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## Initiatives to Address Global Environmental Issues



At Kyushu Electric Power, we pursue a range of initiatives aimed at both reducing greenhouse gas emissions in the supply and use of electricity. On the supply side, these include both making use of nuclear power (with safety as our chief consideration) and the proactive development and adoption of renewable energy, as well as ongoing efforts to improve efficiencies of thermal power generation and reduce losses in the transmission and distribution processes. On the use side, initiatives include cutting back on electricity use in offices and the use of systems like EcoDrive, which promote efficient use of energy and resources.

The Kyuden Group is determined to meet the goals of our electricity business as a whole through an array of actions set forth in our Action Plan for Achieving a Low-carbon Society through the electricity business. These include using nuclear power—again, with a heavy focus on safety—and renewable energy, improving the efficiency of thermal power generation, appropriate maintenance and management, and offering services aimed at reducing use of carbon resources, such as those that promote energy efficiency and CO<sub>2</sub> efficiency.

### Reducing CO<sub>2</sub> Emissions

#### FY2017 Results

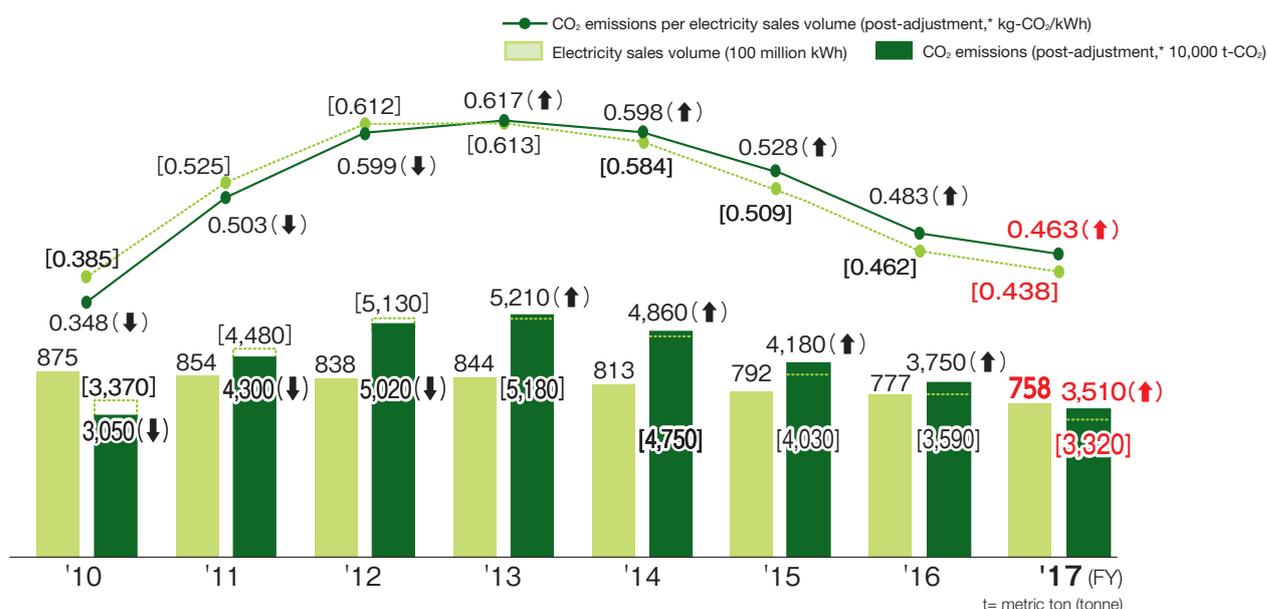
## CO<sub>2</sub> emissions were approximately 7% (2.4 million metric tons) lower in FY2017 than FY2016

Our CO<sub>2</sub> emissions for FY2017 were 35.1 million metric tons, with a CO<sub>2</sub> emissions per electricity sales volume of 0.463 kg of CO<sub>2</sub> per kWh\* (CO<sub>2</sub> emission factor). In addition to the stable, continuous operation (except during scheduled maintenance) of the Sendai Nuclear Power Station Units 1 and 2, other factors such as lower electricity sales volume and an increase in power generation derived from renewable sources have meant that compared to FY2016, CO<sub>2</sub> emissions have dropped by 7%, and the CO<sub>2</sub> emission factor by 4%.

The high emission factor is a result of the feed-in tariff system (FIT): Kyushu's more rapid uptake of solar power generation than other regions means the area's CO<sub>2</sub> emissions are deemed to be higher than the actual amount of CO<sub>2</sub> emitted when calculating FIT adjustments.

\*These are provisional values; the government will officially release finalized values based on the Act on Promotion of Global Warming Countermeasures.

■ CO<sub>2</sub> Emissions for Kyushu Electric Power Company



Figures in [ ] are actual emission volumes and emissions factors  
 (↑) and (↓) indicate pre/post-adjustment increases/decreases, respectively, associated with CO<sub>2</sub> emissions credits, feed-in tariffs (FIT) and other considerations  
 \*Adjusted in line with CO<sub>2</sub> emissions credits and feed-in tariffs (FIT).  
 Note: Calculated according to the "Calculation and Announcement of Actual Emission Factors and Post-adjustment Emission Factors for Each Power Provider" released by the national government in accordance with the Act on Promotion of Global Warming Countermeasures (includes portion due to purchasing power from other companies). Total electricity sales volume differs after FY2016 as the government's guidelines for calculating CO<sub>2</sub> emissions were revised to exclude electricity supplied to remote islands (excluding the Goto Islands, which are handled as part of mainland Nagasaki Prefecture).

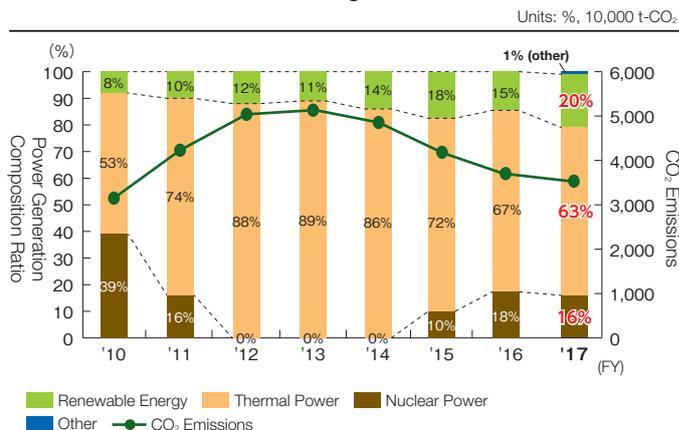
# Stable operation of nuclear power stations cuts CO<sub>2</sub> emissions by approx. 7 million metric tons

The reduction in CO<sub>2</sub> emissions achieved by our nuclear power stations in FY2017 is calculated to be approximately 7 million metric tons.

The shutdown of nuclear reactors in the wake of the Great East Japan Earthquake in March 2011 caused a major increase in CO<sub>2</sub> emissions, which peaked in 2013 and have trended downwards since then. In FY2017, stable operation of Sendai Nuclear Power Station Units 1 and 2 (except during scheduled maintenance) and the increase in renewable energy generation ensured that thermal power stations accounted for a lower share of all power generated. Consequently, emissions were down approximately 7% (2.4 million metric tons) year-on-year.

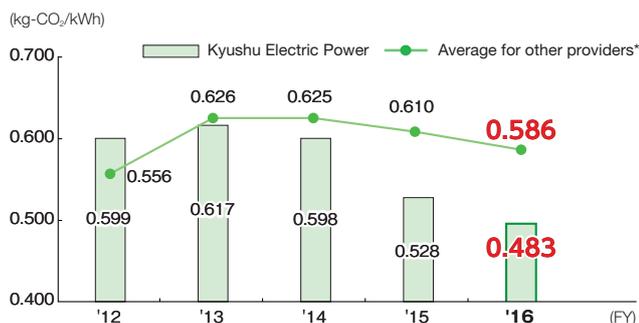
Nuclear power generation is similar to renewable energy in that it produces no CO<sub>2</sub> during power generation; thus, it is an excellent means of mitigating global warming and, from an energy security standpoint, remains an important energy option.

■ Power Generation Composition Ratio\* and CO<sub>2</sub> Emissions Volume Change Over Time



\*Power received from other companies does not include unspecified fuel types. The composition ratio shown here differs from the power source composition ratio for electricity sales volume.

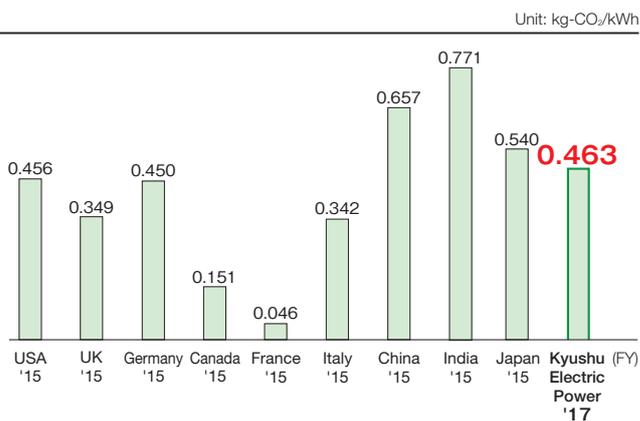
■ Comparison with Other Providers for CO<sub>2</sub> Emissions per Electricity Sales Volume (post-adjustment)



\*Average CO<sub>2</sub> emissions volume per electricity sales volume (post-adjustment) of former general power providers (nine companies), excluding Kyushu Electric Power.

\*See the section on environmental data (p. 50) for information on emissions of greenhouse gases other than carbon dioxide, and on greenhouse gas emissions (and reductions thereof) by Kyuden Group companies.

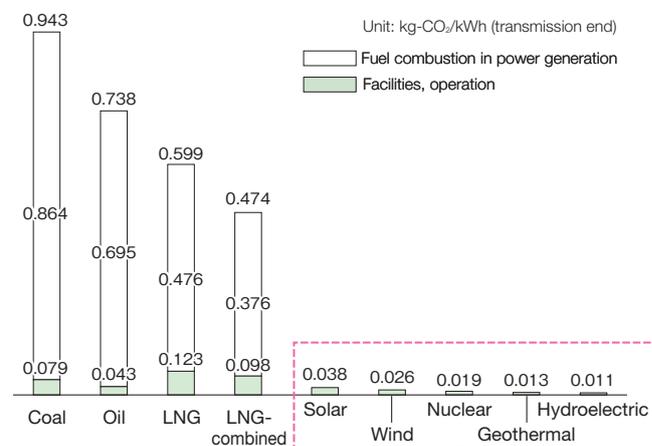
■ CO<sub>2</sub> Emission Factors of Major Countries



Source: Created based on CO<sub>2</sub> Emissions from Fuel Combustion 2017 (IEA)

## Reference: CO<sub>2</sub> emissions over lifecycle by power source in Japan

Besides the power generation process, CO<sub>2</sub> is emitted not only when burning fuel, but also when using energy at other times, including when constructing the power station; extracting, transporting, and refining fuel; and disposing of spent fuel. Even when these indirect emissions are considered, nuclear power and renewable energy have lower overall CO<sub>2</sub> emissions than other sources.



Source: Central Research Institute of Electric Power Industry report