

Air emissions from marine vessels account for 5 to 10 % of global emissions from the transport sector.



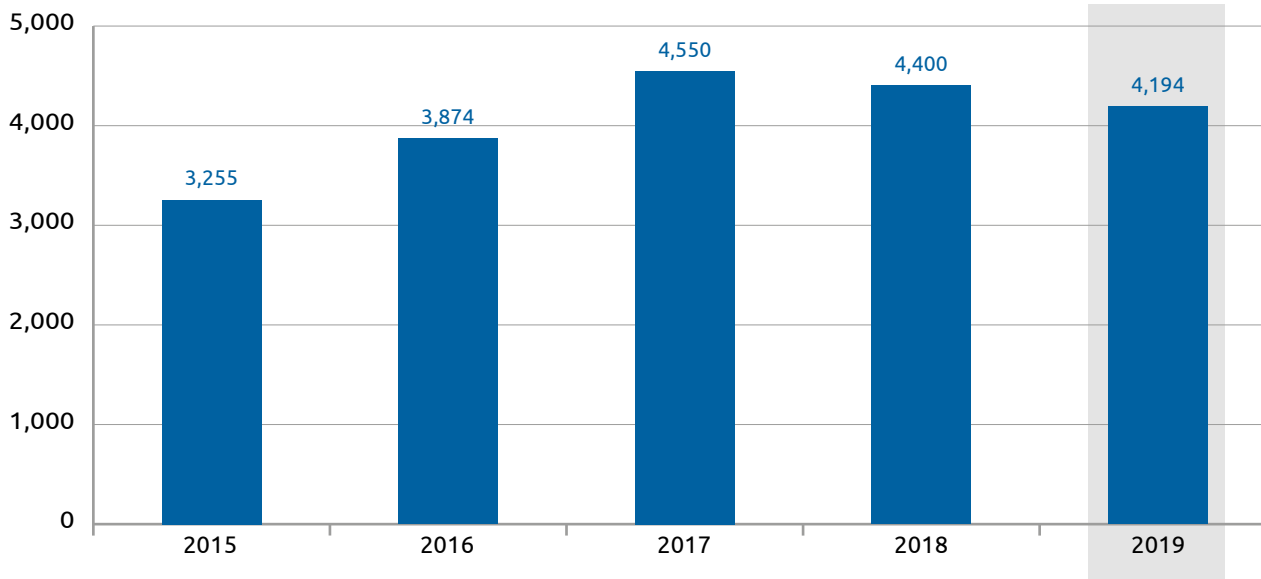
The company also declares its intention to continue implementing 'green' technologies, including energy saving ones, as well transparent energy consumption calculation methods. Reducing carbon footprint from the fleet while maintaining high economic indicators is one of the key directions for development specified in the document.

In the HR management area, the company confirms its commitment to create favourable working conditions and provide opportunities for enhancing professional skills to existing employees and trainees, ensure gender equality and access to qualified medical aid, and pursue a «zero tolerance» policy towards corruption in any form.

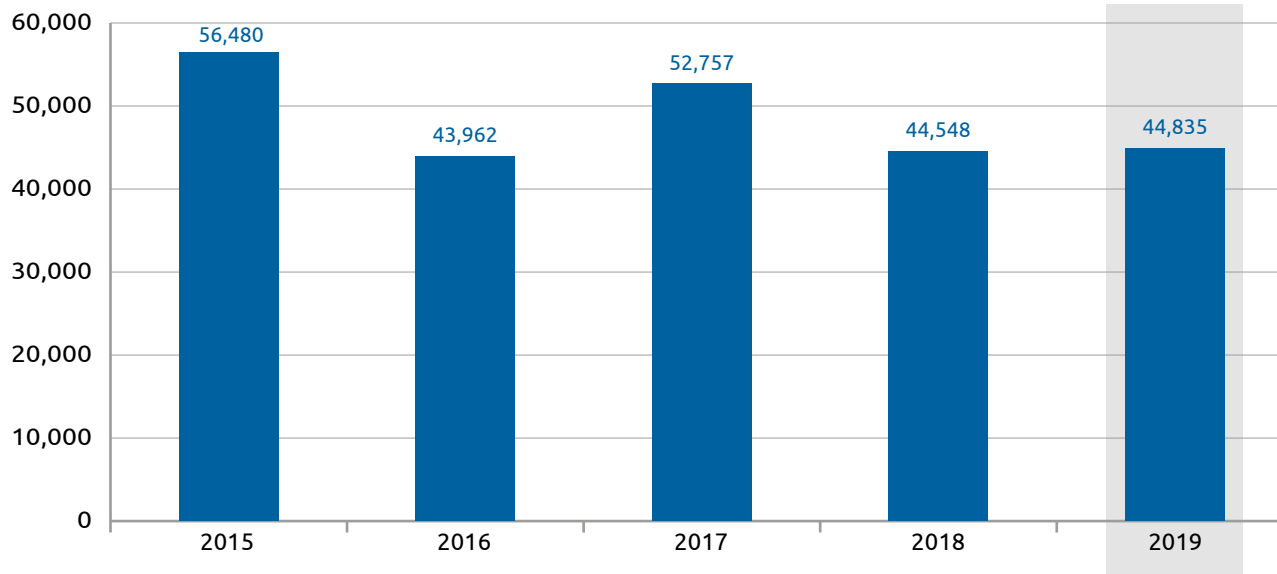
6.4.2. ATMOSPHERIC EMISSIONS

The basic components of atmospheric emissions are carbon, sulphur and nitrogen oxides formed during the combustion of fuel in ship engines.

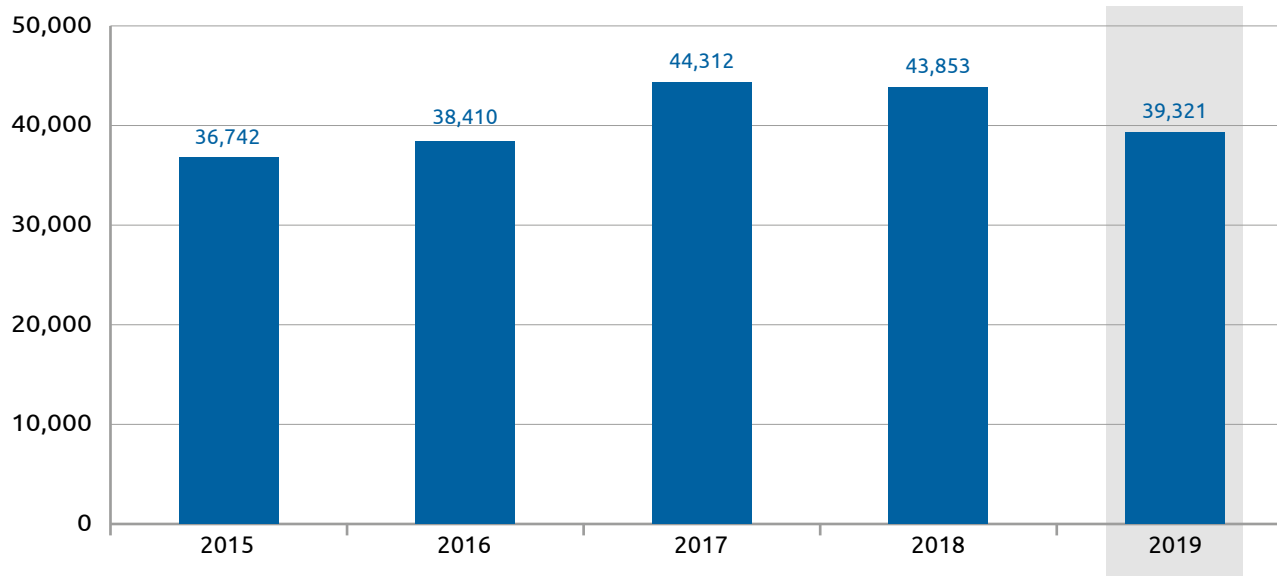
Dynamics of carbon dioxide (CO2) emissions, 000'tonnes



Dynamics of nitrogen oxides (NOx) emissions, tonnes



Dynamics of sulphur oxides (SOx) emissions, tonnes



Energy Efficiency Operational Index (EEOI) is calculated as the total CO₂ emissions (in grammes) produced on a voyage per total tonne-miles generated (tonnes carried multiplied by distance travelled).

The table below shows the EEOI calculation for different types of Sovcomflot Group's vessels operating on voyage (spot) contracts. In this case, fuel for the vessels is procured by the ship owner or fleet operator. A decrease in the EEOI index means a decrease in carbon oxides emissions and, accordingly, in fuel consumption per tonne-mile, which characterises an improvement in the operational performance of the company's fleet.



The decrease in CO₂ emissions is due to the increase in the use of LNG fuel in 2019 to 15 % of the total fuel consumption of the fleet, which generally boosts the energy efficiency of ships.

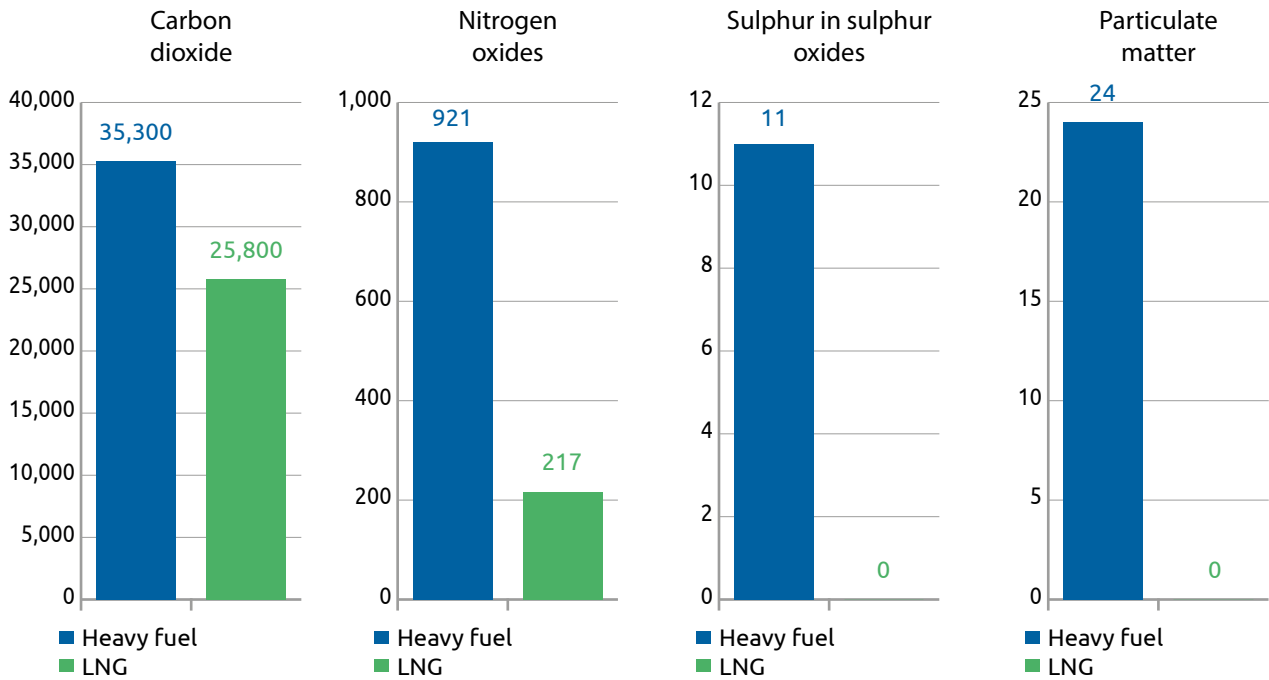
EEOI index of Sovcomflot Group's ships in 2019, grammes/tonne-mile

Type of vessel	Standard	Actual
Suezmax tankers	≤ 12	8.346
Aframax tankers	≤ 15	10.118
LR2 product carriers	≤ 15	11.053
LR1 product carriers	≤ 16	13.294
MR product carriers	≤ 25	19.617
Handy product carriers	≤ 25	24.809
Panamax bulkers	≤ 12	7.580

The Group is constantly supplementing the fleet with energy efficient and environmentally sustainable, new generation vessels which incorporate innovative technologies, developing a Ship Energy Efficiency Management Plan (SEEMP) for each ship in order to control emissions of hazardous substances from exhaust fumes, and fulfilling EU Council Directive 2012/33/EU on the sulphur content of certain marine fuels, using ship fuel with a reduced sulphur content.

The commissioning of a series of SCF's new generation vessels, the world's first Aframax tankers specially designed to run on LNG, has significantly contributed to environmental protection. The tankers of this series have dual-fuel main and auxiliary engines and boilers. These vessels are fitted with Selective Catalytic Reduction technology, which enables compliance with Tier III regulations governing NOx emissions (Annex VI to the International Convention for the Prevention of Pollution from Ships) even when running on diesel fuel¹.

Atmospheric emissions from an LNG-fuelled power plant, tonnes per year



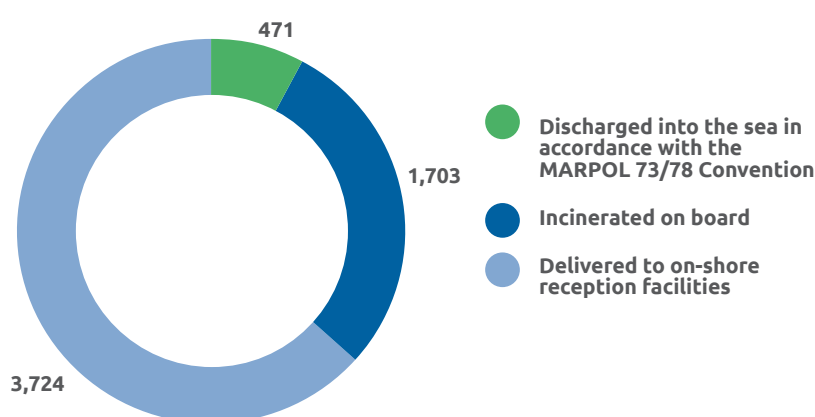
¹ More detailed information about this series is presented in section 3.2 of this Annual Report, Investment activities.

Advantages of LNG operation are most evident in figures: the reduction of sulphur oxides and soot emissions reaches 100 %, nitrogen oxides emissions decrease by at least 76 %, and carbon dioxide emissions - by up to 30 %¹ as compared with power plants running on conventional heavy fuel.

6.4.3. WASTEWATER AND WASTE MANAGEMENT

A key focus of the Sovcomflot Group's environmental protection activities is reducing the amount of wastewater and waste that gets into the World ocean during ship operations. These activities are carried out pursuant to the internal procedures of the Group, which encompass the requirements of both international and domestic legislation.

Amount of different types of garbage disposed of in 2019, cubic metres



At present the Group's ships are equipped with wastewater treatment systems that combine me-chanical, chemical, physical-chemical (including electrolysis) and biological methods. All wastewater treatment plants on board ships have the approval of classification societies confirming compliance with the requirements of Annex IV of the MARPOL 73/78 Convention. The quality of discharged water is confirmed by a wastewater plant certificate (type approval certificate).

Management of garbage produced on ships during operations is also organised in strict compliance with Annex V of the MARPOL 73/78 Convention, which governs the prevention of pollution by garbage from ships.

¹ The data were confirmed by the results obtained from the first year of operation of the 'Green Funnel' series of Aframax tankers. The reduction in nitrogen oxides emissions was 76-96 % depending on the navigation area.