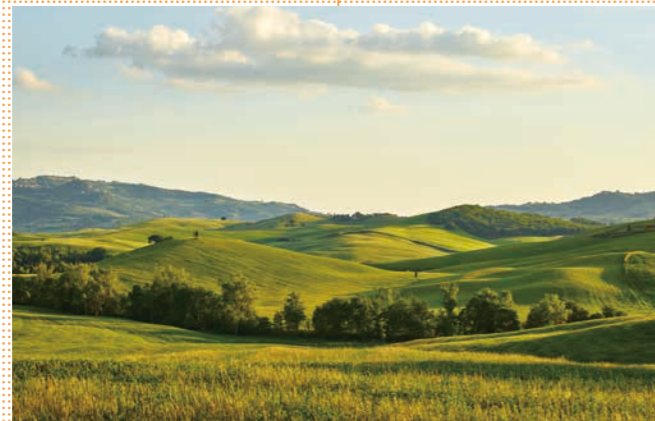


FOCUS AREA

SK innovation creates social value in areas that are highly relevant to our business and also create much social interest through active communication with our stakeholders.

MATERIAL ISSUE 01

Active Responses to Climate Change



Why is it important?

Importance of the issue

SK innovation is facing various risk factors from stricter regulations on energy and environment such as global efforts to reduce greenhouse gas emissions following the Paris Climate Treaty as well as a decrease in asset value from reduced use of fossil fuels. We are building a system to respond to the issues in advance and manage them on a company scale as well as engaging in various activities.

How is SK innovation responding to this issue?

SK innovation's strategic approach

- Build a response roadmap to analyze risk scenarios
- Forecast excess or deficiency of carbon credits through emissions simulation, create and operate a trading platform
- Discover and drive businesses to obtain emissions credit abroad to execute emissions trading
- Reduce greenhouse emissions by improving energy efficiency and transforming fuel

How is performance tracked?

Performance evaluation method and mid- to long-term goals

- Set target amount and manage emissions
- Find cases of reduction in emissions or cost, provide incentives
- Set internal price for emissions, measure and include economic efficiency of investment projects

Reducing greenhouse emissions through products

Produce environment-friendly base oil and lubricants

SK lubricants developed a low-density quality base oil product which is being sold on the global market. The product can improve fuel efficiency by up to 2.0% compared to the existing general products. This will also lead to reducing greenhouse emissions. If we consider environment-friendly base oil and lubricant products purchased by the global market, we created social value of KRW 131.5 billion in 2018 by reducing greenhouse emissions. We plan to extend our product line-up and expand areas where green base oil products can be used.

Reduce environmental impact with HCPP (High Crystallinity Polypropylene)

SK global chemical has developed HCPP which lightened the weight of vehicles resulting in better fuel efficiency as well as reducing greenhouse emissions. Applying highly solid and light plastic on vehicles can cut its weight by 10kg which improves fuel efficiency by 2.8% and reduces CO₂ by 4.5%. If we factor in our sales volume, we created social value worth 4.5 billion won in 2018. We will increase our sales by 40% by 2021 and develop additional environment-friendly plastic products.

Energy efficiency

Reduce greenhouse emissions through waste heat business

Waste heat is the unused heat given to the surrounding environment during energy use. It is always produced when energy is used like the exhaust fumes of boilers or heat from cooling water in power plants. SK incheon petrochem is running an 'Energy Upcycling' project which collects this waste heat to supply as energy for heating in the area. Energy upcycling is the practice of utilizing byproduct energy created from production processes as a second energy source to improve its usage value. In particular, the heat source SK incheon petrochem provides can substitute high-power generation which is relatively higher in cost, which can reduce the cost of the heat source for the community. Above all, this kind of reduction can replace annual energy use of 27,000 tons of LNG or 66,000 tons of soft coals, which will reduce 50,000 tons of greenhouse emissions per year.

New technology to process greenhouse emissions

New technology to retrieve carbon dioxide

We are expecting cuts in carbon credits and an increase in carbon credit price due to stronger environmental regulations and policies to cut greenhouse emissions. In response, SK innovation is developing a low-cost environmental carbon capture technology to develop new carbonic anhydrase (CA). We activated the CO₂ Carbonation catalyst for the first time in 2018 after continuous investment and developed two types of new heat-resistant CAs which we patented. Furthermore, we secured a platform technology to develop pure catalysts and research force to study mutations.

Promote spread of environment-friendly electric cars

SK innovation will create environmental value by growing its electric vehicle battery business that contributes to spreading eco-friendly electric vehicles. Electric cars release only 47% of the amount of greenhouse emissions that vehicles with internal combustion engines release¹⁾. One electric car can reduce 1.1 tons of greenhouse emissions a year. SK innovation will create social value step-by-step through its battery business.

¹⁾ Source: Korea Energy Economics Institute publications

