

## TEN YEARS SINCE THE INTRODUCTION OF PPP CONCESSIONS IN JAPAN AND THE OUTLOOK FOR THE FUTURE

### — NUMBER OF PARTICIPATING COMPANIES EXPECTED TO INCREASE WITH AN EXPANSION IN MARKET ENTRY OPPORTUNITIES —

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#### SUMMARY

- Looking back on the 10 years since Japan introduced public-private partnership concessions (which give private companies the “right to operate” public facilities for a certain period of time), it is noticeable that, while the achievements are concentrated in the airport sector, a certain degree of success has been achieved. For private companies, the past decade can be regarded as a period during which a new business field was formed from the ground up within the public sector, and ambitious companies from various industries have entered this market.
- In the future, opportunities to enter the concession project are expected to increase due to the holistic operation of multiple facilities across wider areas, the integrated operation of facilities in different sectors, and the expansion in types of projects that can be executed under concession contracts with the adoption of the “availability payment” method. It is hoped that the number of new companies entering the market will increase accordingly.

#### 1. TEN YEARS SINCE THE INTRODUCTION OF CONCESSIONS

A concession grants a specific private company the exclusive right to operate public facilities, such as water services and roads owned and managed by the national and local governments, for a certain period of time. It is a method known as ‘public-private partnership’, and it utilizes private management know-how and other resources for the operation of public facilities. Its history dates back to a particular case involving the water utility industry in France in the mid-19th century. When PFI,<sup>1</sup> which focuses on the utilization of private funds for the construction of public facilities, was introduced in the UK in the early 1990s, the concept of PPP<sup>2</sup> was born as a general term for public-private partnership methods including concessions and PFI, and the concept spread from Europe to the rest of the world. The history of PPPs in Japan began with the enactment of the PFI Act<sup>3</sup> in 1999, which aimed to introduce PFIs modeled after the UK. The law was then amended in May 2011 to grant the concession rights of public facilities to the private sector, and 10 years have passed since then.

<sup>1</sup> Acronym for Private Finance Initiative. The private company constructs the facility and maintains it for a certain period of time after construction.

<sup>2</sup> Acronym for Public-Private Partnership.

<sup>3</sup> The official name is the Act on Promotion of Private Finance Initiative.

## 1-1. Background and significance of the introduction

By the end of 2010, more than 10 years after the enactment of the PFI Act, the total number of PFI projects implemented in Japan had reached 400, and the number was steadily rising. However, analysis of the operator's method of recovering the investment cost showed that approximately 70% of the projects were of the "service purchase type", in which the government pays the operator regularly after the facility is constructed, and that only about 5% of projects were running the project on a "self-funding basis" whereby the cost is covered by the fee revenues collected from facility users<sup>4</sup>. The service purchase type still offers an advantage for the government side in that the construction cost can be paid in installments and deferred, but ultimately, the government must bear all the project costs by using public financial resources.

Against this backdrop, the need to reduce public expenditures amid Japan's tight public financial situation prompted the expansion of self-funding PPPs, and the "concession method" was introduced with the revision of the PFI Act in May 2011. The project using the concession method (hereinafter referred to as the concession project) targets existing public facilities that earn revenue through the collection of fees from users. The introduction of concessions thus enabled private companies to participate in a new public business, where they are granted strong and exclusive operating rights to manage a public facility and earn revenue based on usage.

## 1-2. Implementation status and issues

After the introduction of the concession method, the number of concession projects steadily increased due to the efforts of the national and local governments, along with the private companies that have boldly taken on the challenge of the new public business. Starting with Tajima Airport, which commenced a concession project in January 2015, the operation rights of Kansai International Airport, Osaka International Airport, and Sendai Airport were transferred in 2016. The year 2016 also saw a development in the road sector with the commencement of an Aichi Prefectural toll road project. In the sewerage sector, a concession project began in Hamamatsu City in 2018. Of these, the projects for which financial results have been disclosed are shown in Figure 1. While airport concession projects incurred deficits in the last two years due to the impact of the COVID-19 pandemic, toll roads and sewerage projects have, in general, been generating stable profits. As of the end of July 2021, 27 concession projects are underway, including 12 airports, 1 toll road project, 2 sewerage facilities, 1 industrial water supply system, 1 public gas works, and 1 public hydroelectric power generation project (Figure 2). According to the Cabinet Office, the cumulative scale<sup>5</sup> of the concession projects reached approximately 11.6 trillion yen at the end of 2019, meaning the government achieved its target of 7 trillion yen by the end of 2022 well ahead of schedule.

**Figure 1: Performance of concession businesses in Japan**

(unit: ¥100 mn)

	Kansai and Osaka International Airports		Sendai Airport		Toll roads, Aichi Prefecture		Public sewerage system, Hamamatsu City	
	Sales	Net income	Sales	Net income	Sales	Net income	Sales	Net income
FY 2020	554	-176	24.7	-15.1	128.4	2.9	18.9	2.7
FY 2019	2,130	333	57.5	-0.4	162.3	3.5	18.7	2.0
FY 2018	2,177	293	55.1	1.4	163.3	2.8	18.8	1.7
FY 2017	2,064	283	51.6	1.1	156.6	3.3	—	—
FY 2016	1,802	169	—	—	—	—	—	—

Source: Compiled by MGSSI based on materials of each operating company

<sup>4</sup> Other projects are combinations of both types.

<sup>5</sup> Gross income expected from the contracted project for the operator during the contracted period.

Figure 2: Major concession projects in Japan

Project	Tajima Airport	Kansai/Osaka Int'l Airports	Sendai Airport	Kobe Airport	Takamatsu Airport	Tottori Airport
Start date	[Phase one] 2015/1/1 [Phase two] 2020/4/1	2016/4/1	[Building facilities] 2016/2/1 [Airport operation] 2016/7/1	2018/4/1	[Building facilities] 2017/12/1 [Airport operation] 2018/4/1	2018/7/1
Termination date	[Phase one] 2020/3/31 [Phase two] 2025/3/31	2060/3/31	2045/11/30	2060/3/31	2032/9/30	2024/3/31
Main members of the consortium	Hyogo Prefecture, Toyooka City, Japan Airlines, New Kansai International Airport	ORIX, VINCI Airports	Tokyu, Maeda Corporation, Toyota Tsusho, Tokyu Land Corporation	Kansai Airport (ORIX, VINCI Airports)	Mitsubishi Estate, Taisei Corporation, Kagawa Prefecture, Pacific Consultants, Takamatsu City	ANA Holdings, Hinomaru Bus, Tottori Prefecture, Tottori City
Project	Nanki-Shirahama Airport	Fukuoka Airport	Shizuoka Airport	Kumamoto Airport	Seven airports in Hokkaido	Hiroshima Airport
Start date	2019/4/1	[Building facilities] 2018/11/1 [Airport operation] 2019/4/1	2019/4/1	[Building facilities] 2019/7/1 [Airport operation] 2020/4/1	[Building facilities] 2020/1/15 [Airport operation] New Chitose Airport: 2020/6/1 Ashikawa Airport: 2020/10/1 Wakkanai, Kushiro, Hakodate, Obihiro, and Memanbetsu Airports: 2021/3/1	[Building facilities] 2021/2/1 [Airport operation] 2021/7/1
Termination date	2029/3/31	2048/7/31	2039/3/31	2052/5/30	2049/10/30	2050/12/17
Main members of the consortium	Industrial Growth Platform, Michinori Holdings, Hotel Shirahamakan	Fukuoka Airport Holdings, NNR/MC Airport Management (Nishi-Nippon Railroad, Mitsubishi Corporation), Changi Airports Kyushu	Mitsubishi Estate, Tokyu, Shizuoka Railway, Suzuyo	Mitsui Fudosan, Kyushu Electric Power, Sojitz, Japan Airport Terminal, Kyushu Industrial Transportation Holdings, Sankei Building	Hokkaido Airport, Mitsubishi Estate, Tokyu, Development Bank of Japan, Hokkaido Electric Power, Japan Airlines, ANA Holdings, Mitsui Fudosan, Mitsubishi Corporation	Mitsui Fudosan, Tokyu, Hiroshima Bank, Hiroshima Electric Railway, Kyushu Electric Power, Chugoku Electric Power, Mazda, Fukuyama Transporting, Hiroshima Gas, Sumitomo Corporation, Tokyu Construction
Project	Aichi Prefectural toll roads	Public sewage treatment plant, Hamamatsu City (Seien area)	Public sewage facility, Suzaki City	Industrial water supply works in Ariake and Yatsushiro, Kumamoto Prefecture	Otsu City gas project, etc.	Reconstruction and operation of hydroelectric power plants, Tottori Prefecture
Start date	2016/10/1	2018/4/1	2020/4/1	2021/4/1	2019/4/1	2020/9/1 (Tsukuyone)
Termination date	[Chitahanto Road network - four routes] 2046/3/31 [Sanage Green Road] 2029/6/22 [Kinuura Tunnel] 2029/11/29 [Kinuura-Toyota Road] 2034/3/5 [Nagoya-Seto Road] 2044/11/26	2038/3/31	2039/9/30	2041/3/31	2039/3/31	[Tsukuyone] 2040/8/31 [Oshika 1st Power Plant] 2044/1/31 [Oshika 2nd Power Plant] 2043/8/31 [Hinogawa 1st Power Plant] 2044/11/30
Main members of the consortium	Maeda Corporation, Mori Trust, Daiwa Lease, Central Nippon Expressway Company, Daiwa House Industry	Veolia Japan, JFE Engineering, ORIX, Tokyu Construction, Suyama Construction	NJS, Shikoku Pump Center, Hitachi Zosen Chugoku Construction Works, Private Finance Initiative Promotion Corporation of Japan, The Shikoku Bank	METAWATER, Kumamotoken Kousaikai, Nippon Telegraph and Telephone West Corporation, Wesco	Osaka Gas, Otsu City, JFE Engineering, Suido Kiko Kaisha	Mibugawa Electric Power (Marubeni), Chubu Electric Power

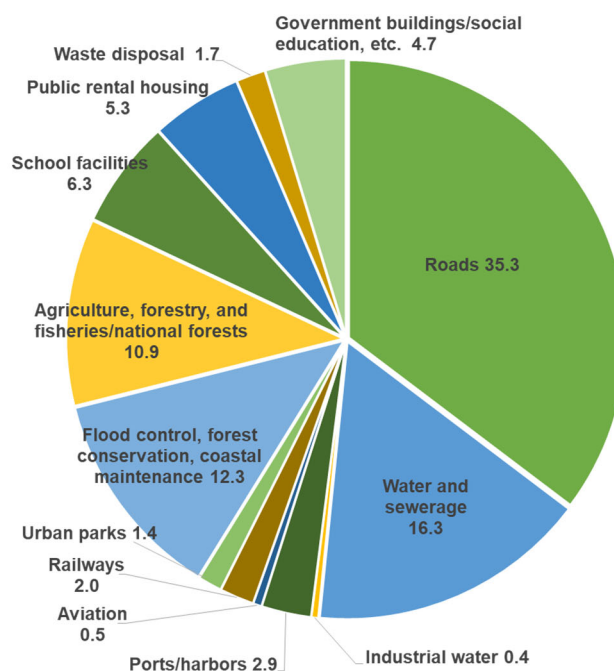
Source: Compiled by MGSSI based on operating companies' disclosure materials (project implementation plans, etc.)

The airport sector has seen the most concession projects. The government has promoted the concession method mainly for nationally managed airports, such as by establishing related laws and the legal environment as seen by the enactment of the Airport Concession Act<sup>6</sup> in 2013. In contrast, the concession projects have not progressed as much in the sectors of water/sewage and roads<sup>7</sup> (Figure 3), which together account for approximately half of Japan's social capital stock.

<sup>6</sup> The formal name is the Act for the Operation of Government Controlled Airports by Private Sector Entities. The law stipulates special measures regarding regulations, such as those related to the Civil Aeronautics Act and the Airport Act, when a concession project is undertaken at airports.

<sup>7</sup> According to estimates by the Cabinet Office, of Japan's social capital stock (gross capital stock) as of the end of fiscal 2014, aviation accounted for 0.5%, roadways 35.3%, sewerage 10.3%, and water supply facilities 6.0%. (<https://www5.cao.go.jp/keizai2/ioj/index.html>)

Figure 3: Breakdown of social capital stock by field (FY 2014, %)



Source: Compiled by MGSSI based on the report "Measuring Infrastructure in Japan 2017" (in Japanese) issued by the Cabinet Office

The water and sewage systems are operated by local governments such as municipalities, and residents are very cautious about entrusting the operation to private companies. Furthermore, in the case of the water supply, the provisions of the Water Supply Act require first invalidating the approval of the water supply business owned by the local government in order for a private company to newly obtain approval. Although two projects have been implemented for sewerage,<sup>8</sup> this requirement has hindered the introduction of concessions for water supply projects. However, with the revision of the Water Supply Act in 2019, it became possible for local governments to retain their position as water utilities along with the ultimate responsibility for the water supply, while delegating operating rights to private companies. Prompted by this development, Miyagi Prefecture is moving to introduce a waterworks concession project, and the concession project is scheduled to start in 2022<sup>9</sup>.

As for roads, the issue is that private sector operation of toll roads is not permitted under the Act on Special Measures Concerning Road Construction and Improvement, which regulates the collection of tolls from users. To address this situation, Aichi Prefecture established a toll road concession project in October 2016 as a special case using the Act on Special Districts for Structural Reform. However, since then, as the government has not taken action to improve the legal environment, the concession project is not expected to spread for toll roads.

## 2. OUTLOOK FOR THE FUTURE

### 2-1. Holistic operation of multiple facilities across a wide area

Infrastructure rooted in our daily lives, such as water and sewage systems, is facing problems having to do with money, resources, and manpower. That is, revenues are decreasing owing to population decline, demand for facilities renewal is increasing due to aging infrastructure, and there is both a decreasing supply and increasing aging of skilled personnel. This situation calls for an improvement in project management by establishing partial-affairs-associations (authorities) between adjacent municipalities to enable cooperation over a broader area, which would allow for securing a certain scale of business, consolidating facilities, and reducing the required

<sup>8</sup> One project was started in April 2018 in Hamamatsu City, Shizuoka Prefecture, and another was started in April 2020 in Susaki City, Kochi Prefecture.

<sup>9</sup> The city of Osaka was also in the process of selecting an operator with a plan to start a water supply concession project in fiscal 2022, but it announced in September 2021 that all applicants had pulled out.

number of personnel. However, such cooperation between local governments is difficult to coordinate toward an agreement because of obstacles such as differences in infrastructure usage fees. That said, it may be possible to promote wide-area cooperation using concession projects as a bridge, such as water supply concessions, which are being introduced since the Water Supply Act was revised in 2019.

In the airport sector, a concession project for collectively operating seven airports in Hokkaido was launched in 2020<sup>10</sup>. It is conceivable to apply a similar scheme to other sectors. While the national government took the lead in the case of the airports, it is expected that the cooperation between local governments will be led by prefectures, government ordinance-designated cities, and core regional cities,<sup>11</sup> and will be promoted in the core regional urban areas<sup>12</sup> and other such regions. Currently, several core regional urban areas are looking to collaborate in water and sewage projects and other works,<sup>13</sup> and the use of concession contracts is expected to provide a means of doing so.

In turn, because of the role played by the concession scheme in cooperation on infrastructure projects across wider areas, faster growth in the number of concessions for water, sewage, and other infrastructure is also expected.

## 2-2. Integrated operation of facilities in different sectors

The concession projects promoted so far have been undertaken in each specific infrastructure sector, such as airports, sewage facilities, and roads. In the future, an increasing number of concessionaires are expected to integrate operation of public facilities in different sectors that straddle these domains.

The concessionaire of a public gas project in Otsu City, Shiga Prefecture, which started in April 2019, is obliged to carry out water supply-related work (pipeline inspection and repair work) as auxiliary work. The project can be considered a de facto integrated concession project involving the infrastructure of the different sectors of gas and water supply. The integration is expected to contribute to an improvement in maintenance efficiency, such as by implementing needed repairs to underground pipelines for both gas and water at the same time. The operating company of this project (Biwako Blue Energy) is made up of a consortium of private companies — gas major Osaka Gas and two companies with strengths in the water and sewage business, JFE Engineering and Suido Kiko Kaisha. This project's policy clearly states that the operating company will explore how it can develop an integrated infrastructure business. As such, in the future, there is a possibility of the company evolving into a concession project that also handles sewerage and other infrastructure works. Through such concessions that integrate works in different sectors, an increasing number of regions are expected to see the multifaceted operation of local public facilities by comprehensive infrastructure management companies.

<sup>10</sup> The seven airports are four airports (New Chitose Airport, Wakkanai Hokkaido Airport, Kushiro Airport, and Hakodate Airport) managed by the national government, one (Memambetsu Airport) managed by Hokkaido Prefecture, and two managed by Obihiro City and Asahikawa City.

<sup>11</sup> Designated by government ordinance based on the request of a city with a population of 200,000 or more. It is a special designation based on the Local Autonomy Act that strengthens the administrative authority of cities other than government ordinance-designated cities that are relatively large in size and capacity. Affairs that are handled by government ordinance-designated cities, excluding those that are more efficiently handled by prefectures, can be transferred to core regional cities. As of April 1, 2021, 62 cities were designated as core regional cities.

<sup>12</sup> Based on the Local Autonomy Act, a metropolitan area is formed through a cooperative agreement between a government ordinance-designated city or core regional city with a daytime/nighttime population ratio of approximately 1:1 or higher and neighboring municipalities that have continuity and unity in terms of social and economic characteristics. The policy is one where the central city of a metropolitan area of considerable size and core strength collaborates with neighboring cities, towns, and villages to “drive economic growth, accumulate and strengthen sophisticated urban functions, and improve life-related functional services” through consolidation and networking, thereby creating a base for maintaining a certain metropolitan population and a vibrant social economy even in a society with a declining population, low birthrate, and aging population. As of April 1, 2021, Japan had 34 such core regional urban areas, with a total of 328 municipalities participating.

<sup>13</sup> The areas include the Ishikawa Central Metropolitan Area and the core regional urban area formed around the Kitakyushu metropolitan area.

### 2-3. Introduction of concessions for infrastructure without user fee revenues

As a means of achieving more efficient maintenance and renewal of aging infrastructure, the expansion of PPPs, including concessions and PFIs, is expected. To this end, it will be necessary to introduce concessions to infrastructure projects that do not generate user fee revenues. If realized, concession contracts could be expanded to non-toll roads, which account for more than 35% of Japan's stock of social infrastructure, and the market would be expected to expand significantly. In addition, in the aforementioned example of integrated operation of facilities across different sectors, concessionaires will aim to deliver improved convenience and profitability through more efficient maintenance and synergistic effects, and the integration would also include infrastructure that does not generate income from usage fees, such as water supply/sewage facilities and roads, or parks and roads.

As a method to achieve this, the author has long expected the introduction of concession contracts using the “availability payment” arrangement. In this method, regardless of the number of users of the facility, if the facility is made available in an appropriate state, the government will pay the agreed upon compensation to the operator. In addition, if the level of service is higher than the predefined evaluation standard, a bonus will be paid, and conversely, if the service level is lower, the payment will be reduced as a penalty, which gives the operator the motivation to maintain and improve the level of service.

The availability payment arrangement is not rare for concession projects in other countries, because there have been many bankruptcies among self-funding concessionaires since the global financial crisis of 2008. However, as mentioned above, under Japan's PFI Act, concession contracts are limited to existing facilities with user fee revenues, so it will be necessary to amend the law to introduce the availability payment method. At the meeting on the “Fourth Industrial Revolution” held in April 2020 by the government's Council for Advancing Structural Reform, Growth Strategy Council—Investing for the Future, the council recommended that guidelines be formulated describing the definition and utilization method of availability payments for infrastructure projects that do not generate usage charges, such as non-toll roads. In addition, the council recommended that national institutions and local governments be invited to consider application of the method, that more than 10 feasibility surveys be conducted by 2022, and that steps be taken to proceed with the formulation of projects. In February 2021, the Ministry of Land, Infrastructure, Transport, and Tourism began soliciting applications from local governments that are considering introducing projects utilizing this method (the ministry's announcement was entitled “Support for considering the introduction of public-private partnership projects related to infrastructure maintenance and management”). In this way, the government recently started taking steps toward introducing the availability payment method at last, suggesting the day when it will be realized may not be far away.

It can be said that in the 10 years since Japan introduced concessions, the efforts of the national government, local governments, private companies, and others have resulted in a certain degree of success, even though there are still some issues that need to be tackled. For private companies, the past decade can be regarded as a formation period for a new business field in the public sector. Ambitious companies from various industries, such as construction, plant engineering, real estate, transportation, electric power, gas, general trading, and finance have taken the lead in boldly entering the market. In the future, opportunities for private companies to enter the concession project are expected to increase due to the holistic operation of multiple facilities across wider areas, the integrated operation of facilities in different sectors, and the expansion in types of projects that can be executed under concession contracts with the adoption of the “availability payment” method. It is hoped that the number of new companies entering the market will increase accordingly.