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Responding to Climate Change

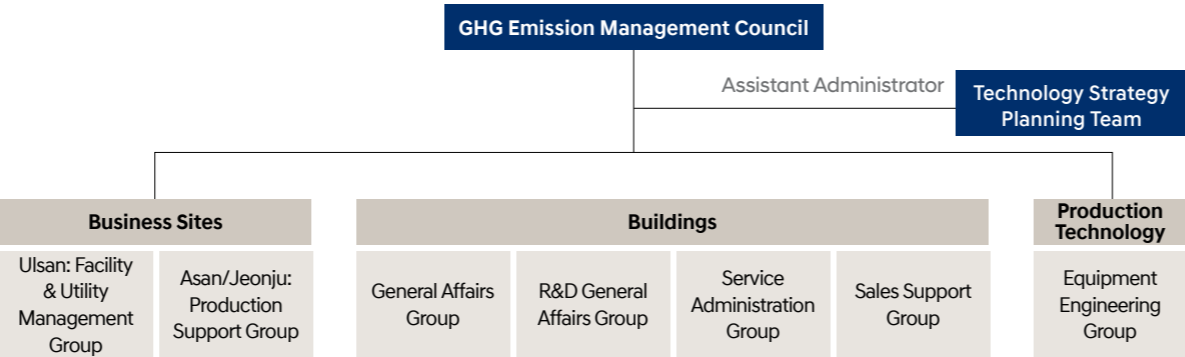
Classification	2016 Achievements	Mid-to Long-term Directions
GHG emission reduction at business sites	<ul style="list-style-type: none"> Met the target allocated by the government under the Korean emissions trading scheme Introduced the energy storage system (ESS), and began to develop a co-generation system Continued efforts to save energy and improve process efficiency – changed lighting and heat source for material facilities, and adopted high efficiency equipment 	<ul style="list-style-type: none"> Mid-to long-term direction for GHG emissions reduction at business sites <ul style="list-style-type: none"> Supply equipment: Improve equipment efficiency, operation, and technology Production equipment: Standardize operating hours and energy sources Indirect equipment: Standardize management guidelines and optimize energy uses of buildings New technology: Adopt self-power generation and renewable energy sources

GHG Emission Reduction at Business Sites

The GHG Emission Management Council

At the Paris Climate Conference in 2015, the world community agreed to work on climate change issues to curb rises in global temperatures. Hyundai also strives to minimize the GHG emissions generated from our manufacturing processes, to develop fuel efficiency technology, and to conduct research in the mass-production of eco-friendly cars, in order to address the global issue of climate change. We review our business sites every quarter for their GHG emission plans and achievements as part of the Korean emissions trading scheme (ETS), and we also analyze our GHG emissions reduction performance from a financial perspective. We use and share new energy technologies, and operate energy review and promotion programs to improve the efficiency of energy-intensive processes. We have increased investment in energy saving, and all our overseas business sites undertake energy-saving initiatives to meet their country-specific regulations and business conditions.

Organization to Respond to GHG at Business Sites



GHG Emission Reductions at our Business Sites

To comply with Korea’s climate change and energy-saving policies, we implemented the energy target management system between 2011 and 2014, and joined the ETS in 2015 in order to work hand-in-hand with the Korean government in reducing GHG emissions. We met in full the targets given us by the government over that period, and all our sites in Korea have been committed to reaching the targets assigned to them since they joined the ETS in 2015.

Asan Plant The Asan Plant has put into place a wide range of energy conservation programs, including introducing new high-efficiency equipment and optimizing its processing equipment in order to maximize energy efficiency. It installed high-efficiency air compressors in its utility room and introduced an an air compressor load sharing system which has cut KRW 300 million in annual energy costs. The paint shop uses insulation paint to reduce losses from radiation energy, thereby resulting in KRW 60 million in annual cost savings. In 2017, the Plant will switch to LED lighting for its street and office lights, to improve efficiency and reduce GHG emissions.

Ulsan Plant The Ulsan Plant’s commitment to reducing GHG emissions has brought about energy-saving initiatives such as introducing high-efficiency equipment, optimizing processing equipment and adopting new sources of energy. In 2016, the Plant invested KRW 1.35 billion in replacing its air compressor equipment with high-efficiency equipment, and invested another KRW 2.82 billion in replacing 34,400 units of lighting in the assembly shop. It has also installed a 2MWh-capacity ESS to support the Korean government’s green policies. The Plant is currently planning to install a co-generation system by early 2018, following a review process. These efforts enabled the Plant to reduce its GHG emissions by 3.7% in 2016, down to 931,000tCO₂.

Jeonju Plant The Jeonju Plant has reduced the energy consumption of its production equipment and replaced low-efficiency equipment to cut its GHG emissions. In 2016, it installed better oven equipment in its paint shop, which has reduced the operating time for paint booths and thus led to a 1,391 tCO₂ reduction in emissions. The Plant has also invested KRW 600 million to replace low-efficiency water heaters/coolers with high-

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efficiency double-effect refrigerators, and thus reduced 385 tons of CO₂. In addition, it made investments into high-efficiency equipment such as high-efficiency motors and air compressors, and has switched to LED lighting. It has also changed its dehumidifying system in compressed air and office cooling systems. These efforts enabled the Plant to reduce its GHG emissions by 4.2% over the previous year.

Namyang Technology Research Center The Namyang Technology Research Center is involved in a wide spectrum of research projects to design body frame, engines and other automotive components, to develop prototypes and to conduct performance tests that assist our vehicle development. As these projects inevitably generate GHG emissions, the Center strives to minimize these emissions by using high-efficiency equipment and efficient operational systems. While the construction and expansion of buildings (Pilot Building 3 and five other buildings in 2016) naturally leads to increases in energy consumption, high-efficiency insulation materials, motors and experimental devices were introduced to curb the consumption of energy. In addition, 500kW-capacity photovoltaic generators generated ‘green’ power, resulting in 720,000 kW or KRW 110 million in annual power cost savings. Older buildings within the Center are gradually switching to high-efficiency LED lighting, and an automatic lighting control system has been introduced to reduce 3.83 million kW in energy consumption and 17.83 million tons of CO₂ in GHG emissions.

Optimized Logistics

We have established an optimized logistics network, from the transport of raw materials to the delivery of components and finished products. Because road transport accounts for the majority of our logistical operations, reducing GHG emissions on the road is key to reducing our overall GHG emissions in logistics. As of 2016, we are operating vehicle processing centers in 13 areas around Korea, and optimize their routes to curb the GHG emissions created through road transport. We also aim to maximize our use of railroad transport, which generates fewer GHG emissions than road transport.

Participating in the Carbon Market

In accordance with the Paris Climate Conference agreement, the Korean government has set a goal of reducing the nation’s total GHG emissions by 37% from the estimated business as usual (BAU) emissions in 2030.

In December 2014, we finalized our allocation target for the 1st phase (2015-2017), and we are endeavoring to meet this target through our internal GHG emissions reduction programs. We have also developed a system to meet the target by purchasing allowance units through the emissions exchange at times when the target has not been met.

Response to Climate Change Risks and Opportunities

	Category	Status	Response
Regulatory risks	Strict regulations on fuel efficiency globally	Regulations on fuel efficiency and emissions across the world, including Korea, the U.S., Europe, China and India	Enhance fuel efficiency technology for all models and develop eco-friendly cars
	Taxes on fuel and energy	Tax benefits and penalties through CO ₂ -based vehicle taxes in 17 European countries	Enhance fuel efficiency technology for all models and develop eco-friendly cars
	Reinforced regulations on refrigerants, tires and fuel	Regulations on new refrigerants to be implemented in Europe and the U.S.	Develop refrigerant technology
	Emissions reporting system	Greenhouse gas emissions regulations in most worksites	Ensure the reliability of greenhouse gas emissions across the globe
Regulatory opportunities	Regulation on product efficiency	Increase in sales of eco-friendly cars due to reinforced GHG regulation	Enhance competitiveness in fuel efficiency through consistent R&D efforts in comparison with competitors
Physical risks	Tropical low pressures	Risk of tornadoes during summer in the U.S.	
	Changing rain patterns and drought	Risk of flood, snowstorms, drought and yellow dust in Korea and China Risk of snowstorms in the Czech Republic	
	Abnormal temperature	Risk of hot temperatures during summer in Korea, Turkey and the Czech Republic	
	Other climate risks	Risk of tsunami in India Possibility of disruption in imports and others due to abnormal climate change	
Physical opportunities	Climate changes in countries where competitors are located	Opportunity for sales increases of the company	
Managerial opportunities	Change in consumer behavior that prefers eco-friendly products	Increase in consumers’ demand for eco-friendly cars as a result of eco-friendly car support policy in the U.S. and Europe	Enhance fuel efficiency technology for all models and develop eco-friendly cars