
Transport and Environmental Issues in the Gases Industry

1 Introduction

EIGA Working Group 5 (“Environment”) has compiled this Environmental Newsletter to provide information on environmental issues relevant to the Industrial Gases Industry.

These brief guidelines are intended to help assist people how they can improve the environmental impact related to transport operations.

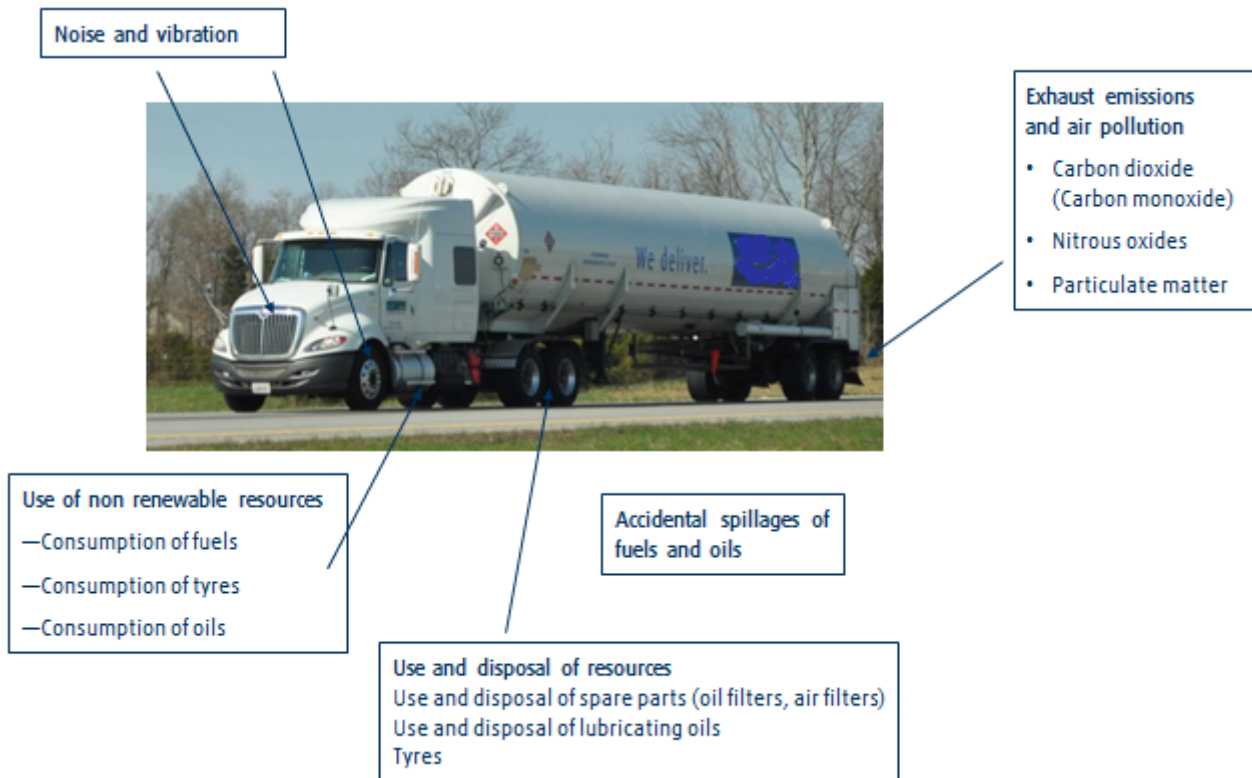
According to the European Environment Agency, transport accounts for around a third of the final energy consumption in the EEA member countries and for more than a fifth of greenhouse gas (GHG) emissions. Road transport represents 82% of transport energy use.

Transport is also responsible for a large share of urban air pollution as well as noise nuisance. Road transport, was responsible for 17.5% of all European Union (EU) GHG emissions in 2010

Transport emissions are coming under increasing attention of policy makers in the EU. Emissions of air pollutants from transport have generally declined over the past two decades. However, around 90% of city dwellers in the EU are still exposed to air pollutants at levels deemed harmful to health by the World Health Organization (WHO), and transport is a large contributor to this. Transport also causes noise impacts. Road traffic exposes more people to harmful levels of noise than any other source.

2 Environmental impacts of transport

The environmental impact of transport operations can be seen below:



Some facts and figures about transport fuel consumption:

- Constant up and downhill driving or city driving with many stops can increase fuel consumption by more than 50%;
- Driving into a wind blowing an additional 10 metres/sec can increase fuel consumption by up to 18%;
- If there is rain or snow on the road surface, rolling resistance increases, and fuel consumption may increase by 10-20%;
- Lowering the speed from 90 km/h to 80 km/h reduces fuel consumption by up to 6%;
- One additional stop every 10 km increases the fuel consumption by approximately 35%. 10 stops and accelerations per 10 km increase fuel consumption by up to 130%; and
- The fuel consumption can increase by up to 10% if the vehicle is not serviced regularly and/or if non-approved parts are being used on the truck.

3 What can we do to improve – good environmental practices to minimize environmental impacts

Areas of interest to improve environmental impacts	Good practice
Reduce emissions to air	<ul style="list-style-type: none"> • Use alternative fuels such as lower carbon impact fuels e.g. CNG, LNG, bio-diesel, hydrogen, electrical; • Maintain and service engines according to manufacturer; • Use most fuel efficient engines (Euro 6 plus); • Use engine management systems to optimise driving; and • Driver training and coaching on efficient driving
Use fuels more efficiently	<ul style="list-style-type: none"> • Use most fuel efficient engines; • Train and coach drivers in safe and efficient driving behaviours; • Optimise vehicle routing and deliveries; • Use multi modal transport; and • Track and record vehicle fuel efficiency
Minimise noise and vibration	<ul style="list-style-type: none"> • Maintain trucks according to the manufacturers recommendations; • Optimise technology of truck fleet i.e. purchase new trucks with new technology; <ul style="list-style-type: none"> – installing acoustic screens to provide sound insulation; – reducing tyre rolling sound emissions by using new tyre profiles and fitting new types of tyres; and – improving air penetration by better aerodynamics (which also cuts fuel consumption)

Waste management – reducing the impacts of wastes at distribution terminals, see EIGA Doc 88 *Good Environmental Management Practices for the Industrial Gas Industry*; of which a part of the table is reproduced below.

APPENDIX E—GEMP for truck maintenance and distribution terminals			
Source	Environmental Aspect	Potential Impact(s)	Good Environmental Management Practices
Brake shoes	Asbestos	Waste Air	Do not use asbestos brake shoes. Replace existing shoes. Dispose of as hazardous waste to authorized contractor
Cleaners—engine, brake and other specialty maintenance products	Various chemicals, aerosol cans	Soil Air Waste disposal	When using specialty cleaning products, apply product to rag then apply the product -containing rag to surface being cleaned. Minimize overspray, drips, and residues. Use absorbent materials to collect excess. Do not mix spent specialty products with parts washer solvents. Empty aerosol cans (contents no longer under pressure) before discarding into non-hazardous waste(trash), if permitted. Do not clean parts over ground or drain. Use drip pan. <u>Dispose of in accordance with appropriate rules and regulations.</u>
Motor oil changes	Used oil, oil filters	Soil Surface water Waste disposal	Puncture filter dome end and hot drain used oil for 24 hours. Recycle used oil filters, where service is available. Recycle used oil through an approved oil recycler. Do not mix solvents or other chemicals with used oil. Do not pour oil on ground or down drain. <u>Report and clean up any leaks immediately</u>
Motor vehicle air conditioners	Refrigerants (CFCs, HCFCs, HFCs)	Ozone depletion Global warming Air	Minimize leaks through preventive maintenance. Repair leaks promptly. Do not vent refrigerants to atmosphere. Recover refrigerants to the maximum extent possible during maintenance and servicing by certified technicians using approved recovery and recycling equipment. Where practical, retrofit units with less harmful refrigerants that are approved by an environmental representative.
Radiator servicing	Ethylene glycol, Propylene glycol, and similar heat exchange fluids	Soil Surface water Waste disposal	Recycle spent antifreeze via approved recycler. Dispose of spent solutions as a last resort through an approved disposal contractor. Do not pour antifreeze on ground or down drain. Use drip pan to collect. <u>Report and clean up any leaks immediately.</u>

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