

WM2017 Plenary Session

Nuclear Energy Policy in Japan

Agency for Natural Resources and Energy, METI

March, 2017

Current Situation & Future Works on Fukushima-Daiichi NPS



Unit 4

Mar 2011



Now



Unit 3

Mar 2011



Now



Waterproof Pavement

Before

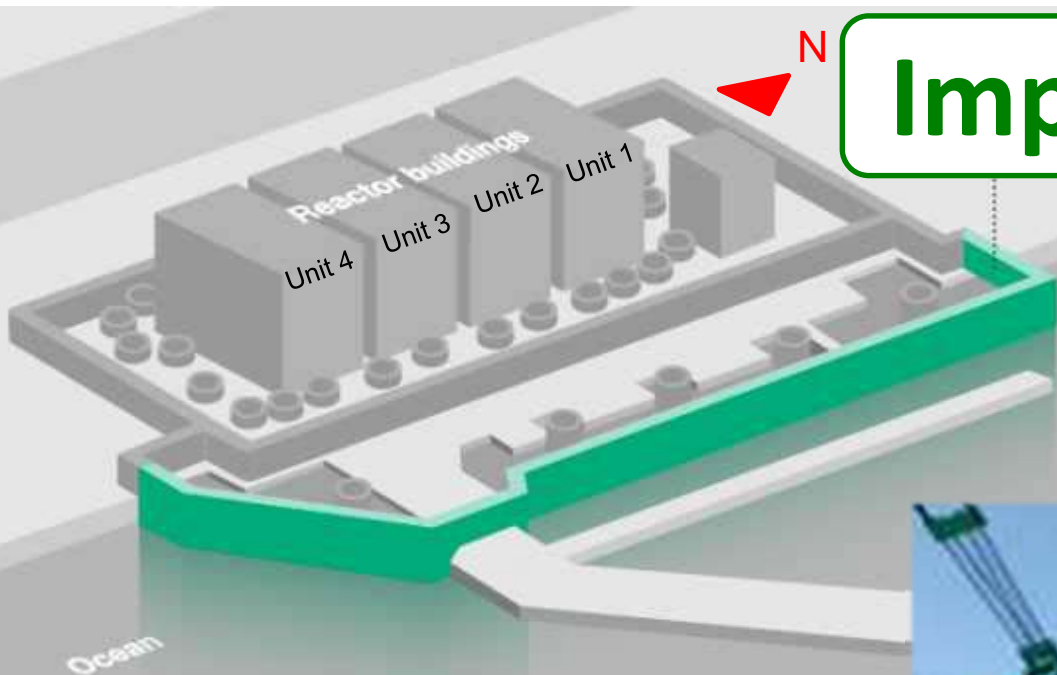


After



Contaminated Water Management

Impermeable Wall

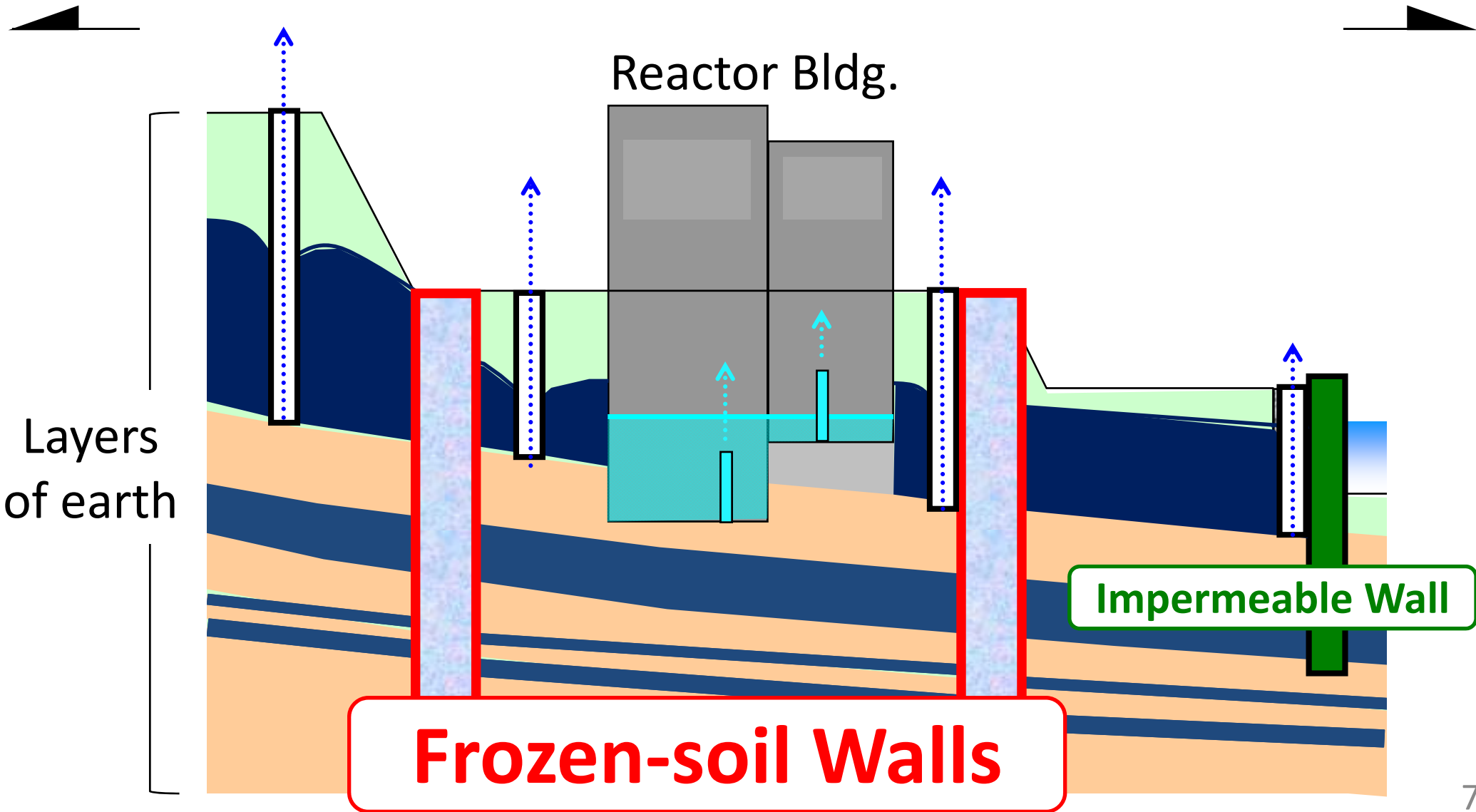


Frozen-soil Walls

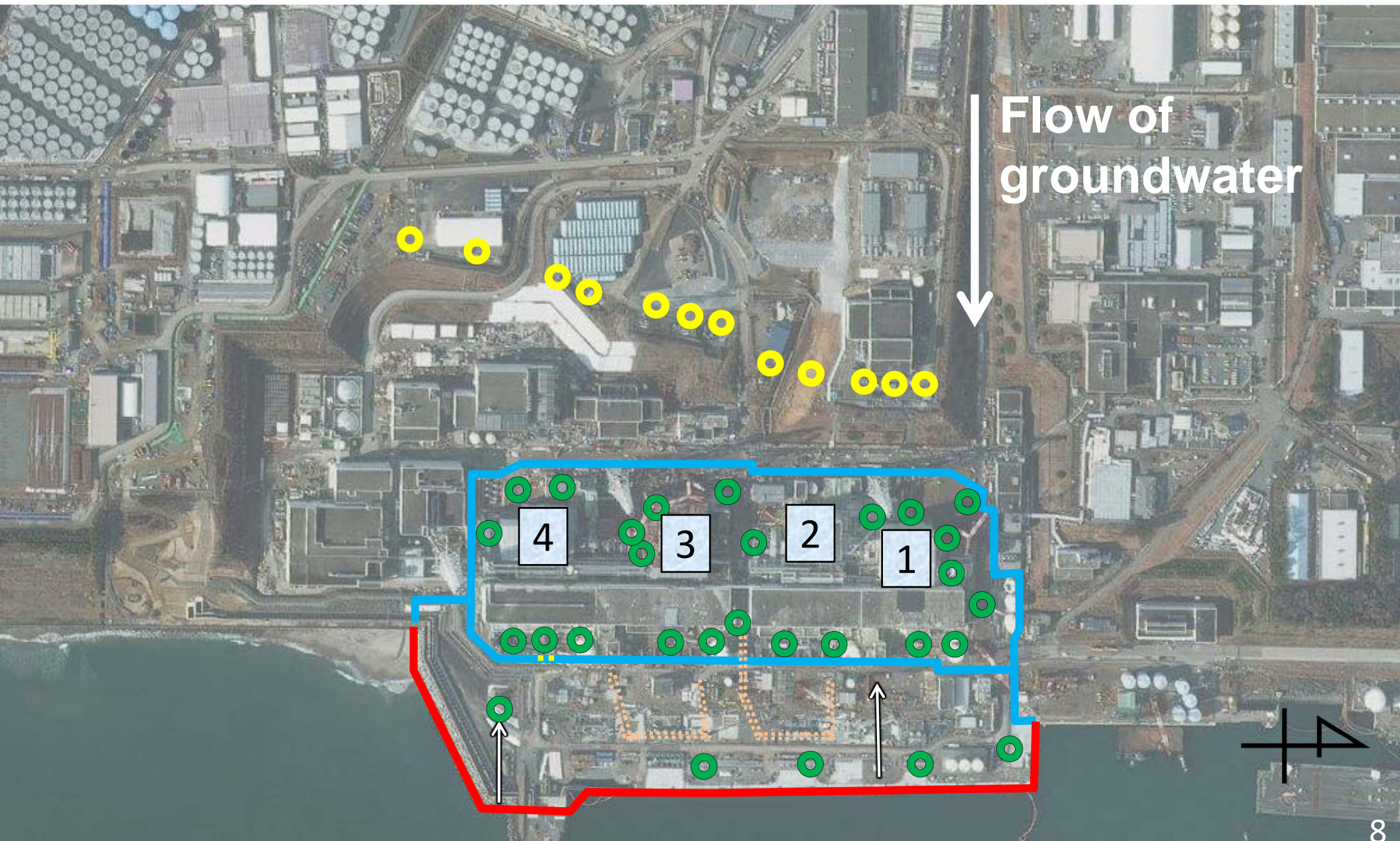
Mountains

Cross-section

Sea



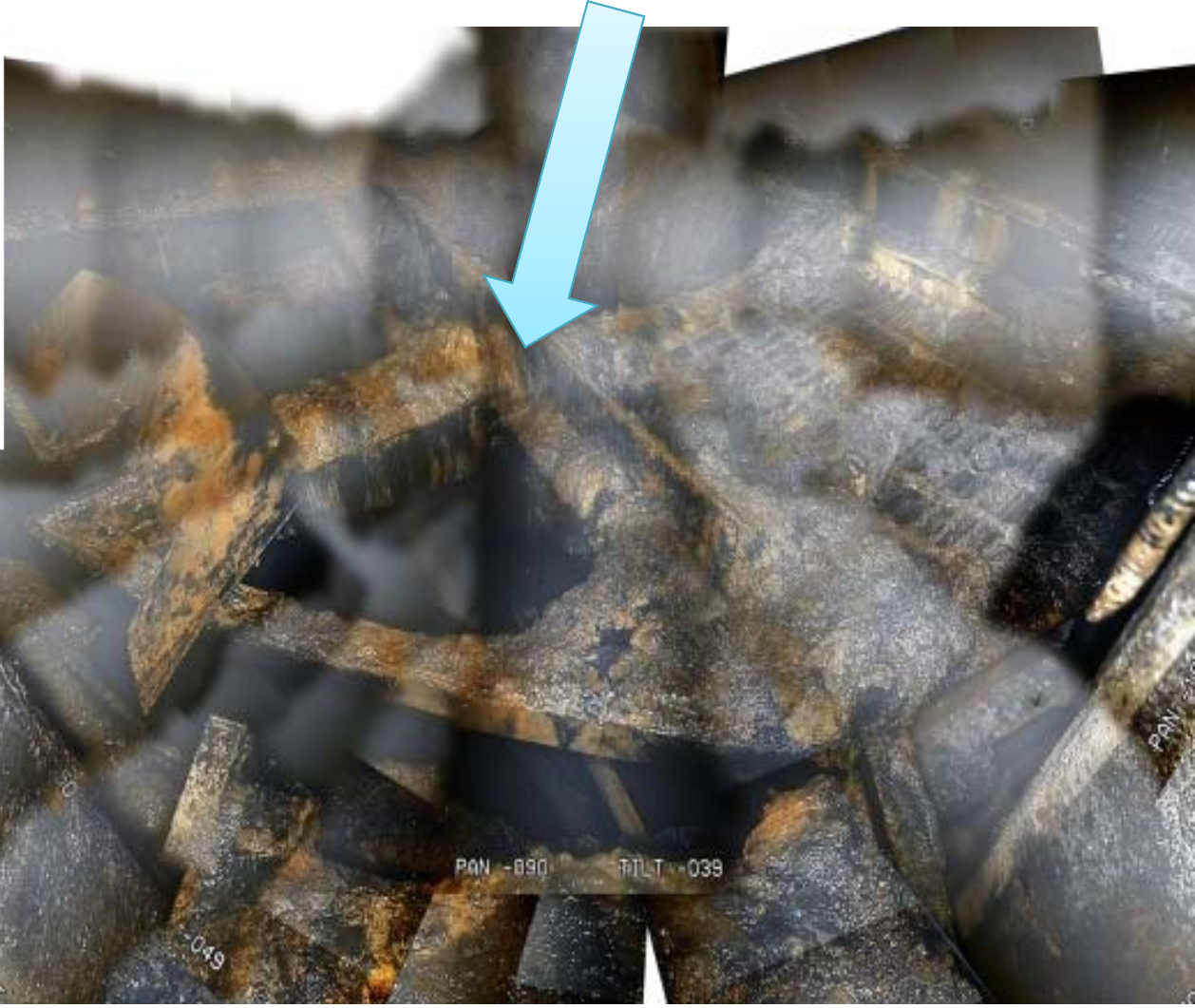
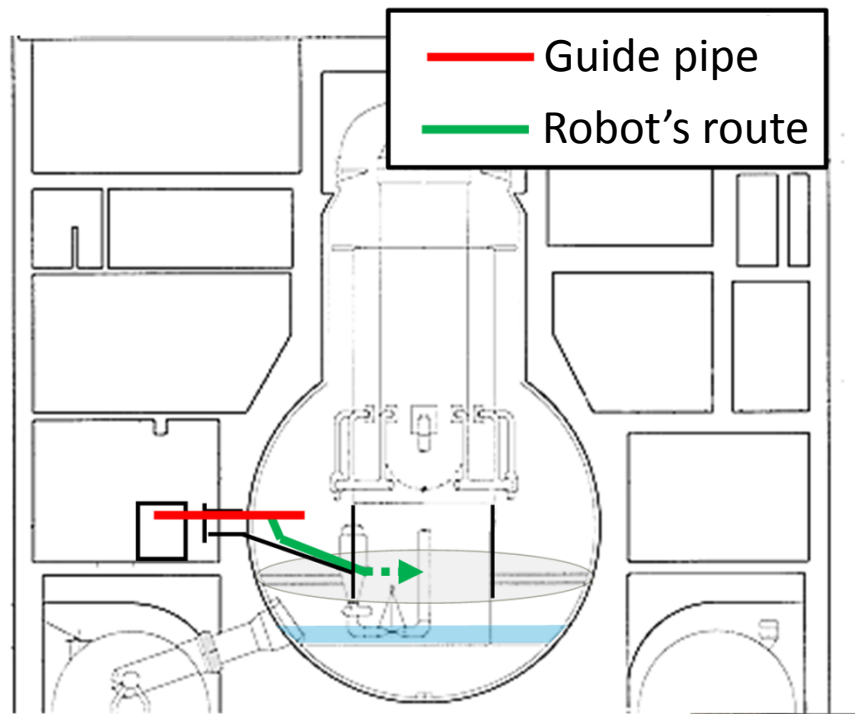
Bird's-eye view



Robot into Unit 2

(30th Jan. 2017)

Scaffold fallen



Need more technologies

TEPCO CUUSOO

An open innovation platform
for energy related technologies and ideas

Open Innovation Platform “TEPCO CUUSOO” (Website: <https://tepcocuusoo.com>)

Items 77

Innovation 3

About TEPCO CUUSOO

FAQ

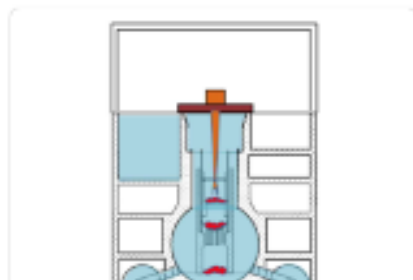
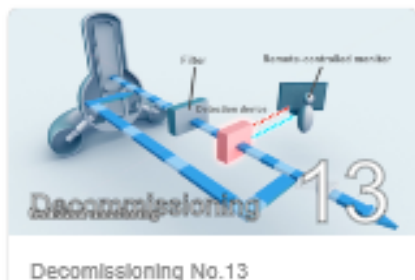
Expertise and Technologies in Decommissioning

In a pursuit to decommission Fukushima Daiichi nuclear power station, TEPCO group is seeking knowledge and expertise of research institutions and firms from across the world.

As the accident has no precedent, we are in need of expertise and advanced technologies from internal and external sources in order to address complicated issues and operations.

We welcome your suggestions. For samples of proposals and submission procedure, click [here](#).

[CHALLENGE](#) | [PROCUREMENT](#) | [DATA](#) | [DECOMMISSIONING](#)



Japan's Energy Policy after Fukushima accident

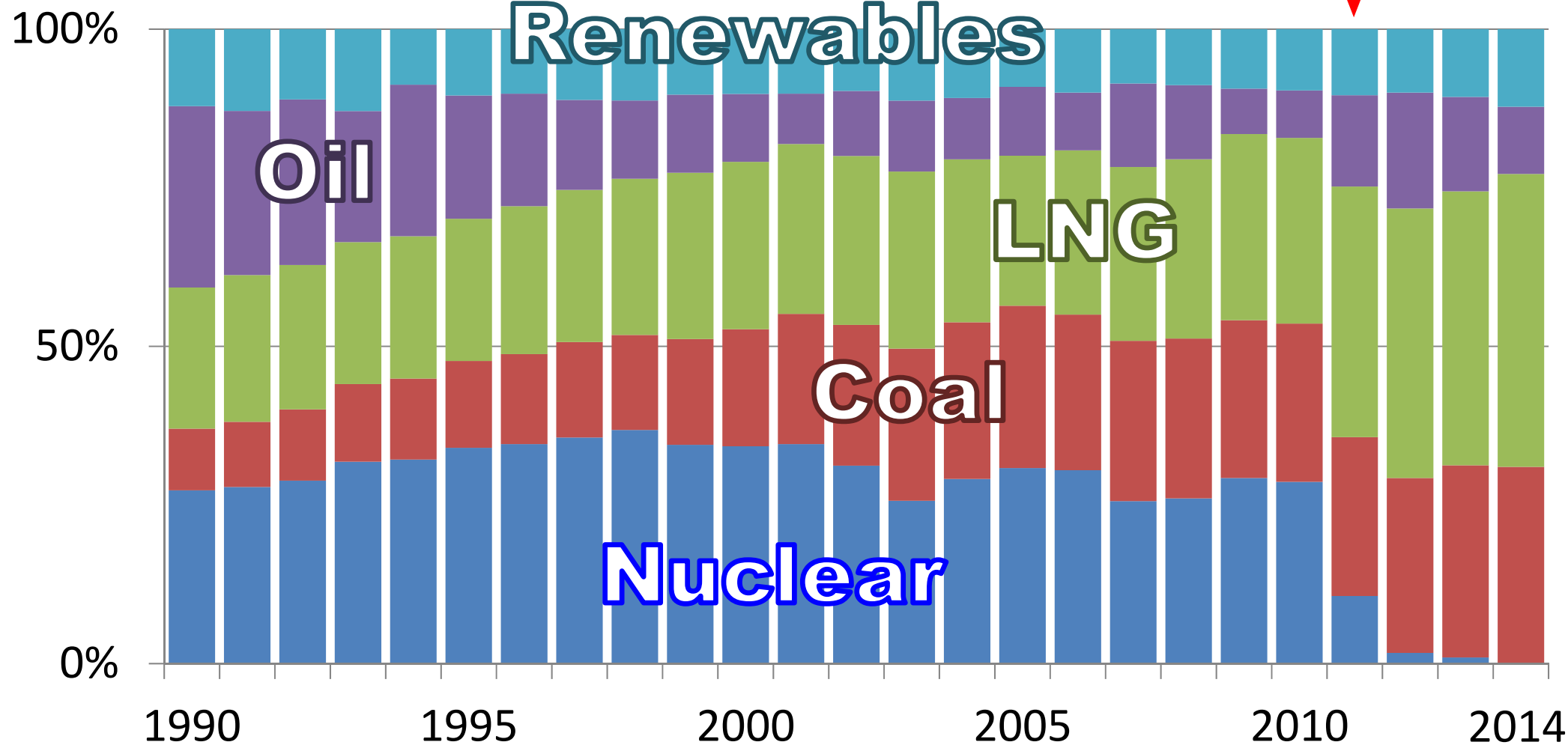
Coal & LNG fill nuclear

3.11

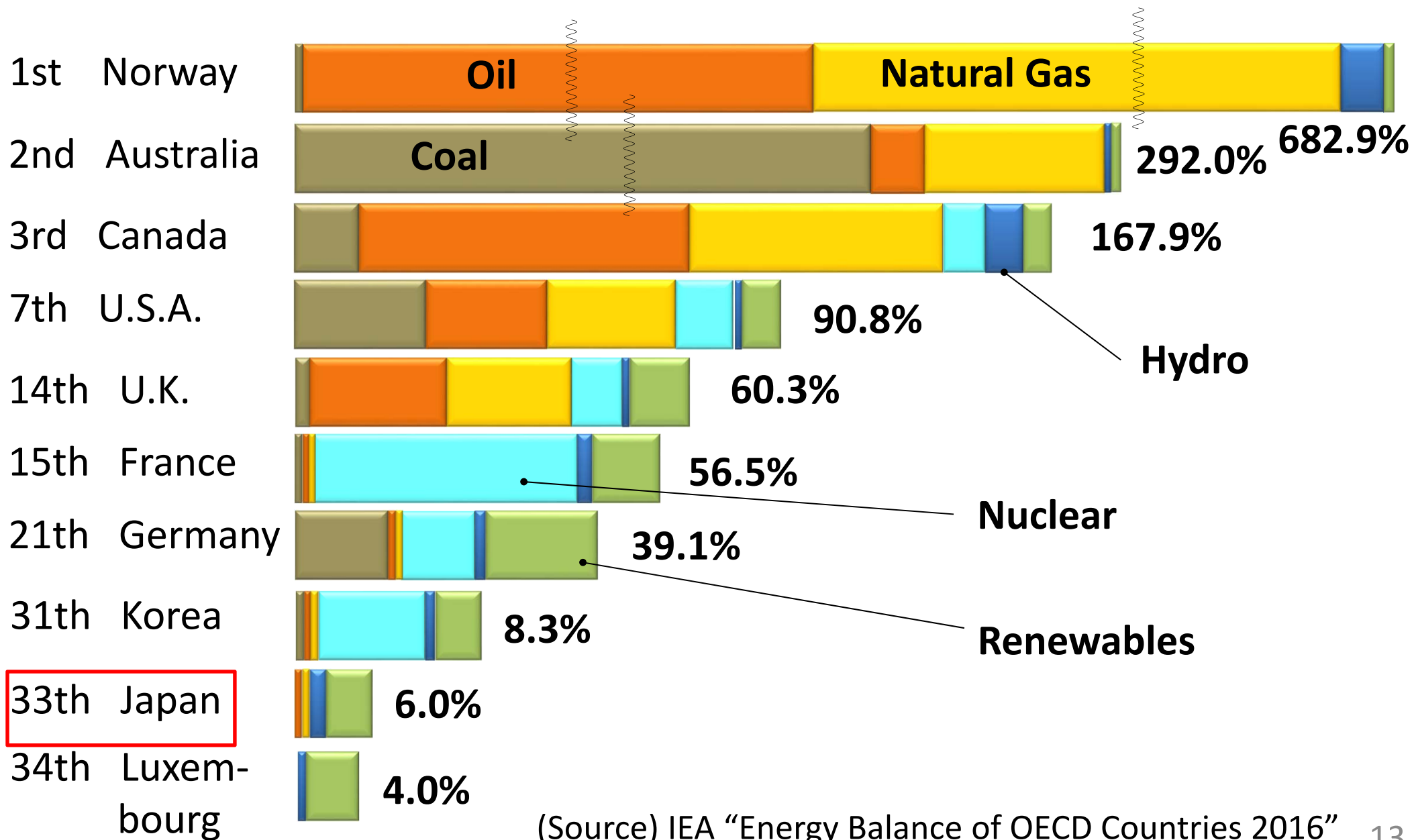
Fukushima accident



[of generation]



Self-sufficiency lowered



(Source) IEA "Energy Balance of OECD Countries 2016"

“3E+S” : Energy policy principle

Safety

Energy
security

Self-sufficiency rate
to 25%

Economic
efficiency

Electricity cost less
than current

Environ-
ment

GHG emission
reduction

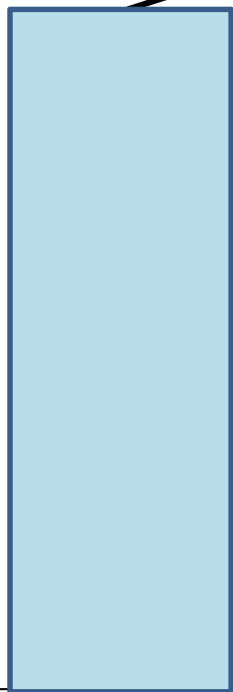
“Energy mix” in 2030

Power demand

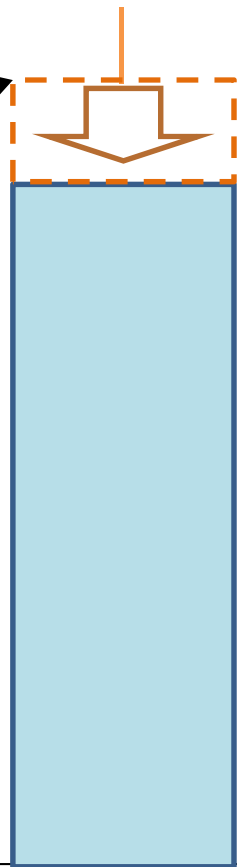
Power source composition

-17% by Energy saving

Economic growth



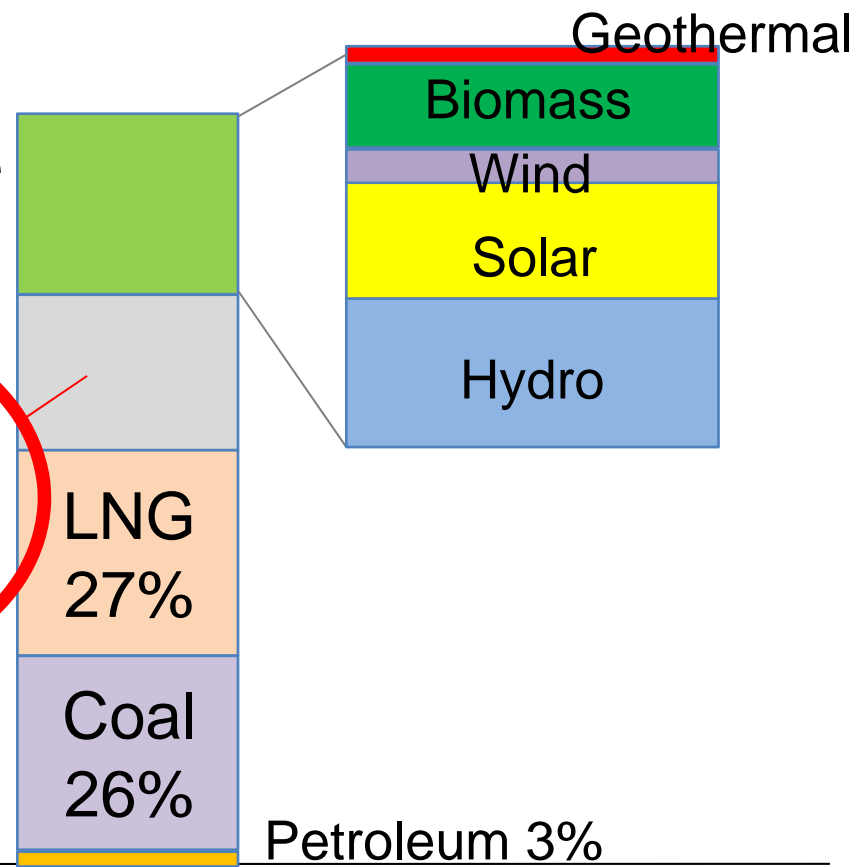
2013



2030

**Renewable
22 to 24%**

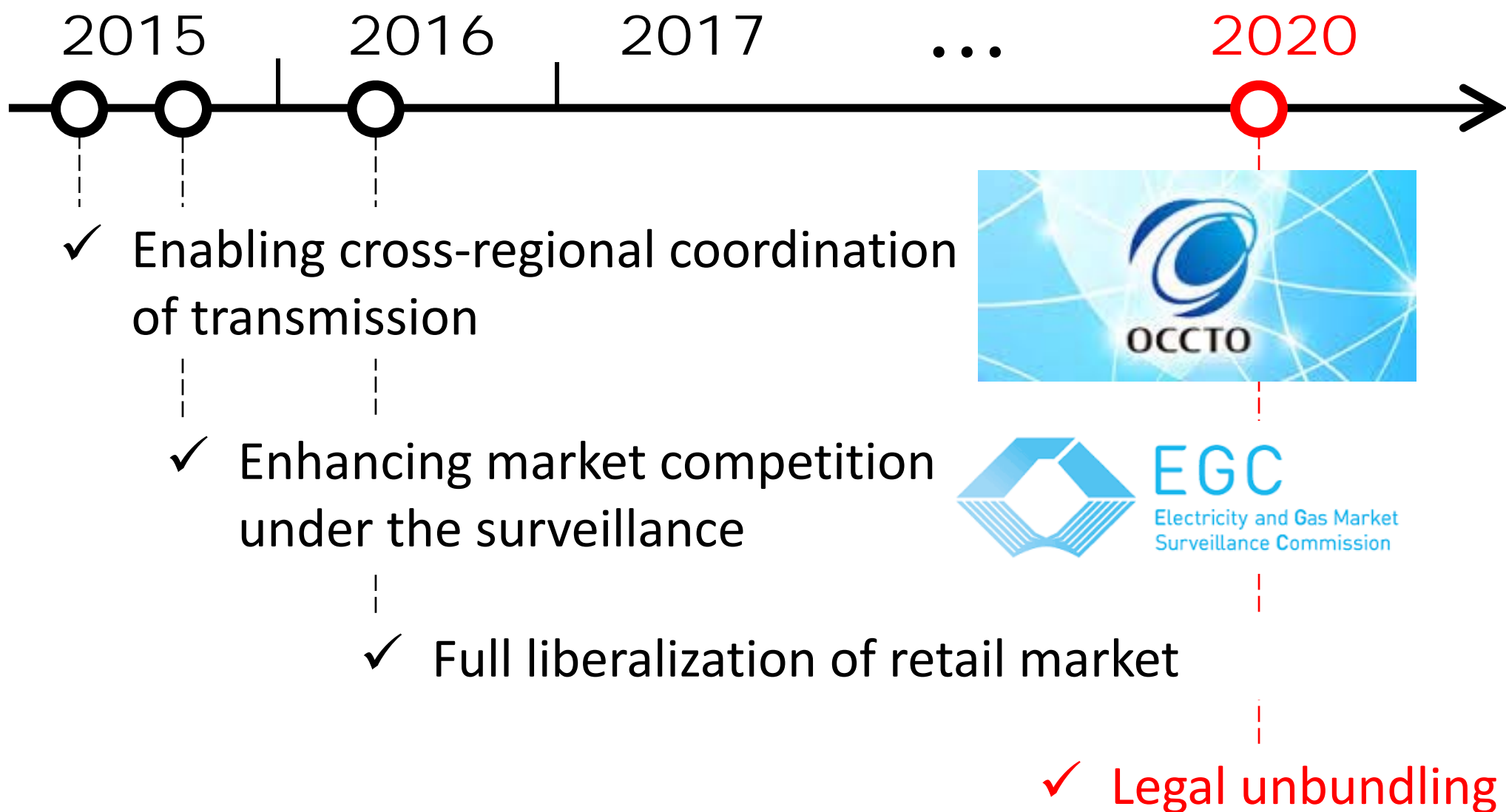
**Nuclear
power
20 to 22%**



2030

Petroleum 3%

Electricity market reform



Challenges

More competition

- ✓ Creating “Base-load market”
- ✓ Merit-order on cross-regional transmission

... and social responsibility

Environment and renewables

- ✓ “Capacity mechanism” & “Non-fossil credit market”

Decommissioning

- ✓ Accounting rule retrofit & a new fund for 1F decom.

Three NPPs restarted & in operation

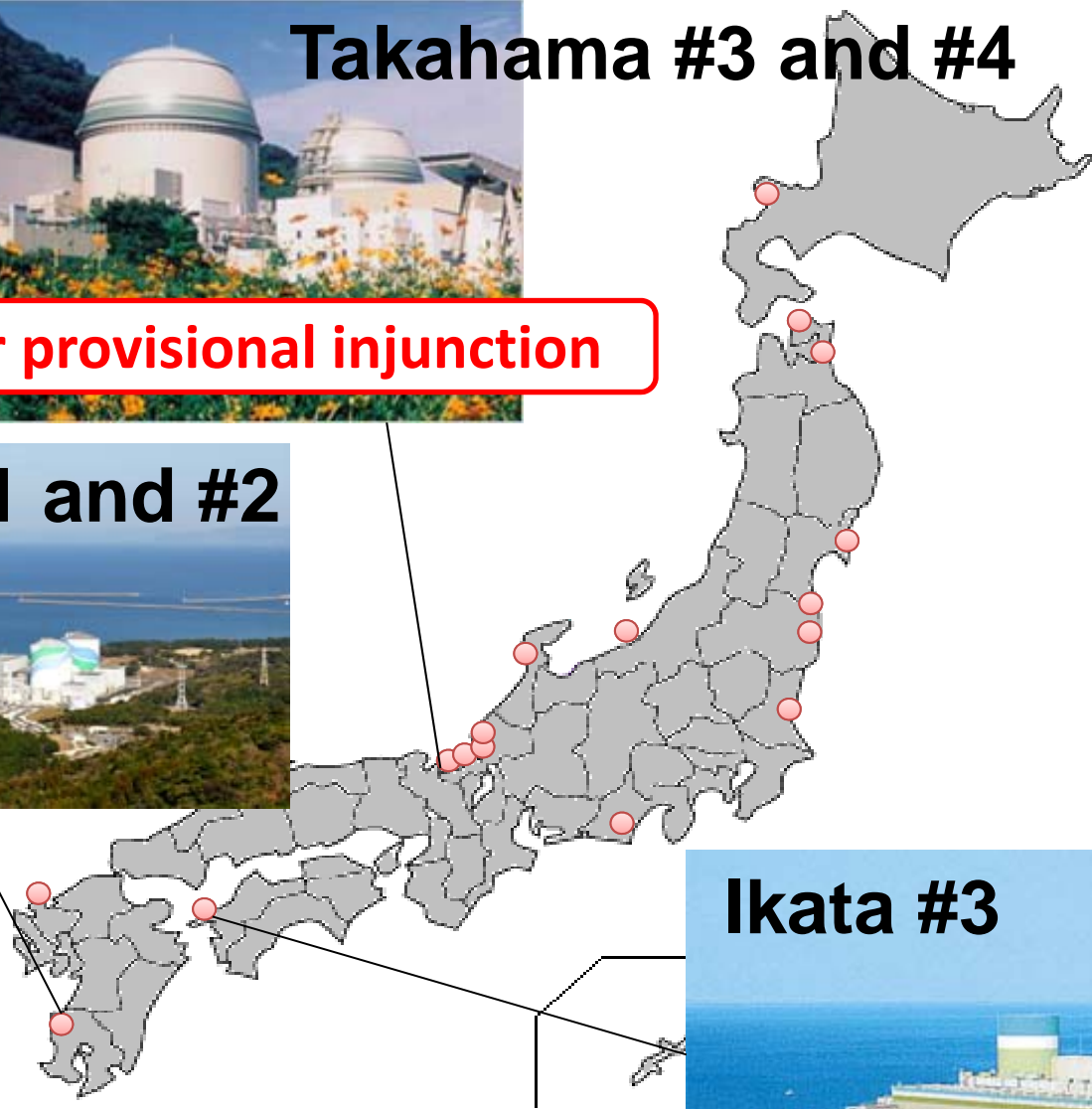


Takahama #3 and #4

Under provisional injunction



Sendai #1 and #2



3

45 Units



Ikata #3

Nuclear Fuel Cycle Policy

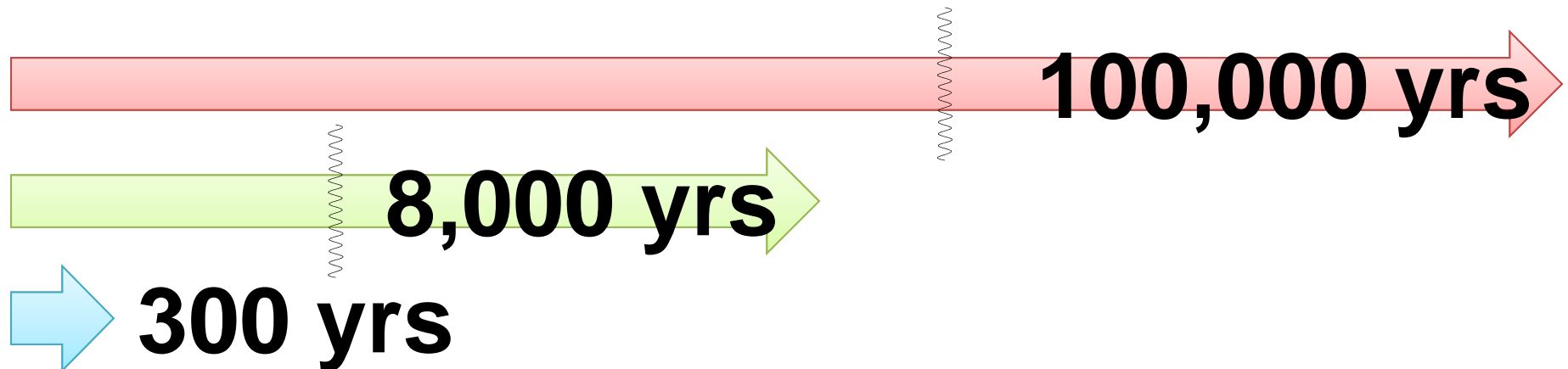
Merits of Fuel Cycle for Japan

1. Effective utilization of resources

2. Volume reduction of HLW



3. Shortening of duration of harmfulness



Reprocessing & MOX Fuel Fab. Plants

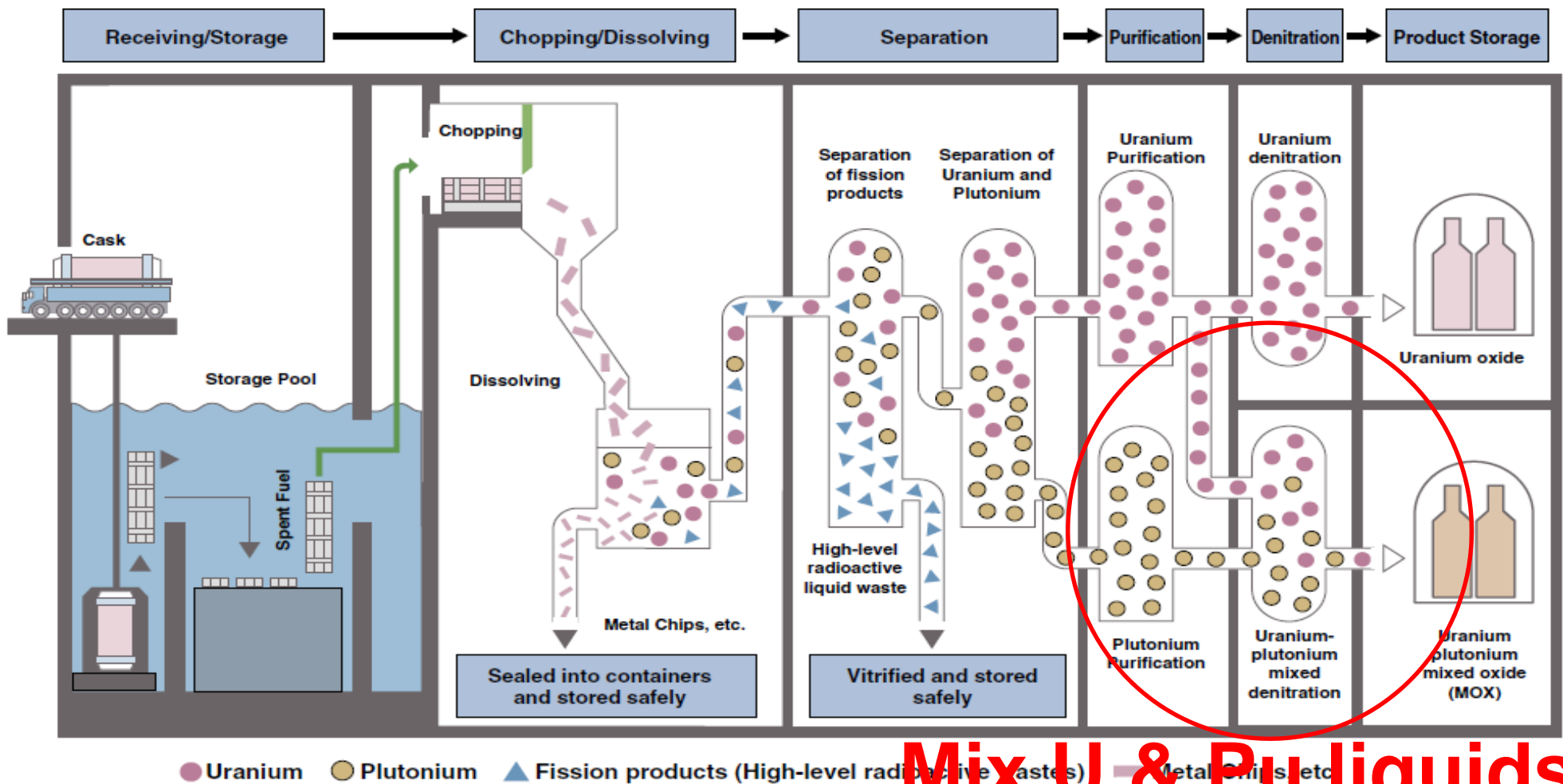
Rokkasho
Reprocessing
Plant



MOX Fuel
Fabrication
Plant

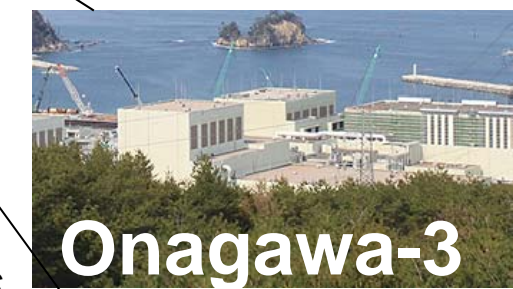
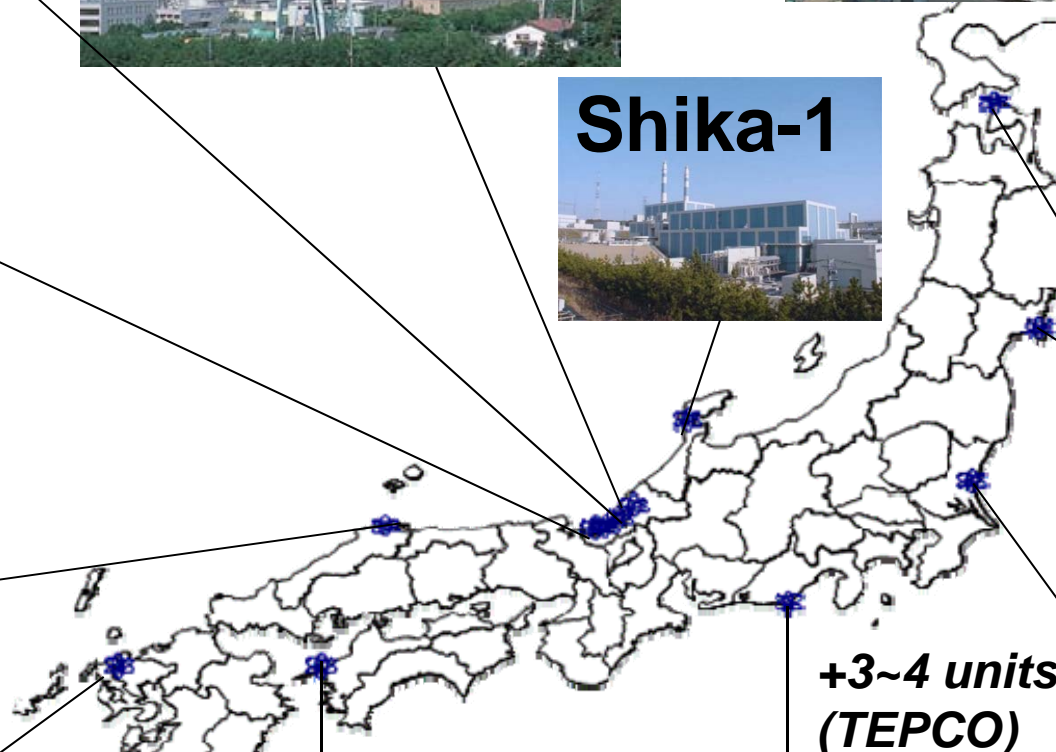
State-of-the-Art Safeguards

- Monitoring by IAEA on-site inspector
- No separation of pure Pu powder



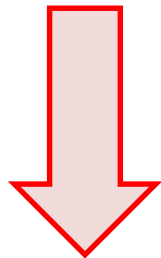
Mix U & Pu liquids

Plutonium utilization in LWR planned



“NuRO” established 2016

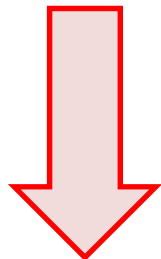
Each electric power utility



Contributions for reprocessing, etc.
(required to contribute funds)

NuRO
使用済燃料再処理機構

Authorized org.
(w/ fund mgt. system)



Payments
(Contract out the reprocessing operation)

JNFL

Statement by Minister

Principle: not to possess plutonium
without specific purposes



**I NEVER approve a plan
not in line with the principle**

US – JPN cooperation on nuclear security

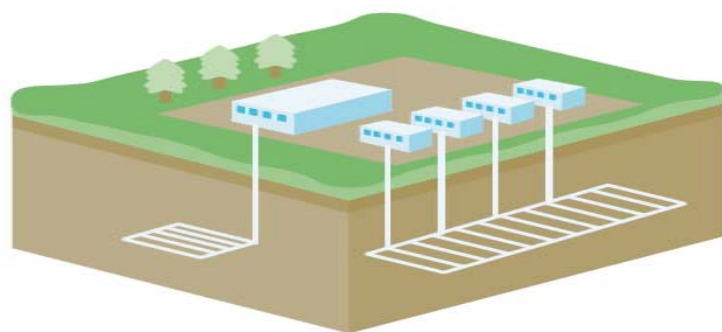
(From US - Japan fact sheet on Dec 5, 2016)



- ✓ **Fuel cycle policy: national choice**
- ✓ **Goal: reducing JP's Pu stockpile**
- ✓ **Appreciate JP's efforts**
- ✓ **Model of transparency**
- ✓ **No concern about JP's Pu mgt.**

Spent fuel management & final disposal

Spent fuel storage facilities



Final disposal of HLW

Added processes

Mapping

Dialogue

Proposals

Literature survey,
Investigation, etc

Construction & Operation

International Workshop on Decommissioning of NPPs

For more optimized decommissioning,
First ever international workshop!

WHEN : June 30, 2017

WHERE : Tokyo, JAPAN