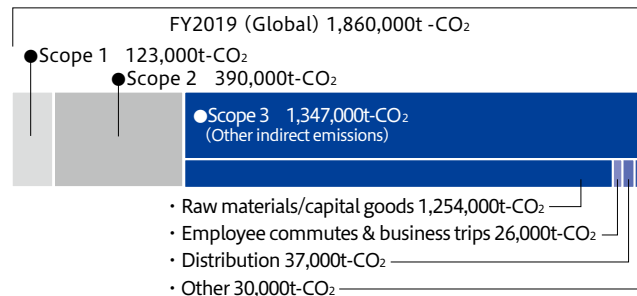


### Environmental impact in the value chain

From the perspective of preserving the earth, we have surveyed and disclosed not only GHG emissions (Scope 1\*<sup>1</sup>, Scope 2\*<sup>2</sup>) in our business activities but also emissions in our entire value chain including excavation of raw materials and product use and disposal (Scope 3\*<sup>3</sup>). To increase precision for a more accurate picture, we reviewed the calculation method and data collection for Scope 3.

\*1 Greenhouse gas emissions emitted directly by the company itself (natural gas and other fossil fuels, etc.)  
 \*2 Indirectly emitted greenhouse gases (electricity, etc.)  
 \*3 Greenhouse gases emitted in the supply chain that are indirectly emitted by the company (manufacturing, transport, business travel, commuting, etc.)

### CO<sub>2</sub> emissions by scope level



## 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 believe that we must reduce greenhouse gas emissions to virtually zero by the end of this century. With the aim of minimizing 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 6th Environmental Action Plan with activity targets for FY2020. We have also set the goal of cutting CO<sub>2</sub> emissions 43% by FY2030, the midpoint for the TG 2050 Environmental Challenge, and implementing stepwise, specific CO<sub>2</sub> reductions. To reduce CO<sub>2</sub> emissions over the entire product lifecycle, we are making efforts to increase efficiency in distribution and other areas.

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

The Toyoda Gosei Group is reducing CO<sub>2</sub> emissions (per unit sales) in the product stage, production stage, and over the entire lifecycle to achieve the targets set for FY2020.

#### ● 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 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*

In the production stage, we are developing new production techniques that minimize energy usage and introducing energy-saving equipment through the Production Engineering Technology Environment Subcommittee started in FY2016.

We also conduct regular *kaizen* to thoroughly eliminate

waste. Today, the TG ESCO (expert team that conducts reduction activities with *genchi-genbutsu*) formed in 2016 is conducting *kaizen* activities that include the latest technologies and collecting and applying information on best practices from other companies.

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

Toyoda 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 are also making active efforts to reduce CO<sub>2</sub> emissions over the lifecycle with more efficient distribution, including reviews of truck allocation and transport modes with the aim of improving truck payloads and shortening distribution lines.

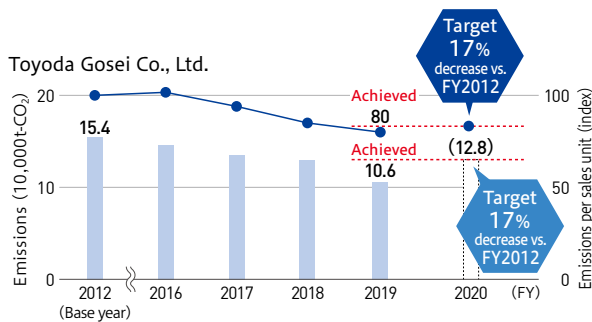
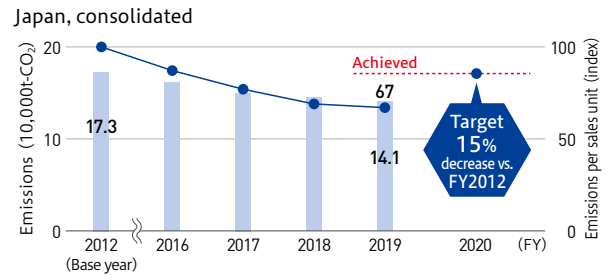
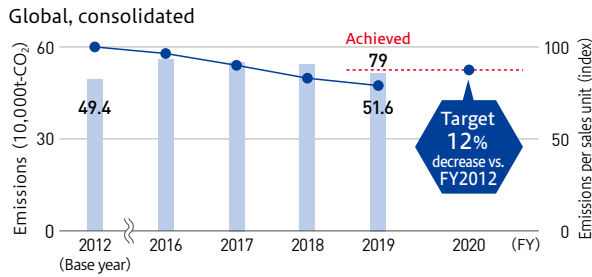


• Renewable energy

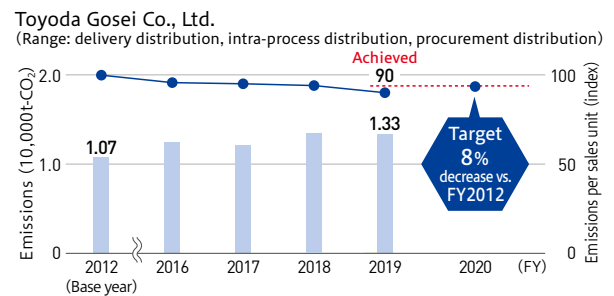
We are moving toward a target of using renewable energy equivalent to 2% of our total global electricity consumption by FY2020. This includes installation of solar and wind clean

energy generation equipment and the purchase of green power. 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)\*4



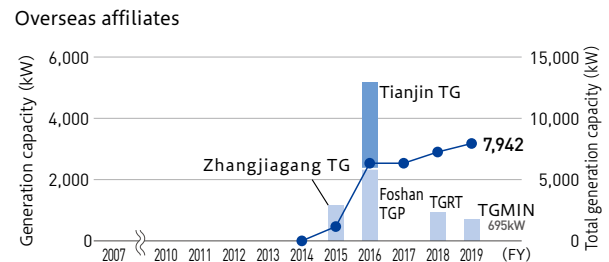
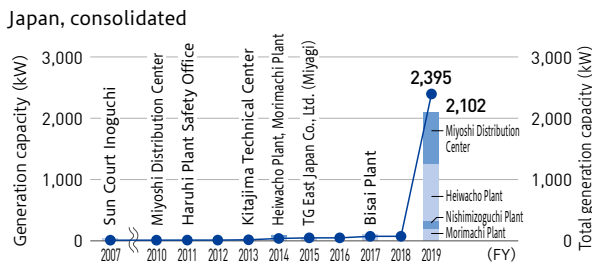
CO<sub>2</sub> emissions in distribution, CO<sub>2</sub> emissions per sales unit (index)\*4



\*4 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\*5 are the 1990 Keidanren factors. The CO<sub>2</sub> conversion factors used for other countries are from the GHG Protocol (2001).

\*5 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\*6

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.

\*6 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>)

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

