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GOVERNMENT OF DUBAI

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Dubai Municipality

Technical Guidelines on Hazardous Waste Collection & Transport

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Waste Strategy and Projects Department
Dubai Municipality

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1.0	22/08/2024	Ammar Kamil Mohammed Saeed	
1.0	22/08/2024	Wafa A.Yousef Hanoun	

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Version No.	Date	Reviewer(s)	Signature
Waste Strategy and Project department			
1.0		Mohammed Iqbal Alkhalsan	
1.0		Ali Abdulla Yousuf Al Jaroodi	

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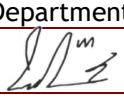
1.0		Waste Strategy and Project Department Head	
			

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CO	Carbon monoxide
DET	Department of Economy & Tourism
DM	Dubai Municipality
H_2	Hydrogen
HWTV	Permit Hazardous Waste Transport Vehicle Permit
JA-HWTF	Jebel Ali – Hazardous Waste Treatment Facility
Li-ion	Lithium Ion
NOC	No Objection Certificate
PPE	Personal Protective Equipment
RTA	Roads and Transport Authority
WSPD	Waste Strategy and Project Department
WTS	Waste Treatment Section
RASID	Dubai Municipality has introduced the RASID waste management monitoring system to regulate operations of registered waste management companies by streamlining and monitoring waste management transportation and associated activities – from collection through transit and till disposal, from analysis review to end-user solutions and by controlling illegal and unauthorized dumping practices.
Non-hazardous waste	is a waste or mixture of wastes that does not pose a substantial threat to public health or the environment and is safer to handle, store, and dispose of compared to hazardous waste. However, it can be harmful to the environment if left untreated. This category includes everyday household items like food waste, paper, cardboard, plastics, glass, metals, and textiles, as well as non-toxic industrial waste, uncontaminated construction and demolition debris, organic waste like yard trimmings and agricultural residues, and certain electronic waste.
Hazardous waste	Is a waste or mixture of wastes containing one or more properties of a hazardous substance, i.e., being toxic, infectious, corrosive, flammable, oxidizing, radioactive, reactive or explosive, which, at a certain concentration or condition and improper handling can cause substantial

	harm to humans, properties or the environment.
UN Number	The United Nations (UN) Numbers are four-digit numbers used worldwide in international commerce and transportation to identify hazardous chemicals or classes of hazardous materials. These numbers generally range between 0000 and 3500 and are ideally preceded by the letters "UN" (for example, "UN1005") to avoid confusion with other number codes.
Material Safety Data Sheet (MSDS)	Hazardous substances or dangerous preparations must be accompanied by so-called safety data sheets. These safety data sheets contain information on the composition and the chemical and physical properties of substances as well as information on toxicology, ecology, transportation and disposal and thus provide assistance for the assessment of waste based on certain ingredients.
Waste Collection	Collection within the meaning of this guideline is the loading, transport & any interim storage of waste for the purpose of transportation to a waste disposal and/or treatment plant.

1 INTRODUCTION

In general, this guideline underscores adherence to the specified legal and regulatory framework, ensuring that Hazardous Waste Collection & Transport activity is conducted in compliance with established laws, circulars, and guidelines. This serves to standardize practices across the industry, promoting sustainable waste management practices, safeguarding public health, and preserving the environment within the Emirate of Dubai. The guideline encompasses detailed operational procedures, safety protocols, and contractual obligations to ensure that waste management practices are conducted responsibly and sustainably within Dubai. It provides additional details about the vehicle types and critical parameters to consider during transport. Hence, this Technical Guide is intended to deliver:

a) General provisions such as mandatory training for all personnel involved in waste collection and transportation,
b) Vehicle requirements for hazardous waste collection & transport
c) Procedures for waste collection & transport frequency based on waste type, the correct positioning and handling of waste containers, and specific measures to prevent spillage and leakage during waste collection operations, etc.
d) Specific provisions for Hazardous Waste Collection & Transport activity

2 LEGAL FRAMEWORK, CIRCULARS, AND GUIDELINES

The relevant provisions of the following laws and regulations were used as guidance and references in the preparation of this technical guideline.

- Cabinet Decision No. (37) of 2001 on the Executive Regulations of Federal Law No. (24) of 1999 on Environmental Protection and Development - Hazardous Materials, Hazardous Waste and Medical Waste Regulations
- Cabinet Decision No. (33) of 2018 on the circulation of used oils
- Federal Law (No.) 24 of 1999 and modified by Federal Law (No.) 11 for 2006 regarding Protection & Development of the Environment.
- Executive Order of Federal Law No. 24 of 1999 for Regulation of Handling Hazardous Materials, Hazardous Wastes and Medical Wastes, issued by Cabinet Decree No. 37 of 2001
- Local Order No. 11 of 2003 on Public Health and Safety of the Society in the Emirate of Dubai
- Local Order (No.) 61 of 1991 on the Environment Protection Regulations in the Emirate of Dubai
- Local Order No. (115) of 1997 Concerning Medical Wastes Management in the Emirate of Dubai Cabinet Decree No. 138 of 2023 Concerning the Weights and Dimensions of Heavy Vehicles & Administrative Penalties for Violations.
- Code of Practice on The Management of Medical Wastes from Hospitals, Clinics and Related Health Care Premises in Dubai (1997)
- Local Order (No.) 7 of 2002 on Management of Waste Disposal Sites in the Emirate of Dubai; as amended by Local Order No. (5) of 2003
- Executive Council Resolution (No.) 58 of 2017 Concerning the Approval of Fees and Fines of Waste Disposal in the Emirate of Dubai
- Executive Council Resolution No. (14) of 2015 Amending the Schedule of Public Hygiene-related Violations and Penalties Attached to the Implementing Bylaw of Local Order No. (11) of 2003 Concerning Public Health and Community Safety in the Emirate of Dubai
- Cabinet Decree No. 138 of 2023 Concerning the Weights and Dimensions of Heavy Vehicles
- Procedures and guidelines for implementing and implementing Administrative Order No. 30/2003, in accordance with Local Order No. 11/2003
- Code of Practice for the Management of Dangerous Goods in the Emirate of Dubai
- UAE Occupational Health and Safety Management System (OHSMS) National Standard
- Law No. (26) of 2015 Regulating Data Dissemination and Exchange in the Emirate of Dubai.
- Technical Guideline No. 4. on Duty of Care

- Technical Guideline No. 5. on Waste Classification
- Technical Guideline on Chemicals & Wastes Transportation
- Technical Guideline on Lubricants & Petroleum Wastes Transport
- Technical Guideline on Used Lubricants Collecting Services

The related circulars and posted information bulletin of this guideline are posted on Dubai Municipality's website – www.dm.gov.ae link to the Waste Department.

The Duty of Care Program is a management tool to control the waste generated in Dubai. The regulation requires that all transfers of waste are appropriately recorded in order to assist in tracking the quantity generated and movements of waste. Waste collection & transport companies, as primary actors in the duty of care, need to ensure that the waste is safely & properly collected and that the complete waste transport is recorded in the waste manifest along with any other records required by DM. This will ensure that the waste is properly managed at the source, transported by licensed waste management companies and delivered to an approved facility and/or disposed of at proper sites.

3 SCOPE AND COVERAGE

These guidelines and procedures are applicable to the transportation of waste by road within the Emirate of Dubai. The scope is restricted to companies holding a valid business license for activity 3812007-Hazardous Waste Collection & Transport from the Department of Economy & Tourism (DET) or licenses from the Free Zone Authorities in Dubai as applicable. It also permits companies to engage with third-party entities through formal contracts for waste transportation, provided these third parties fully comply with the standards set by the Waste Strategy and Projects Department (WSPD). The guideline emphasizes the necessity of licensed vehicles for waste collection and transportation, mandating that these vehicles are duly registered under the company's name and meet all specified operational fitness and safety requirements.

The following compliance requirements should be considered for companies conducting Hazardous Waste Collection & Transport activity:

- This technical guideline shall be considered for the following waste types:
  - **Batteries and Accumulators**
    - Lead-acid batteries
    - NiCd batteries
    - Lithium batteries
  - **Fluorescent Tubes and Other Mercury-containing Waste**
    - Fluorescent lamps

    - Thermometers
    - Mercury switches
- **Solvents**
    - Halogenated solvents
    - Non-halogenated solvents
- **Acids**
    - Sulfuric acid
    - Hydrochloric acid
    - Nitric acid
- **Alkalis**
    - Sodium hydroxide solution
    - Potassium hydroxide solution
- **Pesticides**
    - Insecticides
    - Herbicides
    - Fungicides
- **Paints, Varnishes, and Adhesives**
    - Waste paint
    - Varnish residues
    - Adhesive residues
- **Photo-chemicals**
    - Fixer solutions
    - Developer solutions
- **Pharmaceutical Waste**
    - Expired medications
    - Pharmaceutical residues
- **PCB-containing Waste**
    - Transformers containing PCBs
    - Capacitors containing PCBs
- **Waste from Electrical and Electronic Equipment**
    - Waste electronics
    - Electrical appliances
- **Other Hazardous Waste**
    - Various hazardous wastes that do not fit into the above categories

For the following waste types please also refer to the respective Technical Guidelines as seen below:

- **Laboratory Chemicals**
    - Laboratory reagents

- Discarded chemicals from laboratory use

→ Please refer to Technical Guidelines on Chemicals & Wastes Transport

- **Waste Oils**
  - Used lubricating oils
  - Hydraulic oils
  - Engine oils

→ Please refer to Technical Guidelines on Lubricants & Petroleum Wastes Transport & Used Lubricants Collecting Services

4 GENERAL PROVISIONS

The following provisions apply to companies with a valid license for Hazardous Waste Collection & Transport activity or any third party engaged through a formal contract and who have attained prior authorization requests on behalf of the contracting party from the WSPD. The decision to accept or reject applications of a similar nature is at the sole discretion of the WSPD. Furthermore, any vehicles used for the activity must be registered with the company applying for the transportation license, and it is strictly forbidden to use any vehicle that is not registered under the company's name, even if the company operates under a single sponsor or as a subsidiary.

Hazardous waste transporters play an important role in the hazardous waste management system by delivering hazardous waste from the point of generation to its ultimate destination in a safe and secure manner. Vehicles that are transporting hazardous wastes within the Emirate of Dubai are required to obtain a "Hazardous Waste Transport Vehicle - HWTV Permit" from the Waste Strategy and Projects Department (WSPD) of DM and are also required to comply with all applicable local regulations.

4.1 Hazardous Waste Collection Operations

a) It is the responsibility of the waste generator to verify the credentials and compliance of the waste transporters as per the latest published bulletin. The list of approved hazardous waste transporters is available at the Dubai Municipality website: (https://www.dm.gov.ae/municipality-business/environment-and-coasts/waste-department/)
b) There is always a risk of spillage and leakage during the transport of hazardous waste. When incompatible substances mix with each other, there is a possibility of a chemical reaction, which can produce enough heat and friction to cause fire or explosion and release dangerous gases. To prevent spillage all companies/establishments that generate "Hazardous Waste" are required to obtain a valid permit or No Objection Certificate (NOC) from the WSPD prior to transport, disposal, recycling or processing.
c) Each load of hazardous waste applied for disposal by the generator must be accompanied by a document, i.e., a printout of an approved "Permit for Disposal of Hazardous Waste". The original of these documents must be handed to the Supervisor at the disposal site/ Waste Treatment facility upon delivery of the waste loads.
d) Waste generators must acquire sufficient training and certification in hazardous waste management practices to ensure they understand their responsibilities.
e) Waste generators must maintain documentation of the types and quantities of hazardous waste generated, including MSDS and other necessary safety documents.
f) Waste generators must maintain detailed records of waste disposal activities, including dates, quantities, and recipients. Proof or evidence in the form of laboratory tests or photos can be included.
g) Waste generators must prepare Emergency Response Plans for the collection (handover and loading to transporter process).
h) It is the responsibility of the waste generator to check if valves and connections are carefully verified to prevent any leakage.
i) It is the responsibility of the waste generator to see that the waste materials are properly packed and marked and the appropriate documents are supplied to the hazardous waste transporters.
j) Hazardous waste must be packed in good-quality packaging. Packaging must be free of any indication that their integrity has been compromised. Packages must be constructed, closed and prepared for transport to prevent any leakage. These provisions apply to both new packaging and packaging which are reused.

When packaging is reused, all measures must be taken to prevent contamination.

k) Packaging must be compatible with hazardous material and designed to prevent leaks, spills, or reactions during transport.
l) Packages must be marked with proper labels, hazard labels, and markings indicating the hazard class and proper shipping name, including the UN number. The label must be recognizable and legible at all times. Labels must include hazard and/or handling labels, depending on the goods.
m) The language of the text should be in English & Arabic unless specified otherwise. Examples of suitable packaging methods for hazardous wastes are seen in the figure below:

Figure 1 Different suitable Container types: ASP, metal clamping ring drum, plastic clamping ring drum, mesh box

n) Containers must meet specifications for strength, thickness, and durability.
o) The body and closure of any packaging must be so constructed as to be able to resist the effects of vibration adequately. Stoppers, corks, or other such friction-type closures must be held in place securely, tightly and effectively by positive means. The closure device must be designed in such a way that it is unlikely that it can be incorrectly or incompletely closed and must be such that it may be checked easily to determine that it is completely closed.
p) Inner packaging must be packed, secured or cushioned to prevent their breakage or leakage and to control their movement within the outer packaging. Cushioning material must not react dangerously with the contents of the inner packaging. Any leakage of the contents must not substantially reduce the protective properties of the cushioning material.
q) The inner and outer packaging must be designed to withstand the conditions of transport, including vibrations, temperature variations, and pressure changes.
r) Absorbent material is not required if the inner packaging is so protected that the breakage and leakage of their contents from the outer package will not occur during normal conditions of transport. Where absorbent material is

required, and an outer package is not liquid-tight, a means of containing the liquid in the event of leakage must be provided in the form of a leak-proof liner, plastic bag or other equally efficient means of containment.

s) A package must be of such size that there is adequate space to affix all required markings and labelling as required.
t) Hazardous waste shall be packed only in inner packaging and placed in suitable outer packaging. The total gross mass of the package shall, however, not exceed 30 kg.

4.2 Waste Transporter Obligations

a) Import of hazardous waste to Dubai from other Emirates for the purpose of disposal and recycling is prohibited.
b) Export of hazardous waste to other Emirates for reasons other than disposal must have prior written approval from the WSPD.
c) Hazardous waste is not allowed to be transported directly from the place of generation to any disposal site or recycling facility without an approved online Permit for Disposal of Hazardous Waste or without written approval and/or NOC from the Waste Treatment Section (WTS). Transporters must ensure that the route is shared beforehand as well as alternative paths in case of unexpected alterations to the route (accidents ahead, weather limitations, traffic changes, major events, etc.).
d) Transport companies must plan the transport by, e.g. selecting routes which avoid dense residential areas and arranging supervision during parking.
e) Risk assessment for vehicle passage through tunnels must be taken into account, and traffic management and suitability of alternative routes must be considered.
f) Companies involved in waste collection and transportation are required to keep detailed records of their operations, including collection schedules, vehicle maintenance logs, training, compliance with circulars and any incidents of spillage or leakage. These records should be made available for inspection upon request by relevant authorities. Templates which can be used to maintain these records are attached in Annex 4.
g) Transport companies must meet all criteria in the Permit for Disposal of Hazardous Waste application so it can be part of the Register/documentation.
h) Transport companies must fill in the manifest/documentation about the waste generator, quality and relevant substance concentrations, type of hazards, process of generation, contact information of the generator and treatment facility/disposal and any other relevant details.

i) Transport companies must ensure the waste being declared matches the waste being collected, according to the Technical Guidelines 5 classification codes and MSDS and/or any sampling results where applicable.
j) Every person handling hazardous wastes must be trained in the nature and dangers of the load being carried, the risks in its use, hazards involved with any spills, personal exposure and emergency procedures. No person shall transport hazardous waste unless they have successfully completed an approved hazardous waste driver's course in the last 2 years. The individual must also be able to handle documentation, prove the accuracy and reliability of declarations, ensure the integrity of containers, and ascertain that the vehicles and their markings meet requirements.
k) A list or reference of approved training institutes is available online at the Civil Defense website: https://www.dcd.gov.ae/portal/portal/licensing/new/trancompany.pdf.
l) Drivers of hazardous waste must stay within posted speed limits in designated heavy vehicle lanes. Motor vehicles should be equipped with a speed limitation device set up in such a way that the speed does not exceed 90 km/h.
m) Safety measures should be considered from the loading of the waste and transport up to the delivery at the endpoint, including the cleaning of the vehicle afterwards. All levels of personnel involved should be well informed, and these people should share the responsibility.
n) Vehicles carrying hazardous waste should not be left to stand unattended.
o) The design and construction of tanks should take into consideration permissible load, forces, pressure build-up, temperature, etc., and the properties of the substance. All piping should be of suitable material.
p) The connection of the vehicle and container should be connected or secured properly so that it does not run loose.
q) Transport companies must ensure that the driver of a vehicle has the necessary documents for the load at hand.
r) Transport companies must ensure that the driver of a vehicle and workers are provided with PPE and emergency response kits in case of spillage and leakage of hazardous waste.
s) Companies must have an emergency response plan in place, including the availability of spill kits and trained personnel to manage such incidents.
t) All waste transport vehicles must carry safety equipment and provisions at all times to manage any accidents or spills involving hazardous waste. The equipment shall include but not be limited to the following: at least 2 spill kits, which include safety gloves, boots, cover-all attire, scooping tools or spade, absorbent materials, rigid plastic or metal containers with lids, spare sacks of

appropriate material and appropriate fire extinguishers. When relevant, portable eye showers and other measures should be available as well.

u) Hazardous waste must be transported in a secure and safe manner. The vehicle and waste container must be sealed completely so that no leakage would occur during transportation.

v) To ensure that the packaging, tank, vehicle, and/or containers have not been damaged in such a way that may endanger the unloading operations, waste transport companies must reject cargo that does not meet the packaging and labelling requirements outlined in this guideline and potentially mentioned in the waste manifest.

w) Waste transporters must ensure the decontamination and cleaning of vehicles and containers is carried out correctly. Any previous spillage in the vehicles or containers should be cleaned prior to putting in a new load of hazardous waste.

x) Two or more kinds of incompatible waste shall not be loaded together in a single vehicle. Incompatible wastes are those materials that, when mixed there, would be a risk of violent reaction or fire, generate a harmful gas, or render the materials more dangerous to deal with.

y) The maximum permissible level in tonnage of a certain waste type should be determined as per the waste type(s) being handled.

z) All spillage and leakages must be dealt with immediately after the appropriate MSDS has been referred to. Spillages or fire situations releasing toxic or poisonous gases should be dealt with through appropriate ventilation and respiratory protective systems dependent on the gas.

aa) On no account must even a small amount of spilt material or any potentially hazardous material be flushed into drainage systems or sewers.

bb) In case of a road accident, the driver or operator must notify Dubai Municipality- Waste Management Department immediately within two hours by telephone (04-6066029) stating the location and nature of the accident, as well as document with videos and photograph the incident and report all involved individuals and damages.

4.3 Vehicular & Maintenance and requirements

a) To obtain an annual permit for each vehicle intended for use in transporting hazardous waste, waste transporters must apply through the DM Website (https://waste.dm.gov.ae/) and follow the procedure for “Hazardous Waste Transport Vehicle Permit” as depicted in Annex 2. The following documents must also be attached per vehicle:

- Copy of a valid **Dubai Trade License with license activity for private companies only**
- Copy of valid **Vehicle Registration Card** for each vehicle
- **Photos of the Vehicle** showing the plate number (Front, Back, Right Side and Left Side) per vehicle
- Copy of **Training certificates of driver and operator** from a competent institution for hazardous waste handling safety, emergency response procedure in case of spills & accidents and handling other emergency cases that may arise during the transportation of such wastes. A list of the institutions or centers allowed to train operators, drivers, and other employees is available online at the civil defense website: https://www.dcd.gov.ae/portal/portal/licensing/new/trancompany.pdf.
- Copy of the **RASID Certificate** - for renewal, please visit (http://www.rasid.ae). The process of RASID installation is explained in detail in Annex 1. All collected customer data will be safeguarded in accordance with Article 13 of Law No. (26) of 2015 Regulating Data Dissemination and Exchange in the Emirate of Dubai.
- As the DM-operated facilities such as Jebel Ali – Hazardous Waste Treatment Facility (JA-HWTF) have implemented **Smart Gates systems**, all approved hazardous waste transport vehicles which are registered in RTA-Dubai and entering JA-HWTF for disposal purposes are required to install **NAFITH** to track and store all the information related to the vehicles, waste types, in/ out weight, in/ out date & time. Further information is provided in the NAFITH User Manual: https://nafithcust.dm.gov.ae/nafithcustomerui/root/assets/TemplateDocuments/NAFITH-UserManual-v1.1.pdf.
- Proof of **coverage of Environmental Liability insurance,** including bodily injury, property damage, business interruption, crisis management, transportation liability, as well as clean-up costs associated with hazardous waste (minimum 1 million AED). This insurance is independent of any existing vehicle insurance. The insurance coverage amount in AED for transport operations shall be set by the insurance company and tailored specifically to the type of hazardous waste being transported as well as the specific requirements and operations of the business.

b) Vehicles should undergo regular inspections, including checks on safety equipment, vehicle integrity, and proper placarding. Placards must be placed on both sides and rear and must be marked with the word identifying the load. The symbol and words shall be bold and readable from at least 30 meters away. Please refer to Annex 3 for the size, shape, and wording of the placard required.

The name, address and telephone number of the operator shall be clearly marked on the vehicle.

c) The vehicle being applied for a permit to transport hazardous waste must be inspected by a WSPD officer and shall pass the following "Approval Requirement":
   - The vehicle has the capacity to carry its load safely without any risk of spillage.
   - A compartment or skip is adequate to prevent leakage.
   - Vehicle displays placards showing the classification and its corresponding UN code for the chemical composition of the hazardous waste. The placard must be designed according to the requirements in Annex 3.
   - The name, address and contact details of the transport company are clearly marked on the vehicle.
   - The vehicle is equipped with all the safety equipment needed for emergencies, such as PPE.
   - Vehicles transporting **waste code A: Acid/Alkali/Corrosive wastes** must be resistant to corrosion against contact with acidic and alkali wastes resulting from spills or leaks which may occur during handling or transport. This can be accomplished by the installation of a catch tray coated with plastic or synthetic liner. Sample point on tank discharge must be provided.
   - Vehicles transporting **waste code B: Liquid hazardous wastes** must be transported in drums- The tray of the vehicle must be able to contain without leakage, a volume equivalent to the largest volume drum being transported.
   - Vehicles transporting **waste code C: General solid hazardous wastes** must be equipped to enable a cover to be securely placed over the load.
   - Vehicles transporting **waste code D: Wastes with dust hazards** must have a smooth internal compartment so that no bags get punctured. The vehicle must also be equipped to enable a cover to be securely placed over the load.
   - Vehicles transporting **waste code F: Flammable/Solvent waste** must have exhaust pipes which discharge horizontally. All wiring must be in good condition. The vehicle must be equipped with an auto-isolation switch to shut off all electrical systems in the event of an accident. The vehicle must carry a dry chemical fire extinguisher of not less than 10kg.
   - Purpose-designed vehicles transporting **waste code H1: Clinical waste** must have the following features in common:
     - An adequate size, having a body with a minimum height of 2.1 meters.

- A bulkhead must separate the driver's cabin from the rest of the body and be designed to retain the load if the vehicle is involved in > 29km/hr. collision.
- A system to secure the load during transport must be provided.
- A secure compartment must be provided to carry a supply of plastic bags, protective clothing, cleaning tools, disinfectants and hand-cleaning materials.
- The internal surface of the body must be lined or smooth. The standard of the internal finish must be suitable for the steam and chemical cleaning process.
- Open-top skip must not be used for the transportation of medical waste.

- Vehicles transporting **waste code H2: Pharmaceutical waste** must be of a closed type.

d) Vehicles must be equipped with proper lighting, including reflective markings and rotating lights, to ensure visibility during night operations or low-light conditions.
e) Backup cameras and alarms can be installed to aid in safe maneuvering.
f) Vehicles must be **properly maintained and repainted** as per DM Requirements. **Orange-colored vehicles will NOT be given a permit as this is reserved for DM vehicles.**
g) Holders of a hazardous waste transport vehicle permit must abide by the conditions of the permit, which in particular stipulates that the permitted vehicle shall only be used to carry the specific category of hazardous waste for which it has been approved.
h) Vehicles may not be used for any other type of waste or cargo transportation once they have carried hazardous waste.
i) Selection of suitable containers to handle waste under these technical guidelines are listed in Annex 6.

5 SPECIFIC PROVISIONS FOR MEDICAL WASTE TRANSPORT

For the transport of medical waste (Clinical & Pharmaceutical wastes), waste transporters must ensure the following:

a) The medical waste must be packed securely in a yellow bag, strictly following the specifications as per UN No. 3291.
b) All staff handling bags of medical waste should be well-trained on handling procedures, which include but are not limited to the following:
   - Understanding the special problems related to handling all types of medical wastes, including used sharps

- Checking of bags if securely sealed
- Handling bags by neck only
- Identification of waste by bag color and ensure that the origin of the waste is clearly marked on the bag
- Checking the integrity of the seal of the bags when movement is complete
- Knowing the procedure in the case of accidental spillage and to report promptly such incidents
- Be aware that such waste should not be re-bagged, except under supervision by a senior medical staff member, in the event of a bag failure.
- The transporter shall ensure that concerned staff are aware of the proper color (YELLOW) coding for medical waste specified in the Code and shall not remove or handle waste which is improperly bagged.

c) Staff handling medical waste should be provided with heavy-duty gloves, industrial aprons or leg protectors, and industrial "Wellington" boots or equivalent types. Emergency personal protective outfits must be available at all times in the transport vehicle for emergency spill response. This must include suitable overalls, masks, disposable gloves and eye protectors.
d) Medical waste in bags must be transported in closed containers and air-conditioned vehicles.
e) A full course of anti-tetanus, Hepa-B, serum and feces-carried disease immunization is mandatory for all staff carrying out the medical waste handling operations."
f) Periodic health checks should be performed to monitor employees' health, and audits should revise these records and interpret the results by a third party.
g) Transporters handling medical waste must have a contingency plan to deal with any spillage and in cases when the container of waste is damaged or ruptured.
h) Transporters must ensure that sharps wastes shall only be handled if they are contained in a sharp container/special box (UN No. 3291), which meets the following criteria:
    - Made of strong, rigid, puncture-proof materials.
    - Impermeable and able to be permanently sealed once it is full or ready for disposal (or at intervals of not more than one week).
    - Fitted with a non-removable lid with an aperture that prevents the removal of sharps waste once dropped in the box.
    - Preferably yellow in color and marked with the biohazard symbol and the words "DANGER - USED SHARPS" on the exterior.

- Should be of a size suitable for handling or carrying single-handedly and fitted with a safe handle for that purpose.
- Provision for the waste generator to clearly mark the sharp box with the name of the institution from which it arises.
- Provision should be made for the ability to mark and label any trolleys or containers with the name of the institution from which they arise, and transporters must ensure that such marking is carried out.

i) Containers used for transport and handling of medical waste to be disposed of at the **DM Central Medical Waste Treatment Facility** should have the following specifications:
   - Containers can be 240-litre waste bins in the case of smaller generators up to 1.5 m^3 trolleys with dimensions not exceeding 1.2 m L x 0.725 m W x 1.6 m H
   - The trolley should have a removable front panel.
   - Containers must be dedicated to the collection of medical waste only and should not be used for moving other items (thus avoiding possible contamination).
   - Containers must be cleaned and disinfected by a steam sterilization system that will be used in the DM central medical waste treatment facility for the cleaning of the containers prior to their collection and reuse.
   - Other specifications may be approved by the WTS if they are functional, safe and suitable for the disposal facility.

6 SPECIFIC PROVISIONS FOR ELECTRICAL CAR WASTE BATTERIES & E-CIGARETTE WASTES

6.1 Electrical Car waste batteries

The following compliance requirements should be considered for companies conducting Electrical Car waste batteries Collecting Services activity:

- Waste Generators (mechanic shops etc.) may store waste batteries for a period of a maximum 3 months only if all the following provisions of storage are fulfilled.
- Store batteries in a well-ventilated, cool, dry place, away from direct sunlight, heat sources, and flammable materials. Consistent temperature control is crucial to maintain the safety and integrity of Li-ion accumulators.
- Temperature Sensors: Each storage compartment should have four sensors to monitor the surface temperature of Li-ion accumulators. This redundancy ensures accurate temperature readings and early detection of temperature anomalies.
- Ambient Temperature Monitoring: Overall compartment temperature should be continuously monitored to detect any significant changes that could impact battery safety.
- Gas Detection: Install sensors for detecting smoke, hydrogen (H_2), and carbon monoxide (CO). These sensors can provide early warnings of thermal runaway or battery failure,
- Equip storage containers with a system to flood and cool compartments if the temperature of a Li-ion accumulator reaches 68°C. This system should be capable of deploying water or another cooling medium to quickly reduce temperature and prevent further heating, thus avoiding thermal runaway.
- Containment Systems: Use appropriate containment systems to manage leaks or spills. These systems should include absorbent materials and secondary containment to mitigate environmental contamination and safety hazards.
- Packaging Requirements: Use UN-approved packaging that is heat-insulating, leak-resistant, stabilizing, and shockproof. Packaging must prevent short circuits and be made from non-conductive materials like strong plastic or metal with a non-conductive liner.
- Labeling and Placards: Ensure correct labeling and placarding under UN 3480 (lithium-ion batteries) or UN 3481 (lithium-ion batteries contained in equipment or packed with equipment) as outlined in Annex 3.
- Labels must also indicate if the battery is classified as end-of-life (EOL) or damaged-
  defective (DD).

Damaged battery characteristics include:

- Dents, punctures, cracks in battery outer shell.
- Damage including fluid(s) coming out from within the battery pack.
- Water damage and/or corrosion on the terminals*.
- Broken or damaged terminals.
- Loose wiring either inside the battery pack or protruding from the pack.
- Indications the battery has been opened and/or worked on

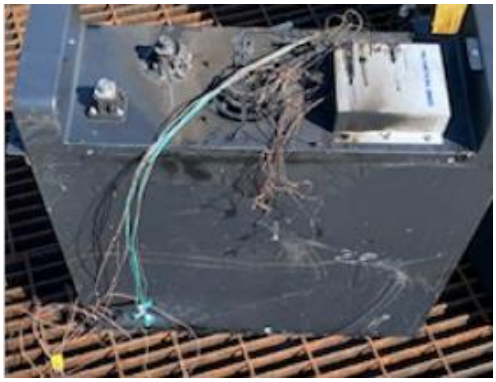


Figure 2 Damaged power storage unit battery

- Batteries must be packed to prevent short circuits and damage. Use non-conductive materials between terminals or individual batteries if necessary.
- When shipped within equipment, batteries should be securely protected and fixed within the device to prevent damage.
- Damaged batteries, especially those heavier than 30 kg, should be packed separately. Use a box with sufficient non-conductive insulation material (e.g., vermiculite or sand) to prevent any contact with other batteries or conductive materials. Additional buffering should be provided to prevent movement within the packaging.
- The packaging must protect against external factors such as heat, moisture, and shocks during transport. Additionally, it should provide protection against internal hazards, like increased pressure from within due to battery damage. Critical batteries may require additional protection measures.
- Recognize that batteries come in various shapes, sizes, and chemistries, which are constantly evolving. The packaging and handling procedures should accommodate these variations.
- Handle batteries with care to avoid damage, punctures, or short circuits during loading and unloading. Use appropriate lifting and securing equipment.
- Provide drivers with written instructions on emergency procedures, including how to deal with battery fires, leaks, or spills. Ensure that all personnel involved in the transport are adequately trained in these procedures.

6.2 E-Cigarettes wastes

- Store e-cigarettes and associated waste in a well-ventilated, cool, dry place, away from direct sunlight, heat sources, and flammable materials. Temperature control is essential to prevent thermal reactions, especially considering the presence of lithium-ion batteries.
- The containers used should be constructed from materials that can resist high temperatures and prevent the spread of flames in case of an incident.
- Only UN approved containers that are heat-insulating and leak-resistant shall be used for collection and transport.
- Fill-level measurement systems can be utilized to avoid overloading and ensure timely collection.
- When an amount of 200 liters or more accumulates, it must be collected within 3 days.
- Temperature Monitoring: Continuous monitoring of temperature within the storage containers to detect any irregularities early and prevent thermal runaway.
- Automatic Alerts: Remote connectivity should enable 24/7 monitoring and trigger automatic alerts in case of temperature anomalies, gas detection, or full capacity.
- Clearly label packages with the appropriate UN number (e.g., UN 3480 for lithium-ion batteries) and other hazard warnings. Provide drivers with documentation outlining emergency procedures.
- Optimized Collection Routes: Utilize apps and systems that provide real-time data insights for efficient route planning and collection.
- Data Transfer and Reporting: Smart containers should enable data transfer via built-in technology for continuous monitoring and reporting, ensuring safety and compliance.
- Train personnel on the safe handling of e-cigarette waste. This includes proper loading and unloading procedures and steps to take in case of a fire, spill, or other emergency situation.
- The transport vehicle should be equipped with proper ventilation and fire suppression systems. The design should allow for the safe transport of waste, minimizing the risk of incidents.

7 REFERENCES

1 European Waste Framework Directive 2008/98/EC

2 DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions.

3 International Standard Industrial Classification of all Economic Activities (ISIC). United Nations Series M No. 4, Rev. 4.

4 Notes on operational fire protection when Storage and use of lithium-ion batteries. German Statutory accident insurance: https://publikationen.dguv.de/widgets/pdf/download/article/3863

ANNEX 1: VALIDITY OF PERMITS

Permits	Validity of Permits
Permit for Waste Collection or Transport or Trading Activity (WCTT)	Valid for the same duration as the license issued by Concerned authorities in Dubai.
Permit for Vehicles to Transport Hazardous Waste (HWTP)	Valid for the same duration as per vehicle registration validity in RASID which is one year.
Permit For Vehicles to Access Dubai Municipality Waste Disposal Sites (NAFITH)	Valid for the same duration as per vehicle registration validity in RASID which is one year.

ANNEX 2: PROCEDURE FOR HAZARDOUS WASTE TRANSPORT VEHICLE PERMIT APPLICATION

This service will help you to secure a **Hazardous Waste Transport Vehicle (HWTV) Permit** for vehicles to transport hazardous waste in the Emirate of Dubai.

1. **LOG IN** to the Dubai Municipality website https://www.dm.gov.ae/
2. **APPLY** on Waste Services Online-Apply for a Vehicle Permit to Transport Hazardous Waste and attach the following:
   - Copy of **valid** Dubai Trade License **with license activity** (**Hazardous Waste Collection & Transport**- CODE 3812007* and/or **Used Lubricants Collecting Services** for oil collectors for recycling purpose- CODE 3812001) – for private companies only.
   - Copy of **valid** Vehicle Registration Card for each vehicle
   - Photos of the Vehicle showing the plate number (Front, Back, Right Side and Left Side) per vehicle
   - Copy of **valid** Training certificates of driver and operator from a competent institution for hazardous waste handling safety, emergency response procedure in case of spills & accidents and handling other emergency cases that may arise during the transportation of such wastes.
   - Copy of the RASID Certificates - for renewal (http://www.rasid.ae)

3. **COMPLY** with the time, location and schedule of vehicle inspection.

4. **ENSURE** prior vehicle inspection - the vehicle is in compliance with the below requirements:
   - Vehicle has the capacity to carry its load safely without any risk of spillage.
   - Compartment or skip is adequate to prevent leakage.
   - Vehicle displays placards showing the classification and its corresponding UN code for the chemical composition of the hazardous waste. The placard must be designed according to the requirements in **Annex 3**.
   - Vehicle features cabin ventilation and drivers dispose of masks availability with renewed filters

- The name, address and contact details of the transport company are clearly marked on the vehicle.
- Vehicle is equipped with all the safety equipment needed for emergencies such as
  a) Personal Protective Equipment (PPE),
  b) Spill kits (scooping tools (spade), absorbent materials, plastic/metal containers with lid) and
  c) Fire extinguishers /other firefighting tools
- First Aid Kit is provided with complete medical necessities.
- Sample point provided (for liquid waste transporter)
- The requirements (as per waste type) for vehicles are met.

License codes are made known to generators, transporters, traders, handlers, and involved parties.

5. **PAY** related fees through the following webpage: https://www.dm.gov.ae/easy-payments/#1695718196331-cf8318a1-87c1
6. **PRINT** your HWTV Permit after payment

NOTE: All approved hazardous waste transport vehicles which are **registered in RTA-Dubai** and **entering JA-HWTF** for disposal purposes are required to **install NAFITH.** **NO HWTV Permit-NO NAFITH- NO ENTRY** Email to: fabinselm@dm.gov.ae / ACGONZALES@dm.gov.ae the following requirements:

- Valid Hazardous Waste Transport Vehicle (HWTV) Permit
- RTA-Dubai Vehicle Registration Card/Record

*NEW COMPANY- TRADE LICENSE ADDING ACTIVITY REQUIREMENT

➢ GO to DET to add activity to your license OR CLICK: **https://invest.dubai.ae**

For more information, you might contact

Waste Strategy and Projects Department
Studies and Permits Section
Tel.: 04 287 2557 / ext. 203, 204, 205, 216, 217, 231

(VERY IMPORTANT)

- **ENSURE your vehicles are properly maintained and repainted as per DM Requirement**
- **Permit will be granted for all waste collection and transportation vehicles, granted that they are compliant with all requirements, except orange-colored vehicles.**

NOTE: The applicant shall ensure compliance with the vehicle inspection requirement before the date of the inspection schedule (to be agreed upon by the inspector and the applicant).

ANNEX 3: VEHICLE PLACARD PARTICULARS FOR TRANSPORTING HAZARDOUS WASTE

- The placard showing the corresponding UN number must always be clearly displayed on the vehicle.
- The color of the placard must be **black lettering over a white background**.
- The size of the placard must be **40 cm wide and 150 cm long** (special permission could be obtained for a placard size to suit the vehicle).
- When using the integrated UN Placards, **the minimum dimension is 25 cm x 25 cm.**
- The placard must be divided lengthwise by a line along the midpoint, Arabic characters must be written on the upper part, and English characters must be written below.
- The placards shall be affixed to both sides and at each end of the vehicle, as well as at its rear.

Placard for Solid Waste

رقم الأمم المتحدة **3077**	مواد **خطرة** بيئياً (نفايات صلبة)
UN No 3077	**Environmentally Hazardous Substances** **(Solid Wastes)**

Placard for Liquid Waste

رقم الأمم المتحدة **3082**	مواد **خطرة** بيئياً (نفايات سائلة)
UN No 3082	**Environmentally Hazardous Substances** **(Liquid Wastes)**

Placard for Acid / Alkali

رقم الأمم المتحدة **1760**	مواد **خطرة** بيئياً (سوائل أكالة)
UN No 1760	**Environmentally Hazardous Substances** **(Corrosive Liquid N.O.S)**

Placard for Oily Waste

رقم الأمم المتحدة **1268**	مواد **خطرة** بيئياً (نفايات زيتية)

UN No 1268	Environmentally Hazardous Substances (Waste Oil)

Placard for Waste Solvents

رقم الأمم المتحدة 1992	مواد خطرة بيئياً (سوائل قابلة للاشتعال "غير محددة")
UN No 1992	Environmentally Hazardous Substances (Flammable Liquid N.O.S)

Placard for Pharmaceutical Waste

رقم الأمم المتحدة 1851و 3249	مواد خطرة بيئياً (أدوية سامة " سائلة وصلبة)
UN No 1851 & 3249	Environmentally Hazardous Substances (Toxic Medicine "Liquid & Solid" N.O.S)

Placard for Medical Waste

رقم الأمم المتحدة 3291	مواد خطرة بيئياً (نفايات طبية "غير محددة")
UN No 3291	Environmentally Hazardous Substances (Clinical Waste "Unspecified" N.O.S)

Placard for Lithium Ion Batteries

رقم الأمم المتحدة 3480	بطاريات ليثيوم أيون (بما في ذلك بطاريات ليثيوم أيون بوليمر)
UN No 3480	LITHIUM-ION BATTERIES (including lithium-ion polymer batteries)

Placard for Lithium Ion Batteries

رقم الأمم المتحدة **3481**	بطاريات ليثيوم أيون مضمنة في المعدات أو بطاريات ليثيوم أيون معبأة مع المعدات (بما في ذلك بطاريات ليثيوم أيون بوليمر)
UN No 3481	**LITHIUM-ION BATTERIES CONTAINED IN EQUIPMENT or LITHIUM-ION BATTERIES PACKED WITH EQUIPMENT (including lithium ion polymer batteries)**

ANNEX 4: WASTE COLLECTION AND TRANSPORTATION COMPANIES RECORD KEEPING

Collection Schedules

Company Information:

Company Name	_____
Date	_____
Contact Person	_____
Contact Details	_____

#	Date of Collection	Location of Collection	Waste Type	Waste Amount (KG)	Vehicle License Plate	Driver Name	Driver License Number	End use facility

Declaration:

I hereby certify that the above information is accurate and complete to the best of my knowledge.

Name:_____
Signature:_____
Date: _____

Vehicle Maintenance Logs

Company Information:

Company Name	_____
Date	_____
Contact Person	_____
Contact Details	_____

#	Vehicle License Plate	Date of Maintenance	Type of Maintenance Performed	Performed By (Technician/Company)	Comments/Notes

Declaration:

I hereby certify that the above information is accurate and complete to the best of my knowledge.

Name:_____
Signature:_____
Date: _____

Incidents Log

Company Information:

Company Name	_____
Date	_____
Contact Person	_____
Contact Details	_____

#	Incident Date	Location	Description	Action taken to mitigate	Reported to (Authority/ Department)	Follow-up Actions

Declaration:

I hereby certify that the above information is accurate and complete to the best of my knowledge.

Name:_____
Signature:_____
Date: _____

ANNEX 5: GENERAL WORKFLOW FOR PERMIT ISSUANCE AND VEHICLE REGISTRATION

The flow diagram below outlines the essential steps that companies must follow to obtain a permit for conducting waste collection, transport, or trading activities in Dubai.

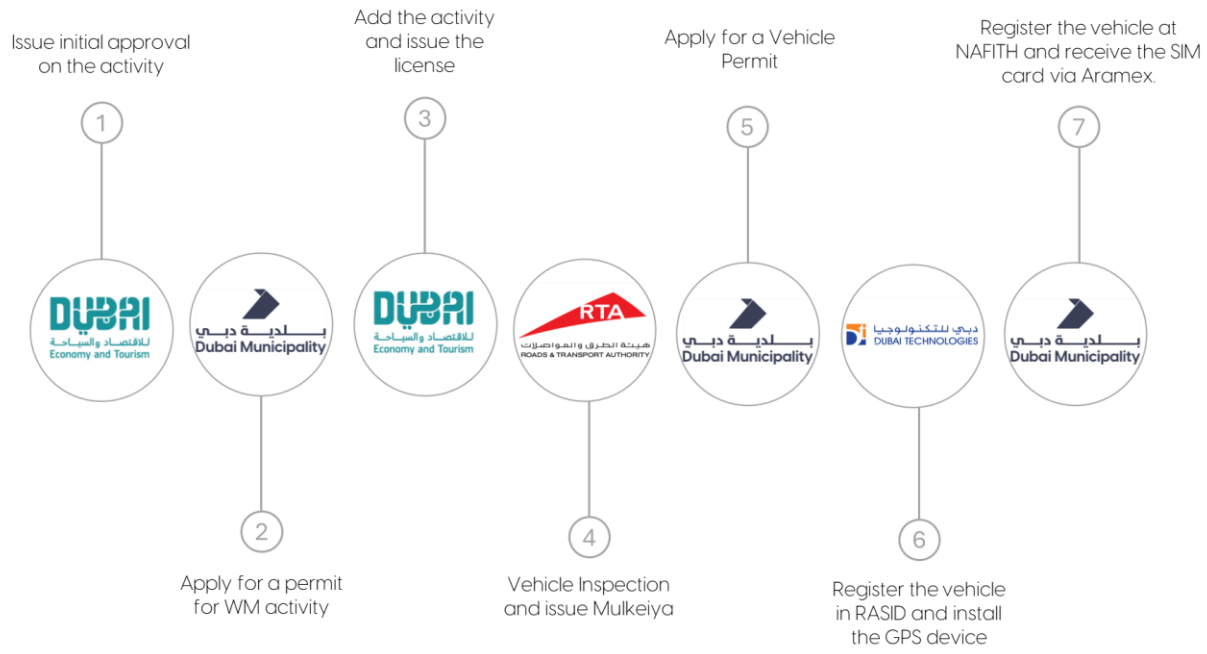
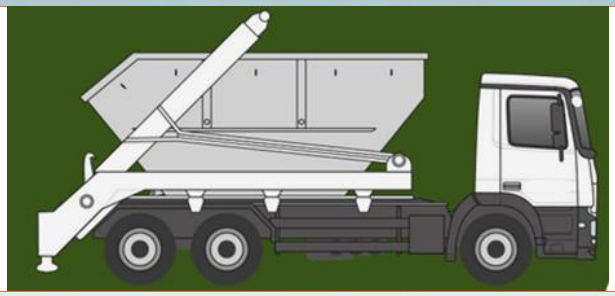
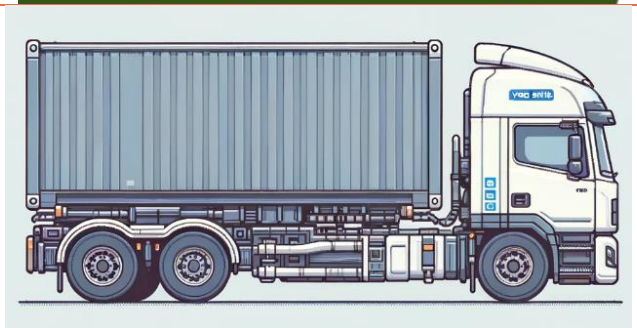
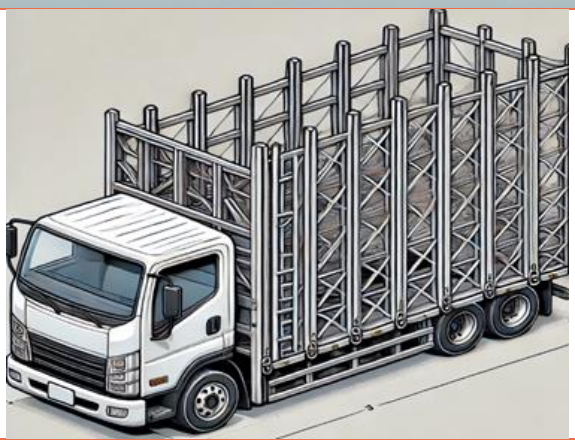


Figure 3 - General workflow for permit issuance and vehicle registration

ANNEX 6: SELECTION OF SUITABLE VEHICLES

Table 1: Selection of Suitable Vehicles

Vehicle type	Brief Description	Image
Road Tankers/small and large	Hydrocarbon transport tankers provided with safety requirements as per RTA regulations	
Refrigerated Closed trucks	Closed vans/pick up provided with refrigeration	
Skip Loaders with covered skips	vehicles with hydraulic arms for lifting and transporting skips that are securely covered.	
Swap body (container) system	Mobile (exchangeable) container system for the long-distance transportation of waste	

Box Trucks	trucks have fully enclosed cargo areas to securely transport	
Pickup trucks with steel drums	Steel drums loaded into pickup trucks provided with side barricades with safety requirements as per RTA regulations	

ANNEX 7: PROCESS OF RASID INSTALLATION

The process of RASID installation can be done by permitted transporters in the following steps:

1. **Company Registration:** The transporter must fill out the application at http://rasid.ae/en/registration/company-registration. During the registration process, the customer must upload the company logo, a valid trade license and a valid hazardous waste transport vehicle (HWTV) permit.

2. **Company Approval from RASID:** The application is automatically sent to RASID for verification and approval.

3. **Vehicle Registration:** Once the company is approved on RASID, the transporter must use the user credentials and register the vehicles by filling in the required details and uploading valid Mulkiya copies (front and back) and vehicle images (front, side and rear).

4. **Vehicle Approval from RASID:** The request is automatically sent to RASID for verification and approval. The vehicle approved by RASID shall undergo the installation of approved RASID GPS tracking devices.

5. **Third-Party GPS Tracking Device Registration:**

The transporter must upload Device Specifications, Communication Protocol and Telecommunications Regulatory Authority (TRA) approval certificate. The company must proceed to install GPS devices in the vehicles approved by DM.

6. **RASID Online Payment:**

Once the vehicles are approved by RASID for Vehicle Registration and Annual Subscription payment, the transporter can use the RASID user credentials and proceed to make the online payment. For more information, please visit http://rasid.ae/en/fees-charges .

7. **Active:** Once the payment is made, the vehicles go active. DM-WSPD and the transporter can monitor/ manage the hazardous waste transport fleet by accessing online with the user's credentials.