

RECOMMENDATIONS on
Financing the Cost of Repair, Operation and Other Activities for the Interstate Use
Water Facilities on the Chu and Talas Rivers

I. General Section

1. These “Recommendations Regarding Financing the Cost of Repair, Operation and Other Activities for the Interstate Use Water Facilities on the Chu and Talas Rivers” (hereinafter – the Recommendations) shall apply to the following water facilities listed in Article 2 of the Agreement between the Government of the Republic of Kazakhstan and the Government of the Kyrgyz Republic on the Use of Water Management Facilities of Intergovernmental Status on the Rivers Chu and Talas signed on January 21, 2000 in the city of Astana:

- Orto-Tokoyskoye Water Reservoir on the Chu River;
- By-Pass Ferroconcrete Chu Canals on the Chu River from Bystrovskaya HPP to Tokmok;
- Western Bolshoi Chu Canal;
- Eastern Bolshoi Chu Canal;
- Chumysh Hydrosystem on the Chu River;
- Kirovskoye Water Reservoir on the Talas River;

and have been developed with the proper consideration given to the major principles of the Statute of the Commission of the Republic of Kazakhstan and the Kyrgyz Republic on the Interstate Use of the Chu and Talas Water Facilities (hereinafter – the Commission), approved by the Government of the Republic of Kazakhstan and the Government of the Kyrgyz Republic.

3. The Recommendations include decision-making options suggested to the Commission in defining the scope and costs of repair, operation and other activities, as well as procedural actions related to financing for these purposes and advised cost-sharing procedure.

4. The Recommendations were developed with the proper consideration of the basic provisions of the effective regulatory and methodological documents, the existing operation services setup, the long-term experience and the trends for interstate allocation of water, as well as the specific features of implementation and financing of operation and maintenance applied to large water facilities.

II. List of and Technical and Economic Indicators for the Water Management Facilities of Intergovernmental Status that are Subject to Cost Sharing

1. The list of the interstate use facilities and sites subject to cost sharing may include:

a) Orto-Tokoyskoye seasonal storage water reservoir on the Chu River with a system of hydraulic engineering, protective and auxiliary facilities and a specified territory of the water protection area:

capacity (gross /net) - 470/450 mln. m³;

mirror area of normal water level - 23,2 km²;

waterline length - 45 km;

total irrigated area - 120 thousand hectares with 34 thousand hectares located in the Republic of Kazakhstan;

overall hydrosystem throughput capacity - 275 m³/second, including water discharge capacity - 125 m³/second and emergency spillway capacity - 150 m³/second.

b) Kirovskoye long-term storage water reservoir on the Talas River with a system of hydraulic engineering, protective and auxiliary facilities and a specified territory of water protection area:

capacity (gross /net) - 550/540 mln. m³;

mirror area of normal water level - 26,5 km²;

waterline length - 38 km;

total irrigated area - 197 thousand hectares;

overall hydrosystem throughput capacity - 390 m³/second, including water discharge capacity - 180 m³/second and spillway capacity - 210 m³/second.

c) By-Pass Ferroconcrete Chu Canals on the Chu River from Bystrovskaya HPP to Tokmok with a system of facilities:

length - 40 km;

throughput capacity - 70 m³/second;

total irrigated area - 88 thousand hectares.

d) Eastern Bolshoi Chu Canal with a system of facilities:

length – 97,3 km;

throughput capacity - 55 m³/second;

total irrigated area – 41,5 thousand hectares.

e) Western Bolshoi Chu Canal with a system of facilities:

length - 147 km (in the territory of the Kyrgyz Republic);

throughput capacity - 55 m³/second;

total irrigated area - 85 thousand hectares with 12 thousand hectares located in the Republic of Kazakhstan.

f) Chumysh Hydrosystem on the Chu River:

diversion unit with estimated water abstraction of 85 m³/second;

general throughput capacity - 665 m³/second;

total irrigated area - 41 thousand hectares with 20 thousand hectares located in the Republic of Kazakhstan.

2. The water inventory lands allotted for the above water facilities form an integral part of the Chu and Talas Water Management Facilities of Intergovernmental Status, as well as the following facilities located within the Water Management Facilities of Intergovernmental Status or intended to ensure sound technical operation of such facilities:

bridges and crossings;

water conduits and storm water removal facilities; water abstraction facilities for diversion canals, bypass canals, distributors and other canals;

protective dams and bank-protecting systems;

collection, drainage and discharge networks;

water assessment and measurement instrumentation;

observation network, measurement equipment and monitoring systems;

automated and telecontrol equipment;

facility-related mechanical and power equipment;

housing, production and other buildings;

operational roads and related facilities, communications and power transmission lines;

forest plantations in water protection areas.

3. For each of the interstate use water facilities on the basin water management balance sheet specified in subparagraphs a, b, c, d, e, f, the Commission identifies a checklist of respective facilities and equipment, water assessment and measurement instrumentation, housing, production and other buildings, roads, communications and power transmission lines, etc. and defines spatial boundaries (coordinates) of the water inventory land for this facility.

III. Types of Repair and Operation

1. Repair and operation include maintenance of the facilities, routine repair and overhaul, as defined the Commission.

2. Maintenance of the facilities may include: security and fire protection measures, periodical examinations, oversight of work and maintaining the facilities in working condition. These activities are not included into repair and may be incorporated into the item “facility maintenance” (another option - “facility upkeep and supervision”).

3. Routine repair is performed to eliminate minor defects and faults in order to ensure proper (uninterrupted) operation of the systems, facilities and equipment.

Routine repair includes:

annual removal of sediments from the canals;
dam build-up and widening, elimination of minor faults in canals, facilities, equipment and various devices;

regular replacement of high-wear parts and other works.

4. Overhaul is performed whenever it is not possible to ensure proper operation of hydraulic engineering facilities and other equipment through routine repair. Overhaul includes partial or complete replacement of individual elements and components with new, more advanced or efficient parts, which significantly raises performance indicators of the components under repair and the technical level of water facility operation.

Overhaul includes the following:

replacement of individual facility components with the new ones;

elimination of major slips and changing the canal track in specific cases in order to reduce its length or bypass bad sections;

canal coating with reinforced concrete slabs, monolithic slabs or laying a membrane from other materials;

replacement of specific sections of service roads;

filtration control and other works related to dams;

roof and other building parts replacement.

Overhaul may be all-inclusive, including the whole facility, or selective to repair specific constructions.

5. Overhaul of machinery and equipment normally includes complete disassembly of units, replacement or restoration of all worn parts and elements, repair of basic parts and elements, unit assembly, adjustment and testing.

6. Emergency repair and restoration, primarily caused by natural disasters, are a special type of work. Routine repair and overhaul are normally scheduled and performed in a defined order, while emergency work is never scheduled.

IV. List of Repair and Operation Work and Other Activities and Types of Work Subject to Cost-Sharing and Required to Adopt and Implement Concerted Actions in order to Allocate, Regulate, Use and Protect Water Resources and to Use the Chu and Talas Interstate Water Facilities.

The following repair, operations and other activities are advised to be implemented on cost-sharing basis:

1. Maintenance of administrative and managerial personnel (AMP) and linear services staff engaged in operation and servicing of the interstate use sites and facilities.

2. Maintenance, routine repair and overhaul of dams, diversion canals, bypass canals, hydraulic engineering facilities, protective dams, bank protecting devices, collection, drainage and discharge network, mechanical and power equipment, gauging stations and boundary cross sections, service roads and related facilities, communications facilities (communications lines and equipment), power transmission lines, automated and telecontrol devices, production, housing and auxiliary buildings, vehicles, machines and mechanisms.

3. Routine repair and overhaul of water measurement instrumentation and other devices.

Metrology support for water measurement instrumentation, automated and telecontrol equipment, test and control instrumentation. Start-up and adjustment.

4. Repair and acquisition of operational inventory and working clothes.

5. Maintenance of water protection areas and water reservoir areas to ensure their proper technical and sanitary condition.

6. Maintenance of allocated land along diversion and bypass canals and the ChumyshHydrosystem (water inventory lands).

Management of afforested land (including sanitary cuttings), woodlands upkeep and reforestation.

7. Examining technical condition of the facilities.

Developing design and estimate documentation for repair and operations.

8. Emergency (unforeseen) repair and restoration. Emergency supplies stockpiling.
9. Developing design and estimate documentation and performing reconstruction, technical re-equipment and modernization of the following major interstate use water facilities
 - dams of Orto-Tokoyskoye and Kirovskoye Water Reservoirs,
 - bypass and diversion canals,
 - Chumysh Hydrosystem and hydraulic engineering facilities located on the bypass and diversion canals and water reservoirs;
 - collection, drainage and discharge network;
 - protective dams and bank protecting facilities;
 - water measurement (gauging) stations and boundary cross sections;
 - observation network;
 - communications and power transmission lines;
 - service roads and related facilities;
 - mechanical and power facility equipment;
 - automated and telecontrol systems;
 - production, housing and auxiliary buildings.
10. Data processing and administration of monitoring and water inventory for the interstate use facilities.
 11. Maintaining the register of hydraulic engineering facilities.
 12. Organizing and record keeping of water assessment and use.
 13. Implementing scientific research and design activities.
 14. Implementing measures to ensure safety of dams and hydraulic engineering facilities.
 15. Developing standards, norms, rules and other general basin regulatory and methodological documents.
 16. Assessing design and estimate documentation and general basin regulatory and methodological documents.
 17. Arranging additional new water measurement (gauging) stations and boundary cross-sections, if necessary.
 18. Implementing bank protection, erosion control and other measures related to maintaining water reservoirs, river mouth reaches (where there is an influence of an increased water level) in the water protection areas and water areas to maintain them in proper technical and sanitary condition.
 19. Implementing water protection measures on allocated land along bypass and diversion canals and in the area of the Chumysh Hydrosystem.
 20. Hydrometeorological support for operations.
 21. Advanced training for operations staff.
 22. Developing and implementing joint targeted basin programs ensuring efficient use of the Chu and Talas waters, prevention and elimination of water-caused detrimental effects, safety of hydraulic engineering facilities, flood control and use of flood exposed areas, as well as other joint actions within the framework of mutual cooperation or specific arrangements of the Parties.

The list of repair, operation, reconstruction and other activities, as well as the scope and types of this work under other agreed actions involving the interstate use facilities are annually defined by the Commission.

V. Organizing Facility Condition Examination and Developing Technical Documentation for Financing of Repair and Other Activities

1. In order to organize examination of technical condition of the water facilities, equipment and other installations, to detect faulty and worn elements and define the content, scope and deadlines for repair and repair categories (routine, overhaul, emergency repair and restoration), as well as to identify the content of work related to reconstruction (restoration),

technical re-equipment and modernization of canals, facilities and equipment, the Commission may decide to establish a joint working committee.

The composition of the Working Committee will depend on the type of facilities to be examined (canals, dams, other hydraulic engineering facilities, equipment, roads, etc.) and the categories of work to be performed (routine repair and overhaul, emergency repair and restoration, reconstruction and other improvements of facilities and equipment). The Commission may define the composition of the Working Committee and its operation procedure.

2. The Working Committees define the scope and content of repair and other improvements of the interstate use facilities and sites, compile a price breakdown of all defects and a technical examination act. If necessary, the price breakdown for the defect tally sheet is accompanied by an explanatory note.

In addition, the acts may specify the deadlines set to eliminate the defects.

3. Technical documentation for routine repair includes a tally defect sheet with a price breakdown and archival drawings of the facility or installation to be fixed.

Routine repair and overhaul of small facilities, the basic parameters of which may be defined by the Working Committee, may be performed in accordance with the defect sheets based on the examinations of water facilities made in the beginning of the year. The sheet specifies the type of repair, the content and scope of work, price breakdown and the total cost of work.

4. Overhauls of larger facilities and equipment are performed based on the projects developed by design organizations based on preliminary surveys and examination data.

5. Reconstruction (restoration), technical re-equipment and modernization, as well as overhaul of larger facilities are performed based on the projects, examination materials and opinion stating the necessity to perform such work produced by the joint working committee.

Such design and estimate documentation is subject to the state (interstate) review under the procedure established by the Governments of the Parties and regulations. The state independent project assessment is provided by a legal entity authorized by the Governments and agreed with the Commission. The design and estimate documentation is approved on the basis of a positive opinion issued by the above legal entity.

Any documentation provided for assessment should be agreed with all state controlling, supervisory authorities, the owner, natural resource users and other interested organizations.

Under joint decisions made by the Governments such projects may also be considered and assessed by the Joint Expert Committee, whose composition and operations procedure may be established by the Commission. The projects are approved by a joint decision and may be submitted for bidding.

6. Any terms of reference for the development of targeted basin programs, design and estimate documentation, standards, regulations, rules and other general basin regulatory and methodological documents, implementation of scientific research and other activities within the framework of general cooperation or specific arrangements of the Parties should be jointly developed or approved by a decision of the Commission.

7. The operational costs of facility maintenance, routine repair and overhaul may be defined based on the following:

tally defect sheet with a price breakdown drafted in accordance with the technical condition examination act using the rates, prices, tariffs, norms and regulations agreed by the Parties;

design and estimate documentation;

specific standard costs.

8. The costs of emergency repair and restoration are defined by the actual scope of implemented work and activities.

All interstate use water facilities should have stockpiles of supplies, equipment and tools intended for emergency response. The list and amount of emergency supplies and their storage

locations are defined jointly by the Parties.

9. The cost of implementing joint targeted basin programs, ensuring efficient use of the Chu and Talas waters, prevention and elimination of water-caused detrimental effects, safety of hydraulic engineering facilities, flood control and use of flood exposed areas, as well as other joint actions are defined on the basis of design and estimate documentation.

The costs of developing design and estimate documentation are established in the terms of reference.

10. Monitoring of water bodies, maintenance of the water inventory and the register of the Chu and Talas hydraulic engineering facilities and implementation of water assessment are performed by the Parties within the boundaries of their use in accordance with the basin programs or the programs agreed by the Commission;

The materials of the state water inventories represent the official data to be obligatorily used in addressing all water management objectives within a defined basin.

Adjustments of water reservoir and water system operation regimes and scheduling of rapid operational water allocation are effected on the basis of the operational water management balances, which are an integral part of the water inventory.

The costs associated with data processing, monitoring, maintenance of the water inventory and the register, as well as water assessment are defined based on the agreed norms, standards and rates.

11. All standards, regulations, rules, instructions and other documents related to operation of hydraulic engineering facilities and use and protection of water bodies should be mainly developed by specialized water management, science and research organizations with proper consideration of the fundamental provisions incorporated into the existing regulatory and methodological documents in the Republics and should be agreed on (approved) by the Commission.

The costs of developing the above regulatory and methodological documents are established in the terms of reference.

12. Hydrometeorological support of operations is provided to obtain the data required to make well-grounded and timely decisions related to the operational regime of the facilities and includes the following:

- providing notifications and extraordinary warnings of possible developments of dangerous hydrometeorological phenomena, such as mudslides, floods, glacier shearing and other dangerous natural disasters and emergencies, which might disrupt operation of a facility;
- providing timely long-term and short-term hydrological and meteorological forecasts;
- providing other specific data and developing water balance accounts.

The costs of hydrometeorological services are defined based on an agreement (contract) with hydrometeorological agencies and other specialized organizations providing the above services.

13. The costs of purchasing production inventory and working clothes are defined based on the wholesale prices and the costs of associated repair are based on the agreed standards and rates.

14. The costs of maintaining a proper technical and sanitary condition of the water protection areas and water areas, as well maintenance of the water inventory lands are determined on the basis of a tally defect sheet with a price breakdown drafted based on the outcomes of examination conducted for such sites and in accordance with the agreed prices, standards and regulations.

15. The costs of management of afforested land (including sanitary deforestation), rehabilitation and restoration are determined in accordance with the agreed norms and rates or design and estimate documentation.

16. The costs of examining the technical condition of facilities and developing design and estimate documentation for repair, operation and reconstruction are set on the basis of agreed norms, regulations and prices.

17. Hydraulic works mechanical equipment includes the following: gates of drain trunks and release outlets (main gates, guard gates, emergency valves), safety obstruction devices (grids, nets, locks), mechanisms to operate gates and safety obstruction devices (lifting, transportation and cleaning mechanisms, etc.).

The costs of repair and operation of hydraulic mechanical equipment are defined on the basis of

the agreed norms and prices for such work, as well as the cost of spare parts, equipment and unit construction.

18. The costs of water measurement, test, control and other instrumentation repair, as well as metrology support for water measurement instrumentation, automated, telecontrol equipment and test and control instrumentation are determined on the basis of agreements with specialized organizations providing such services or based on the agreed standards and prices.

19. The costs of equipment, units and vehicles, which are not included into the estimates, are defined based on the approved wholesale prices (prices agreed by the parties).

20. The costs of advanced training for the operations staff are determined in accordance with the agreements signed for such purposes and other arrangements of the Parties.

21. The costs of maintenance of administrative and managerial personnel (AMP) and linear services staff are defined based on the manning table and regulations for employees of operational organizations and position-specific wages with consideration of office, travel, transportation and other expenses.

VI. Repair and Operation Scheduling

1. All types of repair, except emergency repair, are performed in accordance with plans developed in advance.

There may be long-term and annual plans with a breakdown by quarters and months.

This form is accompanied by attached data specifying required labor, mechanisms, construction materials and vehicles.

Routine repair and overhaul totaling less than 200 thousand rubles (the Commission may set the cost criterion) is scheduled on the basis of tally defect sheets with price breakdowns for each of the facilities.

Overhauls are scheduled based on the special estimates. The annual overhaul scope should include a title list of facilities to be repaired, types and scope of basic work for each of the facilities, the cost of work by facility, calendar repair deadlines, indication of required supplies, mechanization, vehicles, human resources, etc.

2. Repair and operation schedules are developed for each of the water management basins in general (Chu, Talas), for the Chumysh Hydrosystem, specifically for each of the water reservoirs (Orto-Tokoyskoye and Kirovskoye) and each diversion canals (Western Great Chu Canal, Eastern Great Chu Canal, Chu reinforced concrete diversion canals from Bystrovskaya HPP to Tokmok).

3. While developing annual repair and operation plans, each of the Parties makes provisions for unforeseen (emergency repair and restoration) expenses. The amounts are established jointly, on the basis of available operations records or agreed standards.

4. The Joint Commission of the Parties has a month to consider the repair and operations plan and provides its proposals with regards to the operations content and cost for the current or next year for approval. The plan is approved by the Commission.

VII. Control and Acceptance of Completed Work

1. Technical control of the progress with repair and maintenance, as well as reconstruction (restoration), technical re-equipment and modernization of equipment should be performed on a regular basis, at the end of every ten days or month by measuring the scope of completed work. In doing so, the controllers should be guided by the technical conditions, SNIP, performance instructions and directions and completed work acceptance rules. Special attention should be given to the quality of all types of work and applied materials.

2. An instrumental survey is conducted at the end each month to define the actual scope of completed work; survey outcomes are used as a basis for monthly operational reporting.

3. Completed work is accepted by a special joint commission, consisting of representatives of the Parties, as well as servicing organizations and contractors.

Interim acceptance of completed work for specific units or installations may be used for extensive volumes of work.

The Commission approves the composition of the joint work acceptance commission.

4. The Joint Commission is guided by the rules of completed work acceptance and other effective regulatory documents agreed by the Parties (the joint commission may apply acceptance rules BCH 33-2.3 08086 used for completed constructed irrigation and water management sites intended to be put into operation).

5. The Joint Commission examines the sites subject to repair and draws up an act of acceptance using the prescribed form. The act contains identification of the site, type and scope of completed repair, estimated and actual costs, completion dates. The Commission determines whether the facility is ready for further operations, makes statements of deviations from the project design (if any), flaws and specific suggestions to eliminate the flaws.

VIII. Cost-Sharing Procedure

The main principle of cost sharing must comply with article 4 of the Agreement between the Governments of the Republic of Kazakhstan and the Kyrgyz Republic, which provides that «the Parties shall share the costs of operation and maintenance of the interstate use water facilities and other agreed actions in proportion to the volume of received water».

1. Cost-sharing proportionate to the received volume is advised to be defined for each of the basins as a whole and each of the interstate use water facilities.

2. The size of cost-sharing for each of the Chu and Talas basins as a whole is defined in proportion to the volume of received water in accordance with the valid documents related to the interstate distribution of water resources in the Chu and Talas basins.

3. The size of cost-sharing for each of the interstate use water facilities is defined in accordance with the water supply and water use limits schedule approved by the Commission for a specific facility for a specific period of time. The list of hydraulic stations and boundary cross sections used to define the volume of received water, as well as water assessment and measurement procedure, are prescribed by the Commission.

4. The volume of water supplied to the Republic of Kazakhstan in excess of the volume approved by the water supply schedule without a prior agreement, is not included into the volume of received water and is not factored in while defining the amount of cost-sharing,

5. The amounts of cost-sharing are adjusted in proportion to the actual volumes of water received by each of the Parties based on the outcomes of the year; appropriate compensations are provided or the surplus is transferred to cover the costs for the next year.

6. The share of costs set for each of the Chu and Talas River basins as a whole may cover the following:

 maintenance of administrative and managerial personnel (AMP) of the basin water management;

 advanced training for the operations staff;

 development of standards, regulations, rules and other general basin regulatory documents and their review;

 hydro-meteorological service;

 organizing and recording water assessment and use;

 developing and assessing joint basin programs, general basin project background documentation (integrated water resource use and protection schemes, etc.), implementing general basin specific scientific research and other activities, as well as other joint actions within the framework of mutual cooperation or specific arrangements of the Parties.

7. Other types of work and activities are covered by the share of costs set for each of the interstate use facilities.

8. The design and estimate documentation for reconstruction (restoration), technical re-equipment and modernization, as well as overhaul of large facilities and bulky equipment should provide appropriate justifications and proposals for cost-sharing by the Parties in proportion to the amount of water received from such facilities.

9. Only the Commission may define (change) the share of costs and adjust it.

IX. Financing the Work

1. Cost-sharing is applied with respect to:
operations related to maintenance of facilities, routine repair and overhaul, reconstruction, as well as other activities specified in section IV.

2. Either of the Parties may fulfill its cost-sharing obligations using the following types of financing:

- cash;
- joint performance of work;
- cash substitutes – supplies of materials and equipment, etc. amounting to the appropriate share of costs.

The scope and types of work (activities) should have a complete cycle for each of the Parties.

The choice of cost coverage form may vary depending on the stage in the process of harmonization and approximation of the legal regulatory and methodological framework of the Parties.

3. The costs of repair, operation and other activities involving the facilities (water outlets and other water abstraction facilities) located directly on the interstate use sites and ensuring water supply only for one of the Parties, should be financed by this Party.

4. The sources of financing may include budget funds of the Republics, bank loans, borrowed funds, cost-sharing in operation and rehabilitation of the interstate use water facilities, supplies of tangible resources and equipment by the other party to perform operations, investment (foreign or domestic), grants.

5. The Budget Law for a respective year may provide for the establishment of a Budget Investment Republican Fund "Financing Operations at the Chu and Talas Interstate Use Water Facilities".

The Fund is a targeted budget fund and is formed in accordance with the law of the Republics and the Republican Law on Budget Fund.

The Fund's money and expenses are reflected on the revenue and expenditure sides of the Republican budget, have a specific purpose and are distributed and directed to the channels prescribed by the Law on Republican Budget for a respective year.

The money of the Fund is used to finance activities through personal accounts opened on the place of registration of a legal entity acting as a recipient of the funds.

6. An emergency and force-majeur insurance fund may be created to compensate any damages of the interstate use water facilities. The fund is formed with the shares of costs of the Parties in financing operations and maintenance of the interstate use water facilities. The annual size of the Insurance Fund is determined by the Commission. It should be possible for the funds of the Insurance Fund to be carried over to the next year and accumulated as savings.

7. If it is not possible to create a targeted investment budget fund to finance work at the interstate use water facilities, the Republican Budget Law for a defined fiscal year may provide for a specific item within the current and capital expenses section related to land irrigation to cover the expenses on maintenance, repair and restoration of the interstate use water facilities, as agreed by the Parties for the next fiscal year.

8. The Republics may use specific standard expenses for maintenance and repair of the interstate use water and other facilities in order to develop a plan of work financing in the current year and projections for the next years as a part of developing its long-term economic development program.

While evaluating annual expenses, the total costs in the annual plan of repair and operations based on the specific standard costs may be adjusted on the basis of the actual values and the surplus may be compensated for or carried over to the next year.

9. Standard cost rates of water facility operation and repair may be used:
to define the scope of operation costs and repair costs for the forthcoming fiscal year and for the projection period;
to define contractual prices for water facility repairs;
to develop concept, strategy and feasibility reports on water sector development.

Standard facility maintenance costs include:
control and monitoring of the condition of water facilities;
facility upkeep (preventive repair);
labor costs to pay the workers servicing and maintaining the facilities;
maintenance and other expenses.

Standard routine repair cost-rates include:

excavations;
elimination of minor faults of specific parts in the hydraulic engineering facilities;
removal of silt and vegetation from the canals;
dam build-up and widening, elimination of minor faults in bank-protecting facilities;
some reinforcement of the upper dam slope with rock, gravel, clay, turf and grass
sowing.

Standard overhaul cost-rates include:

replacement of specific facility parts with new ones;
elimination of large slides;
concrete work, coating and other large-scale work.

Standard operation cost-rates do not include:

staff costs of federal state agencies dealing with water facilities operation;
costs of work on safety and adjustment;
cost of sludge control;
costs for preparation of emergency supply stock;
cost of facility operation on subsiding land.

X. Economic Liability for Non-compliance with Agreed Norms and Quantities

Economic liability for not observing agreed norms and quantities of water use implies a reduction (given a low level of water use) or increase (given a level of water use higher than the limits) of funding for operation of the shared water facilities or compensation of damage related to water management activities.

Any damage caused by land requisitioning, water resource loss and waterlogging of land is subject to compensation.

Damage caused by land requisitioning from agricultural use is assessed based on the economic value of land defined through a capitalized rent valuation and based on the area allocated for canals, waterways, water reservoirs and other facilities.

The damage caused by water resource loss in the process of water management activities is estimated based on the effect of a shortage of water for agricultural irrigation. This damage may be evaluated based on the cost of agricultural product losses per 1 m³ of water used for irrigation.

The damage caused by waterlogging of land should reflect the cost of reclamation, the cost of lost agricultural land and the cost of protection of populated areas.

The damage in each specific case is evaluated by the Parties on the basis of mutually agreed justifications and calculations and is submitted for the Commission's consideration.

XI. Efficiency Indicators

Efficiency indicators of scheduled activities for the interstate use water facilities should be applied for overhaul of the large-scale facilities and reconstruction of water facilities after a long record of service (40-50 years).

The efficiency indicators of the above work may include (as agreed by the Parties):

increased efficiency factor of the canals;
reduction (elimination) of damage to the environment as a result of underflooding;
reduction of water resource losses in natural and monetary terms.

Marginal costs for water may be used as an efficiency indicator. Marginal costs for water conforms to the optimal plan of the national water resource development and may be used for economic assessment of the activities required to ensure water resource savings without any changes in the structure of the streamlined water balance, therefore, leaving unchanged the pattern of formation and values of marginal costs for water. Reduced marginal costs corresponds to the respective savings (increase) of available water resources based on a stable supply from water reservoirs and estimated annual water supplied through the canal.