

## Building a decarbonized society

In addition to lighter weight products that lead to improved vehicle fuel efficiency, we are reducing CO<sub>2</sub> emissions through improved productivity and more efficient distribution.

### Basic philosophy

In addition to achieving the goal set under the Paris Agreement of keeping the rise in the global average temperature to below 2°C compared with pre-Industrial Revolution levels, we must reduce greenhouse gas emissions to virtually zero by the end of this century. With the aim of zero CO<sub>2</sub> emissions as presented in the TG 2050 Environmental Challenge, we are utilizing new production techniques and product development skills with an eye toward next-generation vehicles in addition to the manufacturing skills we have cultivated over time. Plans for execution are included in our

7th Environmental Action Plan with activity targets for FY2025. We have also set the goal of cutting CO<sub>2</sub> emissions 50% (vs FY2013 levels) by 2030, the midpoint for the TG 2050 Environmental Challenge, and implementing stepwise, specific CO<sub>2</sub> reductions. We are also conducting activities to reduce CO<sub>2</sub> emissions over the entire life cycle, with consideration of parts and materials procurement, product development, production, and use up to the disposal stage. In June 2021 we started a company-wide, cross-sectional carbon neutrality project to accelerate these activities.

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

The Toyota Gosei Group is reducing CO<sub>2</sub> emissions in the product stage, production stage, and over the entire lifecycle to achieve the targets set for FY2025.

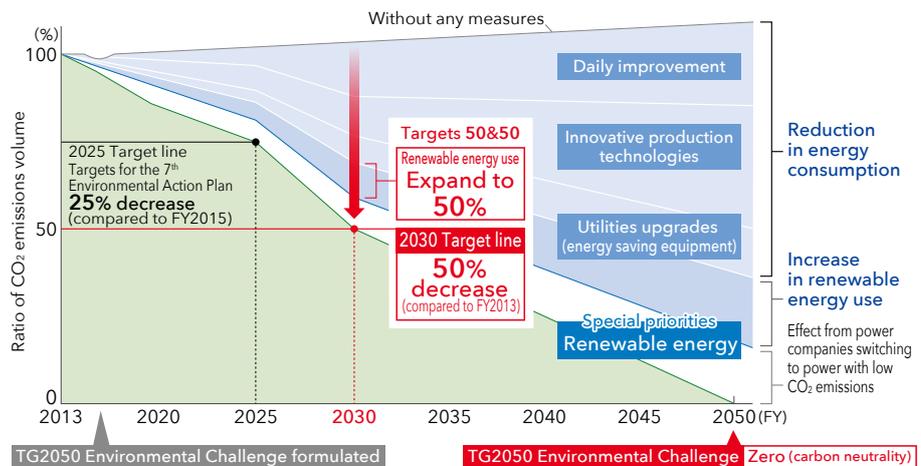
#### •Product development stage: Environmentally-friendly product development .....

In the product stage, we are making headway in providing parts for environmentally-friendly, next-generation vehicles and developing products with lighter weight for greater fuel efficiency and lower energy consumption across the areas of materials technology, product design, and production technology. Examples include the

development of hydrogen tanks for FCEVs and aggressive efforts to switch materials (e.g., from metal or rubber to plastic) in instrument panel peripherals and other interior products and in functional parts such as hoses, reduce the number of components, integrate functions, and use thinner material while ensuring strength.

#### •Production stage: Reductions with development of new processes, daily kaizen .....

We have set 2030 milestones for achieving zero plant CO<sub>2</sub> in the TG 2050 Environmental Challenge, and are working to achieve this with regular *kaizen*, production technology innovations, more efficient utilities, and expansion of renewable energy in plants.



#### •Recycling: Reductions in materials and parts procurement, more efficient distribution .....

Toyota Gosei has prepared and distributed green procurement guidelines for materials and parts procurement with low environmental impact. Together with regular supplier surveys to ensure compliance, we also provide support when improvements are needed.

We have reduced CO<sub>2</sub> emissions with more efficient distribution, including truck allocation with improved payloads and shorter distribution distances and reviews of transport modes.

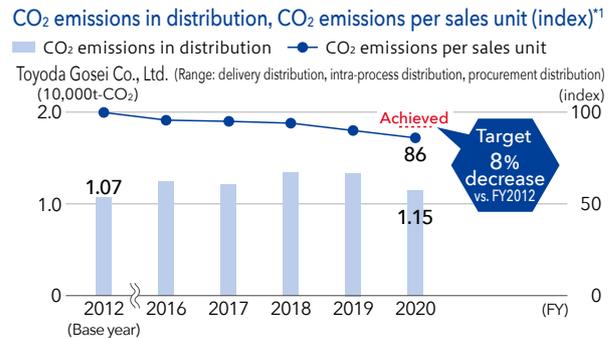
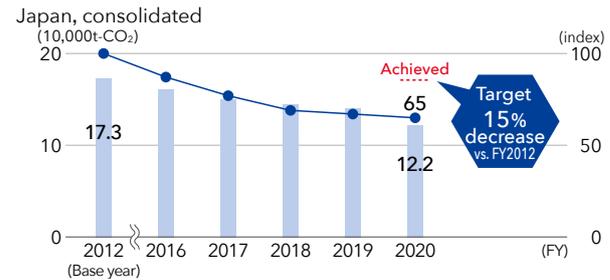
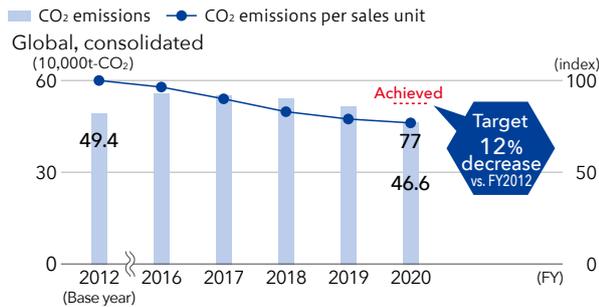


•Renewable energy

We are expanding renewable energy, including the installation of clean solar and wind energy generation equipment and the purchase of green power. This reached 4% of our total global electricity consumption

by the end of FY2020, more than meeting our target of 2%. Our next challenge is to raise clean energy levels to at least 20% globally by FY2030.

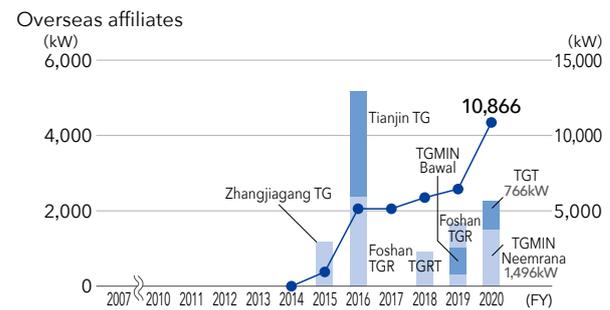
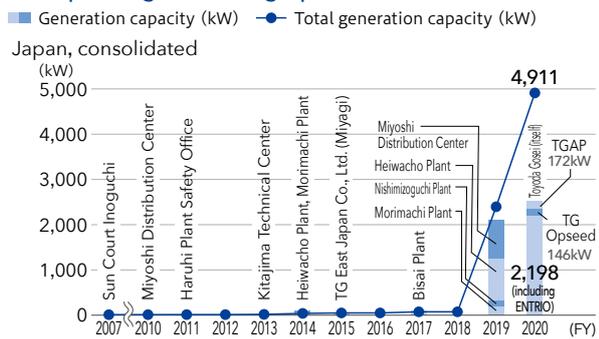
CO<sub>2</sub> emissions, CO<sub>2</sub> emissions per sales unit (index) \*1



\*1 Emissions per sales unit (index) is a figure obtained taking FY2012 as 100 [CO<sub>2</sub> conversion factor]  
The CO<sub>2</sub> conversion factors used for Japan\*2 are the 1990 Keidanren factors. The CO<sub>2</sub> conversion factors used for other countries are from the GHG Protocol (2001).

\*2 Electricity: 0.3707t-CO<sub>2</sub>/MWh, class A fuel oil: 2.69577t-CO<sub>2</sub>/kL, LPG: 3.00397t-CO<sub>2</sub>/t, Town gas: 2.15701t-CO<sub>2</sub>/1,000 Nm<sup>3</sup>, Kerosene: 2.53155 t-CO<sub>2</sub>/ kL, LNG: 2.68682t-CO<sub>2</sub>/t, Gasoline: 2.36063t-CO<sub>2</sub>/kL (excluding external factors of gas companies' town gas heat conversion)

Solar power generation graph (does not include stand-alone systems such as outside lights with solar panels)



Reductions in 6 greenhouse gases\*3

Of the six greenhouse gases, Toyoda Gosei Co., Ltd. uses three (HFC, PFC, SF<sub>6</sub>) and is conducting activities to reduce all of them. By FY2015 we had completed a switch to alternative gases with a low environmental impact for the shield gas used in the production of steering wheel cores and other gases. This has resulted in a 74% decrease in greenhouse gases since FY2012. We will continue these reduction activities in the future.

Trend in greenhouse gas (6 gases) emissions (CO<sub>2</sub> equivalents)



\*3 Hydrofluorocarbon (HFC), perfluorocarbon (PFC), sulfur hexafluoride (SF<sub>6</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), nitrogen trifluoride (NF<sub>3</sub>)