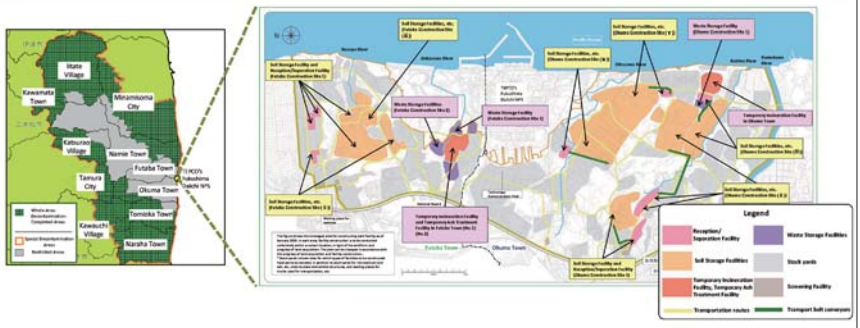
Interim Storage Facility

Interim Storage Facility for Removed Soil and Waste

Outline of the Interim Storage Facility

○ In Fukushima Prefecture, large quantities of contaminated soil and waste have been generated from decontamination works.
○ Currently, it is difficult to clarify methods of final disposal of the soil and waste.
○ **It is necessary to establish an Interim Storage Facility (ISF) in order to manage and store the soil and waste safely and intensively until final disposal.**
(Site Area: approx. 16 km²)
- Removed soil and waste generated from decontamination works in Fukushima Prefecture and incineration ash with radioactivity concentrations exceeding 100,000 Bq/kg are stored.
- The national government has legally specified its intention to take measures necessary for completing final disposal outside Fukushima Prefecture within 30 years after the commencement of interim storage (the Amended JESCO (Japan Environmental Storage & Safety Corporation) Act was promulgated in November 2014).



Prepared by the Ministry of the Environment

In Fukushima Prefecture, large quantities of contaminated soil and waste have been generated from decontamination work. The whole amount of material to be transported to the Interim Storage Facility (ISF) is estimated to be approx. 14 million m^3, which is equivalent to approx. 11 times the volume of the Tokyo Dome.

Currently, it is difficult to clarify methods of final disposal of the soil and waste, and it is indispensable to establish an ISF as a facility to manage and store the soil and waste safely and intensively until final disposal.

At the ISF, the following are to be stored:

(i) Removed soil and waste (e.g. fallen leaves and branches, etc.) generated from decontamination work which is currently stored in Temporary Storage Sites;

(ii) Incineration ash with radioactivity concentrations exceeding 100,000 Bq/kg.

Consent to accept the construction of the ISF was obtained from Fukushima Prefecture in September 2014 and from Okuma Town and Futaba Town in January 2015. The total area of the planned site is approx. 16 km^2, almost the same area as Shibuya Ward in Tokyo.

・Breakdown of the whole amount of material to be transported to the ISF (approx. 14 million m^3)

(i) Volume of the soil and waste that have already been transported to the ISF

(ii) Volume to be transported (volume of the soil and waste stored at Temporary Storage Sites, etc., including combustibles before incineration)

(iii) Volume of waste reduced and stored at Temporary Incineration Facilities

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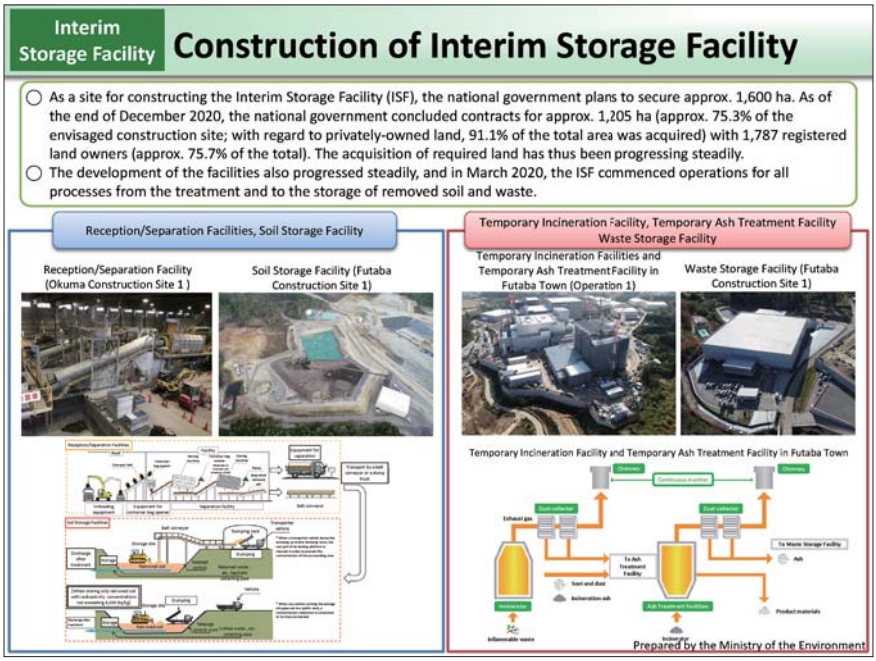

The site necessary for the construction of the Interim Storage Facility (ISF) is estimated to be approx. 1,600 ha and the number of relevant registered land owners is 2,360. By the end of December 2020, the contracts have been steadily concluded for approx. 1,205 ha (approx. 75.3% of the envisaged construction site; with regard to privately-owned land, 91.1% of the total area was acquired) with 1,787 registered land owners (approx. 75.7% of the total). The national government considers it most important to obtain understanding on the construction of the ISF, not to mention building a relationship of trust with land owners, and is committed to continuing efforts of providing sufficient explanations to land owners.

Construction of the Reception/Separation Facilities and Soil Storage Facilities started in November 2016. The Reception/Separation Facilities receive the removed soil and waste which is transported from the Temporary Storage Sites in Fukushima Prefecture to the ISF. The soil and waste are unloaded from trucks, taken out from container bags and separated into combustibles and incombustibles. The Soil Storage Facilities store the soil treated at the Reception/Separation Facilities safely in accordance with their radioactivity concentrations and other properties. Reception and separation of the removed soil and waste started in June 2017 and storage of the treated soil at the Soil Storage Facilities started in October 2017. In March 2020, the ISF commenced operations for all processes of the treatment and storage of removed soil and waste.

At the ISF, safety measures to prevent scattering and leakage of radioactive materials are taken. At the Reception/Separation Facilities, scattering of radioactive materials to outside of the facilities is being prevented by roofs, walls, and double doors and through negative pressure control. Floors are structured not to allow permeation of a liquid for the purpose of preventing contaminated water, etc. from permeating into groundwater. At Soil Storage Facilities, scattering of radioactive materials is prevented by watering, and covering with soil, and permeation into groundwater is prevented by seepage control. Leachate, etc. generated at these facilities is treated properly at a leachate treatment facility and is discharged after water quality management.

Included in this reference material on February 28, 2018
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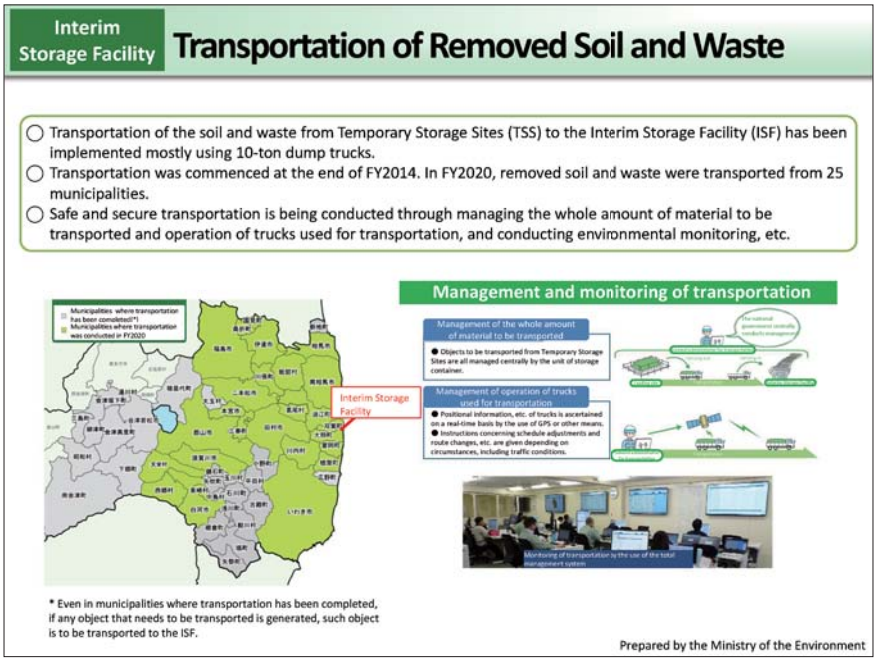

By the end of December 2020, an accumulative total volume of approx. 10,110,000 m^3 of the removed soil and waste had been transported to the Interim Storage Facility (ISF).

Transportation to the ISF is being conducted on a safety-first policy. Major traffic safety measures are as follows.

1. Training for new and existing workers

Training on transportation of removed soil and waste to the ISF is provided to truck drivers and other workers newly employed. Workers already engaging in transportation also receive training again every fiscal year.

2. Pre-driving of transportation routes

All drivers drive the transportation routes in advance to mutually check high-risk spots and things to note, etc.

3. On-site checking of driving status

At spots where attention should be paid for speeding or heavily trafficked spots, etc. driving status of trucks transporting removed soil and waste is checked (including on their way back).

4. Commendation of superior drivers

With the aim of improving and maintaining drivers' motivation and safety awareness, superior driver certificates (to be put on helmets and dashboards) are given to drivers who conducted transportation safely for 100 days or longer via contractors.

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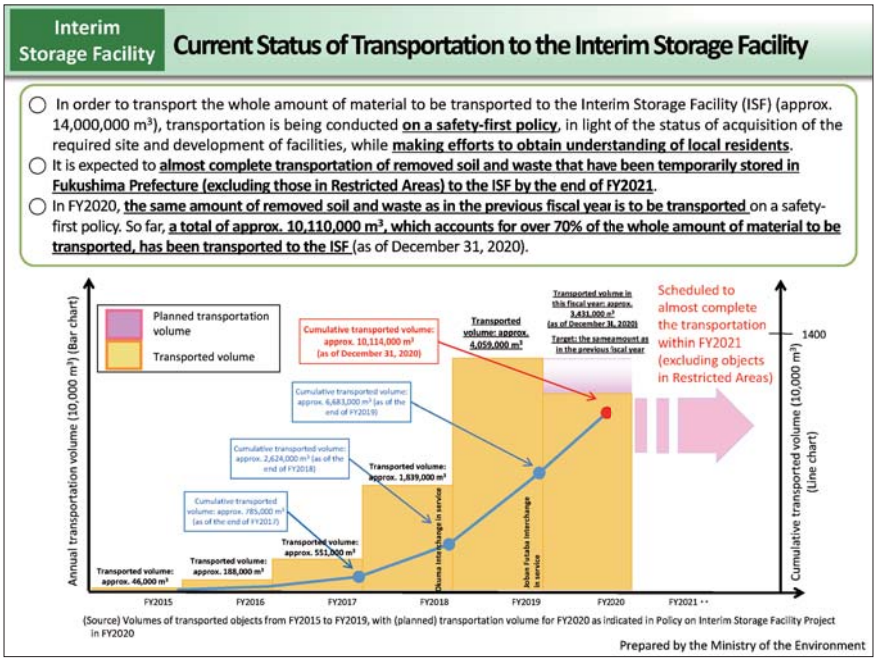


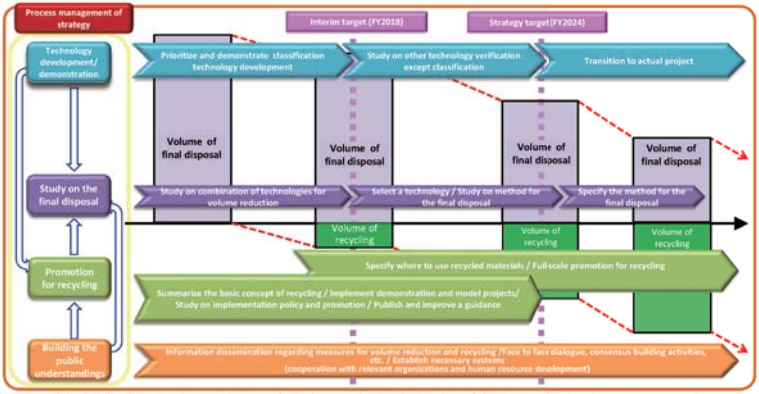
In accordance with the "Policy on the Interim Storage Facility Project in FY2021" announced on December 11, 2020, the transportation of removed soil and waste temporarily stored in Fukushima Prefecture (except the Restricted Areas) is expected to be mostly completed by the end of FY2021. At the same time, the transportation of the removed soil and waste from Specified Reconstruction and Revitalization Base Areas has been carried out.

The figure shows transported volumes from FY2015 to FY2020, etc.

Included in this reference material on March 31, 2017
Updated on March 31, 2021

Interim Storage Facility | **Final Disposal Outside Fukushima Prefecture and Technology Development Strategy for Volume Reduction & Recycling of the Removed Soil**

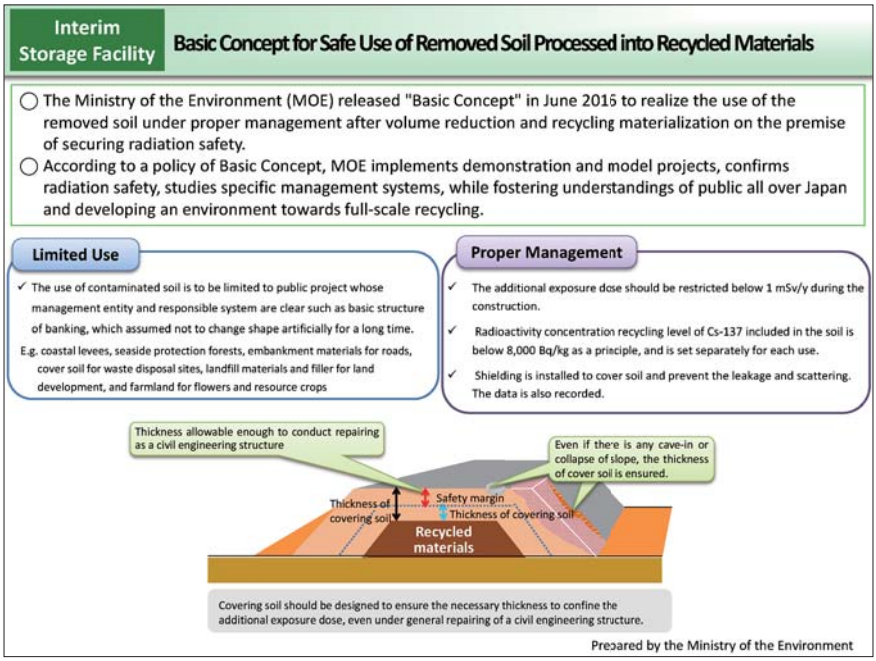
- Regarding the soil and waste removed in off-site decontamination work in Fukushima Prefecture, the national government is to **take necessary measures to complete final disposal outside the prefecture within 30 years from the start of transfer to the Interim Storage Facility**. In order to reduce the final disposal volume, **the government has been making all-out efforts for volume reduction and recycling** of removed soil and waste.
- Specific efforts for volume reduction and recycling have been made in line with the "**Technology Development Strategy for Volume Reduction & Recycling of the Removed Soil under Interim Storage**" and the "Process Chart," which the Ministry of the Environment formulated in 2016 and revised in 2019.



(Figure) Outline of the "Technology Development Strategy for Volume Reduction & Recycling of the Removed Soil under Interim Storage"
Prepared by the Ministry of the Environment

For achieving final disposal of the soil and waste removed through off-site decontamination work outside Fukushima Prefecture within 30 years from the start of transfer to the Interim Storage Facility, it is important to increase the amount of removed soil and waste that can be recycled to the extent possible through processing them while fully utilizing volume reduction technology, etc., thereby reducing the total amount for final disposal. Regarding volume reduction and recycling of removed soil and waste, efforts have been made steadily to develop technologies, promote recycling, and study the direction for final disposal in line with the "Technology Development Strategy for Volume Reduction & Recycling of the Removed Soil under Interim Storage," which the Ministry of the Environment (MOE) published in April 2016. In the mid fiscal year of the Strategy (FY2018), MOE comprehensively reviewed the achievement of the interim target and the forecast of technology development and recycling in the future, etc. and revised the Strategy in March 2019. Additionally, MOE published a guide (draft), which compiled technological matters to note in handling recycled materials safely in public works, etc., in March 2019 and updated it in December 2019.

Included in this reference material on March 31, 2019
Updated on March 31, 2021



With the aim of obtaining public understanding and trust for recycling of the soil removed through off-site decontamination work in Fukushima Prefecture, and at the same time promoting safe use of removed soil processed into recycled materials by stage, the Ministry of the Environment (MOE) compiled the Basic Concept for Safe Use of Removed Soil Processed into Recycled Materials in June 2016. This Basic Concept imposes a limitation that processed removed soil be only used in public works, etc. where management entities and responsibility-related systems are clarified. It also sets the upper limit for radioactivity concentrations of recycled materials to limit additional exposure doses, while supposing that they are used under proper management, such as with shielding by cover soil.

At present, based on this Basic Concept, MOE is implementing demonstration projects in Minamisoma City and Iitate Village to confirm the safety of processed removed soil. The results obtained so far through the demonstration projects have shown no significant changes in ambient dose rates or other values since commencing the projects, and measured values of radioactive cesium in seepage water through cover soil were all below the detection limit.

In the demonstration project in Iitate Village, the development of farmland was commenced in FY2020 and an experiment to grow edible crops has been conducted to confirm growth and safety. As of December 2020, concentrations of radioactive cesium in those edible crops measured by the method specified by the Ministry of Health, Labour and Welfare can be all assessed as below the detection limit (less than 20 Bq/kg) (as a result of continuing measurements until Cs was detected, all values were 0.1 to 2.3 Bq/kg, far below the standard limit for general foods (100 Bq/kg)).

MOE's website, "Interim Storage Facility": Demonstration Project for Recycling in Minamisoma City
http://josen.env.go.jp/chukanchozou/facility/effort/recycling/minamisoma.html (in Japanese)
MOE's website, "Interim Storage Facility": Demonstration Project for Recycling in Iitate Village
http://josen.env.go.jp/chukanchozou/facility/effort/recycling/iitate.html (in Japanese)

Included in this reference material on March 31, 2019
Updated on March 31, 2021