



Environmental impact mitigation, decarbonisation prospects, potential and opportunities

June 2021



TRANSNEFT'S OPERATIONS: REDUCING THE CARBON FOOTPRINT



Transneft:

- ✓ is one of the world's largest transportation companies with the share of electrified operations exceeding 85%*
- ✓ is one of the global leaders in minimum per unit electricity consumption in crude oil transportation ('000 kWh/ mln tkm)
- ✓ consistently implements the energy efficiency programme
- ✓ ensures the most energy-efficient land transportation of crude oil and petroleum products

Our Energy Management System is certified for compliance with ISO 50001:2018, with annual energy audits in place



The total share of purchased low-carbon electricity (from NPPs, HPPs, renewables) is estimated at around 40%**



The Company is assessing the opportunities and efficiency of use of renewables for in-house electricity generation, and increasing the share of such generation (673,000 kWh in 2020)

Business model transformation, from a pure pipeline company to an integrated operator of infrastructure assets.

Upon the consolidation of the NCSP (Novorossiysk Commercial Sea Port) controlling stake in 2018, Transneft became the largest port operator in Russia and one of the biggest in Europe

* By the share of electricity in the total consumption of energy resources. Electrification is a primary means of reducing the transportation-related carbon footprint globally

** Estimated on the basis of electricity payments breakdown over the first 4 months of 2021 (Russian TPPs largely use natural gas as fuel (natural gas provides for over 45% of the total power generation in Russia))

NPP – nuclear power plant, HPP – hydro power plant, TPP – thermal power plant

TRANSNEFT'S ENVIRONMENTAL POSITION HIGHLIGHTS



At Transneft, we invariably place the highest priority on environmental protection and environmental safety of our production facilities

Our key goals in energy efficiency, mitigation of environmental impact, and decarbonisation efforts:

- environmental compliance
- economic benefits
- lower environment impact
- climate action
- climate risk mitigation

Primary focus areas:

- consistently lower GHG emissions
- reduction of per unit non-GHG air emissions
- converting motor vehicles to natural gas
- wastewater treatment and quality control
- enhanced reliability and safety of operating the facilities and equipment
- upgrading site facilities, boiler houses, and energy equipment
- comprehensive environmental monitoring
- biodiversity conservation
- compensatory measures

- ✓ The Company communicates with the stakeholders on sustainable development (ESG) matters
- ✓ There is an upward trend in the Company's ESG ratings assigned by leading research agencies specialising in sustainable development (Sustainalytics, ISS), with potential for further growth

ENVIRONMENTAL MANAGEMENT SYSTEM



Transneft has developed and deployed a duly certified Environmental Management System (EMS)

Our subsidiaries were certified for compliance with ISO 14001 back in 2004

Annual surveillance audits are conducted across Transneft Group to confirm compliance of the Company's EMS with ISO 14001

Our Environmental Management System is certified for compliance with ISO 14001:2015

In 2020, EMS audits were conducted in Transneft and across 26 Transneft Group companies

The audits confirmed that Transneft's EMS complies with ISO 14001:2015



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CLIMATE CHANGE RISKS



Transneft acknowledges the importance of considering climate change risks:

- global climate change risks
- permafrost thawing risks and risks of its possible negative effect on Transneft's facilities
- risks of declining oil demand in the long term (transition risk)

Transneft assesses the climate risk impact on the Company's operations

Key climate action measures include enhancing energy efficiency and reducing GHG emissions

Russia's accession to the Paris Agreement on Climate Change in 2019 encourages climate action, forming the basis for integration of its provisions in the key Russian Government regulations covering improvement of operational efficiency and environmental safety in oil and gas and pipeline sectors

Permafrost thawing risks



The bulk of Transneft's assets are located out of the continuous permafrost areas

Most of the facilities located in permafrost areas were built after 2010

In order to minimise soil impact, prevent permafrost thawing and minimise the risks of destabilisation of the production assets, their design takes into account specific features of permafrost, they are equipped with heat stabilisers, temperature and spatial position monitoring and control devices, and automatic emergency response systems

REDUCTION OF PER UNIT ELECTRICITY CONSUMPTION AND ENERGY SAVING



Energy saving from energy efficiency activities

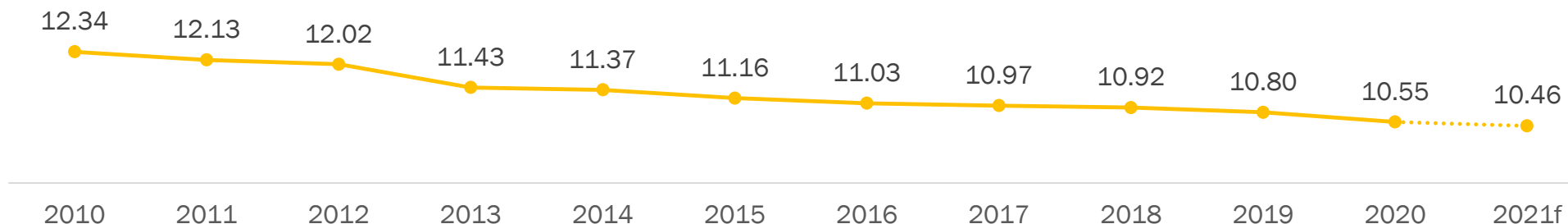
Fuel and energy savings in 2010–2020:

- ✓ electric power 2,710 mln kWh
- ✓ boiler and furnace fuels 44,900 toe
- ✓ thermal energy 55,000 Gcal
- ✓ motor fuel 25,300 toe

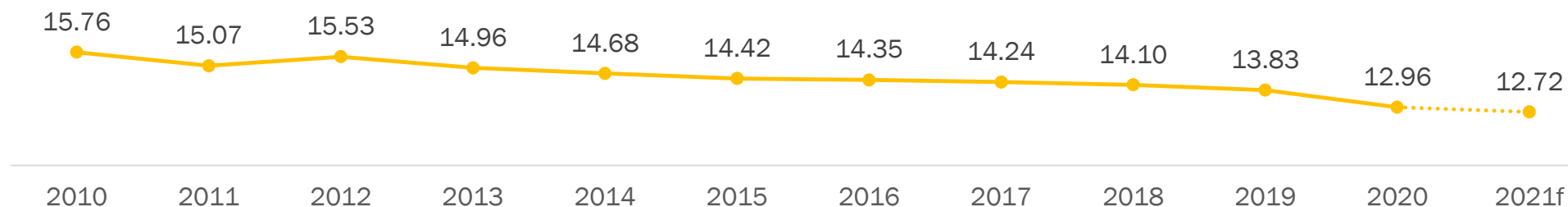
The Energy Management System is certified for compliance with ISO 50001:2018

Total costs of the activities	RUB 7,247 mln
Total savings in money terms	RUB 8,079 mln
Average payback time of the activities	less than 7 years

Per unit electricity consumption (crude oil transportation), '000 kWh / mln tkm*



Per unit electricity consumption (petroleum product transportation), '000 kWh / mln tkm*



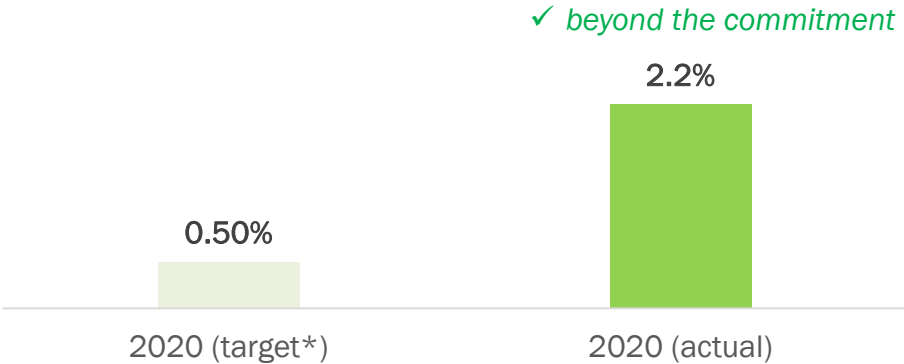
toe – tonnes of oil equivalent

* The indicators are provided on a comparable basis

ENERGY SAVING KEY OBJECTIVES

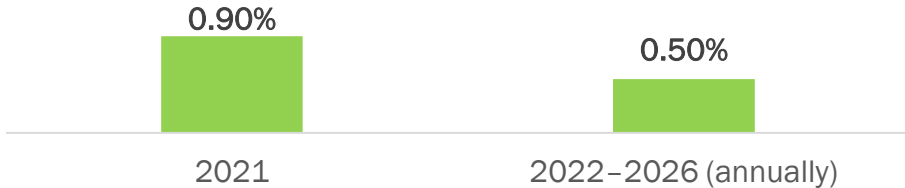


Achievement of the 2020 target of reducing per unit electricity consumption for crude oil transportation, %*



* Initial target – 0.5% (December 2019), updated target – 0.8% (October 2020)

Target reduction in per unit electricity consumption for crude oil transportation in 2021–2026, %*



Projected contribution of the most efficient activities in the total energy savings of 2021–2026, %



Optimisation of the oil pumping process contribution, %



- Optimisation of the oil pumping process parameters (including optimisation of the pumping units rotor mix)
- Pipeline inner surface clean-up
- Other activities

* The indicators are provided on a comparable basis

REDUCTION OF GREENHOUSE GAS EMISSIONS



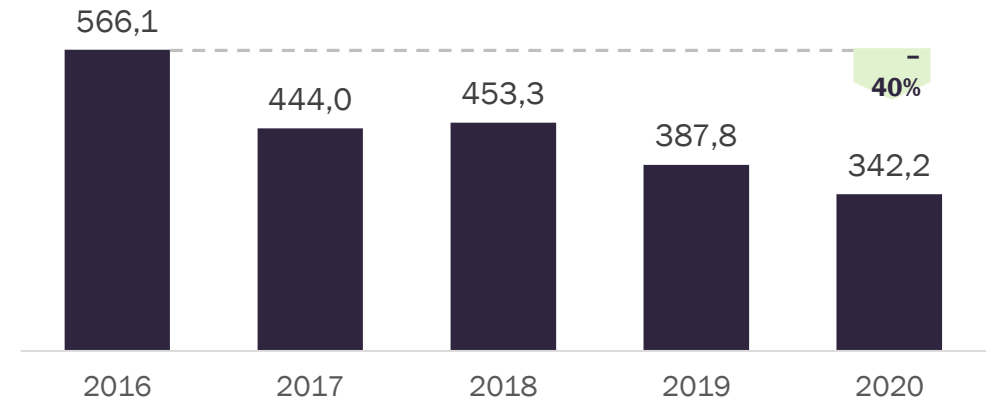
Transneft has been consistently decreasing its emissions of greenhouse gases and other pollutants in line with the federal laws On Environmental Protection and On Protection of Atmospheric Air, and with the United Nations Framework Convention on Climate Change and the Long-Term Development Programme

The main greenhouse gas is carbon dioxide (CO₂) emitted by boiler equipment

Main drivers of lower GHG emissions

- implementing the comprehensive energy saving programme
- technical upgrade of boiler houses and installation of advanced energy efficient boilers
- boiler houses transition from petroleum fuel to natural gas
- use of advanced burner units with controllers monitoring combustion processes and flue gas composition

GHG (CO₂) emissions, '000 tonnes



Mid-term goals:

- ✓ keep reducing GHG emissions, including activities under the energy saving programme
- ✓ set mid-term targets to reduce GHG emissions
- ✓ start to calculate and manage indirect GHG emissions



Key areas for reducing air pollutant emissions (non-GHG)

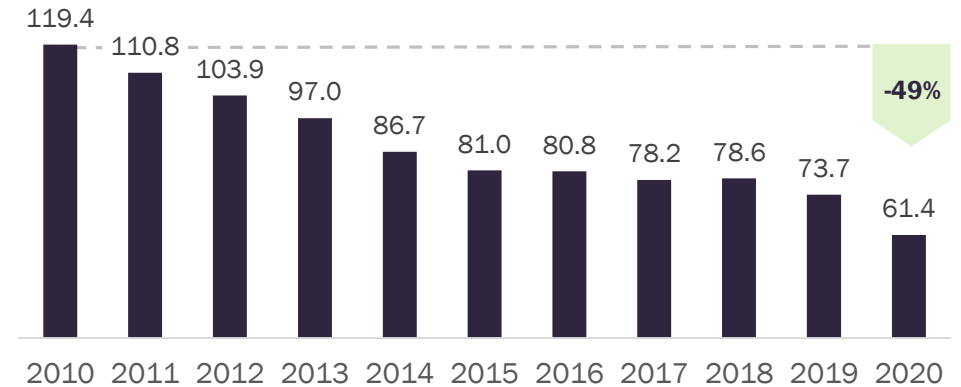
- reducing emissions generated by tank farms by upgrading them and fitting the tanks with floating roofs and pontoons to decrease evaporation of oil and petroleum products
- using vapour recovery units (VRUs) for oil and petroleum products at Transneft facilities. There are currently three VRUs that have been commissioned at the discharge and loading points at the Port of Kozmino, Transneft Western Siberia and Transneft Volga Region subsidiaries.

In 2020, 12.2 kt of air pollutant emissions were captured and neutralised.

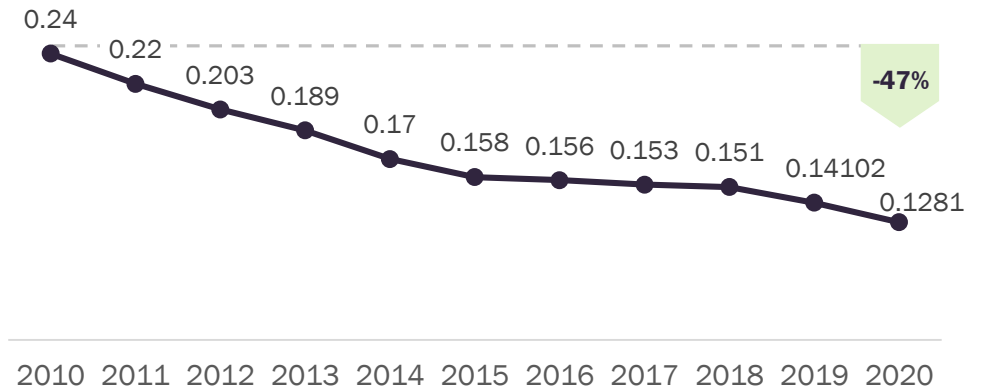
In 2020, per unit air pollutant emissions decreased by 47% vs 2010.

The target for reducing per unit pollutant emissions in 2021 is a decrease by 0.7%

Gross air pollutant emissions, kt



Per unit air pollutant emissions, kg per tonne of oil and petroleum products accepted into the system



CONVERTING MOTOR VEHICLES TO NATURAL GAS



As part of the Programme for converting Transneft motor vehicles and specialised machinery to using natural gas as a motor fuel, in 2017–2020, **202** units of compressed natural gas (CNG) powered machinery and **3** mobile gas refuelling trucks were purchased.

Types of CNG-powered vehicles: dump trucks, semi-trailer trucks, dropside trucks with a carrying capacity of 1.5 to 12 tonnes, buses of different carrying capacities, including crew buses and four-wheel drive passenger vehicles.

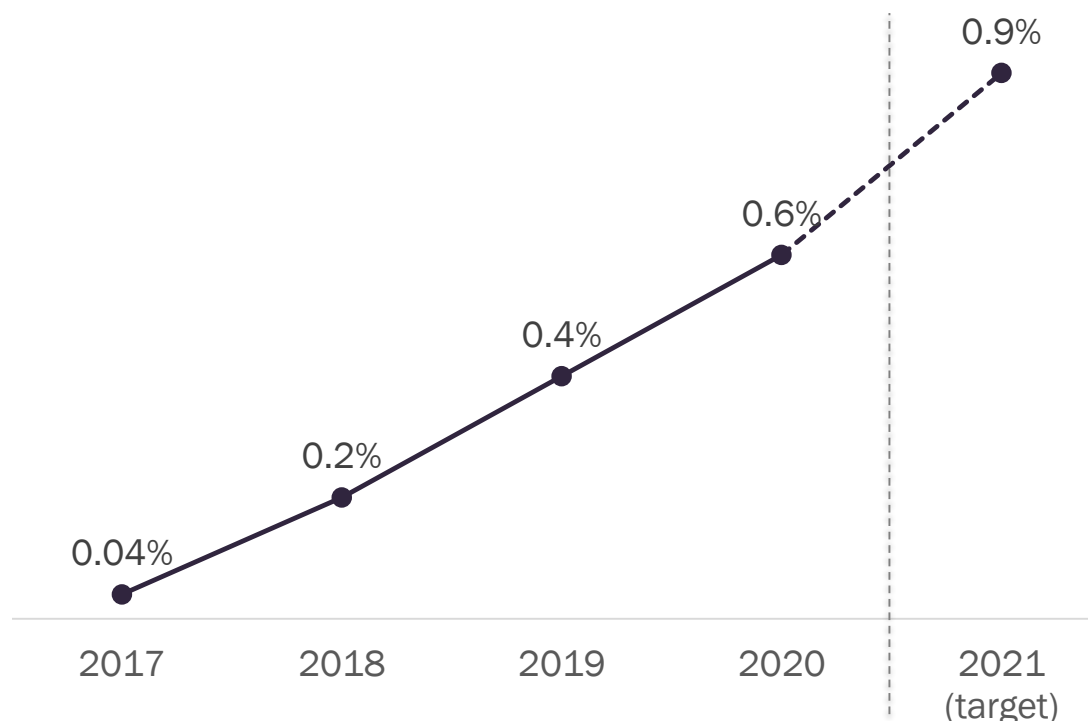
Results achieved

In 2017–2020, total distance travelled by CNG-powered vehicles exceeded 4 mln km, with fuel savings vs conventional fuel amounting to over RUB 31 mln

Plans

- ✓ 2021: purchase **80** units of CNG-powered machinery
- ✓ 2021–2026: operate motor vehicles fitted with gas equipment at **12** Transneft entities

Share of natural gas in total fuel consumption by motor vehicles, %



Prospects of using electric vehicles

The potential for using electric vehicles is currently limited due to lack of truck models suited for the Company's needs, poorly developed infrastructure and low winter temperatures in the main regions of the Company's operations

WATER PROTECTION



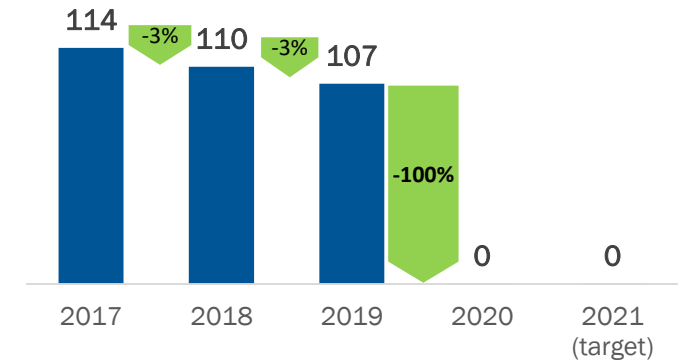
Transneft is making a contribution to the preservation of pure water and water ecosystems by:

- ✓ optimising the management of water resources and using water saving technologies
- ✓ mitigating the adverse impact on water bodies
- ✓ monitoring the impact of construction and operations on the water bodies within the Company's footprint
- ✓ protecting and restoring natural habitats of aquatic plants and animals
- ✓ implementing the Biodiversity Conservation Programme, including renewal of bio resources
- ✓ performing biological monitoring of sea port waters within the Company's footprint

In 2015–2020, the Company built, revamped and overhauled 76 wastewater treatment stations, including four in 2020. Of these, 27 wastewater treatment stations were manufactured, assembled and ramped up to design capacity by Tyumen Machinery and Repair Plant of Transneft-Sibir subsidiary

As a result of implemented water protection initiatives since 2020 the discharge of insufficiently treated wastewater into water bodies **was fully eliminated**

Insufficiently treated wastewater discharge, thousand cubic metres



Wastewater treatment station



ENVIRONMENTAL MONITORING

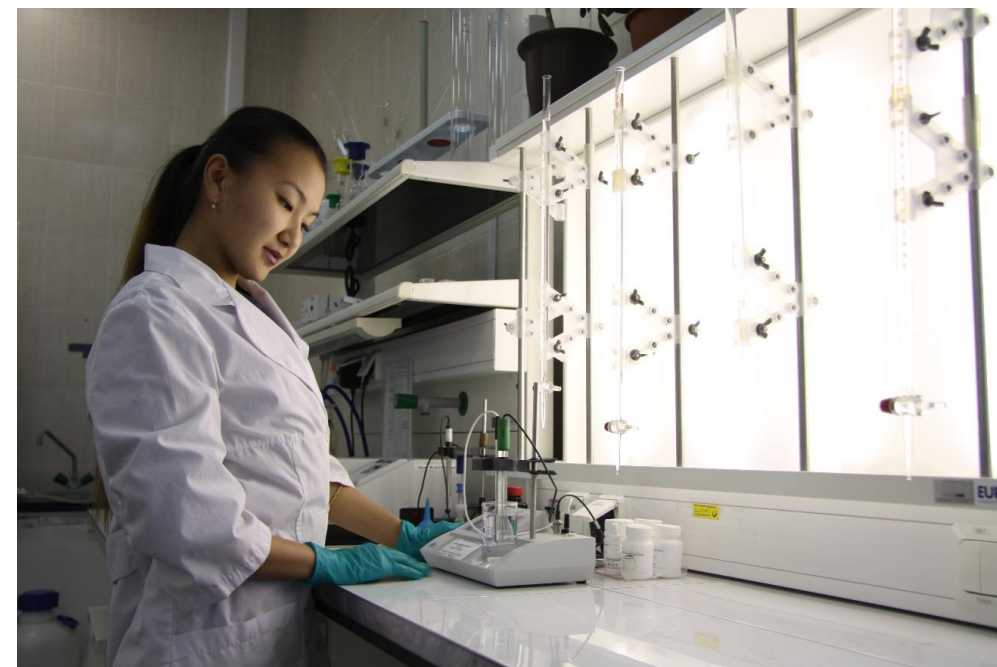


Transneft Group has put in place a robust industrial environmental control system that covers all production facilities for effective air, water, and soil monitoring.

Additional biological monitoring of marine areas is ongoing in Transneft's regions of operation.

Environmental control is carried out by 53 environmental analysis laboratories certified by the Federal Service for Accreditation (RusAccreditation). The laboratories are furnished with cutting-edge analytical equipment and staffed with highly qualified specialists.

Environmental control activities are conducted according to schedules approved by regulatory agencies.



By building and upgrading environmental protection facilities and purchasing environmental protection equipment Transneft ensures compliance of its production facilities with the requirements of international treaties signed by the Russian Federation, the Russian laws, and environmental, safety and natural resource management rules and regulations

The Company sees the preservation and promotion of biodiversity as a key way to offset the environmental impact from the transportation of oil and petroleum products.

Priority areas for wildlife conservation



Reproduction of aquatic bioresources



Biological monitoring (Kozmino, Gulf of Finland, Black Sea)



Increasing the population of rare birds



Programme to restore the European bison population



Installation of bird protection devices

Planning and scope. The Company has identified priority areas for biodiversity conservation, drawn up conservation and restoration plans and programmes, and set the corresponding goals and deadlines. The effort relies on Russian and international best practices and contributions from the leading experts and local communities.

The Company **monitors biodiversity risks** in the areas under control, including those not related to the Company’s activities.

Performance assessment. The Company assesses its impact on biodiversity in the regions of operation and seeks to refrain from works in the areas that have particular importance for the biodiversity conservation and restoration efforts.

The Company contributes to flora preservation by **planting trees and shrubs**. It also cleans water bodies and respective water protection zones in order to preserve the ecosystems of such water bodies and improve the local sanitary and epidemiological situation. As part of environmental initiatives in 2020, Transneft Group planted 1.7 mln trees and 1.3 thousand shrubs.



KEY RESULTS OF THE EFFORTS TO REDUCE ENVIRONMENTAL IMPACT



- ✓ Among the global leaders in terms of the lowest per unit electricity consumption in oil pipeline transportation
- ✓ **Decarbonisation of operations** (by the level of electrification of crude oil and petroleum products transportation, i.e. the share of electricity in total energy consumption) reaching **85%**

Key quantitative indicators reflecting the reduction of environmental impact

	Result	Period
➤ Reduction of per unit electricity consumption in oil transportation*	▼ 14.5%	2010–2020
➤ Reduction of per unit electricity consumption in transportation of petroleum products*	▼ 17.8%	2010–2020
➤ Reduction of air pollutant (non-GHG) emissions	▼ 49%	2010–2020
➤ Reduction of per unit air pollutant (non-GHG) emissions	▼ 47%	2010–2020
➤ Reduction of GHG emissions	▼ 40%	2016–2020
➤ Full elimination of insufficiently treated wastewater discharges	▼ 100%	from 2020
➤ Progressive improvement of ESG ratings:		
▪ Sustainalytics	▲ from 50 to 53**	
▪ ISS	▲ from D to C-	2019–2021
▪ RobecoSAM	▲ from 18 to 26**	

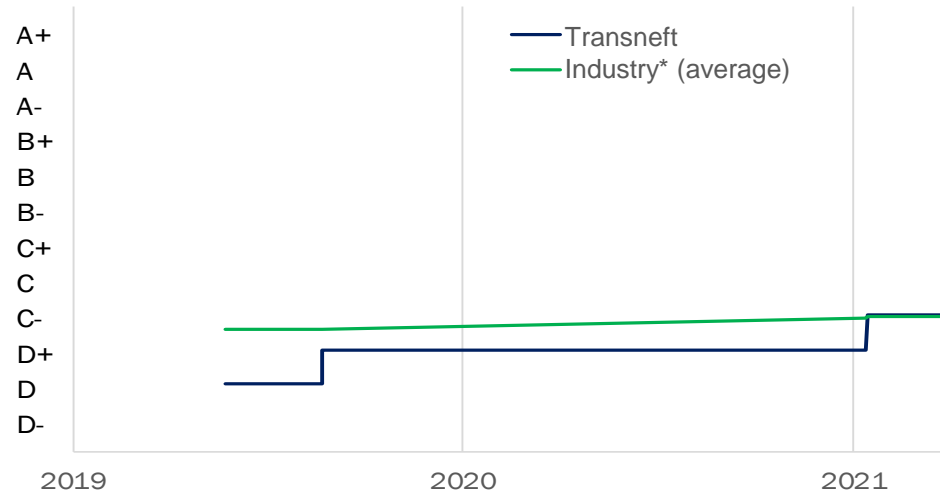
* The indicators are provided on a comparable basis

** ESG risk reduction from 30.2 to 26.1, transition from high-risk to medium-risk group of companies

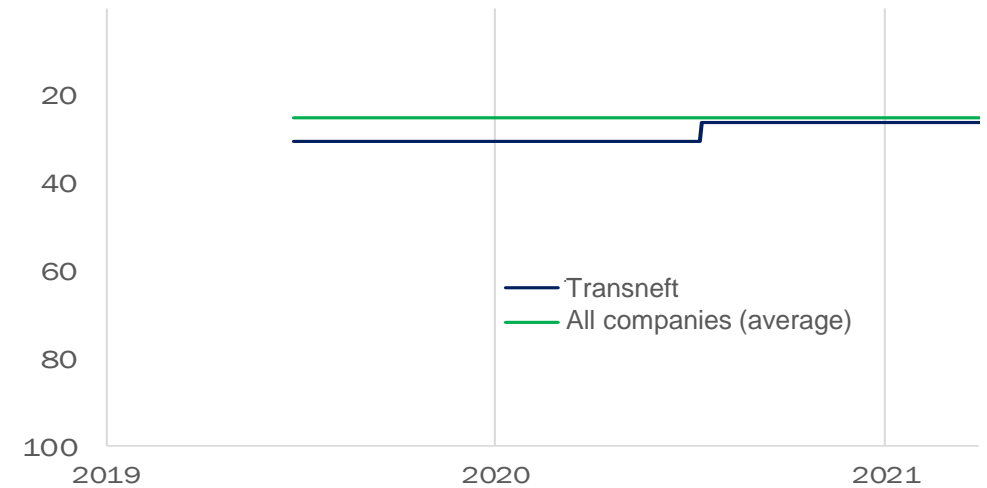
IMPROVEMENT OF TRANSNEFT'S SUSTAINABILITY RATINGS



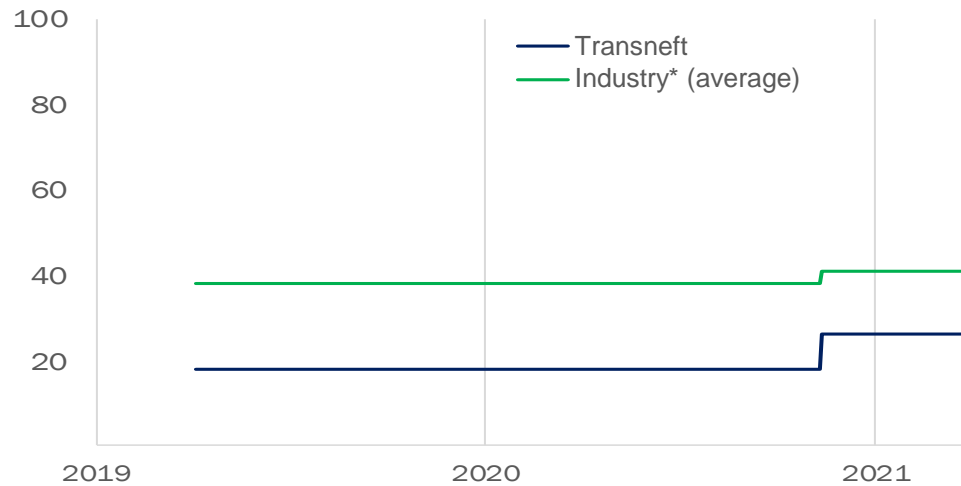
ISS: currently rated C-



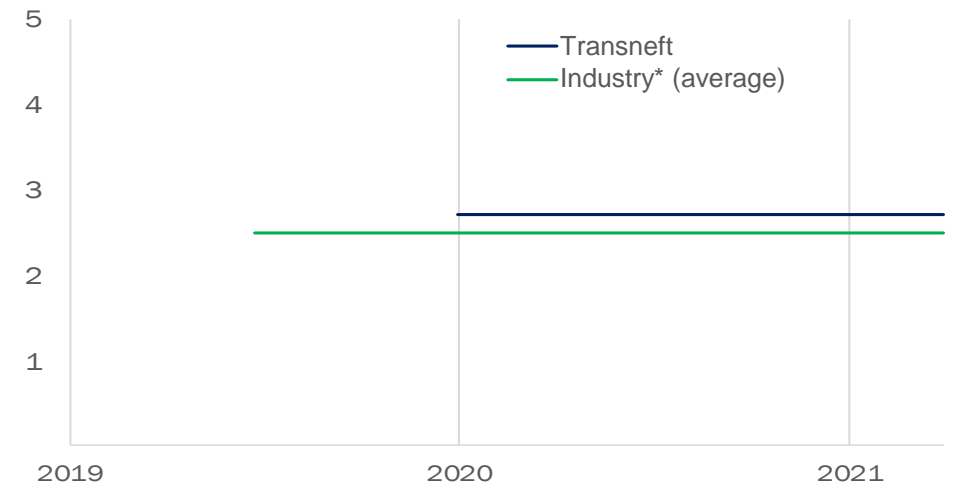
Sustainalytics: the current risk rate of 26



S&P CSA (ex-RobecoSAM): currently rated 26



FTSE: currently rated 2,7



* The industry is determined based on each agency's rating assignment methodology



- Analyse and mitigate the Company's impact on the environment
- **Reduce climate risks, continue implementing energy saving programme**
 - **Improve energy efficiency, implement the energy saving programme**

Key objectives:

 - reduce per unit electricity consumption (on a comparable basis) in 2021 vs 2020
 - ✓ for oil transportation: from 10,550 to 10,460 kWh / mln tkm
 - ✓ for the transportation of petroleum products: from 12,960 to 12,720 kWh / mln tkm
 - **Reduce GHG emissions**

Key objectives:

 - ✓ reduce GHG emissions as part of the energy saving programme
 - ✓ develop a long-term strategy for GHG management
 - ✓ set medium- and long-term goals to reduce GHG emissions
 - ✓ calculate and manage indirect GHG emissions
 - **Monitor the state of production facilities, including those located in permafrost regions, taking climate risks into consideration**
- Reduce per unit non-GHG emissions (by 0.7% in 2021), improve technologies for stemming and capturing vapours from crude oil and petroleum products
- Implement biodiversity conservation programmes
- Foster a dialogue on sustainability with shareholders, investors, ESG rating agencies and other stakeholders



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