

Jointly Held Energy Sustainability forum

In February 2018, Showa Shell hosted a symposium together with the Integrated Research System for Sustainability Science (IR3S) operated by the University of Tokyo, on the theme of the way toward an independent and distributed-type energy society using renewable energy. During the forum, university and government officials took to the stage to deliver presentations on global warming actions and industrial promotion, examples of carbon taxes introduced around the world, and building an independent and distributed-type energy society. In the panel discussion, panelists took part in discussions and made recommendations on how to contribute to local communities using renewable energies from a national and regional standpoint given Japan's experience with the Great East Japan Earthquake.

Symposia held to date: **13**

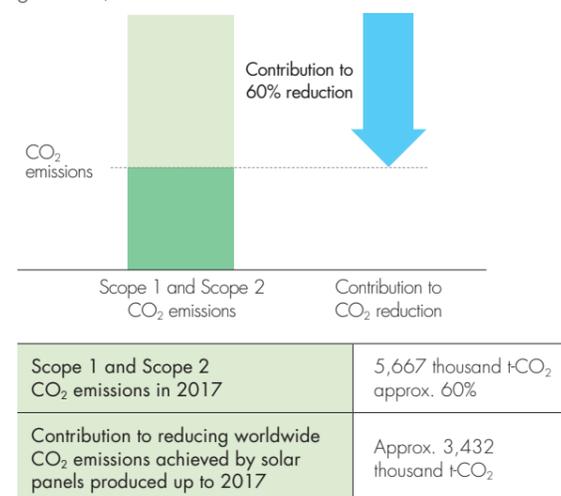


Symposium Hall

PROVISION OF ECO-FRIENDLY PRODUCTS AND SERVICES

Curbing CO₂ by Supplying Renewable Energy

Under our Mid-Term Environmental Action Plan, we are working to reduce society's CO₂ emissions through the prevalence of Showa Shell's eco-friendly products. We have been supplying renewable energy products, which account for about 60% of Showa Shell Group's Scope 1 and Scope 2 emissions in 2017, that reduce CO₂ emissions from thermal power plants and other sources. Looking ahead, we will continue with our efforts to contribute to a low-carbon society through the prevalence of solar power and supply of renewable energy (megasolar and biomass generation).



Supplying Renewable Energy through Partnerships with Local Governments

Solar Frontier of Showa Shell Group installs standalone solar power generation systems for business partners as part of its proposal to the City of Yokohama for the prevalence of renewable energy. Some companies in the city are aiming to power their business operations with 100% renewable energy in 2018 by combining the power generated from this system with power from outside sources. We will continue to work with business partners and local governments for the prevalence of renewable energy in the future.

Certification of Eco-Friendly Products

Solar Frontier's solar panels received L2-Tech certification* from the Ministry of the Environment as a leading low-carbon technology product promoting global warming measures.

The technologies of these solar panels have been recognized, so that these were also introduced in Japan's leading companies in climate change measures by the Ministry of Foreign Affairs. Going forward, we will deliver clean and comfortable living powered by the sun to people around the world through value creation that capitalizes on our proprietary technologies.

*This certification is for leading low-carbon technology that has the maximum effect in reducing energy-derived CO₂ emissions stipulated by the Ministry of the Environment. Products of the highest standard recognized to have leading low-carbon technology with extremely low CO₂ emissions are called L2-Tech certified products.



Supplying Renewable Energy to Businesses

Solar Frontier's Kunitomi and Miyazaki megasolar power plants are natural energy power producers under the Tradable Green Certificate System (TGCS)*. We are helping many companies to reduce their CO₂ emissions and improve the environment through TGCS.

*Tradable Green Certificate System (TGCS) is a mechanism where the environmental added value of electricity produced by natural energy is traded in the form of green certificates after the certificate issuer obtains approval of a third-party institution (in this case, the Green Energy Certification Center).
<http://www.natural-e.co.jp/powerplant/solar.html> (Japanese only)



Kunitomi Megasolar

Supplying Energy using Biomass Power Generation

Keihin Biomass Power of Showa Shell Group uses the former site of a decommissioned refinery to produce and supply electricity from biomass. This clean power plant uses only woody biomass as fuel, including wood pellets and palm tree husks. The power plant has among the largest generating capacities in Japan as a power plant only using woody biomass (49 thousand kW).



Keihin Biomass Power

PREVENTION OF ENVIRONMENTAL POLLUTION AND MEASURES TO REDUCE WASTE

Our Stance on Pollution Prevention

Showa Shell Group complies with environmental laws and regulations as well as carries out voluntary actions following its Code of Conduct and Basic Policy. We also cooperate with governments and regulatory agencies to develop survey and analysis methods and we strive to reduce environmental impacts by further preventing the release of pollutants.

Examples of Initiatives to Prevent Air Pollution

Measures Against SO_x and NO_x

The Group is working to reduce sulfur oxides (SO_x) and nitrogen oxides (NO_x) emissions produced by fuel oils and gases in furnaces and boilers. SO_x emissions are maintained below regulated levels by using low-sulfur fuel oil and sulfur-free fuel gas treated with gascleaning equipment. For NO_x, we are making improvements to our incineration methods by introducing low NO_x burners.

Additionally, we prevent air pollution by installing exhaust gas desulfurization and denitrizer equipment.

Emissions of SO_x and NO_x from Group refineries in 2017 amounted to 2,250 tons and 1,942 tons, respectively, which marked a reduction of 444 tons and 247 tons over the previous year.



Yokkaichi Refinery's gas desulfurization and denitrizer equipment

Measures Against VOCs

Volatile organic compounds (VOCs) potentially cause air pollution. Showa Shell Group is working to minimize VOC emissions through the installation of recovery systems at its service stations and refineries.

The amount of petroleum VOCs emitted by Group refineries and oil depots in 2017 as reported to the Petroleum Association of Japan was 4,873 tons*, which was 491 fewer tons than the previous year.

* The results from April 2016 to March 2017.

Initiatives to Prevent Soil Contamination

We conduct risk assessments based on our HSSE Management System concerning soil contamination at over one thousand facilities owned by Showa Shell Group. At locations determined to pose a high risk, we conduct soil contamination surveys and implement countermeasures. Additionally, we conduct additional soil contamination surveys whenever a facility is decommissioned or rebuilt. In 2017, there were no incidents requiring a response under the Soil Contamination Countermeasures Act.

Moreover, we provide our knowledge and experience to Keidanren committees and the Ministry of the Environment, which reviews the implementation of the Water Pollution Prevention Act and the Soil Contamination Countermeasures Act.