European Bank
for Reconstruction and Development

Sub-sectoral Environmental and Social Guidelines: Road Freight Services

PROCESS DESCRIPTION

This guideline focuses on the operational aspects of road freight services, including logistics, permitting, legislative framework , infrastructure restrictions, loading, road transport, unloading, transfers and transhipments and classification of cargo/payload; whether dangerous, hazardous, non-hazardous, perishable or non-perishable.

Road freight vehicles are classified according to weight and cab-cargo fixture these include light vans, light to heavy goods vehicles, bulk tankers, refrigerated trucks, articulated and non-articulated containers as well as vehicle, machinery and abnormal load transporters.

There are specific instruments of EU and international legislation regarding the loading/unloading of cargo, transporting of cargo (including dangerous substances), vehicular logistics, working hours, safety and security of goods and workers.

Cargo is variable and could include (but not limited to) building materials, machinery and engines, chemicals, perishables (food and drink), agricultural products, leather and textiles, metal products, and live animals.

Other activities associated with road freight transport services include refuelling, cleaning, maintenance and servicing of vehicles as well as en-route storage and cargo transfer and emergency response systems

This guidance note will focus on road freight services only. It will cover issues associated with loading, transfer, haulage, unloading and storage of cargo. It will also include the potential environmental risks associated with the type of vehicle used and accidents, emergency response and transport vehicle security. This guidance note does not cover environment risk factors associated with the production of goods for road transport.

Cargo or payload is variable and may consist of dangerous, hazardous, non-hazardous, or perishable goods, abnormal loads and live animals. Cargo listed as a dangerous or hazardous substance should be labelled in accordance with the United Nations Globally Harmonised System of classification and labelling of chemicals (GHS). These are liquid or solid substances which have been tested and assessed and found to be dangerous to human health and the environment.

Regarding the environment risk associated with the composition of the intended cargo, users of this guidance note are referred to guidance notes covering the manufacture or use of those products.

KEY ENVIRONMENTAL, HEALTH AND SAFETY RISK/LIABILITY ISSUES

Emissions to air

Exhaust emissions from road freight service vehicles may lead to human health impacts. Degradation in air quality near major road transport routes due to emissions and discharge of particulate matter (airborne particulates with an aerodynamic diameter of 10, noted as PM_{10}) may lead to an increase in respiratory and heart disease and stress related illnesses, especially in vulnerable groups such as children and the elderly.

Volume and quality of exhaust emissions from road freight vehicles are dependent on vehicle type and weight, load, and fuel type. Exhaust emissions include particulates (PM_{10}) greenhouse gases such as carbon monoxide, carbon dioxide

(CO), carbon dioxide (CO_2), Nitrous oxides (NO_x) and volatile organic compounds (VOC); the latter emitted during re-fuelling with petrol and diesel. Large vehicles used for road haulage emit a higher volume of CO_2 , NO_x ;. NO_x is particularly higher in the night and in the winter months. Within the EU emission standards for road freight vehicles is outlined in Directive 91/542/EEC.

Airborne particulates (PM_{10}) are largely attributed to heavy goods vehicles. With as much as 80% from diesel engine emissions. Older road freight vehicles and vehicles from recently annexed EU countries may not be fitted with exhaust particle traps or use low sulphur fuel sources.

Habitat degradation

Vegetation is notably affected by elevated levels of heavy vehicle emissions. Leaves are covered with particulate matter which retards photosynthetic processes. Also green house gases such as NO_x and CO_2 form mild acidic solutions when in contact with moisture which affect plant growth.

Effluent and Water Pollution

Discharges resulting from spilt liquid payload, oils or solvents during maintenance work may enter storm drains and therefore enter water courses leading to deterioration in water quality and ecological impact.

MTBE (Methyl Tertiary Butyl Ether) are usually added to petrol to reduce emissions. MTBE is highly soluble in water and is a contaminant. It is detectable in water at small concentrations due to its strong taste and smell and because of its high solubility. Unreported fuel spills may lead to tainting of water supply such as private wells near road freight depots or maintenance yards.

Vehicle wash areas on depots create waste water that is high in suspended solids, oils, diesel and other dirt picked up on roads.

Waste Disposal

Freight vehicle maintenance and management creates waste associated with used parts, tyres and batteries. These pose an environment and health and safety risk if not managed and disposed in accordance with the regional legislation.

- Tyres pose a particular environmental and health and safety risk due to the contaminants associated with their burning. While tyre fires are uncommon, and tyres do not readily decompose, incorrect storage and disposal may present a risk of fire. Chemicals produced from the burning of tyres pose a pollution risk to air and water courses through run-off. The high energy content of tyres means that they have the potential to burn for long periods.

- Lead acid battery disposal poses a marginal environment and health and safety risk of potential release of hazardous chemicals to land and water courses if stored or disposed of incorrectly.

- End of life vehicles (ELV) pose a risk to health and safety and have a negative visual impact. Vehicles which have come to their end of life should be disposed of at a licensed salvage yard. Where dismantling and disposal can take place in controlled conditions and in line with regional regulations.

Road Safety

Trans-boundary travel can lead to lapses in compliance with local road safety standards and the lack of enforcement in some regions. This leads to poor or low level of awareness of public safety and protection and the maintenance and protection of road infrastructure integrity.

Tiredness and driving at night can lead to road traffic accidents. Typically, these occur when drivers have not taken sufficient rest breaks.

Unscheduled re-routing due to accidents, spills or other civil emergency priorities such as abnormal loads, adverse weather conditions may put undue stress on other transport routes.

Dangerous goods transport

Transportation of dangerous goods by road involves the risk of road traffic accidents. Carriage of dangerous goods has the risk of an incident such as spillage of goods, which may lead to hazards such as fires, explosion, chemical burn or environment pollution and long term degradation. There are particular multilateral agreements concerning transport of dangerous substances and minimisation of impact on the environment and health and safety concerns. These should be consulted prior to acceptance of cargo.

Livestock

Transport of live animals may pose risks associated with handling, transfer and conveyance. All animals in transit in Europe must have a Common Veterinary Entry Document (CVED). Non-European countries require comparable documentation stating the welfare, destination and fate of animals being transported. Use of inappropriate vehicles can lead to animal stress, injury and loss.

Live animals and plants require permits, certifications and details of consignment. Freight vehicles used for the transport of live animals should be clearly and visibly marked to indicate transport of live animals.

OTHER ENVIRONMENTAL, HEALTH AND SAFETY RISK/LIABILITY ISSUES

Ecologically sensitive areas

Transport routes through mountainous areas are sensitive because of the specific morphological and meteorological conditions. Amphitheatre shape of valleys means emissions cannot disperse air pollution is compatible with that of an urban area. Traffic air quality is three times worse in mountainous areas than lowland areas. Nitrous Oxide (NOx) is known to be higher in winter and at night and have direct impact on alpine ecosystems which are sensitive to air pollution. NOx contributes to habitat and plant degradation and is also involved in the formation of tropospheric ozone (O3), contributing to global warming.

Refrigerants

Refrigerated road freight vehicles may be used to carry perishable goods. Gases used in cooling systems may be of concern with older vehicles. Under the Montreal Protocol certain refrigerant substances are banned.

Fire

Road freight vehicles and depots, use and store flammable liquids which present a fire risk. Improper storage of used tyres also presents a fire risk.

Handling of loads

Where cargo has been incorrectly loaded it can present a risk of the cargo shifting and moving during transport. This cargo movement can lead to road traffic accidents.

KEY SOCIAL, LABOUR AND COMMUNITY RISK/LIABILITY ISSUES

Congestion

The social and health and safety impact of congestion is especially marked in urban areas. Congestion increases the environment and health issues from noise and vibration associated with the movement of heavy freight vehicles. This may lead to anxiety and stress associated with freight activity. Congested roads, especially along routes with road infrastructure not suited to large road freight service vehicles leads to damage to road infrastructure.

Accidents

The impact of accidents caused by road freight vehicles include the cost of personal injury and death, medical services, police, other emergency services and related administration, as well as damage to other vehicles and property. The social and financial impact varies with the nature, frequency and severity of the accidents.

Transfer of hazardous substances

Inappropriately labelled cargo is a concern as if released the inappropriate response may be applied leading to additional health and safety and community risks.

Pollution incident response planning

Lack of protection and preparation for the management and reporting of spills and other cargo losses and poor connectivity with regional emergency response systems may lead to wider impacts on human health and environment degradation

Odour

Odour can be associated with emissions; as well as from cargo, such as livestock in transit especially when travelling through urban areas. This causes a nuisance to commercial and residential properties along routes of travel

Noise and vibration

Heavy goods vehicles may damage roads and buildings with vibration and cause nuisance to people through noise and odour. New depots, in particular, may attract vehicle movement restrictions to limit nuisance to location residents.

FINANCIAL IMPLICATIONS

- Higher road transport costs due to congestion and environment constraints and impact charging;
- A transport operator may be held liable for damages resulting from an accident if this is considered to be caused by negligence. For example, if a fuel tanker were to crash due to mechanical failure caused by inadequate maintenance, the operator may be held responsible for the resulting damage to health and the environment;
- Vehicle and technological investment to address energy efficiency and reduce environmental and human health impacts
- Injuries may lead to increased payroll costs to replace skilled workers and lost production time;

- Capital investment may be required to comply with new environmental, health and safety requirements;
- Fines, penalties and third party claims may be incurred for non-compliance with environment, health and safety regulations.

IMPROVEMENTS

- Greater engagement with the improvement in engine technologies, exhaust particle traps and cleaner fuels, such as sulphur-free petrol and diesel, to meet EU Directives will enable an improvement in air quality along road transportation routes
- Underground and above ground storage tanks should be regularly checked to ensure that fuel and oils storage is safe and secure.
- Underground storage tanks should be double layered, and above ground storage tanks correctly contained.
- Use of intelligent transport systems (ITS) such as variable messaging signing (VMS) and telematics to improve road freight efficiency
- Drivers should seek advice on appropriate alternate routes from emergency services for size and load of freight vehicle operating if there is a need for change from designated transport route due to civil emergency , accident or adverse weather conditions
- Greater use of low emission zones in urban areas to improve air quality and health and wellbeing
- Ensure that cargos are correctly loaded to prevent movement during transport;
- Ensure that drivers take sufficient rest breaks;
- Designated maintenance waste disposal area in Freight depots with dedicated waste containers for the segregation of waste, especially hazardous waste. Waste is to be removed by a licensed contractor in accordance with the regional legislation;
- Appropriate safety checks should be conducted to fulfil health and safety requirements and cargo security;
- Adherence to the designated transport networks for road freight conveyance and logistics planning systems to address contingency planning and emergency response;
- All vehicles and vehicle depots should have and maintain emergency response plans and systems, including extinguishers and hazardous waste containment vessels and material to be deployed in the event of a spill;
- Regular vehicle inspection and maintenance, with particular reference to tyres and engine can improve safety, reduce harmful air emissions and reduce consumption of natural resources;
- Regular inspection should be carried out of all bulk containment on site to prevent leakage and product loss;
- Provision of secondary spill containment for storage and process vessels;

- Ensure that bulk storage areas are locked to prevent unauthorised use of materials or vandalism;
- Ensure that vehicle wash areas are contained and that wash water is directed to appropriate treatment facilities before discharge to local water courses;
- Provision of personal protective equipment (PPE) that is fit for the task to prevent injury and maintain hygiene standards. Staff should be trained in the correct selection, use and maintenance of PPE. PPE should be inspected regularly and maintained or replaced as necessary;
- Train all personnel associated with loading, road transport, unloading, transfers and transhipments and classification of cargo/payload, maintenance and logistics;
- Consider environmentally favourable logistics planning for road freight route planning (environmentally preferred logistics solutions).

GUIDE TO INITIAL DUE DILIGENCE SITE VISITS

During the initial site visit, the issues will vary according to the type and size of road freight vehicles employed and type of cargo handled and distances travelled. While visiting the site it is important to discuss and review the following:

- Review the condition of the depot and house keeping. Do areas look clean and tidy? Are there designated walk areas? Look for localised spills and equipment and materials in driving and walking paths which may present a hazard;
- Check signage around the site. Are signs clear and visible both the drivers and pedestrians? Are sign heights appropriate for type of vehicles on site? Are warning, hazard and mandatory health and safety signs present and in appropriate locations?
- Identify site fuelling stations. Is fuel kept in above ground or below ground storage tank? Does the fuel storage conform to the correct containment and health and safety requirements?
- Identify storage for other chemicals and wastes. Are these appropriately located and separated?
- Are there vehicle wash areas? Are these contained to capture wash water runoff?
- Check where waste water is discharged to;
- Emergency Planning and Response. Is there adequate space and access for emergency services on site? Are first aid stations and eye washing facilities identified with correct signage and accessible?
- Check waste storage facilities for safe positioning, coverage and security
- Check site environment, health and safety plan. Are site observations, regarding location and type of storage, waste and emergency response facilities documented?
- Do all vehicles have up to date maintenance records and travel log books?
- Have there been any reportable incidents e.g. fires, explosions, injuries, fatalities?

- Has there been a notifiable and/or reportable breach in site operation and management? Have there been any permits or licenses revoked due to operational transgressions or poor health safety or environmental practices? Has the relevant authorities inspected the facility and or vehicles concerned? What were there findings?

- Is there clear, designated organisational responsibility for environmental, health, safety and welfare?

- Is there a communicated logistics management plan and emergency response plan?

- Are staff wearing Personal Protective Equipment?

- Check that wages and working hours are consistent with the average for the sector and national standards;

- Does the business plan have line items for Environment, Health and Safety improvements?

- If the investment or refinancing will led to restructuring of the company, what will be the potential impacts on health and safety at the operational, employee welfare and wide community impacts level?

- If the company plans to invest in new technology, what will be the impact on human resources, in particular health and safety and employee welfare?

- Check the conditions and duration of validity for all permits;

- Check that labour standards, contracting and remuneration are in line with national law and are consistent with the average for the sector

- Check that hours, including overtime, are recorded and staff should receive written details of hours worked and payment received

- Has the company received inspections from the local labour inspectorate in the previous three years? Have these resulted in any penalties, fines, major recommendation or corrective action plans;

- Does the organisation have a grievance mechanism which allows employees to raise workplace concerns?

- Are employees free to form, or join, a worker's organisation of their choosing?

Take notes and ask questions relating to any activities that address the improvements listed in the improvements section of this document.

ACTION PLANS

Dependent on the individual business, select appropriate improvements from the list above to include in the action plan. As a minimum, any business should be required to have the following in place:

- Operational procedures to manage environmental, health and safety risks;

- Monitoring programmes;

- Improvement objectives, targets and project plans;

- Training for personnel;

- Regular inspections, checks and audits with records to demonstrate achievement of the required level of performance against legal requirements and improvement action;

- Emergency plans for environment, health and safety accidents or hygiene non-compliance;

- Management review/demonstrated involvement in environment, health, safety and hygiene management.

EFERENCES AND ADDITIONAL SOURCES

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