

Reinan E-Coast Plan and Nuclear Recycling Business

November 15, 2025

**Reinan E-Coast Planning Office
Fukui Prefecture**

1. Reinan E-Coast Plan
2. Outline of Nuclear Recycling Business
(Centralized Clearance Treatment Business)
3. Enhancement of Understanding of Nuclear
Recycling Business

1. Reinan E-Coast Plan

1) History of Planning

"Energy R&D Hub Plan" (established in 2005)

Aiming to be a comprehensive R&D base for nuclear energy

Intent: Regional development utilizing research institutions and human resource development institutions, related to nuclear reactors

Efforts: Ensuring safety and security — Measures addressing the aging of nuclear reactors, etc.

Strengthening R&D functions — Fast Breeder Reactor Research Center, etc.

Training and exchange of human resources — Skill training for engineers of companies in the prefecture, etc.

Creation and development of industries — Building technology transfer systems through industry-government-academia collaboration, etc.



Changes in the environment surrounding the prefecture

- Fukushima Daiichi accident (2011), long-term shutdown of nuclear power plants in the prefecture, successive decisions to decommission
- Decision to abolish the prototype fast breeder reactor "Monju" and to establish a new test and research reactor (2016)
- Incorporation of the concept of "renewable energy as the main power source" into the Fifth Strategic Energy Plan (2018)
- Expected expansion of non-resident population due to the opening of the Hokuriku Shinkansen in Tsuruga (2023)

⇒ Scaling up from a nuclear-centered urban development plan to include decommissioning, new test reactors, and the use of renewable energy

The Reinan E-Coast Plan was formulated in March 2020

1. Reinan E-Coast Plan

2) Outline of the Reinan E-Coast Plan

Four Basic Strategies and Eight Projects

Basic Strategies	Projects to Proceed with Strategies
I. Promotion of nuclear-related research and development of human resources Formulating a hub for Japan's future nuclear and energy research and development and human resource development	1. Creating a research and human resource development center that brings together researchers from Japan and overseas 2. Creating innovation using new test reactors and promoting their use
II. Cultivation of decommissioning business Upgrading local industries in response to environmental changes surrounding nuclear power such as decommissioning	1. Promoting the participation of local companies in decommissioning and other work, and expanding the supply of products and technologies 2. Promoting the reuse of demolished waste and turning it into a business
III. Regional development through the use of various energies Developing a smart energy area in anticipation of the extension of the Shinkansen and expanding the number of residents and visitors in the Reinan area	1. Promoting the creation of a smart energy area in collaboration with cities and towns in the Reinan region 2. Providing opportunities to learn broadly about nuclear power and renewable energy and encouraging human interaction
IV. Cultivation of diverse local industries Fostering diverse industries by supporting businesses using research results and attracting companies by taking advantage of the improved location environment.	1. Realizing next-generation agriculture, forestry, and fisheries through technological advancement and technology transfer to local companies and institutions 2. Cultivating diverse industries by supporting and attracting local businesses

Relevant
SDGs



7 Affordable and clean energy

Secure access to affordable, reliable, sustainable and modern energy for all



8 Satisfying jobs and economic growth

Promote inclusive and sustainable economic growth, full and productive employment and satisfying jobs for all



9 Creating a foundation for industry and technological innovation

Build resilient infrastructure, promote inclusive and sustainable industrialization, and expand technological innovation



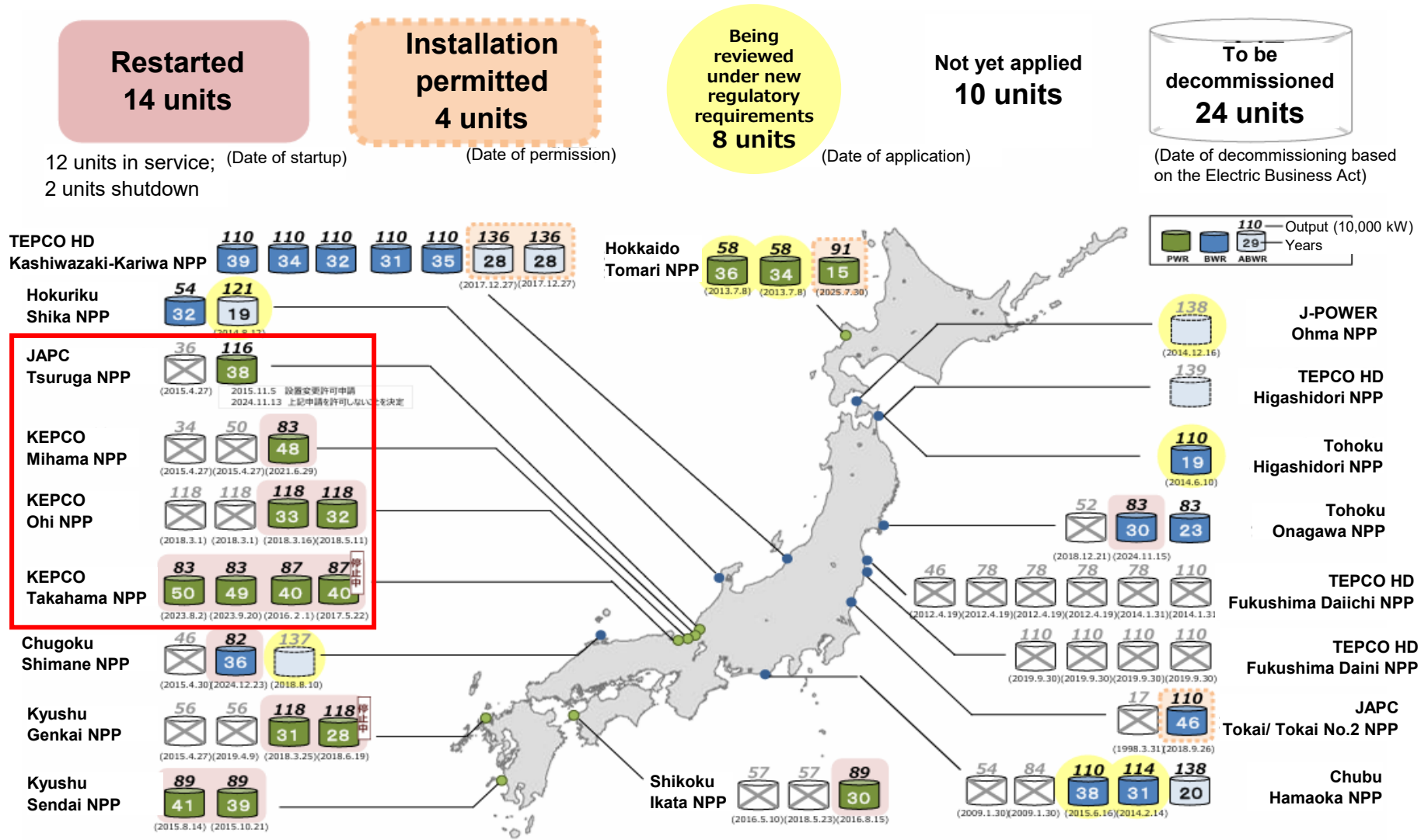
11 Creating a sustainable city

Achieve inclusive, safe, resilient, and sustainable cities and human settlements

(Reference) Current Status of Nuclear Power Plants in Japan

- The environment surrounding nuclear power has changed significantly since the Great East Japan Earthquake.
- **Fukui Prefecture has decided to decommission seven of the 15 nuclear reactors*.**

*In addition to the 13 reactors in the figure, JAEA's advanced converter "Fugen" and fast breeder reactor "Monju" are included.



Source: Situation of Nuclear Power Plants in Japan as of September 2, 2025 (Agency for Natural Resources and Energy)

2. Outline of Nuclear Recycling Business (Background) Situation Surrounding Decommissioning

- A series of decisions to decommission nuclear power plants in Fukui Prefecture
 - ✓ Nuclear-related work is shifting from maintenance and inspection to decommissioning-related work.
 - ⇒ Concerns about **future employment and technological sustainability for companies in the prefecture**
 - ✓ As decommissioning progresses, a large volume of waste is generated.
 - ⇒ **Essential to steadily proceed with treatment and disposal**

Status of decommissioning of nuclear power plants in the prefecture

*Total including expenses other than facility demolition and waste disposal costs

	Plant name	Reactor type	Installer	Approval of decommissioning plan	Work period	Estimated cost		
						Dismantling of facilities	Waste treatment and disposal	Total*
Commercial reactor	Tsuruga Unit 1	BWR	The Japan Atomic Power Company	2017	24 years	¥24.1 billion	¥12.1 billion	¥36.3 billion
	Mihama Units 1 & 2	PWR	Kansai Electric	2017	29 years	¥48.5 billion	¥19.5 billion	¥68.0 billion
	Ohi Units 1 & 2			2019	30 years	¥78.0 billion	¥40.6 billion	¥118.6 billion
Reactor under R&D	Prototype Advanced Thermal Reactor FUGEN	ATR	Japan Atomic Energy Agency	2018	27 years	¥39.2 billion	¥34.5 billion	¥74.7 billion
	Prototype Fast Breeder Reactor MONJU	FBR		2018	30 years	¥87.0 billion	¥48.0 billion	¥150.0 billion
Total						¥276.8 billion	¥154.7 billion	¥447.6 billion

2. Outline of Nuclear Recycling Business

1) Role of Nuclear Recycling Business

- Recognizing **decommissioning as an opportunity for regional development and industrial growth in the Reinan area**, Fukui Prefecture has positioned the **expanded participation of local companies in decommissioning projects** as part of the Reinan E-coast plan. In particular, **attention has been given to clearance materials generated in large quantities** during decommissioning **but with low levels of radioactivity**.

Vision for the future

Through the formation of company consortia, etc., more companies in the prefecture are participating in decommissioning work in the prefecture and expanding into construction work outside the prefecture, thus advancing the decommissioning business ahead of the rest of the country.

- Companies in the prefecture with decommissioning know-how and technology are forming a corporate consortium.
 - Enabling participation in primary contracting and primary subcontracting work that companies in the prefecture were previously unable to secure, as well as entry into decommissioning work outside the prefecture [Reference II-3]

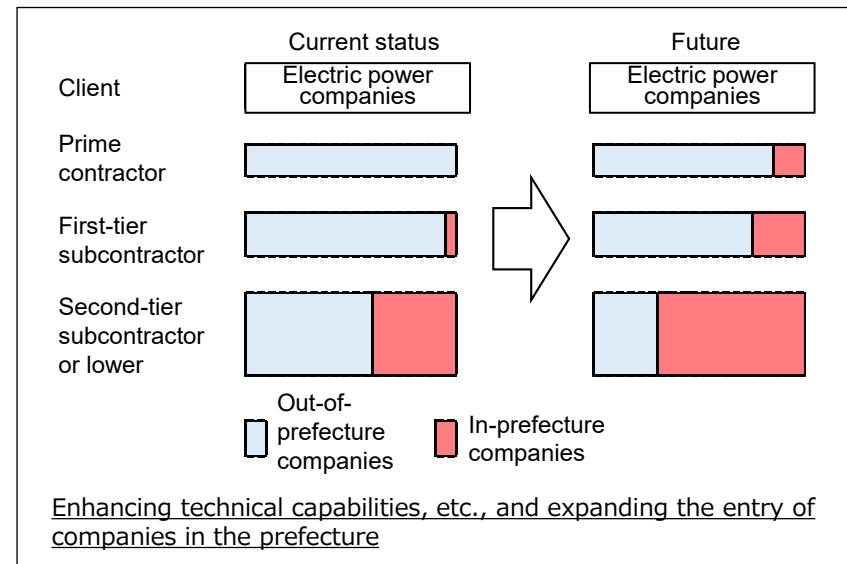
- By developing products and technologies that address the needs of decommissioning work, expanding use in construction work inside and outside the prefecture and in industries beyond nuclear power.

→ Increase motivation of companies in the prefecture to engage in R&D, revitalize joint research with electric power companies and research institutes, and promote interaction between companies.

- As understanding of the clearance system increases, dismantled waste from nuclear power plants is reused outside the electric power industry.

→ Companies that reuse waste below the clearance level generated in the prefecture are entering the prefecture.

[Reference II-3] Structure of ordering future construction projects (image)



(Source) Excerpts from Reinan E-Coast Plan

https://www.pref.fukui.lg.jp/doc/dengen/shinkeikaku/suishinkaigi_d/fil/2_keikakuhontai.pdf

2. Outline of Nuclear Recycling Business

2) Business Model of Centralized Clearance Treatment

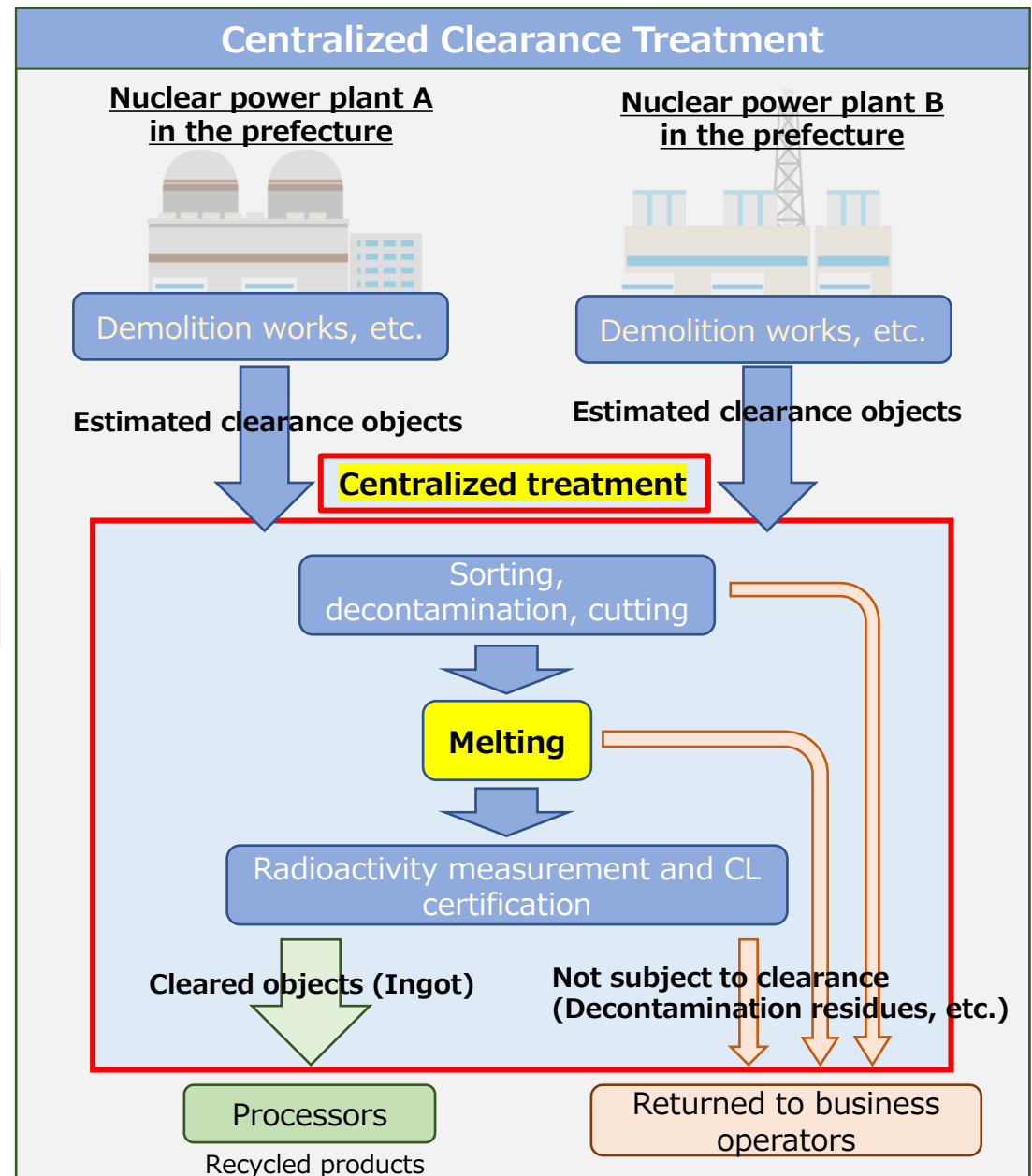
Feature of the centralized clearance treatment business

1) Centralized treatment

- Radioactivity measurement and clearance confirmation are currently performed at each power plant.
- ⇒ **Centralized treatment for greater efficiency**
- A center is being established where technology and know-how of local companies are accumulated.
- ⇒ Allowing it to serve **as a human resource development hub**

2) Melting process before confirmation

- Measurement and evaluation are complicated due to variations in waste contamination and shape
- ⇒ **Melting is expected to homogenize contamination and standardize shapes, thereby improving work efficiency.**
- Precedents already exist overseas
- ⇒ **The melting process** has been employed for **more than 30 years** to promote recycling of cleared objects.



2. Outline of Nuclear Recycling Business

3) Opinion Exchange Meeting with the Nuclear Regulatory Agency

- As the project was the **first in Japan** to involve melting materials prior to clearance confirmation*, a public meeting was set up to **exchange views** among Fukui Prefecture, the Agency for Natural Resources and Energy, and **the Nuclear Regulatory Agency** on regulatory issues.

*This refers to the confirmation that radioactive substances contained in materials and other objects used by nuclear operators and related entities do not exceed the criteria stipulated by the Nuclear Regulation Authority.

- Through the opinion exchange meetings, the **regulatory outlook** for the realization of the project **became clear**.

1) Permission for the centralized treatment business

- The centralized treatment business can be implemented if the operating entity obtains permission for 'waste management' as stipulated in the 'Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors.'

2) Feasibility of "melting treatment"

- No amendment to the clearance rules is required.
- The examination criteria were amended in June 2025 to clarify the concept concerning intentional mixing and dilution during the melting process.

2. Outline of Nuclear Recycling Business

4) Establishment of the Fukui Clearance Materials Processing Co., Ltd.

- On May 30, 2025 this year, **a comprehensive cooperation agreement was signed** between **Fukui Prefecture, six municipalities in the Reinan region, nuclear operators and local financial institutions** to promote the centralized clearance treatment business.
- On August 1, the **company responsible for implementing the business**, Fukui Clearance Materials Processing Co., Ltd. was **established**.



Signing ceremony for the comprehensive cooperation agreement on the promotion of the nuclear recycling business (May 30, 2025)

3. Enhancement of Understanding of Nuclear Recycling Business

1) Study Sessions for Local Companies

Purpose

- Fukui Prefecture aims to transform its industrial structure so that local companies, which have traditionally operated as second-tier subcontractors or lower, can receive orders in a position equivalent to main contractors.
- The Fukui Prefecture will continue to hold study and training sessions to enable local companies to participate in the centralized clearance treatment business as prime contractors, gain relevant experience, and participate in decommissioning works as prime contractors.

Sessions Held

Sessions held in 2024	Date	Participants	Topics
Study on waste management and radiation control	December 6	11 attendants from 9 companies	• Basic knowledge on radiation control • Radioactive waste management at nuclear power plants • Overview of decommissioning of Tsuruga Unit 1, configuration and materials of LWRs • Radiation measurement practice
Training program based on the centralized clearance treatment business plan	December 20	16 attendants from 13 companies	• Status of studies on nuclear recycling business • Permission and approvals required for installing and operating a centralized clearance treatment facility • Rules and documents required for the operation of the facility
Opinion exchange meeting	March 14	17 attendants from 12 companies	• Status of studies on nuclear recycling business • Current status of decommissioning and involvement with the centralized clearance treatment business • Relation between the centralized clearance treatment business and the local businesses

3. Enhancement of Understanding of Nuclear Recycling Business

2) Holding Workshops for Local Residents

Purpose

- To enhance understanding among local residents, workshops on the clearance system have been held for citizens in each municipality of the Reinan region, as well as high-school students in the Reihoku and Reinan regions.

Sessions Held

Study sessions for local citizens

Sessions held in 2024	Date	Participants	Topics
Tsuruga City	December 13	10	Status of nuclear power plants in Fukui Prefecture and their decommissioning, clearance system, exhibition of clearance metals and actual measurement, design of cleared objects and places to put them
Mihama-cho	February 24	7	
Wakasa-cho	October 26, 27	5	
Obama City	January 18	8	
Ohi-cho	November 27	4	
Takahama-cho	December 26	6	
High-school students (Reihoku)	November 26	21	
High-school students (Reinan)	January 10	3	

Signboards made of cleared objects



3. Enhancement of Understanding of Nuclear Recycling Business

3) Events Sponsored by Local Residents

- On February 24, **local residents organized an event to study the utilization of clearance metals.**
- The event was attended by 70 people of various generations, including high-school students. Activities to promote understanding of the use of clearance metals were introduced, and workshops using cleared metals were conducted.



3. Enhancement of Understanding of Nuclear Recycling Business (Reference) Installation Map of Clearance Materials

- In cooperation with the national government and the nuclear operators, Fukui Prefecture has, **for the first time in Japan, installed products made of recycled clearance metals in 17 municipalities within the prefecture.**

