing the newly established district “Water Supply Services,” turning the tax into the only mandatory contribution by water users for irrigation and a source for maintaining the infrastructure networks<sup>85</sup>.

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<sup>80</sup> [https://secca.eu/wp-content/uploads/2023/10/Session-4\\_4-Bakhrom-Gaforzoda-for-25.10.2023-FINAL-ENG.pdf](https://secca.eu/wp-content/uploads/2023/10/Session-4_4-Bakhrom-Gaforzoda-for-25.10.2023-FINAL-ENG.pdf)

<sup>81</sup> Resolution of the Cabinet of Ministers of the Republic of Uzbekistan, dated 16.04.2024 r. № 204 «On additional measures to introduce market mechanisms in the fuel and energy sector» <https://lex.uz/uz/docs/6887311>

<sup>82</sup> Resolution of the Cabinet of Ministers of the Republic of Uzbekistan, dated 31.03.2025, № 194 «On Amendments and Addition to the Schedule of Phased Changes in Prices for Fuel and Energy Resources in 2024-2025 to Support Consumers of Fuel and Energy Resources <https://lex.uz/docs/7467778>

<sup>83</sup> Article 445 of the Tax Code and confirmed by clause 6 of PP-5 dated 05.01.2024

<sup>84</sup> With the official exchange rate of the Central Bank 1 USD ≈ 12 654 Som (30 June 2025), basic tax is equivalent ≈ 0,008 USD/m<sup>3</sup> (0,79 ¢); with coefficient of 0,5 — 0,004 USD/m<sup>3</sup>, with 0,7 — 0,006 USD/m<sup>3</sup>, with 1,1 — 0,009 USD/m<sup>3</sup>

<sup>85</sup> The Resolution of the President of the Republic of Uzbekistan dated January 5, 2024, No. PP-5, “On measures to improve the water management system and increase the efficiency of their use at the grassroots level» <https://lex.uz/docs/6734975?ONDATE=01.01.2025&ONDATE2=08.05.2024&action=compare>