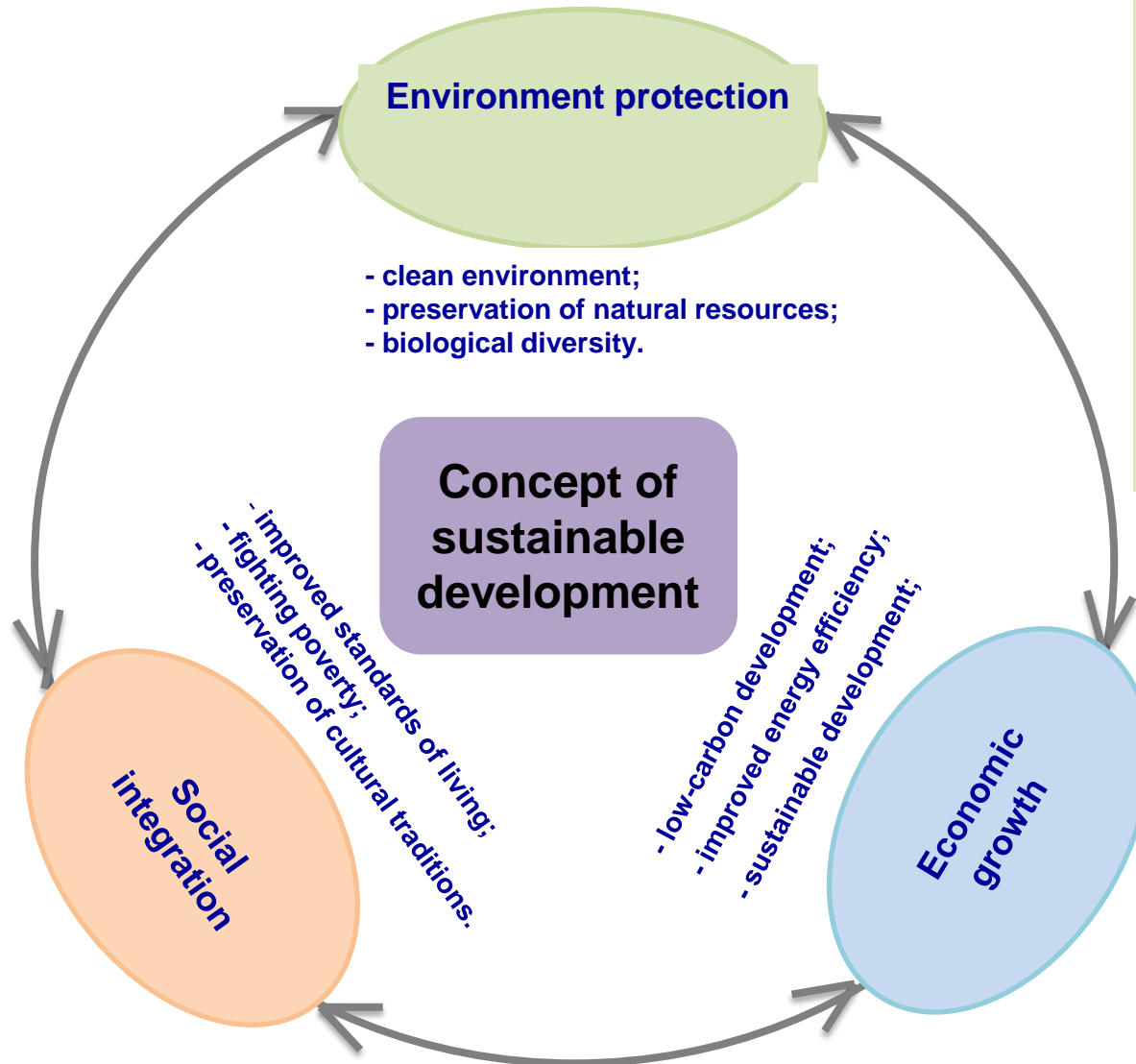


Project goals. Tasks for Phase 1 and the proposed work distribution between project partners for Phase 1

**Svetlana Vorontsova – Deputy General Director,
Transport Integration Ltd**



Countering climate change and its consequences is one of the Global Sustainable Development Goals

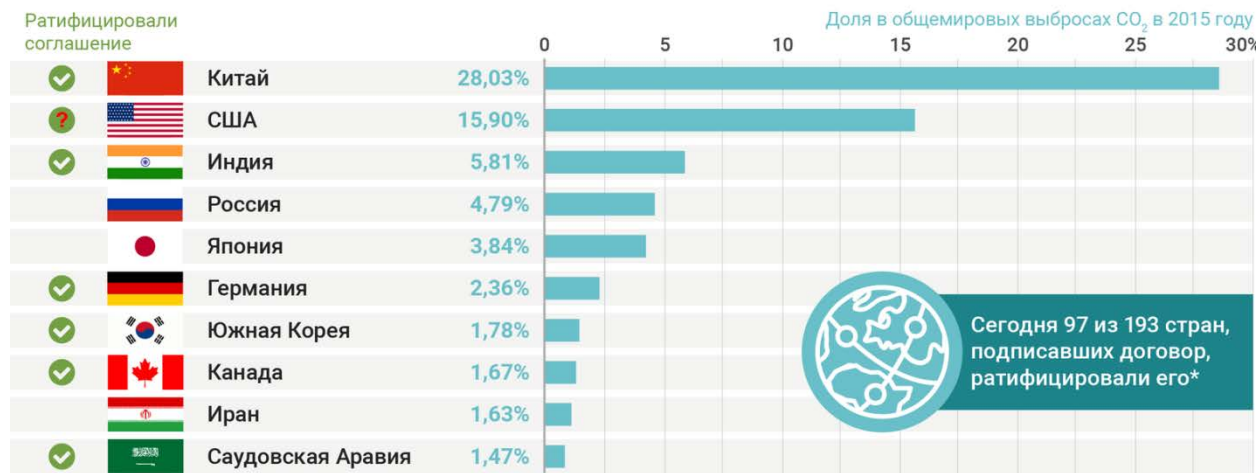


In September 2015, the UN General Assembly approved 17 global sustainable development goals (SDG) (UN General Assembly Resolution 70/1: Transforming our world: the 2030 Agenda for Sustainable Development), which countries across the world will apply during the next 15 years as the basis for their programs and policies. The goals provide for the balance of all three dimensions of sustainable development: economic, social and environmental.

One of the 17 Sustainable Development Goals involves urgent measures to counter climate change and its consequences. Urgent measures to fight climate change are important since the average annual temperature on the planet has been rising in the last decades due to increased GHG emissions and the increasing frequency, intensity and duration of natural disasters and the scale of their negative impact.

Project relevance

Russia is in the Top 10 in terms of GHG emissions, below China, the US and India (Russia is responsible for about 5% of the global GHG emissions).



The Russian Federation signed the Paris climate agreement adopted by the 21st Session of the parties to the United Nations Framework Convention on Climate Change in Paris. **Russia's goal with regards to the Paris Agreement is to lower GHG emissions by 2030 to 70...75% of the level of 1990, with the absorption capacity of forests taken into account as much as possible.**

Dynamic of GHG emissions in the Russian Federation

GHG emissions in Russia between 1990 and 2015, in billion tons in CO₂-equiv. *

	Emissions, in billion tons in CO ₂ -equiv.				
	1990	2000	2005	2008	2015
Energy sector	3.08	1.84	2.07	2.18	2.19
Manufacturing sector	0.30	0.20	0.21	0.21	0.21
Agriculture	0.32	0.15	0.14	0.13	0.13
Waste	0.08	0.08	0.09	0.09	0.11
Total w/o LULUCF	3.77	2.27	2.50	2.61	2.65
LULUCF	0.16	-0.35	-0.46	-0.54	-0.52
Total including LULUCF	3.93	1.92	2.04	2.07	2.13

LULUCF – emissions and absorption related to land use, land-use change and forestry

* – Source: *The National Report on the cadastre of anthropogenic emissions from sources and absorption of greenhouse gases outside the Montreal Protocol, for the period from 1990 through 2015*

The total anthropogenic GHG emissions in the Russian Federation was 3.77 billion tons in CO₂equiv. in 1990 and 2.65 billion tons in CO₂equiv. in 2015. (Without absorption of GHG in *LULUCF*). This is 70.3% of the total GHG emissions in 1990. Adding the emission and absorption related to *LULUCF*, the total emissions in 2015 was 2.13 billion tons in CO₂equiv. (54.2% of the total emissions in 1990).

Structure of GHG and other air emissions in the Russian Federation

GHG (2015)			Other pollutants (2016)		
	million tons in CO ₂ - equiv.	%		M tons	%
Total	2,651.2	100	Total	31.62	100
carbon dioxide (CO ₂)	1,670.8	63.02	solids	2.03	6.44
methane (CH ₄)	864.1	32.59	Gaseous and liquid substances, including:	29.54	93.56
nitrogen monoxide (N ₂ O)	90.4	3.41	sulfur dioxide (SO ₂)	4.11	12.98
hydrofluorocarbons (HFC)	21.2	0.8	nitrogen oxides (in terms of NO ₂)	3.46	10.87
perfluorocarbons (PFC)	3.6	0.14	carbon monoxide (CO)	15.86	50.22
sulfur hexafluoride (SF ₆)	1.1	0.04	hydrocarbons (w/o volatile organic compounds)	3.4	10.77
			volatile organic compounds	2.76	8.72

**Without emissions and absorption of greenhouse gas connected with land use, land-use change and forestry.*

Source: The Statistics Bulletin "Main indicators of environmental protection 2017", the National Report on the Cadastre of Anthropogenic Emissions From Sources and Absorption of Greenhouse Gases Outside the Montreal Protocol, for the period from 1990 through 2015, page 23, RosStat

The main component of GHG emissions in Russia is carbon dioxide – 63% in the total emission of gases (in CO₂ equivalent) with direct greenhouse effect subject to UN FCCC. Methane accounts for ~ 32.6%, nitrogen monoxide ~ 3.4%, other greenhouse gases – for about 1%.

In Russia, the main contributor to GHG emissions is the energy sector (83%). Those emissions are caused by extraction, processing, transportation and use of natural fuel.

Permafrost limits in the Russian Federation (current situation)



There are significant ongoing climate changes in Russia, which progress at a rate above the average global rate. The average annual temperature in Russia is going up 0.4°C to 0.5°C over 10 years, the greatest temperature changes taking place in the Arctic and permafrost zones which warmed by 0.8°C to 1°C in 10 years. The permafrost area of Russia is 11.1 million km² (65% of the total Russian territory), population in the area being about 6 million. A significant part of capital construction facilities located in permafrost areas may lose their functionality completely or in part due to climate change including depergelation.

Permafrost limits

In the Russian Federation (forecast 2050 based on modeling)



The medium forecast scenario shows that the permafrost area in Russia will be 9.6 million km² by 2050 including:

- continuous permafrost – 3.5 million km²;
- discontinuous permafrost – 1.7 million km²;
- insular permafrost – 4.4 million km².

Regulation of climate change issues in the Russian Federation

**Climate doctrine in the Russian Federation
for the period through 2020.**

**Comprehensive Plan of Implementation of the Climate
Doctrine of the Russian Federation for the Period
Through 2020.**

**Action Plan for implementation of the Basic Principles of
State Policy on Environmental Development of the Russian
Federation for the period through 2030.**

National Plan for Adaptation to Negative Climate Changes

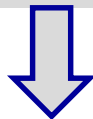
**The Transport Strategy of the Russian Federation for the
period through 2030.**

**Comprehensive Plan for Modernization and Expansion of
Arterial Infrastructure for the Period through 2024**

**Documents
that
determine
the RF
climate
change
adaptation
action plan**

Comprehensive Plan for Implementation of the Climate Doctrine of the Russian Federation for the Period Through 2020.

Limiting GHG emission in the transport sector

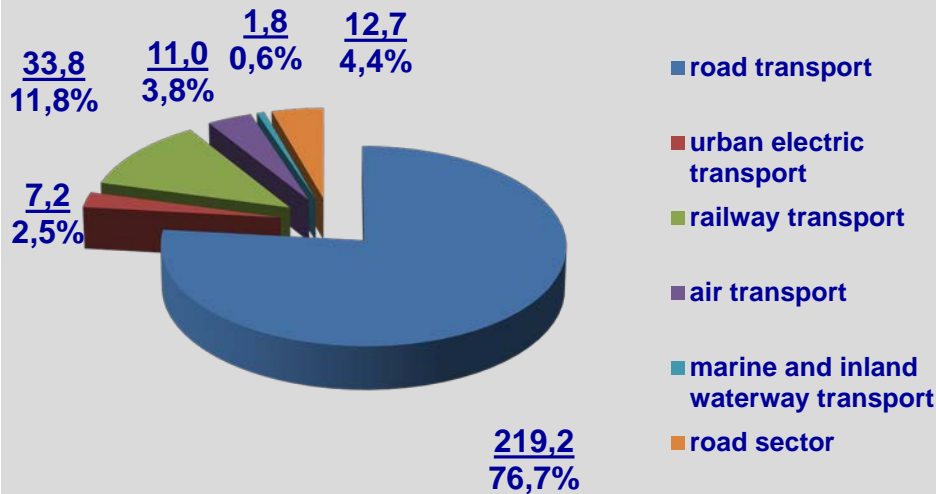


- transition to sustainable low-carbon based development of transport industry;
- improved fuel efficiency of transport vehicles;
- increased manufacturing of cars with hybrid engines;
- transport vehicles changing to alternative fuel;
- renewal of the road vehicle fleet;
- development of a technical regulation setting forth requirements for safety of roads with requirements for reduction in GHG emissions taken into account.



Contribution of transport to the total GHG emissions in the Russian Federation

The total gross GHG emissions generated by the transport industry is 285.6 million tons in CO₂equiv.



The transport industry is responsible for about 11% of the total GHG emissions in Russia.

Road transport is the largest contributor to GHG emissions, generating 219.2 million tons in CO₂equiv. (76.7% of the total gross GHG emissions from the transport industry).

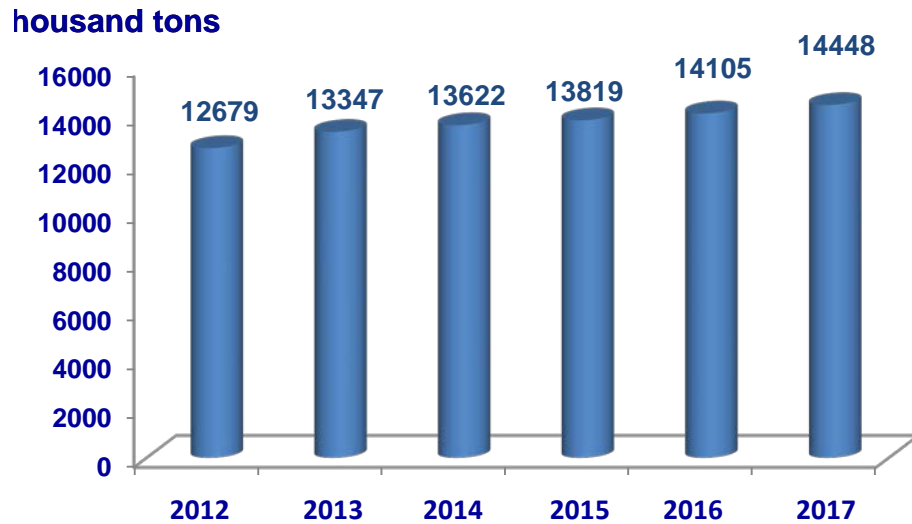
In 2018, there were ~ 52.4 million road vehicles in Russia, with 83% (43.5 million veh.) being passenger cars, 8.2% (4.3 million veh.) – light commercial vehicles, 7.8% (4.1 million veh.) – goods vehicles, and 1% (0.5 million veh.) – buses.

The number of cars in Russia went up 50% over the last 10 years. In 2018, the car ownership rate in Russia was 294 cars per 1,000 residents.

The average car age was over 12 years, with 55% cars being over 10 years old. Cars that meet Euro-5 or higher environmental standards make 13%, diesel cars making 5%. There are 2,500 electric cars in Russia.

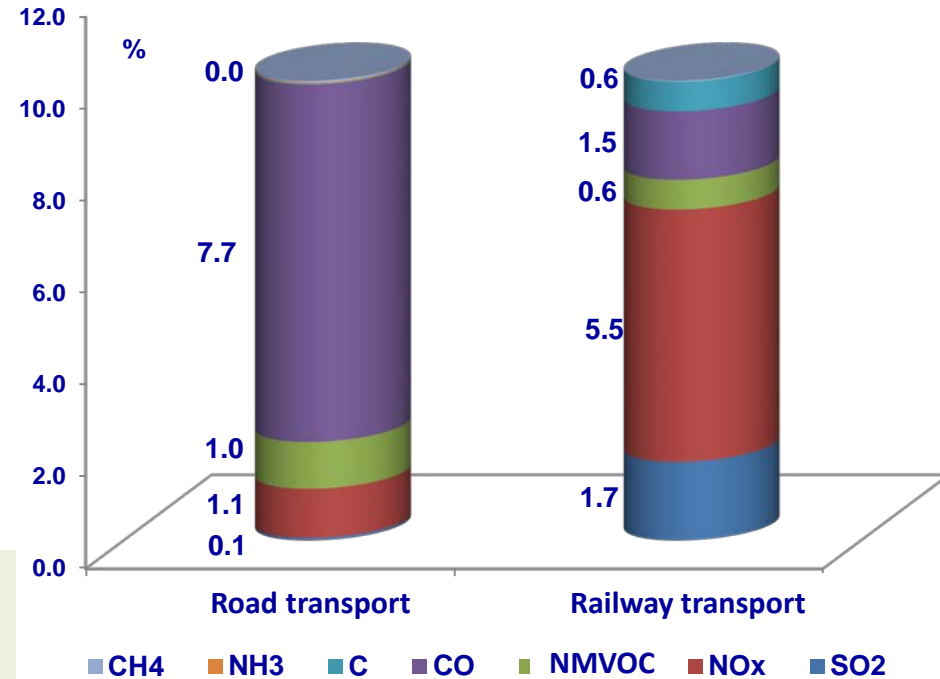
Dynamic and structure of atmospheric pollution from road transport in the Russian Federation

Dynamic of atmospheric pollution from road transport during the period from 2012 through 2017



In Russia, the major types of greenhouse gases such as CO₂ and N₂O are not included in calculations of pollutant emissions from mobile sources (road and railway transport).

Structure of pollution from road and railway transport in 2017, %



The total amount of pollutant emissions from road transport in the Russian Federation in 2017 was **14,448** thousand tons, from railway transport – **157** thousand tons.

The main issues as regards regulation of GHG emissions in the Russian Federation

1. No approved methodologies for GHG inventory and calculation in relation to road transport in regions and along roads in Russia.

The Methodological Guidelines and Manual for Measuring Greenhouse Gas Emissions by Businesses and Other Organizations Operating in the Russian Federation, approved by Order of Ministry of Natural Resources and Environment of the Russian Federation No. 300 dated 30.06.2015 do not cover calculations of GHG emissions from road transport (mobile and fixed sources) within regions and along roads.

2. The draft federal law “On government regulation of greenhouse gas emissions and on amendments to individual legal acts of the Russian Federation” does not provide government regulation mechanisms for GHG emissions from road transport.

Road transport being responsible for about 76.7% of GHG emissions in the transport industry, it is important to extend mechanisms of government regulation of GHG emissions to road carrier companies and individuals owning cars.

3. Russia does not have government statistics reports on distances traveled and fuel consumed by road vehicles owned by small businesses and private individuals – 90% of all road vehicles in Russia – which prevents well-based calculations of GHG emissions from road transport and implementation of the Polluter-Pays Principle.

4. Russia does not have:

- standard requirements regarding specific CO₂ emissions (per 1 km of distance traveled) for new vehicles available on the domestic market;
- eco-labeling of road vehicles indicating their energy efficiency (specific fuel consumption rate and GHG emission per 1 km);
- an effective system to control technical condition and fuel efficiency of vehicles owned by private individuals.

5. There is a transport tax in Russia, levied from road vehicle owners, which is based on the engine capacity and the cost of the vehicle. To foster reduction in GHG emissions, the transport tax should be replaced with an environmental charge, which would take into account the environmental class of a vehicle, its age, annual distance traveled, the amount of fuel (energy) used, specific fuel efficiency and CO₂emission rate.

Goals of Phase 1 of the Green Intertraffic Project

Goals of Project Phase 1:

1. To analyze the dynamic of GHG emissions and other air emissions from all industries, including from road transport over the period from 1990 through 2018 in EU countries and Russia.
2. To analyze existing strategic and program documents adopted in EU countries and Russia which determine targets for reducing GHG and other air emissions from road transport for the future (2020-2030-2050).
3. To analyze mechanisms for collection, availability and quality of existing statistics on performance and fuel consumption by road transport, as well as the amounts of GHG and other air emissions in EU countries and Russia.
4. To compare Russian and international approaches (UNECE regulations, EU Directives, development programs of the UN, GEF and other international organizations) and methodologies for calculation of GHG and other air emissions from road vehicles (passenger cars, goods vehicles, and buses) using various types of fuel and energy.
5. To develop methods for calculation of GHG emissions from road transport in regions and along roads.
6. To test the methodology for measuring GHG and other air emissions from road transport on the E-18 section from Saint Petersburg to Helsinki (federal road A-181 "*Scandinavia*" *Saint Petersburg – Vyborg – Finnish border* in Russia, and the E-18 section *Helsinki – Hamina – Russian border* in Finland).
7. To develop proposals on mechanisms of government regulation of GHG emissions from road transport

Time schedule of Phase 1 of the Green Intertraffic Project

<p>Activity 2 WP 1: Research and Innovation</p> <p><i>(December 2018 – July 2019)</i></p>	<p><i>December 2018 – April 2019</i></p>	<p><u>Step 2.1.</u></p> <ul style="list-style-type: none"> ❖ Conducting a special survey on comparison of Russian and Finnish approaches and methodology: for calculation of greenhouse gas and other air emissions from vehicles using different types of fuel and energy; assessment of environmental load from Intertraffic; environmental risk assessment; legal requirements and standards
	<p><i>February 19 – April 2019</i></p>	<p><u>Step 2.2.</u></p> <ul style="list-style-type: none"> ❖ Development of the common approaches and methodologies, including Greenhouse Gas and other Air Emissions from Intertraffic Manual.
	<p><i>May 19 – July 2019</i></p>	<p><u>Step 2.3.</u></p> <ul style="list-style-type: none"> ❖ Publishing of the Manual

Sections of the Report on Phase 1 of the Green Intertraffic Project

No.	ToR paragraph	Party responsible for preparation of report section	Deadline
Phase 1 (December 2018 – July 2019)			
1.	<p>Analysis of the dynamic of GHG emissions and other air emissions from all industries over the period from 1990 through 2018 in EU countries and Russia.</p> <p>Analysis of the dynamic and amounts of GHG and other air emissions from road transport over the 1990 – 2018 period in EU countries and Russia.</p> <p>Changes in the contribution of road transport to GHG and other air emissions from all types of transport over the period from 1990 through 2018 in EU countries and Russia.</p>	<ul style="list-style-type: none"> •Finnish Meteorological Institute (FMI) •Lappeenranta–Lahden teknillinen yliopisto (LUT) (information about EU countries) ----- •Transport Integration Ltd (information about the Russian Federation) 	February 8, 2019
2.	<p>Analysis of existing strategic and program documents adopted in EU countries and Russia, which determine targets for reducing GHG and other air emissions for the future (2020-2030 -2050)</p>	<ul style="list-style-type: none"> •Finnish Meteorological Institute (FMI) •Lappeenranta–Lahden teknillinen yliopisto (LUT) (information about EU countries) ----- •Transport Integration Ltd (information about the Russian Federation) 	February 15, 2019
3.	<p>Analysis of existing statistics provided by road carrier companies of all forms of incorporation to government statistics agencies of EU countries and Russia, on transport work and services provided and works completed; the number of vehicles and equipment with their main characteristics and fuel efficiency; fuel/energy types and consumption rates.</p>	<ul style="list-style-type: none"> •Finnish Meteorological Institute (FMI) •Lappeenranta–Lahden teknillinen yliopisto (LUT) (information about EU countries) ----- •Transport Integration Ltd (information about the Russian Federation) 	February 22, 2019

Sections of the Report on Phase 1 of the Green Intertraffic Project

No.	ToR paragraph	Party responsible for preparation of report section	Deadline
4.	Analysis of mechanisms for collection, availability and quality of existing statistics on the amounts of GHG and other air emissions from road transport in EU countries and Russia	Finnish Meteorological Institute (FMI) Lappeenranta–Lahden teknillinen yliopisto (LUT) (information about EU countries) ----- Transport Integration Ltd (information about the Russian Federation)	March 1, 2019
5.	Comparing Russian and international approaches (UNECE regulations, EU Directives, development programs of the UN, GEF and other international organizations) and methodologies for calculation of GHG and other air emissions from road vehicles (passenger cars, goods vehicles, and buses) using various types of fuel and energy.	Finnish Meteorological Institute (FMI) Lappeenranta–Lahden teknillinen yliopisto (LUT) (information about EU countries) ----- Transport Integration Ltd (information about the Russian Federation)	March 30, 2019
5.1.	The list of documents used in EU countries and Russia, which provide methodology for and methodological recommendations on calculation of the amounts of GHG and other air emissions from road vehicles using various types of fuel and energy		
5.2.	Analysis of the list of GHG and other air emissions from road vehicles, taken into account in EU countries and Russia		
5.3.	Analysis of completeness of monitoring coverage of GHG and other air emissions from road vehicles, taken into account in EU countries and Russia		
5.4.	Analysis of completeness of monitoring coverage of various factors (technical, process related, weather related, operation related, etc.) in intensity of GHG and other air emissions from road vehicles		
5.5.	Analysis of mechanisms for assessment of adequacy and accuracy of methods and results of measuring GHG and other air emissions from road vehicles		
5.6.	Conclusions and recommendations as regards the possibility (or impossibility) of using international approaches to, methodology for and methodological recommendations on calculation of GHG and other air emissions from road vehicles using various types of fuel and energy in Russia		

Sections of the Report on Phase 1 of the Green Intertraffic Project

No.	ToR paragraph	Party responsible for preparation of report section	Deadline
6.	Analysis of impact of weather factors on the amount of GHG and other air emissions from road transport and on their dispersion in the atmosphere	<ul style="list-style-type: none"> ● Finnish Meteorological Institute (FMI) (information about EU countries) ----- ● Saint-Petersburg State University ● Institute of Radar Meteorology (information about the Russian Federation) 	March 30, 2019
7.	Development of science based proposals on the content of the draft Methodological Guidelines for Measuring Greenhouse Gas and Other Air Emissions From Road Transport in the Russian Federation, using international experience	<ul style="list-style-type: none"> ● Transport Integration Ltd 	April 15, 2019
7.1.	Preparation of the list of users of Methodological Guidelines for Measuring Greenhouse Gas and Other Air Emissions From Road Transport in the Russian Federation		
7.2.	Preparation of proposals on the structure of the draft Methodological Guidelines for Measuring Greenhouse Gas and Other Air Emissions from Road Transport in the Russian Federation		
7.3.	Development of main principles for the methodology for measuring GHG and other air emissions from road transport in the Russian Federation		
7.4.	Preparation of proposals on the single list of indicators of GHG and other air emissions from road transport		
7.5.	Development of the calculation methodology for forecasting fuel consumption rates for various fuel types used by road transport. Development of the calculation methodology for forecasting the amount of GHG and other air emissions from road transport		
7.6.	Preparation of proposals on application of the Methodological Guidelines for Measuring Greenhouse Gas and Other Air Emissions from Road Transport in analysis of road transport emissions along federal roads that support international transport operations		

Sections of the Report on Phase 1 of the Green Intertraffic Project

No.	ToR paragraph	Party responsible for preparation of report section	Deadline
8.	Testing the methodology for measuring GHG and other air emissions from road transport on the E-18 section from Saint Petersburg to Helsinki (federal road A-181 “Scandinavia” Saint Petersburg – Vyborg – Finnish border in Russia, and the E-18 section Helsinki – Hamina – Russian border in Finland).	Finnish Meteorological Institute (FMI)	May 15, 2019
8.1.	Calculation of the amount of GHG and other air emissions from road transport on E-18 section from Saint Petersburg to Helsinki (federal road A-181 A-181 “Scandinavia” Saint Petersburg – Vyborg – Finnish border in Russia and the E-18 section Helsinki – Hamina – Russian border in Finland) in 2017-2019.	Lappeenrannan–Lahden teknillinen yliopisto (LUT) (information about Finland)	
8.2.	Development of a forecast of GHG and other air emissions from road transport on E-18 section from Saint Petersburg to Helsinki (federal road A-181 A-181 “Scandinavia” Saint Petersburg – Vyborg – Finnish border in Russia, and the E-18 section Helsinki – Hamina – Russian border in Finland) for the period through 2030, with two scenarios: the base scenario involving the existing trends as regards increase in energy efficiency of road vehicles, and the innovation-based scenario focused on a significant increase in energy efficiency of road vehicles.	----- Transport Integration Ltd (information about the Russian Federation)	
8.3.	Assessment of environmental risks involved in growing GHG and other air emissions from road transport, the case being the E-18 section from Saint Petersburg to Helsinki (federal road A-181 “Scandinavia” Saint Petersburg – Vyborg – Finnish border in Russia, and the E-18 section Helsinki – Hamina – Russian border in Finland) during the period through 2030.		

Sections of the Report on Phase 1 of the Green Intertraffic Project

No.	ToR paragraph	Party responsible for preparation of report section	Deadline
9.	Preparation of proposals on implementation of a system to monitor GHG and other air emissions from road transport, the case being the E-18 section from Saint Petersburg to Helsinki (federal road A-181 "Scandinavia" Saint Petersburg – Vyborg – Finnish border in Russia, and the E-18 section Helsinki – Hamina – Russian border in Finland).	<ul style="list-style-type: none"> ● Finnish Meteorological Institute (FMI) ● Lappeenranta–Lahden teknillinen yliopisto (LUT) (information about Finland) ----- ● Saint-Petersburg State University ● Institute of Radar Meteorology (information about the Russian Federation) 	Wednesday, May 15, 2019
10.	Analytical review of mechanisms for regulation of GHG and other air emissions from road transport, and steps taken by EU countries (legal, organizational, engineering, technical, economic, etc.) to effect transition to sustainable low-carbon development of road transport	<ul style="list-style-type: none"> ● Finnish Meteorological Institute (FMI) ● Lappeenranta–Lahden teknillinen yliopisto (LUT) (information about EU countries) ----- 	June 15, 2019
10.1.	Development and introduction of a classification of energy efficiency of road vehicles		
10.2.	Adding energy efficiency (fuel efficiency) requirements for road vehicles and for preservation of such properties during particular service life to relevant technical regulations		
10.3.	Including energy efficiency class of road vehicles and other energy efficiency information in technical documentation, markings and labels		
10.4.	The existing mechanisms to foster reduction in GHG and other air emissions from road vehicles, encourage energy saving and higher energy efficiency of road transport (legal, organizational, engineering, technical and economic measures, etc.).	<ul style="list-style-type: none"> ● Transport Integration Ltd ● Saint-Petersburg State University ● Institute of Radar Meteorology (information about the Russian Federation) 	

Sections of the Report on Phase 1 of the Green Intertraffic Project

No.	ToR paragraph	Party responsible for preparation of report section	Deadline
11.	Preparation of consolidated reports on Phase 1 of Intertraffic Project	Finnish Meteorological Institute (FMI) Lappeenranta–Lahden teknillinen yliopisto (LUT) (information about EU countries) ----- Transport Integration Ltd Saint-Petersburg State University Institute of Radar Meteorology (information about the Russian Federation)	15 July 2019



Discussion of results of Phase 1 of the Green Intertraffic Project

Organizations interested in discussing results of Phase 1 of the Green Intertraffic Project



Transport industry authorities:

- Ministry of Transport of the Russian Federation;
- Ministry of Transport and Communications of Finland.



Road administrations:

- Federal Road Agency, Federal State-Funded Institution “Administration of federal roads “North-West” named after N.V. Smirnov (Russia);
- E-18 road administrations in Finland.



Authorities for hydrometeorology and environmental monitoring:

- Federal State-Funded Institution “North-Western Administration for Hydrometeorology and Environmental Monitoring” (Russia);
- Authorities for hydrometeorology and environmental monitoring in Finland.



Border area development authorities:

- Government of Leningrad Region (Russia);
- Regional councils: Etelä-Karjala, Uusimaa, Kymenlaakso (Finland).



Business entities:

- Transport and road companies of Saint Petersburg and Leningrad Region (Russia);
- Transport and road companies of Finland.