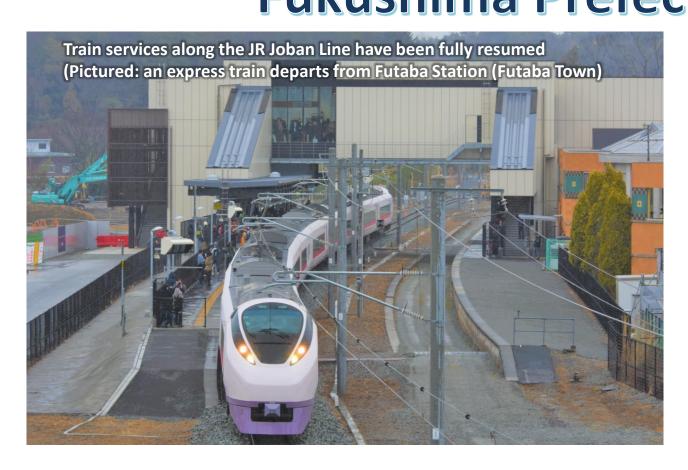


# ~Fukushima Today~

# Steps for Reconstruction and Revitalization in Fukushima Prefecture







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#### Coming into a decade since the disaster

The Revitalization of Fukushima has been making steady progress. This can be seen in the evacuation order partially being lifted for Futaba Town and in how preparations are underway for the full opening of the Fukushima Robot Test Field. On the other hand, Fukushima is faced with multiple challenges and difficulties including the ongoing situation where more than 40,000 people are still under evacuation following the unprecedented compound disaster, and other disasters such as Typhoon Hagibis have put an additional burden on our revitalization efforts.



- OStart drawing up a comprehensive plan based on input from Fukushima residents.
- OThe Basic Policy on Reconstruction from the Great East Japan Earthquake after the end of the Reconstruction and Revitalization Period was approved in a cabinet meeting.

#### 1 Revitalization efforts and challenges

#### (1)Decontamination

Decontamination of prefectural land has been completed in all areas except for the Difficult-to-return Zone. Atmospheric radiation levels in the Prefecture have significantly dropped, and are the same as other major cities throughout the world

Okuma

 $0.10 \sim 7.46$ 

2020.2.19



Fukushima Prefectural Centre for Environmental Creation Main Facilities (Miharu Town)



Environmental monitoring, education, training, exchanges

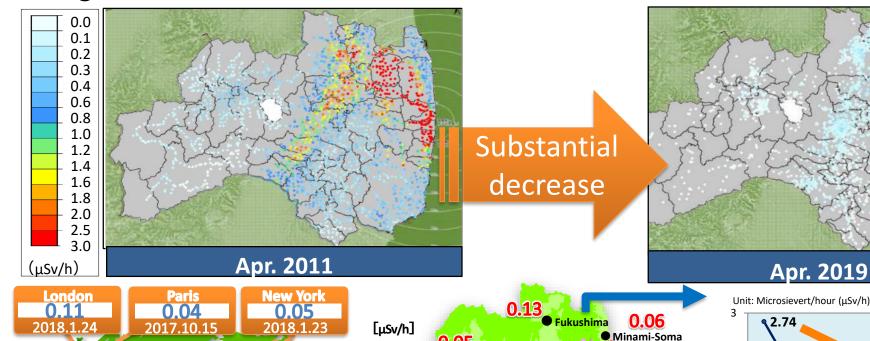
Environmental Radiation Monitoring
Centre
(Minamisoma City)



Environmental monitoring around the NPS

#### **OAir radiation dose in Fukushima Prefecture**

[µSv/h]



**Aizuwakamatsu** 

**Minamiaiz**u

As of 19 Feb. 2020

#### [Challenges]

Fukushima

avg, fig before the disaster

0.04µSv/h)

City

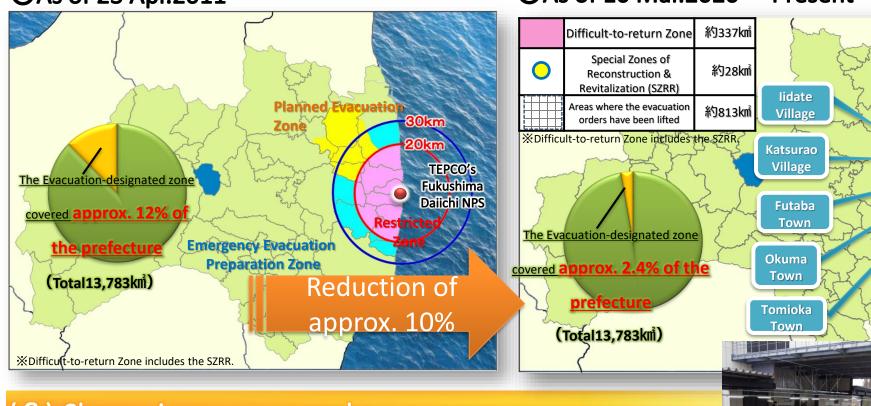
2011 2012 2013

- Steady restoration of land used for Temporary Storage Sites.
- Safe and secure transportation of contaminated soil to the Interim Storage Facility.
- Complete final disposal of contaminated soil outside of Fukushima Prefecture within 30 years.
- Make progress on the decontamination of Special Zones for Reconstruction and Revitalization.

#### Current status of the Evacuation-designated Zone

Progress is being made on the lifting of evacuation orders in accordance with the creation of an environment which people can return to. The proportion of the

area of the prefecture under evacuation orders has reduced from approx. 12% to approx. 2.4%. OAs of 10 Mar. 2020 ~ Present **OAs of 23 Apr.2011** O Lifting of evacuation orders in



### 2020

4 Mar. Futaba Town (around Futaba Station, Evacuation Order Cancellation **Preparation Zone**)

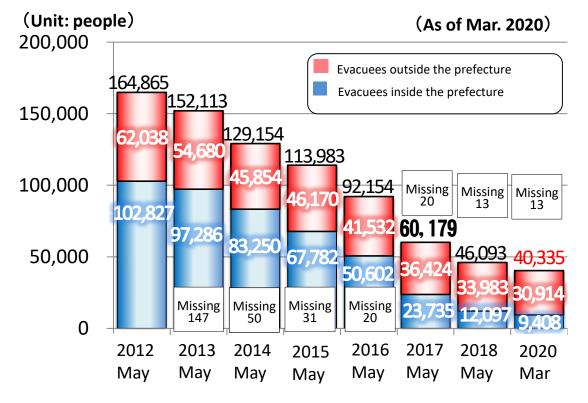
5 Mar. Okuma Town (around Ono Station) 10 Mar. Tomioka Town (around Yonomori Station)

#### The first lifting of evacuation orders in Futaba

#### **Challenges**

The SZRR only occupies approx. 8.3% of the Difficult-to-return Zone. The Fukushima Prefectural Government is requesting the national government to present a specific policy toward lifting orders in the rest of the areas.

#### (3) Change in evacuee numbers



O Proportion of residents living in municipalities where evacuation orders have been lifted (As of Feb. 2020)

Futaba Station reopened 14 Mar. 2020

#### Lifted 2014

- Tamura City (Miyakoji District) 84.5% [Lifted 2015]
- Naraha Town 57.7% Lifted 2016
- Kawauchi Village 80.3%
- 51.9% Minamisoma City (Odaka District) Lifted 2017
- Kawamata Town (Yamakiya District) 46.2%

#### (Challenges)

Namie

Town

Fukushima

Daiichi NPS

- Maintaining a support system and consultation services for evacuees.
- Creation of an environment for people to return that includes shopping, healthcare and welfare, education, transportation, and wildlife damage control.
- Promotion aimed at encouraging new enterprises, human resources, and people from outside the Prefecture to relocate.

#### 4) Health of Fukushima residents

The Prefecture is aiming to become one of the healthiest prefectures in Japan by implementing the Fukushima Health Management Survey and Projects for a Long and Healthy Life

The Fukushima Health Management Survey is being implemented to understand the health of residents, in order to maintain and improve their health into the future.

#### **◆**Basic Survey

Self-administered questionnaires: 27.7% [568,331 respondents/2,055,248 subjects]

< Results of estimate on external exposure dose > (All citizens surveyed)

Ratio of dose from 0 to 2mSv accounts for 93.8% of all.

XEstimate of external exposure dose for the 4 months from the nuclear accident (March-July2011)

#### ◆Thyroid Ultrasound Examination

Citizens aged 18 or younger at the time of the disaster (About 380,000 persons)

X Primary Examination (April 2011 - March 2014) Full-scale Examination (April 2014 - present)

**Primary Examination: Ultrasound Examination** Secondary examination: Thorough thyroid ultrasound

examination and blood testing



The Projects for a Long and Healthy Life will try to respond to various health issues caused by changing environments after the disaster.

- Encouraging healthy thinking among residents.
- Educating the next generation through child health promotion programs.
- Health promotion that starts from a healthy diet.
- Protection from second-hand smoke.
- Improving consultation rate of health check ups and screenings.

#### The easy to use and fun "Fukushima Healthy App" helps residents to acquire a healthier lifestyle













#### Development of a hub for cutting-edge radiological research and medical care & Fostering of human resources in medical fields

#### **Fukushima Global Medical Science Center**



Providing cutting-edge medical care such as PET scans and MRI's

#### School of Health Sciences (tentative name) **Fukushima Medical University**



Training medical professionals responsible for local medical care.

#### **Fukushima Medical Device Development Support Centre**



Promotion of the domestic medical equipment industry and improving medical skills through training.

- The number (or rate) of people with metabolic syndrome, child obesity and children's cavities is high, compared with the national average.
- Extend people's healthy life expectancy by encouraging a healthy lifestyle.

#### (5) Securing of housing and creating an environment for people to return

Construction of Revitalization Public Housing has been completed to provide for those affected by the disaster with places to settle down. Development is progressing for other facilities such as medical and caregiving services, as well as, shopping facilities necessary for people to move back.



# Permanent housing provision

### Shopping facilities

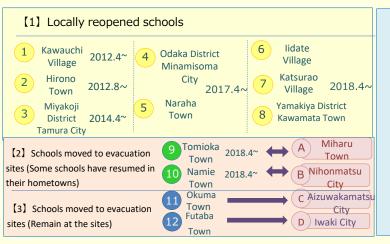








#### ◆ Educational facilities









Construction of public housing for nuclear disaster evacuees

4,767 units completed

4,767 units planned

(As of Feb. 2019)

100% completed throughout the Prefecture

**\*Except for 123 units of which leasing procedures are pending** 

#### [Futaba Medical Center-affiliated Hospital]

Futaba Medical Center-affiliated hospital operates as a secondary emergency medical facility in Futaba district accepting patients 24/7, 365 days a year (including on public holidays).





Exterior

Multi-purpose medical helicopter

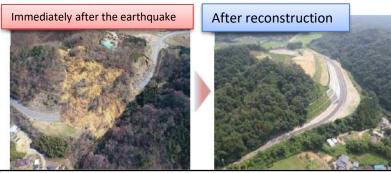
- Continuing to provide consultation regarding housing and rebuilding of livelihoods, as well as looking after residents, providing support for everyday life and, and community building
- Providing a comprehensive medical and caregiving system based on the needs of residents

#### (6) Basic infrastructure

95% of reconstruction work has been completed. Development of transportation networks including roads has been progressing and train services along the entirety of the JR Joban Line have been resumed.

Site affected by the disaster: Iwaki City (Watanabe-machi)
Route 14

Damage: Collapsed slope due to a large landslide

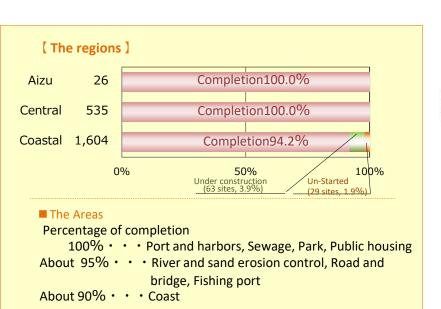


Site affected by the disaster: Hirono Town,
Asamigawa District coast

Multiple protections against Tsunami (Seawall, green and open space, disaster prevention forest, and road)











Futaba IC opened on 7 Mar. 2020



JR Joban Line resumed full service on 14 Mar. 2020

- Impact on revitalization efforts caused by Typhoon Hagibis.
- Reconstruction of public works facilities and coasts in the Difficultto-return Zone
- Pevelopment of the Fukushima Reconstruction and Revitalization road and strengthening of the road network which connects the east and west sides of the Prefecture.
- Creating a sustainable local public transportation network.

#### (7) Industry ① Agriculture

Production values have recovered up to 90.7% of pre-disaster levels, and farming has resumed gradually in the affected areas.

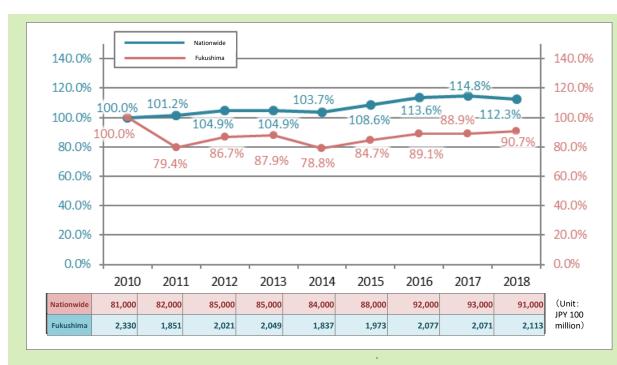
# Decontamination of farmland

Reverse plowing
Reverse the surface soil
with subsoil

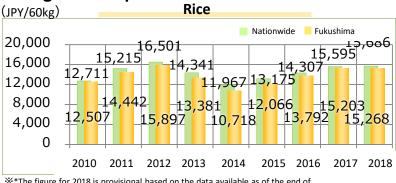




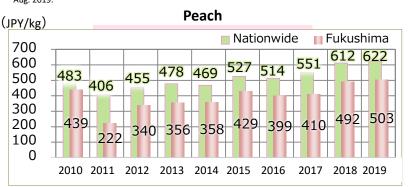
#### > Ratios of agricultural products compared to 2010 set as 100%.



# > Transition of the price for most Fukushima agricultural products.



\*\*The figure for 2018 is provisional based on the data available as of the end of Aug. 2019.



# An original new variety of Fukushima rice has been named

Fukushima's original high-end rice variety was named "Fuku-Warai" on 10 Feb. 2020



#### **[**Features of Fuku-Warai**]**

- This large grain rice has a strong sweet flavour and a soft texture.
- The rice is easy to cultivate because it is more resistant to collapse and diseases than the Koshihikari variety.

### **Smart agriculture initiatives**



#### Farming has resumed in the affected areas





#### Wildlife Damage



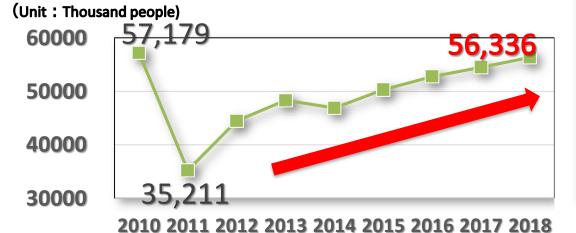


- Regaining the price of agricultural products to the national average (Promoting branding of Fukushima products).
- Wildlife damage control.
- Supporting recovery of farm land and agricultural facilities to resume farming.
- Securing manpower and introduction of agricultural facilities and machines to resume farming.

#### (7) Industry ②Tourism

The number of tourists visiting Fukushima has recovered to 98.5% of pre-disaster levels, and the number of educational tours to 89%. However, the growth rate of inbound tourists has not yet reached the national average.

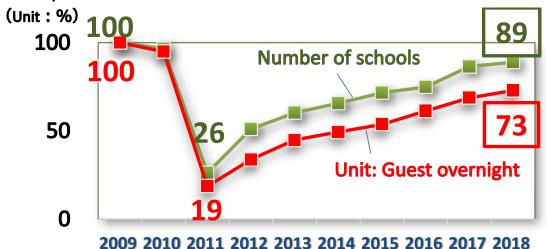
#### **OTourists from outside Fukushima**



**OEducational Tour** 

(Ratios of Educational Tour

compared to 2009 set as 100%.)



#### **OTotal number of international guests**

(Ratios of International Guests compared to 2010 set as 100%)
(Unit : %)
400
300
200
100
65
Fukushima
100
2010 2011 2012 2013 2014 2015 2016 2017 2018



Sake breweries tours in Fukushima which won the Annual Japan Sake Awards for 7 straight years



Promotion of Hope Tourism especially in Hamadori (Coastal Region)

The route starts from Tokyo and travels around Fukushima, Tochigi, and Ibaraki.



Attracting inbound tourists by distributing attention-grabbing videos such as "SAMURAI spirits"

No.1 Tadami River Bridge Viewpoint which attracts tourists from around Japan and the world (Mishima Town)



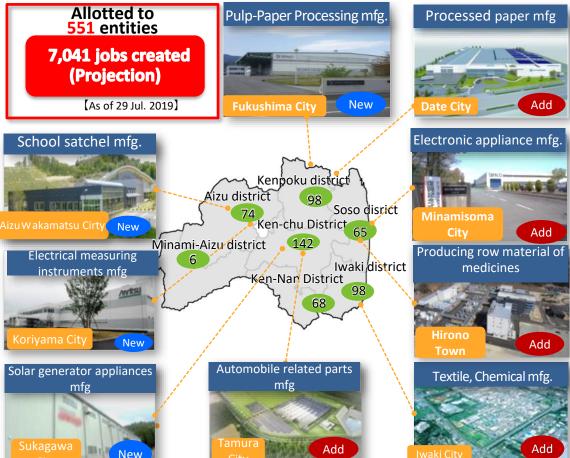
- Recovering the number of educational tours by expanding target regions while continuing to focus on students from neighbouring and metropolitan areas.
- Attracting more inbound tourists by promoting extensive sightseeing tours
- Recovering tourism in the coastal region through Hope Tourism.

#### (7) Industry ③Business investment and employment creation

The shipment value of products in the Prefecture has recovered to exceed the benchmark set before the disaster (2010). The Prefecture's gross product growth rate has also exceeded that of Japan's GDP.

#### **OFukushima business investment subsidy for revitalization of industries**

Creating employment and industry expansion in the Prefecture through supporting companies looking to start new or expand the number of factories and other facilities in the Prefecture.



**OThe Prefecture's gross product** 

Compared with 2010: 106% increase

(Unit: Trillion yen)

Compared with

2010: **107%** 

increase

2010 2011 2012 2013 2014 2015 2016

**OReal GDP** 

(Unit: Trillion yen)

550

500

450

O Subsidy to business investment for employment creation in the tsunami and nuclear disaster-affected areas

We support companies that set up new factory or additional factory inside the prefecture. Those activate business and create jobs.

209 entities

2,542 jobs created (projection)

[As of 26 Jul. 2019]

# O Subsidy for investment promotion for the support of self-help and return and the employment creation

In order to secure jobs for disaster-affected people and accelerate support for their independence and ability to return to the areas they evacuated from, we will support companies that are planning to newly or additionally build plants in the evacuation-ordered areas, and make efforts to create employment and cluster industries.

85 entities

850 Jobs created (projection)

[As of 11 Oct. 2019]

The shipment value
(Fukushima Pref.)
(Unit: Trillion yen)

The shipment value of products (Futaba County)
(Unit: 100 million)

1,500

1,077

4.32

Pref.: Exceeds predisaster record

Futaba County: Remains at 20% pre-disaster record

4 120

196

0

2012 2013 2014 2015 2016 2017

2010 2011

Seminar on Industrial Sites for Business Establishment under the Fukushima Innovation Coast Framework



- Recovery of the industrial bases in Futaba County and the Coastal Region. Accelerating the Fukushima Innovation Coast Framework to develop self-sustaining and continuous industry growth
- Creation of new industries through technological development support and attracting new businesses to the region. Promoting participation of local companies
- Supporting disaster affected companies in Futaba County and other businesses to resume operations and promoting expansion of business from outside of the Prefecture.

#### (7) Industry 4 The Fukushima Innovation Coast Framework

For the initiative to take shape, efforts are fully underway in the development of industry hubs, clustering of industries, fostering human resources, and expanding the non-resident population.

◆There are 3 core pillars based on a blueprint drawn up on Dec. 9, 2019 for the development of industry with the Innovation Coast Framework.

# 1. A region where people can take on any challenge

■ We aim to develop the coastal region to be a place where new challenges are taken up in various fields.

**Decommissioning** 

Robots and

**Drones** 

### 2. Local companies are major players

■ In order to encourage not only cutting-edge companies but various local companies to actively participate in the initiative, we will promote wide-area cooperation between local businesses and incoming companies to the region.

# 3. Fostering human resources who will play a major role in the initiative

■ We will foster innovators in the region and professionals who will support the industrial cluster.

# This year's highlights

Strengthening the promotion structure



# Education and fostering human resources to support the initiative







#### 6 areas of focus

Energy, the Environment, and Recycling

Agriculture, forestry and fisheries industries

#### [New]

Healthcare-related industries

[New]
Aerospace
industries

# Target

#### ♦ Promotion of the industrial cluster utilizing the Fukushima Robot Test Field (RTF)

- Promoting business investment and participation of local companies while taking advantage of the RTF in attracting companies wanting to carry out research and demonstrations of various robotic technologies.
- Expanding business in the coastal region as a whole by promoting companies which utilize the RTF as well as various related industries including commerce and service.
- Making the RTF a hub for establishing and implementing technical standards and specifications of robot and drone technologies.

#### Establishing a model for a future energy society

- ■Expanding introduction of renewable energy under the Fukushima Plan for a new energy society.
- Using hydrogen generated by the Fukushima Hydrogen Energy Research Field in a wide variety of applications such as for mobility and other industries.
- Clustering a wide range of related industries including wind power generation and storage batteries.
- Revitalization of agriculture, forestry, and fisheries industries utilizing cutting-edge technologies.
- Realizing efficient agriculture, forestry, and fisheries practices using ICT, robots and drones.
- We aim to secure and foster a wide range of agricultural human resources who will match regional characteristics from supporting large-scale agriculture management entities to creating communities to protect farmland in mountainous areas.
- Introducing and spreading state of the art technologies which have been developed and demonstrated in the coastal region to all of the prefecture.

Accelerating research and development, as well as promotion of the industrial cluster







Fair of Smart Agricultural and

**Husbandry Technologies** 

Expanding the non-resident population in the Coastal Region and accelerating the re-establishment of the living environment.





# Creation of industry hubs and management support

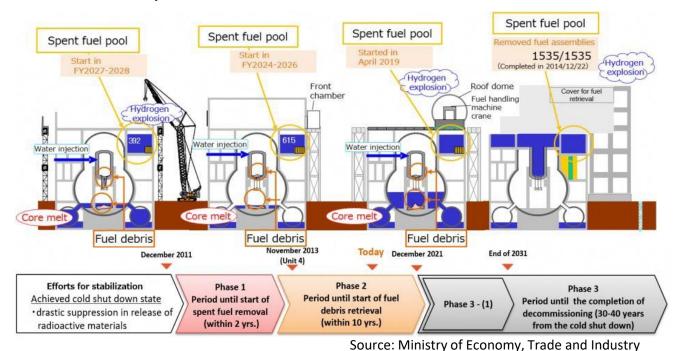


- Creating an economic ripple effect in the Prefecture by connecting businesses to the innovation projects and enhancing industrial clustering.
- Making the planned International education and research hub a reality (The Prefecture will be helping to coordinate final drafts from the expert panel due in summer 2020.).

#### (8) Efforts towards decommissioning

The current decommissioning status of TEPCO's Fukushima Daiichi (F1) and Daini (F2) Nuclear Power Stations (NPS) and disposal of tritiated water

O Current situation and outlook for the F1NPS Units 1 to 4 (Units 5&6 are in O Disposal of treated water containing tritium at F1NPS cold shutdown )



#### [Reference]

Revision of the Mid-and-Long-Term Roadmap was approved at the national Inter-Ministerial Council for Contaminated Water and Decommissioning Issues (27 Dec. 2019)

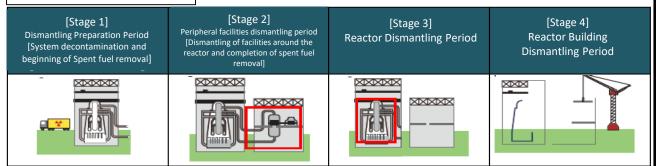
#### (Main revisions)

- → Start trial retrieval from the first unit (Unit 2) by 2021 Fuel debris
- Fuel removal from → Complete fuel removal from Unit 1 through 6 the spent fuel pool by 2031

#### O The decision has been made to decommission F2NPS

TEPCO submitted a notice for decommissioning of all reactors at the F2NPS (Units 1 to 4) to the Minister of the Economy, Trade, and Industry in Sep. 2019

<Decommissioning Process>



Completing decommissioning of all the reactors will take more than 40 years due to the decommissioning of F1NPS at the same time. (Source by TEPCO)

#### **♦** About the tritium containing treated water

The generation of contaminated water was reduced from approx. 540m<sup>3</sup>/day (May. 2014) to approx. 170m<sup>3</sup> (average in FY2018) by the implementation of a multi-layered approach including: pumping up groundwater by Subdrain and installing the Land-side frozen soil wall. However, the treated water which is created by purifying the contaminated water is being generated continuously. Therefore, the tanks expected to reach full capacity in summer 2022, and appropriate space to install additional tanks is limited.



Tanks at F1NPS

#### Disposal Method

According to a report by the Subcommittee on Handling of the ALPS Treated Water, two methods were proposed: 1 Discharge into the Sea 2 Vaporization into the atmosphere. Prevention of reputational damage was also considered.

(Source: The Subcommittee on Handling of the ALPS Treated Water Report 10 Feb. 2020)

- Trouble resulting from reactor decommissioning would have a large effect on the revitalization of areas where evacuation orders have been lifted and effect the return of evacuees. So, it is necessary to have continuous surveillance carried out by the Association for monitoring of safety in decommissioning to ensure decommissioning progresses steadily and safely.
- The Prefecture has the following three requests to the national government and TEPCO in regards to the disposal of treated water containing tritium:
- 1Discuss substantially about the effects on the environment and damage to the prefecture's reputation
- ②Consider the method with a careful and accurate explanation to the public.
- ${rac{3}{3}}$  Provide accurate information about Tritium and measures to dispel harmful rumors.

#### Damage caused by Typhoon Hagibis and it's enormous impact on revitalization

#### Damage caused by Typhoon Hagibis (As of Feb. 14, 2020)

- Deaths: 36 (including 4 disaster-related deaths)
- Evacuees: 1,761 (15 people are still in evacuation shelters)
- Housing damage: Totally destroyed 1,484 houses, Partially destroyed 12,527 houses.
- Public infrastructure facilities disaster assessment: approx. JPY 89 billion

- Damage to agriculture, forestry and fisheries industries: approx. JPY 63.6 billion
- Damage to commerce and Industry: JPY 93 billion
- Damage to the Prefecture's cultural properties: approx. JPY 0.5 million
- Damage to Social and educational facilities: approx. JPY 2 billion

#### Fukushima Pref. Govt. initial budget in FY2020 for Typhoon Hagibis: JPY 58.8 billion

- 【Details】 Restoration and Maintenance Subsidy Project for Facilities of Small and Medium Enterprise Groups: JPY 9.9 billion
  - Public infrastructure (Agriculture, Forestry and Fishery Department, Public Works Department): JPY 42.7 billion
  - Business continuity support project: JPY 0.5 billion

#### Route 138 (Sukagawa City)





[Disaster-affected residents] Counselling for everyday life, checking in with members of the community as part of isolation prevention

[Disaster-affected companies] Subsidies for supporting enterprise groups, sustaining small businesses, etc. to support resumption of business and disaster prevention.

#### Supporting aid

Agricultural, forestry and fisheries workers 1 Supporting the restoration of agricultural machinery and the resumption of farming

Tourism companies Attracting tourists through "fukkowari" reconstruction discounts.

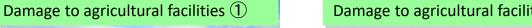
#### The ruins of Ishikawa Town's Fire Dept.



After the Typhoon: Kagamiishi Town









#### [Challenges]

Park. (As of Jan. 2020)

- Early resumption of full-scale operations of disaster affected companies. XOf those that have resumed businesses which were affected. approx. 40% operate partially in the Koriyama Central Industrial
- Disaster waste disposal Disaster waste in the prefecture comes to 560,000 tons according to the disaster waste disposal plan. Disposal of waste will be completed by Apr. 2021
- Early restoration of agricultural facilities to resume farming
- Development of disaster-resistant communities through promotion of measures for disaster prevention, disaster mitigation, and building national resilience.

Reconstruction and

restoration from

damage

New Basic Policy for revitalization

Link the New Basic Policy for revitalization and the measures taken in response to Typhoon Hagibis to move the revitalization forward to the next phase.

The Basic Policy for Reconstruction from the Great East Japan Earthquake after the end of the Reconstruction and Revitalization Period was approved in a cabinet meeting on 20 Dec. 2019

[Revitalization framework after the end of the Reconstruction and Revitalization Period]

- Extending the Reconstruction Agency's installation period by 10 more years to maintain comprehensive coordinating ability
- Continuing a special financial account for reconstruction and revitalization from the Great East Japan Earthquake
- Continuing a special allocation tax for reconstruction and revitalization from the Great East Japan Earthquake
- Considering tax measures to address challenges such as Fukushima Innovation Coast Framework and harmful rumours
- At each new stage of the revitalization, issues raised by the transition and the diverse changing needs in areas affected by the nuclear disaster will require a detailed response, and where needed revisions will be carried out

Providing support through

'Measures to Restore Disaster-affected Resident's Everyday Lives and Livelihoods"

- (1) Restoring everyday life
- (2) Restoring occupations and livelihood
- (3) Disaster Emergency Recovery
- (4) Disaster relief

Proceeding with the revitalization through the national government's

support.

Link

#### Reconstruction and revitalization in evacuation area

- Re-establishment of the living environment including: healthcare, education, commerce, and public infrastructure etc.
- Restoring commerce, industry, and occupations and livelihoods
- Expanding the non-resident population and promoting relocation from outside of the Prefecture etc.
- Continuous efforts for revitalization
  - •Support for rebuilding livelihoods, mental healthcare for disaster affected residents, recovery of the environment, etc.
- Prevention of harmful rumours and memories related to the disaster from fading away
  - Educational tours attracting inbound tourists
  - · Expanding sales channels of the Prefecture's agricultural, forestry, and fisheries products etc.
- **Projects for the future** 
  - ·Industrial clustering based on the Fukushima Innovation coast framework
  - Fostering human resources for new industries etc.
- Rising to meet new challenges in the later phases.

Start drawing up a comprehensive plan based on input from Fukushima residents.



- Rebuilding the livelihoods of disasteraffected residents
- Disaster restoration project
- **Boosting tourism demand**
- Supporting small and medium sized companies
- Supporting agricultural, forestry and fisheries workers, etc.

Typhoon Hagibis Immediate and steady support to answer the needs of disaster-affected residents and companies.



Revitalization moves into the next phase in 2020.

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