The 19th FNCA study panel, March 23, 2018

Basic Policy for Nuclear Energy and White Paper on Nuclear Energy

Yoshiaki OKA
Chairman
Japan Atomic Energy Commission (JAEC)

Contents

- Basic Policy for Nuclear Energy
- Collaboration Program of Nuclear Power related Organizations
- Building infrastructure for communication
- Public communication/stakeholder dialog
- White Paper on Nuclear Energy

Basic Policy for Nuclear Energy

- First policy paper on nuclear energy after the TEPCO Fukushima accident, characterized as:

An articulation of policy directions and ultimate goals for cross-cutting issues of overall nuclear policy

Guideposts for JAEC itself and the relevant government ministries, agencies in performing their respective roles and responsibilities

An indication of long-term policy directions, incorporating a wide variety of viewpoints surrounding nuclear energy

It is to be reviewed, as necessary, basically every five years or so

Changing Environment Surrounding Nuclear Energy

Impact of the Fukushima Accident

- Essential **to sincerely face up to the public distrust and anxiety** about nuclear energy and **rebuild social confidence**.

Environment surrounding nuclear energy use

- With full liberalization of the retail electricity market, it is pointed out that **the new competitive electric power business** has made it difficult to make reliable prediction about the future of nuclear power business.

Environment surrounding the global warming issue

- Japan's INDC intend to reduce greenhouse gas emissions by **26.0% relative to the FY2013 level by FY2030**.

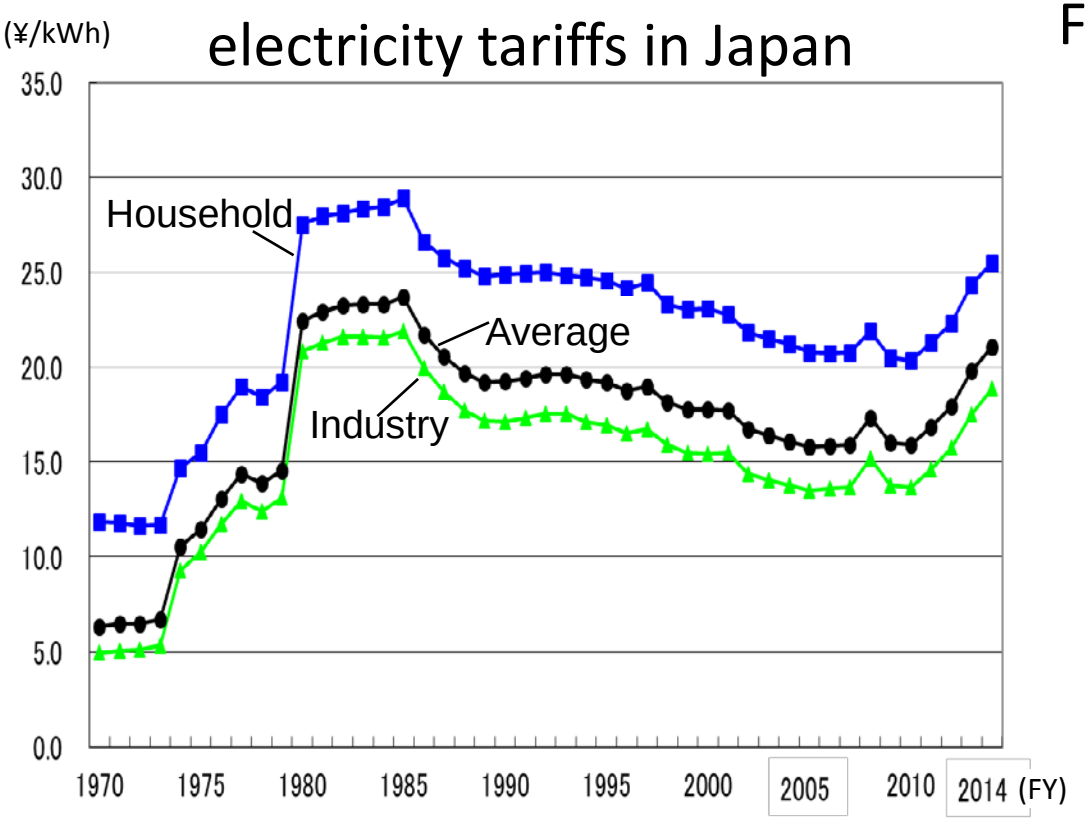
Energy issues that affect the livelihood and economic activities

- Increased use of existing thermal power stations and introduction of a feed-in tariff (FIT) system for renewable energy **have led to electricity tariffs higher**.
- The rise in electricity tariffs has had a major negative impacts on people's livelihood and economic activities.

Electricity Tariffs and Fuel cost

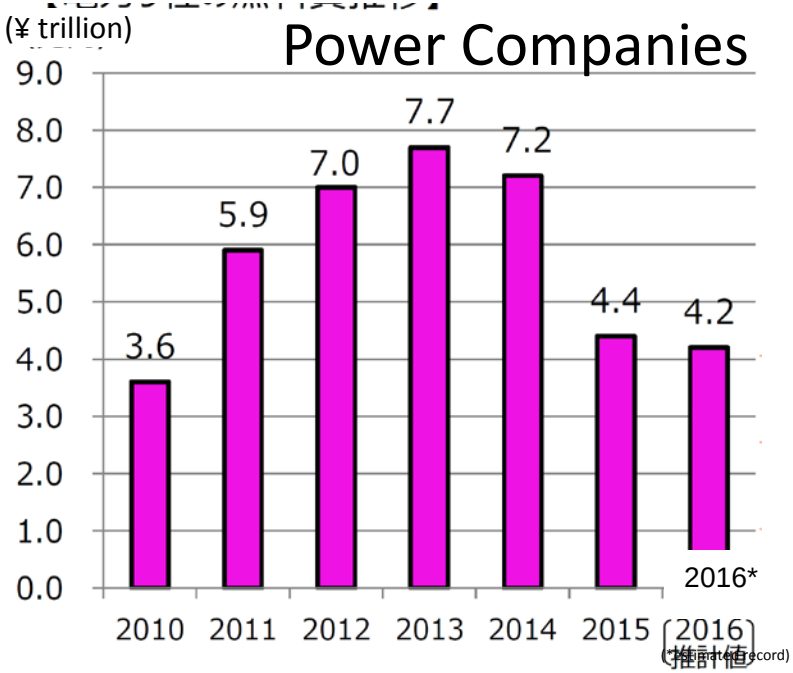
- After the Fukushima accident, **electricity tariffs raised by about 30% for industry and by about 20% for household**.
- **Fuel cost increased by $90 billion due to higher dependency on thermal power generation** as a result of the suspension of nuclear power generation after the Fukushima accident.

electricity tariffs in Japan



Source: Energy Annual Report 2015

Fuel Cost of Japanese Electric Power Companies



FY	2010	2011	2012	2013	2014	2015
Thermal (%)	61.7	78.9	88.3	88.3	87.8	84.6

Source: Federation of Electric Power Companies of Japan

Fundamental Issues Ingrained in Nuclear Energy-related Organizations

- National culture is embedded in values and social structures and affects the work methods of individuals and the activities of organizations.
- The unique mindset and groupthink in Japan, the pressure to conform tacitly or forcibly to the opinion of the majority, and the tendency to maintain the status quo are all very strong, and they can be a problem.
- As a result of the sub-optimization of information sharing in terms of the contents and scope, Truly needed information does not get appropriately shared.
- Recognizing those characteristics, nuclear energy-related organizations have to take drastic steps to improve their way of conducting their works.

Basic Objectives of Nuclear Energy Use

Appropriate use of nuclear energy is necessary, while **thorough risk-management by responsible regime is precondition**.

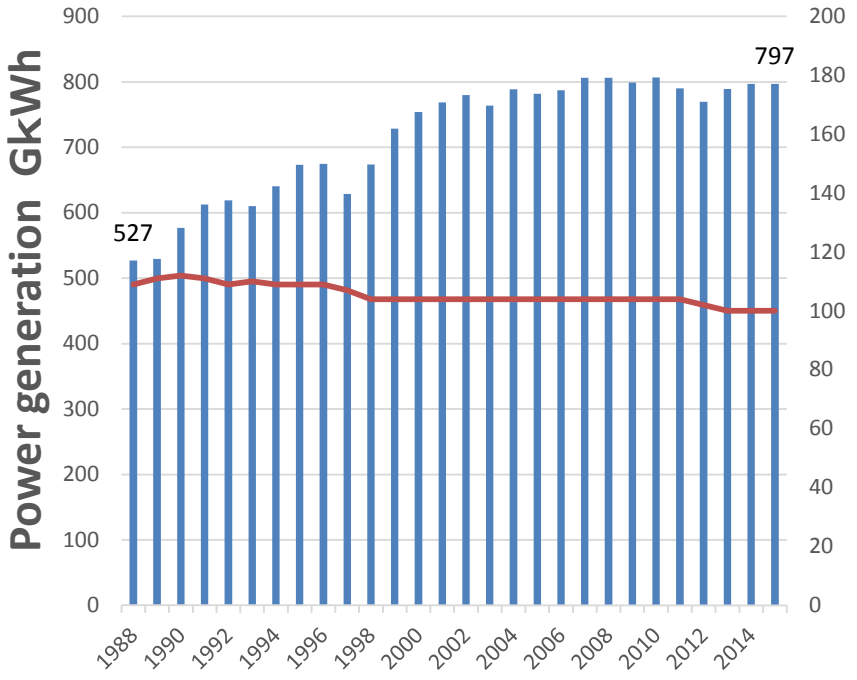
1. Fukushima Accident: Seriously reflect on the accident and **lessons learned.**
2. Nuclear energy, addressing **global warming issues and people's livelihood and the economy**
3. Nuclear energy in the **global context**
4. **Peaceful use of nuclear energy**: enhancing non-proliferation and security regimes
5. **Rebuilding public trust**, as a major precondition
6. Steadily pursuing **decommissioning and radioactive waste disposal**
7. **Improving quality of life** through the use of radiation and radioactive isotopes
8. **Strengthening the foundations** for the use of nuclear energy

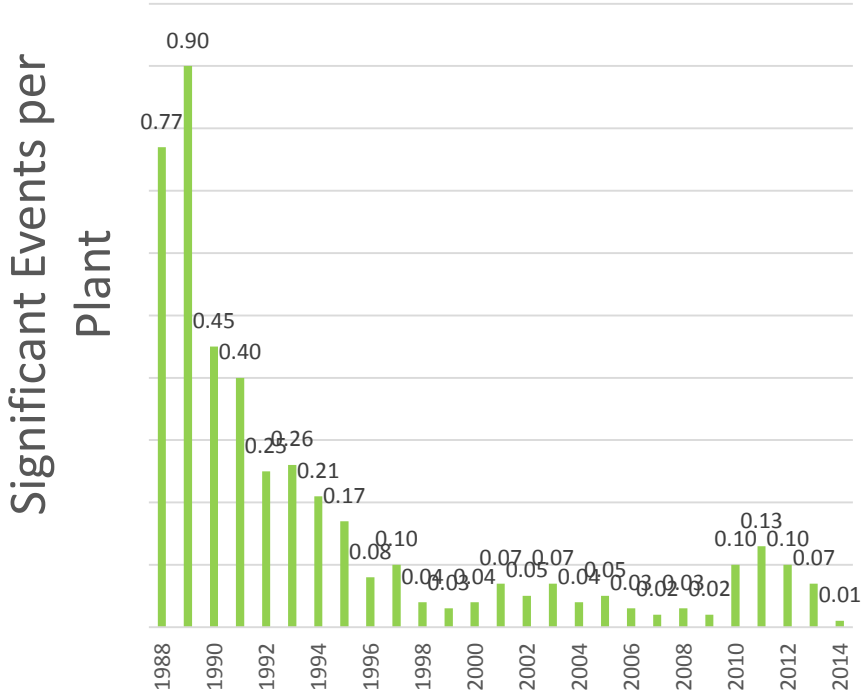
Important initiatives and directions

Continuous improvement of safety

Economic and safety improvement coexist in USA by voluntary safety management and improvement of regulation

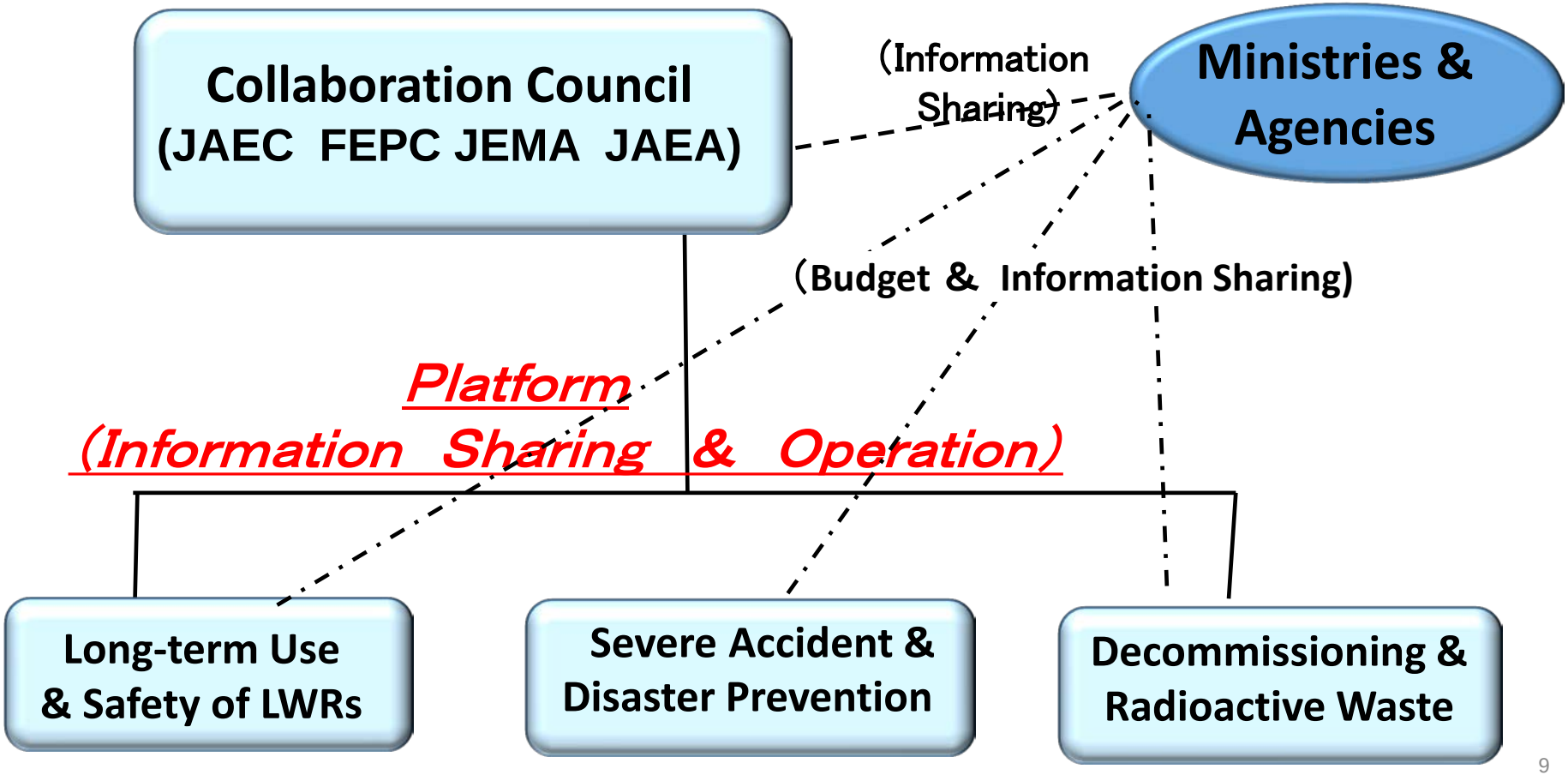
US nuclear power generation increased 50% and reactor accidents decreased 1/30th after 10 years from the TMI accident.



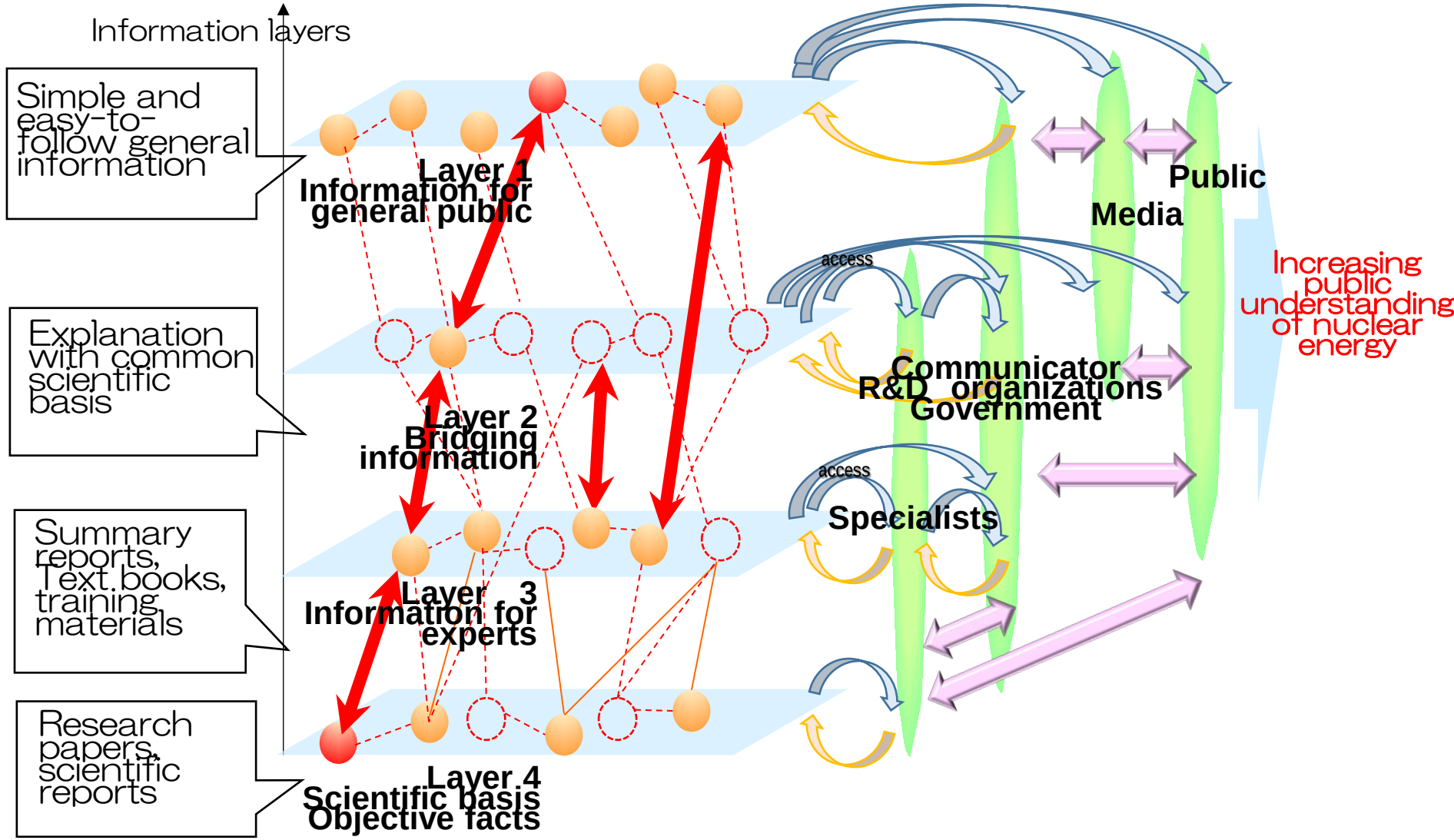


Collaboration Program of Nuclear Energy related Organizations

Vision : Improvement of Knowledge & Technology Base
Deepening Public and Experts' Understanding
Improvement of R&D Management



Increasing public information with evidence in Japanese



knowledge-based Information network

public communication

Providing Public with Policy Information

- **It is common to provide public with easy-to-understand information regarding nuclear energy policies in the U.S. and the UK.**
- **Such sufficient effort has been not made in Japan.**
- **JAEC has published explanation for public on utilization of plutonium in Japan. *(note)***
- **Each ministry and agency in Japan is also expected to provide policy information on HP etc.**

[note] "*Plutonium Utilization in Japan*" is posted on the JAEC's website:
http://www.aec.go.jp/jicst/NC/about/kettei/kettei171003_e.pdf

Public communication

- Informing the public (push-type activities) does not necessarily promote their understanding.
- Preparing knowledge-based information and evidence-based policy information and making them available to the public constitute the infrastructure for communication.
- Stakeholder* dialog/engagement (pull-type activities) is necessary. It has been conducted in UK for geological disposal facility siting and in USA for environmental clean-up of legacy facilities for nuclear weapon production.
- Learning the lessons will promote our understanding of the complex, multi-disciplinary characteristics of the communication.

*Stakeholder: a person, group or organization that has interest or concern.

Science/nuclear communication in UK

Long history of Science Communication in UK, but UK government failed in public communication at BSE disease.

1. **UK government science advisory system**: a Chief Scientific Advisor and Chief Scientific Advisors in each government department.

2. **Scientific Advisory Group in Emergencies (SAGE):** a system for being able to advise government using scientific information in emergencies.

3. **sciencewise:** UK national center for public dialog in policy making involving science and technology

4. **British Science Association** (ref.1)

5. **Science Media Centre**: Independent organization for the promotion of more expert information at times when science is under attack in the headlines.

6**. Nuclear Industry Council**: A partnership between the UK government and the nuclear industry. Published a report on nuclear energy and public engagement, **" In the Public Eye**"

7. **Public/stakeholder dialog**, ex. Geologic disposal facility siting (ref2).

ref.1: Katherine Mathieson, "What do we know about public attitudes & public engagement about nuclear? http://www.aec.go.jp/jicst/NC/iinkai/teirei/siryo2018/siryo09/ssiryo1-1-1.pdf
ref.2: Steve J. Robinson, " Public and Stakeholder Dialog", http://www.aec.go.jp/jicst/NC/iinkai/teirei/siryo2018/siryo09/ssiryo1-1-2.pdf

Stakeholder dialog/engagement

- **Building trust** is the purpose of communication
- Key for building trust: **Respect to participants,** openness and transparency, professionalism, listening, honesty, integrity etc.
- **Best practices** are **find stakeholders by interests**, listening, build on common ground, early dialog, send staff responsible, **use Joint fact-finding** (Agree who provides facts & how facts are found. **Do not try to inform facts first/directly.**)
- Skills will be developed by **facilitation training**.

Source: Steve Robinson, UK Japan Stakeholder Dialog & Engagement Workshop, British Embassy Tokyo, Feb. 2014

Be aware of psychological effects of messages of nuclear safety/risk

- "What's is being done to ensure an accident like Fukushima can never happen again?" Use of such language is not entirely restricted to the nuclear industry.
- **No other industry talks about an accident 'never being allowed to happen again**'. In speaking so much and in such a way about safety - implying that absolute safety is both possible and necessary.
- The response of BP to the enormous deepwater Horizon oil spill in 2010, for example, seems to have been subtly different.
- "BP is doing everything within its power to learn from this horrible spill so that it is unlikely to ever happen again, and if it does, so they will be able to respond more quickly and effectively next time."
- Human or psychological rationality is different but not inferior to 'technical' rationality. **All communication should put psychological rationality first.**

Ref.: Malcom Grimston, "The Paralysis in Energy Decision Making", Whittles Publishing, 2016, chapter 11

"Public understanding nuclear energy, It's not (just) about the science", http://www.jaif.or.jp/cms_admin/wp-content/uploads/understanding/annual/47th/47-s1_grimston-e.pdf

- **Be aware of psychological effects of risk communication**.
- **Communication is not necessarily risk-communication**.
- Communicate by interest of the **focus group**.

White Paper on Nuclear Energy 2016

- Published for the first time since March 2010
- Describing the overall picture of nuclear energy use, including the government's efforts based on the lessons learned from the Fukushima accident
- Plan to publish annually

Chapter 1 Response to the TEPCO Fukushima Daiichi NPP accident and efforts for recovery and reconstruction of Fukushima

Chapter 2 Basic activities for the use of nuclear energy

Chapter 3 The use of nuclear energy and radiation

Chapter 4 Research and development of nuclear energy

Chapter 5 International cooperation

Reference: http://www.aec.go.jp/jicst/NC/about/hakusho/index_e.htm

Thank You