KDI Public and Private Infrastructure Investment Management Center Annual Report 2022

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November 2023
Korea Development Institute
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Preface

The Public and Private Infrastructure Investment Management Center (PIMAC) at the Korea Development Institute (KDI) is dedicated to reviewing and evaluating public investment projects including major government-financed projects, public-private partnership (PPP) projects and public institutions investment projects in order to improve efficiency and transparency in their implementation. PIMAC has been acknowledged as a professional research institute where its studies focus on procedure and methodology related to public investment management, thereby contributing to solidifying the fundamental of the Korean economy.

From its establishment in 1999 up to 2022, PIMAC carried out 1,367 feasibility studies for government-financed projects, including Preliminary Feasibility Study (PFS) and Reassessment Study of Feasibility (RSF), which altogether contributed to fiscal savings worth KRW 219 trillion. PIMAC assisted with 5,190 cases of Public-Private Partnership (PPP) projects including Value for Money Tests, facilitating the implementation of 818 PPP projects of worth KRW 126 trillion in total. PIMAC performed 243 PFS and RSF for projects pursued by public and quasi-government organizations (public institutions), contributing to improving efficiency and financial soundness of public institutions projects. Through evaluation of 63 Special Tax Treatment Performance, PIMAC commits to both *ex ante* and *ex post* management of Special Taxation. In addition, through 260 research projects on guideline and policy related to public investment management, PIMAC endeavors to advance its evaluation method and improve regulatory setting of public procurement. In its performance, PIMAC has served to establish PFS as a model case of public assessment and to improve public investment efficiency and fiscal soundness.

The *2022 Annual Report of PIMAC* presents the highlights of PIMAC's activities since its establishment and the results of studies and researches conducted in 2022. We hope this report will help the readers understand PIMAC's continued efforts at, on the one hand, contributing to the efficiency of fiscal management by playing various roles in promoting public investment projects, and on the other hand, preemptively responding to social, economic, environmental and institutional changes and to improving the objectivity, transparency, and consistency of its analyses and results.

Hyungtai Kim
Executive Director of PIMAC, KDI

Contents

Preface

CHAPTER I

Overview of the Public and Private Infrastructure Investment Management Center 12

Section 1. Foundational Purposes and Roles 12

Section 2. History and Grounds for Mandate 13

1. History 13
2. Grounds for Mandate 17

Section 3. Organization and Staff 17

CHAPTER II

Government-Financed Project Evaluations 21

Section 1. Overview of Preliminary Feasibility Studies 21

1. History of PFS 21
2. Projects Subject to PFS and Types of PFS 28
3. Process 30

Section 2. Overview of Reassessment Studies of Feasibility 36

1. Total Project Cost Management 36
2. Reassessment Study of Feasibility 40

Section 3. Track Records of Government-Financed Project Evaluation 47

1. Track Records from 1999 to 2022 47
2. Track Recrods in 2022 64

CHAPTER III

Public-Private Partnerships Projects 73

Section 1. Overview of Public-Private Partnerships system 73

1. Background and Progress of Public-Private Partnerships 73
2. Eligible PPP projects and Implementation Methods 76
3. Players in PPP Projects and Their Roles 85
4. Detailed Projects Implementation Process 86
Section 2. PPP Project Details 98
1. PPP Project Eligibility Review 98
2. VFM Analysis (Proposal Review) and Feasibility Study 98
3. Request for Proposals and Request for Alternate Proposals Review 99
4. Project Plan (Proposal) Evaluation 100
5. Agreement Negotiations and Draft Agreement Review 100
6. Refinancing Pre-review 101
7. Project Implementation Condition Adjustment Review 101
8. PPP Project Support 102
9. Management Implementation Plan Review 103
Section 3. Performance of PPP Projects 104
1. PPP Projects by Type 104
2. PPP Projects by Facility Type 106
3. PPP Project by Year 108
4. PPP Projects by Agency 113
5. PPP Projects by Ordering Formality 116
6. PPP Projects by Implementation Stage 117
Section 4. Track Records of PPP Project Support 119
1. Track Records from 1999 to 2022 119
2. Track Records in 2022 121

CHAPTER IV

Public Institution Investment Projects Evaluation 132

Section 1. Overview of PFS of Public Instition Investment Projects 132
1. Background and Grounds for Implementation 132
2. Projects Subject to PFS and Implementation Structure 139
3. Public Institution Project PFS Process and Details 142
Section 2. Overview of RSF of Public Instition Investment Projects 144
1. Total Project Cost Management 144
2. Reassessment Studies of Feasibility 145
Section 3. Track Records of Public Institution Investment Projects 147

1. Preliminary Feasibility Study 148
2. Project Plan Reviews 153
3. Reassessment Study of Feasibility 154

CHAPTER V

Performance Evaluation of Special Taxation 155

Section 1. Background and Grounds 155

1. Background 155
2. Overview of Tax Expenditures 157
3. Grounds 159
4. Types of Evaluation of Special Cases of Taxation 160
5. Target Projects 161
6. Process of performance evaluation of special cases of taxation 163

Section 2. Track Records of performance Evaluation of Special Cases of Taxation 168

1. Track records from 2015 to 2022 168
2. Track Recrods in 2022 169

CHAPTER VI

Policy Research and Service 171

Section 1. Policy Research Overview and Track Records 171

1. Policy Research Overview 171
2. Track records of Policy Research 182

Section 2. Policy Services Overview and Track Records 184

1. Education and Seminars on PPP Investment 184
1. Public Investment Policy Seminar 187
2. International Cooperation 187
3. Database System Management and Operation 189

List of Tables

Table I-1	Shows the history of PIMAC	14
Table I-2	Key Tasks	19
Table I-3	Staff by Discipline	20
Table II-1	major events of the PFS	26
Table II-2	Overview PFS	34
Table II-3	History of the TPCM	38
Table II-4	track records of PIMAC's government-financed project evaluations conducted from 1999 to 2022.	47
Table II-5	PFS track records	48
Table II-6	Gross value of projects subject to PFS	50
Table II-7	PFS track records by ministry	51
Table II-8	Proportions of projects found economically feasible (B/C ≥ 1) in PFS, by area and year	53
Table II-9	Proportions of projects that met the overall feasibility requirement in PFS, by area and year	54
Table II-10	Annual total project costs saved by PFS	55
Table II-11	Track records of assessment of project plan	56
Table II-12	Annual total cost savings by assessment of project plan	57
Table II-13	RSF track records	58
Table II-14	Causes of projects undergoing RSF (based on official documents received)	59
Table II-15	Annual total project costs saved by RSF	60
Table II-16	Track records of reassessments of projects plans	61
Table II-17	Track records of Reassessments of demand forecast	62
Table II-18	Track records of Pre-feasibility review on design modification and assessments of design modification	62
Table II-19	Annual total project costs saved by reassessments of project plans	63
Table II-20	Summary of the results of PFS in 2022	64
Table II-21	Area-specific projects subject to PFS in 2022	66
Table II-22	Projects that underwent PFS in 2022, by ministry/agency	67
Table II-23	Economic feasibility (B/C≥ 1) of projects that underwent PFS in 2022, by area	67
Table II-24	Overall feasibility of projects that underwent PFS in 2022 (AHP ≥ 0.5)	68
Table II-25	Summary of project plan reviews conducted in 2022	68
Table II-26	Summary of RSF results in 2022	69
Table II-27	Causes of RSF conducted in 2022	69
Table II-28	RSF conducted in 2022, by area	70
Table II-29	Total costs of projects that underwent RSF in 2022	70
Table II-30	Projects that underwent RSF in 2022, by ministry/agency	70
Table II-31	Economic and overall feasibility of projects that underwent RSF in 2022	71
Table II-32	Summary of reassessments of project plans in 2022	71
Table II-33	Assessments of design modification in 2022	72

Table III-1	Changes in the PPP system and characteristics	75
Table III-2	General Principles of Designation of PPP Projects (provided in then Basic Plan)	78
Table III-3	Methods of Implementation of PPP Projects (provided in the Basic Plan)	79
Table III-4	Features of PPP projects types	81
Table III-5	Comparison of BTO-rs and BTO-a	82
Table III-6	PPP projects by type	105
Table III-7	PPP projects by arrangement and order type	105
Table III-8	PPP projects by facility type	106
Table III-9	PPP projects by arrangement and facility type	107
Table III-10	PPP projects by type and year	110
Table III-11	PPP projects by year and agency	111
Table III-12	PPP projects by year and order type	112
Table III-13	PPP projects by agency	113
Table III-14	PPP projects by agency and project type	114
Table III-15	PPP projects by agency and facility type	115
Table III-16	PPP projects by ordering formality	116
Table III-17	PPP projects by ordering formality and facility type	117
Table III-18	PPP projects by implementation stage	117
Table III-19	PPP projects by implementation stage and facility type	118
Table III-20	BTO-types PPP projects by implementation stage	119
Table III-21	BTL PPP projects by implementation stage	119
Table III-22	PPP projects support in 2022	120
Table III-23	Facility eligibility review in 2022	121
Table III-24	VFM analysis and proposal reviews in 2022 (BTO)	122
Table III-25	VFM analysis and proposal reviews (BTL) in 2022	122
Table III-26	BTL feasibility study reviews (BTL) in 2022	123
Table III-27	RDF and VFM reassessment in 2022	125
Table III-28	Request for Proposals in 2022	125
Table III-29	Request for Alternate Proposals reviews in 2022	126
Table III-30	Draft concession agreements review (BTO) in 2022	127
Table III-31	Draft concession agreements review (BTL) in 2022	127
Table III-32	Refinancing and project implementation condition adjustment in 2022	128
Table III-33	Refinancing review in 2022	128
Table III-34	Review of the adjustment of project implementation conditions in 2022	129
Table III-35	Short-term financial review in 2022	129
Table III-36	Other review and Q&A services in 2022	131
Table IV-1	Progress of the PFS scheme for public institute projects	137
Table IV-2	Weights given to publicness and profitability in public institute project PFS	144
Table IV-3	Track records of public instituion investment projects evaluation	148
Table IV-4	PFS requests from public instituion and selected project	148

Table IV-5	Project selected for public instituion projects PFS	149
Table IV-6	Public institution projects selected for PFS, by area	149
Table IV-7	Results public institution project PFS	150
Table IV-8	Results of public institution project PFS by area	150
Table IV-9	Results of economic feasibility analysis, 2011-2022	151
Table IV-10	Results of profitability analysis by area, 2011-2022	151
Table IV-11	Results of overall feasibility analysis by year and area, 2011-2022	152
Table IV-12	PFS for public institution projects, 2022	152
Table IV-13	Public institution project plan reviews	153
Table IV-14	Public institution project plan reviews in 2022	153
Table IV-15	Public institution project RSF	154
Table IV-16	Public institution projects that underwent RSF in 2022	154
Table V-1	Annual tax expenditures	156
Table V-2	Annual national tax exemptions	158
Table V-3	Legal grounds of performance evaluations of special taxation	159
Table V-4	Weights applied to AHP evaluation items	165
Table V-5	Programs selected by the Ministry of Economy and Finance for performance evaluation of special cases of taxation	168
Table V-6	Track records of performance evaluation of special cases of taxation conducted by KDI	169
Table V-7	Performance evaluation of special cases of taxation conducted by KDI in 2022	170
Table VI-1	Studies of government-financed project evaluation guidelines	171
Table VI-2	Studies of guidelines for PPP project support (BTO projects)	173
Table VI-3	Studies of guidelines for PPP project support (BTL projects)	174
Table VI-4	Studies of guidelines for PFS for public institution project	174
Table VI-5	Studies of guidelines for performance evaluation of special cases of taxation	175
Table VI-6	General studies of government-financed projects	175
Table VI-7	General studies of PPP project support	177
Table VI-8	General studies of PFS for public institution projects	181
Table VI-9	General study of performance evaluation of special cases of taxation	181
Table VI-10	Guidelines developed and research projects conducted	182
Table VI-11	Guideline and general studies conducted in 2022	183
Table VI-12	List of research projects conducted in 2022	184
Table VI-13	Oneline education track records of PPP Projects in 2022	185
Table VI-14	Face to face education track records of PPP Projects in 2022	185
Table VI-15	List of PPP online education programs	185
Table VI-16	Public investment seminar performace in 2022	187
Table VI-17	Track records of international cooperation in 2022	188
Table VI-18	InfraInfo DB system	190
Table VI-19	Basic materials for the database system	190
Table VI-20	System maintenance	191

List of Figures

Figure I-1	Organization Chart	18
Figure II-1	Selection of projects subject to PFS and implementation process	31
Figure II-2	Selection of projects subject to PFS and implementation process	33
Figure II-3	RSF workflow	46
Figure III-1	BTO and BTL project structure	81
Figure III-2	Players in PPP projects and their roles	85
Figure III-3	BTO project process	86
Figure III-4	BTO project (government-solicited project) implementation process	89
Figure III-5	Government-solicited project selection process (if PFS requested for government-funded projects)	90
Figure III-6	Government-solicited project selection process (if PFS feasibility studies requested for government-solicited PPP projects)	91
Figure III-7	BTO project (unsolicited project) implementation process	92
Figure III-8	Government-solicited BTL project implementation process	93
Figure III-9	Unsolicited BTL project implementation process	94
Figure III-10	Competitive dialog (BTO, government-solicited BTL project) process	95
Figure III-11	Hybrid PPP project process (government-solicited projects)	96
Figure III-12	Hybrid PPP project process (unsolicited projects)	97
Figure III-13	Number of project and total investment by year	108
Figure III-14	Number of project and average investment by year	109
Figure IV-1	Public institution project PFS workflow	142
Figure V-1	Tax revenue and expenditure growth rate	155
Figure V-2	Special taxation PFS process	163
Figure V-3	Special taxation PFS process	164
Figure V-4	Workflow of PFS for special taxation	167

CHAPTER I

The Public and Private Infrastructure Investment Management Center (PIMAC)

Section 1. Foundational Purposes and Roles

The Public and Private Infrastructure Investment Management Center (hereinafter, 'PIMAC') of the Korea Development Institute (hereinafter, 'KDI') plays important roles in the pursuit of public investment by examining and evaluating public investment projects with objectivity and rationality and studying relevant institutions and methodologies with the aim to contribute to reinforcing and improving the efficiency of public investment.

PIMAC conducts Preliminary Feasibility Studies (hereinafter, 'PFS') for major government-financed projects and Reassessment Studies of Feasibility (hereinafter, 'RSF') for government expenditure management to ensure transparency in decision-making on government investment and contribute to the efficiency and stability of fiscal management. Also, to facilitate implementation of Public-Private Partnership (PPP) projects in an efficient manner, PIMAC provides not only direct support to competent authorities including Value-for-Money (VFM) analysis, reviews for refinancing gain sharing, supporting negotiation and dispute mediation, but also policy services to competent authorities, the private sector and foreign country officials through training on PPP projects and studies to develop detailed guidelines for project implementation and relevant policies.

PIMAC, moreover, is designated as a specialized institution to conduct PFS for public institution investment projects above a certain value. PIMAC objectively assesses the feasibility of the projects and provides information to the public institutions for their decision-making on new investments, thereby improving the efficiency of the projects and helping ensure financial stability. In addition, PIMAC conducts PFS and in-depth evaluations of special taxation for *ex ante* feasibility assessment and *ex post* performance analysis of tax policies.

PIMAC is true to its role as a professional institution that validates feasibility of major public projects. To ensure its analyses and evaluations are objective and reasonable, it also continues working on research in relevant areas including methodologies. Furthermore, PIMAC organizes forums and training programs on public investment schemes and policies and pursues international cooperation and networking by strengthening cooperation with various overseas organizations including the World Bank, the Organization for Economic Co-operation and Development, and the International Monetary Fund. In addition, PIMAC continues building on databases for the efficient management at all stages of PPP investment and exerts efforts to help Korean businesses advance into overseas markets by sharing global policy issues and strengthening economic cooperation with developing countries.

Section 2. History and Grounds for Mandate

1.History

PIMAC, KDI was established in January 2000 as an internal organ of KDI following the introduction of PFS under Article 9-2 of the Enforcement Decree of the Budget and Accounts Act in May 1999. Following the amendment to the Act on Public-Private Partnerships in Infrastructure in January 2005, PIMAC was launched as an institution annexed to KDI, and the Private Infrastructure Investment Center of Korea at the Korea Research Institute for Human Settlements transferred thereto. In January 2014, KDI was designated as a specialized institution for government-project evaluation under Article 8-2 of the National Finance Act, and from 2008 to 2018, PIMAC, KDI was designated as the sole institute executing PFS for fiscal projects excluding national R&D projects. Meanwhile, since the introduction of PFS for Public Enterprises and Quasi-Government Agencies (although generally called ‘State-Owned Enterprises (SOEs),’ hereinafter referred to collectively as ‘public institutions’ unless otherwise stated) investment projects in January 2011, PIMAC, KDI was designated as a specialized institution for conducting PFS for public institutions investment projects, and also in accordance with Article 16 of the Operational Guideline of Public Enterprises and Quasi-Government Agencies, under Article 25-3 of the Enforcement Decree of the Public Institution Act. In addition, in September 2014, KDI was designated as a specialized institution for special taxation evaluation in accordance with Article 135-2 of the Enforcement Decree of the Restriction of Special Taxation Act.

▎Table I-1▎ Shows the history of PIMAC

Year	Public and Private Infrastructure Investment Management Center (PIMAC)	
	Public Investment Center (PIMA)	Private Infrastructure Investment Center of Korea (PICKO)
1998	• The Public Project Efficiency Task Force was organized (Strategy and Budget Committee, Ministry of Construction and Transportation).	• The Comprehensive Measures to Attract Private Investment in Infrastructure were established in August. • The Act on Public-Private Partnerships in Infrastructure was proclaimed in December.
1999	• The Comprehensive Measures for Public Construction Project Efficiency were established (Ministry of Construction and Transportation). • PFS launched for 24 projects in January. • General guidelines and area-specific guidelines published in February. • PFS legislated under Article 9-2 of the Enforcement Decree of the Budget and Accounts Act in May.	• The Korea Research Institute for Human Settlements established PICKO in April. • Lee Kyu-Bang took office as the inaugural director (served consecutive terms) in April.
2000	• Pilot application of analytic hierarchy process (AHP) to PFS. • PIMA established in January. • Kim Jay-Hyung took office as the inaugural director in January.	• The SOC Private Investment Support Group was organized (relevant ministries, PICKO, financial institutions, private businesses, academia, etc.).
2001	• AHP fully introduced to PFS.	• Mid-/long-term PPP plans established (PPP Basic Plans).
2002	• Revalidation study of feasibility introduced in January. (Revalidation study of feasibility renamed reassessment studies of feasibility (RSF) in 2007.)	• Prepared grounds for the establishment of mid-/long-term PPP plans (amendment to the Act on Public-Private Partnerships in Infrastructure).
2003	• Shim Sang-Dal took office as the second director in August.	• Kim Heung Soo took office as the third director in February.
2004	• Pilot PFS in informatization launched in April (three projects).	• An international seminar on PPP held in September. • An international seminar on PPP criteria and process held in November.

▌Table I-1▌ Continued

Year	Public and Private Infrastructure Investment Management Center (PIMAC)	
	Public Investment Center (PIMA)	Private Infrastructure Investment Center of Korea (PICKO)
2005	• PIMA and PICKO were merged (under Article 23 of the PPP Act (Act No. 7386)) to form PIMAC, an affiliated body of KDI in January. • Jeon Hong-taek took office as the inaugural executive director in January. • BTL (Build-Transfer-Lease) newly included as a PPP type; Value-for-Money (VFM) tests introduced in January. • The International Conference on the Risk Analysis and Management of PPP in Infrastructure Projects was held in December (IMF, World Bank, ADB, Partnerships UK).	
2006	• Kim Jay-Hyung took office as the second executive director (took consecutive terms as the third and fourth executive director) in April. • PFS and RSF legally institutionalized (under Articles 38 and 50 of the National Finance Act (Act No. 8050)) in June.	
2007	• The scope of PFS expanded (national R&D projects and informatization projects). • The Asia-Pacific Ministerial Conference on Public-Private Partnerships for Infrastructure Development held in October. • Review on Refinancing gain sharing introduced in December.	
2008	• PIMAC designated as agency administering PFS (excluding national R&D projects) under Operational Guidelines for PFS • Simplified PFS (preliminary cost review) introduced. (Simplified PFS renamed as project plan review in 2012.)	
2009	• The Knowledge Sharing on Infrastructure Public-Private Partnerships in Asia held in May (ADB, ADBI, World Bank Institute).	
2010	• The scope of PFS expanded (other non-investment fiscal projects). (“Other non-investment fiscal projects” recategorized as “other fiscal projects” in 2012.)	
2011	• PFS for public institution investment projects introduced in January. • PIMAC designated as specialized agency administering PFS for public institution investment projects in January. • The International Conference on Performance Evaluation and Success Cases of Public-Private Partnership Projects held in August (IMF, World Bank).	
2012	• Park Hyun took office as the fifth executive director in February.	
2013	• Kim Kang-Soo took office as the sixth executive director (served consecutive terms as the seventh executive director) in July.	

▎Table I-1▎ Continued

Year	Public and Private Infrastructure Investment Management Center (PIMAC)	
	Public Investment Center (PIMA)	Private Infrastructure Investment Center of Korea (PICKO)
2014	• The law on the introduction to PFS for special taxation (Restriction of Special Taxation Act) amended in January. • PIMAC designated as specialized agency to perform PFS for fiscal projects (under Article 8-2 of the National Finance Act (Act No. 12161)) in January. • KDI designated as specialized agency to perform evaluation of special taxation (under 135-2 of the Enforcement Decree of the Restriction of Special Taxation Act (Presidential Decree No. 25590)) in September. • International Conference on Strengthening the Management of Public Investment: Korean and International Experiences in celebration of the 15th anniversary of the introduction of PFS held in October. • International seminar in celebration of the 20th anniversary of the introduction of public-private partnership held in December (Ministry of Economy and Finance, World Bank, ADB).	
2015	• Evaluation for special taxation performed in January.	
2016	• Kim Kiwan took office as the eighth executive director (served consecutive terms as the ninth executive director) in March. • PFS for public institution investment projects legally institutionalized (under Articles 40 of the Act on the Management of Public Institutions (Act No. 14076)) in March. • PIMAC designated as specialized agency to perform PFS for public institutions investment projects (under Article 16 of the Operational Guidelines for PFS for Public Enterprises' and Quasi-Government Institutions' Projects) in November.	
2017	• General Guidelines for Performance of PFS established in April.	
2019	• Government diversified special agencies that perform PFS (KDI, Korea Institute of Public Finance (KIPF) according to the National Finance Act and the Operational Guidelines for PFS) in May. • Kim Hyungtai took office as the tenth executive director (served consecutive terms as the eleventh executive director) in December. • International Conference on Public Investment Management in celebration of the 20th anniversary of the introduction of PFS held in December (Ministry of Economy and Finance, World Bank).	
2020	• PPP policy change from enlisting of 53 eligible PPP facilities to expanding to all public facilities in March. • RSF for public institution investment projects legally institutionalized (under Article 40-3 of the Act on the Management of Public Institutions (Act No. 17128)) in March. • Guidelines for Total Project Cost Management for Public Enterprises and Quasi-Government Institutions enacted in September.	
2021	• Pilot study on preliminary feasibility review performed.	

2. Grounds for Mandate

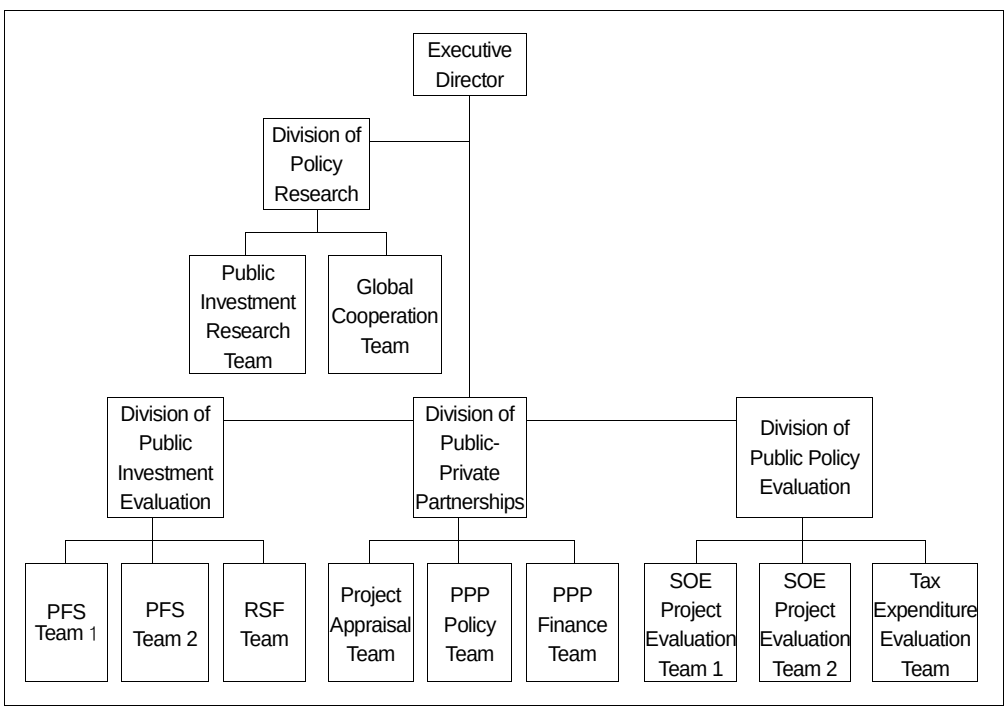
The assessment of major government-financed projects including PFS is carrie out based on Article 38(Preliminary Feasibility Study) and Article 50(Management of Total Project Cost) of the National Finance Act, along with related guidelines. PIMAC of KDI is designated as an institute specialized in evaluation of fiscal projects according to Article 8-2(Designation of Survey and Research Institutes Specialized in Evaluation of Fiscal Projects) of the National Finance Act. PPP projects in Korea are implemented based on the Act on Public-Private Partnerships in Infrastructure (hereinafter, 'the PPP Act'). For PPP projects, PIMAC offers comprehensive support services including feasibility studies for major PPP projects and project plan evaluations under Article 23(Establishment of Public and Private Infrastructure Investment Management Center) of the PPP Act. Meanwhile, PFS and RSF for public institutions investment projects according to Article 40(Budget Compilation) and Article 40-3(Feasibility Review and Disclosure of Results Thereof) of the Act on the Management of Public Institutions, along with related guidelines. PIMAC of KDI is designated as an agency that performs PFS on public institutions investment projects according to Article 16 of the Operational Guidelines for PFS for Public Enterprises' and Quasi-Government Institutions' Projects, which is grounded on Article 25-3(Preliminary Feasibility Study) of the Enforcement Decree of the Act on the Management of Public Institutions. Performance evaluation of special taxation is based on Article 142(Ex Ante and Ex Post Management of Special Taxation). KDI is designated as specialized institution that performs evaluation for special taxation according to Article 135-2(Designation of Institutions Specialized in Surveys and Research for Assessment, etc. of Special Taxation) of the Enforcement Decree of the Restriction of Special Taxation Act.

Section 3. Organization and Staff

PIMAC, KDI consists of four divisions: Division of Public Investment Evaluation, Division of Public-Private Partnerships, Division of Public Policy Evaluation, and Division of Policy Research. These divisions, respectively, have team-level organizations, which are as follows: The Division of Public Investment Evaluation consists of Preliminary Feasibility Study Team 1, Preliminary

Feasibility Study Team 2, and Reassessment Study of Feasibility Team. The Division of Public-Private Partnerships is divided into Project Appraisal Team, PPP Policy Team, and PPP Finance Team. Teams that belong to the Division of Public Policy Evaluation are SOE Project Evaluation Team 1, SOE Project Evaluation Team 2, and Tax Expenditure Evaluation Team. Finally, Public Investment Research Team and Global Cooperation Team comprise the Division of Policy Research. The organization chart and tasks are shown as follows.

| Figure I-1 | Organization Chart



| Table I-2 | Key Tasks

Organization			Tasks
Office of the Executive Director		Executive Director	• Supervises studies, surveys, and support activities related to public investment projects (government-funded projects, PPP projects, and public institution investment projects), and special taxation.
Division of Public Investment Evaluation	Preliminary Feasibility Study Team 1		• Conducts, supports, and manages PFS and project plan reviews for major public investment projects related to standardized types of projects, such as those in the transportation sector. • Performs research related to government-funded project PFS guideline and policy.
	Preliminary Feasibility Study Team 2		• Conducts, supports, and manages PFS and project plan reviews for major public investment projects related to non-standardized types of projects, such as those in the construction, informatization, culture, R&D, and other sectors. • Performs research related to government-funded project PFS guideline and policy.
	Reassessment Study of Feasibility Team		• Implements RSF, reassessments of demand forecast (RDF), reassessments of project plans, and assessments of design modification for the projects subject to total project cost management (TPCM). • Performs research related to government-funded project RSF guideline and policy.
Division of Public-Private Partnerships	Project Appraisal Team		• Performs feasibility studies of government-initiated PPP projects and supports and manages VFM for projects proposed by the private sector. • Conducts, supports, and manages RDF and VFM reassessments of PPP projects. • Performs research related to improving PPP policy and related field.
	Public-Private Partnerships Policy Team		• Conducts, supports, and manages feasibility studies and reviews for BTL projects. • Prepares and reviews PPP project request for proposals and announcement of third-party proposals. • Provides support for project proponent designation including negotiating for concession agreements and reviewing draft agreements. • Supports the PPP Project Deliberation Committee and the Dispute Settlement Committee. • Performs research related to improving PPP policy and related field.
	Public-Private Partnerships Finance Team		• Reviews refinancing gains for PPP projects, supports negotiation thereof. • Reviews and provides support for project condition adjustments and MRG payments. • Reviews and provides support for amendments to concession agreement following refinancing and project condition adjustments. • Performs research related to improving PPP policy and related field.

▎Table I-2 ▎ Continued

Organization		Tasks
Division of Public Policy Evaluation	SOE Project Evaluation Team 1	• Performs evaluations (PFS, RSF, review of project plan, etc.) for public institution investment projects such as electric power projects and overseas projects. • Conducts studies on guidelines and policies on public institutions project evaluation for electric power projects and overseas projects.
	SOE Project Evaluation Team 2	• Performs evaluations (PFS, RSF, review of project plan, etc.) for public institution investment projects such as industrial complexes and land development projects. • Conducts studies on guidelines and policies on public institutions project evaluation for industrial complexes and land development projects.
	Tax Expenditure Evaluation Team	• Conducts and supports PFS and in-depth evaluation of special taxation.
Division of Policy Research	Public Investment Research Team	• Supports and manages research and studies performed by PIMAC and identifies mid to long term policy agenda. • Operates and manages the Public Investment Policy Forum. • Conducts training on public investment projects and develops and manages relevant databases.
	Global Cooperation Team	• Analyzes international trends in public investment. • Pursues international cooperation and public relations, and establishes and manages local and international networks and databases. • Provides consultation for foreign country officials.

As of December 2022, PIMAC had 107 staff members consisting of experts in various disciplines including economics, business management, accounting, law, transportation, environment, and civil engineering.

▎Table I-3 ▎ Staff by Discipline

Discipline	No. of staff	Discipline	No. of staff
Economics	21	Law	5
Business management, finance, accounting	16	International cooperation, development cooperation, policy, etc.	11
Civil, architecture, environment engineering, etc.	18	Others (culture and tourism, water resources, etc.)	2
Urban planning and engineering, transportation, etc.	18	Administration and support, internship	9

Note: As of December 31, 2022.

CHAPTER II

Government-Financed Project Evaluation

PIMAC conducts government-financed project evaluations under Article 8-2 of the National Finance Act, and its duties are largely divided into two categories. Firstly, Preliminary Feasibility Study (PFS) is designed to improve the efficiency of fiscal management by ensuring transparent and fair decision-making on major public investment projects based on priorities in accordance with Article 38 of the National Finance Act. Secondly, RSF aims to improve the efficiency of fiscal expenditures by ensuring stage-specific reasonable adjustment and management of project costs in line with Article 50 and Article 21 and 22 of the Enforcement Decree of the Same Act. In addition, PIMAC conducts Assessment of Project Plan, Reassessment of Project Plan, RDF, project design reviews, and assessments of design modification in accordance with PFS guidelines and TPCM guidelines.

Section 1. Overview of Preliminary Feasibility Studies

1. History of PFS

A. Background

1) Thorough review at preliminary stage

Successfully implementing large-scale government-financed projects requires thorough preliminary reviews of their political, economic, and technical feasibility. It is true that a preliminary assessment is also necessary for the general public as well as the private sector when they implement their own projects; however, a greater importance should be placed on the preliminary assessment of public projects given that they are considerably larger in scale and have greater ripple

effects over the entire nation. Recklessly pursuing projects without thorough reviews of their feasibility will lead to the following risks.

First, projects with no demand or no economic feasibility may be pursued. Building a facility when there is no demand is nothing but a waste of budget. Should there be some demand but not enough for effective operation of the facility, the government would inevitably have to provide continued support, eventually leading to fiscal constraints in the long run.

Second, it may cause an unexpected cost overrun and frequent changes in project plans. The government budget is managed and executed in accordance with a detailed plan. When a project is launched without a thorough review in advance, an unexpected cost overrun might occur in the middle of the project implementation process. This, consequently, may cause some difficulties in fiscal management. Even though a preliminary review is conducted, a cost overrun may still possibly occur due to inflation or unexpected situations in the construction site. However, in this case, the amount exceeding the original budget would be much more limited, and it would likely be in the anticipated error range. Furthermore, lack of a thorough preliminary review might also cause frequent changes in the project plans, thereby increasing the overall project cost and delaying the completion date for the project.

Third, once a project is launched but then found to be not feasible, it is very difficult to halt it. In most cases, nullifying a project would be impossible, in reality, due to an angry backlash from the local government or local population. Even if it is possible to nullify the project, this means that the entire investment up to that point would be lost, and the problem of disposal of facilities built during the project implementation will be seriously raised.

Even if a project is assessed to be economically and technically feasible, some concerns in terms of policy, such as overall fiscal management, might be raised. The budget is not unlimited. Therefore, it is necessary to consider the priority of projects in a holistic manner for an efficient allocation of resources under budget constraints. This means that it is necessary to decide whether to push forward with

the project by assessing the feasibility of the individual project as well as conducting a thorough comparison and review targeting the "potential project group" in a broader perspective.

2) Importance of PFS

PFS was introduced for the purpose of improving the existing feasibility studies. The importance of PFS can be found in that it presents a solution to the problems of existing feasibility studies that had been conducted before the introduction of the PFS regime. In other words, existing feasibility studies mainly focused on technical review and preliminary design because it is regarded that the target project would be implemented. However, PFS, as a pre-stage of the actual feasibility studies, focuses on evaluating the policy significance and economic efficiency that the target project had in the context of the overall fiscal management. That is, PFS is to suggest an efficient and realistic implementation plan for the project.

Although cost-benefit analysis would be thoroughly conducted based on the details of draft design plans, it is appropriate to decide whether to pursue the project, or even conduct a feasibility study, before conducting any technical review that requires a large amount of money. In other words, the decision to implement a new project should be made before conducting any technical review. This decision should be confirmed based on an accurate understanding of how the potential project is positioned within the entire budget management system and the higher-level plans for the whole and individual project sectors in addition to the overall framework of existing projects. Of course, technical issues are important, however, project implementation itself should be decided based on more fundamental factors. Those factors may include a review of purpose and importance of the project, right timing for project implementation, alternatives to the potential project, viability and concreteness of financing plans, and an evaluation on the ripple effect of the project.

Therefore, the aim of the preliminary feasibility study is basically to make a decision on whether to start a new project in terms of the national economy before conducting a full-fledged feasibility study. For this purpose, the preliminary

feasibility study is conducted by a third-party organization that does not have any direct interests in the relevant project, and should be conducted in an objective and neutral manner. Furthermore, the implementation steps for a new project are set as preliminary feasibility study → feasibility study → design → compensation → commencement of construction. The budget is allocated, in principle, based on the individual steps, respectively. In doing so, the government amended the Enforcement Decree of the Budget and Accounting Act in March 1999 to require that project budgets be prepared in the order of a PFS, a feasibility study, basic design, working design, compensation, and construction.

In addition, PFS provide another important advantage as they facilitate the standardization of methods for project assessments by providing assessment guidelines. This, consequently, will contribute to improving efficiency in resource allocation by securing the objectivity of the study results and establishing a comparison system for priorities among different potential projects for investment.

Another advantage of conducting PFS is that they could be used as the basic data for a feasibility study, which may be pursued based on the results of the PFS.

Those data, statistics, and information collected during a PFS are all necessary for a feasibility study. In addition, the model and criteria for evaluating the feasibility as well as the standard for various coefficients that were developed during the PFS can also be used for the feasibility study when necessary. Furthermore, it is more efficient for the budget management to use PFS to screen and narrow down primarily the number of potential projects subject to feasibility studies. In other words, the efficiency of resource allocation will be significantly improved by conducting PFS for a larger "potential project pipeline," and it will eventually reduce the costs of feasibility studies. As elaborated above, introducing the PFS will help relevant personnel identify problems before they conduct a full feasibility study and significantly improve efficiency in budget management and fiscal soundness.

B. Legal basis of PFS

The PFS is conducted under Article 38 of the National Finance Act and Article 13 of the Enforcement Decree of the National Finance Act with the aim to establish budgets and fund management plans for large-scale projects. The Guideline to the Preliminary Feasibility Studies, which are mandated by the provision in Article 38(6) of the National Finance Act to clarify the selection of subjects of PFS, institutions to conduct PFS, methods, and processes, clearly state that PFS should be conducted by PIMAC and Korea Institute of Public Finance (KIPF) upon request of the Minister of Economy and Finance.

C. Evolution of PFS

As part of the government's drive for public sector innovation, the (former) Ministry of Construction and Transport organized the Public Project Efficiency Promotion Group, and the group developed the Comprehensive Measures for Public Project Efficiency Promotion to eliminate inefficiency and waste in each stage of public construction projects. These measures aimed to ensure transparency in the planning and implementation of public construction projects, reduce construction costs, improve productivity, and establish a system for construction quality assurance and were pursued in consultation with relevant government agencies such as the Strategy and Finance Committee. In doing so, the PFS was introduced following legal and institutional reform of 1999 including an amendment to the Enforcement Decree of the Budget and Accounting Act.

▎Table II-1▎ major events of the PFS

Year	Event
1998	• Public Project Efficiency Promotion Group organized (Strategy and Budget Committee, Ministry of Construction and Transport).
1999	• Comprehensive Measures for Public Project Efficiency Promotion (Ministry of Construction and Transport). • PFS initiated in January (24 projects). • General and area-specific guidelines published in February. • PFS legislated under Article 9-2 of the Enforcement Decree of the Budget and Accounting Act in May.
2000	• Pilot AHP analysis in PFS.
2001	• Full-scale AHP analysis as part of PFS.
2004	• Pilot PFS for IT projects in April (three projects).
2007	• Scope of PFS extended (to national R&D and IT projects). • PFS and RSF legislated under Article 38(4) of the National Finance Act and Its Enforcement Decree in January.
2008	• Simplified PFS (preliminary cost review) introduced.
2010	• Scope of PFS extended (to other non-investment fiscal projects).
2012	• Stricter PFS applied to welfare projects. • PFS exemption requests became mandatory. • Project plan review introduced • “Other non-investment fiscal projects” recategorized as “other fiscal projects.”
2016	• Fiscal project evaluation advisory meeting → Fiscal Project Evaluation Advisory Committee. - Fiscal Project Evaluation Advisory Committee operation rules established. • More AHP evaluators (two people added to the PFS staff per project). • PFS requests made half-annually → quarterly (effective November 2016).
2017	• Executive Guideline to Preliminary Feasibility Studies established. - Details on PFS process, analysis methods, criteria, etc.
2018	• PFS for national R&D projects transferred to the Ministry of Science and ICT (commissioning).

▎Table II-1▎Continued

Year	Event
2019	• Fiscal Project Evaluation Advisory Committee → Fiscal Project Evaluation Committee. • AHP governance reform (effective July 2019). • Changes in policy analysis items (applicable to projects subject to PFS in 2019 first round). - Project conditions, policy impact (employment, living environment, environmental impact, and safety), and special evaluation items. • Changes in the balanced regional development evaluation system (capital and non-capital regions separated). • Welfare and income transfer project evaluation system reform. • Korea Institute of Public Finance included as a PFS institution.
2020	• Compulsory project plan review if PFS exempted for the sake of "state policy."
2021	• Pilot project for Pre-feasibility evaluation on national facilities
2022	• Revisions to the Guideline to the PFS and Executive Guideline to PFS

The Guideline to the PFS and the Executive Guideline to PFS were partially revised in 2022, and the major revisions are as follows:

① Detailed exemption criteria for PFS and expansion of Assessment of Project Plan

② Expansion of pilot projects that fall under the welfare sector, adjustment to calculation methods on evaluation result, strengthened post-verification and evaluation, details on the evaluation items

③ Setting up of regular consultation/coordination system

④ Expansion of benefits items for B/C analysis

⑤ Addition to project-specific items within Policy Effects (Safety effects revised as optional)

⑥ Addition to evaluation items on improvement of regional underdevelopment

⑦ Improved composition and operation of sector sub-committee under the Fiscal Project Evaluation Committee

⑧ Ensured consistency of TPCM guidelines and the coverage of total project cost

⑨ Abolition of the pilot PFS system

⑩ Introduction of fast-track PFS procedure

⑪ Details provided for timing for withdrawal of PFS

⑫ Strengthened provision of information such as progress of PFS implementation

⑬ Improved composition of sector sub-committee

2. Projects Subject to PFS and Types of PFS

A. Projects subject to and exempted from PFS

1) Projects subject to PFS

Construction, informatization, and national R&D projects with a total project cost of KRW 50 billion or more and state funding of KRW 30 billion or more, and projects that fall under welfare, healthcare, education, labor, culture and tourism, environmental preservation, agriculture, ocean and fisheries, and industry and small and medium enterprises ("other fiscal projects") with mid-long fiscal expenditures of KRW 50 billion or more, as defined below, are subject to PFS.

Construction projects refer to the projects that involve construction work such as civil engineering and building. Informatization projects are defined as the projects funded by informatization budgets in accordance with the project-specific guidelines under the Detailed Guidelines for Budget Policy. Other fiscal projects are projects that fall under welfare, healthcare, education, labor, culture and tourism, environmental preservation, agriculture, ocean and fisheries, and industry and small and medium enterprises under the program budget scheme and that are not classified as construction or informatization projects.

PFS are applicable to all projects that receive the government's financial support including projects directly conducted by the state, projects commissioned by the state, projects subsidized by local governments, and PPP projects. When carrying out PFS of government-solicited PPP projects, PIMAC may also conduct feasibility studies under the Act on Public-Private Partnerships in Infrastructure.

2) Projects exempted from PFS

As provided in Article 38(2) of the National Finance Act, the following projects are exempted from PFS:

① Construction or extension of public office buildings, correctional facilities, or elementary or secondary educational facilities

② Projects for the restoration of cultural heritage

③ Confidential projects relating to national security or national defense

④ Projects relating to inter-Korean exchange and cooperation or implemented under an agreement or treaty between states

⑤ Projects for simple amelioration, maintenance, or repair to improve the utility of existing facilities, such as road maintenance or repair or the improvement of decrepit waterworks

⑥ Projects urgently required for disaster recovery, safety, health, or food safety under Article 3, Subparagraph 1 of the Framework Act on the Management of Disasters and Safety

⑦ Projects approved by the competent Standing Committee of the National Assembly and that need to be implemented urgently for disaster prevention

⑧ Projects that need to be implemented by law

⑨ Projects for which PFS are of no practical use, for example, a subsidy or loan for personnel expense or operating expense of a funded or subsidized institution

⑩ Projects pursued by state policy for balanced regional development or urgent economic or social needs, which should meet all of the following requirements (if a project failed a PFS earlier due to insufficient economic feasibility, etc., such a project may be exempted from PFS only if economic or social conditions surrounding the project have changed, for example, the implementation of associated projects or developments in surrounding areas, or if the project has been replanned in consideration of the results of the previous PFS). In such cases, the details of the project exempted from PFS and the reasons for the exemption should be reported to the competent Standing Committee of the National Assembly without delay:

Ⓐ The project should have a specific project plan formulated with regard to the purposes and scale of the project, a plan for implementation, etc.

Ⓑ The project should be finally approved by the State Council as a project that needs to be implemented under national policies.

B. Types of PFS

Other than general PFS applicable to the projects mentioned above, a package PFS, project plan review, or pilot PFS may be conducted.

1) PFS on a package project

For a package project that consists of a multiple number of individual projects where individual project elements contained therein have strong correlations and are likely to influence priority, for example, five-year state road or state-supported provincial road plans, the individual projects contained in a single project package may be subject to a package PFS.

2) Assessment of Project Plan

If needed, the Minister of Economy and Finance may review projects exempted from PFS for their funding plans, mid-/long-term financial requirements, effective alternatives, among others, in a way comparable to PFS to determine the appropriate scale of the projects and reflect the findings in budgeting and funding plans.

3. Process

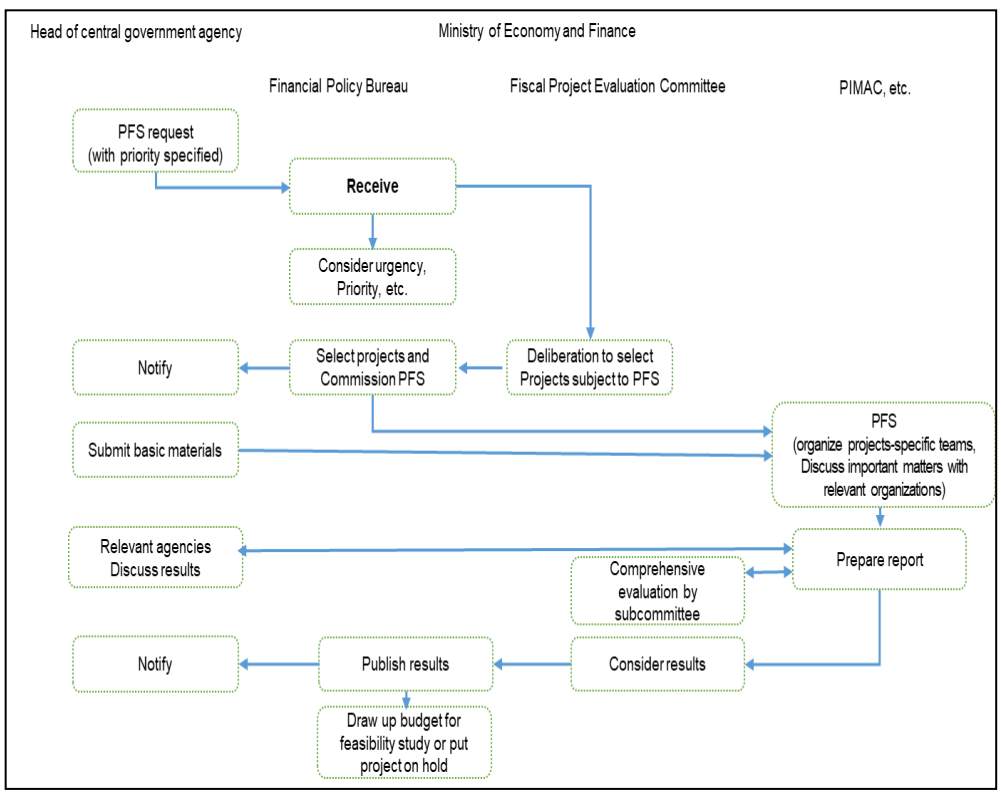
A. Designation of projects subject to PFS

Under the Operational Guideline for Preliminary Feasibility Studies, the Minister of Economy and Finance designates projects subject to PFS after deliberation by the Fiscal Project Evaluation Committee ex officio or upon request of the heads of central government agencies. If the head of a central government agency intends to include a project subject to PFS in its budget or fund management plan, in principle, he/she shall file a PFS request with the Minister of Economy and Finance at least two years prior to the implementation of the project given the time required for the study. However, if there is an urgent project or there is an unavoidable circumstance, a PFS may be requested for a new project scheduled for the following year.

The Minister of Economy and Finance reviews the central government agencies' PFS requests based on the PFS project selection criteria and designates projects subject to PFS after deliberation by the Fiscal Project Evaluation Committee. PFS may be conducted without the request of the head of the corresponding central government agency if deemed necessary in the view of

budgeting, fund management planning, etc. PFS are commissioned by the Minister of Economy and Finance to KDI, the Korea Institute of Public Finance (KIPF), or the Korea Institute of S&T Evaluation and Planning (KISTEP) or the Science and Technology Policy Institute (STEPI) if a national R&D project. [Figure II-1] shows the selection process.

Figure II-1 Selection of projects subject to PFS and implementation process



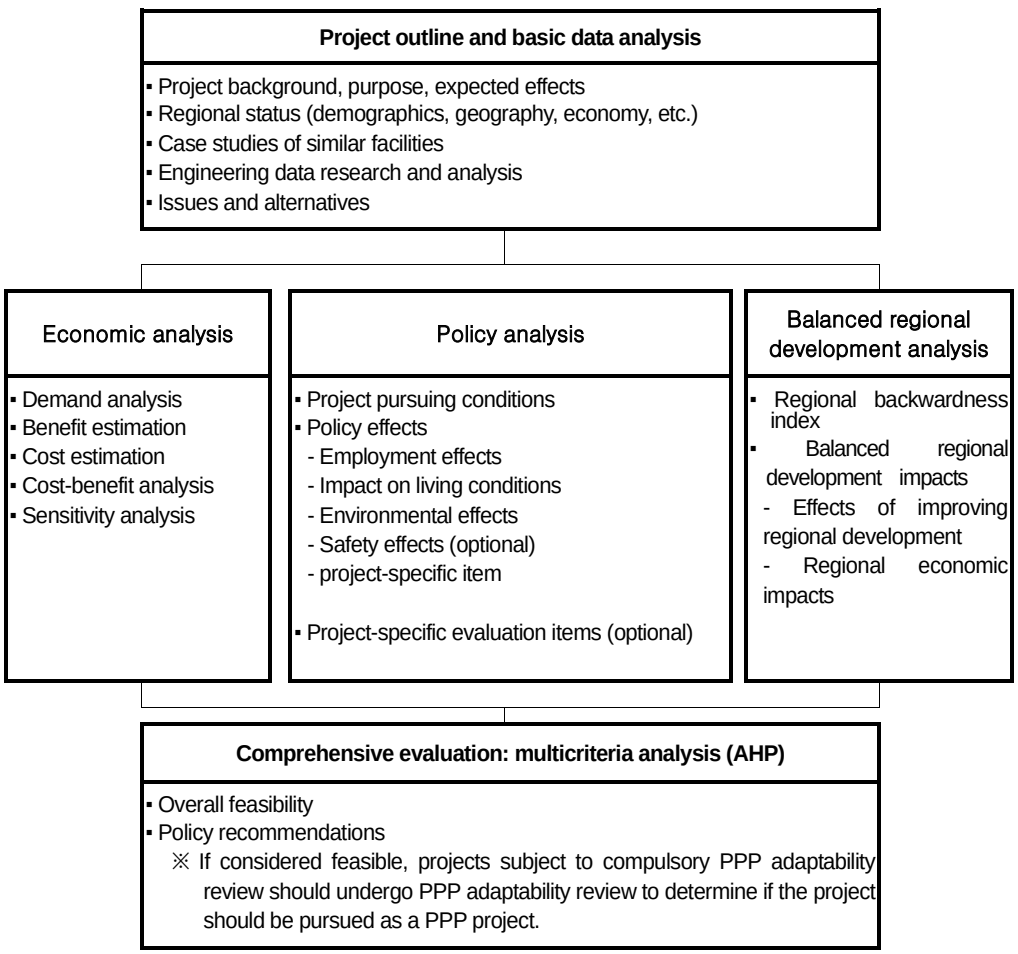
Source: KDI PIMAC website (http://pimac.kdi.re.kr).

B. PFS process

The basic principles of PFS are as follows: First, analyze the project outline and basic data to highlight the issues relevant to the project. Second, estimate demand, benefits, and costs for economic feasibility analysis. Third, analyze the social conditions for project implementation, the policy effects, and (optionally) project-

specific evaluation items for policy feasibility analysis. Fourth, to prevent regional imbalance from worsening and improve regional equality, specifically take the project's position in the national economy based on the analysis of factors that influence balanced regional development such as ripple effects over the regional economy, the region's relevant underdevelopment. Fifth, conduct multi-criteria analysis of the findings from the economic feasibility analysis, policy analysis, and balanced regional development analysis.

▎Figure II-2▎Selection of projects subject to PFS and implementation process



Notes: 1) For informatization projects, technical feasibility analysis is conducted in addition to the economic feasibility analysis, policy feasibility analysis, and balanced regional development analysis. Technical feasibility analysis may be omitted if the main content of the project is construction work.

2) Balanced regional development analysis is not conducted for projects pursued in the capital region or if the project's spatial scope or its effects are not confined in a specific area.

3) For projects where cost-benefit analysis is not considered appropriate, cost-effectiveness analysis can be performed.

4) Among other fiscal projects, the 'welfare and income transfer' project carries out a 100-point evaluation for each analysis area such as 'economic and social environment analysis, adequacy of project design, and cost-effectiveness' during the comprehensive evaluation, and 1. Project implementation is appropriate if all of three evaluation areas score 85 points or higher or the overall score is 255 points of higher, 2. Re-Request for PFS after adjusting the project plan if two or more of the three evaluation areas score less than 75 points or the overall score is lower than 225 points, 3. In cases other than Subparagraph 1 and 2, the procedure of project implementation is followed on the condition of supplementing the project plan (items requiring supplementation of the project plan, supplementary measures, etc. must be fully presented in detail)

Sources: Ministry of Economy and Finance, Operational Guideline for Preliminary Feasibility Studies, December, 2022.

▎Table II-2▎ shows the summary of PFS including the background and legal grounds, conditions subject to PFS, and the PFS process and structure.

▎Table II-2▎ Overview PFS

Category	Overview
Background and legal grounds	□ Overview of PFS • PFS is established by the Minister of Economy and Finance with the aim to draw up budgets and fund management plans for new large-scale projects. • Legal grounds: Article 38 of the National Finance Act and Article 13 of its Enforcement Decree. □ Background and purpose of PFS • Implementation of numerous unreasonable projects due to poor performance of feasibility studies before 1999 • PFS were introduced to exert prudence in new investment in government-financed projects, thereby improving the efficiency of fiscal management.
Projects	□ Projects subject to PFS • New projects that include government financial support as follows: : Construction, informatization, and other fiscal projects with a total project cost of KRW 50 billion or more and state funding of KRW 30 billion or more (in line with Article 28 of the National Finance Act, projects that fall under welfare, healthcare, education, labor, culture and tourism, environmental preservation, agriculture, ocean and fisheries, and industry and small and medium enterprises with mid-long fiscal expenditures of KRW 50 billion or more). □ Projects exempted from PFS • Projects that fall under Article 38(2) of the National Finance Act. : Construction or extension of public office buildings, correctional facilities, elementary or secondary educational facilities, cultural heritage restoration, etc. • Assessment of project plan: reviews appropriate scale of projects exempted from PFS.

▌Table II-2▐ Continued

Category	Overview
Process and structure	□ Process ・ PFS request (head of central government agency → Minister of Economy and Finance). ・ Selection for target project(reviewed by Minister of Strategy and Finance, Fiscal Project Evaluation Committee). ・ PFS (Minister of Economy and Finance → KDI PIMAC, KIPF). □ Main contents of PFS ・ Economic feasibility analysis: Cost-benefit analysis in consideration of the project's demands, benefits, costs, etc. (financial analysis if needed). ※ B/C: Expected benefits divided by costs, expressed in present value. ・ Policy analysis: Qualitative evaluation of important factors that cannot be quantified, hence not included in economic analysis, but are important to determine the feasibility of the project. ※ Conditions for project implementation, policy effects, project-specific evaluation items, etc. ・ Balanced regional development analysis: Reflecting higher-level national policy of balanced regional development. ※ Regional backwardness index, balanced regional development impacts (effects of improving regional development, regional economic impacts) ※ For projects in the metropolitan area, balanced regional development analysis is not conducted. ・ Comprehensive evaluation (AHP): Determine the feasibility of the project based on analysis results for each evaluation item. ※ AHP: Analytic Hierarchy Process to measure relative importance of factors to draw quantitative conclusions.

Section 2. Overview of Reassessment Studies of Feasibility

1. Total Project Cost Management

In accordance with Article 50 of the National Finance Act and Articles 21 and 22 of its Enforcement Decree, the Guideline for Total Project Cost Management is introduced with the purpose of improving the efficiency of fiscal expenditures by rationally adjusting and managing the total cost of a large-scale project implemented with the national budget or fund for each stage of project implementation. The total project costs are managed in various stages including project planning, PFS, feasibility studies, basic design, working design, procuring and contracting, construction, and completion. Also, changes in project durations are subject to review.

In order to improve the efficiency of fiscal investment and prevent budget waste in advance, the Guideline for Total Project Cost Management stipulates that projects that meet certain requirements should be subject to Reassessment of Demand Forecast and Reassessment Study of Feasibility. Or certain projects requiring adjustment of total project cost should be subject to Pre-feasibility review on design modification and Assessment of Design Modification as well as review of opinions by PFS implementing agencies. The detailed history of this system is as follows:

The Total Project Cost Management (TPCM) was first provided in Article 3 of the Enforcement Decree of the Budget and Accounts Act in 1989. The total project costs are managed in various stages of project implementation including project planning, PFS, feasibility study, basic design, working design, ordering and contracting, construction, and completion of the project. Also, changes in period of a project should be subject to initiation of a consultation process with MOEF in accordance with TPCM. After that, the Guideline for Total Project Cost Management was established in 1994, applicable to projects with total project costs of KRW 10 billion or more. In 1995, the total project cost threshold for projects subject to TPCM was raised from KRW 10 billion to KRW 50 billion, which was later further subcategorized into KRW 50 billion for civil engineering projects and KRW 20 billion for architectural projects in 1996. To put project cost management under tighter control, the concept of PFS was introduced and implemented together with the TPCM system in 2000. In 2003, Reassessment of Feasibility Study was

introduced for projects with more than 20% increases in total project costs. In 2005, a set of total project cost adjustment criteria by sector, including roads and railroads, was established. In 2006, Reassessment of Demand Forecast was introduced for project with significant changes in demand during project implementation. In the same year, Pre-feasibility review on design modification was adopted in cases where professional investigation is required in the design change items for the project with changes in total project costs after the start of construction. In 2008, following the amendment to the Enforcement Decree of the National Finance Act (July 23, 2008), the thresholds for projects subject to TPCM were lowered to KRW 30 billion for civil engineering projects and KRW 10 billion for architectural projects, although the numbers were brought back to KRW 50 billion for civil engineering and KRW 20 billion for architectural projects by the amended Enforcement Decree of the National Finance Act (November 10, 2010) in 2010. In 2013, exemption requirements for Reassessment Study of Feasibility were additionally adopted for civil engineering and informatization projects with state funding support of less than 30 billion won. In 2014, a clause was newly added to attach additional review of opinions by PFS implementing agencies if the size and amount of the project set in the PFS or feasibility study were exceeded when the total project cost is adjusted. In addition, the definition of total project cost in the construction sector has been changed to include site-related costs borne by the existing state-owned land or local governments. In 2016, costs related to state-owned land were excluded from the total project cost, and the informatization projects and R&D projects with aim to build foundations for research activities were newly subject to TPCM. In 2017, total project cost adjustment was added in line with the extension of the construction period, and in 2018, the scope of RSF and review of opinions by PFS implementing agencies was adjusted. In 2019, the PFS and RSF scheme were revamped. In 2022, evaluation items for RSF were changed in line with the partial revision to the Guideline to the PFS and Executive Guideline to PFS. Those changes includes expansion of benefits items for B/C analysis, addition to project-specific items within Policy Effects (Safety effects are revised as optional), addition to evaluation items on improvement of regional underdevelopment, ensured consistency of TPCM guidelines and the coverage of total project cost, etc.

▎Table Ⅱ-3▎History of the TPCM

Year	Major changes in TPCM and government-financed project evaluations
1989	• TPCM established(amendment to the Enforcement Decree of the Budget and Accounting Act).
1994	• *Guideline for Total Project Cost Management* established for projects with total project costs of KRW 10 billion or more • **TPCM project thresholds established** (major investment projects with a project period of two years or more and with total construction costs of KRW 10 billion or more, projects with total construction costs of less than KRW 10 billion that require total project cost management).
1995	• TPCM thresholds **change** (total project costs KRW 10 billion → KRW 50 billion).
1996	• TPCM thresholds **subdivided** (KRW 50 billion for civil engineering projects, KRW 20 billion for architectural projects).
2000	• In order to strengthen the management of the total project cost, PFS was introduced and managed closely with TPCM
2003	• RSF introduced for the projects with more than 20% increases in total project costs.
2006	• Reassessment of Demand Forecast was introduced for project with significant changes in demand during project implementation • Pre-feasibility review on design modification was adopted in cases where professional investigation is required in the design change items for the project with changes in total project costs after the start of construction.
2008	• Following the amendment to the Enforcement Decree of the National Finance Act(July 23, 2008), TPCM thresholds adjusted (KRW 30 billion for civil engineering projects, KRW 10 billion for architectural projects). • Simplified PFS introduced (projects with estimated total project costs of KRW 40 billion or more but less than KRW 50 billion, and projects for which project implementation has already been decided)
2009	• Total project cost criteria for simplified PFS removed; simplified PFS applicable to projects exempted from PFS. • **Simplified RSF introduced (projects exempted from RSF).**

▎Table Ⅱ-3▎Continued

Year	Major changes in TPCM and government-financed project evaluations
2010	• In line with the amendment of the Enforcement Decree of the National Finance Act (November 10, 2010), TPCM thresholds was raised to KRW 50 billion or more for civil engineering and informatization projects, KRW 20 billion r more for architectural projects).
2013	• **RSF exemption criteria added: projects exempted from PFS, and civil engineering and informatization projects with state funding of less than KRW 30 billion.**
2014	• **Costs of state-owned land and site-related costs borne by local governments** added to the definition of the total costs of construction projects. • **RDF baseline changed:** estimates in the previous stage → estimates in the initial project • Facility-related other expenses recategorized from other incidental costs to construction costs. • **PFS implementing agencies' opinions:** opinions taken into consideration for total project cost adjustments in excess of the limits and amount ceilings set in the PFS or feasibility study.
2016	• **Costs of state-owned land** removed from total project costs (costs borne by local governments included). • New TPCM requirements for informatization and R&D projects (informatization plans, consultation process for total project cost adjustment, and adjustment standards)
2017	• New provisions on the adjustment of the total project costs on the grounds of the extension of the construction period.
2018	• Scope of RSF and review of opinions by PFS implementing agencies redefined.
2019	• PFS and RSF scheme revamped.
2022	• In 2022, evaluation items for RSF were changed in line with the partial revision to the Guideline to the PFS and the Executive Guideline to PFS**.**

Here, total project costs refer to all costs required to implement the project as provided in Article 21(1) of the Enforcement Decree of the National Finance Act. They include costs borne by the central government, local governments, public institutions, and private players. The total project costs of a construction project

include all costs incurred for construction such as construction costs, compensation costs, incidental costs, and etc. The total project costs of an informatization project refer to all costs incurred for system establishment, which include equipment purchases, rents, software development, and etc.

Projects subject to TPCM refer to the projects directly implemented by the state, projects commissioned by the state, projects implemented by local governments and public institutions(public enterprises, quasi-government organizations, and other public institutions as defined in Article 5 of the Act on the Management of Public Institutions) that are supported by the state's budget or funding support or subsidies, and projects implemented by private institutions. These projects are defined as civil engineering and informatization projects with a total project cost of 50 billion won or more and the state's budget support of 30 billion won or more, with a project period of 2 years or more, and construction projects with a total project cost of 20 billion won or more (including incidental construction costs such as electricity, machinery, equipment, etc.)

2.Reassessment Study of Feasibility

A. Requirements for RSF

The requirements for TPCM and RSF are provided in Article 50 of the National Finance Act.

① With respect to a large-scale project prescribed by Presidential Decree that takes at least two years for completion, the head of each central government agency shall determine the scale of the project, the total project cost, and the project period, and shall consult with the Minister of Strategy and Finance in advance. The foregoing shall also apply to the modification or change of the scale of the project, the total project cost, or the project period already consulted.

② With respect to a project under paragraph (1) that falls under any of the following, as requested by the Board of Audit and Inspection based on the audit findings, the Minister of Strategy and Finance shall conduct a review of the feasibility of the project (hereinafter referred to as the "reassessment study of feasibility") and report the results of the review to the National Assembly:

(1) A project for which a preliminary feasibility study has never been conducted because its total project cost did not reach the scale subject to a preliminary feasibility study, but the relevant total project cost has increased to the scale subject to a preliminary feasibility study during the course of the implementation of the project
(2) A project that has been implemented without undergoing a preliminary feasibility study, although it falls within the projects subject to a preliminary feasibility study, because the project cost was reflected in the budget
(3) A project of which total costs have increased to a threshold provided by a Presidential Decree
(4) A project for which the estimated demands for the relevant project have been decreased by a certain degree that shall be provided by a Presidential Decree due to changes in conditions of the project, etc.
(5) Other projects for which it is necessary to conduct an RSF to avoid, for example, waste of budget

③ Notwithstanding the provisions in Paragraph 2, RSF may be omitted in any of the following situations:
(1) If a significant part of the project has been constructed, hence significant sunk costs
(2) If there are no actual benefits of conducting an RSF, for example, where the increases in the total project costs are primarily associated with statutory costs and changes in higher-order plans
(3) If the project is pursued for balanced regional development and/or in response to urgent economic or social needs
(4) If the implementation of the project is urgently needed for disaster prevention, recovery support, and/or safety

④ The Minister of Strategy and Finance shall conduct an RSF requested by the National Assembly by its resolution and report the results of the review to the National Assembly.

⑤ The Minister of Strategy and Finance shall prepare guidelines for the management of total project costs and shall notify the head of each central government agency thereof.

The requirements for RSF are provided in Article 49 of the Guidelines for Total Project Cost Management.

① In accordance with Article 50(2) of the National Finance Act and Article 22 of its Enforcement Decree, the Minister of Strategy and Finance shall conduct an RSF for any of the following:

(1) A project for which the PFS has never been conducted because its total project costs did not reach the PFS threshold provided in Article 38 of the National Finance Act, Article 13 of the Enforcement Decree of the same act, and the Operational Guideline for Preliminary Feasibility Study, but the relevant total project costs have increased to the PFS threshold during the course of implementation of the project

(2) A project that was subject to a PFS but has been implemented without undergoing a PFS by virtue of the state budget or fund management plans

(3) A project of which the total project costs, excluding inflation or increase in value of land, have increased due to increases in the project scale or area by a certain proportion that shall be provided by the Minister of Strategy and Finance based on the size of the project within the extent of 10%–20% compared to the total project costs initially confirmed in consultation with the Minister of Strategy and Finance

The increases in the total project costs shall be calculated based on the total project costs estimated during the PFS. If the project did not undergo a PFS, the increases in the total project costs shall be calculated based on the initial total project costs included in the budget, and if the project underwent an RFS, it will be based on the total project costs confirmed after the RFS.

To determine if the total project costs have increased by a certain proportion, the certain proportion shall mean 20% of the total project costs if the project's total costs are less than KRW 100 billion, or 15% of the total project costs if the project's total costs are KRW 100 billion or more.

(4) A project for which an RSF has been requested to be conducted by the head of a central government agency under Article 39(2), or a project for which the demands estimated during an RSF under Article 40 have been decreased by 30% or more compared with the initial estimated demands from the PFS, basic plans, or a feasibility study

(5) A project that has been reported to the Reporting Center on Extravagant Budget Spending of the Ministry of Strategy and Finance as a case of extravagant budget spending and that the Minister of Strategy and Finance deems it is highly foreseeable to waste the budget due to overlapping investments, etc.

(6) A project for which an RSF has been requested to be conducted by the Board of Audit and Inspection Korea based on the audit findings or a resolution by the National Assembly

(7) A project that the Minister of Strategy and Finance or the head of a central government agency deems it necessary to conduct an RSF, for example, in the event of any of the following subparagraphs:

a. A project that is continued without a second PFS after being considered to have insufficient feasibility from its first PFS

b. A project whose transport facilities development project operator, in consultation with the Minister of Land, Infrastructure and Transport pursuant to Article 19(3) of the National Transport System Efficiency Act, has requested that the Minister of Strategy and Finance take necessary measures since a significant difference has been found between the results of a feasibility evaluation under Article 18 of the National Transport System Efficiency Act and the results of a preliminary feasibility study under Article 38 of the National Finance Act

c. A project, of which construction costs are managed by construction work type as categorized in Schedule 3 attached to Article 5(2) and for which design work is staggered, that experiences an increase in construction costs for a certain type of construction work by 20% or more compared with the total costs for that construction work determined under Article 1(3) (the same shall apply to aggregate costs for that construction work; reserve funds, if any, shall be included in the total project costs used as the baseline)

② Notwithstanding the provisions in Paragraph 1, the Minister of Strategy and Finance may not conduct an RSF if he/she deems that there is no practical use due to any of the following:

(1) If a significant part of the project has been constructed, hence significant sunk costs

(2) If the increases in the total project costs are primarily associated with external factors such as statutory costs and changes in higher-order plans

(3) If the project is pursued for balanced regional development and/or in response to urgent economic or social needs as follows:

a. Projects for balanced regional development: infrastructure projects pursued to resolve significant imbalance among regions or to ensure balanced development among metropolitan areas, etc.

b. Projects in response to urgent economic or social needs: projects that aim to respond to important changes in internal or external conditions such as economic recession, massive unemployment, and sudden changes in foreign exchange rates

(4) If the implementation of the project is urgently needed for disaster prevention, recovery support, and/or safety

(5) If the project is exempted from the RSF under Article 38(2) of the National Finance Act and Article 11 of the Operational Guideline for Preliminary Feasibility Study

(6) If the project is a civil engineering or informatization project that receives state financial support of less than KRW 30 billion

Meanwhile, Article 49-2 of the *Guideline for Total Project Cost Management* provides that, where the RSF is not conducted under any of the circumstances provided in Article 49(2) of the National Finance Act, Reassessment of Project Plan (formerly simplified RSF) may be conducted with the aim to consider the appropriate level of project scale, costs, and alternatives in a way comparable to an RSF.

B. Key elements of the RSF

Basically, RSF refers to the process to reexamine the feasibility of a projet in the course of the project implementation. In this context, RSF is conducted by applying the sector-specific research methodology for PFS.

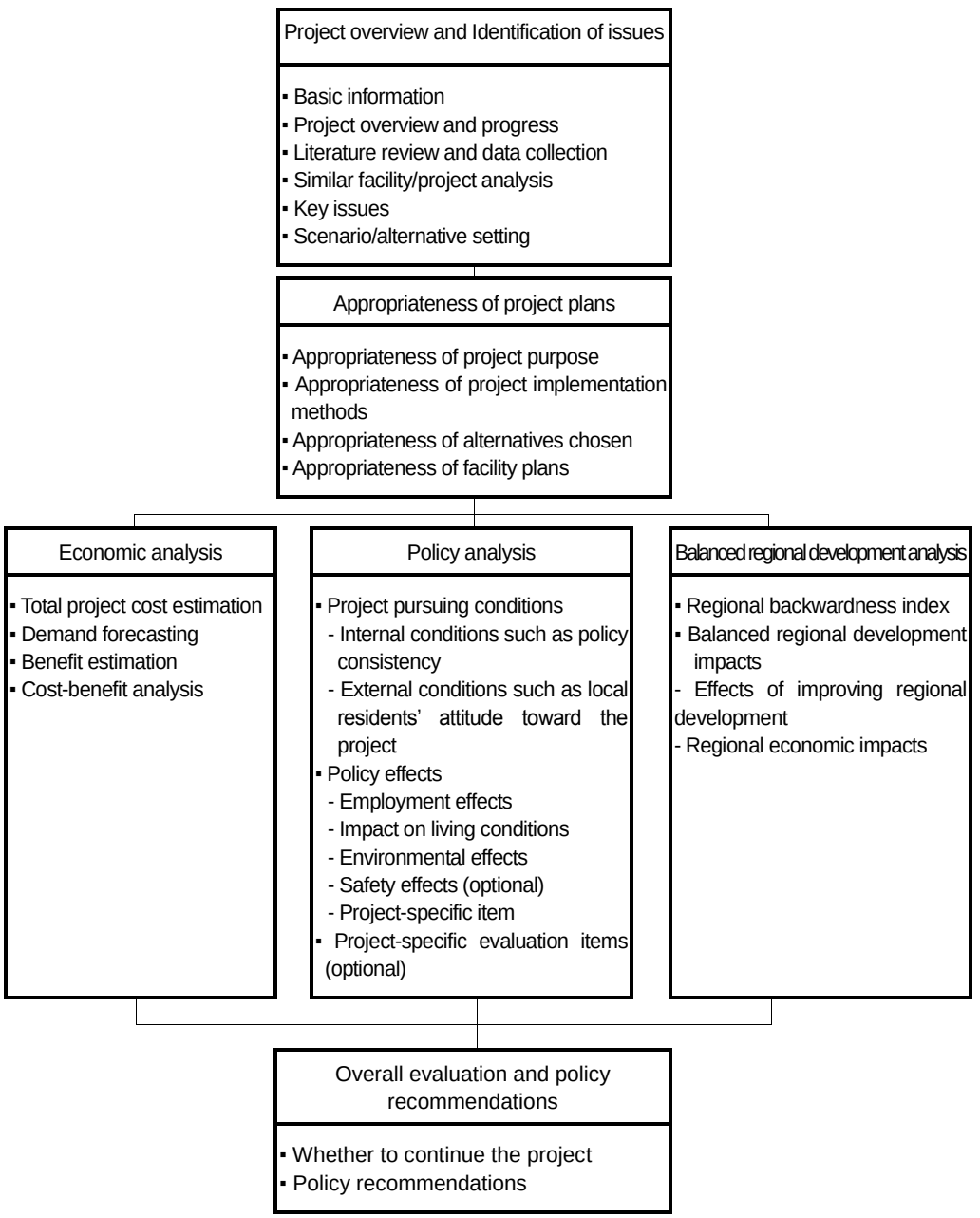
Article 51 of the *Guideline for Total Project Cost Management* provides the content of the RSF as follows: review the project overview and the key issues in the RSF, consider the appropriateness of the project plan, examine the findings from each stage of the RSF such as economic analysis, policy analysis, and balanced regional development analysis, and summarize the results to decide on the feasibility of the project and present alternatives. Reviewing the project overview and progress involves looking into the basic information of the project, including the project's background, objectives, and expected outcomes.

In addition, RSF reviews the progress of the project from the project initiation to the RSF as well as current status of budget execution. At the same time, RSF examines any changes in the total project costs and what has caused the project to undergo the RSF. Identifying the key issues in the RSF means to consider if the purpose of the project is appropriate, if there are any issues relating to the

appropriateness of the project purpose, and if there are issues relating to the appropriateness of the project implementation strategy, economic analysis, policy analysis, technical analysis, and total project cost estimation including the selection of structure, and etc. Review of project plan includes examining the appropriateness of the project purpose, design standards of project plan, and alternatives selection.

In an economic analysis, the same criteria of PFS are applied, but the analysis is conducted by adjusting it to fit the nature of the RSF, for example, how to treat sunk costs. Sector-specific guidelines for PFS can be applied for demand forecasting, but the findings are presented in comparison with demand forecast results from the previous stage. Total project costs are estimated based on construction-work-specific quantity and unit price estimation. Contingencies are not reflected in RSF if the project is at the stage where the results of basic design and working design are available. For the economic analysis, the reference year is the year preceding the RSF, and the *Operational guideline for PFS* is applied for social discount rate and analysis period. Annual input rates are based on the PFS Guidelines with possible adjustments in consideration of budget allocation. The costs of design and construction already completed are treated as sunk costs, but land purchase costs are not considered as sunk costs. For policy analysis, the criteria provided in the PFS Guidelines are applied with possible adjustments in consideration of project-specific characteristics. The analytic hierarchy process (AHP) provided by the *Operational guideline for PFS* is applied in the comprehensive evaluation in order to determine the feasibility of the project based on the progress of project implementation, economic analysis, policy analysis, and balanced regional development analysis in order to decide on whether or not to continue the project implementation. The RSF provides appropriate amount to adjust the total project costs, and suggests improvements in project implementation, such as preferred project implementation methods, and technical measures to improve the quality of the facilities. If the project is considered unfeasible, strategies to tune-up the project, such as the scale of the project and investment timing, are presented.

▎Figure II-3▌ RSF workflow



Note: Balanced regional development analysis is not conducted for projects pursued in the capital region or if the project's spatial scope or its effects are not confined in a specific are

Section 3. Track Records of Government-Financed Project Evaluation

1. Track Records from 1999 to 2022

Track records of government-financed project evaluations such as PFS and RSF conducted by KDI are summarized as shown in <Table Ⅱ-4>. Those records are classified based on the projects or which the study has been completed.

▎Table II-4 ▎track records of PIMAC's government-financed project evaluations conducted by KDI from 1999 to 2022

Year	PFS		RSF			
	PFS	Assessment of Project Plan	RSF	Reassessment of Project Plan	RDF	Assessment of Design Modification/Pre-Feasibility Review of Design Modification
1999	20	-	-	-	-	-
2000	30	-	-	-	-	-
2001	41	-	-	-	-	-
2002	30	-	-	-	-	-
2003	32	-	6	-	-	-
2004	55	-	6	-	-	-
2005	30	-	9	-	-	-
2006	52	-	19	-	-	1
2007	46	4	14	-	1	-
2008	38	7	21	-	1	-
2009	63	9	31	-	3	3
2010	48	6	31	3	1	1
2011	43	2	15	5	-	-
2012	35	6	11	4	1	-
2013	16	4	9	6	3	1
2014	34	10	18	11	7	-
2015	18	9	10	11	-	4

▎Table II-4▎Continued

Year	PFS		RSF			
	PFS	Assessment of Project Plan	RSF	Reassessment of Project Plan	RDF	Assessment of Design Modification/Pre-Feasibility Review of Design Modification
2016	23	-	11	15	1	8
2017	31	8	9	11	2	3
2018	22	5	4	7	-	6
2019	25	31	6	13	-	5
2020	19	14	2	12	-	9
2021	16	12	6	14	1	10
2022	18	10	2	10	-	11
Total	785	137	240	122	21	62

A. PFS

A total of 785 PFS(based on completed projects) were conducted between 1999 and 2022. By sector, road and rail projects accounted for more than half (about 52%) of the PFS conducted so far, with 266 and 141 projects, respectively.

▎Table Ⅱ-5▎PFS track records

(Unit: projects)

Year	Road	Railway	Port	Culture, tourism, architecture	Water resource (dam)	Others	Total
1999	11	2	1	4	1	1	20
2000	11	7	5	2	1	4	30
2001	20	14	1	5	-	1	41
2002	9	8	2	2	5	4	30
2003	10	7	3	5	5	2	32
2004	24	13	1	2	3	12	55
2005	11	6	2	1	3	7	30

▌Table Ⅱ-5▌Continued

Year	Road	Railway	Port	Culture, tourism, architecture	Water resource (dam)	Others	Total
2006	27	10	5	5	1	4	52
2007	30	5	1	2	1	7	46
2008	12	2	4	3	2	15	38
2009	22	5	2	2	12	20	63
2010	7	14	2	1	2	22	48
2011	6	5	2	11	5	14	43
2012	7	7	5	6	5	5	35
2013	8	-	1	2	1	4	16
2014	6	4	2	12	2	8	34
2015	3	3	2	7	-	3	18
2016	5	6	2	3	4	3	23
2017	10	7	-	7	4	3	31
2018	8	5	1	4	2	2	22
2019	5	2	4	5	1	8	25
2020	7	3	1	3	1	4	19
2021	2	3	1	4	2	4	16
2022	5	3	3	1	4	2	18
Total	266	141	53	99	67	159	785

Notes: 1) The number of projects for which PFS had been completed as of the end of December 2022.
2) Other projects include airports, informatization, R&D, and other fiscal projects.
3) Architectural projects were counted as a separate category in 2011 and onward, before which those projects were categorized as other projects.
4) Assessment of Project Plan(simplified PFS) excluded.

The gross value of the projects that underwent PFS between 1999 and 2022 was KRW 407.1 trillion. The annual value of the projects subject to PFS ranged between KRW 6 and 34 trillion, the majority being road and railways projects accounting for 62.7%.

▎Table Ⅱ-6▎Gross value of projects subject to PFS

(Unit: KRW trillion)

Year	Road	Railway	Port	Culture, tourism, architecture	Water resource (dam)	Others	Total
1999	14.9	2.0	0.1	0.3	0.6	0.7	18.7
2000	4.9	4.6	0.8	1.5	0.0	0.5	12.4
2001	6.1	12.1	0.1	1.4	-	0.1	19.7
2002	5.9	6.2	0.3	0.5	1.1	0.7	14.7
2003	5.3	5.4	1.9	1.0	1.3	0.8	15.7
2004	7.1	6.4	1.0	1.0	0.2	2.5	18.3
2005	3.5	4.6	0.4	1.4	0.4	1.7	12.1
2006	7.7	7.3	1.3	0.6	0.1	1.1	18.1
2007	6.8	4.2	2.0	0.2	0.1	7.6	20.9
2008	2.6	1.1	1.0	0.3	0.4	5.0	10.4
2009	13.1	7.7	0.4	0.3	3.4	9.5	34.4
2010	5.7	17.9	0.5	0.1	0.5	9.3	34
2011	1.3	6.1	0.6	1.9	2.0	3.7	15.6
2012	1.8	10.3	2.1	1.1	0.8	1.7	17.8
2013	1.9	-	0.1	0.1	0.4	1.3	3.8
2014	2.1	13.7	0.6	2.0	0.5	3.1	21.9
2015	2.3	1.3	0.5	1.3	-	1.1	6.5
2016	1.1	4.0	0.3	0.3	0.6	0.6	6.9
2017	3.8	7.2	-	0.8	1.2	8.3	21.3
2018	1.2	8.2	0.1	0.7	0.3	0.8	11.3
2019	2.1	6.8	0.9	1.0	0.2	3.1	14.1
2020	4.0	3.7	0.5	0.7	0.4	2.9	12.1
2021	1.5	1.2	10.2	1.1	0.3	1.2	15.6
2022	1.9	4.3	8.7	0.1	2.8	12.9	30.8
Total	108.6	146.3	34.4	19.7	17.6	80.2	407.1

Note: Sum of the total costs of projects (plans) that completed PFS as of the end of December 2022.

Of all projects subject to PFS, the ones pursued by the Ministry of Land, Transport and Infrastructure and the Ministry of Maritime Affairs and Fisheries accounted for 65.1%, or 511 projects. More recently, the scope of projects subject to PFS has been expanded, leading to an increasing number of ministries and agencies using the PFS, including the National Tax Service and the Ministry of Employment and Labor.

▎Table Ⅱ-7▎PFS track records by ministry

(Unit: projects)

Year	Ministry of Land, Transport and Infrastructure		Ministry of Maritime Affairs and Fisheries	Ministry of Trade, Industry and Energy		Ministry of Education		Ministry of Culture, Sports and Tourism	Ministry of Agriculture, Food and Rural Affairs	Others
	Ministry of Construction and Transport	Rail Authority[1]		Ministry of Industry and Energy	Ministry of Finance and Economy[2]	Ministry of Education, Science and Technology[3]	Ministry of Education			
1999	12	1	2	1	-	-	-	3	1	-
2000	12	7	5	1	-	1	-	2	-	2
2001	27	8	2	-	-	-	-	2	-	2
2002	19	4	3	2	-	-	-	2	-	-
2003	17	4	7	-	-	-	1	1	-	2
2004	26	1	4	-	9	1	-	2	2	10
2005	20	-	3	-	-	-	2	-	2	3
2006	33	-	10	-	2	2	-	-	1	4
2007	25	-	2	2	1	-	1	1	1	13
2008	21			7		1		1	1	7
2009	42			8		3		2	3	5
2010	26			9		5		2	2	4
2011	19			5		2		2	1	14
2012	22			2		4		2	2	3
2013	13			1		1		-	-	1
2014	10			5		2		3	4	1

▌Table Ⅱ-7▌ Continued

Year	Ministry of Land, Transport and Infrastructure		Ministry of Maritime Affairs and Fisheries	Ministry of Trade, Industry and Energy		Ministry of Education		Ministry of Culture, Sports and Tourism	Ministry of Agriculture, Food and Rural Affairs	Others
	Ministry of Construction and Transport	Rail Authority[1]		Ministry of Industry and Energy	Ministry of Trade, Industry and Energy[2]	Ministry of Finance and Economy[2]	Ministry of Education, Science and Technology[3]			
2015	6		2	1		2	-	2	1	4
2016	12		2	1		-	-	2	4	2
2017	19		3	2		-	-	1	1	5
2018	13		1	-		-	-	1	1	6
2019	8		6	1		2	1	-	-	7
2020	8		1	2		-	-	1	1	6
2021	6		1	1		2	1	1	2	2
2022	7		4	-		-	1	-	-	6
Total	511 (65.1%)			60 (7.6%)		35 (4.6%)		34 (4.3%)	27 (3.4%)	111 (14.9%)

Notes: 1) The Rail Authority was privatized as KORAIL in January 2005 and relevant projects were transferred to the Ministry of Land, Transport and Infrastructure.
2) Following the government organization reform in 2008, the projects managed by the former Ministry of Finance and Economy were transferred to the Ministry of Knowledge Economy, which was later succeeded by the Ministry of Trade, Industry and Energy in March 2013.
3) The Ministry of Education, Science and Technology was substituted by the Ministry of Science and Future Planning in March 2013, which was later succeeded by the Ministry of Science and ICT in July 2017.

Of the projects subject to PFS, 48.9% were found economically feasible (B/C ≥ 1). Port projects were most likely to be economically feasible (64.2%), and the proportions of projects in other areas that met the economic feasibility requirement ranged between 38.3% and 55.3%

▌Table Ⅱ-8▌ Proportions of projects found economically feasible (B/C ≥ 1) in PFS, by area and year

(Unit: %, projects)

Year	Road	Railway	Port	Culture, tourism, architecture	Water resource	Others	Total
1999	36.4	50.0	100.0	25.0	100.0	100.0	45.0
2000	45.5	71.4	80.0	0.0	100.0	50.0	56.7
2001	30.0	50.0	0.0	20.0	-	0.0	34.1
2002	33.3	87.5	50.0	0.0	0.0	75.0	46.7
2003	50.0	71.4	100.0	0.0	60.0	50.0	53.1
2004	50.0	53.8	100.0	0.0	33.3	58.3	50.9
2005	45.5	33.3	100.0	0.0	66.7	71.4	53.3
2006	48.1	20.0	40.0	60.0	0.0	75.0	44.2
2007	53.3	0.0	0.0	50.0	100.0	28.6	43.5
2008	41.7	50.0	75.0	66.7	50.0	26.7	42.1
2009	27.3	20.0	50.0	50.0	66.7	45.0	41.3
2010	42.9	21.4	100.0	100.0	100.0	54.5	47.9
2011	83.3	0.0	50.0	54.5	20.0	42.9	44.2
2012	85.7	0.0	60.0	16.7	60.0	80.0	48.6
2013	37.5	0.0	100.0	0.0	100.0	75.0	50.0
2014	66.7	50.0	50.0	83.3	50.0	50.0	64.7
2015	33.3	66.7	50.0	57.1	-	37.5	47.8
2016	100.0	33.3	0.0	66.7	50.0	66.7	56.5
2017	30.0	42.9	0.0	42.9	75.0	66.7	45.2
2018	62.5	40.0	100.0	50.0	50.0	100.0	59.1
2019	40.0	50.0	75.0	60.0	0.0	75.0	60.0
2020	71.4	0.0	100.0	100.0	0.0	100.0	68.4
2021	0	0	0	50.0	50.0	25.0	25.0
2022	80.0	33.3	66.6	100.0	50.0	0.0	50.0
Total	266	141	53	99	67	159	785
B/C≥1 (Projects deemed feasible)	126	54	34	47	35	88	384
B/C≥1 (% feasibility)	47.4%	38.3%	64.2%	47.5%	52.2%	55.3%	48.9%

Note: 1) The smart grid project categorized as others was divided into six subprojects, each of which underwent economic feasibility analysis.

2) Conditional implementation of other fiscal projects is assumed to have secured economic feasibility.

Of the projects subject to PFS, 66.8% met the overall feasibility requirement (AHP ≥ 0.5). Port projects were most likely to be feasible (77.4%), and railway projects were the least likely, 58.2%.

▌Table Ⅱ-9▐ Proportions of projects that met the overall feasibility requirement in PFS, by area and year

(Unit: %, projects)

Year	Road	Railway	Port	Culture, tourism, architecture	Water resource	Others	% deemed feasible
1999	45.5	50.0	100.0	100.0	100.0	100.0	65.0
2000	27.3	71.4	80.0	0.0	100.0	75.0	53.3
2001	30.0	35.7	100.0	40.0	-	0.0	34.1
2002	33.3	75.0	50.0	0.0	0.0	75.0	43.3
2003	70.0	71.4	100.0	0.0	60.0	50.0	59.4
2004	87.5	53.8	100.0	100.0	66.7	66.7	74.5
2005	36.4	83.3	100.0	100.0	66.7	71.4	63.3
2006	63.0	40.0	40.0	40.0	100.0	50.0	53.8
2007	63.3	20.0	100.0	50.0	100.0	42.9	56.5
2008	75.0	100.0	100.0	100.0	50.0	46.7	68.4
2009	50.0	80.0	50.0	0.0	91.7	80.0	68.3
2010	71.4	64.3	100.0	100.0	100.0	77.3	75.0
2011	83.3	60.0	50.0	81.8	80.0	71.4	74.4
2012	100.0	28.6	80.0	50.0	80.0	100.0	71.4
2013	62.5	-	100.0	50.0	100.0	75.0	68.8
2014	83.3	75.0	50.0	91.7	50.0	75.0	79.4
2015	33.3	66.7	50.0	100.0	-	62.5	69.6
2016	100.0	83.3	50.0	66.7	50.0	66.7	73.9
2017	30.0	42.9	-	57.1	75.0	100.0	51.6
2018	75.0	60.0	100.0	75.0	100.0	100.0	77.3
2019	80.0	100.0	100.0	60.0	100.0	100.0	88.0
2020	100.0	66.7	100.0	100.0	100.0	100.0	94.7
2021	100	33.3	0	100.0	100.0	75.0	75.0
2022	100.0	100.	100.	100.	100.	100.0	
Total projects	266	141	53	99	67	159	785
Projects deemed feasible	165	82	41	67	50	119	524
% feasibility	62.0%	58.2%	77.4%	67.7%	74.6%	74.8%	66.8%

Notes: 1) Based on the (former) Ministry of Planning and Budget's press releases for projects from 1999 to 2002, and AHP ≥ 0.5 in 2003 and thereafter.

2) The smart grid project categorized as others was divided into six subprojects, each of which underwent overall feasibility analysis.

From the introduction of the PFS in 1999 to the end of December 2022, 961 projects underwent PFS including the PFS for the third, fourth, and fifth five-year state road and state-supported provincial road plans and civil engineering, architecture, informatization, and other fiscal projects. By determining projects' feasibility, PFS have helped save approximately KRW 169.9 trillion of budget.

▌Table Ⅱ-10▐ Annual total project costs saved by PFS

(Unit: projects, KRW 100 million)

Year[1)]	Total projects	Total project costs[2)]	Total costs saved[6)]
1999	20	271,559	197,956
2000	30	152,439	57,753
2001	41	198,401	105,823
2002	30	162,059	73,120
2003	32	176,278	39,885
2004	55	185,740	52,697
2005	30	123,561	39,569
2006	52	193,531	101,401
2007	46	189,476	82,947
2008	38	90,471	39,685
2009	63	303,290	91,362
2010	48	279,831	112,091
2011[3)]	99	228,262	107,606
2012	35	206,434	75,150
2013	16	34,445	9,421
2014	34	119,939	28,305
2015	18	64,689	31,323
2016[4)]	49	122,781	60,952
2017	31	239,904	103,175
2018	22	115,155	26,053
2019	25	145,667	10,692
2020	19	129,605	10,754
2021[7)]	110	318,876	241,633
2022	18	306,726	0
Total[5]	961	4,359,122	1,699,353

Notes: 1) Based on the Ministry of Planning and Budget's press releases (project progress and mid-/long-term review) for projects in 1999–2002 when AHP was not employed.

2) Project costs reestimated by PFS, including state treasury and local government budgets.
3) Including the 56 PFS for the third five-year state road and state-supported provincial road plans.
4) Including the 26 PFS for the fourth five-year state road and state-supported provincial road plans.
5) Results of analysis as part of PFS may differ from the actual budget execution.
6) Sum of the total costs of projects of which AHP < 0.5.
7) Including the 94 PFS for the fifth five-year state road and state-supported provincial road plans.

B. Assessment of Project Plan

Employing evaluations equivalent to the PFS, Assessment of Project Plan started with the review of the PFS for the 2010 F1 international racing competition in 2007. Between 2007 and 2022, 127 projects underwent simplified PFS or Assessment of Project Plan. <Table II-11> shows the area-specific track records of assessment of project plan.

▌Table Ⅱ-11▐ Track records of assessment of project plan

(Unit: projects)

Year	Road	Railway	Port	Culture, tourism, architecture	Water resource (dam)	Others	Total
2007	2	-	-	-	-	2	4
2008	5	-	-	-	-	2	7
2009	3	-	1	-	-	5	9
2010	2	-	-	-	2	2	6
2011	-	-	1	-	-	1	2
2012	2	1	-	1	1	1	6
2013	1	-	1	1	-	1	4
2014	2	-	-	7	1	-	10
2015	-	-	1	6	2	-	9
2016	-	-	-	-	-	-	-
2017	-	-	3	3	2	-	8
2018	-	-	-	4	1	-	5
2019	14	7	-	9	-	1	31
2020	1	1	-	7	3	2	14
2021	-	-	-	8	3	1	12
2022	-	-	1	8	-	1	10
Total	32	9	8	54	15	19	137

Note: All projects that underwent studies equivalent to PFS (assessment of project plan, simplified PFS, etc.).

From 2007 to 2022, 137 projects that were exempted from PFS underwent assessment of project plan that included analysis equivalent to PFS. PIMAC contributed to saving KRW 3.1 trillion of budget by analyzing and proposing appropriate scales of these projects and effective alternatives.

▌Table Ⅱ-12▐ Annual total cost savings by assessment of project plan

(Unit: KRW 100 million)

Year	No. of projects	Total project costs in project plans	Total project costs after assessment of project plan[1), 2)]	Total project costs saved
2007	4	9,790	9,705	85
2008	7	3,167	2,723	444
2009	9	111,521	123,200	-11,679
2010	6	52,969	44,925	8,044
2011	2	7,467	5,275	2,192
2012	6	45,080	35,650	9,430
2013	4	57,822	56,763	1,059
2014	10	17,176	13,485	3,691
2015	9	44,826	39,191	5,635
2016	-	-	-	-
2017	8	13,996	13,151	845
2018	5	5,911	5,786	125
2019	31	211,469	220,573	-9,103
2020	14	66,486	64,961	1,525
2022	10	15,256	14,707	549
Total	137	837,709	806,348	31,361

Notes: 1) The assessment of project plan was formerly known as simplified PFS.
2) Results of analysis as part of project plan reviews may differ from the actual budget execution.

C. RSF

From 2002 to 2022, 240 projects underwent RSF (excluding reassessments of project plans and reassessments of demand forecast). A majority of the RSF were

for road projects, 62% or 149 projects, followed by culture, tourism, and architecture (38 projects), water resource (16), port (14), railway (13), and others (9).

▌Table Ⅱ-13▌ RSF track records

(Unit: projects)

Year	Road	Railway	Port	Culture, tourism, architecture	Water resource (dam)	Others	Total
2003	3	-	-	3	-	-	6
2004	2	1	-	2	-	1	6
2005	6	-	-	3	-	-	9
2006	10	-	-	2	5	2	19
2007	9	2	2	1	-	-	14
2008	10	1	2	6	2	-	21
2009	25	-	2	1	2	1	31
2010	17	3	-	5	4	2	31
2011	12	-	-	2	-	1	15
2012	6	1	1	2	1	-	11
2013	3	1	2	3	-	-	9
2014	16	-	2	-	-	-	18
2015	6	1	-	3	-	-	10
2016	7	1	1	1	-	1	11
2017	8	-	-	-	1	-	9
2018	2	-	-	1	1	-	4
2019	3	1	1	-	-	1	6
2020	-	-	1	1	-	-	2
2021	4	1	-	1	-	-	6
2022	-	1	-	1	-	-	2
Total	149	14	14	38	16	9	240

Notes: 1) Projects with RSF completed as of the end of December 2021.
2) Others include informatization and R&D projects, among others.
3) Reassessments of project plans and reassessments of demand forecast excluded.

The primary grounds for projects undergoing RSF was increases in the total project costs, which was the case for 79 projects out of the 265 projects that underwent RSF since 2002 (29.8%), followed by 54 projects (20.3%) that were included in the budget without undergoing PFS (see <Table II -14>).

▌Table Ⅱ-14▐ Causes of projects undergoing RSF (based on official documents received)

(Unit: projects)

Year	Project costs raised to level subject to PFS	PFS omitted	Increases in total project costs	Decreases in estimated demands	Report on budget wasting	On parliament/audit board request	Others	Total
2002	-	-	1	-	-	-	-	1
2003	3	1	1	-	-	-	1	6
2004	2	2	5	-	-	-	-	9
2005	3	4	9	-	-	-	-	16
2006	3	4	8	-	1	-	4	20
2007	3	4	2	1	1	-	6	17
2008	4	1	6	1	-	-	6	18
2009	4	2	3	3	-	14	10	36
2010	2	8	6	1	-	6	4	27
2011	2	5	2	-	-	-	-	9
2012	2	2	3	1	-	-	1	9
2013	1	8	2	1	-	2	7	21
2014	2	5	3	7	-	-	3	20
2015	2	-	4	-	-	-	-	6
2016	-	2	3	1	-	-	4	10
2017	1	1	2	1	-	-	-	5
2018	1	2	2	-	-	-	-	5
2019	1	-	4	-	-	-	-	5
2020	3	-	5	-	-	-	-	8
2021	1	-	5	-	-	-	-	6
2022	4	3	3	-	-	-	1	11
Total	44	54	79	17	2	22	47	265

Note: Years based on the commencement of the projects (official documents received) as of the end of December 2022.

Between the introduction of RSF in 2003 and the end of December 2022, 328 projects in civil engineering, architecture, informatization, and other areas underwent RSF, contributing to budget savings of KRW 40 trillion.

▌Table Ⅱ-15▐ Annual total project costs saved by RSF

(Unit: projects, KRW 100 million)

Year	Total projects[1)]	Total project costs proposed	Total project costs after RSF	Total project costs saved[2)]
2003	6	47,987	42,328	5,659
2004	6	13,977	13,928	49
2005	9	72,976	47,375	26,847
2006	19	49,126	44,357	4,769
2007	14	40,650	43,684	-1,915
2008	21	166,919	155,070	29,306
2009	31	98,162	81,191	30,541
2010	31	148,006	132,340	34,250
2011[3)]	48	121,438	108,690	96,584
2012	11	48,657	48,598	34,987
2013	9	10,420	10,069	5,948
2014	18	80,368	76,537	20,762
2015	10	33,305	30,477	7,859
2016[4)]	66	100,593	95,995	74,665
2017	9	26,994	21,470	22,690
2018	4	6,504	6,592	-88
2019	6	7,307	8,989	3,952
2020	2	1,133	1,148	292
2021	6	17,562	17,475	2,664
2022	2	6,121	5,954	167
Total[5)]	328	1,098,205	992,267	399,988

Notes: 1) Projects with RSF completed as of the end of December 2022.

2) Total project costs saved: balance between the project proposal and the optimum alternative if the project's AHP ≥ 0.5, and total project costs if the project's AHP < 0.5, or balance between the project proposal and the optimum alternative if no AHP was conducted.

3) Including the 33 RSF for the third five-year state road and state-supported provincial road plans.

4) Including the 55 RSF for the fourth five-year state road and state-supported provincial road plans.

5) Results of analysis as part of RSF may differ from the actual budget execution.

D. Reassessments of Project Plans, etc.

Reassessments of project plans and demand forecast started in 2007. From 2007 to 2022, 122 and 21 projects underwent reassessments of project plans and reassessments of demand forecasts, respectively. The plans of 32 road projects, 14 railway projects, 7 port projects, 50 culture, tourism, and architecture projects, 11 water resource projects, and 8 other projects were reassessed, and 17 road projects and 4 port projects faced reassessments of demand forecasts. Since 2006, 51 projects have undergone Pre-feasibility review of design modification and assessments of design modification.

▌Table Ⅱ-16▐ Track records of reassessments of projects plans

(Unit: number of projects)

Year	Road	Railway	Port	Culture, tourism, architecture	Water resource (dam)	Others	Total
2010	1	-	1	1	-	-	3
2011	1	3	-	1	-	-	5
2012	1	-	-	1	1	1	4
2013	1	-	-	4	-	1	6
2014	2	-	1	6	1	1	11
2015	1	1	2	5	2	-	11
2016	1	-	1	13	-	-	15
2017	1	3	-	5	1	1	11
2018	4	-	-	1	2	-	7
2019	5	3	1	3		1	13
2020	6	-	-	6	-	-	12
2021	6	3	1	1	3	-	14
2022	2	1	-	3	1	3	10
Total	32	14	7	50	11	8	122

Note: Projects with reassessments completed as of the end of December 2022.

▌Table Ⅱ-17▐ Track records of Reassessments of demand forecast

(Unit: number of projects)

Year	Road	Railway	Port	Culture, tourism, architecture	Water resource (dam)	Others	Total
2007	-	-	1	-	-	-	1
2008	1	-	-	-	-	-	1
2009	2	-	1	-	-	-	3
2010	1	-	-	-	-	-	1
2011	-	-	-	-	-	-	0
2012	1	-	-	-	-	-	1
2013	3	-	-	-	-	-	3
2014	7	-	-	-	-	-	7
2015	-	-	-	-	-	-	0
2016	1	-	-	-	-	-	1
2017	-	-	2	-	-	-	2
2018	-	-	-	-	-	-	-
2019	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-
2021	1						1
2022	-	-	-	-	-	-	-
Total	17	-	4	-	-	-	21

Note: Projects with reassessments completed as of the end of December 2022.

▌Table Ⅱ-18▐ Track records of Pre-feasibility review on design modification and assessments of design modification

(Unit: projects)

Year	Road	Railway	Port	Culture, tourism, architecture	Water resource (dam)	Others	Total
2014 and before	4	1	-	1	-	-	6
2015	2	-	1	-	1	-	4
2016	2	3	-	1	-	2	8
2017	2	1	-	-	-	-	3
2018	1	5	-	-	-	-	6
2019	2	2	1	-	-	-	5
2020	3	5	1	-	-	-	9
2021	2	1	3	2	2	-	10

▌Table Ⅱ-18▐ Continued

Year	Road	Railway	Port	Culture, tourism, architecture	Water resource (dam)	Others	Total
2022	-	7	1	2	-	1	11
Total	18	25	7	6	3	3	62

Note: Projects with reassessments completed as of the end of December 2022.

Reassessments of project plans involve evaluations of the appropriateness of the project scale, total project costs, and effective alternatives, among others, in a way equivalent to RSF. From 2010 to 2022, 122 projects underwent reassessments, leading to budget savings of KRW 5.7 trillion.

▌Table Ⅱ-19▐ Annual total project costs saved by reassessments of project plans

(Unit: projects, KRW 100 million)

Year	Total projects	Total project costs proposed	Total project costs after reassessment	Total project costs saved
2010	5	83,021	77,217	5,804
2011	3	14,959	11,241	3,718
2012	4	47,117	30,532	16,585
2013	6	8,429	7,294	1,135
2014	11	12,490	9,871	2,619
2015	11	10,891	10,363	528
2016	15	17,661	16,992	669
2017	11	65,531	50,909	14,622
2018	7	35,100	33,646	1,454
2019	13	174,869	172,342	2,527
2020	12	38,234	36,945	1,289
2021	14	97,321	94,440	2,881
2022	10	62,231	59,368	2,863
Total	122	667,854	611,160	56,694

Note: 1) Projects with reassessments of project plans (simplified PFS) completed as of the end of December 2022.
2) If multiple alternatives were found in the reassessment, the total costs of the least expensive alternative.
3) Results of analysis as part of the reassessments may differ from the actual budget execution.

2. Track Records in 2022

A. PFS

In 2022, 18 projects underwent PFS. The total project costs were KRW 30 trillion and 799.6 billion in the project plans, or KRW 30 trillion and 672.9 billion in PFS results. <Table II-20> shows the summary of the results.

▌Table Ⅱ-20▐ Summary of the results of PFS in 2022

(Unit: KRW 100 million)

No.	Project	Area	Total project costs			Results	
			Project plan (A)	PFS (B)	Change (B - A)	B/C	AHP
1	Industry cluster on fishery food construction project	Architecture	773	813	40	1.17	0.605
2	Metropolitan area(v) water supply pipe double-track project	Water Resource	1,836	1,615	-221	1.63	0.745
3	Jeonju area water supply pipe double-track project	Water Resource	3,496	3,023	-473	0.62	0.548
4	Saemangeum environmental ecology site construction project (Phase 2)	Other	2,860	2,288	-572	0.70	0.609
5	Express national highway No.15(Seopyeongtaek~Ansan) expansion project	Road	9,805	10,001	196	1.11	0.663
6	Sejong-si~Cheongju International Airport connecting road construction project	Road	2,120	1,799	-321	0.84	0.519
7	Port automation test best construction project(Gwangyang Port)	Port	5,940	6,915	975	0.97	0.594
8	Green smart school construction project	Other	126,514	119,068	-7,446	-	0.575
9	Jinhae new port Construction project(Phase 1)	Port	77,001	79,208	2,207	1.01	0.566
10	National River(Gulpocheon) River Maintenance Project	Water Resource	1,418	1,267	-151	1.09	0.627

▌Table Ⅱ-20▌ Continued

No.	Project	Area	Total project costs			Results	
			Project plan (A)	PFS (B)	Change (B - A)	B/C	AHP
11	Susaek~Gwangmyeong high-speed rail construction project	Railway	24,399	24,823	424	1.11	0.654
12	Gimhae airport-Daedong expressway expansion project	Road	3,711	3,261	-450	1.05	0.605
13	Jeju-ilju bypass road(Seogwipo girls' middle school~Samsung girls' high school) construction project	Road	583	530	-53	1.09	0.620
14	Safe drinking water supply system construction project: Nakdong river area	Water Resource	21,575	24,959	3,384	0.78	0.555
15	Honam Line(Gasuwon~Nonsan) express project	Railway	7,779	7,192	-587	0.61	0.505
16	Hwangnyeong 3 Tunnel road construction project	Road	3,250	3,787	537	1.00	0.576
17	Gunsan pord 2nd dredged soil dump site construction project	Port	4,287	4,915	628	1.75	0.591
18	Busan urban railway Hadan-Noksan Line construction project	Railway	10,649	11,265	616	0.89	0.542
Total			307,996	306,729	-1,267	-	-

Note: Optimum alternatives found by AHP.

Area-wise, there were five road projects (27.8%) including Express national highway No.15 (Seopyeongtaek~Ansan) expansion project, three railway projects (16.7%) including Susaek~Gwangmyeong high-speed rail construction project, three port projects (16.7%) including Port automation test best construction project (Gwangyang Port), one culture, tourism, and architecture project (5.6%) including Industry cluster on fishery food construction project, four water resource projects (22.2%) including Metropolitan area (v) water supply pipe double-track project, two other government-financed projects (11.1%) including Green smart school construction project.

In terms of total project costs, other type of government-financed project accounted for the largest part of the projects subject to PFS, KRW 12 trillion and 135.6 billion. The average total costs per project were KRW 1 trillion and 704.1

billion, with other type of government-financed project costing the most, KRW 6 trillion and 678 billion on average.

▌Table Ⅱ-21▐ Area-specific projects subject to PFS in 2022

(Unit: projects, KRW 100 million)

Category			Road	Railway	Port	Culture, tourism, architecture	Water resource	Other	Total
No. of projects			5	3	3	1	4	2	18
		%	27.8%	16.7%	16.7%	5.6%	22.2%	11.1%	100.0%
Totals	Adjustment of Project Plan (A)	Sub total	19,469	42,827	87,228	773	28,325	129,374	307,996
		Average	3,894	14,276	29,076	773	7,081	64,687	17,111
	PFS (B)	Sub total	19,378	43,280	91,038	813	30,864	121,356	306,729
		Average	3,879	14,427	30,346	813	7,716	60,678	17,041
	Difference (B - A)	Sub total	-91	453	3,810	40,	2,539	-8,018	-1,267
		Average	-18	151	1,270	40	635	-4,009	-70

Note: Other government-financed projects include 'Green smart school construction project', and Saemangeum environmental ecology site construction project (Phase 2)

The Ministry of Land, Infrastructure and Transport pursued seven projects accounting for 38.9% of the projects that underwent PFS in 2022. Cost-wise, projects pursued by the Ministry of Land, Infrastructure and Transport cost the most, KRW 6 trillion and 859 billion.

▌Table Ⅱ-22▐ Projects that underwent PFS in 2022, by ministry/agency

(Unit: projects, KRW 100 million)

Category			Ministry of Land, Infrastructure and Transport	Ministry of Oceans and Fisheries	Ministry of Environment	National Agency for Administrative City Construction	Ministry of Education	Total
No. of projects			7	4	5	1	1	18
		%	38.9	22.2	27.8	5.6	5.6	100.0
Total project costs	Adjustment of Project Plan (A)	Sub total	60,176	88,001	31,185	2,120	126,514	307,996
		Average	8,597	22,000	6,237	2,120	126,514	17,111
	PFS (B)	Sub total	60,859	91,851	33,152	1,799	119,068	306,729
		Average	8,694	22,963	6,630	1,799	119,068	17,041
	Difference (B - A)	Sub total	683	3,850	1,967	-321	7,446	1,267
		Average	98	963	393	-321	7,446	70

In terms of economic feasibility, 55.6% of the projects were considered economically feasible (B/C ≥ 1). While 100% of the culture · tourism · architecture, 80% of road, 66.6% of port, 50% of water resource project, 33.3% of railway project were considered economically feasible, none of the other government-financed project met the economic feasibility requirement.

▌Table Ⅱ-23▐ Economic feasibility (B/C≥1) of projects that underwent PFS in 2022, by area

(Unit: projects)

Category		Road	Railway	Port	Culture, tourism, architecture	Water resource	Other	Total
No. of projects		5	3	3	1	4	2	18
B/C ≥ 1	Projects	4	1	2	1	2	0	10
	%	80%	33.3%	66.6%	100.0%	50.0%	0.0%	55.6%

Note: Other government-financed projects include 'Green smart school construction project', and Saemangeum environmental ecology site construction project (Phase 2)

In terms of the overall feasibility of the projects, 100% of the projects met the overall feasibility requirement (AHP ≥ 0.5). All of the road, railway, culture · tourism · architecture, water resource projects were found feasible.

▌Table Ⅱ-24▐ Overall feasibility of projects that underwent PFS in 2022 (AHP ≥ 0.5)

(Unit: projects)

Category		Road	Railway	Port	Culture, tourism, architecture	Water resource	Other	Total
No. of projects		5	3	3	1	4	2	18
AHP ≥ 0.5	Projects	5	3	3	1	4	2	18
	%	100%	100%	100%	100%	100%	100%	100%

B. Assessment of Project Plan

In 2022, 10 projects including Incheon district prosecutors' office northern branch construction project underwent assessment of project plan. The total costs of these projects in their original plans were KRW 1 trillion and 525.6 billion, and the total costs after the assessment of project plan were KRW 1 trillion and 470.6 billion, a decrease of KRW 549 billion.

▌Table Ⅱ-25▐ Summary of project plan reviews conducted in 2022

(Unit: KRW 100 million)

No.	Project	Total project costs		
		Project plan (A)	Assessment of Project Plan (B)	Savings (A - B)
1	Yeosu National Industrial Complex buffer storage facility construction PPP project	3,060	3,257	-197
2	Incheon district prosecutors' office northern branch construction project	1,052	1,020	32
3	Shipbuilding project for replacement of old marine research ship	903	590	313
4	Suwon City resource recovery facility installation (remodelling) project	1,500	1,445	55
5	Gwangmyeong City resource recovery facility installation project	1,668	1,417	251
6	Jeonju area landfill circulation use maintenance project	902	863	39
7	Shipbuilding project for replacement of old ship at Mokpo Maritime University	1,054	590	464
8	Taebaek Correctional Facility Construction Project	1,943	2,230	-287
9	Namyangju City Resource Recovery Facility PPP project	1,800	1,869	-69
10	Gwangyang (Yeocheon) Port Myodo Waterway Straightening Project	1,374	1,426	-52
Total		15,256	14,707	549

Note: 1) Projects with reviews completed as of the end of December 2022.
2) If multiple alternatives were found in the review, the total costs of the least expensive alternative. Results of analysis as part of reviews may differ from the actual budget execution.

C. RSF

In 2022, two projects including Cheonan~Cheongju airport double track railway project underwent RSF, of which results are presented in <Table II -26>.

▌Table Ⅱ-26▌ Summary of RSF results in 2022

(Unit: KRW 100 million)

No.	Project	Total project costs		Results		
		Proposed (A)	RSF (B)	Savings (A - B) or (A)	B/C	AHP
1	Cheonan~Cheongju airport double track railway project	5,603	5,482	121	1.09	0.626
2	Former Jeonnam provincial office restoration project	518	472	46	3.01	0.678
Total		6,121	5,954	167	-	-

Notes: 1) Optimum alternatives found with AHP.
2) Total project costs as specified in their RSF request; hence, the base year for pricing was different from the RSF pricing base year.
3) Total project costs included all costs already put in.
4) Total project costs saved: balance between the project proposal and the optimum alternative if the project's AHP ≥ 0.5, and total project costs if the project's AHP < 0.5; results of analysis as part of RSF may differ from the actual budget execution.
5) Projects with RSF completed as of the end of December 2022.

The grounds for these projects facing RSF were increases by more than the ratio determined by the total project cost (two project).

▌Table Ⅱ-27▌ Causes of RSF conducted in 2022

(Unit: projects)

Category	Project costs raised to level subject to PFS	PFS omitted	Increases in project costs	Decreases in demand	Others	Total
RSF	-	-	2	-	-	6

Note: Projects with RSF completed as of the end of December 2022.

Looking at the track records of the RSF by sector, one project was carried out in the railway sector, and the other one was in the culture, tourism, and architecture sector.

▌Table Ⅱ-28▐ RSF conducted in 2022, by area

(Unit: projects)

Category	Road	Railway	Port	Culture, tourism, architecture	Others	Total
RSF	-	1	-	1	-	2

Note: Projects with RSF completed as of the end of December 2022.

The total costs of the projects that underwent RSF in 2022 were KRW 612.1 billion in their project plans and KRW 595.4 billion after RSF, a decrease of KRW 167 billion.

▌Table Ⅱ-29▐ Total costs of projects that underwent RSF in 2022

(Unit: KRW 100 million)

Category	Projects	Total project costs		
		Project plan	RSF	Savings
RSF	2	6,121	5,954	167

Note: Total project costs saved: balance between the project proposal and the optimum alternative if the project's AHP ≥ 0.5, and total project costs if the project's AHP < 0.5; results of analysis as part of RSF may differ from the actual budget execution.

One was pursued by the Ministry of Land, Infrastructure and Transport, the other was pursued by the Ministry of Culture, Sports and Tourism.

▌Table Ⅱ-30▐ Projects that underwent RSF in 2022, by ministry/agency

(Unit: projects)

Category	Ministry of Land, Infrastructure and Transport	Ministry of Culture, Sports and Tourism	Total
RSF	1	1	2

Note: Projects with RSF completed as of the end of December 2022.

In terms of economic feasibility (B/C ≥ 1) and overall feasibility (AHP ≥ 0.5), 100% of the projects were considered economically feasible (B/C ≥ 1), and all the projects met the overall feasibility requirement.

▌Table Ⅱ-31▐ Economic and overall feasibility of projects that underwent RSF in 2022

(Unit: projects)

Category		Economic feasibility (B/C ≥ 1)	Overall feasibility (AHP ≥ 0.5)
No. of projects		2	
Deemed feasible	Projects	2	2
	%	100%	100%

D. Reassessments of Project Plans, etc.

In 2022, 10 projects underwent reassessments of project plans, including Tourism hub city development project. The total costs of these projects were KRW 6 trillion and 223 billion in their project plans, and KRW 5 trillion and 936.9 billion after the reassessments, a decrease of KRW 286.1 billion.

▌Table Ⅱ-32▐ Summary of reassessments of project plans in 2022

(Unit: KRW 100 million)

No.	Project	Total project costs		
		Project plan (A)	Reassessment (B)	Savings (A - B)
1	Tourism hub city development project	5,786	5,638	148
2	10·27 Buddhist memorial hall construction project	1,688	1,395	293
3	Advanced water treatment facility installation Project in KKachiul water purification plant	641	612	29
4	Okjeong-Pocheon metropolitan railway construction project	13,881	13,189	692
5	Establishment of Wi-Fi in public places	2,474	2,422	52
6	Seonghwan ~ Ijang (National Route 70) road construction project	1,202	1,118	84
7	Gangdong Tax Office building construction project	388	313	75
8	Coast Guard Jeju Sarabong official residence construction project	198	176	22

▌Table Ⅱ-32▌ Continued

No.	Project	Total project costs		
		Project plan (A)	Reassessment (B)	Savings (A - B)
9	Expressway No. 29 Sejong-Pocheon Line (Sejong-Anseong) construction project	32,737	32,637	100
10	Third Government Integrated Computer Center project	3,235	1,869	1,366
Total		62.230	59.369	2.861

Notes: 1) Total project costs as specified in their reassessment request; hence, the base year for pricing was different from the reassessment pricing base year.
2) Total project costs included all costs already put in.
3) If multiple alternatives were found in the reassessment, the total costs of the least expensive alternative. Results of analysis as part of reassessments may differ from the actual budget execution.
4) Projects with RSF completed as of the end of December 2022.

In 2022, eleven projects including KTX direct connection project departing from Suwon, KTX direct connection project departing from Incheon underwent assessment of design modification.

▌Table Ⅱ-33▌ Assessments of design modification in 2022

Category	No.	Project
Assessment of Design Modification	1	KTX direct connection project departing from Suwon, KTX direct connection project departing from Incheon
	2	Shinbundang Line Gwanggyo~Homaesil construction project
	3	Daegu Industrial Line railway construction project
	4	Southern Inland railway construction project
	5	Great Train Express(GTX) Line B
	6	Seokmun Industrial Complex leading-in railway construction Project
	7	Gunsan Chonbuk National University Hospital construction project
	8	Infectious disease hospital construction project in the Honam region
	9	Gwangju Songjeong~Suncheon single-line railway
	10	Gageodo port typhoon damage restoration project
	11	Hwaong District large-scale agricultural development project

Note: Projects with reviews/assessments completed as of the end of December 2022.

CHAPTER III

Public-Private Partnerships Projects

Section 1. Overview of Public-Private Partnerships system

1. Background and Progress of Public-Private Partnerships

A. Background

PPP projects refer to arrangements where the private sector constructs and operates SOC including roads, harbors, airports, railroads, and environmental facilities that traditionally belonged to the scope of the government sector. SOC forms a basis of national economic activities and is a decisive factor for national competitiveness. Investment in SOC itself not only contributes to employment, income growth, regional development, and technological advancement but also indirectly supports production. Traditionally, SOC has been provided, operated, and managed by the public sector. Involving private capital in these facilities represents a major change in the paradigm of public investment.

As its economy was growing, Korea faced issues related to the shortage of infrastructure including roads, railroads, ports, airport facilities, electricity, water resources, and sewage disposal facilities, leading to negative effects such as increases in logistics costs and the deterioration of national competitiveness. The government established plans to resolve these issues, but the biggest challenge was how to raise funds for investment. Continued economic growth would not simply convert to unlimited tax revenues to invest in these projects.

In the 1990s, people's income rapidly grew, which caused surges in demand for welfare, and the trends of localization and opening accelerated. There also were surges in demand for investment in welfare, education, and environment that were

once neglected by growth-centered development policies. As a way to tackle the insufficiency of funds, the government explored possibilities of attracting private capital primarily focusing on projects to which the user-pays principle was applicable. This led to the enactment of the Act on the Promotion of Private Capital into Social Overhead Capital Investment in 1994, which was later substituted by the Act on Private Participation in Infrastructure in December 1998.

B. Progress and legal ground of PPP

1) Progress

In August 1994, the Act on the Promotion of Private Capital into Social Overhead Capital Investment was enacted with the aim to pursue social overhead capital construction projects with private funds on top of government funds, and government-solicited build-transfer-operate (BTO) projects emerged to build and run infrastructure such as roads, railroads, and ports.

The Act on the Promotion of Private Capital into Social Overhead Capital Investment was renamed the Act on Private Participation in Infrastructure in December 1998 with the aim to vitalize private investment to overcome the nation's economic crisis during 1997 and 1998 and introduce unsolicited projects as a new way to pursue private investment.

In January 2005, the Act on Private Participation in Infrastructure was substituted by the Act on Public-Private Partnerships in Infrastructure (PPP Act), under which build-transfer-lease (BTL) projects for schools, military residences, and other social infrastructure were introduced, and publicly offered infrastructure funds were established to attract more investors.

The current PPP system was structured by amendments to the laws and the Enforcement Decree of the PPP Act and the Basic Plan for Public-Private Partnerships in Infrastructure (Basic Plan), under which the government was required to report the total ceiling of BTL projects in a given year, facility-specific ceilings, and reserve ceilings when it submits that year's budget plan to the National Assembly for preauthorization and the controversial minimum revenue guarantee scheme was phased out.

The progress of the PPP system in Korea is largely divided into four phases. In phase 1, from the 1960s to August 1994 when the Act on the Promotion of Private Capital into Social Overhead Capital Investment was established, PPP projects were pursued based on different individual laws. Phase 2 corresponds to the period

from the enactment of the Act on the Promotion of Private Capital into Social Overhead Capital Investment to March 1999 when the act was wholly amended and renamed as the Act on Private Participation in Infrastructure. Phase 3 represents the period from April 1999 when the Act on Private Participation in Infrastructure was enforced to December 2004, and phase 4 started in January 2005 when the PPP Act was enforced and lasts until the present. Below is the summary of the phase-specific changes in the PPP system.

▌Table Ⅲ-1▐ Changes in the PPP system and characteristics

Phase	Period	Changes and characteristics
1	1968–1994	• Sporadic implementation of PPP projects based on individual acts (Road Act, Harbor Act, etc.).
2	1994–1998	• Act on the Promotion of Private Capital into Social Overhead Capital Investment. • Facilitation of private investment with systemic procedures in place. • Facilities categorized into type 1 and type 2 facilities; BTO projects allowed for type 1 facilities, and BOO for type 2 facilities.
3	1999–2004	• Act on Private Participation in Infrastructure. • Positive government support and role sharing for private investment. • Facility categorization into type 1 and type 2 abolished to allow for diversified project implementation.
4	2005–present	• Enforcement of PPP Act. • BTL projects introduced. • Unsolicited projects required to undergo VFM. • Publicly offered infrastructure funds. • Unsolicited BTL projects allowed (amendment on March 2, 2016). • Hybrid (BTO + BTL) projects allowed (provisions established on February 10, 2020). • All-inclusive concept applied to infrastructure (amendment in March 2020).

Sources: 1) Adapted from Ministry of Planning and Budget, A study on the development of private investment in SOC (2002).
2) Adapted from KDI, A study on private infrastructure investment legislation reform (2007).

2) Legal Grounds

The legal grounds for PPP projects are the PPP Act, its Enforcement Decree, and the Basic Plan. The PPP Act has twofold nature as a general law that provides matters relating to PPP projects such as eligible facilities, implementation methods and processes, support systems, and management, supervision, and sanction systems, and a special law that takes precedence over other laws when it comes to PPP projects.

The Basic Plan was established by the Minister of Economy and Finance in consultation with the heads of relevant central government agencies and the Private Investment Deliberation Committee pursuant to Article 7 of the PPP Act and Article 5 of its Enforcement Decree. Along with the Act and the Enforcement Decree, it serves as guidelines for PPP projects, including the following:

◦ Area-specific policy orientations for private investment in infrastructure
◦ Scope of private investment, methods, and conditions for PPP projects or eligible PPP projects
◦ Management, operation, and support for PPP projects
◦ Other policy orientations relating to PPP projects

Also, PIMAC published detailed guidelines for project implementation.

2. Eligible PPP projects and Implementation Methods

A. Eligible PPP projects and types

Infrastructure that may be constructed with a PPP project includes facilities that serve as foundations for production activities, facilities that are intended for improved utility and user convenience, and facilities that increase benefits for citizens. Previously, Article 2(1) of the PPP Act stipulated PPP projects may be built under 53 facility types, 12 facility areas, and 56 laws. The amended PPP Act of 2020 employed the all-inclusive concept, rather than specifically listing types of infrastructure, to expand the scope of PPP further. Under the amended law, any of the following infrastructure are open to PPP:

- Facilities that are foundations for economic activities, for example, roads, railroads, ports, sewage, excreta, and waste treatment facilities, and recycling facilities
- Facilities needed for the provision of social services, for example, kindergartens, schools, libraries, science halls, cultural multiplexes, and public healthcare facilities
- Public facilities needed for the central or local governments such as government offices, facilities for veterans, disaster control facilities, military facilities; or other public facilities such as community sport facilities, recreational facilities, or other community facilities

The following facilities are excluded from PPP projects under the amended law:

- Facilities designated by the Minister of Defense as facilities to handle military secrets provided in Article 2(1) of the Military Secret Protection Act
- Facilities designated by the Minister of Defense as facilities for military operations provided in Article 2(1)A of the Act on National Defense and Military Installations Projects
- Diplomatic information networks
- Other facilities provided by a Presidential Decree

B. Implementation process

PPP projects are divided into government-solicited projects where the governments invite private bidders to projects it considers to be more efficient when implemented by the private sector, and unsolicited projects where the private sector identifies and develops public investment projects they find profitable, and propose the proposals to the government.

▌Table Ⅲ-2▌ General Principles of Designation of PPP Projects (provided in then Basic Plan)

Article 4 (General Principles of Designation of PPP Projects)

The competent authority shall consider the following general principles in designating PPP projects:

1. Principle of Payment by Beneficiary: Projects that can provide higher-quality services in comparison with existing facilities that can be used with the lower burden of expenses so that users are willing to pay higher usage fees in return for such high benefits
2. Principle of Profitability: Projects that can secure a rate of return sufficient for the recovery of investment expenses made by the private sector investor within the scope of usage fees acceptable to the government and payable by the users, and the construction subsidies the government is able to provide
3. Principle of Project Benefits: Projects that are unlikely to be completed early or provide services due to budget restraints if implemented as government-financed projects but are anticipated to be completed on time and generate early benefits if implemented under a public-private partnership
4. Principle of Efficiency: Projects that are anticipated to generate increased benefits and reduced cost compared to a government-financed project thanks to the creativity and efficiency of the private sector and are likely to produce higher quality of services due to competition with government-financed projects

Source: Ministry of Economy and Finance, The Basic Plan for Public-Private Partnerships in Infrastructure, 2022.

PPP projects can be primarily implemented in the BTO or BTL form but also often in BOT or BOO form. In BTO and BTL projects, the ownership of the facilities is transferred to the competent authority upon completion, and in return the concessionaire is granted the right to manage and operate the facility under the PPP Act. Article 3 of the Basic Plan provides the methods of implementation of PPP projects, and PPP projects can also be pursued in a way proposed by the private sector and deemed reasonable by the competent authority, or proposed by the competent authority in the request for proposals.

▌Table Ⅲ-3▌ Methods of Implementation of PPP Projects (provided in the Basic Plan)

Article 3 (Methods of Implementation of PPP Projects)

① PPP projects may be implemented in the following ways pursuant to Article 4 of the Act:

1. Build-Transfer-Operate (BTO) Method: A method where the ownership of the infrastructure facility is vested in the central or local government upon the completion (of new construction, expansion or improvement) of the infrastructure and the concessionaire is granted the right of management and operation of the facility for a specified period of time. <Amended on May 10, 2013; April 20, 2015>

2. Build-Transfer-Lease (BTL) Method: A method where the ownership of the relevant infrastructure facility is vested in the central or local government upon completion (of new construction, expansion or improvement) and the concessionaire is granted the right of management and operation of the facility for a specified period of time, where the central or local government leases the facility for the time period specified in the concession agreement for use and generation of profit <Amended on May 10, 2013; April 20, 2015>

3. Build-Operate-Transfer (BOT) Method: A method where the concessionaire is granted the ownership of the relevant infrastructure facility upon completion (of new construction, expansion or improvement) for a specified period of time, upon expiration of which the ownership is vested in the central or local government <Amended on April 20, 2015>.

4. Build-Own-Operate (BOO) Method: A method where the ownership of the relevant infrastructure facility is vested in the concessionaire upon completion (of new construction, expansion or improvement) <Amended on April 20, 2015>

5. Build-Lease-Transfer (BLT) Method: A method where the concessionaire leases the relevant infrastructure facility to a third party upon completion (of new construction, expansion, improvement) for a specified period of time, upon expiration of which the facility is transferred to the central or local government. <Amended on April 20, 2015>.

....

10. Hybrid (BTO+BTL) Method: A method where a single infrastructure facility is constructed and operated under a scheme that combines the methods prescribed in Article 4, Subparagraphs 1 and 2 of the Act. <Newly established on February 15, 2012. Amended on May 12, 2014; February 10, 2020>.

11. Conjoined Method: A method of physically dividing the relevant infrastructure facility, upon the resulting sections of which two or more of the methods prescribed in Article 4, Subparagraphs 1 through 6 are used. <Newly established on February 10, 2020>

12. Rehabilitate (R) method: A method where existing infrastructure is refurbished or expanded, and the management and operation rights are granted for the entire facility including the parts refurbished or expanded (the reversion of ownership, the recognition of management and operation rights, methods for use, and profit making may be as per Subparagraphs 1 through 11; in such cases, the relevant provisions in the Basic Plan shall apply mutatis mutandis). <Newly established on July 18, 2022>

13. Other methods presented by the private sector and recognized as appropriate by the competent authority

or presented by the competent authority in this Basic Plan (including cases in which the Ministry of Education seeks to construct private school facilities through a method similar to that prescribed in Subparagraph 2). <Amended on February 10, 2020>

Source: Ministry of Economy and Finance, The Basic Plan for Public-Private Partnerships in Infrastructure, 2022.

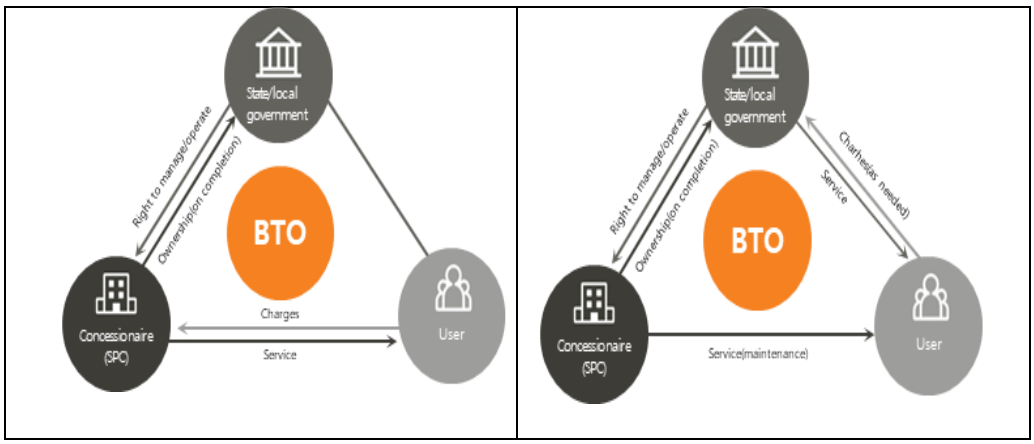
In a BTO project, the concessionaire has the right to manage and operate the facility on its own and charge users for facility use to collect its investment. These types of PPP projects are primarily used for easily profitable facilities such as roads and railways (i.e., from tolls and fares). The concessionaire bears the market risks related to the operation of the facility (risk for demand fluctuations). In 2015, the government adopted new ways to attract more private investment by sharing project investment risks between the government and the private sector, which are build-transfer-operate-risk sharing (BTO-rs) and build-transfer-operate-adjusted (BTO-a) as provided in Articles 32 and 33-2 of the Basic Plan.

In a BTL project, the concessionaire has the right to manage and operate the facility and lends the facility to the competent authority. In return, it receives rent to collect investment. These types of PPP projects are primarily used where it is unviable to collect investment by charging user fees, for example, schools and cultural facilities. As the concessionaire collects investment from rent paid by the government, it does not bear the market risks related to the operation of the facility (risk of demand fluctuations).

In a hybrid (BTO+BTL) project, an infrastructure facility is constructed and operated in a way that mixes the methods provided in Article 4(1) (BTO) and Article 4(2) (BTL) of the PPP Act. In a conjoined project, an infrastructure facility is physically divided, and two or more methods provided in Articles 4(1) through 4(6) of the act are used.

The Rehabilitate (R) method encompasses all methods of improving and expanding existing social infrastructure and recognizing management and operation rights to use and profit from the entire facility, including the improved and expanded parts. Accordingly, the business promotion method can be determined as one of items 1 to 11 of Article 3, Paragraph 1 of the basic plan, and in this case, the contents of the relevant basic plan must be followed.

▌Figure Ⅲ-1▐ BTO and BTL project structure



Source: KDI PIMAC website (http://pimac.kdi.re.kr).

<Table Ⅲ-4> shows the features of BTO and BTL projects in terms of the nature of eligible facilities, investment collection methods, project risks, etc.

▌Table Ⅲ-4▐ Features of PPP projects types

Type	BTO	BTL
Nature of facilities	Investment is collected from charges paid by end users (profit-yielding)	Investment cannot be collected from charges paid by end users (service purchase)
Examples	Roads, railways, ports	Schools, military bases, sewers, cultural facilities, welfare facilities
Investment collection	Charges paid by end users (Beneficiary pays)	Rent paid by the government (Government finance)
Business risks	Borne by the private sector (Profitability varies by demand)	Private sector free from demand risks
Profitability	High	Low
Project types	• BTO • BTO-rs • BTO-a	BTL

C. Investment risk sharing in BTO projects

In BTO projects, concessionaires are solely responsible for demand-related risks, hence risk for bankruptcy, in return for relatively higher profitability. And in principle, charges rise annually in consideration of the consumer price index, which may frustrate the users. To address these issues, the government added new types of BTO projects for risk sharing to the Basic Plan announced on April 20, 2015, which are BTO-rs and BTO-a.

In the BTO-rs arrangement, the government compensates for the concessionaire's investment to the extent that the concessionaire takes responsibility for risks out of the amount of total private investment save for government subsidies for construction. As the project becomes less profitable to the extent that the government takes investment risks, the concessionaire charges less for the use of the facility. In the BTO-a arrangement, the government compensates for the principal and interest of the underlying borrowings among the total private investment (to an extent provided in the contract) and the minimum opportunity costs of the private investment and operating expenses. By doing so, the project becomes less profitable to the extent that the government takes investment risks, hence less charges to the users.

▌Table Ⅲ-5▐ Comparison of BTO-rs and BTO-a

Category		BTO-rs	BTO-a
Risk sharing	Risk taking	Partially taken by the government (e.g., 50%)	Primarily taken by the government (e.g., 70%)
	Guarantee	Government's sharing of private investment and operating expenses	• Principal and interest of 70% of private investment • Basic profits for 30% of private investment (at government fund rate) • Operating expenses
	Redemption	As per the government's burden (rate may vary)	Amounts in excess of private investment (e.g., 70%)
Operating expenses	Guarantee	50% (example)	100%
	Profitability	Mixed current yield (Weighted average of government's burden + concessionaire's burden)	Five-year treasury bond rate +α (guaranteed yield)
Charges	Level	Agreed charges (equivalent to public utility charges)	Agreed charges (equivalent to public facilities)
	Rises	Annual inflation rate (Possibly in consideration of public utility charge rises)	Annual inflation rate (Possibly in consideration of public utility charge rises)

D. Hybrid (BTO+BTL) PPP project structure

Recently, the government refreshed its orientations for PPP projects with focuses on the diversification of PPP projects, the promotion of new PPP projects, and the improvement of PPP projects' reliability in its amended Basic Plan published on February 10, 2020 (Ministry of Economy and Finance's Notification No. 2020-26). The diversification of PPP projects primarily revolves around diversifying the modes of project implementation and facilities and sectors subject to PPP projects. In particular, the government introduced new PPP project arrangements, for example, BTO-BTL combined projects. Hybrid project arrangements where the concessionaire runs the facility and the government collects part of its investment in a BTL arrangement would be ideal for projects that incur large amounts of investment and operating expenses but require charges be kept under control, for example, road and railway projects.

A hybrid PPP project consists of two parts: the profit-making part allows the concessionaire to collect investment from charges paid by users, and the leasing part allows the concessionaire to collect investment from rent, etc., paid by the state or local governments. The profit-making part is structured in the same way as an ordinary BTO project based on the amount of private investment in the profit-making part. In this hybrid PPP arrangement, in principle, the concessionaire is entitled to all of the charges paid by users, but if the actual revenues in a given year exceed that year's estimated revenues, the amount in excess may be recollected as per the mixing ratio. The leasing part is structured in the same way as an ordinary BTL project to calculate profitability and rent, and the amounts payable by the government are subject to parliamentary review and resolution.

In hybrid PPP projects, the mixing ratio should be no more than 50% of the total private investment, and if an unsolicited project, the project proposer is required to negotiate the mixing ratio with the competent authority before submitting a project plan. The free-use period and management and operation concession period should not exceed 50 years. Profitability should be set for the profit-making part and leasing part, respectively, with the overall project profitability presented for reference only.

The government expects that the introduction of hybrid PPP projects will contribute to encouraging the pursuit of projects that would offer strong public benefits but yield lower profitability using government contributions under BTL arrangements, and to providing greater benefits for the public by, for example,

lowering service charges for public infrastructure facilities. This also would contribute to the predictability of fiscal expenditures over the operation period of the facility and improved fiscal integrity by allowing the government to collect excess profits from the profit-making part.

E. Rehabilitate (R) method PPP project structure

The existing private investment laws and basic plans are designed to focus on new construction, and there are insufficient details to promote existing facilities, such as private investment facilities whose management and operation period has expired and outdated financial facilities, as private investment projects. Therefore, the basic plan for private investment projects in 2022 is insufficient. Through plan revision, an improved operation method was introduced.

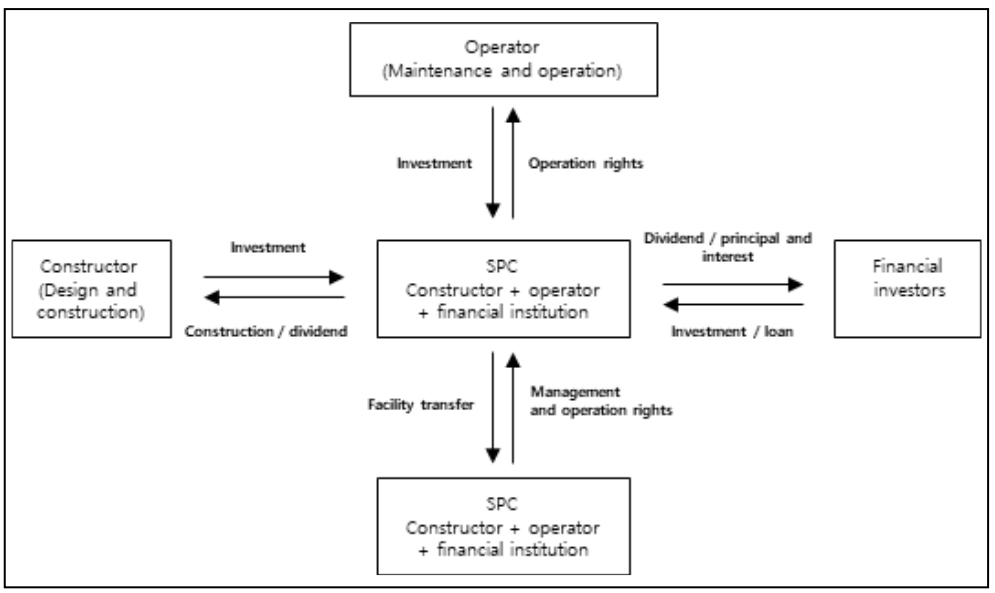
An improved operation-type private investment project refers to a project in which the private sector procures investment resources, improves and expands existing social infrastructure, and then recovers the private investment costs through usage fees for the entire facility, including the improved and expanded parts. In other words, it is a method of investing in the improvement and expansion of existing facilities and receiving usage fees from the government or users for the entire facility, including both the project operator's own investment and the uninvested portion (existing facilities). In the case of an existing private investment project, the project operator's investment target and operation target are identical, but in the case of an improvement operation type private investment project, the project developer only spends the costs (investment target) for improvement and expansion, etc., and enjoys the operating profits of the entire facility, making the investment easier. It has the characteristic of being inconsistent between the target and the operation target.

Many privately funded projects are nearing the expiration of their management and operation rights, and the number of facilities with financial facilities that are more than 20 years old is increasing. As a result, expansion and improvement are needed to improve deterioration and meet the increased facility standards. Therefore, the government is providing improved operation type private investment. With the introduction of the project, effects such as timely improvement of old facilities are being sought under limited financial conditions.

3. Players in PPP Projects and Their Roles

A PPP project is constituted by a concession agreement between the government and the private party. In this arrangement, a special purpose company (SPC) constructs the facility with private capital, the competent authority grants the right to manage and operate the SPC, and the SPC operates the facility for a certain period.

▎Figure Ⅲ-2▎Players in PPP projects and their roles

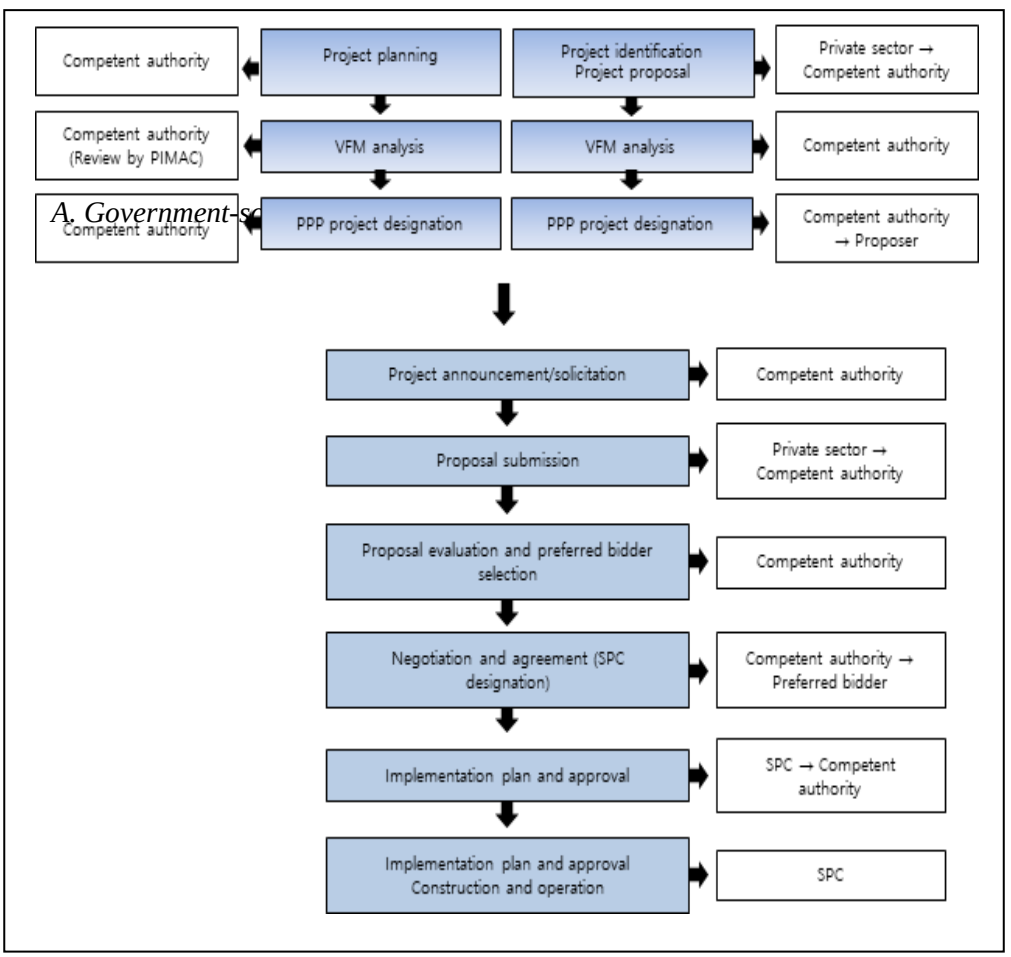


The SPC is a non-government player that executes the PPP project. It usually consists of a design firm, a constructor, a financial investor (or investors), and an operation company, which, respectively, take charge of design, construction, finance, and operation. The competent authority is the head of the administrative institution that is responsible for the infrastructure project, which may be the head of a central government agency or a local government. The competent authority selects PPP projects in consideration of project plans, feasibility studies, consistency with mid-/long-term plans, and project priorities and is responsible for the overall management of the PPP project including implementation plan approval and project management.

4. Detailed Projects Implementation Process

BTO projects are divided into unsolicited projects where the private sector proposes a project, and government-solicited projects where the competent authority designates and invites proposals under the request for proposals. BTL projects were solely government-solicited projects in the past, but the amendment to the PPP Act on March 2, 2016 allowed unsolicited BTL projects.

❙ Figure Ⅲ-3❙ BTO project process



The competent authority is required to establish plans for projects that are deemed appropriate to pursue as PPP projects and solicit bids for them. These projects should be consistent with the general principles of PPP project designation (Article 4 of the Basic Plan), the provisions on the types of facilities eligible for PPP projects under Article 2(1) of the PPP Act, the mid- and long-term plans for social overhead capital, and government investment project priorities.

To facilitate interconnections between government-funded and private investment projects and promote government-solicited PPP projects, VFM analysis is conducted as part of PFS to see if a project should be pursued as a PPP project. The PFS involves comparison between the public sector comparator (PSC) and the private finance initiative (PFI) to see if a PPP project would have advantages over a government-financed project.

For a government-solicited project where private investment is deemed necessary, the competent authority should develop a Request for Proposals within one year from the designation of the project. It should announce the plan pursuant to instructions provided in a Presidential Decree to allow private players to submit project proposals. The competent authority reviews and evaluates the project proposals pursuant to instructions provided in a Presidential Decree and selects the preferred bidder to negotiate terms and conditions. Then, it signs an agreement with the bidder, followed by the designation of the SPC to implement the project.

B. Unsolicited project

An unsolicited project is pursued when the competent authority reviews a project proposal based on the general principles of PPP project designation, the types of facilities eligible for PPP projects under Article 2(1) of the PPP Act, the mid- and long-term plans for social overhead capital and government investment project priorities, conducts PFS including cost-benefit analysis, and finds that the project proposal is feasible and the PFI would ease government burden and offer greater quality of service compared with a comparable government-financed project.

An unsolicited project starts with a project proposal submitted by a private business to the competent authority. If the competent authority finds the proposal meets all formality requirements and is consistent with legislation and its policies, it asks the head of PIMAC to review the project proposal before it decides on whether to proceed with the PPP project. The head of PIMAC delivers comments on the project proposal to the competent authority and the Minister of Economy and Finance, and the competent authority, in consideration of the comments from the

head of PIMAC, etc., informs the proposer of its views on the project proposal in writing. If appropriate, the summary of the project proposal should be publicly posted in the official gazette, at least three daily newspapers, and the competent authority's website to solicit third-party alternate proposals. If third-party alternate proposals are received, the initial proposer's proposal and the third-party alternate proposals are evaluated to select the preferred bidder, followed by negotiations, an agreement, and project implementation. Most BTO projects are unsolicited rather than government solicited.

C. BTL project

In the selection of BTL projects, considerations are given to legal, economic, and financial fitness and urgency of the project. Legal fitness implies that BTL projects may be considered only for public facilities the state or local government must build to provide citizens with fundamental services, facilities in which the state and/or local governments have already allocated finance, and projects included in mid- and long-term investment plans established based on relevant laws and regulations.

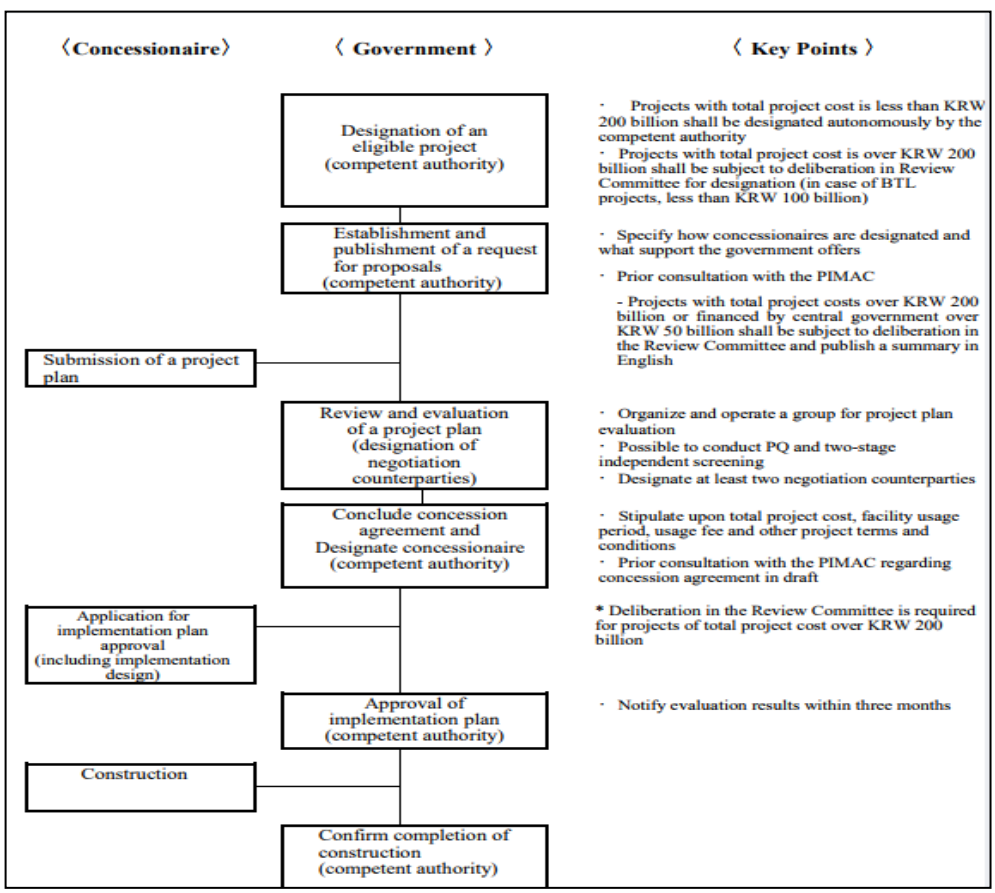
Economic and financial fitness means that BTL projects may be considered for ① projects where relying on the creativity and efficiency of the private sector would offer an advantage over government-funded projects in terms of timely completion and early achievement of benefits, improved benefits from the project including facilities quality and safety and the quality of services offered, and savings on lifecycle costs such as design, construction, and operating costs, ② projects where operation and maintenance account for a significant portion of the lifecycle costs and consolidating design, construction, management, and maintenance would yield greater efficiency, ③ projects where it is unviable to charge users or collect investment from charges paid by users (BTO projects if investment can be collected with charges and construction subsidies), and ④ projects where facilities are physically segregated to allow for independent business management and accounting.

Urgency of the project and other considerations include ① projects that would yield great benefits and require urgent facilities expansion, hence, prioritized investment required but investment being sluggish due to government fund limitations, ② projects where the ownership of the facilities constructed with private capital can be transferred to the state or local governments at the time of completion, and ③ projects where the level of service expected from private parties can be objectively and clearly defined. In addition, the competent authority

should select projects by giving full consideration to the following to ensure the projects can be initiated within the given year:

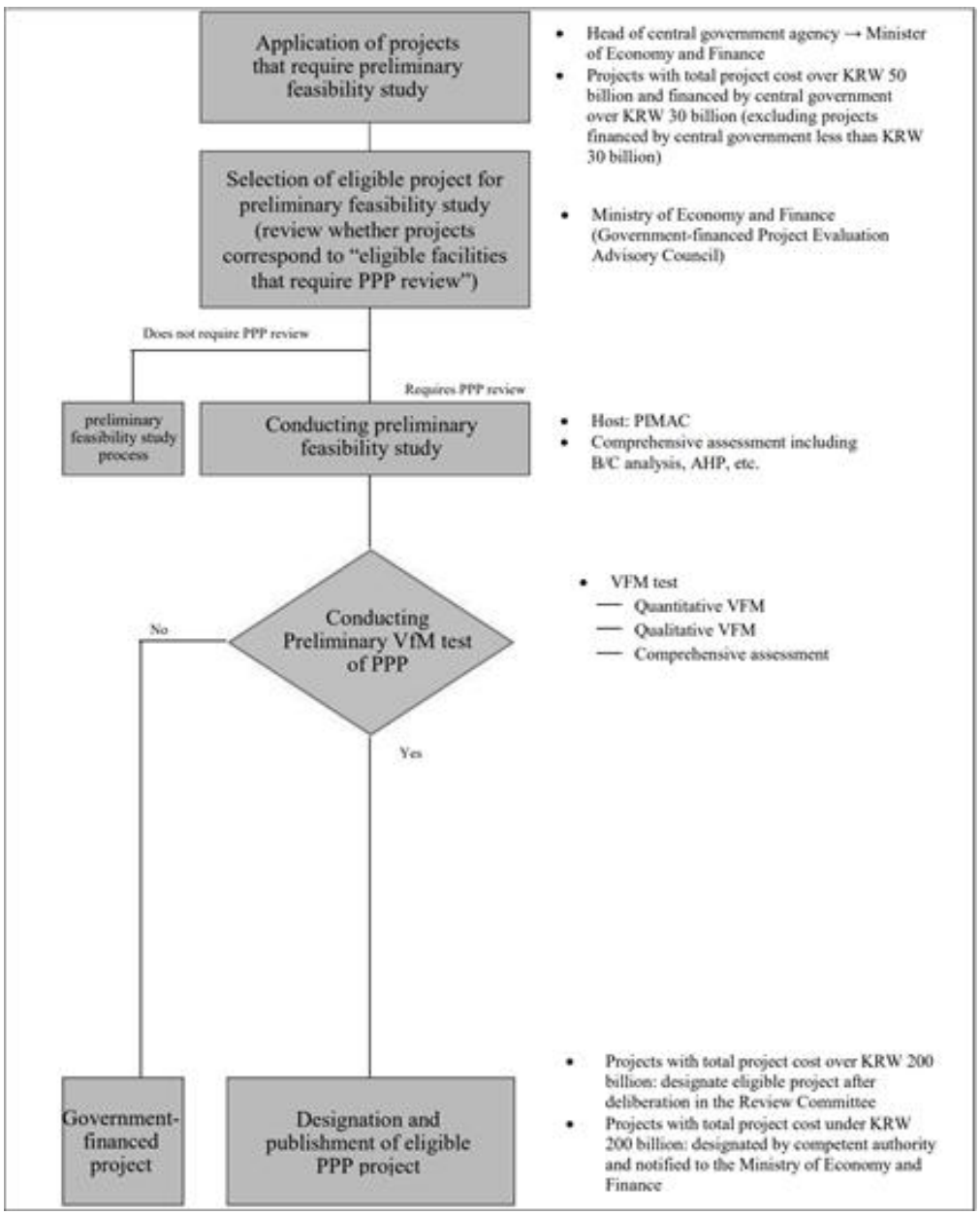
① Streamlined project execution including obtaining additional workforce for facilities expansion
② For buildings and structures, fixed arrangements for project sites and likelihood to have relevant approval and permit processes done in a timely manner
③ For civil engineering projects, likelihood of early construction commencement with completed basic design and streamlined approval and permit process
④ Absence of obstacles in project implementation, or if present, likelihood of swift resolution, for example, relocation plans, alternative facilities plans, no probable civil complaints in terms of environment, etc.

▎Figure Ⅲ-4▎BTO project (government-solicited project) implementation process



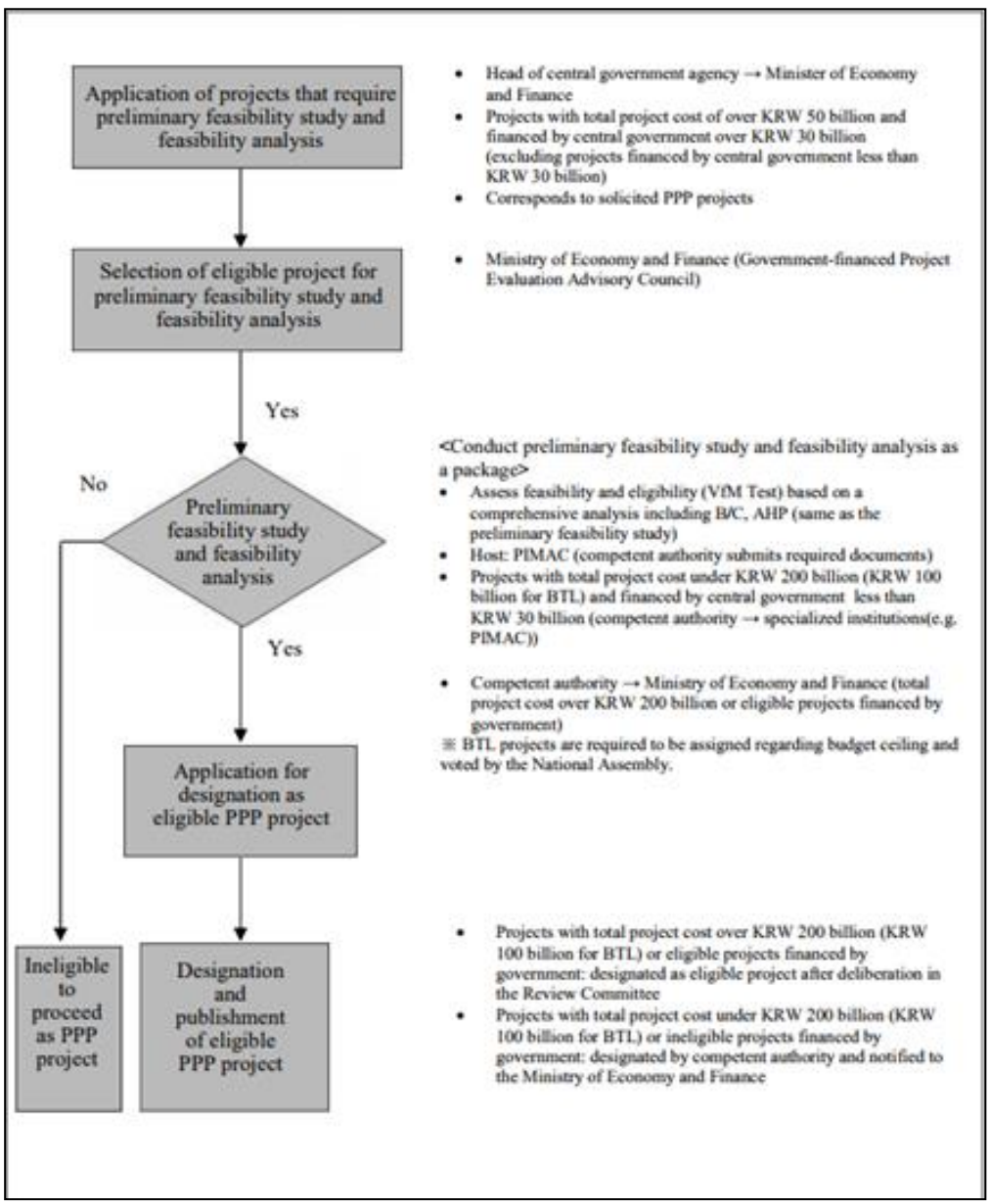
Source: Ministry of Economy and Finance, Basic Plan for PPP, 2022.

▎Figure Ⅲ-5 ▎ Government-solicited project selection process (if PFS requested for government-funded projects)



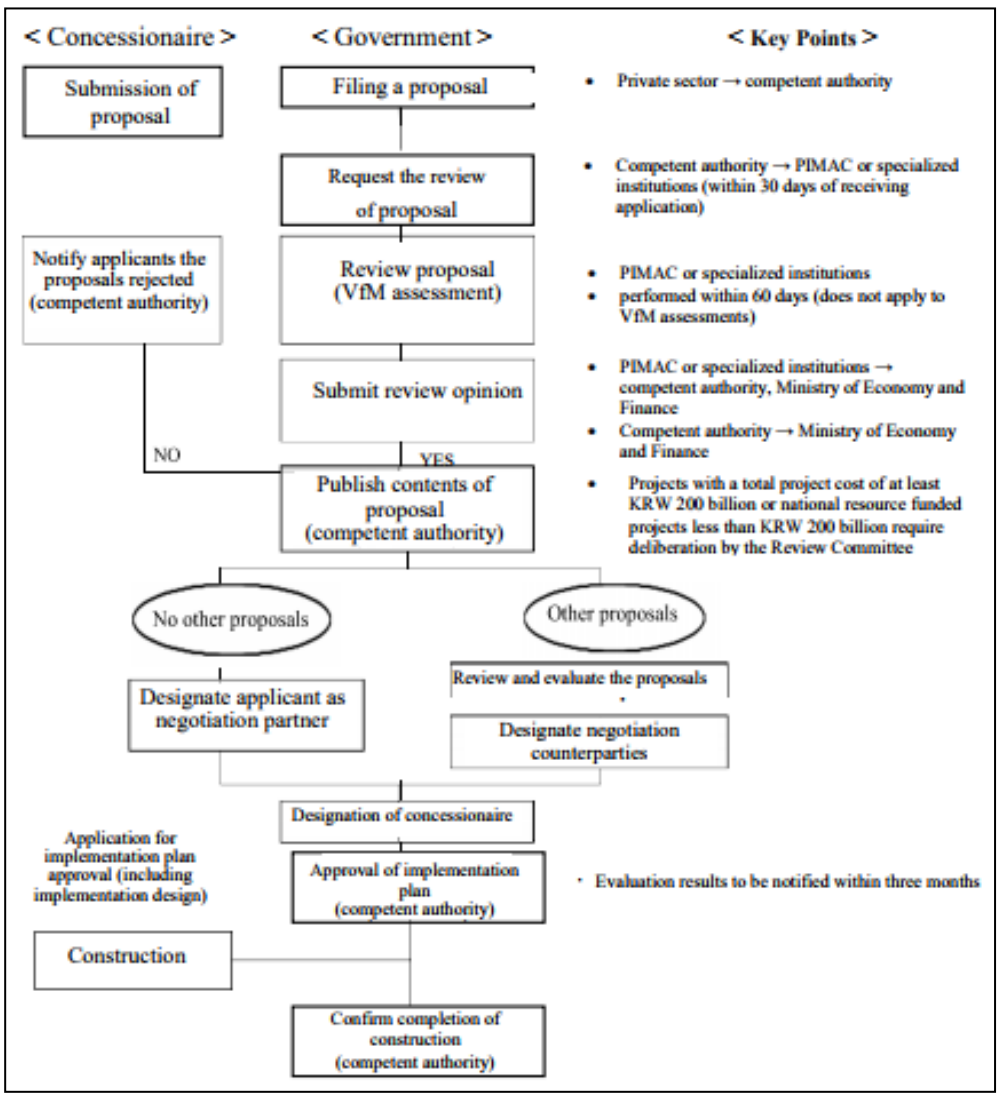
Source: Ministry of Economy and Finance, Basic Plan for PPP, 2022.

▎Figure Ⅲ-6▎Government-solicited project selection process (if PFS feasibility studies requested for government-solicited PPP projects)



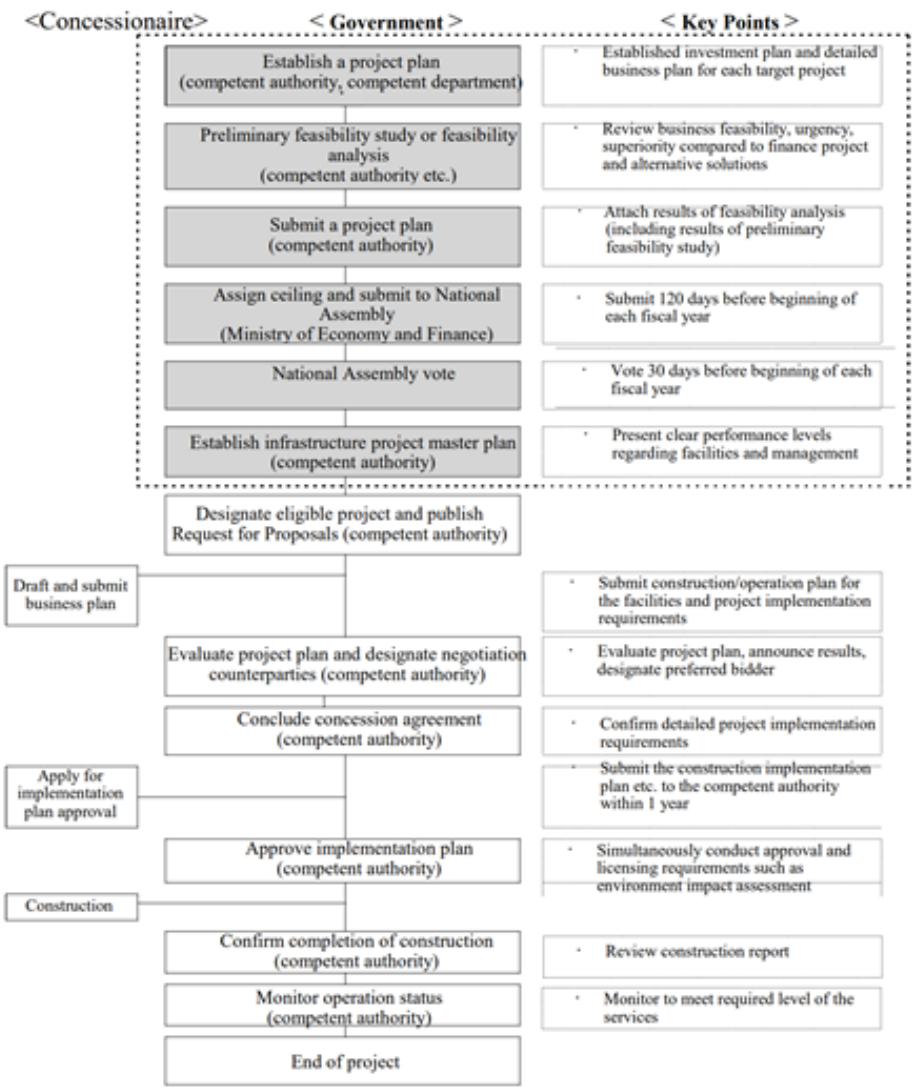
Source: Ministry of Economy and Finance, Basic Plan for PPP, 2022.

▎Figure Ⅲ-7▎BTO project (unsolicited project) implementation process



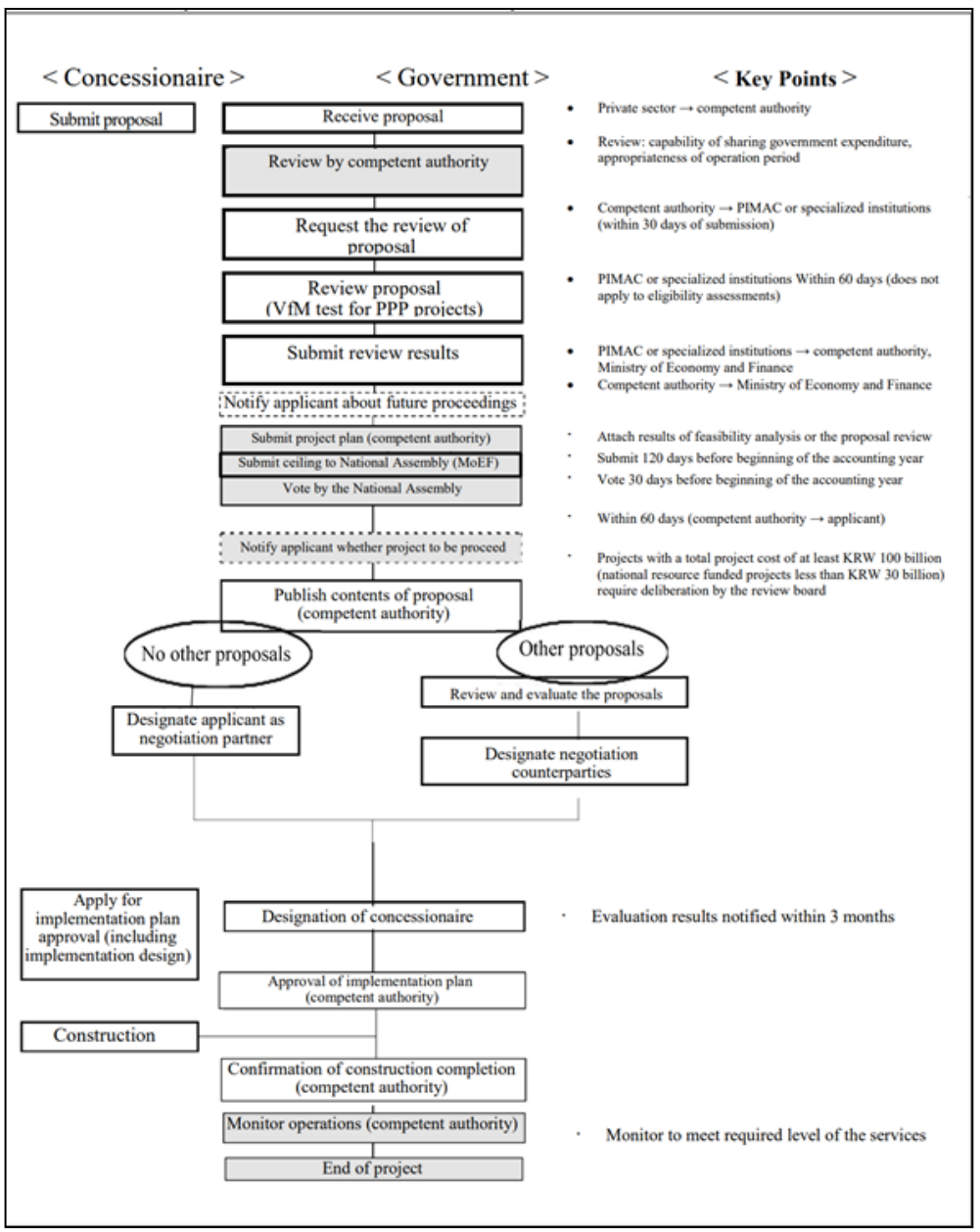
Source: Ministry of Economy and Finance, Basic Plan for PPP, 2022.

▎Figure Ⅲ-8▎Government-solicited BTL project implementation process



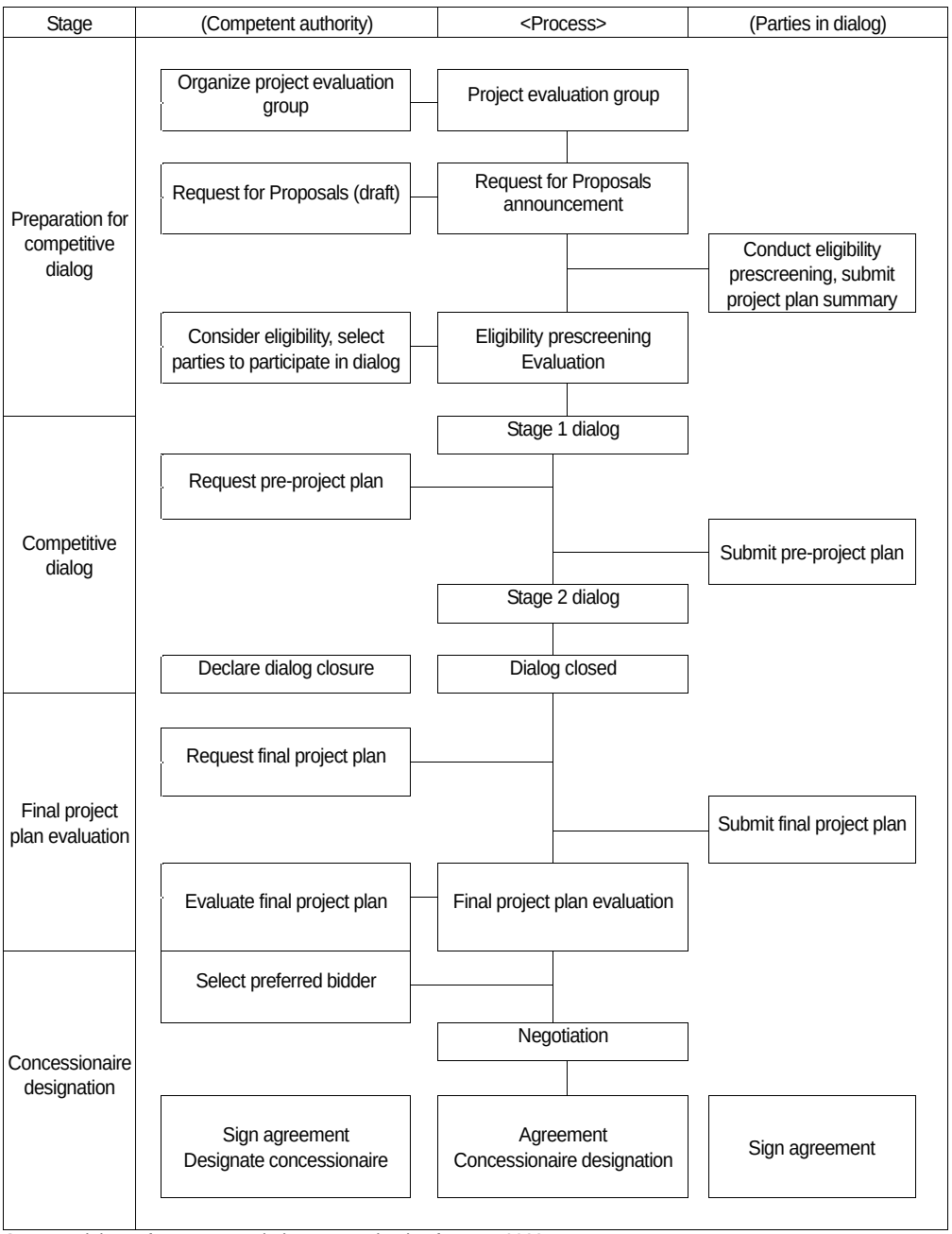
Source: Ministry of Economy and Finance, Basic Plan for PPP, 2022.

▎Figure Ⅲ-9▎ Unsolicited BTL project implementation process



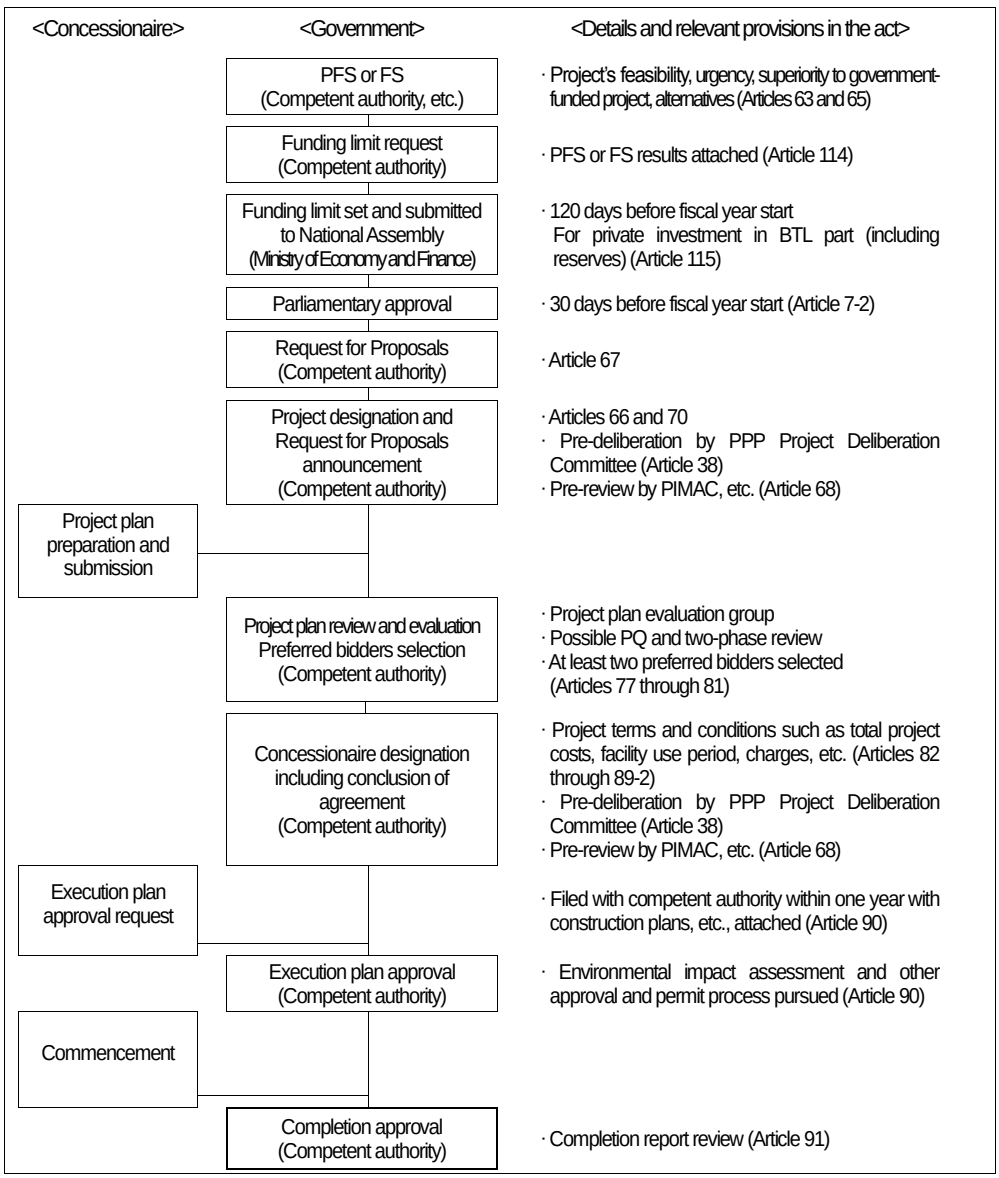
Source: Ministry of Economy and Finance, Basic Plan for PPP, 2022.

❙ Figure Ⅲ-10❙ Competitive dialog (BTO, government-solicited BTL project) process

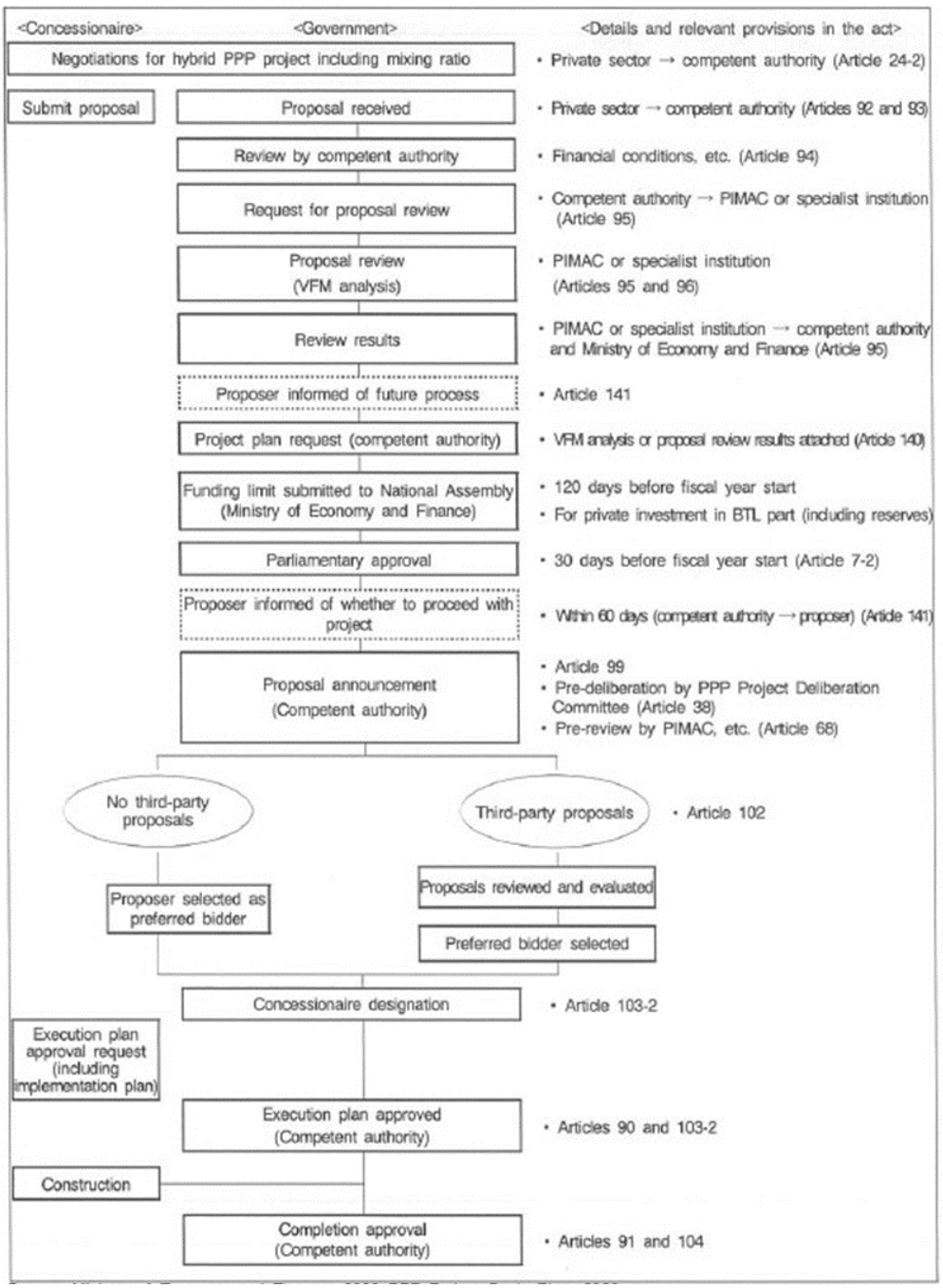


Source: Ministry of Economy and Finance, Basic Plan for PPP, 2022..

▎Figure Ⅲ-11▎Hybrid PPP project process (government-solicited projects)



▎Figure Ⅲ-12▎Hybrid PPP project process (unsolicited projects)



Section 2. PPP Project Details

1. PPP Project Eligibility Review

The revamping of the provisions on the definitions of social infrastructure facilities in the PPP Act allowed for many types of solicited or unsolicited projects [Article 2(1) of the PPP Act].

Before preparing a proposal, a private player files an application for PPP project eligibility review with the competent authority. The competent authority asks PIMAC for preliminary eligibility review, and PIMAC submits its opinions to the competent authority and the Ministry of Economy and Finance, followed by deliberation by the PPP Project Deliberation Committee.

To facilitate deliberation by the PPP Project Deliberation Committee, PIMAC presents its views, including consistency with relevant laws and fitness for public interest, based on the eligibility review request received from the competent authority.

2. VFM Analysis (Proposal Review) and Feasibility Study

A. VFM analysis (proposal review)

When a private player submits a PPP project proposal, the competent authority is required to ask the head of PIMAC or a specialist institution for the review of the proposal. PIMAC conducts a VFM analysis for a project with total costs of KRW 200 billion or more, or a proposal review otherwise.

VFM analysis, or proposal review, consists of three stages. First, feasibility analysis is intended to determine if the project is feasible. Second, if the project is considered feasible, PPP project eligibility analysis involves VFM analysis of the public sector comparator PSC and the private finance initiative PFI to see if a PPP project would be a better fit than a government-funded project. Third, PPP alternatives building involves financial analysis based on the findings from the second stage, calculation of reasonable project costs, charges, and government financial support, and identifying PPP alternatives.

B. Feasibility study

The Basic Plan provides that the competent authority should conduct feasibility studies based on the guidelines for the feasibility study of BTL PPP projects developed by PIMAC. This includes economic and policy feasibility analysis with particular focuses on the expected benefits and urgency of the project and VFM analysis to see if the PPP project would ease government burden and improve service quality compared with a government-funded project. The competent authority is required to ask PIMAC to consider the results of the feasibility study, and PIMAC submits its opinions to the competent authority and the Ministry of Economy and Finance.

3. Request for Proposals and Request for Alternate Proposals Review

A. Request for Proposal review (government-solicited projects)

Request for Proposals review corresponds to third-party alternate proposal review in unsolicited BTO projects. As all BTL projects are government solicited, Request for Proposals is essential. The Request for Proposals is developed after the feasibility study to ensure consistency with the results of the feasibility study. The competent authority is required to ask PIMAC to review the draft Request for Proposals, and PIMAC reviews the draft plan to determine its consistency with PPP-related laws, the Basic Plan, and relevant regulations.

B. Request for Alternate Proposal review and preparation (unsolicited projects)

Pursuant to Article 7(10) of the Enforcement Decree of the PPP Act, if the competent authority has decided to proceed with a PPP project, it should invite third-party proposals for the project by publishing the overview of the proposal in the official gazette, at least three daily newspapers, and its website. Upon request of the competent authority, PIMAC reviews the third-party proposals received.

4. Project Plan (Proposal) Evaluation

Following the Request for Proposals and Request for Alternate Proposals process, the original proposer's proposal and third-party proposals are evaluated to select the preferred bidder, with which an concession agreement will be concluded. The competent authority is required to review and evaluate the proposals as per relevant provisions in a Presidential Decree and designate the preferred bidder.

PIMAC evaluates PPP project proposals for the competent authorities. To ensure transparency, fairness, and objectivity, it employs sophisticated and detailed techniques to evaluate proposals.

5. Agreement Negotiations and Draft Agreement Review

A. Negotiations to conclude an agreement

When the preferred bidder is selected pursuant to the provisions in the PPP Act, the competent authority negotiates the terms and conditions with the preferred bidder and concludes an agreement. Negotiations include conditions for project implementation and total project costs. PIMAC assists the competent authority in this process and negotiates on behalf of the competent authority to ensure fairness and objectivity in negotiations.

PIMAC organizes a negotiation group consisting of internal and external experts. The terms and conditions resulting from the negotiations are reviewed by the Negotiation Review Committee. PIMAC also puts forth efforts to ensure expertise and objectivity in negotiations and facilitate negotiations.

B. Draft agreement review

The Basic Plan provides that the competent authority is required to pre-consult PIMAC if it intends to conclude an agreement for a project with total costs of KRW 200 billion or more or a project subject to deliberation by the PPP Project Deliberation Committee. This is to ensure, by having important PPP projects undergo review by PIMAC, that the projects are in the interest of the public.

The Basic Plan also provides that for all BTL projects PIMAC should review the agreements. The competent authority is required to have the concession agreement be reviewed by PIMAC before concluding it. PIMAC reviews the agreement to determine its consistency with PPP-related laws, the Basic Plan, and relevant regulations.

6. Refinancing Pre-review

As an increasing number of PPP projects entered the operation stages and resulting increases in refinancing were expected, the government amended the Basic Plan in 2004 to clarify the criteria and process of refinancing. The 2004 Basic Plan defined what refinancing was and presented common principles, as well as a basic framework to calculate profits in refinancing. After that, given changes in macroeconomic environments and the emergence of issues surrounding the minimum revenue guarantee (MRG), the 2007 Basic Plan extended the scope of refinancing to changes in investors and provided that state-managed projects that underwent deliberation by the PPP Project Deliberation Committee should be pre-reviewed by PIMAC for refinancing.

PIMAC has detailed guidelines for refinancing, and upon request of competent authorities it offers refinancing pre-review services including shared benefits measurements. Also, upon request of competent authorities pursuing PPP projects, it also negotiates with concessionaires, advises competent authorities, and reviews refinancing cases including changes in investors.

7. Project Implementation Condition Adjustment Review

In 2014, Article 33-2 of the Basic Plan was amended to extend the scope of project restructuring, which had been applicable to MRG projects, to projects that were poorly managed or in which excessive government funds were put in. This is intended to ease the financial burden of the competent authority by adjusting project implementation conditions. Projects to which this provision may be applied include projects where MRG provisions would incur excessive burden on

government finance and projects that might incur massive government payables if terminated.

PIMAC supports competent authorities intending to adjust project implementation conditions. If such projects underwent deliberation by the PPP Project Deliberation Committee, PIMAC also conducts pre-review upon the request of competent authorities.

8. PPP Project Support

A. Supporting the PPP Project Deliberation Committee

The PPP Project Deliberation Committee is responsible for deliberation on projects subject to deliberation by the PPP Project Deliberation Committee pursuant to the PPP Act and the Basic Plan. The subjects of the deliberation include projects with total costs of KRW 200 billion (KRW 100 billion if a BTL project), Request for Proposals that receive government funding (KRW 30 billion or more), Request for Alternate Proposals, concession agreements, and amendments to concession agreements that are disadvantageous to the government. For these projects, PIMAC reviews the competent authority's Request for Proposals, Request for Alternate Proposals, and concession agreements and provides the PPP Project Deliberation Committee with expert opinions to assist with the committee's deliberation.

B. Dispute settlement review

In March 2014, the Ministry of Economy and Finance established the operating rules of the PPP Project Dispute Settlement Committee that is responsible for arbitration and settlement of disputes arising from PPP projects. In principle, the committee reviews dispute cases and informs the parties of recommendations for settlement within 90 days from the receipt of the request. PIMAC's roles in this regard include providing advice on legal and technical issues relating to disputes brought to the PPP Project Dispute Settlement Committee to facilitate the committee's settlement and arbitration, thereby streamlining the settlement of disputes relating to PPP projects and ultimately promoting PPP projects and contributing to efficiency.

C. Other review and Q&A services

In addition to the abovementioned services, PIMAC, upon request of local governments and parties involved in PPP projects, reviews various issues relating to PPP projects. It also answers questions relating to PPP projects received from competent authorities, private players, and the public through its website.

D. Help desk support

PIMAC runs a help desk accessible via telephone or in person for central government agencies and local governments to ask questions about decision-making on PPP projects and issues arising from agreement management, among others. With the help desk, PIMAC listens to the voices of competent authorities and private parties involved in PPP projects and provides them with proper advice. This also allows PIMAC to identify areas that need institutional improvements based on feedback from the field.

9. Management Implementation Plan Review

After 20 years since the introduction of PPP projects, some of the initial projects saw their PPP management and operation arrangements becoming due (end of operation), and this called for further planning to continue operating the facilities after the expiry of the management and operation period under the PPP arrangements, for example, whether additional investment would be required, and who would take responsibility for facility operation and management. Accordingly, the 2015 Basic Plan (Ministry of Strategy and Finance Notification No. 2015-82) established new provisions on the management of projects on expiry of management and operation periods and the establishment of management implementation plans in Article 54-2. PIMAC, upon request of competent authorities, pre-reviews management implementation plans for projects that underwent deliberation by the PPP Project Deliberation Committee

Section 3. Performance of PPP Projects

From 1992 to the end of December 2022, 818 PPP projects were implemented with total investment of KRW 125 trillion. In 2022, 31 PPP projects were implemented with total investment of KRW 3,121.7 billion. Of the 31, six were BTO-type projects, and the other fifteen were BTL-type projects. Of the KRW 3,121.7 billion put in the PPP projects in 2022, KRW 172 billion was invested in BTO projects (55.1%) and KRW 140.17 billion in BTL projects (44.9%).

1. PPP Projects by Type

Although Article 4 of the PPP Act provides many different PPP project arrangements including BTO, BOT, BOO, and BTL, most of the projects pursued so far were BTO and BTL projects. Of the 818 PPP projects implemented between 1992 and 2022, 276 projects were BTO-type (33.7%) and 542 were BTL-type (66.3%) projects. Of the KRW 126 trillion put in the PPP projects so far, KRW 91.3 trillion was invested in BTO-type projects (72.6%), and KRW 34.3 trillion (27.4%) in BTL-type projects.

Of the 276 BTO-type projects, the majority, 250 projects, were BTO projects with total investment of KRW 83.3 trillion. The average investment in BTO projects was KRW 333.3 billion, 5.2 times higher than that in BTL projects, KRW 63.5 billion.

▌Table Ⅲ-6▐ PPP projects by type

(Unit: projects, KRW 100 million)

Category		No. of projects	Proportion	Total investment	Proportion	Average investment
BTO	BTO	250	30.6%	883,261	66.3%	3,333
	BOO	7	0.9%	10,944	0.9%	1,563
	BOT	4	0.5%	6,579	0.5%	1,645
	BTO-a	14	1.7%	21,340	1.7%	1,524
	BTO-rs	1	0.1%	41,047	3.3%	41,047
	Subtotal	276	33.7%	913,171	72.6%	3,309
BTL	BTL	542	66.3%	343,908	27.4%	635
Total		818	100%	1,257,079	100%	1,537

By order type, of the 276 BTO-type projects 111 were government-solicited projects (40.2%), and 165 were unsolicited projects (59.8%).

▌Table Ⅲ-7▐ PPP projects by arrangement and order type

(Unit: projects, KRW 100 million)

Category		No. of projects	Proportion	Total investment	Proportion	Average investment
BTO	Government solicited	111	40.2%	364,613	39.9%	3,285
	Unsolicited	165	59.8%	548,558	60.1%	3,325
	Subtotal	276	100%	913,171	100%	3,309
BTL	Government solicited	542		343,908		635
Total		818		1,257,079		1,537

2. PPP Projects by Facility Type

Of the 818 PPP projects implemented so far, education projects made up the largest portion, 278 projects, followed by environmental projects (221), defense (93), road (66), and culture and tourism (42). Investment-wise, KRW 47.5 trillion of the KRW 125.7 trillion was invested in the road projects, followed by railways (KRW 28.5 trillion) and environmental (KRW 17.5 trillion) projects. The average investment was the highest in the railway projects, KRW 1,583.9 billion, followed by road projects, KRW 719.2 billion.

▎Table Ⅲ-8▎PPP projects by facility type

(Unit: projects, KRW 100 million)

Category	No. of projects	Proportion	Total investment	Proportion	Average investment
Education	278	34.0%	117,964	9.4%	424
Environment	221	27.0%	175,472	14.0%	794
Defense	93	11.4%	68,228	5.4%	734
Road	66	8.1%	474,650	37.8%	7,192
Road (parking lot)	31	3.8%	3,582	0.3%	116
Road (service area)	3	0.4%	654	0.1%	218
Culture and tourism	42	5.1%	23,115	1.8%	550
Port	17	2.1%	72,159	5.7%	4,245
Welfare	20	2.4%	8,015	0.6%	401
Railway	18	2.2%	285,101	22.7%	15,839
Airport	14	1.7%	8,256	0.7%	590
Logistics	6	0.7%	12,114	1.0%	2,019
ICT	8	1.0%	7,532	0.6%	942
Housing	1	0.1%	237	0.0%	237
Total	818	100.0%	1,257,079	100.0%	1,537

Note: Road, parking lot, and service area projects were counted separately.

Of the 250 BTO projects, 100 were environmental projects, followed by road (66 projects), road (parking lot) (31), port (17), airport (14), and railway (12) projects. Of the 542 BTL projects, 276 were education projects, followed by environmental (107 projects), defense (93), and culture and tourism (33) projects. All 14 BTO-a projects were environmental projects, and the only BTO-rs project

was a railway project. In terms of facility-type-specific total investment, road projects accounted for 57.0% of all BTO projects (KRW 47.5 trillion), and education projects accounted for 33.9% of all BTL projects (KRW 11.7 trillion).

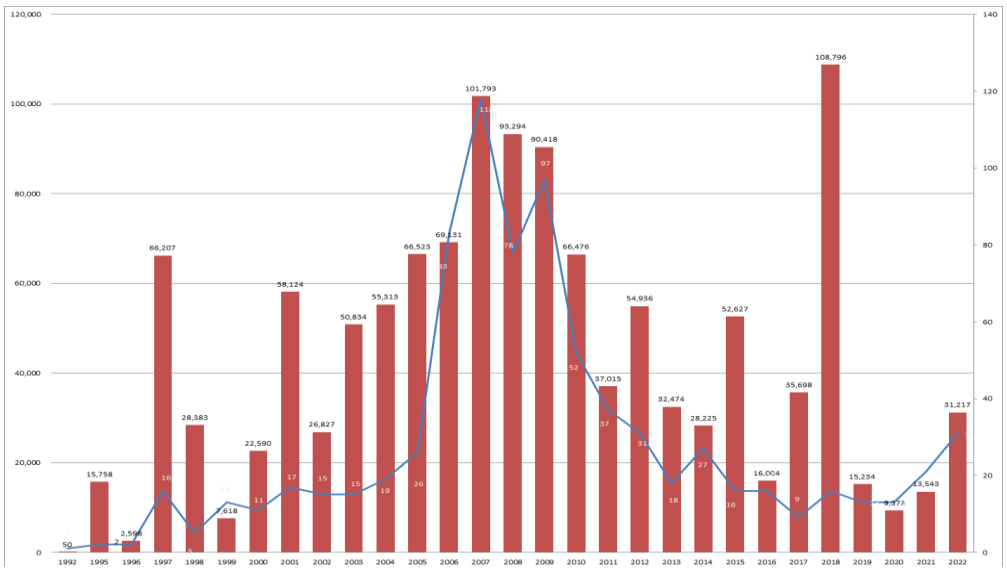
▌Table Ⅲ-9▐ PPP projects by arrangement and facility type

(Unit: projects, KRW 100 million)

Category		No. of projects	Proportion	Total investment	Proportion	Average investment
BTO	Environment	100	40.0%	76,720	9.2%	767
	Road	66	26.4%	474,650	57.0%	7,192
	Road (parking lot)	31	12.4%	3,582	0.4%	116
	Road (service area)	3	1.2%	654	0.1%	218
	Port	17	6.8%	72,159	8.7%	4,245
	Airport	14	5.6%	8,256	1.0%	590
	Railway	12	4.8%	189,358	22.7%	15,780
	Education	2	0.8%	1,299	0.2%	650
	Culture and tourism	4	1.6%	6,139	0.7%	1,535
	ICT	1	0.4%	444	0.1%	444
	Subtotal	250	100%	833,261	100%	3,333
BTO-a	Environment	14	100%	21,340	100%	1,524
BTO-rs	Railway	1	100%	41,047	100%	41,047
BOT	Culture and tourism	3	75.0%	3,438	52.3%	1,146
	Logistics	1	25.0%	3,141	47.7%	3,141
	Subtotal	4	100%	6,579	100%	1,645
BOO	Logistics	5	71.4%	8,973	82.0%	1,795
	Culture and tourism	2	28.6%	1,971	18.0%	986
	Subtotal	7	100%	10,944	100%	1,563
BTL	Education	276	50.9%	116,665	33.9%	423
	Environment	107	19.7%	77,412	22.5%	723
	Defense	93	17.2%	68,228	19.8%	734
	Culture and tourism	33	6.1%	11,567	3.4%	351
	Welfare	20	3.7%	8,015	2.3%	401
	Railway	5	0.9%	54,696	15.9%	10,939
	ICT	7	1.3%	7,088	2.1%	1,013
	Housing	1	0.2%	237	0.1%	237
	Subtotal	542	100%	343,908	100%	635
Total		818		1,257,079		1,537

Note: % proportion by arrangement.

▎Figure Ⅲ-13▎ Number of project and total investment by year

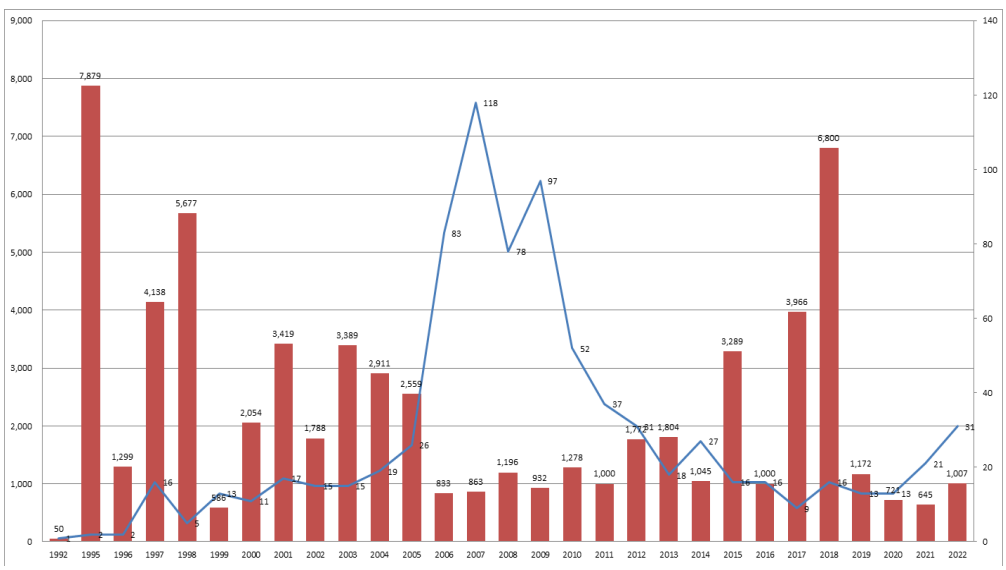


3. PPP Project by Year

Since the legal grounds for PPP projects were established in 1994, the number of projects and total investment have continued to rise. In particular, the introduction of unsolicited project arrangements and the MRG scheme in 1999 triggered surges in investment in PPP projects. The introduction of BTL arrangements in 2005 led to sharp rises in the number of projects, but the average investment decreased. Both the number of projects and total investment reached their peak in 2007 before they started declining. In 2015, the number of projects did not increase, but the total investment perked up as agreements on four major projects for railway and road construction were concluded. In 2017, only nine agreements were concluded, but total investment surged primarily associated with the concession agreement for the construction of the Pyeongtaek-Buyeo-Iksan (Western Inland) Expressway. In the following year, 16 concession agreements were concluded, and total investment also sharply increased with the conclusion of

concession agreements for the Sinansan Line double-track railways and the Great Train Express Line A.

▎Figure Ⅲ-14▎Number of project and average investment by year



<Table V-5> shows the types of projects pursued by year. Total investment in BTO-type PPP projects (BTO, BOT, BOO, etc.) was KRW 91.3 trillion, and KRW 34.3 trillion was put in BTL projects. Without private investment, the government would have had to invest a significant portion of such amounts, and if the government had not been able to implement projects due to financial limits, that would have meant decreases in benefits for the public.

▌Table Ⅲ-10▐ PPP projects by type and year

(Unit: projects, KRW 100 million)

Year	No. of projects	Total investment	Average investment	BTO		BTL	
				No. of projects	Total investment	No. of projects	Total investment
1992	1	50	50	1	50	0	0
1995	2	15,758	7,879	2	15,758	0	0
1996	2	2,598	1,299	2	2,598	0	0
1997	16	66,207	4,138	16	66,207	0	0
1998	5	28,383	5,677	5	28,383	0	0
1999	13	7,618	586	13	7,618	0	0
2000	11	22,590	2,054	11	22,590	0	0
2001	17	58,124	3,419	17	58,124	0	0
2002	15	26,827	1,788	15	26,827	0	0
2003	15	50,834	3,389	15	50,834	0	0
2004	19	55,313	2,911	19	55,313	0	0
2005	26	66,523	2,559	18	62,761	8	3,762
2006	83	69,131	833	12	39,434	71	29,697
2007	118	101,793	863	17	42,484	101	59,309
2008	78	93,294	1,196	15	64,199	63	29,095
2009	97	90,418	932	10	35,414	87	55,004
2010	52	66,476	1,278	4	20,333	48	46,143
2011	37	37,015	1,000	13	23,352	24	13,663
2012	31	54,936	1,772	8	38,816	23	16,120
2013	18	32,474	1,804	9	14,967	9	17,507
2014	27	28,225	1,045	9	15,852	18	12,373
2015	16	52,627	3,289	7	32,623	9	20,004
2016	16	16,004	1,000	5	10,690	11	5,314
2017	9	35,698	3,966	4	33,431	5	2,267
2018	16	108,796	6,800	7	103,772	9	5,024
2019	13	15,234	1,172	5	11,844	8	3,390
2020	13	9,373	721	5	6,353	8	3,020
2021	21	13,543	645	6	5,344	15	8,199
2022	31	31,217	1,007	6	17,200	25	14,017
Total	818	1,257,079	1,537	276	913,171	542	343,908

Note: The BTO columns show data for BTO, BOT, BOO, BTO-a, and BTO-rs projects.

Projects pursued by local governments sharply increased since the introduction of BTL arrangements in 2005. The number of projects pursued by local governments, 350 projects,

was larger than the number of projects managed by the state (243) and local government projects managed by the state (225) but was less in the amount of total investment.

▌Table Ⅲ-11▐ PPP projects by year and agency

(Unit: projects, KRW 100 million)

Year	No. of projects	Total investment	State managed		State-managed local government		Local government managed	
			No. of projects	Total investment	No. of projects	Total investment	No. of projects	Total investment
1992	1	50	0	0	0	0	1	50
1995	2	15,758	1	15,055	0	0	1	703
1996	2	2,598	0	0	0	0	2	2,598
1997	16	66,207	12	59,465	1	3,025	3	3,717
1998	5	28,383	1	26,310	1	1,881	3	192
1999	13	7,618	4	4,334	0	0	9	3,284
2000	11	22,590	2	20,264	0	0	9	2,326
2001	17	58,124	4	48,254	1	986	12	8,884
2002	15	26,827	0	0	3	22,363	12	4,464
2003	15	50,834	4	19,930	2	26,343	9	4,561
2004	19	55,313	4	26,958	4	23,390	11	4,965
2005	26	66,523	9	42,188	6	19,209	11	5,126
2006	83	69,131	18	33,477	20	21,567	45	14,087
2007	118	101,793	14	43,799	37	31,686	67	26,308
2008	78	93,294	10	53,861	27	20,445	41	18,988
2009	97	90,418	35	39,797	31	35,902	31	14,719
2010	52	66,476	22	47,613	14	10,755	16	8,108
2011	37	37,015	11	20,082	7	6,537	19	10,396
2012	31	54,936	10	39,923	10	8,608	11	6,405
2013	18	32,474	6	23,392	3	3,127	9	5,955
2014	27	28,225	12	9,184	7	13,994	8	5,047
2015	16	52,627	6	27,382	7	22,960	3	2,285
2016	16	16,004	8	9,221	6	5,888	2	895
2017	9	35,698	8	34,448	0	0	1	1,250
2018	16	108,796	11	83,551	3	16,472	2	8,773
2019	13	15,234	7	3,241	4	4,278	2	7,715
2020	13	9,373	7	2,448	4	2,075	2	4,850
2021	21	13,543	12	7,719	4	3,177	4	2,647
2022	31	31,217	5	6,477	23	11,190	3	13,550
Total	818	1,257,079	243	748,373	225	315,858	350	192,848

In terms of ordering formalities, government-solicited BTO-type projects showed sudden decreases in 2007 and thereafter, which was in contrast to unsolicited projects. This implies that unsolicited projects are preferred over government-solicited projects.

▌Table Ⅲ-12▐ PPP projects by year and order type

(Unit: projects, KRW 100 million)

Year	No. of projects	Total investment	Government solicited				Unsolicited (BTO)	
			BTO		BTL			
			No. of projects	Total investment	No. of projects	Total investment	No. of projects	Total investment
1992	1	50	1	50	0	0	0	0
1995	2	15,758	2	15,758	0	0	0	0
1996	2	2,598	2	2,598	0	0	0	0
1997	16	66,207	15	65,108	0	0	1	1,099
1998	5	28,383	5	28,383	0	0	0	0
1999	13	7,618	12	7,268	0	0	1	350
2000	11	22,590	10	22,549	0	0	1	41
2001	17	58,124	10	51,143	0	0	7	6,981
2002	15	26,827	11	14,159	0	0	4	12,668
2003	15	50,834	4	1,351	0	0	11	49,483
2004	19	55,313	10	25,881	0	0	9	29,432
2005	26	66,523	5	17,716	8	3,762	13	45,045
2006	83	69,131	9	35,566	71	29,697	3	3,868
2007	118	101,793	5	910	101	59,309	12	41,574
2008	78	93,294	1	159	63	29,095	14	64,040
2009	97	90,418	0	0	87	55,004	10	35,414
2010	52	66,476	1	721	48	46,143	3	19,612
2011	37	37,015	0	0	24	13,663	13	23,352
2012	31	54,936	0	0	23	16,120	8	38,816
2013	18	32,474	1	1,100	9	17,507	8	13,867
2014	27	28,225	1	93	18	12,373	8	15,759
2015	16	52,627	1	564	9	20,004	6	32,059
2016	16	16,004	1	141	11	5,314	4	10,549
2017	9	35,698	2	984	5	2,267	2	32,447
2018	16	108,796	2	72,411	9	5,024	5	31,361
2019	13	15,234	0	0	8	3,390	5	11,844
2020	13	9,373	0	0	8	3,020	5	6,353
2021	21	13,543	0	0	13	6,756	6	5,344
2022	31	31,217	0	0	25	14,017	6	17,200
Total	818	1,257,079	111	364,613	540	342,465	165	548,558

4. PPP Projects by Agency

There were 2.7 times more state-managed local government PPP projects and local-government-managed PPP projects, 575, than state-managed PPP projects, 243. However, total investment in the state-managed PPP projects (KRW 74.8 trillion) was 1.5 times more than that in state-managed local government PPP projects and local-government-managed PPP projects (KRW 50.9 trillion). On average, KRW 308 billion was invested in a state-managed project, and KRW 140.4 billion and KRW 55.1 billion in a state-managed local government project and a local-government-managed project, respectively.

▎Table Ⅲ-13▎PPP projects by agency

(Unit: projects, KRW 100 million)

Agency	No. of projects	Proportion	Total investment	Proportion	Average investment
State managed	243	29.7%	748,373	59.5%	3,080
State-managed local government	225	27.5%	315,858	25.1%	1,404
Local government managed	350	42.8%	192,848	15.3%	551
Total	818	100%	1,257,079	100%	1,537

Regardless of who managed the project, the majority of the projects were BTL projects, but BTO projects accounted for the largest portion of the total investment. Of all BTL projects, 169 were state-managed projects (69.5% of state-managed projects), 166 were state-managed local government projects (73.8% of state-managed local government projects), and 3 were local-government-managed projects (0.9% of local-government-managed projects). In terms of total investment, KRW 52.6 trillion was invested in state-managed BTO projects (70.3% of total investment in all state-managed projects), KRW 21.3 trillion was invested in state-managed local government BTO projects (67.4% of total investment in all state-managed local government projects), and KRW 9.4 trillion was invested in local-government-managed BTO projects (48.9% of total investment in all local-government-managed projects). For BTL projects, KRW 16.7 trillion was invested in state-managed projects (22.3% of total investment in all state-managed projects), KRW 9.6 trillion in state-managed local government projects (30.4% of total

investment in all state-managed local government projects), and KRW 1.1 trillion in local-government-managed projects (5.7% of total investment in all local government-managed projects).

Table Ⅲ-14 PPP projects by agency and project type

(Unit: projects, KRW 100 million)

Agency	Project type	No. of projects	Proportion	Total investment	Proportion	Average investment
State managed	BTO	65	26.7%	526,114	70.3%	8.094
	BTO-a	3	1.2%	3,396	0.5%	1.132
	BTO-rs	1	0.4%	41,047	5.5%	41.047
	BOO	4	1.6%	7,830	1.0%	1.958
	BOT	1	0.4%	3,141	0.4%	3.141
	BTL	169	69.5%	166,845	22.3%	987
	Subtotal	243	100%	748,373	100%	3.080
State-managed local government	BTO	51	22.7%	212,924	67.4%	4.175
	BTO-a	8	3.6%	7,044	2.2%	881
	BTL	166	73.8%	95,890	30.4%	578
	Subtotal	225	100%	315,858	100%	1.404
Local government managed	BTO	134	38.3%	94,223	48.9%	703
	BOO	3	0.9%	3,114	1.6%	1.038
	BOT	3	0.9%	3,438	1.8%	1.146
	BTL	207	59.1%	81,173	42.1%	392
	Subtotal	350	100%	192,848	100%	3.633
Total		818		1,257,079		1.537

In terms of facility types, of the 243 state-managed projects, 93 were defense projects, followed by education (59), road (24), and port (17) projects. The majority of state-managed local government (225) and local government-managed (350) projects were environment (136) and education (196) projects, respectively. In terms of total investment, road projects (KRW 32.1 trillion) accounted for the largest portion of total investment in the state-managed projects (KRW 74.8 trillion), environmental projects (KRW 12.1 trillion) in the state-managed local government projects (KRW 31.6 trillion), and education projects (KRW 7.7 trillion) in local-government-managed projects (KRW 19.3 trillion).

▌Table Ⅲ-15▌ PPP projects by agency and facility type

(Unit: projects)

Category		No. of projects	Proportion	Total investment	Proportion	Average investment
State managed	Defense	93	38.3%	68,228	9.1%	734
	Education	59	24.3%	32,303	4.3%	548
	Road	24	9.9%	321,367	42.9%	13,390
	Port	17	7.0%	72,159	9.6%	4,245
	Airport	14	5.8%	8,256	1.1%	590
	Railway	11	4.5%	216,010	28.9%	19,637
	Logistics	5	2.1%	10,971	1.5%	2,194
	Environment	7	2.9%	6,744	0.9%	963
	Welfare	8	3.3%	3,834	0.5%	479
	Culture and tourism	2	0.8%	1,656	0.2%	828
	ICT	3	1.2%	6,845	0.9%	2,282
	Subtotal	243	100%	748,373	100%	3,080
State-managed local government	Environment	136	60.4%	121,252	38.4%	892
	Culture and tourism	26	11.6%	7,154	2.3%	275
	Road	20	8.9%	105,124	33.3%	5,256
	Road (service area)	1	0.4%	141	0.0%	141
	Welfare	12	5.3%	4,181	1.3%	348
	Railway	7	3.1%	69,091	21.9%	9,870
	Education	23	10.2%	8,915	2.8%	388
	Subtotal	225	100%	315,858	100%	1,404
Local government managed	Education	196	56.0%	76,746	39.8%	392
	Environment	78	22.3%	47,476	24.6%	609
	Road	22	6.3%	48,159	25.0%	2,189
	Road (parking lot)	30	8.6%	3,441	1.8%	115
	Road (service area)	3	0.9%	654	0.3%	218
	Culture and tourism	14	4.0%	14,305	7.4%	1,022
	ICT	5	1.4%	687	0.4%	137
	Logistics	1	0.3%	1,143	0.6%	1,143
	Housing	1	0.3%	237	0.1%	237
	Subtotal	350	100%	192,848	100%	551
Total		818		1,257,079		1,537

5. PPP Projects by Ordering Formality

Government-solicited PPP projects outnumbered unsolicited projects both in number and total investment, while the average investment was higher in unsolicited projects.

To date, 651 government-solicited projects were implemented with total investment of KRW 70.7 trillion and the average investment per project of KRW 108.6 billion. The average investment of 167 unsolicited projects was KRW 329.3 billion with total investment of KRW 55 trillion.

▎Table Ⅲ-16▎PPP projects by ordering formality

(Unit: projects, KRW 100 million)

Category	No. of projects	Proportion	Total investment	Proportion	Average investment
Government solicited	651	100.0%	707,078	100.0%	1,086
BTO	111	17.1%	364,613	51.6%	3,285
BTL	540	82.9%	342,465	48.4%	634
Unsolicited	167	100%	550,001	100%	3,293
BTO	165	98.8%	548,558	99.7%	3,325
BTL	2	1.2%	1,443	0.3%	722
Total	818	100.0%	1,257,079	100.0%	1,537

The largest number of government-solicited PPP projects were education projects, 277, followed by environmental (132) and defense (93) projects. The unsolicited projects were dominated by environmental (89) and road (48) projects that far outnumbered the third most common project type—culture and tourism (8 projects). Railway projects required the largest amount of investment (KRW 21.1 trillion) among the government-solicited projects, followed by road (KRW 11.9 trillion) and education (KRW 11.8 trillion) projects. The investment in the unsolicited projects primarily went to road (KRW 35.6 trillion), environmental (KRW 9.0 trillion), and railway (KRW 7.4 trillion) projects.

▎Table Ⅲ-17▎PPP projects by ordering formality and facility type

(Unit: projects, KRW 100 million)

Category	Government solicited						Unsolicited			
			BTO		BTL		BTO		BTL	
	No. of projects	Total investment	No. of projects	Total investment	No. of projects	Total investment	No. of projects	Total investment	No. of projects	Total investment
Education	278	117,964	2	1,299	275	116,395	0	0	1	270
Environment	221	175,472	26	9,230	106	76,239	88	88,830	1	1,173
Defense	93	68,228	0	0	93	68,228	0	0	0	0
Culture and tourism	42	23,115	1	267	33	11,567	8	11,281	0	0
Road	66	474,650	18	118,950	0	0	48	355,700	0	0
Road (parking lot)	31	3,582	28	2,805	0	0	3	777	0	0
Road(service station)	3	654	0	0	0	0	3	654	0	0
Welfare	20	8,015	0	0	20	8,015	0	0	0	0
Airport	14	8,256	13	7,755	0	0	1	501	0	0
Port	17	72,159	12	60,959	0	0	5	11,200	0	0
Railway	18	285,101	7	156,324	5	54,696	6	74,081	0	0
Logistics	6	12,114	4	7,024	0	0	2	5,090	0	0
ICT	8	7,532	0	0	7	7,088	1	444	0	0
Housing	1	237	0	0	1	237	0	0	0	0
Total	818	1,257,079	111	364,613	540	342,465	165	548,558	2	1,443

6. PPP Projects by Implementation Stage

The majority of the PPP projects are in operation (686 projects, 83.9%). They also account for the majority of the total investment, KRW 98.2 trillion. The average investment per project is the highest in projects under construction, KRW 587.7 billion.

▎Table Ⅲ-18▎PPP projects by implementation stage

(Unit: projects, KRW 100 million)

Stage	No. of projects	Proportion	Total investment	Proportion	Average investment
Complete	54	6.6%	23,595	1.9%	437
In operation	686	83.9%	982,020	78.1%	1,432
Under construction	35	4.3%	205,682	16.4%	5,877
In preparation	43	5.3%	45,782	3.6%	1,065
Total	818	100.0%	1,257,079	100.0%	1,537

Of the 686 projects in operation, 235 are education projects, followed by environmental (185), defense (88), and road (54) projects. Of the 35 projects under construction, 10 are environmental projects, followed by education (8) and defense, road, and railway (5) projects respectively. Among the projects in operation, road projects attracted the largest amount of investment, KRW 39.3 trillion, followed by railway (KRW 16.9 trillion) and environmental (KRW 13.9 trillion) projects.

Table Ⅲ-19 PPP projects by implementation stage and facility type

(Unit: projects, KRW 100 million)

Category	Complete		In operation		Under construction		In preparation		Total	
	No. of projects	Investment	No. of projects	Investment	No. of projects	Investment	No. of projects	Investment	No. of projects	Investment
Education	11	3,279	235	102,613	8	2,777	24	9,295	278	117,964
Environment	17	9,308	185	139,423	10	10,396	9	16,345	221	175,472
Defense	0	0	88	65,239	5	2,989	0	0	93	68,228
Road	3	5,049	54	392,615	5	69,721	4	7,265	66	474,650
Road (parking lot)	12	367	18	2,494	0	0	1	721	31	3,582
Road (service area)	0	0	3	654	0	0	0	0	3	654
Culture and tourism	0	0	40	17,499	0	0	2	5,616	42	23,115
Port	0	0	17	72,159	0	0	0	0	17	72,159
Welfare	0	0	18	6,919	1	421	1	675	20	8,015
Railway	0	0	13	168,613	5	116,488	0	0	18	285,101
Airport	6	2,847	8	5,409	0	0	0	0	14	8,256
Logistics	1	1,949	3	6,132	1	2,890	1	1,143	6	12,114
ICT	4	796	3	2,014	0	0	1	4,722	8	7,532
Housing	0	0	1	237	0	0	0	0	1	237
Total	54	23,595	686	982,020	35	205,682	43	45,782	818	1,257,079

Of all BTO-type PPP projects, 202 projects (73.2%) are in operation with total investment of KRW 69.3 trillion (75.9%). There are 16 projects under construction (5.8%) with total investment of KRW 16.8 trillion (18.4%), and their average investment per project is the largest, KRW 1,049 billion. 17 projects are in preparation for construction (6.2%) with total investment of KRW 3.1 trillion (3.4%).

▎Table Ⅲ-20▎BTO-types PPP projects by implementation stage

(Unit: projects, KRW 100 million)

Stage	No. of projects	Proportion	Total investment	Proportion	Average investment
Complete	41	14.9%	21,068	2.3%	514
In operation	202	73.2%	693,176	75.9%	3,432
Under construction	16	5.8%	167,837	18.4%	10,490
In preparation	17	6.2%	31,090	3.4%	1,829
Total	279	100.0%	913,171	100%	3,309

Of all BTL PPP projects, 484 projects (89.3%) are in operation with total investment of KRW 28.9 trillion (84.0%). There are 19 projects under construction (3.5%) with total investment of KRW 3.8 trillion (11.0%), and their average investment per project is the largest, KRW 199.2 billion. 26 projects are in preparation for construction (4.8%) with total investment of KRW 1,469 billion (4.3%).

▎Table Ⅲ-21▎BTL PPP projects by implementation stage

(Unit: projects, KRW 100 million)

Stage	No. of projects	Proportion	Total investment	Proportion	Average investment
Complete	13	2.4%	2,527	0.7%	194
In operation	484	89.3%	288,844	84.0%	597
Under construction	19	3.5%	37,845	11.0%	1,992
In preparation	26	4.8%	14,692	1.3%	565
Total	542	100.0%	343,908	100.0%	635

Section 4. Track Records of PPP Project Support

1. Track Records from 1999 to 2022

The PPP project support services at PIMAC include reviews of appropriateness of eligible facilities, New Deal infrastructure deliberation, proposal reviews, feasibility analyses, feasibility analysis reviews, reassessment studies, (draft) Request for Proposals and (draft) Request for Alternate Proposals reviews, project plan evaluations, concession agreement negotiations, (draft) agreement reviews,

negotiations and preliminary reviews of refinancing at the operating stage, adjustment of project implementation conditions and advice. <Table Ⅲ-22> shows the institution's PPP project support service track records from 1999 to 2022.

| Table Ⅲ-22 | PPP projects support in 2022

(Unit: projects)

Type of service		´99	´00	´01	´02	´03	´04	´05	´06	´07	´08	´09	´10	´11	´12	´13	´14	´15	´16	´17	´18	´19	´20	´21	´22
Eligibility review		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	3
New Deal infrastructure deliberation		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-
Assessment	VFM analysis (BTO)	-	-	-	-	-	-	4	1	12	10	25	5	3	5	1	2	-	1	4	12	8	8	8	6
	VFM analysis (BTL)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1
	Proposal review (BTO)	5	23	19	22	39	15	11	12	11	15	14	13	10	5	7	6	4	8	5	11	9	8	2	3
	Proposal review (BTL)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	3
	Feasibility study reviews (BTO)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	-	2	-	-	-	1	-
	Feasibility study reviews (BTL)	4	8	10	-	4	4	-	-	-	-	68	17	14	20	15	12	11	6	8	12	18	23	16	41
	R D F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	-	1	2	-	-	-	-
	VFM reassessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	1	1	-	1	-	1
Request for Proposals and Request for Alternate Proposals review		7	7	9	7	12	11	48	57	62	42	42	35	18	14	12	11	10	8	4	8	10	13	6	10
Project plan review		1	2	8	7	-	7	16	8	17	5	1	7	4	2	-	-	1	1	1	-	-	1	-	-
Concession agreement negotiations		3	32	23	25	29	20	6	8	6	8	4	4	3	3	-	4	-	2	1	-	-	-	1	-
Advice, etc.								39	76	71	98	58	65	90	173	147	196	174	237	225	169	162	237	280	225
Concession agreement review		3	5	3	2	2	7	2	41	78	80	72	45	25	20	13	16	16	11	9	7	7	6	12	9
	BTO	3	5	3	2	2	7	2	1	5	4	5	4	7	6	5	4	8	5	4	3	3	3	6	8
	BTL	-	-	-	-	-	-	-	40	73	76	67	41	18	14	8	12	8	6	5	4	4	3	6	1
Refinancing negotiation and pre-review		-	-	-	-	-	-	-	-	4	12	14	9	16	4	11	6	9	16	13	11	4	3	9	7
Project condition adjustment		-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2	4	6	-	3	2	2	-	1
Short-term finance (MRG review, etc.)		-	-	-	-	-	-	-	-	-	-	-	-	-	16	17	48	31	29	32	39	30	32	16	24
Dispute settlement review		-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	2	2	-	-	-	-	5	1	-
Management implementation plan review		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	1	-
Total		23	77	72	63	86	64	126	203	261	270	298	200	183	267	225	311	267	325	307	278	248	334	368	334

Note: Assessment, review, analysis, evaluation, and negotiation cases completed as of the end of each year.

2. Track Records in 2022

A. Facility eligibility review

Following the revamping of the provisions on the definition of social overhead capital in the PPP Act, PIMAC started conducting facility eligibility reviews in 2020. There are 3 projects reviewed in 2022.

▎Table Ⅲ-23▎Facility eligibility review in 2022

(Unit: projects)

No.	Project	Competent authority
1	Seoul Grand Park Gondola PPP project	Seoul City
2	Blockchain-Based Integrated Platform PPP project	Busan Metropolitan City
3	Gyeonggi Provincial Office Public EV Charging Station PPP project	Gyeonggi Provincial Office

B. New Deal infrastructure deliberation

In accordance with Article 24 of the Restriction of Special Taxation Act and Article 24 of the Enforcement Decree of the same Act, special provisions on taxation for infrastructure collective investment organizations (hereinafter referred to as the "New Deal Infrastructure Fund") shall be applied. PIMAC presents an advisory opinion on whether the New Deal infrastructure fund's investment is subject to the New Deal infrastructure. There is no project reviewed in 2022.

C. VFM analysis (proposal review) and feasibility study review

1) VFM analysis and proposal review (BTO)

In 2022, PIMAC conducted VFM analyses for 6 projects and proposal reviews for 3 projects. Of the 9 projects, 7 were BTO-a projects and 2 were BTO projects. Facility-type-wise, 5 were environmental projects, 3 were road projects (including parking lots), and 1 was port project.

▎Table Ⅲ-24▎VFM analysis and proposal reviews in 2022 (BTO)

Service	No.	Project	Competent authority	Facility type
VFM analysis	1	Namyangju Resource Recycling Complex (BTO-a)	Namyangju City	Environment
	2	Gongju-Cheonan Expressway (BTO-a)	Ministry of Land, Infrastructure and Transport	Road
	3	Busan New Port Ship Repair (BTO)	Ministry of Oceans and Fisheries	Port
	4	AH1 Expressway (BTO-a)	Ministry of Land, Infrastructure and Transport	Road
	5	Pyeongtaek City Tongbok Public Sewage Treatment Facility Modernization (BTO-a)	Pyeongtaek City	Environment
	6	Ilsan Sewage Treatment Plant Facility (BTO)	Goyang City	Environment
Proposal review	1	Gumi City Metropolitan Bioenergy Center (BTO-a)	Gumi City	Environment
	2	Namyangju City Resource Recovery Facility (BTO-a)	Namyangju City	Environment
	3	Uijeongbu Singok 1-dong Public Parking Lot (BTO)	Uijeongbu City	Road

2) Proposal review (BTL)

BTL projects used to be implemented in the government-solicited method. However, with the amendment to the PPP Act in March 2016, private sectors were allowed to submit proposals for unsolicited projects. In 2022, 1 VFM analysis for a BTL project was conducted and 3 proposal reviews were conducted.

▎Table Ⅲ-25▎VFM analysis and proposal reviews (BTL) in 2022

Service	No.	Project	Competent authority	Facility type
VFM analysis	1	Changwon City Buffer Storage Facility (BTL)	Changwon City	Environment
Proposal review	1	Uijeongbu City Sewerage Pipeline (BTL)	Uijeongbu City	Environment
	2	Yeosu Sewerage Pipeline (BTL)	Yeosu City	Environment
	3	Taean-gun Sewerage Facility Construction (BTL)	Taean County	Environment

3) Feasibility study review (BTO)

In 2022, no feasibility study review requests for government-solicited BTO projects were received; hence, no BTO feasibility study reviews were conducted.

4) Feasibility study review (BTL)

In 2022, PIMAC conducted feasibility study reviews for 41 BTL projects, which ranged from military facilities, police stations, and dormitories to childcare centers. Of them, 31 were commissioned by the Ministry of Education, 8 by the Defense Installations Agency (Ministry of Defense), 1 by Daegu City, and 1 by the National Police Agency.

▎Table Ⅲ-26▎BTL feasibility study reviews (BTL) in 2022

No.	Project	Competent authority	Facility type
1	Police Specialized Medical And Research Complex Center (BTL)	The National Police Agency	Architecture
2	Taeneung Education Facility (Yuksa) Private Investment (BTL)	Defense Installations Agency	Architecture
3	Jangseong Educational Facility (Sangmudae) (BTL)	Defense Installations Agency	Architecture
4	Hwacheon Residence and Accommodation Facilities for Officials and Executives (BTL)	Defense Installations Agency	Architecture
5	Hwacheon Accommodation Facilities for Executives (BTL)	Defense Installations Agency	Architecture
6	Bupyeong Residence Facilities for Officials (BTL)	Defense Installations Agency	Architecture
7	Nonsan Residence Facilities for Officials (BTL)	Defense Installations Agency	Architecture
8	Cheorwon Accommodation Facilities for Executives (BTL)	Defense Installations Agency	Architecture
9	Yuseong Residence Facilities for Officials (BTL)	Defense Installations Agency	Architecture
10	2023 Daegu Metropolitan City Sewerage Pipeline Maintenance (BTL)	Daegu Metropolitan City	Architecture
11	2023 Kangwon National University Dormitory (BTL)	Ministry of Education	Architecture
12	2023 Chonbuk National University Dormitory (BTL)	Ministry of Education	Architecture
13	2023 Jeju National University Dormitory (BTL)	Ministry of Education	Architecture
14	2023 Chungbuk National University And Other School Dormitory (BTL)	Ministry of Education	Architecture

▌Table Ⅲ-26▌ Continued

No.	Project	Competent authority	Facility type
15	2023 Kyungpook National University Facility Improvement (BTL)	Ministry of Education	Architecture
16	2023 Kongju University Facility Improvement (BTL)	Ministry of Education	Architecture
17	2023 Pukyong National University Facility Improvement (BTL)	Ministry of Education	Architecture
18	2023 Pusan National University Facility Improvement (BTL)	Busan Metropolitan City	Architecture
19	2023 Seoul National University of Science and Technology Facility Improvement (BTL)	Ministry of Education	Architecture
20	2023 Andong University facility improvement (BTL)	Ministry of Education	Architecture
21	2023 Chonnam National University Facility Improvement (BTL)	Busan Metropolitan City	Architecture
22	2023 Chonbuk National University Facility Improvement (BTL)	Ministry of Education	Architecture
23	2023 Korea National University of Transportation Facility Improvement (BTL)	Ministry of Education	Architecture
24	2023 Green Smart School (Seoul Daejo Elementary School and 2 other schools) (BTL)	Ministry of Education	Architecture
25	2023 Green Smart School (Seoul Heukseok Elementary School and 1 school) (BTL)	Ministry of Education	Architecture
26	2023 Green Smart School (Busan Seo Middle School and 2 other schools) (BTL)	Ministry of Education	Architecture
27	2023 Green Smart School (Daegu Hwawon Elementary School and 3 other schools) (BTL)	Ministry of Education	Architecture
28	2023 Green Smart School (Incheon Fire Department, Incheon) (BTL)	Ministry of Education	Architecture
29	2023 Green Smart School (Gwangju Dongwoon Elementary School) (BTL)	Ministry of Education	Architecture
30	2023 Green Smart School (Daejeon Chungnam Girls' Middle School and 1 school) (BTL)	Ministry of Education	Architecture
31	2023 Green Smart School (Ulsan Ulsan Technical High School) (BTL)	Ministry of Education	Architecture
32	2023 Green Smart School (Gyeonggi Suseong High School and 2 other schools) (BTL)	Ministry of Education	Architecture
33	2023 Green Smart School (Gyeonggi Pocheon Elementary School and 2 schools) (BTL)	Ministry of Education	Architecture
34	2023 Green Smart School (Gangwon Gangneung Jungang High School) (BTL)	Ministry of Education	Architecture
35	2023 Green Smart School (Seongnam Elementary School in Chungju, North Chungcheong Province) (BTL)	Ministry of Education	Architecture
36	2023 Green Smart School (Chungnam Yeonmudae Mechanical Engineering High School and 2 schools) (BTL)	Ministry of Education	Architecture
37	2023 Green Smart School (Jeonbuk Deokjin Middle School and 1 school) (BTL)	Ministry of Education	Architecture
38	2023 Green Smart School (Jeonnam Mokpo Seobu Elementary School and 1 school) (BTL)	Ministry of Education	Architecture
39	2023 Green Smart School (Jeonnam Suncheon Girls' High School and 2 other schools) (BTL)	Ministry of Education	Architecture
40	2023 Green Smart School (Gyeongbuk Yanghak Elementary School and 3 schools)	Ministry of Education	Architecture
41	2023 Green Smart School (Gyeongnam Howon Elementary School and 4 other schools)	Ministry of Education	Architecture

5) RDF and VFM reassessments

Article 57 of the Basic Plan provides that the competent authority should commission RDF for projects where there are significant changes in the demand forecast due to cancellation or changes in relevant development plans, the mode of project implementation is changed from a government-funded project to a PPP project, there is a five-year or wider gap between two different stages of project implementation, or the demand estimate in the VFM analysis differs from the demand predicted by the private sector by 30% or more. In 2022, a VFM reassessment for a project under BTO type was conducted.

▎Table Ⅲ-27▎RDF and VFM reassessment in 2022

No.	Project	Competent authority	Facility type
1	New Busan-Gimhae Light Rail Station Construction (BTO) VFM reassessment	Gimhae City	Railway

D. (Draft) Request for Proposals and (Draft) Request for Alternate Proposals review

1) (Draft) Request for Proposals review

In 2022, PIMAC conducted request for proposals review for 3 BTL projects and 1 BTO project. The key considerations include consistency with the PPP Act, the BTO request for proposal guidelines, the BTL request for proposal guidelines, and the Basic Plan.

▎Table Ⅲ-28▎Request for Proposals in 2022

No.	Project	Competent authority	Project type
1	Great Train Express B (GTX-B) Line (BTO)	Ministry of National Defense	Railway
2	The 5th Daycare Center for Police Station (BTL)	The National Police Agency	Architecture
3	2022 Ministry of National Defense Army Pocheon Accommodation Facilities for Executives (BTL)	Defense Installations Agency	Architecture
4	Seobusan Medical Center (BTL)	Busan City	Architecture

2) Request for Alternate Proposals review

In 2022, PIMAC reviewed third-party Request for Proposals for 6 projects including 1 BTO-type, 5 BTO-a type, and 1 Hybrid (BTO+BTL) type of PPP projects.

▎Table Ⅲ-29▎Request for Alternate Proposals reviews in 2022

No.	Project	Competent authority	Project type
1	Chuncheon Public Sewage Treatment Facility Relocation And Modernization (BTO-a)	Chuncheon City	Environment
2	Boryeong City Incineration Facility Expansion (BTO)	Boryeong City	Environment
3	Daejang-Hongdae Metropolitan Railway (BTO+BTL)	Ministry of Land, Infrastructure and Transport	Railway
4	Sasang-Haeundae Expressway (BTO-a)	Ministry of Land, Infrastructure and Transport	Road
5	Pyeongtaek City Tongbok Public Sewage Treatment Facility Modernization (BTO-a)	Pyeongtaek City	Environment
6	Namyangju City Resource Recovery Facility (BTO-a)	Namyangju City	Environment

E. Project plan (proposals) evaluation

In 2022, no project plans were evaluated.

F. Negotiation for concession agreements

In 2022, no negotiation for concession agreement was conducted.

G. Draft concession agreements and revised agreements review

1) Draft concession agreements review (BTO)

In 2022, PIMAC reviewed draft concession agreements for 3 BTO projects, 4 BTO-a projects and 1 BTO-rs project.

▎Table Ⅲ-30▎Draft concession agreements review (BTO) in 2022

No.	Project	Competent authority	Project type
1	Mokpo City Resource Recovery Facility (BTO)	Mokpo City	Environment
2	Balan~Namyang Expressway (BTO-a)	Hwaseong City	Architecture
3	Seongnam City Domestic Waste Treatment Facility (2nd) (BTO-a)	Seongnam City	Environment
4	Undergrounding the Dongbu Expressway (BTO-a)	Seoul Metropolitan City	Road
5	Wiryesinsa Line Urban Railway (BTO-rs)	Seoul Metropolitan City	Railway
6	Jeonju City Comprehensive Recycling Town Development Project (BTO)	Jeonju City	Environment
7	Suwon City Sewage Sludge Treatment Facility (BTO)	Suwon City	Environment
8	Seunghak Tunnel (BTO-a)	Busan Metropolitan City	Road

2) Draft concession agreements review (BTL)

In 2022, PIMAC reviewed draft concession agreement for 1 BTL projects.

▎Table Ⅲ-31▎Draft concession agreements review (BTL) in 2022

No.	Project	Competent authority	Project type
1	Next Generation of M-BcN (BTL)	Department of Defense	Information and Communication

H. Dispute settlement review

In 2022, no dispute settlement review was conducted.

I. Management implementation plan review

In 2022, no management implementation plan review was conducted.

J. Refinancing and project implementation condition adjustment

In 2022, PIMAC conducted refinancing reviews for 7 projects, project implementation condition adjustment reviews for 1 project, and short-term financial reviews for 24 projects.

▎Table Ⅲ-32▎Refinancing and project implementation condition adjustment in 2022

(Unit: projects)

Category	No. of projects
Refinancing review	7
Refinancing negotiation	-
Project Implementation condition adjustment	1
Short-term review (MRG review, etc.)	24

In 2022, PIMAC conducted refinancing reviews for 5 projects for which – 1 of Ministry of Land, Infrastructure and Transport, 1 of Hwaseong City, 1 of Daegu Metropolitan City, 1 of Gyeongsangnam-do, and 1 of Suwon City. One review of the adjustment of project implementation conditions that was completed and it was requested by the Seoul Metropolitan City.

▎Table Ⅲ-33▎Refinancing review in 2022

No.	Project	Project type	Competent authority
1	Bibong-Maesong Urban Expressway (BTO)	Hwaseong City	Road
2	Daegu 4th Ring Road (Sangin ~ Beommul) (BTO)	Daegu Metropolitan City	Road
3	Connecting Road between Busan and Geoje (BTO)	Gyeongsangnam-do	Road
4	Incheon-Gimpo Expressway (BTO)	Ministry of Land, Infrastructure and Transport	Road
5	Seoul~Munsan Expressway (BTO)	Ministry of Land, Infrastructure and Transport	Road
6	Daegu-Busan Expressway (BTO)	Ministry of Land, Infrastructure and Transport	Road
7	Suwon Outer Ring Road (BTO)	Suwon City	Road

▎Table Ⅲ-34▎Review of the adjustment of project implementation conditions in 2022

No.	Project	Project type	Competent authority
1	Uyi - Sinseol Urban Railway (BTO)	Seoul Metropolitan City	Railway

Of the 24 projects for which PIMAC conducted short-term financial reviews including 20 BTO projects, 3 BTL projects, and 1 BOO project. For the BTO projects, PIMAC provided various services including review of the revised concession agreement, MRG reviews, calculation of user fee, and responses to questions from competent authorities. For the BTL projects, PIMAC reviewed changes in financial models that reflected changes in rent or profit rates. For the BOO projects, PIMAC reviewed changes of investors.

▎Table Ⅲ-35▎Short-term financial review in 2022

No.	Project	Project type	Competent authority
1	Inquiry regarding increase in operating expenses for Busan Gimhae Medium-capacity rail	BTO	Gimhae City
2	Review of the 2nd modified implementation agreement (draft) for Incheon North Port General Pier (3 berths)	BTO	Ministry of Oceans and Fisheries
3	Review of changes in investors for Yeongnam region complex cargo terminal and inland container base	BOO	Ministry of Land, Infrastructure and Transport
4	Review of calculation of user fee for Pyeongtaek City public sewage treatment facility	BTO	Pyeongtaek City
5	Review of change implementation agreement (draft) for Comprehensive environment and energy town in Daejeon Metropolitan City	BTO	Daejeon Metropolitan City
6	Review of initial user fee for Shinbundang Line (Yongsan~Gangnam) double track railway	BTO	Ministry of Land, Infrastructure and Transport
7	Review of user fee of 2022 for Shinbundang Line (Gangnam~Jeongja) double-track train	BTO	Ministry of Land, Infrastructure and Transport
8	Review of user fee of 2022 for Shinbundang Line (Jeongja~Gwanggyo) double track train	BTO	Ministry of Land, Infrastructure and Transport

▌Table Ⅲ-35▌ Continued

No.	Project	Project type	Competent authority
9	Review of calculation of operating income guarantee of 2021 for Pyeongtaek Dangjin Port Inner Port East Terminal (3 berths)	BTO	Ministry of Oceans and Fisheries
10	Review of operation improvement plan for Pyeongtaek Dangjin Port Inner Port East Terminal (3 berths)	BTO	Ministry of Oceans and Fisheries
11	Review of refinancing change agreement (draft) for Sanseong Tunnel	BTO	Busan Metropolitan City
12	Inquiry on opinions of the project operator following the review of the revised implementation agreement (draft) for Comprehensive environment and energy town in Daejeon Metropolitan City	BTO	Daejeon Metropolitan City
13	Review of operating income guarantee of 2021 for Ulsan New Port Development (Phase 1-1)	BTO	Ministry of Oceans and Fisheries
14	Review of 2020 operating income guarantee calculation for Incheon North Port Multipurpose Pier (Phase 2-1)	BTO	Ministry of Oceans and Fisheries
15	Review of operating income guarantee calculation (Step 1-1) for Mokpo New Outer Port	BTO	Ministry of Oceans and Fisheries
16	Review of operating income guarantee calculation (steps 1-2) for Mokpo New Outer Port	BTO	Ministry of Oceans and Fisheries
17	Review of financial model revision (draft) for national maritime museum	BTL	Ministry of Oceans and Fisheries
18	Inquiry on approval of paid-in capital increase for Gunjang Port miscellaneous goods pier (2 berths)	BTO	Ministry of Oceans and Fisheries
19	Inquiry on interpretation of provisions in concession agreement for Gimpo City Sewage Facilities	BTO	Gimpo City
20	Review of financial model of recalculation of rent following the adjustment of rate of returns for Cheonan Arts Center	BTL	Cheonan city
21	Inquiry on opinions of the project operator followingthe modified implementation agreement for Comprehensive environment and energy town in Daejeon Metropolitan City	BTO	Daejeon Metropolitan City
22	Review of management implementation plan following early termination of concession agreement for Gyeongju City Resource Recovery Facility	BTO	Gyeongju city
23	Inquiry on project proposal submission for Baekyang Tunnel	BTO	Busan Metropolitan City
24	Review of government payment recalculation (6th) for Jeolla Line Iksan-Sinri double-track train	BTL	Ministry of Land, Infrastructure and Transport

K. Other reviews and Q&As

In 2022, PIMAC offered other reviews and Q&A services for 225 cases—84 answers to inquiries about PPP systems and relevant legislation and questions from the Ministry of Economy and Finance, 123 responses to questions received through its website, and 18 answers to questions received through the help desk.

| Table Ⅲ-36 | Other review and Q&A services in 2022

(Unit: projects)

Category	No. of projects
Inquiries about PPP systems and relevant legislation	84
Website Q&As	123
Help desk	18
Total	225

CHAPTER IV

Public Institution Investment Projects Evaluation

Section 1. Overview of PFS of Public Institution Investment Projects

1. Background and Grounds for Implementation

A. Background and progress

1) Background

A public institution refers to an institution established and operated by the government contribution or investment or government financial support in order to efficiently meet public demand. As of the end of January 2021, there were 350 institutions designated by the Minister of Economy and Finance as public institutions under Article 4(1) of the Act on the Management of Public Institutions.

Public institutions play direct execution and indirect support functions to realize the government's policy goals. As providers of essential goods and services for citizens, they have the forms of a corporation, entity, or institution, rather than a government or local government.

The Act on the Management of Public Institutions aims to contribute to improving service for citizens by ensuring that public institutions are managed efficiently and operated transparently. The government has put forth efforts to improve public institution management systems with the aim to maintain effective control over public institutions that produce goods and services in the interest of the public, but controversies about lax management and inefficiency are continuing.

As the financial soundness of public institutions became a major social issue, the National Assembly, the Board of Audit and Inspection, and the Anti-Corruption and Civil Rights Commission emphasized the need to have major investment projects by public institutions undergo PFS conducted by a third party and tighten the supervision. The Anti-Corruption and Civil Rights Commission pointed out that allowing public

institutions to take part in projects at their own discretion regardless of their foundational purposes posed risk for moral hazard and highlighted the importance of systems to pre-verify their budget plans and actual execution. The Board of Audit and Inspection also criticized that pursuing projects irrelevant to their foundational purposes and recklessly pushing forward projects without considering feasibility was detrimental to their financial soundness. The board also pointed out that excessive competition with private players damaged their profitability and that they were negligent in delving into potential risks of investment projects.

In response to continued concerns over the financial soundness of public institutions, the Ministry of Strategy and Finance (currently the Ministry of Economy and Finance), at the May 2010 Financial Strategy Meeting, announced measures to strengthen feasibility reviews for projects pursued by public institutions. In January 2011, the PFS was introduced for projects pursued by public enterprises and quasi-government institutions, which should be conducted by a specialist institution designated by the Ministry of Strategy and Finance pursuant to Article 50 of the Act on the Management of Public Institutions and the Budget Guidelines for Public Enterprises and Quasi-Government Institutions. PIMAC, KDI was designated by the Minister of Strategy and Finance as a specialist institution to conduct PFS. In the past, public institutions were allowed to conduct their own feasibility studies for new investment projects and capital contribution projects worth KRW 50 billion or more and compile budget for these projects if deemed feasible. However, the government found the results of their self-conducted feasibility studies no longer objective or trustworthy and revamped the system to mandate PFS conducted by a specialist institution designated by the Minister of Strategy and Finance with the aim to improve the efficiency of public institution projects and ensure the financial soundness of public institutions.

On March 22, 2016, the government established new provisions in Article 40(3) of the Act on the Management of Public Institutions requiring that new investment projects and capital contribution projects pursued by public institutions undergo PFS. Accordingly, public institution projects were required to undergo PFS unless exempted by law. Under the previous PFS Guidelines for Public Enterprises' and Quasi-Government Institutions' Projects, new investment projects and capital contribution projects with total costs of KRW 50 billion or more and government funding and public institution contributions of KRW 30 billion or more were subject to PFS. Under Article 25-3 of the Enforcement Decree of the Act on the Management of Public Institutions established on March 22, 2016, the minimum project value was raised to total project costs of KRW 100 billion or more and government funding and public institution contributions of KRW 50 billion or more. In 2022, the

Enforcement Decree of the Act on the Management of Public Institutions was amended and the minimum project value was raised to total project costs of KRW 200 billion or more and government funding and public institution contributions of KRW 100 billion or more.

The Ministry of Economy and Finance amended the PFS Guidelines for Public Enterprises' and Quasi-Government Institutions' Projects on September 28, 2017 to reflect improvements made in the PFS scheme. This amendment allowed for outsourcing PFS to experts outside the specialist institutions designated to conduct PFS, and for reducing the study period to two months in exceptional cases where there have been previous similar PFS cases. Also, in consideration of the government's policy orientation, job creation effects were included as an element for policy analysis, and the social discount rate and the financial discount rate for present value estimation in B/C and PI analyses were lowered from 5.5% to 4.5%.

The Ministry of Economy and Finance focused on facilitating PFS, incorporating social value, and improving efficiency, which were reflected in the amended PFS Guidelines for Public Enterprises' and Quasi-Government Institutions' Projects of December 27, 2018 (enforced on January 1, 2019). Three major changes were made under this amendment. First, application rounds for PFS for public institution projects increased from two times (end of January and June) to three times (end of January, May, and September) annually. This was to avoid unnecessary delays in PFS caused by public institutions putting in requests for not fully elaborated projects due to the time limits. Second, the simplified PFS scheme was further tightened. In the past, simplified PFS were applied to international bidding projects and projects with similar preceding cases, and the PFS scheme did not differ from the general PFS other than simply referring to preceding study cases to shorten the study period. Under the amended guidelines, the scope of the simplified PFS was redefined as projects that would offer strong benefits for the public and have insignificant necessity to consider profitability, for example, building and expanding public offices and projects to meet international environmental regulations, and profitability analysis became omittable in a simplified PFS. Third, "social contribution" was established as a new evaluation item. Previously, only part of quantifiable social values were considered in economic feasibility analyses. This change allowed for specifically taking unquantifiable social values into consideration.

For PFS evaluation items, the Ministry of Economy and Finance pursued improvements with focuses on reflecting economic and social conditions, ensuring timely pursuit of public institution projects, and the efficiency of the scheme. On April 29, 2020, the ministry amended the PFS Guidelines for Public Enterprises'

and Quasi-Government Institutions' Projects (enforced on May 1, 2020). The amendment introduced four major changes.

First, the PFS evaluation items for domestic and overseas projects were reorganized. PFS for domestic projects were divided into capital and non-capital regions, and the regional underdevelopment evaluation system was changed from a merit and demerit system to a merit system. As part of the policy analysis, the "impact on residents' living conditions" was added with the aim to understand the impact of projects pursued by public institutions, for example, power plants and industrial complexes, on the lives of local residents from the early stage. The guidelines also specified examples of special evaluation items and encouraged the use of these evaluation items in PFS. For overseas projects, the "ripple effects over small and medium enterprises" were added as one of public benefit evaluation items to take their external effects on the national economy into consideration. The financial feasibility analysis was also restructured to consider both overall project feasibility and investors' perspectives on feasibility. This was intended to consider investors' cash flow as an important factor to determine a project's profitability.

Second, to reduce the time required to conduct PFS, the guidelines specified time limits—four months for overseas projects and five months for domestic projects. To make sure this provision has effects in practice, public institutions were required to fill out a checklist before filing a PFS request to understand their preparedness and were encouraged to proceed with PFS for these projects only when they were sufficiently concretized. The guidelines also stated that where PFS are urgently needed or there are preceding cases of PFS, public institutions are encouraged to take advantage of a simplified PFS (which takes only two months to complete) to reduce research inputs and simplify administrative processes.

Third, in an effort to tighten Total Project Cost Management (TPCM), the government established the Total Project Cost Management Guidelines for Public Enterprises and Quasi-Government Institutions on August 26, 2020 (enforced on September 1, 2020). These guidelines aim to improve the efficiency of the budget execution of public institutions by ensuring the reasonable adjustments and management of total costs of major projects at public institutions under Article 5 of the Act on the Management of Public Institution pursuant to the provisions in Article 40 of the Act on the Management of Public Institution.

Fourth, to improve the efficiency of PFS on the operational side, new analytical techniques were introduced, and the use of scenario analysis was encouraged. Previously, PFS were conducted based on project plans filed by public institutions, but under the new guidelines the institution conducting the PFS was allowed to discuss with the relevant institution to identify and apply alternatives. For the sake of efficiency in operation, requirements for the resubmission of a PFS request were

eased, and the number of policy experts involved in overall evaluation using Analytic Hierarchy Process (AHP) was increased from two to four people to strengthen policy evaluations in addition to the existing technical and theory-based evaluations. Lastly, in favor of projects that aim to strengthen industrial competitiveness in the fields of materials, components, and equipment, projects relating to these industries were given additional points in AHP.

In July 2021, the Ministry of Economy and Finance revised the PFS Guidelines for Public Enterprises' and Quasi-Government Institutions' Projects (enforced on August 1, 2021) focusing on improving the efficiency of performing PFS and ways to refect more thoroughly specific nature of a project. The amendments are largely threefold:

First, it was intended to promote the timely implementation of the institution's project through a faster PFS by improving the use of 'rapid PFS' and establishing a prior consultation procedure. To this end, the operating guidelines were revised from voluntary and exceptional application of rapid PFS to apply-by-rule method if the project meets requirements for rapid PFS. In addition, a prior consultation procedure was newly established to allow preparatory consultations with the specialized agency (KDI) at the stage of establishing the project plan, upon request by the public institution, even before applying for a PFS. Such complementary procedure is intended to prepare in advance the set of documents and materials required for PFS in order to prevent delays in performing PFS.

Second, the amendment intends to improve research methodology by taking into consideration the characteristics of individual projects. By utilizing data provided by syndication when evaluating the profitability of overseas project financing, and preferential treatment was given when evaluating the possibility of financing if loan participation in a project was confirmed. In addition, consideration for policy nature of overseas investment projects at the level of foreign policy was strengthened; overseas projects in developing countries which are implemented as part of foreign policy are to ben given preferential treatment in the policy evaluation. Moreover, 'national and public land development projects commissioned by the state and local governments' were additionally stipulated as cases where profitability analysis can be omitted.

Lastly, in order to enhance the operation of the PFS system, new regulation was made to allow public institutions with very poor financial soundness to have their financial evaluation points be deducted. The reason for such measure was to strengthen the link between the financial soundness of public institutions and PFS. In addition, a definition clause on 'investment' was newly adopted in the guidelines to clarify projects subject to PFS. Participation of various experts who are not part of the research team was expanded in mid-term and final reporting meetings to strengthen accountability.

2) Progress

Table below shows the progress of the PFS scheme for public institution projects.

▎Table IV-1▎Progress of the PFS scheme for public institute projects

Year	Details
2005	• Self-conducted pre-feasibility analysis. - Conducted by public institutions themselves.
2010	• Measures to strengthen public institution project feasibility reported in May. - Financial Strategy Meeting. • Measures to strengthen public institution project feasibility included in November. - Budgeting guidelines deliberated and approved. • PFS process by government-designated specialist institutions developed in November. - Improvement in PFS for public institution projects. • Tightening of PFS for major projects pursued by public institutions in December. - Presidential work report.
2011	• Execution Plans for PFS for Public Enterprises' and Quasi-Government Institutions' Projects announced in January.
2012	• Measures to substantialize PFS for public institution projects announced in November.
2013	• Execution Plans for PFS for Public Enterprises' and Quasi-Government Institutions' Projects amended in February.
2016	• Act on the Management of Public Institutions amended in March (enforced on September 23, 2016). - Strengthening of legal grounds for PFS. - Stricter requirements for PFS exemption. • Legislation pre-announcement for the Enforcement Decree of the Act on the Management of Public Institutions in June (enforced on September 23, 2016). - Projects subject to PFS: New investment and capital contribution projects with total costs of KRW 100 billion or more and institutional investment of KRW 50 billion or more. • PFS Guidelines for Public Enterprises' and Quasi-Government Institutions' Projects in November (enforced on November 7, 2016). - Specified requirements for PFS exemption, exemption process, and RSF.
2017	• PFS Guidelines for Public Enterprises' and Quasi-Government Institutions' Projects amended in September (enforced on September 28, 2017). - Improvements made: simplified PFS for similar projects, expeditious PFS process, diversifying institutions to conduct PFS, greater social benefits for each type of project, considerations given to job creation effects, changes in discount rates, and stricter policy feasibility evaluation.
2018	• PFS Guidelines for Public Enterprises' and Quasi-Government Institutions' Projects amended in December (enforced on January 1 2019). - Improvements made: more rounds for PFS applications, promotion of simplified PFS, 'social contribution' included as an evaluation item, and more.
2020	• PFS Guidelines for Public Enterprises' and Quasi-Government Institutions' Projects amended in April (enforced on May 1, 2020). - Improvements made: shorter research periods, evaluation items revamped, etc. • Total Project Cost Management Guidelines for Public Enterprises and Quasi-Government Institutions established in August (enforced on September 1, 2020). - managing changes to project cost by project stage.
2021	• PFS Guidelines for Public Enterprises' and Quasi-Government Institutions' Projects amended in July (enforced on August 1, 2021). - Improvements made: strengthen fast-track PFS, preferential treatment to individual project (overseas project financing, projects pursued as foreign policy), etc.

▌Table IV-1▌Continued

Year	Details
2022	• The amendment of the Enforcement Decree of the Act on the Management of Public Institutions in December (enforced on January 1, 2023). - Revision of the minimum value of the project · (Total cost of project) KRW 100 billion or more → KRW 200 billion or more · (Sum of government funding and public institution contributions) KRW 50 billion or more → KRW 100 or more

B. Grounds

The PFS for public institution projects is grounded on Article 40 of the Act on the Management of Public Institutions and Article 25-3 of its Enforcement Decree. Article 40(3) of the Act on the Management of Public Institutions provides "[t]he institution head shall conduct a preliminary feasibility study as prescribed by Presidential Decree, in order to compile a budget for a new investment project and capital investment" and prescribes conditions for exemption.

Act on the Management of Public Institutions

Article 40 (Budget Compilation)

③ The institution head shall conduct a preliminary feasibility study as prescribed by Presidential Decree, in order to compile a budget for a new investment project and capital investment: Provided, That such preliminary feasibility study need not be conducted for any of the following projects: [Newly Inserted on March 22, 2016] [Enforced on September 23, 2016]

1. A project for which the preliminary feasibility study is conducted pursuant to Article 38 of the National Finance Act among projects funded by the government budget;
2. A project related to inter-Korean exchanges and cooperation or a project implemented under an agreement or treaty entered into with another country;
3. A simple improvement and maintenance project implemented to increase the use of an existing facility, such as road maintenance and improvement of deteriorated waterworks;
4. A project that needs to be implemented urgently to support the recovery from a disaster defined in subparagraph 1 of Article 3 of the Framework Act on the Management of Disasters and Safety (hereinafter referred to as "disaster"), or to ensure the safety of facilities and to cope with health or food safety issues;
5. A project that needs to be implemented urgently to prevent a disaster, to which the consent of the competent Standing Committee of the National Assembly has been granted;
6. A project that should be implemented pursuant to the statutes;
7. A project that needs to be implemented as a national policy in order to ensure balanced regional

development and to cope with urgent economic and social situations, and that meets both of the following requirements. In such cases, the details of a project exempt from the preliminary feasibility study and the grounds for exemption shall be reported without delay to the competent Standing Committee of the National Assembly:

(a) A detailed project plan including the purpose, scale and implementation method of the project and other matters shall have been formulated;

(b) The project shall have been confirmed at the meeting of the State Council because it needs to be implemented as a national policy.

Enforcement Decree of the Act on the Management of Public Institutions

Article 25-3 (Preliminary Feasibility Study)

(1) The head of a public corporation or quasi-governmental institution (hereafter referred to as "institution head" in this Article) shall apply for a preliminary feasibility study as provided for in the main clause of Article 40 (3) of the Act to the Minister of Economy and Finance, if he or she intends to compile a budget for any new investment project or capital investment that meets both of the following requirements:

1. The total required budget is 100 billion won or more;
2. The sum of the amounts to be contributed by the State and the relevant institution is 50 billion won or more.

2. Projects Subject to PFS and Implementation Structure

A. Selection and exemption of projects

Pursuant to Article 25-3 of the Enforcement Decree of the Act on the Management of Public Institutions, PFS for public institutions project applies to public institutions' new investment and capital contribution projects with total costs of KRW 100 billion or more and the sum of government financial support and public institutions' investment amounts to KRW 50 billion or more. Total project costs refer to the sum of all costs and expenses for the implementation of the project, whether it be borne by the state, local governments, public institutions, or private players. If a project has no definite endpoint, the sum of the project costs for the first five years is taken into consideration. Projects subject to PFS are selected by the Minister of Economy and Finance after deliberation by the Public Institution Project PFS Advisory Committee, which also advises the Minister of Economy and Finance on requirements for PFS exemption, changes in evaluation methods, the

designation of institutions to conduct PFS, and other matter for efficient PFS operation and development.

Article 40(3) of the Act on the Management of Public Institutions provides exemptions from PFS, which are

① A project for which the preliminary feasibility study is conducted pursuant to Article 38 of the National Finance Act among projects funded by the government budget

② A project related to inter-Korean exchanges and cooperation or a project implemented under an agreement or treaty entered into with another country

③ A simple improvement and maintenance project implemented to increase the use of an existing facility, such as road maintenance and improvement of deteriorated waterworks

④ A project that needs to be implemented urgently to support the recovery from a disaster defined in subparagraph 1 of Article 3 of the Framework Act on the Management of Disasters and Safety (hereinafter referred to as "disaster"), or to ensure the safety of facilities and to cope with health or food safety issues

⑤ A project that needs to be implemented urgently to prevent a disaster, to which the consent of the competent Standing Committee of the National Assembly has been granted

⑥ A project that should be implemented pursuant to the statutes

⑦ A project that needs to be implemented as a national policy in order to ensure balanced regional development and to cope with urgent economic and social situations, and that meets both of the following requirements. In such cases, the details of a project exempt from the preliminary feasibility study and the grounds for exemption shall be reported without delay to the competent Standing Committee of the National Assembly:

(a) A detailed project plan including the purpose, scale, and implementation method of the project and other matters shall have been formulated

(b) The project shall have been confirmed at the meeting of the State Council because it needs to be implemented as a national policy

B. Process of PFS

1) Project selection

Public institutions select projects subject to PFS and assessments of the of project plan in accordance with Article 40(3) of the Act on the Management of Public Institutions and the PFS Guidelines for Public Enterprises' and Quasi-Government Institutions' Projects. The head of a public institution is required to submit the project plans of all investment and capital contribution projects with total costs of KRW 100 billion or more and where the sum of government financial support and institutions' investment amount exceeds KRW 50 billion to the institution to conduct PFS and the Minister of Economy and Finance by the end of January, May, or September in the preceding year. The time of submission may be changed if a project is urgently required or there is an unavoidable circumstance.

2) PFS request

The head of a public institution that intends to draw up a budget for a project that is subject to a PFS is required to submit the project plan to the specialist institution to conduct the PFS, in principle, within 30 days from being notified that a PFS should be conducted. In an unavoidable circumstance, this timeframe may not be applied by an agreement with the Minister of Economy and Finance. The year of project implementation means the year in which budget is put in the project for the first time.

C. PFS implementation structure

PIMAC, KDI is a designated specialist institution that conducts PFS for public institution projects under Article 16 of the PFS Guidelines for Public Enterprises' and Quasi-Government Institutions' Projects. The institution that conducts PFS hosts meetings to discuss findings from and results of PFS and may ask relevant officials of the ministry in charge of the public institution, and officials from the Ministry of Economy and Finance to attend the meetings as needed. In principle, a PFS should be completed within four months if an overseas project, five months if a domestic project, and seven months if an overseas resource development and exploration project or a domestic industrial complex project. This period may be extended or shortened by mutual agreement with the Minister of Economy and Finance if the project plan changes, a scenario or alternative analysis is required, or

there is just cause in consideration of the nature of the project and the difficulty of the study.

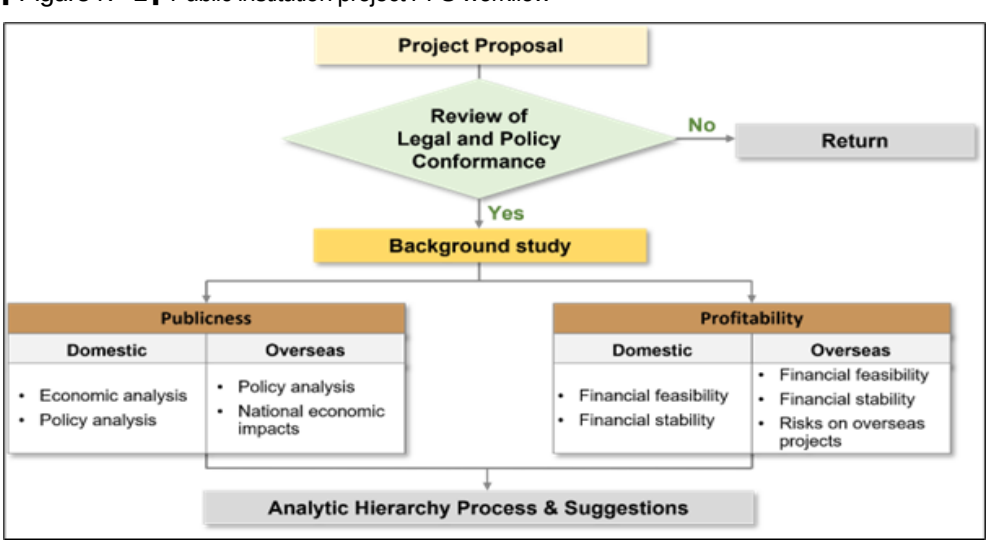
The institution that conducts PFS may charge the public institution for the study based on the cost estimation standards established in consultation with the Ministry of Economy and Finance. Upon completion, the institution should send the final PFS report to the Minister of Economy and Finance and the head of the public institution, which then draws up a budget in consideration of the results of the PFS.

3. Public Institution Project PFS Process and Details

A. Process

PFS for public institution projects aim to determine the feasibility of projects pursued by public institutions and facilitate reasonable decision-making on the right timing of project implementation and the right scale of the project by reviewing the project plans and analyzing the considerations for project implementation. As shown in the figure below, a PFS involves preliminary review of the project plan's legal and policy fitness and evaluations with focuses on two pillars of publicness and profitability. Finally, a comprehensive evaluation (AHP) is conducted, and if needed policy recommendations are made.

▎Figure Ⅳ -1▎Public institution project PFS workflow



Source: KDI, *A study on amendment to the PFS Guidelines for Public Enterprises' and Quasi-Government Institutions' Projects* (2nd ed.), 2018.

B. Details

1) Domestic Projects

The publicness evaluations use the same analytical framework as PFS for government-financed projects to evaluate economic and policy feasibility.

Economic feasibility evaluations are based on cost-benefit analysis and involve analysis of the project's costs and benefits from the perspective of the national economy to present a benefit-cost (B/C) ratio. In doing so, demand for the project is estimated to calculate the benefits and project costs, and all expenses for project implementation are summed to estimate the total costs.

Policy feasibility evaluations consist of 'compulsory' and 'optional' evaluation items, which are either quantitative or qualitative. Compulsory evaluation items are 'conditions of project progression', 'project implementation impact', and 'impact on balanced regional development', and the item 'conditions of project progression' evaluates 'consistency with government policy' and 'willingness of project progression and specificity of the project plan'. 'Project implementation impact' item can evaluate 'impact of living conditions', 'environment and safety', 'job creation effects', and 'nonstandard evaluation items'. Optional evaluation items are taken into consideration depending on the characteristics of the project, looking into matters not quantified as compulsory evaluation items.

The profitability evaluations involve financial feasibility and stability evaluations. Financial feasibility evaluations delve into the profitability of the investment plan by analyzing the flow of revenues from facility operation in comparison with the investment using the profit index method. Financial stability evaluations look into the public institution's financing standing, likelihood of funding for the investment, risk for potential additional funding requirements, and the project's impact on the financial stability of the institution. The overall evaluations employ the AHP technique based on the results of these evaluations to produce a quantitative score.

2) Overseas Projects

Overseas projects are also subject to comprehensive analysis of the feasibility of the project in consideration of its publicness and profitability (using the AHP technique), as in domestic projects. However, they are not subject to economic analysis, and the publicness evaluations involve delving into policy feasibility and ripple effects over the domestic economy. The 'ripple effect evaluations' look into

the project's 'export employment and resource effects', i.e., how the institution's activities will influence the nation's export and resource security and how much employment they will create, as well as the project's 'impact on the institution's competitiveness', i.e., what the synergies will be between the project and the institution's essential business. Also, the 'ripple effects of overseas advancement over small and medium enterprises' are taken into consideration. Profitability evaluations take into consideration the project's financial feasibility and stability, and risks, in particular, the country risk as well as the project risk in and of itself.

3) Evaluation weights

Different weights are applied to domestic and overseas projects in public institution project PFS as provided in the PFS Guidelines for Public Enterprises' and Quasi-Government Institutions' Projects (July 2021). The weights in domestic project PFS are 70% to publicness and 30% to profitability, which may vary in consideration of specific projects' characteristics. In principle, the weights in overseas project PFS are 20% to publicness and 80% to profitability, which too may vary in consideration of a specific project's characteristics.

▎Table IV-2▎Weights given to publicness and profitability in public institute project PFS

Project	Weight
Domestic	Publicness 70%, profitability 30%
International	Publicness 20%, profitability 80%

Source: Ministry of Economy and Finance, PFS Guidelines for Public Enterprises' and Quasi-Government Institutions' Projects, July 2021.

Section 2. Overview of RSF of Public Institution Investment Projects

1. Total Project Cost Management

The Total Project Cost Management (TPCM) for projects pursued by public institutions aims to improve the efficiency of the budget execution of public institutions by ensuring reasonable adjustments and management of the total costs of major projects drawn up by the heads of public institutions under Article 5 of Act

on the Management of Public Institutions based on the provisions in Article 40-3 of the Act on the Management of Public Institutions and Article 25-4 of its Enforcement Decree. This involves stage-specific project cost management including PFS, feasibility studies, basic planning, basic and working design, procuring and contracting, and construction.

To do so, the Ministry of Economy and Finance established the Total Project Cost Management Guidelines for Public Enterprises and Quasi-Government Institutions on August 26, 2020. The total costs of a project refer to the sum of all costs and expenses incurred in the project under Article 40 of the Act on the Management of Public Institutions, including the value of resources and land already possessed and contributions by the state, local governments, other public institutions, and private players.

A construction project's total costs are the sum of all costs and expenses incurred, consisting of construction costs, compensation costs, and auxiliary expenses. An informatization project's total costs are the sum of all costs and expenses for system development, etc., consisting of equipment purchase and rental costs and software development costs, among others. An overseas project's total costs are the sum of all costs and expenses to implement the project overseas, consisting of construction investment, capital investment, contribution to other corporations, etc. A resource project's total costs are the sum of all costs and expenses for resource exploration or development, consisting of pre-drilling exploration costs, drilling costs, project development costs, and miscellaneous costs.

Projects planned by the heads of public institutions under Article 40 of the Act on the Management of Public Institutions that have undergone PFS (including those exempted from PFS under Article 40(3) of the Act on the Management of Public Institutions) or RSF under Article 31 of the same act are subject to TPCM.

To avoid waste of budget, the Total Project Cost Management Guidelines for Public Enterprises and Quasi-Government Institutions provide that projects that fall under certain criteria should be subject to Reassessment of Demand Forecast (RDF), RSF, and reassessments of project plans.

2. Reassessment Studies of Feasibility

A. Requirements

Under Article 40-3 of the Act on the Management of Public Institutions, projects that fall under conditions provided by a Presidential Decree are subject to

RSF. The following are the requirements for RSF provided in Article 25-4 of the Enforcement Decree of the Act on the Management of Public Institutions and Article 31 of the Total Project Cost Management Guidelines for Public Enterprises and Quasi-Government Institutions:

① The heads of public institutions shall conduct reassessment studies of feasibility for any of the following projects:

(1) A project for which the preliminary feasibility study has never been conducted because its total project cost or state funding and public institution contribution did not reach the scale subject to a preliminary feasibility study, but the total project cost has increased to the scale subject to a preliminary feasibility study during the course of the implementation of the project

(2) A project that has been implemented without undergoing a preliminary feasibility study, although it falls within the projects subject to a preliminary feasibility study, because the project cost was reflected in the budget

(Note) If a project's budget was already drawn up but is yet to be executed, the project should be subject to RSF.

(3) A project of which the total project costs, excluding compensation for land required for the implementation of the project and inflation, have increased by 30% or more compared with the initial total project costs excluding compensation for land

(Note 1) Compensation for land (including land already possessed) that was included in the initial total project costs should not be included in the calculation of the total project costs to see if the project is subject to an RSF, which should be calculated based on <Schedule 4> "Total project costs calculation for RSF".

(Note 2) Project stages are divided into design, construction, etc. If an investment project involves no design or construction stages, RSF are applicable when a policy is set to increase the amount of investment by 30% or more.

(4) A project, if falling under Article 26(3), of which demands have decreased by 30% or more

(5) A project for which an RSF has been requested to be conducted by the Board of Audit and Inspection Korea

(6) Other projects for which the head of office in charge of a public institution or the Minister of Economy and Finance acknowledge as

necessary to conduct an RSF to avoid, for example, waste of budget due to redundant investment

② Notwithstanding the provisions in Paragraph 1, the heads of public institutions, in consultation with the head of the competent authority and the Minister of Economy and Finance, may not conduct an RSF if they deem that there is no practical use of conducting an RSF where a significant part of the project has been completed, hence, significant sunk costs, if the project is pursued in response to urgent economic or social needs, or if the implementation of the project is urgently needed for disaster prevention, recovery support, and/or safety.

Meanwhile, Article 36 of the guidelines provides that, where the RSF is omitted under any of the circumstances provided in 31(2) of the guidelines, a reassessment of project plans may be conducted with the aim to consider the appropriate level of project scale, costs, and alternatives in a way comparable to an RSF.

B. Key elements of RSF

In principle, the PSF techniques provided in Chapter 6 of the Total Project Cost Management Guidelines for Public Enterprises and Quasi-Government Institutions are applicable *mutatis mutandis* to RSF, considering the feasibility of the project based on 'publicness' and 'profitability' analysis. The overall assessment uses the AHP techniques to produce measurable results, and policy recommendations may be made to highlight risk factors for the project and policy considerations.

Section 3. Track Records of Public Institution Investment Projects

<Table VI-3> shows the track records of PIMAC's public institution investment projects evaluation conducted from 2011 to date. Of them, 295 were preliminary feasibility study, 13 were reassessment study of feasibility, 9 were project plan review, and 1 was re-examination of project plan review.

▎Table VI-3▎ Project selected for public institution projects PFS

Type of service	´11	´12	´13	´14	´15	´16	´17	´18	´19	´20	´21	´22	Total
Preliminary Feasibility Study	16	17	23	14	20	25	28	33	35	30	40	14	295
Project Plan Reviews	-	-	-	-	2	-	-	-	1	2	1	3	9
Reassessment Study of Feasibility	-	-	-	-	-	-	-	-	-	3	4	6	13
Re-examination of Project Plan Review	-	-	-	-	-	-	-	-	-	-	1	-	1
Total	16	17	23	14	22	25	28	33	36	35	46	23	318

1. Preliminary Feasibility Study

A. Track records between 2011 and 2022

As of the end of December 2022, 674 requests have been received from public institutions to see if their projects were subject to PFS. Of them, 295 projects were found to be subject to PFS. In 2022, 24 project plans were submitted, and 14 projects were considered subject to PFS.

▎Table VI-4▎ PFS requests from public institution and selected project

2011-2019			2020			2021			2022			Total		
Requests	Selected	(%)	Requests	Selected	(%)	Requests	Selected	(%)	Requests	Selected	(%)	Requests	Selected	(%)
560	211	37.7	41	30	73.2	49	40	81.6	24	14	58.3	674	295	43.8

Of the 295 projects selected for PFS, 88, 53, and 45 projects were submitted by the five power companies, the Korea Land and Housing Corporation (LH), and the Korea Power Corporation (KEPCO), respectively. The five power companies' projects accounted for a significant portion of the projects, and it shows that the large-scale projects pursued by public institutions are mainly energy-related projects and industrial complex projects. In 2022, energy-related and industrial complex projects also accounted for the majority of the projects selected for PFS, 2 projects from the five power companies, four projects from the LH, and three projects from KEPCO. By type, power generation and equipment projects had the largest share of 6 projects.

▎Table VI-5▎Project selected for public institution projects PFS

(Unit: No. of Projects)

Public Institution	2011–19	2020	2021	2022	Total
Korea Land & Housing Corporation	35	7	7	4	53
KEPCO and affiliates[2] (five power companies counted separately)	29	5	8	3	45
Five power companies	60	9	17	2	88
Airport and water resources corporations	15	0	1	1	17
Korea Rural Community Corporation	7	0	0	0	7
Korea Asset Management Corporation	10	0	2	0	12
Korea District Heating Corporation	8	0	0	0	8
Others	47	9	5	4	65
Total	211	30	40	14	295

Notes: 1) Year selected for PFS.
2) KEPCO, Korea Power Engineering Company, and Korea Hydro and Nuclear Power Company.
3) Includes Busan Port Authority, Korea Container Terminal Authority, and Ulsan Port Authority.

▎Table VI-6▎Public institution projects selected for PFS, by area

(Unit: No. of Projects)

Year	Power generation and equipment	Industrial complex	Residential area and land development	Port	Road and railroad	Resource development	Others	Total
2011–2017	59	25	34	12	1	2	10	143
2018	23	3	5	1	0	0	1	33
2019	11	9	6	2	4	1	2	35
2020	12	5	5	0	5	1	2	30
2021	25	3	6	2	2	0	2	40
2022	6	3	2	0	1	0	2	14
Total	136	48	58	17	13	4	19	295

Note: Year selected for PFS.

Of the 295 projects, final reports have been published for 228 projects as of the end of December 2022, and 175 of them were found “feasible.” The PFS prevented 112 of 295 projects (53 deemed infeasible, 59 withdrawn), avoiding budget waste of KRW 144.6 trillion (infeasible projects worth KRW 52.2 trillion, withdrawn projects worth KRW 92.4 trillion). Of the 228 projects for which PFS were actually conducted, 76.8% were considered feasible (175 projects). Of all projects selected for PFS including ones withdrawn from PFS or discontinued by public institutions (287 projects), 61.0% were considered feasible.

▌Table VI-7▐ Results public institution project PFS

(Unit: No. of Projects, KRW 100 million)

Year requested	Status								Total	
	Feasible		Infeasible		Withdrawn		Study in progress			
	No. of projects	Total project costs	No. of projects	Total project costs	No. of projects	Total project costs	No. of projects	Total project costs	No. of projects	Total project costs
2011-2016	64	463,578	27	266,734	24	130,025	-	-	115	860,338
2017	14	90,413	7	41,606	7	47,566	-	-	28	179,585
2018	17	352,677	3	4,651	13	671,415	-	-	33	1,028,743
2019	24	19,570	7	68,651	4	11,712	-	-	35	275,933
2020	20	294,946	6	24,091	4	22,640	-	-	30	341,677
2021	29	266,160	3	116,138	6	34,472	2	89,538	40	506,308
2022	7	61,088	-	-	1	6,600	6	201,185	14	268,873
Total	175	1,724,432	53	521,871	59	924,430	8	290,723	295	3,461,457

Note: 1) As of the end of December 2021
2) Year selected for PFS.

The results of 228 PFS have been published for an annual average of 19.0 cases. Power generation and equipment projects accounted for the largest proportion of them.

▌Table VI-8▐ Results of public institution project PFS by area

(Unit: No. of Projects)

Year published	Power generation and equipment	Industrial complex	Residential area and land development	Port	Road and railroad	Resource development	Others	Total
2011	2	2	5	2	-	-	2	13
2012	3	-	4	-	-	-	-	7
2013	4	2	1	4	-	-	-	11
2014	4	-	2	1	-	-	1	8
2015	4	3	3	1	-	-	-	11
2016	8	4	1	2	-	2	-	17
2017	10	5	6	1	-	-	4	26
2018	14	4	4	-	1	-	-	23
2019	12	1	4	2	-	1	1	21
2020	15	10	6	1	6	1	2	41
2021	16	2	5	1	3	-	1	28
2022	12	4	3	1	1	-	1	22
Total	104	37	44	16	11	4	12	228

Notes: 1) Projects for which PFS were completed as of the end of December 2021.
2) Others include training centers and water resources projects.

From 2011 to 2022, approximately 47.4% of domestic projects pursued by public institutions were found economically feasible as a result of economic analysis of PFS.

▎Table VI-9▎Results of economic feasibility analysis, 2011-2022

(Unit: No. of Projects)

Category		Power generation and equipment	Industrial complex	Residential area and land development	Port	Road and railroad	Others	Total
Total projects		77	37	44	16	11	11	196
B/C ≥ 1	Projects	36	20	14	13	4	6	93
	Proportion	46.8%	54.1%	31.8%	81.3%	36.4%	54.5%	47.4%

Notes: 1) Projects for which PFS were completed as of the end of December 2021, excluding overseas projects that were exempted from economic feasibility analysis.
2) For scenario projects, the most positive results were considered.

Meanwhile, 56.1% of the public institution projects PFS were analyzed as financially viable.

▎Table VI-10▎Results of profitability analysis by area, 2011-2022

(Unit: No. of Projects)

Category		Power generation and equipment	Industrial complex	Residential area and land development	Port	Resource development	Road and railroad	Others	Total
Total projects		104	37	44	16	4	11	12	228
PI ≥ 1	Projects	74	14	22	5	2	10	1	128
	Proportion	71.2%	37.8%	50.0%	31.3%	50.0%	90.9%	8.3%	56.1%

Notes: 1) Projects for which PFS were completed as of the end of December 2021.
2) For scenario projects, the most positive results were considered.

Taken together, the overall analysis results using Analytic Hierarchy Process (AHP) show that 76.8% of the projects subject to PFS were considered feasible. This result drops to 61.0% if withdrawn or discontinued projects (59 cases) were included.

▌Table VI-11▐ Results of overall feasibility analysis by year and area, 2011-2022

(Unit: No. of Projects)

Category		Power generation and equipment	Industrial complex	Residential area and land development	Port	Resource development	Road and railroad	Others	Total
Total projects		104	37	44	16	4	11	12	228
AHP ≥ 0.5	Projects	85	26	29	13	3	10	9	175
	Proportion	81.7%	70.3%	65.9%	81.3%	75.0%	90.9%	75.0%	76.8%

Notes: 1) Projects for which PFS were completed as of the end of December 2021.
2) For scenario projects, the most positive results were considered.

B. PFS for public institution projects in 2022

In 2022, PFS for public institution projects were conducted for 22 projects as shown in table below.

▌Table VI-12▐ PFS for public institution projects, 2022

No.	Project Name	Public Institution
1	Busan New Port Stage 2-6 (2 Berths) Harbor Facilities Equipment Production·Installation Project	Busan Port Authority
2	Samcheonpo Natural Gas Generation Project	Korea South-East Power Corporation
3	LNG Storage Facilities Construction Project	Korea Southern Power Corporation
4	Ulsan 5 Combined Generation Project	Korea East-West Power Corporation
5	Ulsan 2,3 Combined Conversion Construction Project	
6	Anseong Dongsin General Industrial Complex Development Project	Korea Industrial Complex Corporation
7	Yeosu National Industrial Complex Expansion Development Project	
8	Canadian Resources Development Project	Korea National Oil Corporation
9	Yeongdong Pumped Storaged Power Plant Construction Project	Korea Hydro & Nuclear Power
10	Hongcheon Pumped Storaged Power Plant Construction Project	
11	Pocheon Pumped Storaged Power Plant Construction Project	
12	Eco-Friendly Smart Regeneration Project	Korea Water Resources Corporation (K-Water)
13	Sejong National Research Complex No.2 Research Building Development Project	Korea Asset Management Corporation

▌Table VI-12▐ Continued

No.	Project Name	Public Institution
14	ESS for System Stabilization Construction Project	Korea Electric Power Corporation (KEPCO)
15	The Eastern Coast of Korea-Capital Area #2 HVDC construction Project	
16	Yongin Electricity Facility for Semiconductors Cluster Construction Project	
17	Electricity facility for Siheung-Incheon Region Construction Project	
18	LNG Station Construction Project	Korea Midland Power Corporation
19	Yongsan Urban Regeneration innovation District Nationnal Demonstration District State-Owned(No.1 Public Parking Lot) Combined Development Project	Korea Land & Housing Corporation (LH)
20	Guri E-Commerce Logistics Complex Development Project	
21	Songpa-Hanam Metro Construction Project	
22	Naju Energy National Industrial Complex Development Project	

Notes: 1) Projects for which PFS were completed as of the end of December 2021.
2) Withdrawn projects excluded.

2. Project Plan Reviews

Article 8 of the guidelines provides that the Minister of Economy and Finance may ask the heads of public institutions, where he/she deems it necessary to ensure the financial soundness of the public institutions and the efficient implementation of projects, to have their projects that are exempted from PFS undergo project plan review. Under this provision, seven project plans have been reviewed since 2015. In 2022 one project plan review.

▌Table VI-13▐ Public institution project plan reviews

Year	2015	2019	2020	2021	2022	Total
Project plans reviewed	2	1	2	1	1	7

▌Table VI-14▐ Public institution project plan reviews in 2022

No.	Project	Public Institution
1	Incheon International Airport Terminal 1 Aged Facilities General Rehabilitation Project	Incheon International Airport Corporation

Notes: Projects for which reviews were completed as of the end of December 2021.

3. Reassessment Study of Feasibility

Following the establishment of the TPCM guidelines for public enterprise and quasi-government institution projects (August 26, 2020), one RSF were conducted in 2022.

▌Table VI-15▐ Public institution project RSF

Year	RSF			Total
	Feasible	Infeasible	Withdrawn	
2020	3	-	1	3
2021	3	-	-	3
2022	1		2	1
Total	7	-	3	7

▌Table VI-16▐ Public institution projects that underwent RSF in 2022

No.	Project	Public Institution
1	(Ko-hygen) Hydrogen Station for Commercial Cars Construction & Operation Project	Korea District Heating Corporation

Notes: Projects for which RSF were completed as of the end of December 2022

CHAPTER V

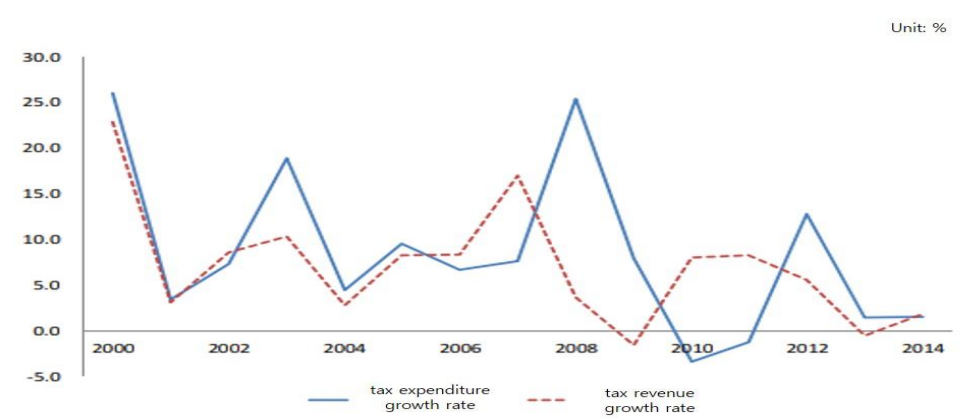
Performance Evaluation of Special Taxation

Section 1. Background and Grounds

1. Background

The Korean economy is prone to external impact. Thus, it is vital to secure financial reserves in case of economic recessions driven by external factors. Doing so requires curbing fiscal expenditures and/or increasing tax revenues, but there are surges in demand for fiscal expenditures due to low birth and aging trends and polarization. The average annual growth rate of the total amount of tax expenditures from 2000 to 2014 was 7.0%, which is higher than the average annual growth rate of national tax revenue of 5.8%, which ultimately suggests the expansion of the system utilizing tax expenditures

▎Figure V-1▎Tax revenue and expenditure growth rate



Accordingly, despite the government expressing its intention to set a sunset deadline for tax expenditures and to reorganize tax expenditure items every year, there were 9 years in which the growth rate of tax expenditures was higher than the national tax growth rate out of 14 years from 2000 to 2014. In addition, the sunset period for tax expenditure items that were scheduled to expire due to the arrival of the sunset deadline was often extended in the process of actually passing the tax law in the National Assembly. Control devices for the scale of tax expenditures included setting national tax reduction rate limits, tax reduction proposals, and tax reduction evaluation systems. However, each has limitations, so the need for a new tax expenditure control device has emerged.

As an effort to curb tax exemptions and reductions, performance evaluation of special taxation was introduced by the amendment to the Restriction of Special Taxation Act in 2014. This amendment became legal basis for newly introducing special cases of taxation worth KRW 30 billion or more annually became subject to PFS for special taxation, and existing special cases of taxation due to expiry were required to undergo in-depth evaluations.

▎Table V-1▎Annual tax expenditures

(Unit: KRW trillion, %)

Year	National tax exemption	Total national tax revenues	National tax deduction rate
2000	13.3	92.9	12.5
2001	13.7	95.8	12.5
2002	14.7	104.0	12.4
2003	17.5	114.7	13.2
2004	18.3	117.8	13.4
2005	20.0	127.5	13.6
2006	21.3	138.0	13.4
2007	23.0	161.5	12.5
2008	28.8	167.3	14.7
2009	31.1	164.5	15.8
2010	30.0	177.7	14.4
2011	29.6	192.4	13.3
2012	30.1	203.0	12.9
2013	33.8	201.9	14.3
2014	34.3	205.5	14.3

Notes: 1) National tax deduction rate = national tax exemption/(national tax exemption + total national tax revenues).
2) Three more items were added in 2012, but calculations for 2012 and thereafter were done with the same criteria as previous years for comparison.
Source: Ministry of Economy and Finance, Tax Expenditure Budget, each year.

2. Overview of Tax Expenditures

A special case of taxation is a deviation from the standard taxation system, where the amount the taxpayer should pay decreases or increases. In practice, most special cases of taxation are exemptions and reductions of tax for particular policy purposes. The effect of reductions in national tax revenues on the national finance is the same with explicit government expenditures; hence, they are referred to as tax expenditures. In South Korea, the Restriction of Special Taxation Act aims to ensure fair taxation and the efficient operation of tax policies. Article 142-2 of the act defines tax expenditures as "financial support pertaining to special taxation, such as reduction or exemption of tax, non-taxation, income deduction, tax deduction, application of favored tax rate, or deferral of tax."

Tax expenditures are divided into direct and indirect exemptions. Direct exemptions result in permanent easing of tax burden (or reductions in tax revenues), consisting of non-taxation, income deduction, favored tax rate, tax deduction, and tax exemption. Indirect exemptions mean the deferment of taxation for a certain period, consisting of reserves, deferral, and taxation carried forward.

Becoming a member of the Organization for Economic Cooperation and Development in 1996, South Korea started publicly announcing the actual results and estimates of national tax exemptions with the aim to improve the transparency and efficient management of the national finance. In 2010, the National Finance Act was amended to require that a tax expenditure budget that specifies the actual results and estimates of national tax exemptions in the previous, current, and following years be submitted to the National Assembly along with the budget bill.

The purpose of preparing a Tax Expenditure Budget is to improve the transparency and efficiency of fiscal management by preparing and announcing tax expenditure details according to the classification criteria for each function of the budget. The government seeks to distribute limited national resources more efficiently by providing information on budget classification criteria (sector-subsector) for each tax expenditure item. In addition, the government seeks to operate an efficient tax reduction and exemption system by reorganizing tax-free and tax exemption systems that have achieved the initial purpose of tax expenditure or its effectiveness is insignificant.

According to the 2023 Tax Expenditure Budget, annual tax exemptions were KRW 57 trillion and 248 billion in 2021 (actual), KRW 63 trillion and 577.6 billion in 2022 (estimate), and KRW 69 trillion and 315.5 billion in 2023 (estimate). The national tax reduction rate in 2021 is 13.5%, which is 1.3 percentage points lower

comparing to 14.8% in 2020, and is expected to gradually rise to 13.9% in 2023 after falling to 13.1% in 2022. In 2021, the national tax reduction amount increased due to tax support in response to COVID-19 (temporary increase in credit card income deduction rate (+0.7 trillion), medium-term taxation special treatment for areas affected by infectious diseases (+0.5 trillion), etc.), but the national tax reduction rate (13.5%) decreased compared to the previous year and fell below the legal limit (14.3%) due to the increase in total national tax revenue.

Afterwards, the national tax reduction rate in 2022 and 2023 is expected to fall to 13.1% in 2022 and to rise to 13.9% in 2023, which is expected to be below the statutory limit forecast (14.6%, 14.3%). This is because the national tax reduction amount is expected to increase due to the strengthening of tax support such as national strategic technology and a temporary increase in the tax credit rate for donations, but the national tax reduction rate is expected to decrease slightly due to an increase in the total national tax revenue.

▎Table V-2▎Annual national tax exemptions

(Unit: KRW 100 million, %)

Category	2021 (actual)	Proportion	2022 (estimate)	Proportion	2023 (estimate)	Proportion
• National tax exemptions (A)	570,248	100.0	635,776	100.0	693,155	100.0
Tax expenditures under the Restriction of Special Taxation Act	303,535	53.2	350,815	55.1	387,718	55.8
Tax expenditures under other tax laws	250,188	43.9	281,382	44.3	302,802	43.8
Tax expenditures by transitional measures	16,526	2.9	3,579	0.6	2,635	0.4
• Total national tax revenues (B)[1)]	3,639,730		4,212,889[2)]		4,286,370[2)]	
• National tax deduction rate [A/(A+B)]	13.5		13.1		1208	
• National tax deduction rate statutory limit[3)]	143.		14.6		14.3	

Notes: 1) Following the amendment to Article 41 of the Enforcement Decree of the National Finance Act, national tax revenues include local consumption taxes.
2) Based on the second supplementary budget in 2022 (May 2022) and the 2023 government budget bill.
3) National tax deduction rate statutory limit = average national tax deduction rate in the past three years + 0.5%p.
Source: Ministry of Economy and Finance, 2023 Tax Expenditure Budget, 2023.

3. Grounds

The Minister of Economy and Finance has the authority for ex ante and ex post management of special cases of taxation under Article 142 of the Restriction of Special Taxation Act and Article 135 of its Enforcement Decree. Special cases of taxation with annual value above a certain threshold may be subject to evaluations for items provided by a Presidential Decree, for example, the progress to achieve their intended purposes, their economic effects, income redistribution effects, and impact on government finance. KDI is designated as an institution to conduct such evaluations under Article 135-2 of the Enforcement Decree.

▎Table V-3▎Legal grounds of performance evaluations of special taxation

Provision	Details
Restriction of Special Taxation Act Article 142 (Ex Ante and Ex Post Management of Special Taxation)	(4) The Minister of Strategy and Finance may conduct an assessment of major special taxation: Provided, That with respect to special taxation, the application period of which ends in the relevant year (excluding matters prescribed by Presidential Decree, including matters wherein the repeal of such special taxation is apparent due to the extinction of eligible items), and the annual amount of which is not less than the amount prescribed by Presidential Decree, the results of the assessment conducted, within budgetary limits, by a specialized survey and research institution on the matters prescribed by Presidential Decree, including the level of target achievement, economic effects, effects of income redistribution, and effects on finance, shall be submitted to the National Assembly no later than 120 days before the commencement of each fiscal year. <Amended by Act No. 11614, Jan. 1, 2013; Act No. 12173, Jan. 1, 2014> (5) In submitting a legislative bill that newly introduces special taxation, the annual amount of which is exceeding 30 billion won annually, such legislative bill shall be accompanied by the results of assessment conducted by a specialized research institution on the matters prescribed by Presidential Decree, including the necessity and timeliness of the special taxation, expected effects, and potential problems. However, this does not apply in cases falling under any of the following subparagraphs. (Added on January 1, 2014, effective until December 31, 2019.) 1. where the cases are subject to the deliberation of the State Council, as they are introduced to respond to economic and social situations 2. where the cases are related to inter-Korean cooperation or pursued in accordance with the intergovernmental agreements or treaties 3. where the support for international competitions or national events has a temporary support period, a clear application period, and an urgent need for immediate introduction for the progress of the matters 4. where the Minister of Economy and Finance acknowledges that the evaluation

Provision	Details
	results include the matters specified by presidential decree including necessity, timeliness, expected effects, anticipated problems, etc. in order to reflect the evaluation results under paragraph 4 as well as to aim at improving existing tax exemptions. (6) The Minister of Strategy and Finance may designate an institution to conduct specialized surveys and research in connection with suggestions for tax reduction or exemption under paragraph (2), presentation of opinions under paragraph (3), and assessments under paragraphs (4) and (5), and subsidize expenses incurred in relation to the operation, etc. thereof. <Newly Inserted by Act No. 11614, Jan. 1, 2013; Act No. 12173, Jan. 1, 2014>
Enforcement Decree of the Restriction of Special Taxation Act Article 135-2 (Designation of Institutions specialized in Surveys and Research for Assessment of Special Taxation)	Pursuant to Article 142 (6) of the Act, the Minister of Economy and Finance may designate any of the following institutions as an institution to conduct specialized surveys and research: 1. The Korea Institute of Public Finance established under the Act on the Establishment, Operation and Fostering of Government-Funded Research Institutes, Etc.; 2. The Korea Development Institute established under the Act on the Establishment, Operation and Fostering of Government-Funded Research Institutes, Etc.; 3. Other institutions that the Minister of Economy and Finance recognizes as having specialized human resources, capacity to conduct surveys and research, etc. regarding the assessment, etc. of special taxation schemes. [This Article Newly Inserted by Presidential Decree No. 25590, Sep. 11, 2014]

Source: Ministry of Government Legislation Korea Law Information Center (www.law.go.kr).

4. Types of Evaluation of Special Cases of Taxation

The Minister of Economy and Finance has the authority for ex ante and ex post management of special cases of taxation under Article 142 of the Restriction of Special Taxation Act and Article 135 of its Enforcement Decree. Performance Evaluation of Special Cases of Taxation are divided into PFS for special taxation as ex ante evaluations and in-depth evaluations of special taxation as ex post evaluations.

PFS for Special Taxation are applicable to newly introduced special cases of taxation. The study aims to delve into their necessity, timeliness, and expected effects and problems to inform the decision maker. In-depth evaluations of Special Taxation are divided into compulsory and arbitrary in-depth evaluations. They aim to review the performance of the special cases of taxation and provide inputs for decisions on the expiry of the programs and institutional improvements.

5. Target Projects

A. PFS for Special Taxation

1) Applicable programs

New special cases of taxation are ones that are not listed in the law specified in Article 3(1) of the Restriction of Special Taxation Act (excluding the Restriction of Special Local Taxation Act), and the amount of special taxation under a given special case of taxation is the amount of annual tax revenue reductions resulting from the implementation of the special case of taxation. PFS for special taxation is applicable to new special case of taxation[1] with an annual special taxation of KRW 30 billion or more and changes in existing special case of taxation with annual tax revenue reductions resulting therefrom of KRW 30 billion or more.

2) Exemptions

Special case of taxation under individual tax law taxation systems that do not aim to ease the tax burden of certain taxpayers and will certainly continue for a long time, and ones that have been deliberated by the Cabinet Meeting to respond to socioeconomic situations, are exempted from PFS.

① Matters that need to be introduced in response to any of the following economic or social situations are introduced at the Cabinet Meeting
   a. Significant contraction of the overall economy or risks thereof, for example, declines in economic indicators such as economic growth rates and employment rates
   b. Significant contraction of certain economic activities or risks thereof, for example, specific industries, or production, employment, or investment
   c. Deterioration of key social indicators or risks thereof, for example, worsening income gaps and poverty

② Matters that are related to inter-Korean exchange and cooperation or are pursued under international agreements or treaties

③ Matters that involve temporary support with a clear timeframe and are urgently needed for the promotion of events such as international competitions and national events

[1] Changes in existing special tax treatment programs mean changes in the special tax rates or addition of beneficiaries, etc. These do not include extensions of applicable periods of existing special tax treatment programs.

④ Matters that are intended to improve existing special cases of taxation by incorporating findings from evaluations under Article 142(4) of the Restriction of Special Taxation Act, of which details are deemed by the Minister of Economy and Finance to have details on matters provided by a Presidential Decree under Paragraph 4, for example, the necessity and timeliness of the special taxation and the expected effects and problems.

B. Special Taxation in-depth evaluations

1) Compulsory in-depth evaluations

Compulsory in-depth evaluations are applicable to special cases of taxation that are due to expire in a given year (excluding ones that fall under any of the following) with annual special taxation of KRW 30 billion or more:

① Programs of which beneficiaries have ceased to exist, hence, clearly due to expire

② Programs related to inter-Korean exchange and cooperation or pursued under international agreements or treaties

③ Programs that underwent an in-depth evaluation in the past three years and were deemed by the Minister of Economy and Finance to have no significant changes in their details, for example, the size of the programs and the beneficiaries

2) Arbitrary in-depth evaluations

Arbitrary in-depth evaluations may be conducted for special cases of taxation that fall under any of the following:

① special cases of taxation with similar purposes that need to be evaluated collectively

② special cases of taxation under which continued increases in tax exemptions are anticipated; hence, objective inspections are needed to ensure efficiency in tax expenditures

③ special cases of taxation for which in-depth evaluations are considered necessary on the grounds of the statements of opinions to the special taxation under Article 142(3) of the Restriction of Special Taxation Act

④ special cases of taxation that have existed for a certain time but for which objective performance evaluations have not been conducted

⑤ special cases of taxation that are deemed by the Minister of Economy and Finance to be in need of in-depth analysis and evaluations for the effective management of the programs

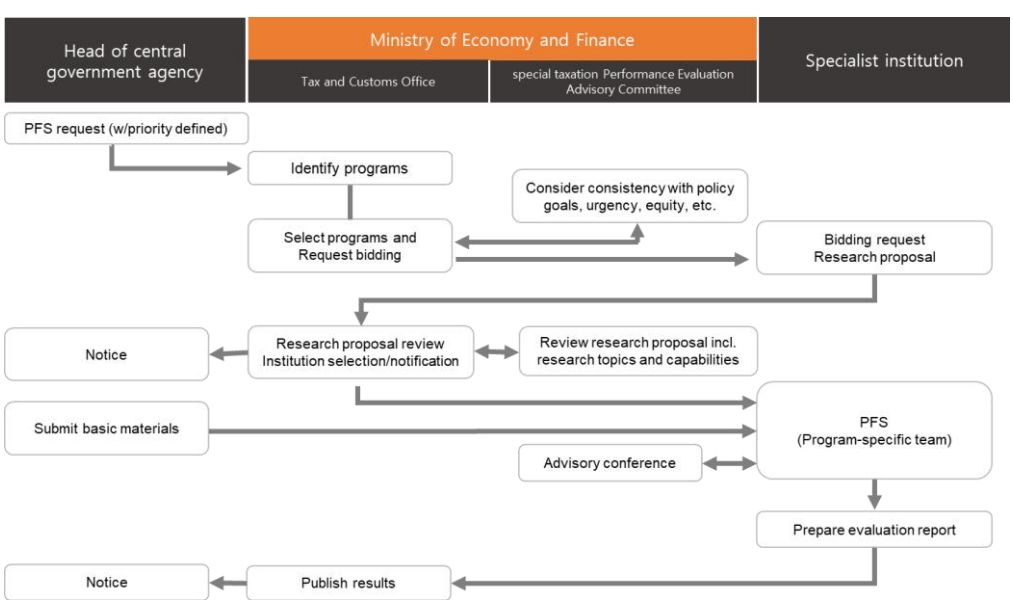
6. Process of performance evaluation of special cases of taxation

A. Process

1) PFS for Special Taxation

The Minister of Economy and Finance designates special cases of taxation to undergo PFS on request from the heads of relevant administrative organizations or by virtue of their own authority. The minister considers PFS requests received from the heads of relevant administrative organizations and selects programs in consultation with the special taxation Performance Evaluation Advisory Committee. PFS are commissioned to specialized institutions that are qualified to conduct evaluations under Article 135-2 of the Enforcement Decree of the Restriction of Special Taxation Act. -[Figure Ⅴ-2] shows the process of the PFS.

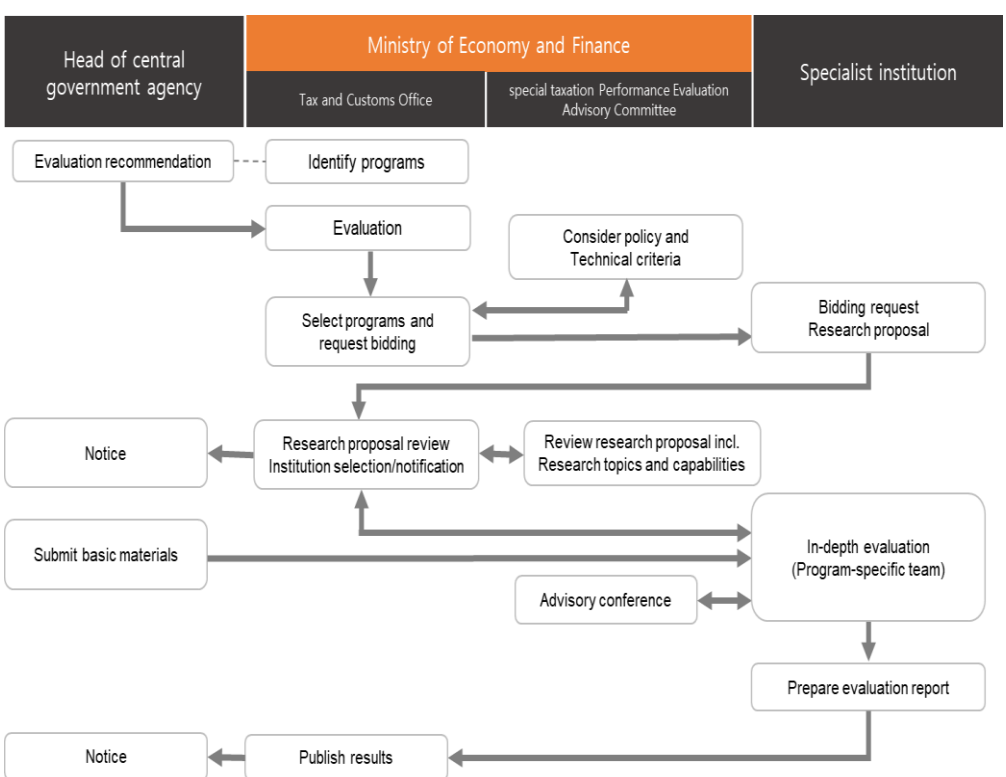
▎Figure V-2▎Special taxation PFS process



2) In-depth evaluation of special taxation

Programs for which in-depth evaluations will be conducted are designated annually between September and December, and additional selections may be available depending on the urgency of evaluations and budget availability. The Minister of Economy and Finance decides on the priority of the in-depth evaluations based on the necessity and feasibility of program evaluations and selects programs in consultation with the Performance Evaluation of Special Taxation Advisory Committee within budget. The heads of relevant administrative organizations may suggest that the Minister of Economy and Finance conduct in-depth evaluations for special cases of taxation they find in need of in-depth evaluations. The in-depth evaluations are commissioned to specialist institutions that are qualified to conduct evaluations under Article 135-2 of the Enforcement Decree of the Restriction of Special Taxation Act. -[Figure Ⅴ-3] shows the process of the in-depth evaluation.

▎Figure V-3 ▎Special taxation in-depth evaluation process



B. Workflow

1) Workflow of PFS for special taxation

In a PFS for special taxation, specialized institutions submit research proposals to the Ministry of Economy and Finance upon its request for bidding, and the ministry consults the Performance Evaluation of Special Taxation Advisory Committee to select an institution to conduct the PFS.

A PFS for special taxation consists of policy analysis, economic analysis, and equity analysis, and a comprehensive evaluation using the AHP methodology based on these findings. Below are the items considered in each analysis stage.

◦ Policy analysis: necessity and timeliness of the special taxation, expected effects and problems, and methods to help resolve them.

◦ Economic analysis: impact on various aspects of the economy, such as employment and investment.

◦ Equity analysis: impact on income redistribution among households, businesses, regions, etc.

◦ Comprehensive evaluation

- PFS for special taxation employs the AHP methodology to produce measurable results in the comprehensive evaluation stage.

▎Table V-4▎Weights applied to AHP evaluation items

Analysis	Economy	Policy	Equity
B/C	30%–50%	30%–40%	20%–30%
E/C	25%–40%	30%–40%	30%–40%

Source: Ministry of Economy and Finance, special taxation PFS Guidelines, March 2020.

◦ Policy recommendations

- If needed, policy recommendations may include comments on risk factors associated with the introduction of the special taxation program and other policy considerations.

- Policy recommendations: necessity for an in-depth evaluation of the special cases of taxation, timing of the evaluation, and collection of relevant

materials for the evaluation, among others, in consideration of the characteristics of the program, potential increases in the amount of the special taxation, costs for reevaluations, etc.

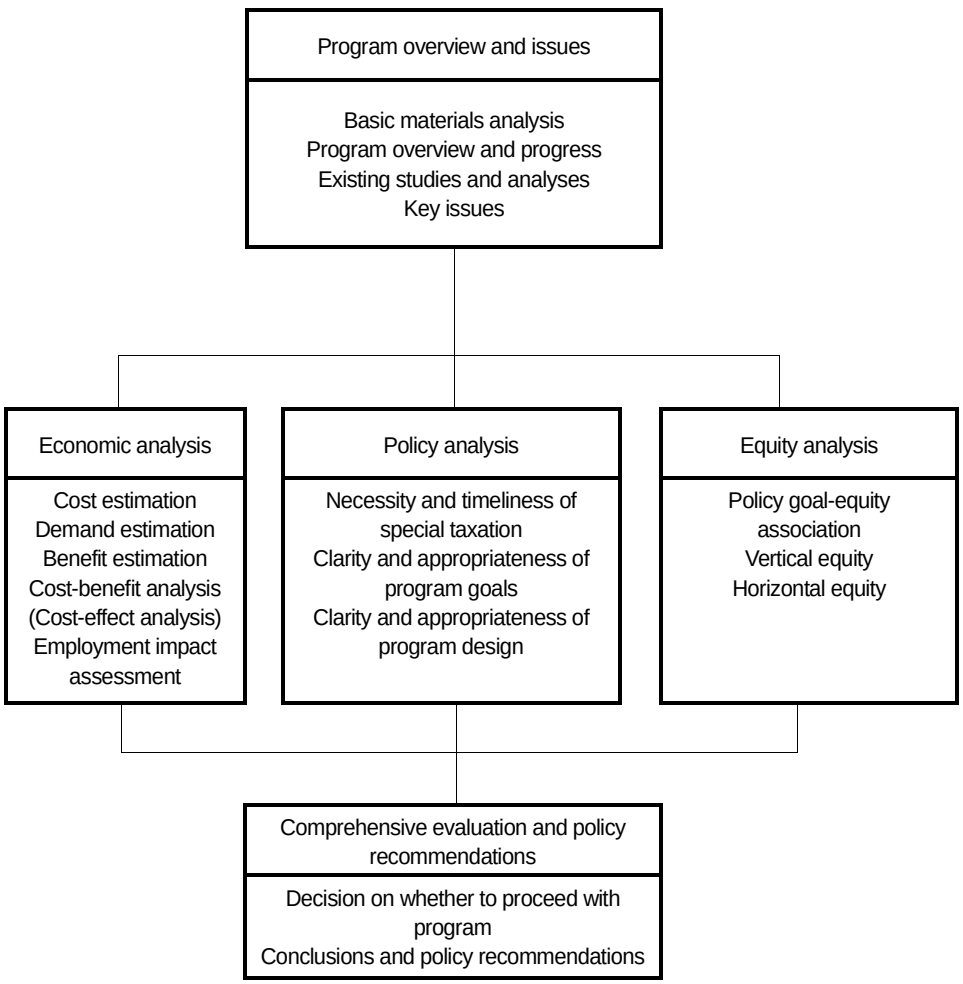
2) Workflow of in-depth evaluation of special taxation

An in-depth evaluation of special taxation is commenced following the same process as the PFS for special taxation.

An in-depth evaluation of special taxation consists of feasibility analysis, effectiveness analysis, and equity analysis, based on which conclusions are drawn about the expiry or abolition of the special taxation program, recommendations for institutional improvement, etc. In the case of in-depth evaluation of special taxation, economic analysis and policy analysis are conducted as effectiveness analysis and feasibility analysis, and AHP evaluation is not conducted.

- Effectiveness analysis: Quantitative or qualitative analysis of economic changes resulting from the operation of special tax treatment
- Feasibility analysis: Quantitative or qualitative analysis of the appropriateness of the government's role and implementation method for special tax treatment

▎Figure V-4▌ Workflow of PFS for special taxation



Note: In a special taxation in-depth evaluation, effectiveness analysis and feasibility analysis are conducted in lieu of economic and policy analysis, and no AHP evaluations are conducted.

Section 2. Track Records of Performance Evaluation of Special Cases of Taxation

1. Track records from 2015 to 2022

From December 2014 to December 2022, the Ministry of Economy and Finance selected 140 programs for performance evaluation of special taxation: 15 for PFS, 149 programs for in-depth evaluations (91 compulsory and 58 arbitrary in-depth evaluations).

▎Table V-5 ▎ Programs selected by the Ministry of Economy and Finance for performance evaluation of special cases of taxation

(Unit: number of projects)

Year	PFS	In-depth evaluations		Total
		Compulsory	Arbitrary	
2015	3	14	3	20
2016	2	6	12	20
2017	2	8	9	19
2018	1	12	5	18
2019	2	3	13	18
2020	3	12	3	18
2021	1	18	8	27
2022	1	18	5	24
Total	14	73	53	140

Note: Above number is based on the year of program commencement.

Of these, PIMAC conducted 61 evaluations: seven PFS and 56 in-depth evaluations(35 compulsory, 21 arbitrary in-depth evaluation). ~~The evaluation~~

▌Table V-6▐ Track records of performance evaluation of special cases of taxation conducted by KDI

(Unit: number of projects)

Year	PFS			In-depth evaluations		Total
	Projects	Project costs	Feasibility	Compulsory	Arbitrary	
2015	1	KRW 34.4B/year	Infeasible	-	-	2
2016	1	KRW 44.5B/year	Infeasible	3	5	9
2017	1	KRW 16.4B/year	Infeasible	3	3	7
2018	0	-	-	5	1	6
2019	1	KRW 210.6B/year	Infeasible	1	5	7
2020	2	KRW 30B/year[2)] KRW 27.4B/year[3)]	Infeasible	7	1	10
2021	0	-	-	8	3	11
2022	1	KRW 110.6B/year	Infeasible	8	3	12
Total	6	-	-	35	21	63

Notes: 1) Above number is based on the year of program commencement.
2) This record excludes the “Evaluation of special tax treatment for employment support (6 cases)”

2. Track records in 2022

In 2022, 8 evaluations were conducted including one PFS, seven in-depth evaluations (six compulsory and one arbitrary).

▎Table V-7▎Performance evaluation of special cases of taxation conducted by KDI in 2022

Year commenced	Type	No.	Project	remarks
2022	PFS	1	New establishment of special taxation provisions to promote investment in ship	
	Compulsory in-depth evaluation	2	Income deduction for the amount of use of credit cards, etc. and tax reduction for use of credit cards, etc.	2 cases included
		3	Zero value-added tax rate on agricultural, livestock, forestry, and fishing equipment	
		4	Tax reduction for corporations relocating their headquarters outside the metropolitan area Tax reduction for companies relocating factories outside the metropolitan area	2 cases included
		5	Special provisions for inclusion in deductible expenses on reserve fund for essential business for non-profit corporations such as school corporations, national university hospital corporations, etc.	
		6	Individual consumption tax reduction for hybrid, electric, and hydrogen electric vehicles	Three cases included
		7	Individual consumption tax exemption for petroleum products used as raw materials for the production process of petroleum products	
	Arbitrary in-depth evaluation	8	Tax reduction for video content production costs	

Note: 1) Completion of 8 evaluations(total of 12 cases based on special tax treatment)
2) Number 2 is one compulsory evaluation and one arbitrary evaluation, number 4 is two compulsory evaluation, number 6 is two compulsory evaluation and one arbitrary evaluation

CHAPTER VI

Policy Research and Service

Section 1. Policy Research Overview and Track Records

To ensure the quality and efficiency of services at PIMAC, the institute develops guidelines and conducts research projects relating to government-financed investment project evaluations, PPP project evaluations, and public institution project PFS.

1. Policy Research Overview

A. Guidelines Studies

Guidelines studies are intended to develop and revise the guidelines and instructions for PIMAC's services, such as general and area-specific guidelines for government-financed project evaluations (PFS and RSF) and public institution project PFS, and guidelines and instructions for PPP project services.

<Table VI-1> ~ <Table VI-5> show the lists of these guideline instructions

▌Table VI-1▐ Studies of government-financed project evaluation guidelines

Study	Revision	Year
Study of standard guidelines for PFS	1st	1999
	2nd	2000
	3rd	2001
	4th	2004
	5th	2008
	6th	2016
	Detailed guidelines	2021

▌Table VI-1▌ Continued

Study	Revision	Year
Study of standard guidelines for PFS for road and railway projects	1st	1999
	2nd	2000
	3rd	2001
	4th	2004
	5th	2008
	5-1st	2013
	6th	2017
	Detailed guidelines	2021
Study of standard guidelines for PFS for water resources projects	1st	1999
	2nd	2001
	3rd	2003
	4th	2008
	5th	2017
Study of standard guidelines for PFS for port projects	1st	2000
	2nd	2001
	3rd	2013
Study of standard guidelines for PFS for airport projects	1st	2000
	2nd	2001
	3rd	2013
Study of standard guidelines for PFS for health and welfare projects	1st	2004
Study of standard guidelines for PFS for medical facility projects	1st	2012
	Detailed guidelines	2022
Study of standard guidelines for PFS for informatization projects	1st	2004
	2nd	2013
	Detailed guidelines	2022
Study of standard guidelines for feasibility reverification (study of standard guidelines for RSF)	1st	2004
	2nd	2012
	Detailed guidelines	2021
Study of standard guidelines for PFS for R&D projects	1st	2008
Study of the improvements to CVM analysis guidelines for PFS	-	2012
Study of standard guidelines for PFS for other non-investment government-financed projects and pilot project evaluations (study of the revision and complementation of the standard guidelines for other government-financed project PFS)	1st	2009
	2nd	2013
Study of standard guidelines for PFS for industrial complex projects	1st	2015
Study of standard guidelines for PFS for culture and tourism projects	1st	2015
	Detailed guidelines	2021
Study of standard guidelines for PFS for development projects	-	2016

▌Table VI-2▌ Studies of guidelines for PPP project support (BTO projects)

Study	Revision
Study of the improvement in the BTO PPP project plan evaluation framework	2005.12
Detailed instructions for PPP project plan evaluation	2009.06
Detailed instructions for unsolicited BTO project VFM analysis (proposal review) and preferential scoring	2007.01
Study of detailed instructions for BTO PPP project VFM analysis	2010.06
Study of guidelines for PPP environmental project VFM analysis (Study of the estimation of benefits in the environmental field)	2007.12
	2011.08
	2018. 06
Study of detailed instructions for PPP port project VFM analysis	2013.08
Study of detailed instructions for feasibility analysis in hybrid (BTO+BTL) projects (Study of the development of detailed instructions for hybrid PPP projects)	2013.04
	2020.12
Study of detailed instructions for PPP rehabilitation project feasibility analysis	2013.02
Standard concession agreement for BTO projects—road projects	2007.02
	2007.10
	2008.05
	2009.08
	2010.04
	2020. 07[1)]
Standard concession agreement for BTO projects—environmental projects	2008.06
Standard basic planning for BTO facility projects—road projects	2007.03
	2010.04
Study of detailed instructions for refinancing	2007.12
	2014.08
Detailed instructions for competitive negotiation	2017.03
Study of detailed instructions for projects with expiring management and operation rights	2017.05
Study of standard output specifications—centering on sewage and waste treatment facilities	2018.12
Study of detailed instructions for PPP project feasibility analysis and project plan review	2018.12

Note: 1) The standard concession agreement was amended based on the results of a PPP project support study titled "Analysis of issues in the standard concession agreement and improvement measures" (2019); hence, it was not counted in <Table Ⅶ-1>.

▌Table VI-3▐ Studies of guidelines for PPP project support (BTL projects)

Study	Revision
Request for Proposals for BTL multiuse school facility projects	2007.01
Detailed instructions for feasibility analysis and VFM analysis for BTL PPP projects	2005.05
	2005.08
	2006.09
	2009.03
	2010.01
	2011.04
Study of detailed instructions for BTL PPP project feasibility analysis	2012.04
Standard concession agreement for BTL PPP projects	2005.11
	2006.09
	2008.11
	2009.03
	2010.01
	2011.04
	2020.07[1)]
Detailed instructions for BTL PPP project facility management and operation	2009.04
Instructions for BTL PPP Request for Proposals	2005.05
	2005.08
	2006.09
	2009.03
	2010.01
	2011.04

Note: 1) The standard concession agreement was amended based on the results of a PPP project support study titled "Analysis of issues in the standard concession agreement and improvement measures" (2019); hence, it was not counted in <Table Ⅶ-1>.

▌Table VI-4▐ Studies of guidelines for PFS for public institution project

Study	Revision	Year
(Commissioned) development of detailed working plans for PFS by public enterprises and quasi-government institutions	-	2010
Study of general guidelines for PFS for public enterprise and quasi-government institution projects	1st	2013
	2nd	2018
	3rd	2021
Study of standard guidelines for PFS for public institution international projects	1st	2013
	2nd	2018
	3rd	2022

▌Table VII-5▌ Studies of guidelines for performance evaluation of special cases of taxation

Study	Revision	Year
(Commissioned) Study of general guidelines for PFS for special taxation	-	2016

B. General Studies

General studies are all studies conducted in relation to PIMAC's services other than guideline studies. <Table VI-6> ~ <Table VI-9> provide the lists of general studies.

▌Table VI-6▌ General studies of government-financed projects

Year	Study
1999	White paper on pre-feasibility study
2000	Establishment and analysis of Multi-Region Input-Output (MRIO) model to estimate public investment projects' impact on regional economy
2000	A study of applying multicriteria analysis to pre-feasibility studies
2000	Improving criteria and procedures of fiscal support for PPP projects
2000	Measures to improve efficiency of budget management in public investment projects I
2000	A basic study of introducing *ex post* program evaluation
2000	A study of methodology and means to facilitate value engineering
2001	A study of guidelines for O-D and network analysis for pre-feasibility study
2001	Analysis of the socioeconomic ripple effects of public investment
2001	A study of environmental cost estimation in pre-feasibility study of transportation projects
2001	A study of introducing *ex post* program evaluation and evaluation methodology
2001	A study of applying multicriteria analysis to pre-feasibility studies II
2001	Measures to improve efficiency of budget management in public investment projects II
2004	A study of value estimation of culture and science museum
2004	Establishment of PFS database
2004	A study of financing for urban railway projects and possibility of adopting the PPP method
2004	Measures to improve efficiency of budget management in public investment projects II: Centering on TPCM performance and improvement measures
2007	Study of Korea Transport Database (KTDB) review and fiscal investment evaluation
2009	Study of estimation of operation and maintenance costs for preliminary feasibility studies for road projects
2011	Study of the economic value estimation of transport facilities
2011	Comparative study of auxiliary facility cost estimation
2011	Review of existing dams' utility water supply capacity
2011	International study of preliminary feasibility study systems and case studies
2012	Study of estimation of operation costs for preliminary feasibility studies for railway projects
2012	Study of estimation of travel time value
2013	Analysis of characteristics of AHP decision-making

▌Table VI-6▌ Continued

Year	Study
2013	Study of land expropriation process and issues in Korea
2013	Study of efficient financing and use of transport facilities
2013	Study of issues surrounding PFS in the transportation field
2013	Study of improvement of stability of PFS results for road projects
2015	Study of *ex post* validation of PFS—centering on road and railway projects
2016	Study of management costs incurred by construction period extension in government-commissioned projects
2016	Study of land costs in feasibility studies
2016	Study of preliminary feasibility study implementation system
2017	Study of methodology to analyze employment effects in government-financed project evaluations
2017	Study of methodology to improve the contingent valuation method (CVM) model
2017	Study of methodology to calculate benefits of transport projects
2017	Study of methodology to estimate demand and benefits in feasibility studies of new transportation means
2017	Detailed examination of feasibility study items
2018	Study of measures to improve road maintenance costs for feasibility studies
2018	Study of improvement of feasibility studies for transport projects using big data
2019	Study of Korea Transport Database review and issues in the transportation sector
2019	Study of criteria for multidimensional method application to estimate benefits of reducing flood damages
2019	Revamping the preliminary feasibility study system in the social sector
2020	Case-based examination of improvement of preliminary feasibility study methodology—centering on road projects
2020	Study of estimation of benefits of improved reliability of travel time
2020	Study of issues surrounding preliminary feasibility studies in the transportation sector II
2020	Study of decision-making in public investment projects
2020	Study of directions for infrastructure investment to promote regional hubs in preparation for population change
2021	A Study of the Characteristics of Route Bus Mobility Based on Big Data
2021	A Study on Improving the Efficiency of Projects in the Social Sector
2021	A Study on the Policy Effect of Financial Investment Projects
2022	Study of methodology to calculate benefits of transport projects II

▌Table VI-7▌ General studies of PPP project support

Year	Study
2006	A study of formulation of request for proposal for BTL projects
2006	A study of the evaluation method for BTL projects
2006	A study of the standard concession agreement for BTL projects
2006	Methods for BTL project management
2006	A study of government payment for BTL projects
2006	Study of risk reflection methods in PPP project VFM analysis
2006	A study of guidelines for output specifications of BTL military housing facilities (military family housing)
2006	A study of guidelines for output specifications of BTL military housing facilities (military barracks)
2006	A study of guidelines for output specification of BTL educational facility projects
2006	A study of standard output specification for BTL sewerage projects
2006	A study of promoting a public involvement (PI) in BTL projects
2006	A study of the use of private advisory service in PPP projects
2006	Study of estimation of payment for early termination of PPP projects
2006	Study of countermeasures to surges in land compensation costs in BTO projects
2006	Study of improved use of industry-based credit guarantee funds in PPP projects
2006	Study of Request for Proposals in BTO PPP projects
2006	Study of standard concession agreement for BTO PPP projects
2007	Public investment management center database development I
2007	Mid- and long-term plans and strategies for PPPs
2007	A study of standard request for proposal for BTL school complex facilities projects
2007	A study of a standard financial model for BTO projects on roads, railways, and ports
2007	A study of measures to facilitate supplementary and ancillary projects
2007	A study of standardization of concession agreements for BTO environmental projects
2007	Study of private investment legislation consolidation
2008	Study of welfare effects of PPP projects and optimum fiscal policy

▌Table VI-7▌ Continued

Year	Study
2008	Study of application of BTL projects to basic environmental facilities
2008	Study of the PPP project environment in Southeast Asia
2008	A study of the formulation of standard request for proposals for BTO projects in urban railways
2008	A study of performance evaluation and development strategy of BTL projects
2008	Comparison between Korean and Japanese PPP systems for Korean system improvement
2008	Study of negotiation management and guidelines in PPP projects
2008	Study of application of government contracts to PPP projects
2008	Study of promotion of PPP projects in tourism
2008	Study of PPP project consistency with national policy and priority
2008	Study of estimation and application of utilities and auxiliary costs in PPP projects
2009	Study of improvement of PPP project evaluation scheme
2009	Study of connection between ODA and PPP in infrastructure projects in developing countries
2009	A study of a standard financial model for BTL projects
2009	Study of evaluation management and evaluation panel pool management
2009	Study of advancement to the Chinese infrastructure market using PPP project type
2009	Study of BTL project facility management and operation guidelines
2009	Study of measures to increase demands for roads built by PPPs
2010	Study of revision of three instructions including BTL project facility basic planning
2010	Study of financial agreements in PPP projects
2010	Study of operation costs in PPP projects and improvement measures
2010	Management of appropriate tolls in road PPP projects
2010	Guide for Act on Private Participation in Infrastructure
2010	Comparative analysis of WTO GPA and FTA agreements and Act on Private Participation in Infrastructure
2011	Guide for standard BTL concession agreement
2011	Study of improvement of PPP system
2012	Study of local companies' engagement in international PPP projects
2012	Study of operation costs in PPP projects: Centering on road projects with minimum revenue guarantee

▌Table VI-7▌ Continued

Year	Study
2013	Study of public rental housing supply and PPP
2013	Study of development of auxiliary project manual
2013	Study of management of PPP projects after expiry of concession agreement
2013	A study of standard output specification for BTL water supply improvement projects
2013	Study of allowance of private proposals for BTL projects
2013	Study of legal issues in PPP projects in 2012
2013	Empirical study of VFM analysis for PPP projects
2013	Study of applicability of BTL projects to welfare facilities
2014	Study of improvement of BTL service performance
2014	Comparison of PPP projects between Korea and Australia
2014	Study of fund investment in PPP projects and deregulation
2014	Detailed instructions for auxiliary business review in PPP projects
2014	Case study of *ex post* VFM analysis for PPP projects (expressways)
2014	Study of determination of profit rate in BTO PPP projects
2014	Study of Korea Transport Database (KTDB) review and preliminary feasibility study
2014	Analysis of key indicators and trends in public investment
2015	Study of termination of concession agreements and payment for early termination in PPP projects—centering on BTO projects
2015	Study of BOO projects
2015	Study of legal issues in public investment in 2014
2015	Study of vitalization of PPP projects in service
2015	Study of causes of financial litigations in PPP projects and implications
2015	Comparison of PPP projects among Korea, Philippines, and Indonesia
2016	Institutionalization of new risk-sharing method for PPP projects
2016	Study of compensation and damage in projects for public interest: Centering on PPP projects
2016	Measures to introduce SIB to public services
2017	Development of performance indicators for road PPP projects and case studies
2017	PPP project performance evaluation and awareness survey
2017	Study of advancement into overseas private investment markets—centering on the Asian PPP market
2017	Study of project condition adjustment methods
2017	Study of improvement of PPP law for operation-type PPP project implementation
2017	Study of restructuring of insolvent PPP projects

▌Table VI-7▌ Continued

Year	Study
2018	Trends in infrastructure investment policy and implications—Australian case studies
2018	Study of improved estimation of rent benefits
2018	Basic study of relation between risk-sharing structure and profitability in PPP projects
2018	Study of legal issues in PPP projects (2015–2017)
2018	Study of environmental factors and execution of dispositions for public interest
2018	Study of return of equity in PPP projects
2018	Study of efficiency of risk sharing in PPP projects
2018	Study of financial issues in PPP projects
2018	Basic study of estimation of benefits of urban regeneration—centering on infrastructure improvement projects
2018	Study of improvement of poorly managed port PPP projects
2018	Study of vitalization of publicly solicited infrastructure funds
2018	Analysis of issues surrounding corporate tax in PPP projects and institutional improvement
2019	Study of refinancing in BTL projects
2019	Analysis of issues surrounding standard concession agreements and improvement measures
2020	Study of improvement of PPP system following application of all-inclusive system
2020	Study of improvement of quantitative VFM analysis
2020	Price evaluation criteria for RFP review
2020	Study of types of PPP projects
2020	Study of improvement of Request for Alternate Proposals in standard Request for Proposals
2020	Study of mid- and long-term development of PPP projects
2020	Study of institutionalization of operation-type PPP projects
2020	Study of improvement of preferential treatment for initial proposer
2021	A Study on Quantitative VfM Calculation and Implementation Alternatives for PPP projects - Focusing on Investment Risk Sharing Type -
2021	A Case Study on the right of Management and Operation of PPP projects
2021	A Study on the Legislation and Case Study on Force Majeure in PPP projects
2021	A Study on the Trends and Implications of each country's Infrastructure Policy Response in the COVID-19
2021	A Comparative Study on Termination Payment and Implementation Method for the Investment Risk Sharing Type and Hybrid Type PPP projects
2021	A Study on the Cost Structure of PPP projects
2022	A Study on Project Assurance for public investment in the United Kingdom.
2022	A Study on the current status and key issues of PPP projects in Tourism and Leisure Facilities.

▌Table VI-8▌ General studies of PFS for public institution projects

Year	Study
2013	Study of PFS for public enterprise and quasi-government institution projects
2014	Basic study of risk factor assessment in public institution international projects—centering on overseas power projects
2014	Study of estimation of costs of conducting PFS for public institution international projects
2014	Basic study of easing of risk factors in public institution international projects using insurance
2016	Study of necessity to introduce total project cost management to public institution projects
2016	Study of social discount rates
2017	Study of improvement of efficiency of investment and operation of railway projects
2018	Study of key issues relating to profitability analysis in PFS for public institution international projects
2018	Study of demand and benefit estimation in knowledge industry center development projects
2019	Study of estimation of power supply benefits and external costs of air pollutants
2020	Study of institutional improvement and complementation of PFS for public institution domestic projects
2020	Study of institutional improvement and complementation of PFS for public institution international projects
2020	Study of development of PFS system for international projects using equity return indicators
2020	Study of complementation of analytical methods for PFS for industrial complex projects
2020	Exploration of application of power intensity to power pricing
2021	A Study on the Improvement of the Methodology for Estimating the Benefits of MICE Industrial Exhibition Hall
2021	A Study on Estimation of Construction Cost of Industrial Complex Development Project (Focusing on Site Construction)
2022	A Study on the Benefit Calculation Methods for Housing Supply Projects.
2022	A Study on the Construction Cost Estimation for Power Generation Projects.
2022	A Study on the Reflection of Environmental Values in Feasibility Study.

▌Table VII-9▌ General study of performance evaluation of special cases of taxation

Year	Study
2016	Study of establishment of tax expenditure evaluation methods

2. Track Records of Policy Research

A. Track Records from 1999 to 2022

<Table VI-10> shows the track records of the research projects conducted by PIMAC.

▌Table VI-10 ▌ Guidelines developed and research projects conducted

(Unit: projects)

Year	Government-financed investment project evaluation			PPP project evaluation			Public institution project PFS			Performance evaluation of special cases of taxation			Total		
	Guidelines	Studies	Subtotal	Guidelines	Studies	Subtotal	Guidelines	Studies	Subtotal	Guidelines	Studies	Subtotal	Guidelines	Studies	Total
1999	3	1	4	-	-	-	-	-	-	-	-	-	3	1	4
2000	6	6	12	-	-	-	-	-	-	-	-	-	6	6	12
2001	6	6	12	-	-	-	-	-	-	-	-	-	6	6	12
2003	1	-	1	-	-	-	-	-	-	-	-	-	1	-	1
2004	5	4	9	-	-	-	-	-	-	-	-	-	5	4	9
2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	4	17	21	-	-	-	-	-	-	4	17	21
2007	-	1	1	2	7	9	-	-	-	-	-	-	2	8	10
2008	4	-	4	-	11	11	-	-	-	-	-	-	4	11	15
2009	-	1	1	1	7	8	-	-	-	-	-	-	1	8	9
2010	-	-	-	1	6	7	1	-	1	-	-	-	2	6	8
2011	-	4	4	2	2	4	-	-	-	-	-	-	2	6	8
2012	3	2	5	-	2	2	-	-	-	-	-	-	3	4	7
2013	5	5	10	3	8	11	2	1	3	-	-	-	10	14	24
2014	-	-	-	1	8	9	-	3	3	-	-	-	1	11	12
2015	2	1	3	-	6	6	-	-	-	-	-	-	2	7	9
2016	2	3	5	1	3	4	-	2	2	1	1	2	4	9	13

▌Table VI-10▐ Continued

Year	Government-financed investment project evaluation			PPP project evaluation			Public institution project PFS			Performance evaluation of special cases of taxation			Total		
	Guidelines	Studies	Subtotal	Guidelines	Studies	Subtotal	Guidelines	Studies	Subtotal	Guidelines	Studies	Subtotal	Guidelines	Studies	Total
2017	2	5	7	2	6	8	-	1	1	-	-	-	4	12	16
2018	-	2	2	2	12	14	2	2	4	-	-	-	4	16	20
2019	-	3	3	-	2	2	-	1	1	-	-	-	-	6	6
2020	-	5	5	1	8	9	-	5	5	-	-	-	1	18	19
2021	4	3	7	-	6	6	1	2	3	-	-	-	5	11	16
2022	2	1	3	-	2	2	1	3	4	-	-	-	3	6	9
Total	45	53	98	20	113	133	7	20	27	1	1	2	73	187	260

Notes: 1) Projects completed at the end of each year.
2) Four in-depth studies for government-financed projects were conducted until 2013.

In 2022, 9 research projects were conducted as shown in <Table VI-11>, consisting of three studies of government-financed projects (two guideline studies and one general study), two studies of PPP projects (general studies), and four studies of PFS for public institution projects (one guideline study and three general studies).

▌Table VI-11▐ Guideline and general studies conducted in 2022

Year	Government-financed project evaluation			PPP project support			Public institution project PFS			Preferential tax treatment performance evaluation			Total		
	Guidelines	Studies	Subtotal	Guidelines	Studies	Subtotal	Guidelines	Studies	Subtotal	Guidelines	Studies	Subtotal	Guidelines	Studies	Subtotal
2022	2	1	3	-	2	2	1	3	4	-	-	-	3	6	9

Note: Projects with a scheduled end date in 2022.

<Table VI-12> provides a list of research projects conducted in 2022.

▌Table VI-12▐ List of research projects conducted in 2022

No.	Project type	Title
1	Guideline	Study of standard guidelines for PFS for informatization projects
2	Guideline	Study of standard guidelines for PFS for medical facility projects
3	Guideline	Study of standard guidelines for PFS for public institution international projects
4	General	Study of methodology to calculate benefits of transport projects II
5	General	A Study on Project Assurance for public investment in the United Kingdom.
6	General	A Study on the current status and key issues of PPP projects in Tourism and Leisure Facilities.
7	General	A Study on the Benefit Calculation Methods for Housing Supply Projects.
8	General	A Study on the Construction Cost Estimation for Power Generation Projects.
9	General	A Study on the Reflection of Environmental Values in Feasibility Study.

Note: Projects with a scheduled end date in 2022.

Section 2. Policy Services Overview and Track Records

1. Education and Seminars on PPP Investment

Following the government's social distancing policy during the COVID-19 pandemic, PPP investment project education was conducted in the form of video lectures in 2022. As the ban on gatherings of more than five people was partially lifted in the second half of the year, face-to-face education was conducted in parallel.

<Table VI-13> shows the online PPP investment project education programs at PIMAC in 2022. In 2022, 3,116 people took six education programs.

▌Table VI-13▐ Online education track records of PPP Projects in 2022

(Unit: people)

No.		Period	No. of Attendees (public)	No. of Attendees (private)	Subtotal
First half	First	2022.02.24 - 2022.03.08	469	151	620
	Second	2022.04.14 - 2022.04.27	445	119	564
	Third	2022.06.09 - 2022.06.22	175	109	284
Second half	Fourth	2022.08.18 - 2022.08.31	388	128	516
	Fifth	2022.10.19 - 2022.10.31	372	252	624
	Sixth	2022.12.01 - 2022.12.14	316	192	508
Total			2,165	951	3,116

Note: The curriculum is largely divided into the public sector and the private sector. The public sector consists of basic, intermediate, advanced, and advanced finance courses, and the private sector consists of basic and private sector-targeted education.

PIMAC has implemented face to face education since the second half of 2022, and has conducted a total of three group trainings for the public and private sectors.

▌Table VI-14▐ Face to face education track records of PPP projects in 2022

Program	Date	Location	No. of Attendees
Education for the public sector I	2022.11.25	Seoul	55
Education for the public sector II	2022.12.07	Busan	47
Education for the private sector	2022.12.21	Seoul	65

<Table VI-15> shows PPP programs offered by online education

▌Table VI-15▐ List of PPP online education programs

Curriculum		List of courses
Education for public sectors	Basic	Understanding of PPP systems and legislation
		Understanding of PPP promotion methods
		Promotion procedures for PPP announced by the government
		Promotion procedures for PPP proposed by private sectors
		Financing and refinancing of PPP
		Role of related Institutions in PPP
		Understanding of feasibility study and VFM
		Explanation for the Comprehensive Guidance Book
		Understanding PPP through Q&A

▌Table VI-15▌ Continued

Curriculum		List of courses
	Intermediate	Introduction to PPP laws and systems
		Introduction to Concepts of PPP promotion methods
		Key procedures for Government-Announced projects
		Key procedures for projects proposed by private sectors
	Advanced	Methodologies for VFM and feasibility study of PPP
		Writing master plan for infrastructure project/third-party proposal and negotiation process issues
		FAQ/Issues and response measures viewed as dispute cases
		Understanding of PPP financing and refinancing/adjustment of project implementation conditions
	Advanced finance courses	Financial structure and analysis of PPP
		Understanding of BTO financial models
		Understanding of BTL financial models
		Understanding of risk-sharing(rs, a) and hybrid financial models
		Understanding financial commitments and refinancing of PPP
		The role and support cases of industry-based credit guarantees
Education for private sectors	Basic	Understanding of PPP systems and legislation
		Understanding of PPP promotion methods
		Promotion procedures for PPP announced by the government
		Promotion procedures for PPP proposed by private sectors
		Financing and refinancing of PPP
		Role of related Institutions in PPP
		Understanding of feasibility study and VFM
		Explanation for the Comprehensive Guidance Book
		Understanding PPP through Q&A
Education for private sectors	Courses for private enterprises	Introduction to PPP laws and systems
		Introduction to Concepts of PPP promotion methods
		Methodologies for VFM and feasibility study of PPP
		FAQ/Issues and response measures viewed as dispute cases
		The role and support cases of industry-based credit guarantees
		Introduction to EDCF(Economic development cooperation fund)

2. Public Investment Policy Seminar

In 2022, the Division of Policy Research held the Public Investment Policy Seminar, a platform for gathering and consolidating diverse opinions from various sectors on public investment issues and policy directions. The seminar series, totaling five sessions, covered a range of topics including 'Regional Balanced Development', 'Urban Air Mobility', and 'Trams'. Specifically, there were three sessions dedicated to the theme of 'Regional Balanced Development' and one each for 'Urban Air Mobility' and 'Trams', related to 'New Modes of Transportation'. The detailed performance of the 2022 Public Investment Policy Seminar is outlined below.

▌Table VI-16▐ Public Investment Seminar performance in 2022

No.	Topic	Date	Presenter
1	Mega-Regions and Regional Balanced Development: Four Preconditions for Balanced Development	2022.06.23	Prof. Ma-KangRae
2	Development of Regional Hub Universities and the Era of Local Governance (Creating 10 Seoul National Universities)	2022.07.21	Prof. Kim-Jongyoung
3	Policy Directions for Establishing Mega-City Development Hubs - Focused on Urban Integration Zones	2022.09.22	Dr. Seo-Minho
4	Introduction to Urban Air Mobility (UAM)	2022.11.10	Jung-Mincheol (Korea Airports Corporation)
5	Trams and Cities (Implications and Challenges of the European Tram Renaissance)	2022.12.01	Jung-Woohyun (KDI PIMAC)

3. International Cooperation

As part of its international cooperation activities, KDI attended 6 international conference and seminars and 2 meetings and education in KDI as listed in following table.

As part of the international cooperation project, visiting training was conducted for members of the National Assembly and government officials belonging to the Mongolian PPP Legislation Subcommittee in September 2022. The delegation is a member of the legal subcommittee to deliberate on the Mongolian PPP bill, and through this training, it contributed to establishing a bilateral cooperation system with Mongolia by improving the Mongolian delegation's understanding of the private investment system (PPP).

In addition, he participated in the Open Learning Campus, promoted by the World Bank as an open learning program, and gave lectures and Q&A sessions with overseas visitors on various topics such as business screening, priority selection, and disclosure regarding private investment in Korea.

Meanwhile, the Korean delegation attended the '15th Annual Meeting of the OECD Network of Senior Infrastructure and PPP Officials' held in October to discuss the current status and cases of Korea's infrastructure and PPP. It was delivered to the infrastructure managers of member countries and Korea's system was introduced.

In addition, the Public Investment Management Center's introduction booklet (brochure), annual report (2021), and leaflet (performance and performance) have been translated into English to introduce Korea's public investment management system and at the same time provide information on the work and business performance of the Public Investment Management Center. Awareness was raised through promotion. In addition, through the English translation of the 2021 Basic Plan for Private Investment Projects, it has been designed to be used when visiting Korea's private investment system or requesting related English materials from public officials from overseas countries performing related work, personnel from related international organizations, etc. Increasing awareness of Korea's public investment management system through the creation of key English materials, such as such, can be included as a major outcome of international cooperation projects.

▌Table VI-17 ▌ Track records of international cooperation in 2022

Category	No.	Program	Date	Place	Note
KDI attendance	1	[Open Learning Campus] World Bank PPP Knowledge Sharing Series: Analyzing, Screening and Prioritizing PPPs	2022.03.07	Online	An international conference (Online)
	2	[Open Learning Campus] World Bank PPP Knowledge Sharing Series: Analyzing, Screening and Prioritizing PPPs	2022.03.21.	Online	An international conference (Online)
	3	Annual Meeting of WAPPP (World Association of PPP Units & PPP Professionals)	2022.06.12.	Online	An international conference (Online)

▌Table VI-17▌ Continued

Category	No.	Program	Date	Place	Note
	4	15th Annual Meeting of the OECD Network of Senior Infrastructure and PPP Officials	2022.10.10.~ 10.11.	Paris (France)	OECD
	5	IDB Dominican Republic Seminar on Public Investment	2022.11.03.	Online	An international conference (Online)
	6	[Open Learning Campus] World Bank Virtual Knowledge Exchange: Planning and Implementing Disclosure in PPPs	2022.11.08.	Online	An international conference (Online)
Meetings/ Education in KDI	5	CIPE (Center for International Private Enterprise)'s Visit to KDI	2022.05.17.	KDI PIMAC	An online meeting
	8	Education for Mongolian lawmakers and government officials of PPP Legislation Subcommittee in KDI	2022.09.27~ 09.28.	KDI PIMAC	Face-to-face education in KDI

4. Database System Management and Operation

PIMAC manages key information in each stage of PPP projects (BTO and BTL) in its database system. The database contains data on PPP projects starting from 1994, ranging from Request for Alternate Proposals to Request for Proposals and completion of operation.

PPP projects were introduced by the Act on the Promotion of Private Capital into Social Overhead Capital Investment of 1994 and started surging when the law was substituted by the Act on Private Participation in Infrastructure in 1999. In particular, the introduction of BTL PPP projects in 2005 further encouraged increases in government-solicited projects. As of the end of 2022, 818 PPP projects have been implemented.

As records on these projects became valuable data, PIMAC found it necessary to manage the data in an efficient and organized manner; hence, the center developed the InfraInfo DB system.

To date, 818 projects have been announced and solicited, and the database contains stage-specific details on 276 BTO-type projects and 542 BTL projects.

▌Table VI-18▐ InfraInfo DB system

Category	No. of projects	Remarks
BTO	276	Database of stage-specific records
BTL	542	
Total	818	

PIMAC has collected stage-specific key data on PPP projects from competent authorities since 2012 and added them to its database. Data collection is conducted under Article 163 of the PPP Project Basic Plan, and the Ministry of Economy and Finance sends competent authorities official requests for information. PIMAC collects, verifies the date, and adds them to the InfraInfo DB system. In 2018, the center developed a system to allow competent authorities to access the system using IDs assigned to each local city, province, and department to verify data on their projects. Since 2019, the Ministry of Economy and Finance and PIMAC have been working to unify the collection and publication of statistical data on PPP projects on this system.

▌Table VI-19▐ Basic materials for the database system

Type	Material
Stage-specific details on PPP projects	• Forms - Materials in the Request for Proposals and Request for Alternate Proposals stage - Materials in the concession agreement and amendment stage - Materials in the operation completion stage - Materials in the operation stage - Materials in the construction stage - Materials in the construction preparation stage
	• Documents submitted - Initial concession agreements and financial models - Amended agreements and changes in financial models
Government-financed project evaluations	• Project plans • Project review reports

To ensure stable and streamlined services, PIMAC concluded maintenance contracts for hardware, security equipment, and solutions with the aim to provide stable services and respond to changes in internal and external environments, for example, changes in relevant or interlinked systems, computing system replacements, user environment changes, and new software installation.

▌Table VI-20 ▌ System maintenance

(Unit: sets)

Category	Program	Quantity	Remarks
Security	Database encryption	1	Personal information and confidential data encryption
Backup	Backup	1	System and data backup
DBMS	Oracle 12c	1	Database
Web program	Web service	1	InfraInfo DB system