COP24

Japan's Energy Policy Going Against the Paris Agreement

—'CASA 2030 Model' estimation result—

UNFCCC COP24/CMP14/CMA1-3

Katowice, Poland

Accident at Fukushima Dai-ichi nuclear power plant

March 11th, 2011

explosions at Plants 1, 3 and 4

Plant 1, 13 March, 15:36

Plant 3, 14 March, 11:01

Plant 4, 15 March, 6:00

Accident at Fukushima Dai-ichi nuclear power plant

- The Great East Japan Earthquake occurred at 2:46 p.m. on March 11, 2011.
- Its magnitude was 9.0.
- The tsunami of 14 – 15 meters high surged over Fukushima Dai-ichi nuclear power plant.
- The external power supply got cut, 12 out of 13 emergency power systems were destroyed.
- 4 of 6 plants were cut the power supply.
- The accident caused meltdown at Plants 1 – 3, which were in operation at that time.
- Reactor-core damages cumulated hydrogen to explosion, and the reactor buildings at Plants 1, 3 and 4 got seriously damaged.

Since the Nuclear Accident

- It has passed about 7 years and 9 months.
- Around 44,878 people are still in the status of evacuation as of July, 2018.
- The causes of the accident have not yet been clarified.
- No one is able to capture the situation of the ruptured containment vessel and the melted nuclear fuel debris.
- This means that, even now, no one can figure out how to clean up the Fukushima Daiichi nuclear disaster.

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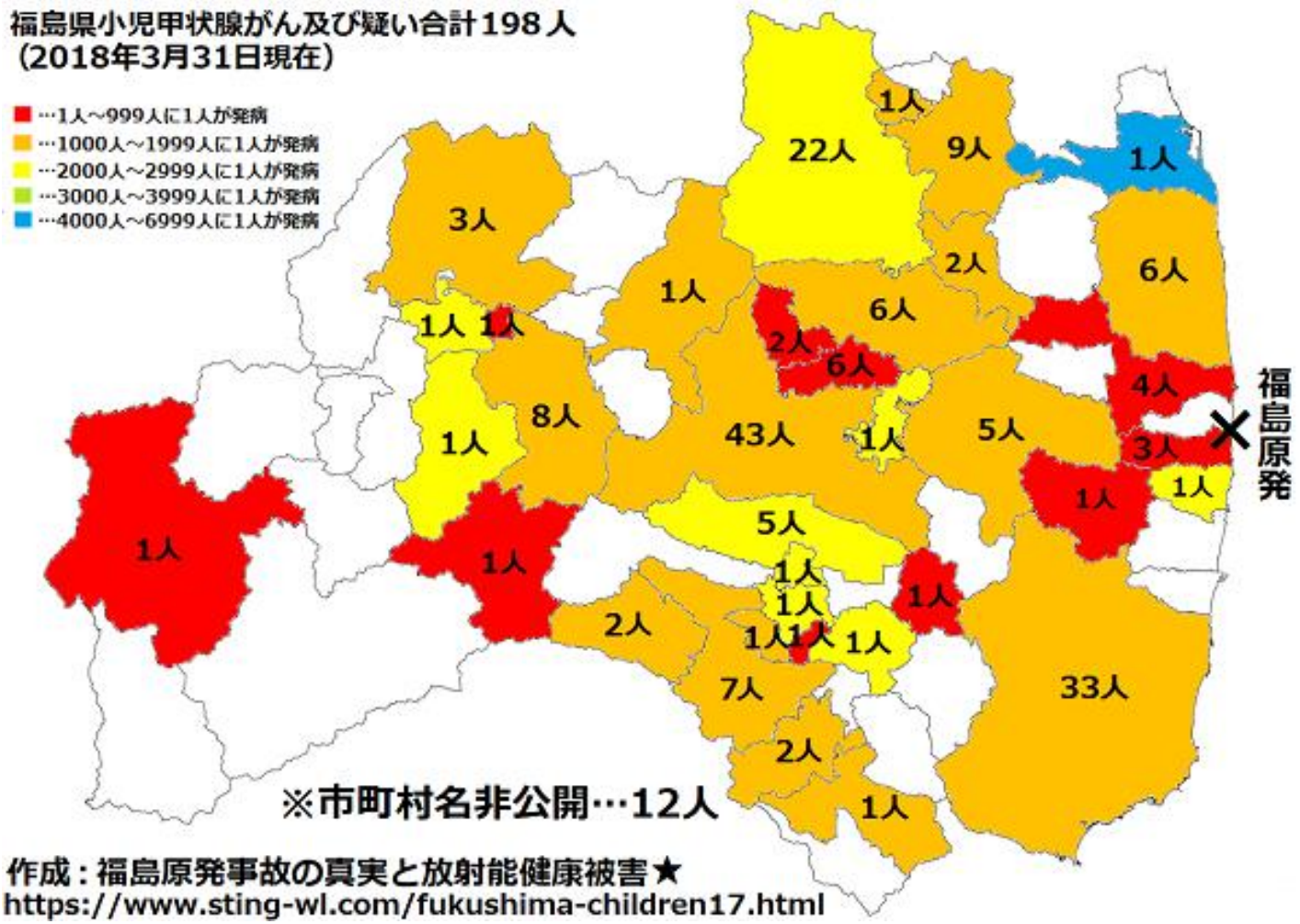
Increasing number of thyroid cancer patients



Contaminated water continues to increase

- Contaminated water up to 1.17million tons.
- The number of the tanks reached about 1,000. One tank contains 1,000tons.

Contaminated water continues to increase

- To purify the contaminated water, ALPS (Advanced Liquid Processing System) has been utilized. It was expected to be got rid of 62 nuclides except Tritium, but 80% of the ‘purified water’ contains radioactive substances such as Cesium-137 beyond reference value.
- Some contains Strontium-90 beyond reference value by 20 thousand times.

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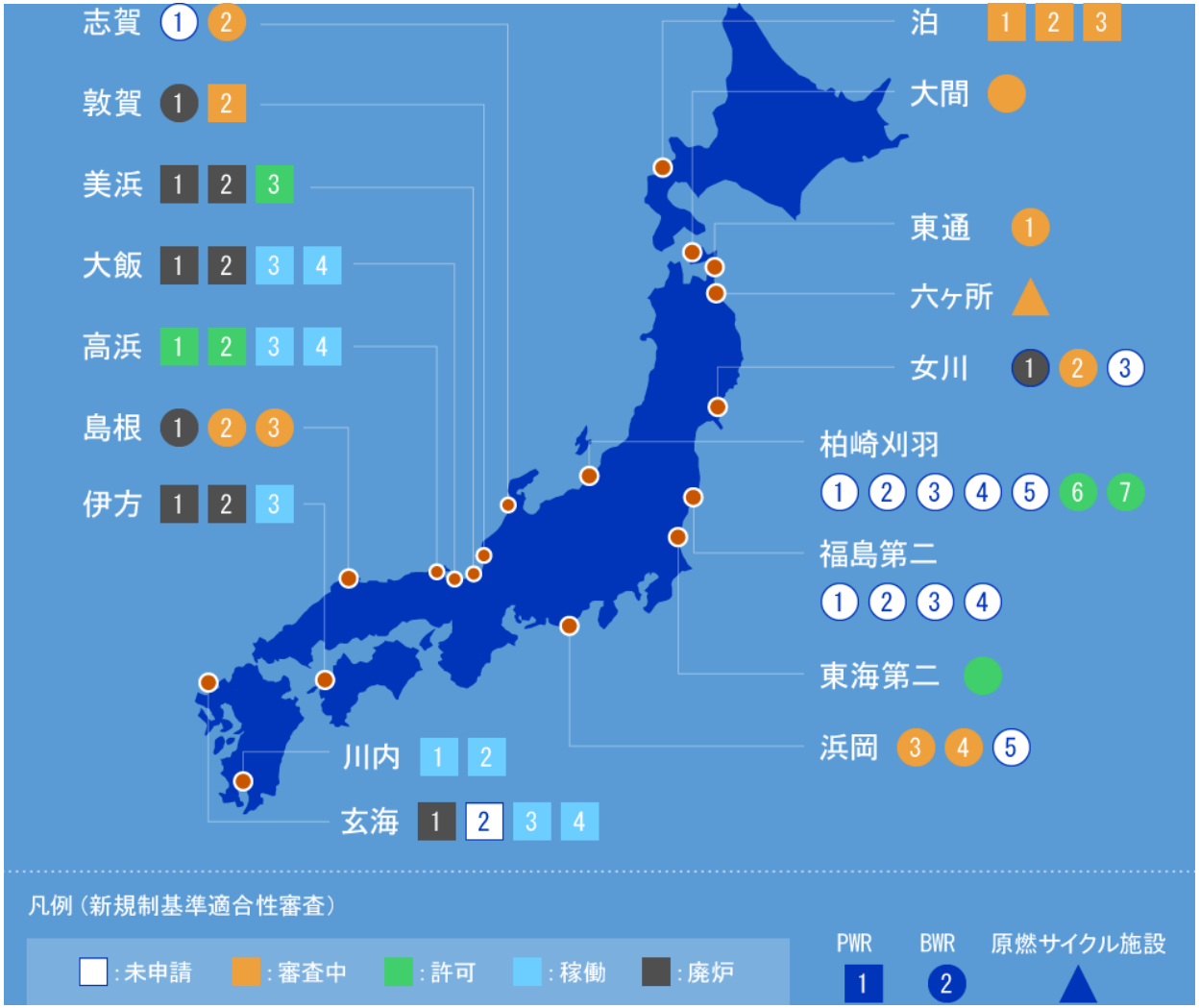
Re-operation of the nuclear power plant has been promoted



Not to apply for the re-operation

During the review of the re-operation

Got Permission of the re-operation

Start re-operation (9 plants)

decided to decommissioning (14 plants)

No one would take responsibility regarding to the decision of re-start

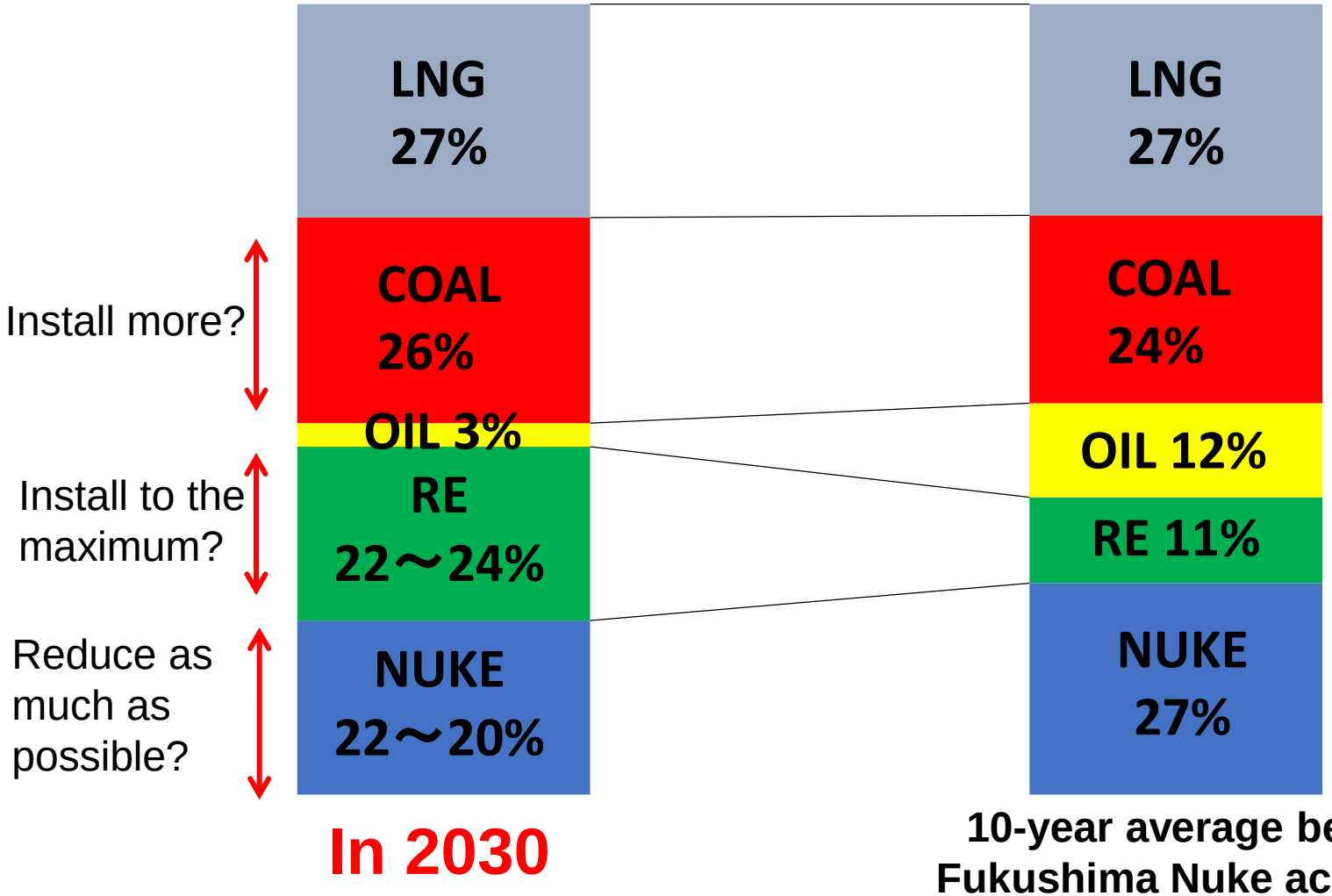
- **Government of Japan** says
  - When nuclear power plants meet the new requirements formulated by Nuclear Regulation Authority (NRC), respect the assessment and proceed with their restart.
- **Nuclear Regulatory Commission (NRC)** says
  - NRC's review result does not mean the safety of the nuclear power plant. NRC will not make judgement on restart.

Problem areas in Japan's Energy Policy

Japan's 5th Strategic Energy Plan

- The Government of Japan formulated the 5th Strategic Energy Plan in July this year.
- It is too low introduction target of renewable energy.
- Coal-fired and nuclear power generations have been regarded as base load power.
- Though the Paris Agreement has been adopted 4 years ago, the Government of Japan still continue to promote coal-fired power plants. The 5th Strategic Energy Plan is against the Paris Agreement.

Japan's Energy MIX in 2030



Problem in Japan's Energy Policy

- RE : 2030 target of installed capacity is too low
- Coal-fired power generation: going to increase
  - Plan to build 35 coal-fired power plants whose installed capacity totals over 18.795GW
  - Most of those plants are to be installed from around 2020
  - They will keep working beyond 2050, even in case that the operational period is set within 40 years
- **Japan's energy policy is going against the Paris Agreement.**

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Plan to build 35 coal-fired power plants in Japan

- Has started operation
- Under construction
- In assessment phase
- Under planning
- Stop operation / already abolished

"Japan Coal Plant Tracker" Webpage, Kiko Network

107.92 million tons of CO_2

- When 35 coal-fired power plants are put in operation, the estimated amount of approximately 107.92 million tons of CO_2 are to be released annually, which counts for 8.2% of all the current CO_2 emissions of Japan.

"Japan Coal Plant Tracker" Webpage, Kiko Network

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Ambition Level of Japan's NDC is too low

	Compared to 1990 level	Compared to 2005 level	Compared to 2013 level
Japan **in 2030**	**▲18.0%**	▲25.4%	▲26.0%
US **in 2025**	**▲14～16%**	▲26～28%	▲18～21%
EU **in 2030**	**▲40%**	▲35%	▲24%

◆ 米国は2005年比の数字を、EUは1990年比の数字を削減目標として提出

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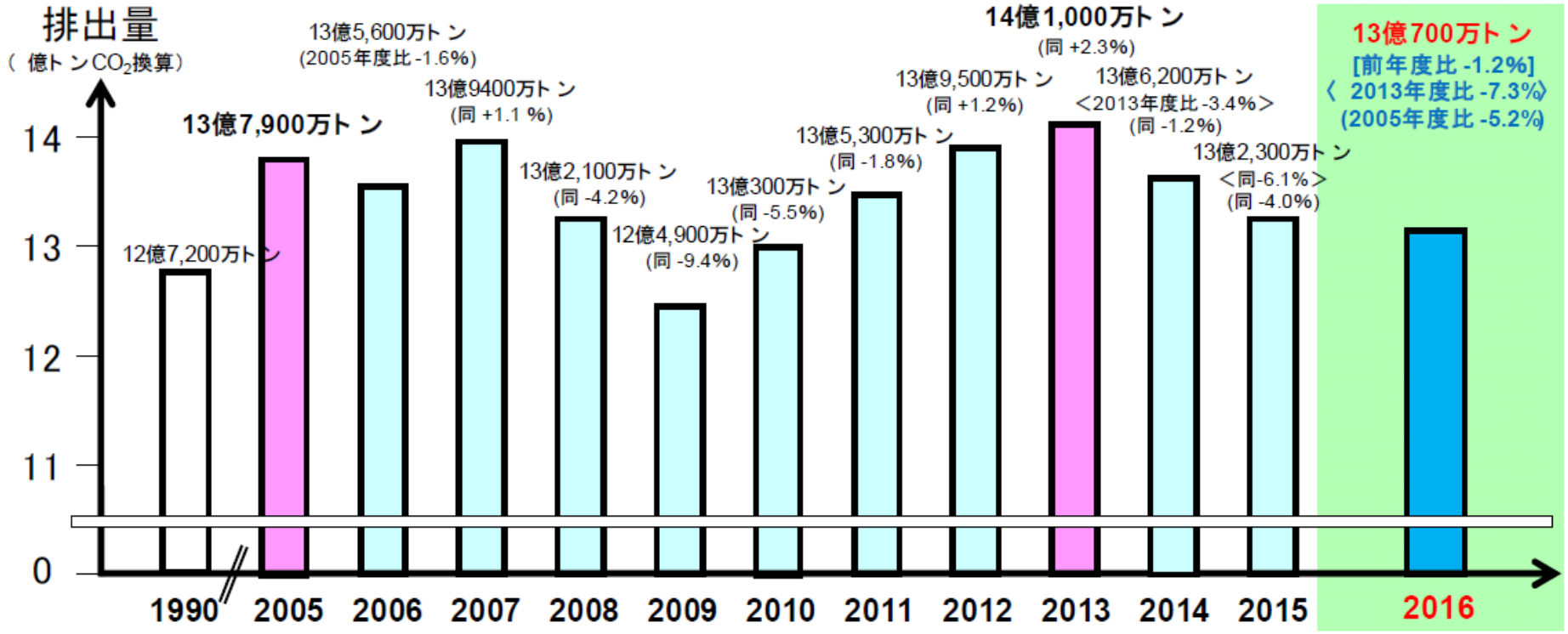
Japan's GHG emissions — In 2016, increased by 4% from 1990 level



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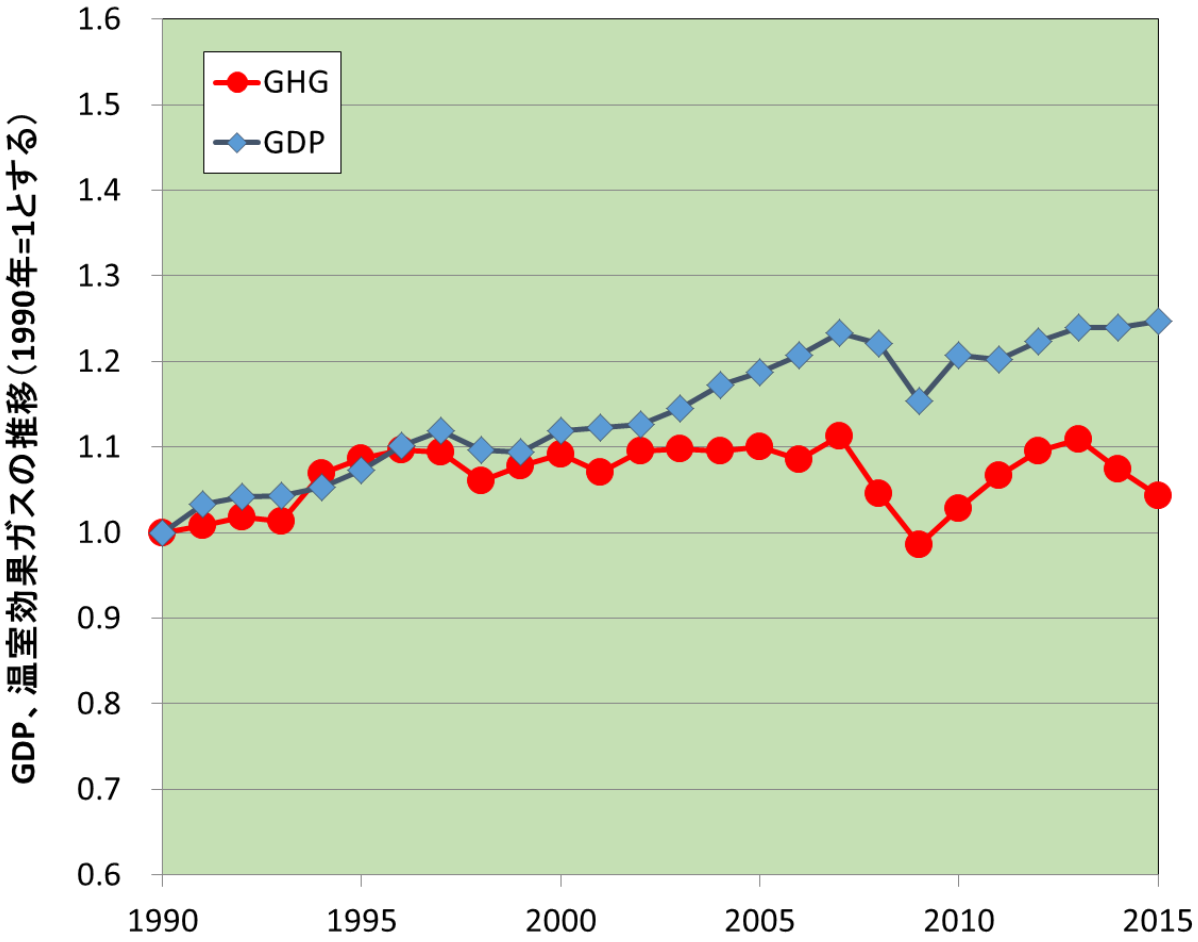
Japan's GDP Growth and GHG emissions

- Since 1990, Japan has increased GHG emissions.

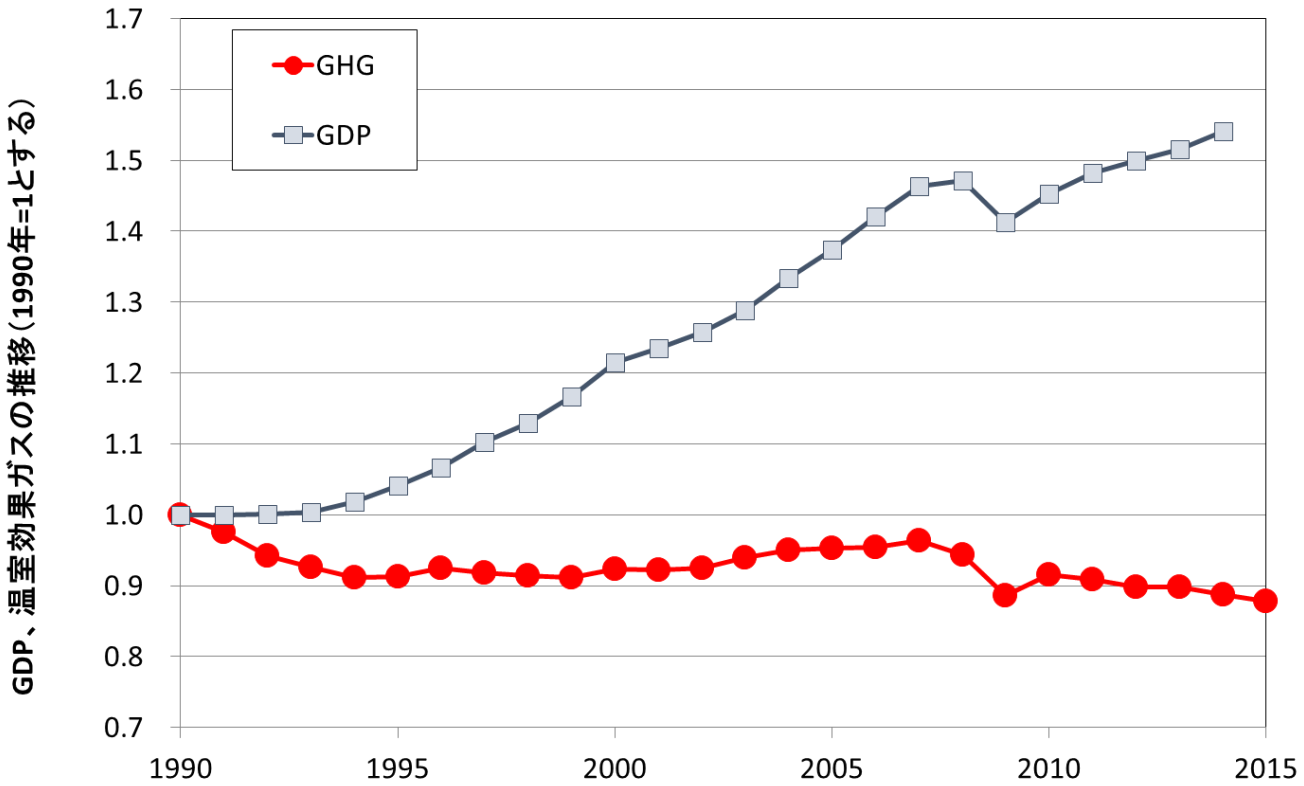
(the year of 1990=1)



Annex-I Parties' GDP Growth and GHG Emissions

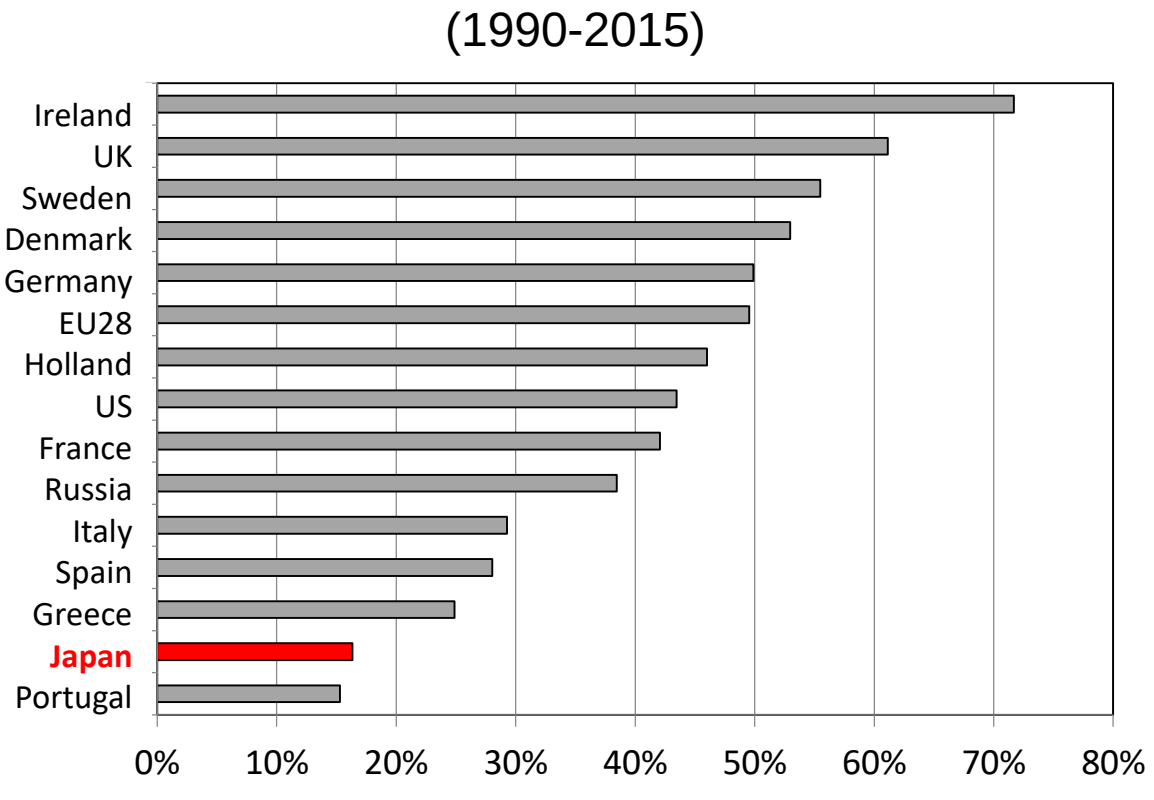
- In total, GHG Emissions from Annex-I Parties have been reduced since 1990, but as for Japan, it has failed to reduce its GHG emissions.

(the year of 1990=1)



GHG reductions rate per GDP

- Japan is behind in GHG emissions reduction rate among developed country Parties.
- Today Japan can't be regarded as advanced in energy efficiency.



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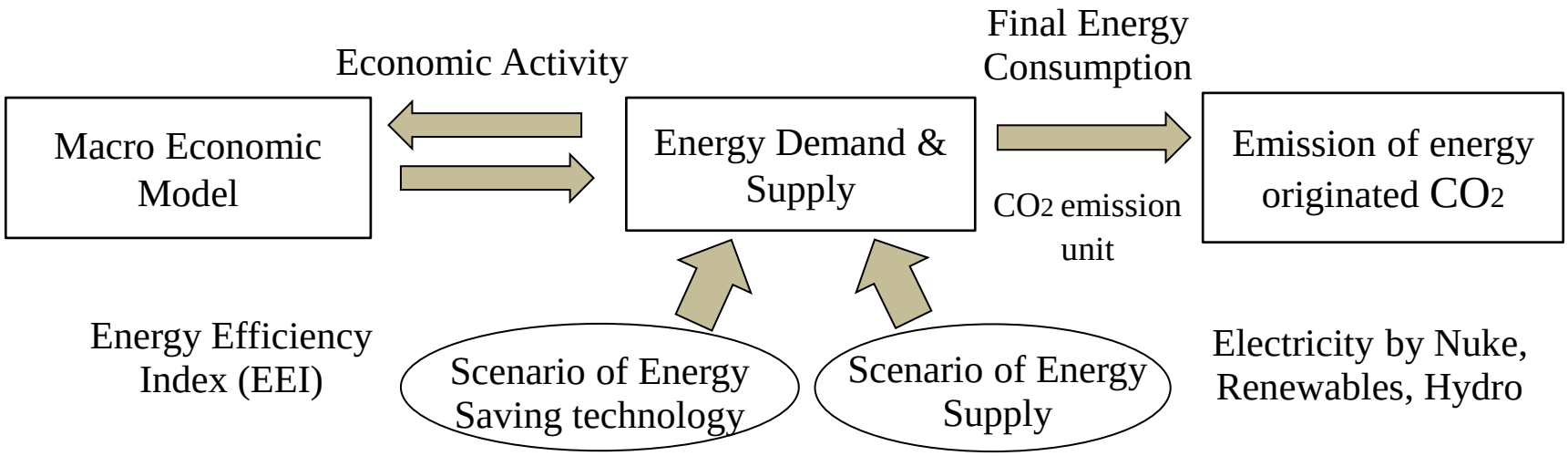
Potentials for CO_2 emission reduction 40%

in Japan

—'CASA 2030 Model' estimation result—

Structure of 'CASA 2030 Model'

- 'CASA 2030 Model' Shows the concrete scenario of climate change countermeasures, and estimates the economic impact by Macro Economic Model.



Precondition of 'CASA 2030 Model'

- 'CASA 2030 Model' Shows the concrete scenario of climate change countermeasures, and estimates the economic impact by Macro Economic Model.

Case		Precondition			
		Energy Efficiency	Renewables increase	Nuke activity	Electricity by Nuke (2030)
Business as Usual (BaU)		No policy	No policy	40 years Nuke Abolished	132.9 TWh
CASA measures	Nuke Zero	Great progress	Great increase	Nuke zero	0 TWh
	All Nuke Abolished in 2030			All Nuke Abolished in 2030	40.9 TWh

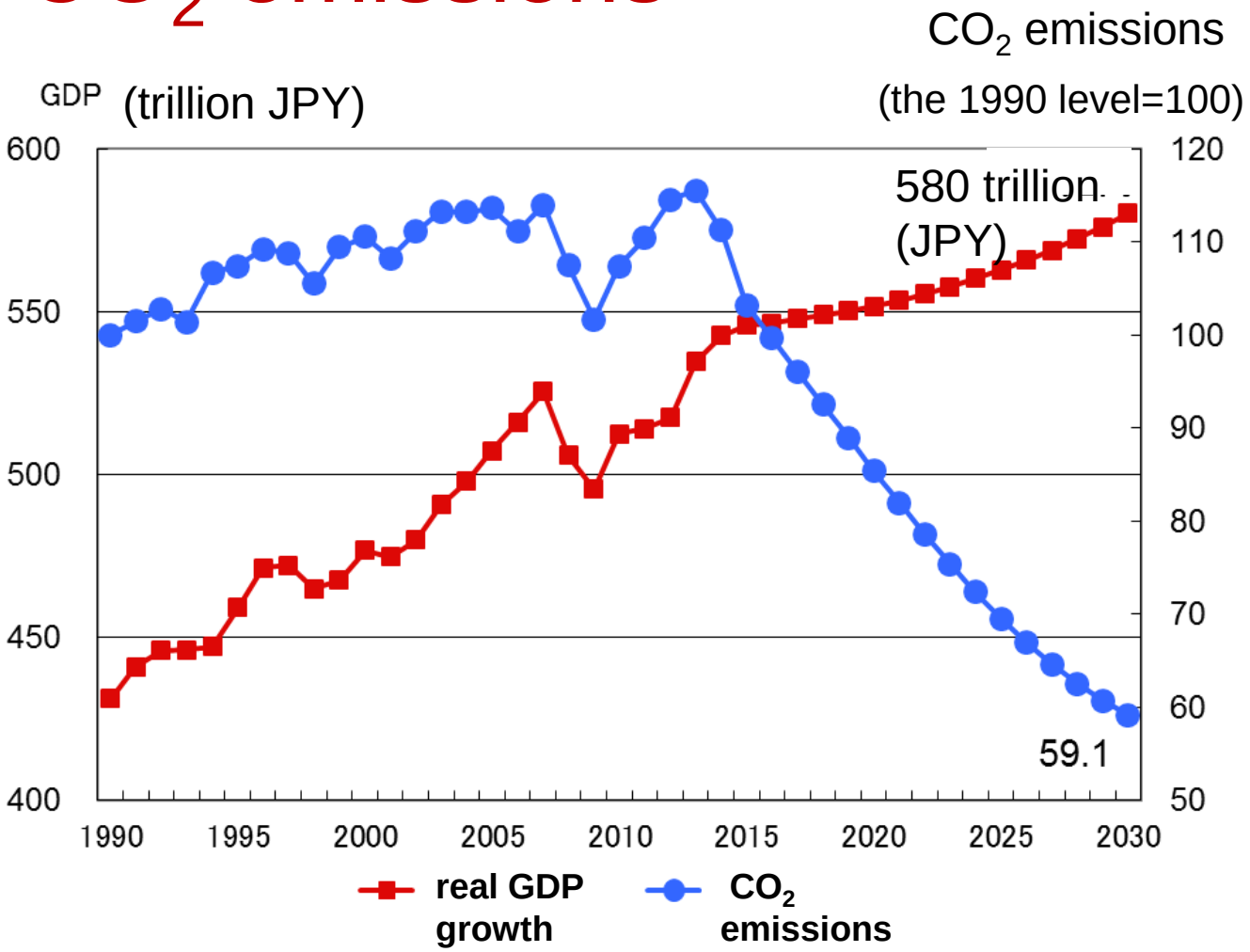
CASA 2030 Model

- CASA developed the “CASA 2030 Model” by integrating the bottom-up method model, based on scenarios with energy efficiency measures and technology measures such as the deployment of renewable energy, and the macro-economic method model.
- **As a result, the model shows clear feasibility for a 40% reduction of CO2 emissions by 2030—from the level of 1990—even in the case of immediate shutdowns of all the nuclear power reactors in Japan, without causing a negative impact on its economy.**

CASA 2030 Model

CASA measures "Nuke Zero"

Decoupling of real GDP growth and CO_2 emissions



CO_2 emissions could be cut by **40%** and real GDP growth could be **steadily increased.**

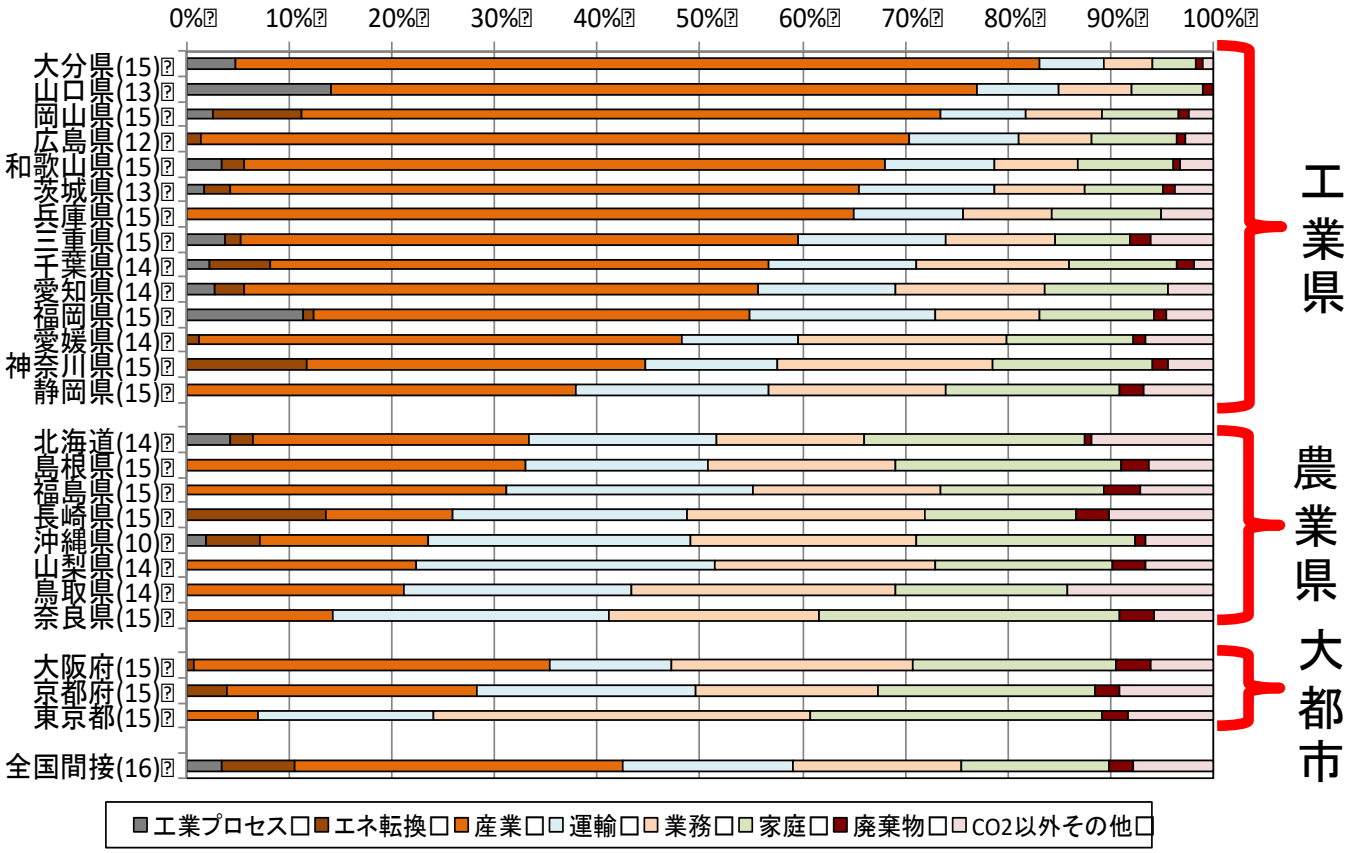
CASA 2030 Model

Carbon budget approach in Japan

- Japan's GHG emissions is **the 5th** in the world (current GHG emissions) / **the 6th** in the world (cumulative GHG emissions). Japan has great responsibility to tackle with the climate change issue.
- In order to achieve the long term goal and objectives of the Paris Agreement, the carbon budget approach is needed and the budget of each Party should be allocated recalling the historical responsibility.
- Now CASA has started the process to consider both all-over Japan carbon budget approach and respective area carbon budget approach with model-case local government carbon budget.

CASA 2030 Model

Prefecture greenhouse gas indirect emissions rate in Japan



- from an industrial process
- from the energy conversion sector
- from industries sector
- from transportation sector
- from commercial sector
- from residential sector
- from waste

Respective carbon budget approach could be useful and essential

- The breakdown of the local GHG emissions is apparently different from each other because of the regional characteristics.
- CASA recognises the urgent need to cultivate regional carbon budget approach so called “Regional Decarbonization Plan”

The Climate is Rapidly Changing

- The monthly CO_2 concentration throughout the entire atmosphere has now surpassed 405 ppm. Additionally, reports on extreme weather events keep coming in from around the world.
- IPCC AR5 and Special Report on 1.5℃ points the countermeasures before 2030 are critical.
- There is no time to waste and urgency should be recognized. Acts are needed now for our future generations.