

Japan Water Agency (Incorporated Administrative Agency)

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1. Summary of operations implemented using FILP funds

Japan Water Agency undertakes the construction and management of dams, estuary barrages, facilities for water level adjustment for lakes and marshes, multipurpose canals and other water utilization or flood control facilities at seven river systems nationwide, including the Tone River, Ara River, Toyo River, Kiso River, Yodo River, Yoshino River and Chikugo River. The Corporation is generally engaged in large-scale, emergency projects contributing to water utilization of large areas, for the national government or local public bodies.

Of the projects implemented by the Corporation, FILP is applied only to the portion categorized as construction costs for water utilization projects. The Corporation pays those costs temporarily until the construction of water utilization facilities is completed and the beneficiary starts to gain income from water supply services.

Note: Projects not eligible for FILP include those for flood control in construction of a dam for the purpose of flood control and management service for the completed facilities.

Here, "water utilization project" is defined as a project to secure a supply of domestic, industrial and agricultural water, and "flood control project" is defined as the flood control and maintenance of normal river functions of the circulatory system of basins.

2. Amount of lending under FY2022 FILP

(Unit: billion yen)

FY2022 FILP	Estimated outstanding amount of FILP lending at the end of FY2021
1.4	196.0

3. Estimated policy cost analysis of the project

(1) Policy cost (Unit: billion yen)

Category	FY2021	FY2022	Fluctuation
1. Government expenditure (subsidies, etc.)	65.1	76.8	+11.8
2. Government revenue (payments to the government, etc.)*1	-	-	-
3. Opportunity cost of capital investments, etc.	-11.0	-3.4	+7.6
Total (1+2+3=policy cost(A))	54.1	73.5	+19.3
Analysis period (years)	35 years	40 years	5 years

(2) Breakdown of policy cost by the time of the provision of funds (Unit: billion yen)

Category	FY2021	FY2022	Fluctuation
(A) Policy cost (previously cited)	54.1	73.5	+19.3
1) Opportunity cost of capital investments, etc. provided before the beginning of the analysis period	1.0	1.2	+0.2
2) Policy cost expected to be newly accrued during the analysis period	53.1	72.2	+19.1
Government expenditure (subsidies, etc.)	65.1	76.8	+11.8
Government revenue (payments to the government, etc.)*1	-	-	-
Opportunity cost of surplus, etc.	-12.0	-4.6	+7.4
Opportunity cost of capital investments, etc.	-	-	-

(4) Sensitivity analysis (cases where assumptions change) (Unit: billion yen)

(A) Policy cost (previously cited)	Case before the negative interest rate policy*2	Fluctuation	1. Government expenditure (subsidies, etc.)	2. Government revenue (payments to the government, etc.)*1	3. Opportunity cost of capital investments, etc.
			73.5	73.6	+0.2
(A) Policy cost (previously cited)	Case of a 1% increase in operating expenses	Fluctuation	1. Government expenditure (subsidies, etc.)	2. Government revenue (payments to the government, etc.)*1	3. Opportunity cost of capital investments, etc.
			73.5	74.2	+0.7

(Note) Components in each column may not add up to the total because of rounding.

*1 Government revenue (payments to the government, etc.) is booked as a negative amount. Example: -10 b. yen for 10 b. yen in payments to government, etc.

*2 Assumed interest rates (discount factor and future interest rate) are based on the market yield on Japanese government bonds on January 28, 2016, before the introduction of the negative interest rate policy.

(3) Year-to-Year comparison analysis

(Computing any fluctuation from previous year)

(Unit: billion yen)

Policy cost		FY2021	FY2022	Simple fluctuation
		Simple comparison (before adjustment)	54.1	73.5
Past year comparison (after adjustment)	1) Adjusting initial years (Analysis results after adjusting initial year to that for FY2022 analysis)	42.4	73.7	+31.3
	2) Adjusting assumed interest rates (Analysis results of re-estimation using assumed interest rate for FY2021)			Real fluctuation (2-1)

[Real fluctuation factor analysis]

○Factors behind policy cost increase

- Increase in subsidies, etc. due to implementation of new operations (+19.5 billion yen)

- Increase in cost due to a dip into reserves accompanying the formulation of a medium-term plan (+9.0 billion yen)

- Others (Decrease in retained surplus, etc. due to the extension of the analysis period) (+2.8 billion yen)

○Factors behind policy cost decrease

- None

4. Outline of estimation and project prospect employed in the analysis

[Outline of estimation]

- 1) The estimation covers the projects to construct dams, canals, and other facilities. (excluding flood control projects from dam construction projects)
- 2) The project scale is estimated to be 162.2 billion yen for the period from FY2022 through FY2036. The project scale in FY2022 is estimated to be 22.2 billion yen. (excluding flood control projects)
- 3) The FY2022 analysis covered 40 years (against 35 years for the FY2021 analysis) during which construction will be completed, with fiscal loans redeemed.
- 4) Based on the total project cost and construction periods of the above-mentioned projects, the amount of subsidy for each project is estimated in consideration of the cost allocation and the subsidy ratio of the project.

[Project prospect]

- 1) Subject to the analysis are 11 projects for constructing irrigation channels, etc., which will be launched in FY2022 and completed by FY2036.
- 2) New project for FY2022: Reconstruction of the second Nobu facility for the Kiso River irrigation channel

(Project costs in the past and future)

(Unit: billion yen)

FY	Result				Estimated	Planned	Assumptions for calculation	
	2017	2018	2019	2020	2021	2022	2023-2036	Appropriation is based on the construction period and project expenses required for the completion of the construction projects.
Project expenses	44.1	61.8	58.1	55.5	54.0	50.3	271.5	
Project expenses subject to the analysis	20.1	25.7	24.2	24.5	20.2	22.2	140.0	

Note: The project cost subject to the analysis excludes the flood control project which is not eligible for FILP.

- 3) The beneficiaries of the water utilization projects agreed to bear the debt individually after the completion of the projects. They plan to make all repayments as the payment of principal in installments by FY2053. The amount to be repaid includes the amount already spent for projects that have not been completed. (Typical period for which debt*)

Domestic and industrial water: 23 years Agricultural water: 17 years

* Recovery period is to be decided by the Institution after the transition through discussion with the parties who pay the fees and obtaining the approval from the minister and competent minister of Land, Infrastructure, Transport and Tourism according to the Article 31 (municipal water) and Article 34 and Article 39 (agricultural water) of the cabinet order of the Japan Water Agency Act.

- 4) Beneficiaries (local authorities, etc.) agreed to bear the debts and prepare project plans accordingly and have never made overdue installment payments. The Agency can therefore count on the punctual repayments of debts and estimate policy costs without taking into account unrecoverable contributions.

5. Reasons for granting of subsidies, mechanism and underlying laws

Subsidies are granted in order to reduce the financial burden on beneficiaries of water supply service for domestic, industrial, and agricultural purposes.

(Underlying laws and regulations)

“Water Resources Development Promotion Act”

Article 13: The national government shall make efforts to take a measure to secure necessary funds and other measures to cover the costs of the implementation of the Basic Plan.

“Japan Water Agency Act”

Article 35: The national government may grant a subsidy to the Agency under a Cabinet Order within the budget. The Agency shall use the subsidy to pay a part of the expenses to carry out the operations specified in Clause 1 or Clause 3 of Paragraph 1 of Article 12.

The Agency receives the following subsidies from the general account of the national budget under the above-mentioned laws.

Domestic water: Subsidy for improvement of facilities to develop water resources for domestic water (Subsidization rate: one third or one half)

Industrial water: Subsidy for projects to secure industrial water (Subsidization rate: 40% or lower)

Agricultural water: Subsidy for projects to develop infrastructure for agricultural business (Subsidization rate: 70% or lower)

Note: The subsidization rate applied to the use of agricultural water in a developing area might exceed 70%.

Payment to the national treasury is stipulated in the Japan Water Agency Act as below:

“Japan Water Agency Act”

(Disposition of Reserve Funds)

Article 31: When the Agency has settled an account pursuant to the provisions of paragraph (1) or paragraph (2) of Article 44 of the Act on General Rules for the final business year of the mid-term target period prescribed in Article 29, paragraph (2), item (i) of the Act on General Rules (hereinafter referred to as the "midterm target period" in this paragraph), and there remains a reserve fund under Article 44, paragraph (1) of the Act, the portion of the amount equivalent to the amount of the reserve fund that was approved by the Minister of Land, Infrastructure, Transport and Tourism may be appropriated for the operations prescribed in Article 12 during the following mid-term target period in accordance with the mid-term plan permitted as set forth in Article 30, paragraph (1) of the Act on General Rules for the next mid-term target period (when the permission for a change pursuant to the provisions of the second sentence of the relevant paragraph is obtained, in accordance with the mid-term plan after the change).

2 If there is a surplus after subtracting the amount for funding the operations involving Paragraph 1-2-(c), 1-5, Paragraph 2 and Paragraph 3 of Article 12 out of the amount approved by the Minister of Land, Infrastructure, Transport and Tourism as provided in the previous paragraph from the amount provided in a Ministry of Land, Infrastructure, Transport and Tourism ordinance as profit involving the operations out of the reserve fund amount as provided in the previous paragraph, the Agency shall pay the surplus to the national treasury.

3 (Omitted)

6. Special remarks

- 1) In accordance with the Japan Water Agency Act (Act No. 182 of 2002), the Water Resources Development Public Corporation was dissolved and the Japan Water Agency (Incorporated Administrative Agency) was established on October 1, 2003.
- 2) It was specified in the "Reorganization and Rationalization Plan for Special Public Corporations" approved at a cabinet meeting in December 2001 that a new system to have water users pay the cost in advance should be introduced and used as much as possible. The system has been implemented for some operations and reflected in the policy cost analysis.
- 3) It should be noted that the values of dams, irrigation channels, and other facilities are not considered in the policy cost analysis.
- 4) The policy cost of the Agency contributes to ensuring a stable supply of domestic and industrial water, promoting more efficient and intensive agricultural business through a stable supply of agricultural water, and enhancing the national economy and the standard of life of Japanese people.
- 5) Facilities constructed and managed by the Agency serve for various purposes such as providing places to local people where they like to come to relax and developing the local water circulation system by letting used agricultural water return to rivers and recharge groundwater.
- 6) In addition to water utilization projects, the Agency carries out flood control projects to ensure the safety of people's lives, properties, and land. The ongoing projects for flood control such as the construction of dams is expected to save about 1.3 trillion yen (on the basis of price levels in FY2021; Calculated by the Agency based on the materials provided by the Ministry of Land, Infrastructure and Transport) by reducing the damage that would have been caused by floods.

(Reference) Outcome and social and economic benefits of operations

1) Special features of FILP-funded projects

- a. Consistent implementation from construction of regional and multi-purpose facilities extending over several prefectures to management (domestic water, industrial water, agricultural water)
- b. Unified implementation from water resources development to aqueducts
- c. Implementation of regional water utilization projects in large urban areas (7 river systems) accounting for approximately 50% of the population, including the Tokyo metropolitan area. This covers approximately 80% of the new water supply goal in the target areas, so the Corporation projects function as a local lifeline.

2) Overview of FILP-funded projects

Total of 11 projects are under way including new construction of new water facilities such as dams and reconstruction of existing water facilities (functional recovery and enhancement).

3) Results of FILP-funded projects

With the completion of 11 projects subject to the analysis coupled with water supply projects implemented by water utilization establishments, water that can be supplied stably to agricultural land and households is approximately 185 m³/s (69 for domestic water, 7 for industrial water and 109 for agricultural water (including supply volume for reconstruction projects)).

- a. The supply volume of domestic water is 69m³/s. When converted to daily volume, it is approximately 6.00 million m³, when converted to water utilization volume per person, it will serve approximately 15 million persons.
- b. The supply volume of industrial water is 7m³/s. When converted to daily volume, it is equivalent to approximately 0.57 million m³, and when converted to supply volume utilized in the plants of 3 industries (chemical industry, steel industry and pulp, paper and paper processed manufacturing), it contributes to product shipments equivalent to approximately 1.1 trillion yen annually (estimate by the Agency).
- c. The supply volume of agricultural water of 109m³/s (busy farming season) is approximately 9.42 million m³ in daily volume, which irrigates approximately 70,000 hectares of agricultural land (equivalent to 2% of agricultural land nationwide). This contributes to stable agricultural management and the production of approximately 150,000 farming households.

(Reference) The daily supply volume is equal to 14 times (domestic water 5, industrial water 1 and agricultural water 8) of the capacity of Tokyo Dome (about 1.2 million m³).

While it is rather difficult to grasp the quantitative benefits generated from operations, as for the 11 operations (Omoi River Development, Narita water facility reconstruction, Tone Connection Canal large-scale Earthquake Countermeasures, Kiso River System Connection Canal, Reconstruction of the Second Nobi Facility for the Kiso River Irrigation Channel, Miyoshi Branch Canal Emergency Measures, Toyogawa Canal Stage II, Kawakami Dam, Emergency measure for Kagawa water supply facilities, Koishiwara Dam, Fukuoka Connection Canal Facility Earthquake Countermeasures), the total following benefits with respect to them, the benefit concerning

- a) The reducing effects of low or disrupted water damage by maintaining the water resource development facilities and of disrupted water damage by reinforcing the facilities to earthquake-resistant in the field of domestic water;
- b) The reduction effect of industrial water procurement costs when forced to seek water from other sources and damage risk aversion effect for the facilities by turning them into earthquake resistant; and
- c) The production and upgrade effects of agricultural products in the field of agricultural water will be estimated as follows;

•in the case where the social discount rate is set to 4% and the longest analysis period is set to 50 years;

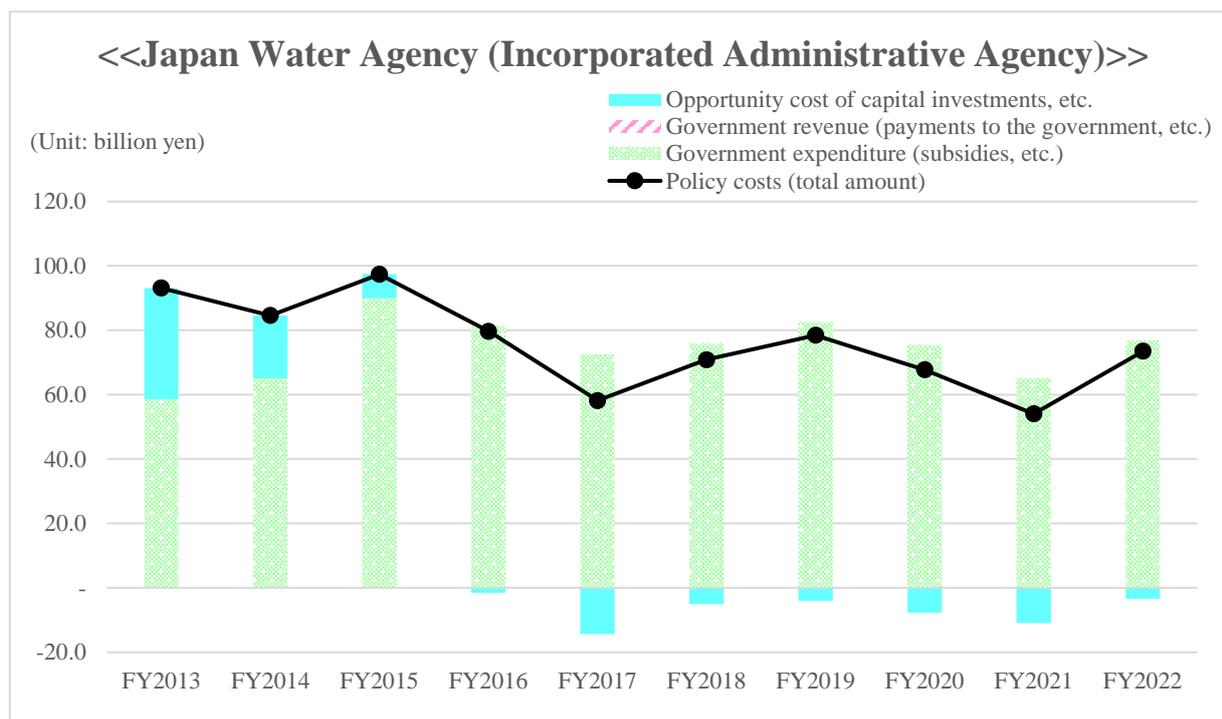
17,418.6 billion yen (estimated by the Agency)

•in the case where the social discount factor is set to that of the policy cost analysis;

35,154.8 billion yen (estimated by the Agency)

Overview of policy cost analysis results

[Changes in policy costs]



Note: Policy costs for each fiscal year differ in assumptions including interest rates applied to estimates.

(Unit: billion yen)

	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
Policy costs (total amount)	93.1	84.6	97.4	79.7	58.1	70.8	78.5	67.7	54.1	73.5
Government expenditure (subsidies, etc.)	58.5	65.0	89.9	81.3	72.5	76.0	82.6	75.5	65.1	76.8
Government revenue (payments to the government, etc.)	-	-	-	-	-	-	-	-	-	-
Opportunity cost of capital investments, etc.	34.6	19.6	7.5	-1.6	-14.4	-5.1	-4.1	-7.8	-11.0	-3.4

【Explanation of policy cost trends】

- The total project cost of construction projects that are subject to policy cost analysis is stipulated in the project execution plan, therefore, remaining project cost decreases as construction projects proceed. Along with this, subsidies, etc. from the government decrease, resulting in policy costs basically being on a decreasing trend. If Government subsidies, etc. increase due to changes in project execution plans or additional projects, however, the policy cost would rise.

【FILP agency's self-assessment of policy cost analysis results (FY2022)】

- In FY2022, the policy cost increased as subsidies from the government increased due to the extension of the analysis period through measures such as the addition of a new project.
- We have confirmed the redeemability of fiscal loans through future cash flow estimation results produced during the policy cost analysis. Given that no annual loss is projected for the future, we have concluded that our financial soundness has been secured.
- In the sensitivity analysis in which the assumed interest rates before the negative interest rate policy introduction were used for computing the policy cost, the cost increased by 0.2 billion yen from the basic case. The increase from the basic case policy cost of 73.5 billion yen was limited to 0.2%, indicating little impact on financial soundness.
- The results of the sensitivity analysis, which calculated the policy cost under the assumption of a 1% increase in operating expenses, showed an increase of 0.7 billion yen in the policy cost to 73.5 billion yen, translating into an increase of around 1.0%. The main factor behind this is an increase in subsidies, etc. from the government due to an increase in operating expenses.

(Reference) Financial Statements

Balance Sheet

(Unit: million yen)

Item	End of FY2020 (Result)	End of FY2021 (Estimated)	End of FY2022 (Planned)	Item	End of FY2020 (Result)	End of FY2021 (Estimated)	End of FY2022 (Planned)
(Assets)				(Liabilities and net assets)			
Current assets	88,527	44,527	41,960	Current liabilities	75,513	35,440	34,158
Cash and bank deposits	53,304	16,709	14,447	Accrued payments	31,110	16	16
Securities	700	100	2,550	Accrued expenses	28	24	29
Others	34,523	27,717	24,963	Others	44,376	35,399	34,114
Fixed assets	3,345,742	3,291,498	3,235,043	Fixed liabilities	3,277,638	3,223,717	3,167,837
Fixed assets for operations	2,654,790	2,750,675	2,787,292	Contra-accounts for assets	3,030,674	3,005,924	2,975,490
Tangible fixed assets	2,648,765	2,744,625	2,781,242	Long-term deposit of subsidies	657	484	434
Intangible fixed assets	6,025	6,051	6,051	Water resource bonds	10,000	10,000	12,000
Fixed assets for general management	6,590	6,639	6,690	Discount on bond	0	0	0
Tangible fixed assets	6,589	6,638	6,689	Long-term borrowings	213,290	184,838	157,992
Intangible fixed assets	1	1	1	Reserves	22,934	22,412	21,850
Construction in progress	425,763	306,817	240,377	Advances received for commissioned operations	51	59	71
Construction in progress for operations	425,763	306,817	240,377	Asset retirement obligations	31	-	-
Investment and other assets	258,600	227,367	200,684	(Total liabilities)	3,353,151	3,259,157	3,201,995
Investment securities	11,463	11,849	9,286	Capital	4,838	4,838	4,838
Installment principal	232,229	205,959	184,827	Government investment	4,838	4,838	4,838
Long-term prepayment of consumption tax, etc.	14,349	9,104	6,177	Capital surplus	- 1,859	- 1,796	- 1,707
Security deposit and guarantee	274	274	274	Capital surplus	1,945	2,212	2,499
Other investments and other assets	285	180	120	Other administrative costs accumulated	- 3,804	- 4,008	- 4,206
				Retained earnings	78,139	73,826	71,877
				Reserve fund carried over from the previous Mid-term Objective period	70,623	64,638	70,347
				Reserve fund	4,777	7,516	-
				Unappropriated income for the current year	2,739	1,672	1,530
				(Of this, gross profit)	(2,739)	(1,672)	(1,530)
				(Total net assets)	81,118	76,868	75,008
Total assets	3,434,269	3,336,025	3,277,003	Total liabilities and net assets	3,434,269	3,336,025	3,277,003

Notes 1. The balance sheet includes amounts for projects other than those subject to the policy cost analysis.

2. Components may not add up to the total because of rounding.

Income Statement

(Unit: million yen)

Item	End of FY2020 (Result)	End of FY2021 (Estimated)	End of FY2022 (Planned)	Item	End of FY2020 (Result)	End of FY2021 (Estimated)	End of FY2022 (Planned)
(Losses)				(Profits)			
Ordinary expenses	127,296	136,149	128,075	Ordinary income	127,871	132,103	126,413
Cost of management activities	35,462	40,063	37,613	Revenues from commissioned work	2,658	2,644	2,280
Cost of entrusted activities	2,636	2,644	2,280	Revenues from subsidies, etc.	33,432	38,083	36,091
Cost of donation-based projects	2	-	-	Donations	2	-	-
Disaster reconstruction operation cost	2,078	1,543	-	Disaster reconstruction operation revenue	2,078	1,543	-
Operational expenses for overseas surveys, etc.	106	183	161	Operational revenues for overseas surveys, etc.	52	50	89
Construction project expenses	8,018	9,277	6,554	Revenues from management miscellaneous sources	911	712	632
General and administrative expenses	508	4,411	2,336	Reversal of contra-accounts for assets funded by subsidies	74,603	74,764	76,423
Depreciation cost of fixed assets for operations	73,268	74,402	76,059	Reversal of contra-construction in progress funded by subsidies	7,634	8,740	6,046
Cost of eliminating fixed assets for operations	1,370	396	399	Income regarding contra-accounts for provision for bonuses	523	523	523
Finance expenses	3,848	3,229	2,672	Financial income	5,950	5,045	4,329
Miscellaneous losses	-	2	2	Miscellaneous income	28	-	-
Temporary losses	82	-	-	Temporary profits	82	-	-
Loss on sale of fixed assets	3	-	-	Reversal of contra-accounts for assets funded by subsidies	82	-	-
Impairment loss	19	-	-				
Payments to the national treasury	60	-	-				
Gross profit	2,739	1,672	1,530	Reversal of reserve fund carried over from the previous Mid-term Objective period	2,164	5,718	3,192
Total	130,117	137,822	129,605	Total	130,117	137,822	129,605

Notes 1. The income statement includes amounts for projects other than those subject to the policy cost analysis.

2. Components may not add up to the total because of rounding.