



Pollution Prevention

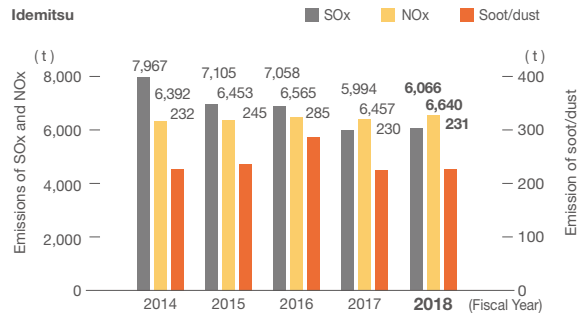
Concept of Pollution Prevention

To reduce the environmental impact of our business, we not only comply with environment-related laws but also autonomously take preventive measures in accordance with internal rule (Basic Essential Points on Health Safety Security and Environment (HSSE)). Furthermore, in order to contribute to pollution prevention not only within the Company but also within society as a whole, we feed back Idemitsu Group's knowledge and experience to committees of the Ministry of the Environment and Keidanren (Japan Business Federation) that review the application of the Water Pollution Control Law and the Soil Contamination Countermeasures Law, where we work on developing research and analysis methods and reducing the environmental impact by strictly preventing emissions of pollutants.

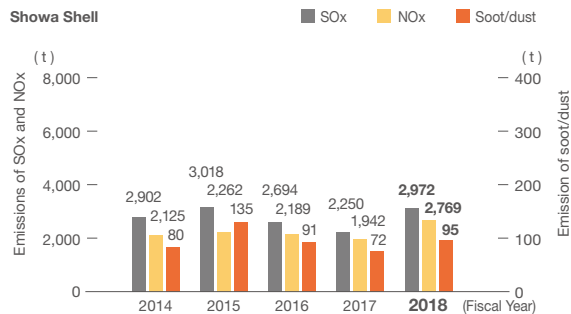
Measures to Prevent Air Pollution

Air pollutants discharged through our businesses include sulfur oxides (SOx), nitrogen oxides (NOx), and soot/dust emitted from boilers and furnaces as well as volatile organic compounds (VOCs) from crude oil or petroleum product storage tanks and tanker truck loading facilities. Thus, our refineries and complexes carry out operational management to ensure compliance with emission standards under laws and regulations as well as with emission limits prescribed by regional pollution prevention agreements.

■ Trend of air pollutant emissions



* Scope of data: Hokkaido Refinery, Chiba Complex, Aichi Refinery, Tokuyama Complex, Cray Valley Idemitsu Corporation, Prime Polymer Co. Ltd., Anesaki Works, BASF Idemitsu Co., Ltd., Kelhin Lube Center, Moji Lube Center, Idemitsu Unitech Co., Ltd., SDS Biotech K.K.



* Scope of data: Showa Yokkaichi Sekiyu Co., Ltd., TOA Oil Co., Ltd., Seibu Oil Co., Ltd.

Measures against Ground Pollution

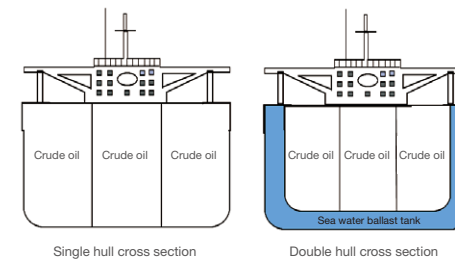
There are ground contamination risks at our oil refineries, complexes, plants, SS (service station) caused by oil leaks from underground pipes etc. To address the risks, we have been implementing autonomous surveys of ground and ground-water pollution and undertaking purification measures if any. In particular, when the closure or rebuilding facilities cause changes in the character of the land, we implement proper management to prevent pollution, including resurvey of ground pollution, in compliance with the Soil Contamination Countermeasures Law.

* In FY2018, there were no serious oil spills.

Measures to Prevent Water and Marine Pollution

In offshore oil development operations, effluent water containing oil is generated during test drilling and development. To prevent sea pollution, the generated water is treated using a separator and the oil is transported to land-based facilities for processing and the oil-free water is returned to the sea after being treated to meet effluent water standards. In addition, we always consult an expert to conduct an environmental impact assessment prior to test drilling and development to ensure that the impact is at an acceptable level. In case of a marine oil spillage, we promptly deploy an oil containment boom to restrict its spread and recover the spilled oil in accordance with our "Oil Pollution Contingency Plan."

During transport by ocean-going tankers, we take measures from aspects of both equipment and personnel to maintain a record of zero oil spillage. In the area of equipment, each of our very large crude carriers (VLCC) in operation is double-hulled (to prevent oil spillage due to a minor damage), thereby reducing the risk of oil spills. In terms of personnel, we provide regular training, including onboard emergency response drills and safety and environmental education, for all crew members.



In addition, we will aim to provide safe and stable energy and materials, and will contribute to the creation of a sustainable society by proactively engaging in environmental protection activities, including solving the problem of marine plastics waste. In September 2019, Idemitsu Group joined the "Clean Ocean Material Alliance (CLOMA)" which aims to solve the problem of marine plastics waste.



Clean Ocean Material Alliance