

**International Days of the Chair
Modeling for Sustainable Development**

Japan's Energy/Climate Policy "After FUKUSHIMA"

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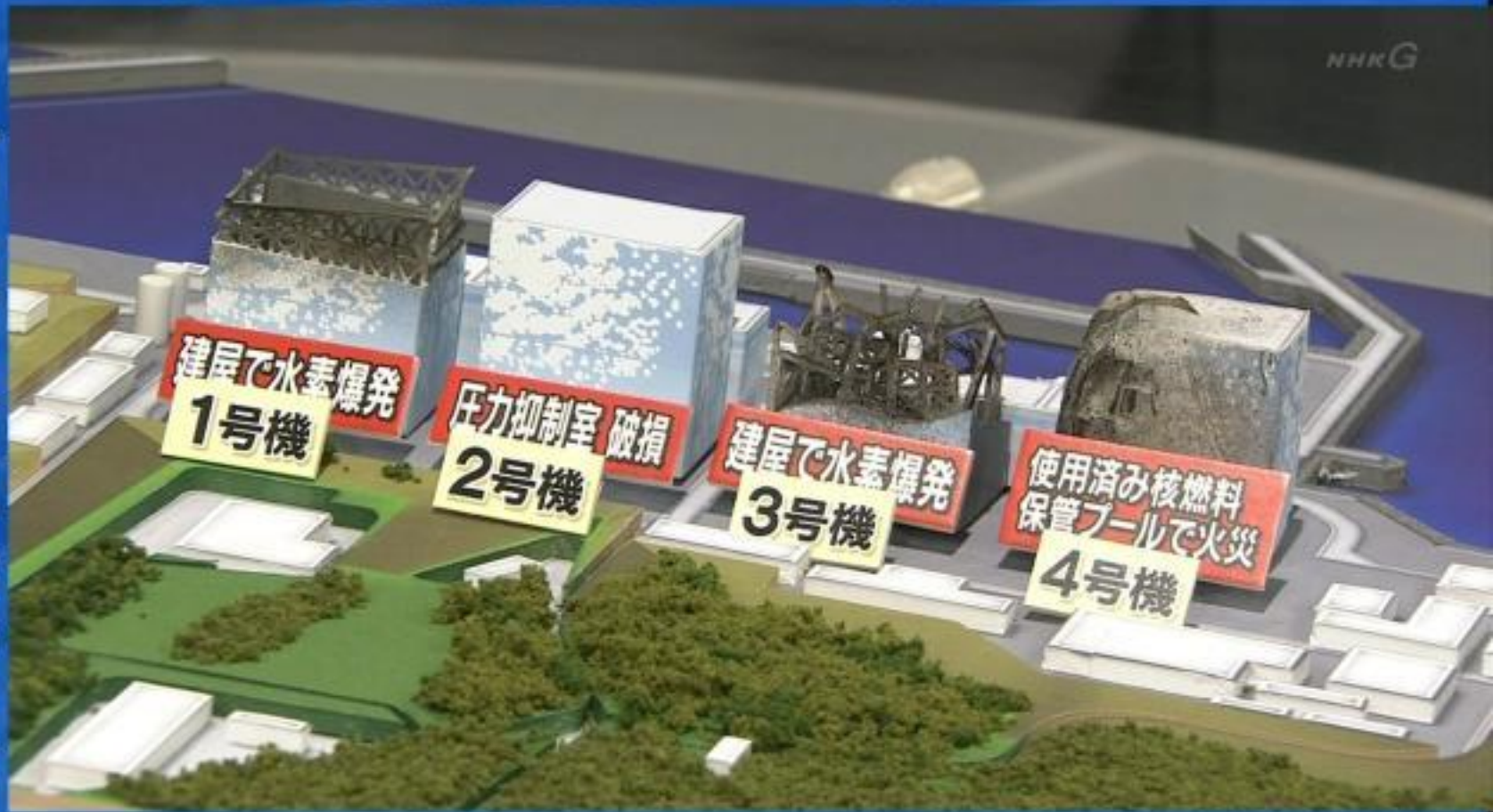
- 1. Situation in Japan**
- 2. Energy/Climate policy**
- 3. Conclusion**

1. Situation in Japan



3号機では使用済み燃料保管プールの水蒸発が

福島第一原発情報







(東京電力提供)

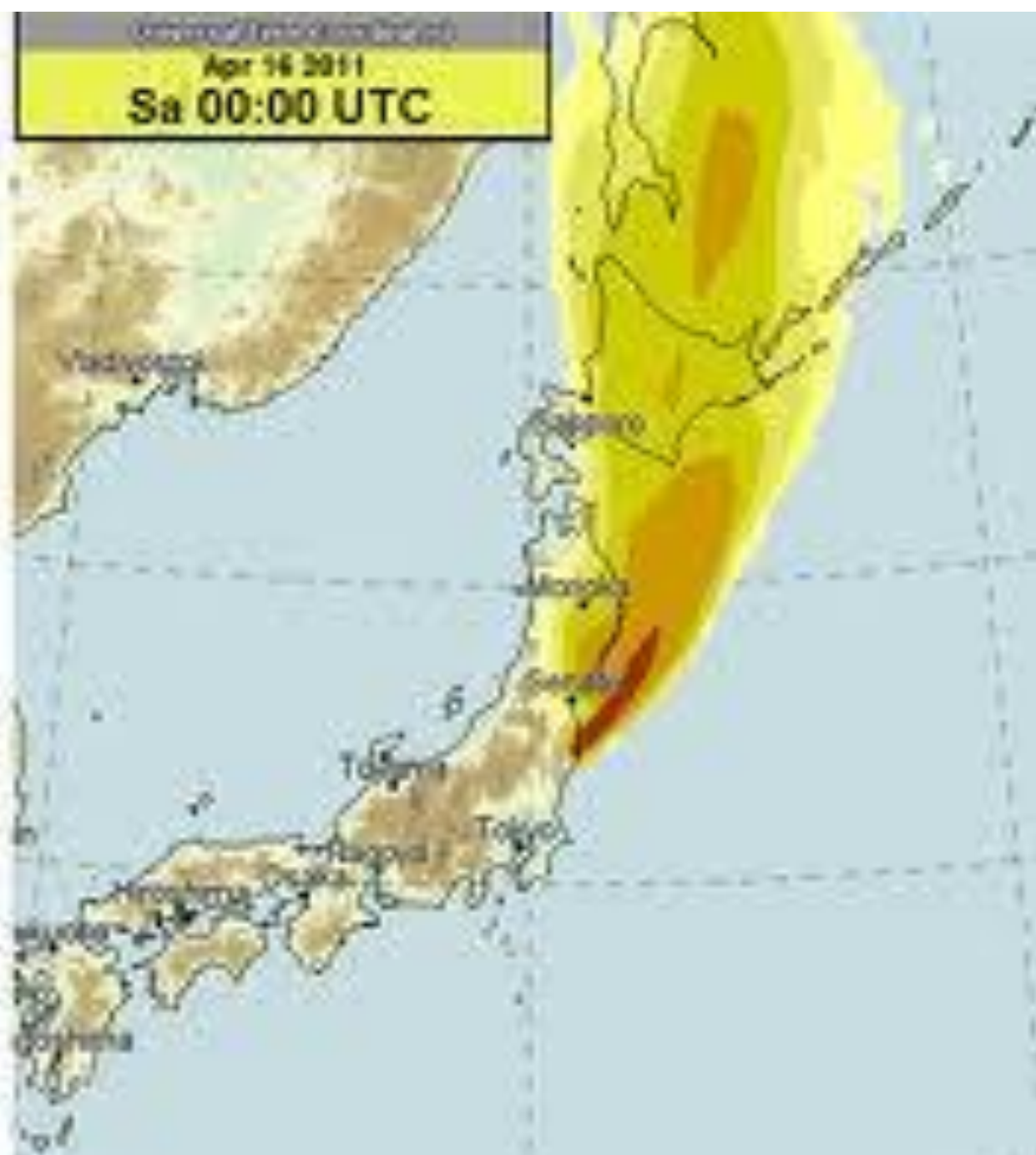
Relative Verteilung in
Fukushima emittierter
radioaktiver Partikel:

Relative distribution of
emitted radioactive particles:



Wichtige Hinweis: Die Darstellung erlaubt
keine Rückschlüsse auf die tatsächliche
Konzentration radioaktiver Partikel in der Luft,
da die Stärke der Quelle unbekannt ist. Einmal
in Richtung Japan fließt nur noch eine kleine
Emission am Nordpol in Abhängigkeit der
Wetterlage verschoben und abgemindert.

Important note: The illustration does not allow
conclusions on the real concentration of
radioactive particles in the air, because the
strength of the source is unknown. It is only
shown how a future emission is distributed if
the weather and diluted depending on current
weather conditions.





「大津波やM9 想定却下」



福島原発設計者ら証言

福島第一原子力発電所（福島県大熊町）の設計者らによる証言が、福島県庁で開かれた記者会見で明らかになった。設計者らは、大津波やマグニチュード9（M9）の地震を想定し、原発を設計したと主張している。また、地震発生時に、原発の設計者らは、原発の安全を確認するために、現場に駆けつけ、安全を確認したと証言している。

【福島県庁】

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「女川や柏



全国一斉抗議会東京会場
2011年3月11日

東電福島原発事故被害者救済会



日本共産党

チェルノブイリ事故の
教訓を

原発

原発は危険

原発は危険

エネルギー政策転換を!

大分県

Myths (unquestioned-beliefs) about nuclear power were broken

- **Myth #1 “Credible (stable)”**: Many small/big accidents
- **Myth #2 “Cheap”**: Subsidy (13 trillion JPY for 54 plants)+Compensation (more than several trillion JPY)+Damage on Industry (more than several trillion JPY) + α
- **Myth #3 “Safe”**: It was just not

Example of the damage cost

- **(Complete or partial) import ban or request for a certificate to “made in Japan food” (almost all countries)**
- **Decrease of foreign visitors: 2.2 million (April-June, 2010) → 1.1 million (April-June, 2011) = Loss of 650 billion JPY per year**
- **Tremendous costs for decontamination: Several hundreds of trillion JPY (?)**



NOTICE!!

Certification of Radiation Safety
Results were **NEGATIVE** for:
BELL PEPPERS (Miyagi Pref.)

1kg
Red Bell Peppers
¥280

1kg
Green Bell Peppers
¥280

1kg
Yellow Bell Peppers
¥280

1kg
Orange Bell Peppers
¥280

1kg
Yellow Bell Peppers
¥280

1kg
Lettuce
¥280

1kg
Lettuce
¥280

1kg
Lettuce
¥280

1kg
Lettuce
¥280

1kg
Lettuce
¥280

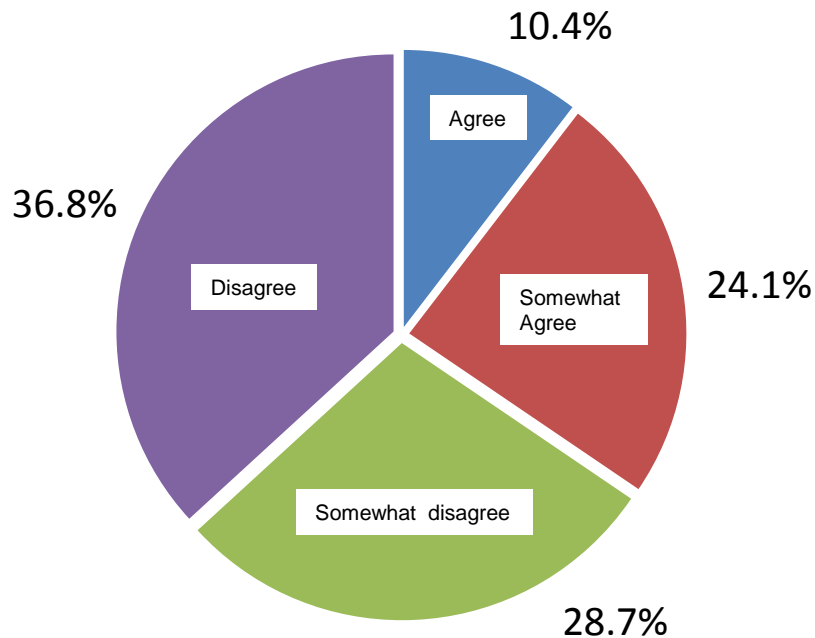
Energy conservation we achieved last summer

- **15 % compulsory** electricity consumption reduction requirement to the heavy consuming facilities in Tokyo and Tohoku area
- Voluntary reduction requirement for general house hold
- **Results: -16 %** compared to last year (July and August, Tokyo metropolitan area)

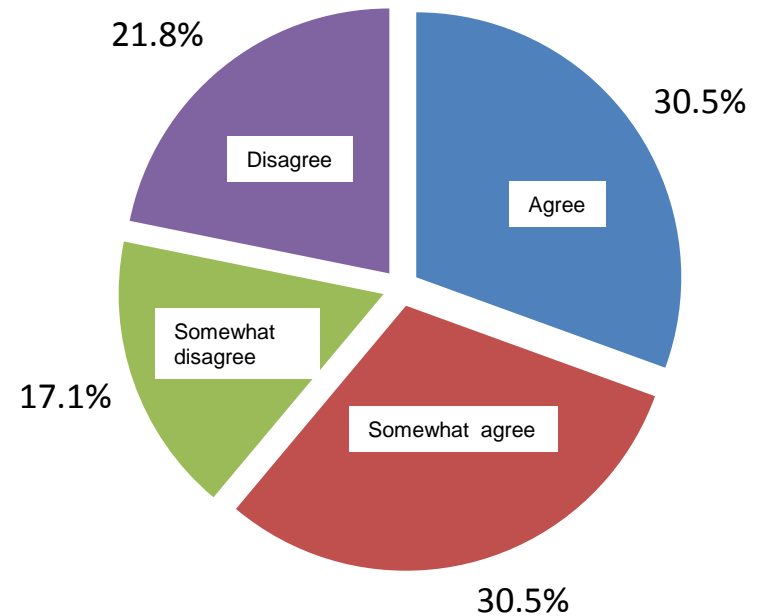
Survey conducted by IGES:

Do you support nuclear power to meet the demand of Japan?

Japanese (N=432)



Non Japanese (N=275)



Survey conducted by Asahi newspaper (Mar. 10, 2013)

Do you support nuclear power plants to start operation again after (periodical) inspection?

Disagree: 57%

Agree: 27%

Survey conducted by Asahi newspaper (Mar. 10, 2013)

Do you trust the safety measures by the Japanese government?

Not at all: 52%

Not so much: 28%

2. Energy/Climate policy

“Less-dependent on nuclear power” is a consensus in Japan, but...

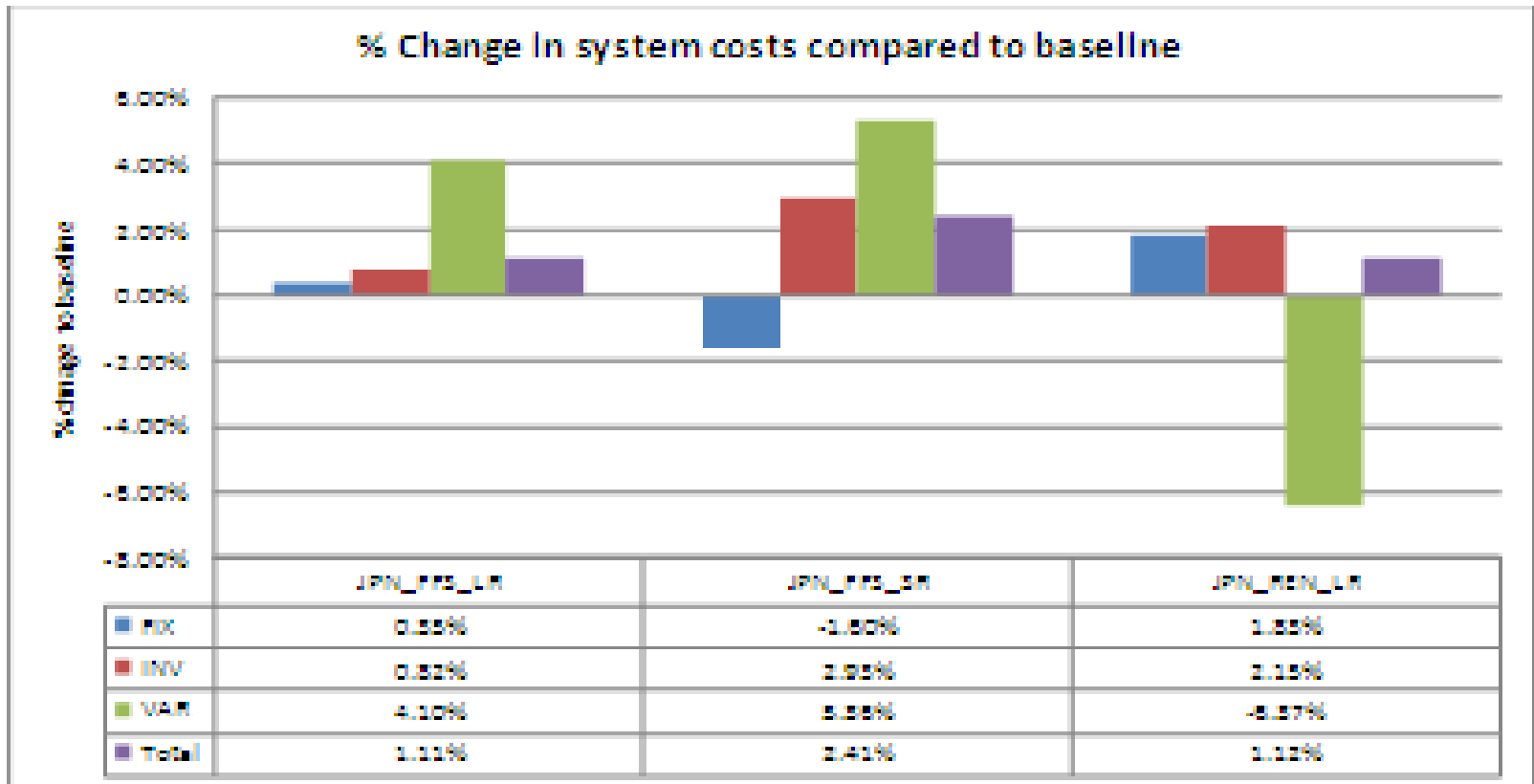
- **When?** : Immediately, 20years, 40 years....
- **How?** : Renewable? fossil fuel?
- **How much?** : Cost re-calculation
- **CO₂ implication?**: Difficult to say something definite at this moment
- **Defense policy implication?**: role of nuclear power as a deterrent force

Renewables are IN, but..

- **Exact FIT tariff prices, terms and amount of introduction, etc. are not yet decided**
- **Re-examining assumptions on cost calculation are still under-going**
- **Many regulation and local stake-holders objections are big barriers**

Renewables are cheaper in the long run, but...

Results of the TIMES Japan model simulation by IGES
 NPV of total energy system cost (2005-2100, 10% discount rate)



Energy conservation potential exists

- For example, If we change all electric bulbs and fluorescent lights in Japan to LED, we can save **99.2 billion kWh** which corresponds to **13** nuclear power plant generation per year
- Anyway, we need to explore more energy conservation potential on the demand side (so far, little incentives for power companies)

Socio-economic impacts are high

- Challenges to the existing oligo-politicized, fragmented power supply/transmission system
- Revision of the price setting methodology of electricity price (**VERY IMPORTANT!**)
- **Political influence of power companies on Japan's industries and policy-makers will change**
- Asia super-grid?

Japan's climate policy: anti-multilateralism? (my personal observation)

Generally speaking, Japan's traditional multilateralism seems to have somewhat faded away due to:

- 1) loss of election for the UN security council member in 2005**
- 2) China's economic/political surge and Japan's relative decline**
- 3) FUKUSHIMA accident**

3. Conclusion

Challenges and Opportunities

- **Japan's energy policy will definitely change after FUKUSHIMA**
- **Impacts on climate policy would be negative in the short term but positive in the medium and long term**
- **In short, everything depends on the restructuring of political decision making system in Japan!**

Last word

**Nuclear is
neither safe
nor cheap!**

***Thank you and
let's keep fingers crossed for
everything!***

