

COUNTRY FACTSHEET

JAPAN

WHAT ARE THE NATIONAL CIRCUMSTANCES THAT INFLUENCE DEEP DECARBONIZATION IN JAPAN?

- Uncertainty of the availability of nuclear power as a consequence of the 2011 Fukushima Dai-ichi Nuclear Plant accident: government intends to reduce the dependency on nuclear power compared with its share before the accident.
- Vulnerability of energy security because of a lack of domestic fossil fuel resources: Japan is dependent on imported fossil fuels and is likely to be the world's largest LNG importer in the next decade. Moreover, the potential for renewable energies to improving import dependency tends to be low, since the land area is relatively small compared to the scale of economic activity and population.
- Difficulty of the energy system reform: reform is needed to accelerate the introduction of renewables, including the capacity of transmission, backup energy system, deregulation of electric utilities and demand side management.

WHAT ARE THE MOST PROMINENT STRATEGIES TO BE IMPLEMENTED FOR DEEP DECARBONIZATION IN JAPAN?

- Substantially improving energy efficiency and electrification in the end-use sectors: total final energy consumption in 2050

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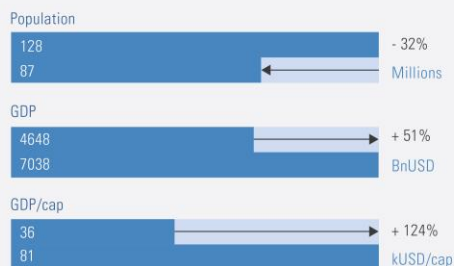
- National Institute for Environmental Studies (NIES)
- Mizuho Information & Research Institute, Inc. (MHIR)
- Institute for Global Environmental Strategies (IGES)

decreases substantially to reach approximately half of the 2010 level despite a continuation of economic growth at an average rate of 1%.

- Decarbonization of electricity based on renewable energies and fossil fuel with CCS, given the reduced dependency on nuclear power: In 2050 the share of renewable energy (including hydropower) and CCS-equipped plant reaches approximately 60% and 35% of total electricity generation, respectively, in case of almost complete phase out of nuclear power.
- Promoting renewable energies, including the integration of variable renewable energies (VREs): there is a huge challenge to integrate VRE into the electricity system. Flexible resources, such as pumped hydro and natural gas plants, demand side management and reinforcement of interconnection capacity, are required to complement large-scale deployment of VREs.

Illustrative pathway: JP - Limited CCS*

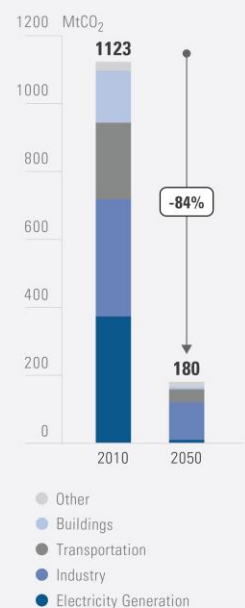
Development indicators from 2010 to 2050



Pillars of decarbonization from 2010 to 2050



Energy-related CO₂ Emissions



*This illustrative pathway is one of the 3 pathways developed in the DDPP country report.