



Contribution of Chemical Industry



Japan Chemical Industry Association

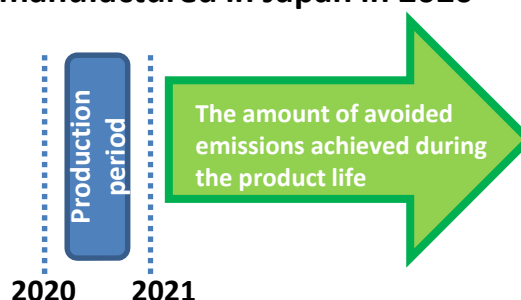
Chemical Industry contributes reducing greenhouse gas (GHG) emissions through providing products and services that avoid GHG emissions (collectively, the “products”).



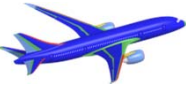

Reducing GHG emissions of product’s manufacturing phase is one part of the solution to realize the environmental benefits. Moreover reducing the GHG emissions throughout whole life cycle of the products is another important part to realize the environmental benefit.

◆ Examples of assessment of products to be manufactured in Japan in 2020

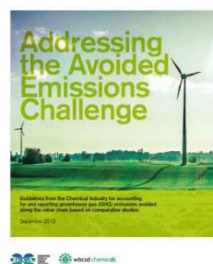
Evaluation of the below studies

The amount of avoided emissions achieved by the products manufactured in 2020 during their product life in Japan was calculated.

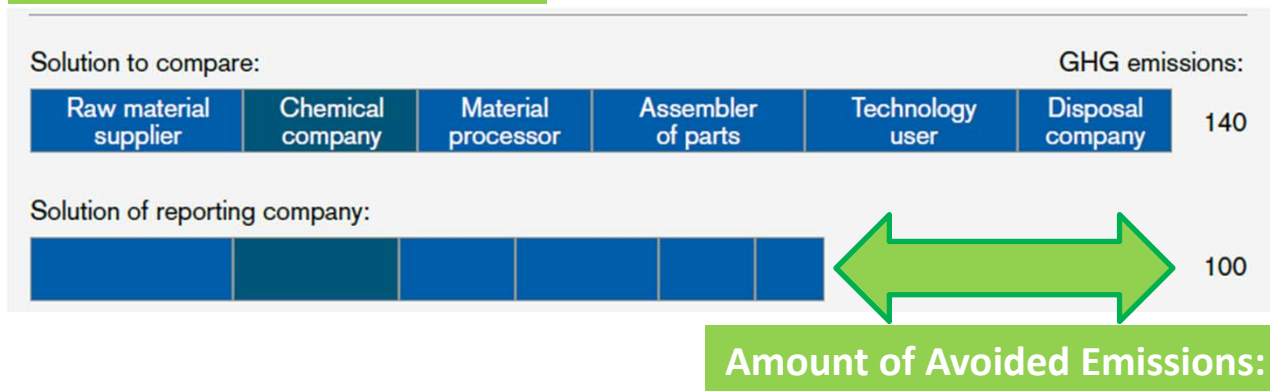





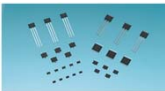

	Renewable energy	Energy-saving		
	Materials for solar power generation	Automotive materials	Aircraft materials	Materials for fuel efficient tires
Solution				
Functions	Through the conversion of solar energy directly into electricity	Through the reduction of the weight while maintaining the same levels of performance and safety	Same as on the left	Through the reduction of the rolling resistance on the road surface
Product under assessment	Power generated by silicon solar cells	Automobiles that use carbon fiber reinforced plastics	Aircraft that use carbon fiber reinforced plastics	Fuel efficient tires <ul style="list-style-type: none"> • For passenger vehicles (PCR) • For trucks and buses (TBR)
Solution to compare	Utility power	Conventional automobiles	Conventional aircraft	Conventional tires
Product life	20 years	10 years	10 years	PCR 30,000 km TBR 120,000 km
Production volume in 2020	1,760,000 kW	15,000 units	45 units	PCR 73 million units. TBR 5 million units.
Amount of the avoided emissions (tons)	▲8.98 million	▲75,000	▲1.22 million	▲6.36 million

Joint project of International Council of Chemical Associations (ICCA) and World Business Council of Sustainable Development (WBCSD) Chemical Sector developed practical guidelines on quantifying and reporting the contributions of the products in October 2013.



Definition of Avoided Emissions



Energy-saving				
LED related materials	Thermal insulation materials for building	Aluminum-plastics hybrid window	Hall effect devices and Hall effect ICs	Piping materials
				
Through the high light-emitting efficiency and long service life	Through the increase of air-tightness and thermal insulation performance of house	Through the increases of air-tightness and thermal insulation performance of housing	Through the increase of motor efficiency using a commutator-less DC motor fitted with inverter	Through the reduction of CO2 emissions in the pipe manufacturing phase
LED light bulbs	House that meet the energy-saving standard of 1999 (housing that uses thermal insulation materials)	Housing that meets the energy-saving standard of 1999 (housing that uses aluminum-plastics hybrid window and thermal insulation materials)	Inverter air conditioner (Hall effect devices as their parts)	PVC pipes
Incandescent light bulbs	Housing before the energy-saving standard of 1980 (housing that does not use thermal insulation materials)	Housing before the energy-saving standard of 1980 (housing that does not use thermal insulation materials)	Non-inverter air conditioners	Ductile cast iron pipes
10 years	Detached houses: 30 years Apartments: 60 years	Detached houses: 30 years	14.8 years	50 years
28 million units	Detached houses: 367,000 units Apartments: 633,000 units	Detached houses: 25,000 units	7,460 units (Number of air conditioners)	493,092 tons
▲7.45 million	▲76 million	Included in figure of at left	▲16.4 million	▲3.3 million