

Decarbonization of Industry Sector



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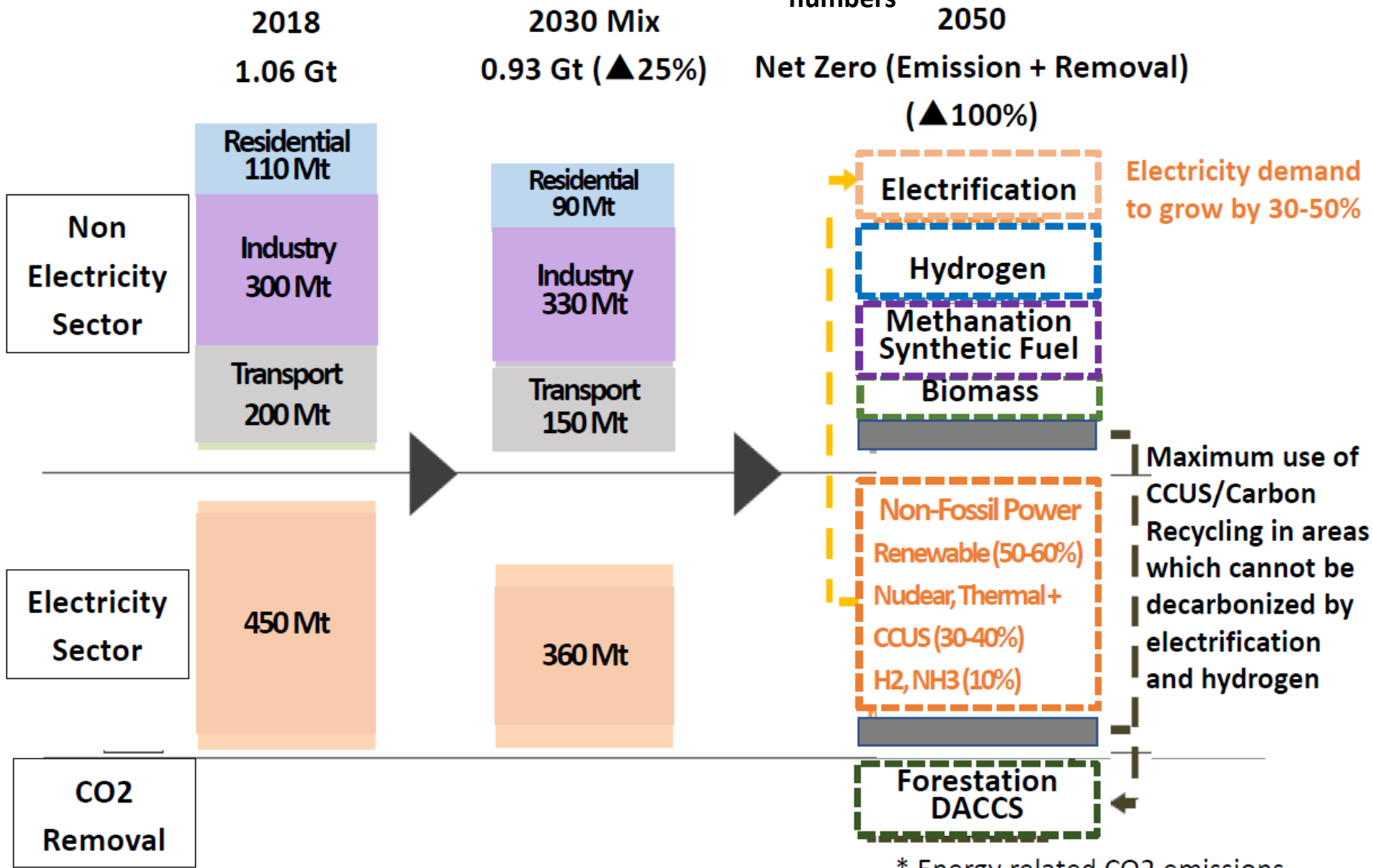
Green Growth Strategy towards 2050 Carbon Neutrality (Dec 2020)

- PM Suga's announcement of 2050 carbon neutrality goal (Oct 2020)
- Industrial policy for achieving carbon neutrality by 2050 with a virtuous cycle of economic growth and environmental protection
- Set ambitious goals for 14 priority fields spelling out current challenges and future actions
- Comprehensive policies for achieving goals (budget, tax, regulatory reform, standardization and international cooperation)



Image of Carbon Neutrality 2050

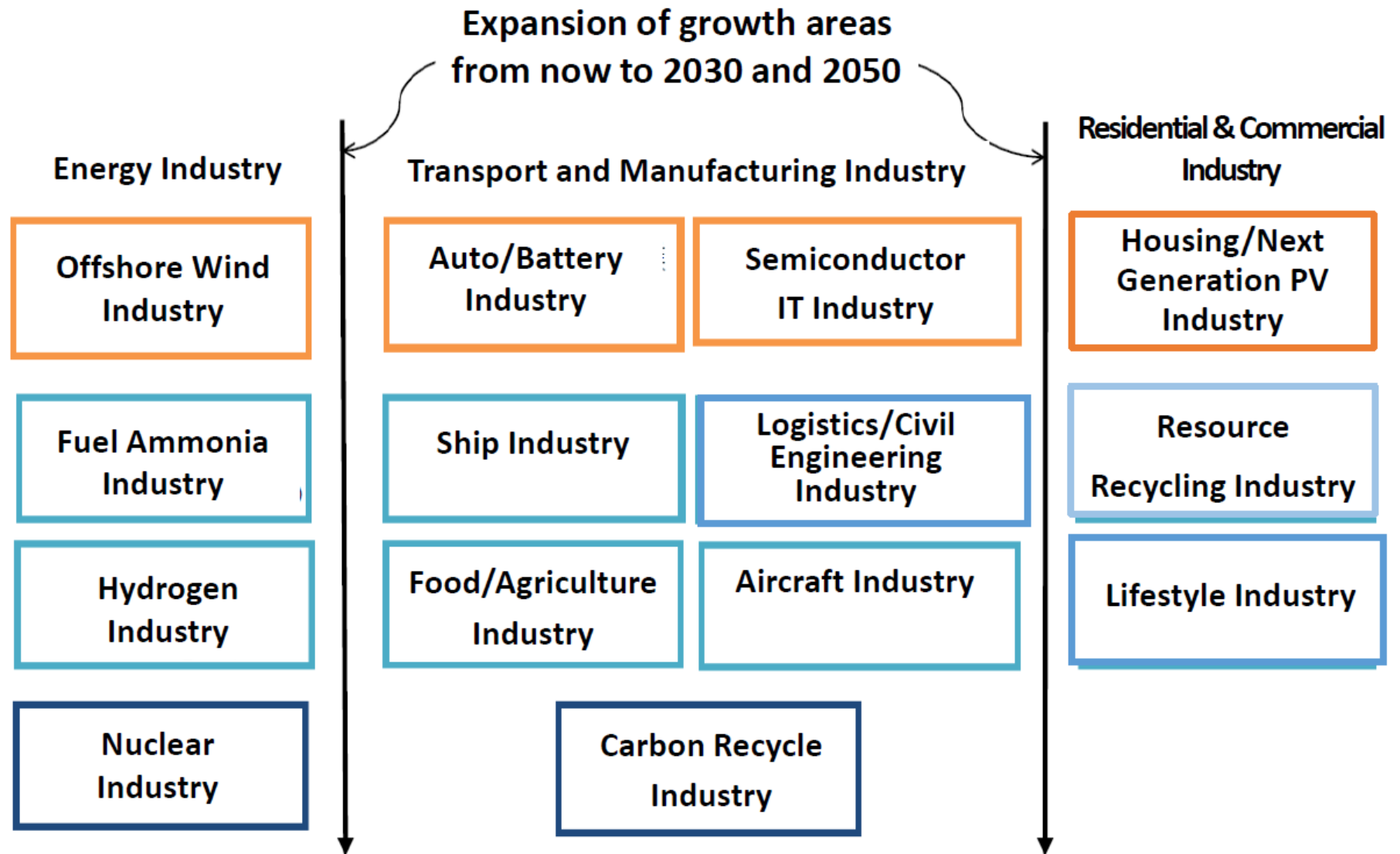
Reference number for further discussion. Plural scenarios to be considered not limited to these numbers



* Energy related CO2 emissions

Source: METI "Green Growth Strategy towards 2050 Carbon Neutrality (Dec 2020)

14 Key Industry Areas for 2050 Carbon Neutrality



Policies and Measures

■ Budget

- ◆ Green Innovation Fund (2 trillion JPY over 10 years) for decarbonization of power, electrification, hydrogen and CCUS
- ◆ For stimulating private sector R&D and investment (15 trillion JPY)

■ Taxation

- ◆ Taxation for promoting investment for carbon neutrality
- ◆ Taxation for promoting R&D

■ Finance

- ◆ Green, Transition and Innovation Finance
- ◆ Long-term finance and output-based subsidized interest payment scheme (1 trillion JPY for 3 years)
- ◆ Green investment promotion fund (80 billion JPY)
- ◆ Expanding carbon disclosure under TCFD

■ Regulatory Reform, Standardization (Hydrogen, Offshore Wind, EV, Battery etc)

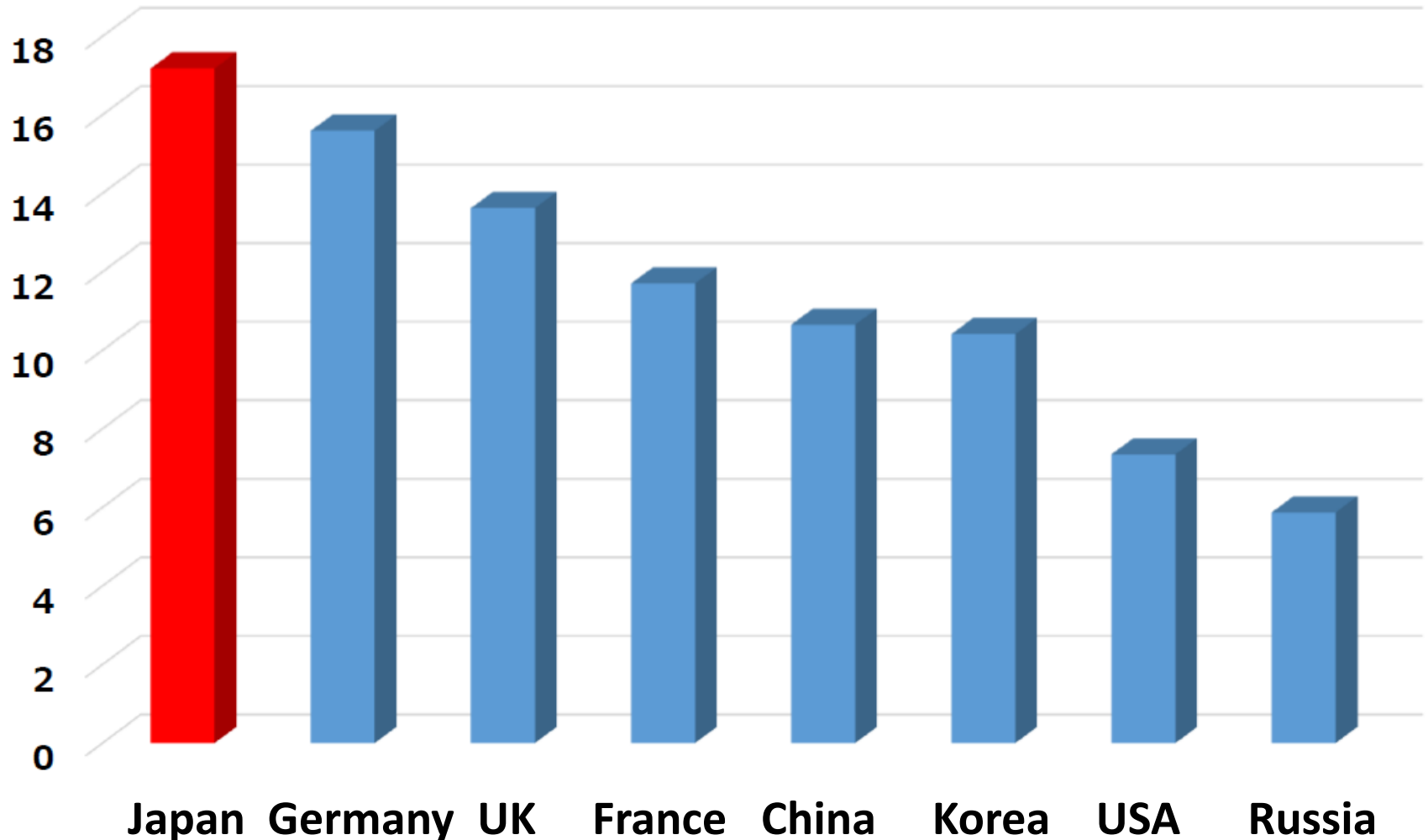
- Carbon pricing conducive to growth strategy (credit trading, carbon tax, border adjustment measures)

■ International Collaboration

Highest Electricity Price for Industry

Electricity Tariff for Industry Sector in Major Countries (2016)

JPY/kWh



Challenges for Decarbonizing Industry Sector

- Efficiency, electrification, hydrogen and CCUS are the keys for decarbonization of industry sector
- Decarbonization of electricity is the prerequisite for electrification.
- Electricity prices for industry in Japan is already very high. Higher electricity price could hamper electrification as well as eroding international competitiveness of industries.
- Government should clarify the “price tag” of 2030-2050 pathways to carbon neutrality.
- Industry sector is also the source of decarbonization technologies. Carbon leakage should be avoided for securing technology basis in Japan. If necessary, the burden sharing between industry and other sectors should be examined.
- Hydrogen and CCUS technologies must be substantially reduced to the level of cost parity with current energy sources (e.g. H₂ cost 100 JPY/Nm³ → 8 JPY/Nm³ in the steel sector). They must also be affordable for Asian developing countries, which hold the key for global decarbonization.

Thank you very much