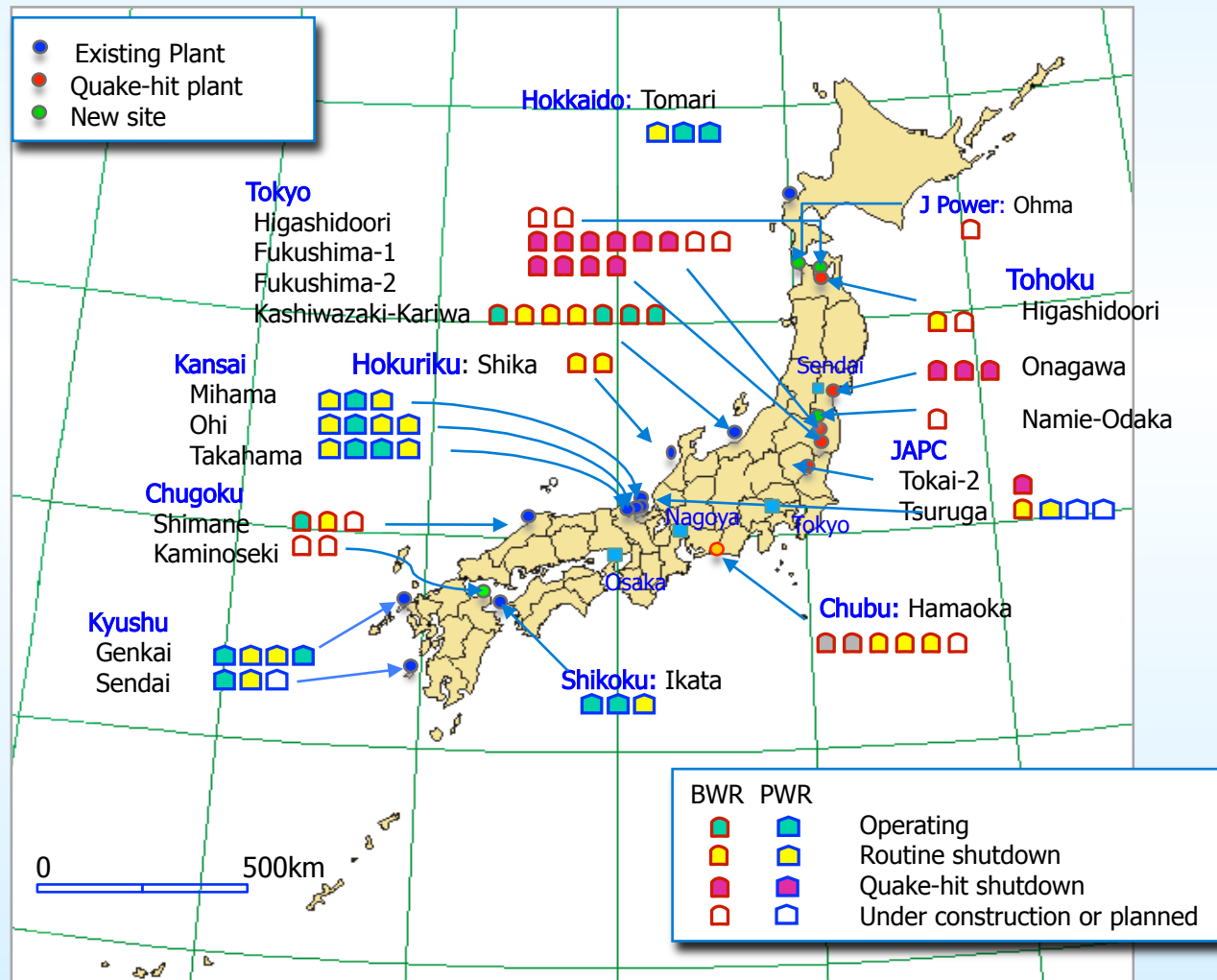


1.1 Nuclear Plants of Japan



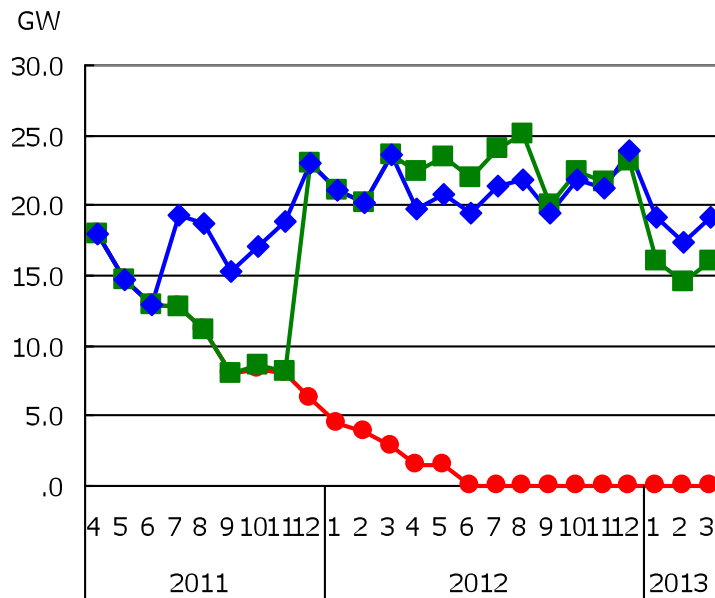
38 out of 54 nuclear plants are off-line in early August.



1.2 Resumption from Maintenance



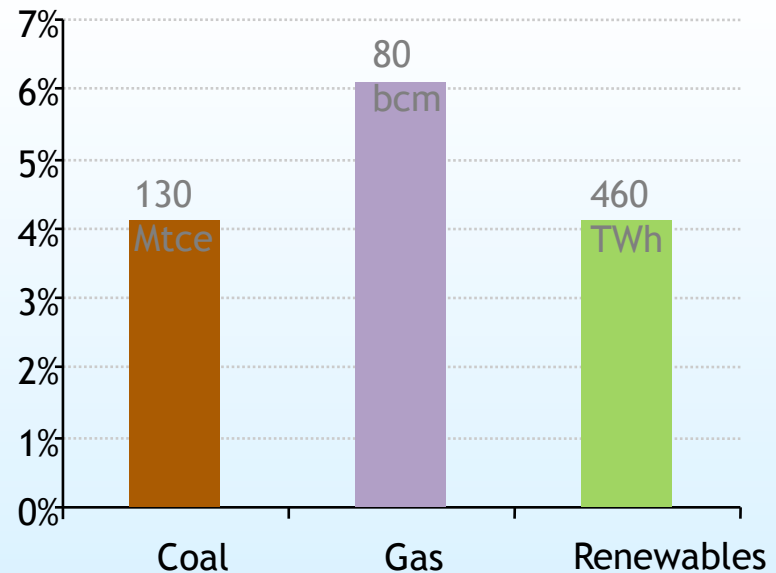
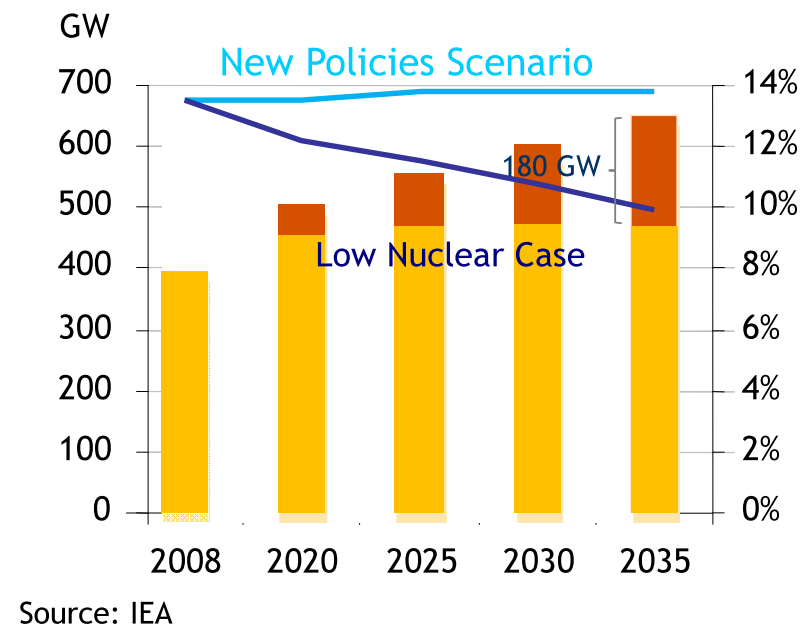
1. After the Fukushima accident, local societies are seriously concerned about nuclear safety.
2. Japanese government decided that all the nuclear power plant should undergo a stringent "Stress Test" before re-start up after regular inspection and maintenance.
3. If no nuclear plant resumes operation, fossil fuel consumption for power generation will increase significantly.



2 Low Nuclear Case: IEA

If nuclear capacity additions are lowered to a half (350 GW → 180 GW), fossil fuel consumption for 2035 will increase collectively;

1. 130 Mtce coal : current steam coal export from Australia,
2. 80 bcm gas : current LNG capacity of Qatar, and
3. 450 TWh RE : 5 times the current German RE production



3.1 Long-term Scenarios for Japan



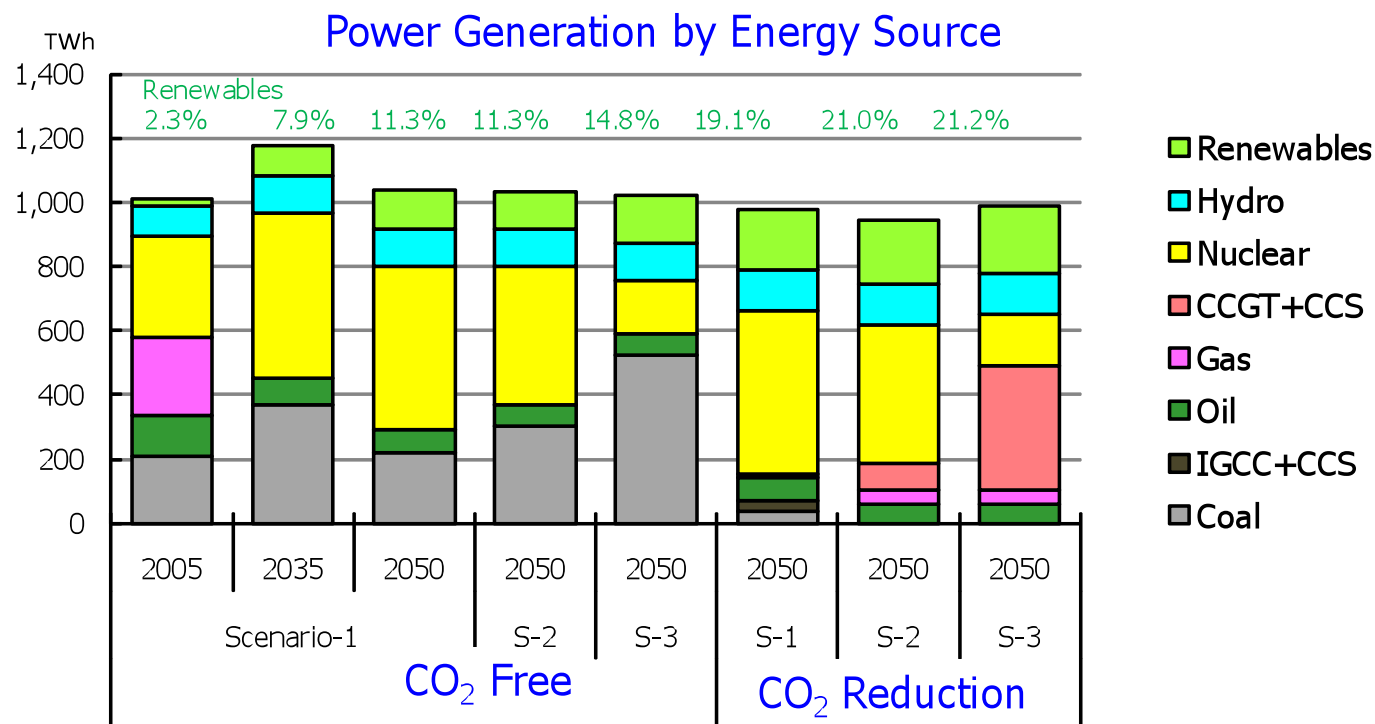
Scenario 1: The installed nuclear power generation capacity in 2030 (68 GW) projected in the Basic Energy Plan of 2010 will be maintained in 2050, which is substantially higher than the 48.8 GW existing before the Fukushima accident.

Scenario 2: The Fukushima No.1 Power Plant will be decommissioned, whereas the Fukushima No.2 will resume operations in 10 years' time. New plants except for the Higashidoori Plant of Tokyo EPC will be constructed as scheduled. Thus, the installed nuclear capacity is projected to increase to 57 GW in 2050.

Scenario 3: Both the Fukushima No.1 and the Fukushima No.2 (9.1 GW in total) will be decommissioned, and nuclear power plants already under construction only will go on line. Nuclear power plants will be decommissioned after 60 years of service. This scenario results in a total nuclear power generation capacity substantially decreasing to 22 GW in 2050.

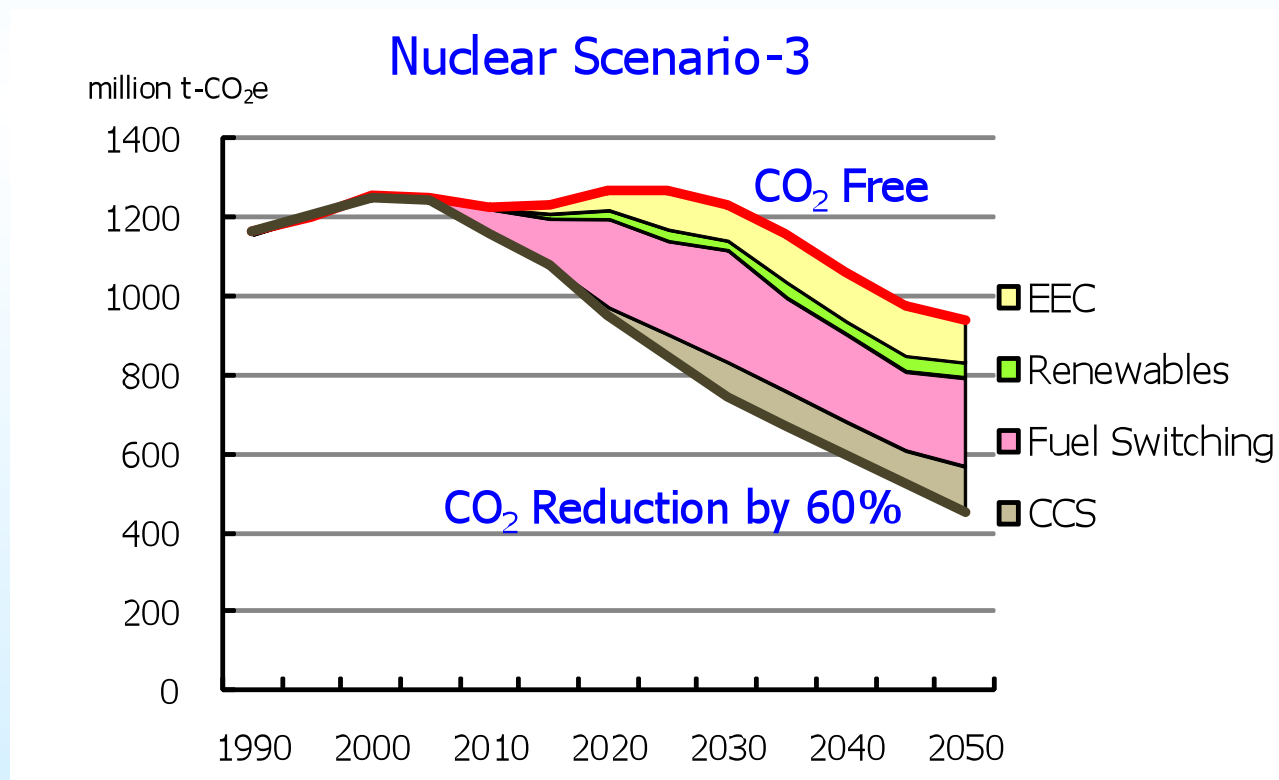
3.2 CO₂ Constraints and Energy Mix

1. Without CO₂ constraints, coal will replace nuclear.
2. With CO₂ restrictions, *natural gas and renewables will replace nuclear*, with significant enhancement of EEC.
3. However, CCS, a non-proven technology for Japan, needs to be replaced by more prudent and realistic options.



3.3 Nuclear Scenario-3

1. As population declines while EEC is enhanced, Japanese energy consumption will begin to reduce around 2030.
2. With restrictions on CO₂ emissions, fuel switching with “CCGT+CCS” is pursued significantly, while potential of CCS is poor in Japan.
3. Renewables, together with stabilized electricity supply system, must be developed more proactively.



Summary



1. World energy demand will increase significantly along with population increase and economic growth mainly in developing countries.
 - Securing sufficient amount of energy at affordable prices continues to be the major challenges for sustainable development.
 - Save for global warming, effects of air and water pollution, acid rains, and heat island cities will become severer with increasing energy consumption.
2. Energy policy after the paradigm change
 - **Efficient use of fossil energy** : natural gas will be used more widely
 - **Nuclear** : although substantially set back from the previous target
 - **Natural or renewable energy** : not so powerful yet as expected
 - **Energy saving** : changes in industry structure and life style

Northeast Asia should pursue a Low-carbon Society proactively with Green Growth policies in the post-Fukushima era.

Thank you