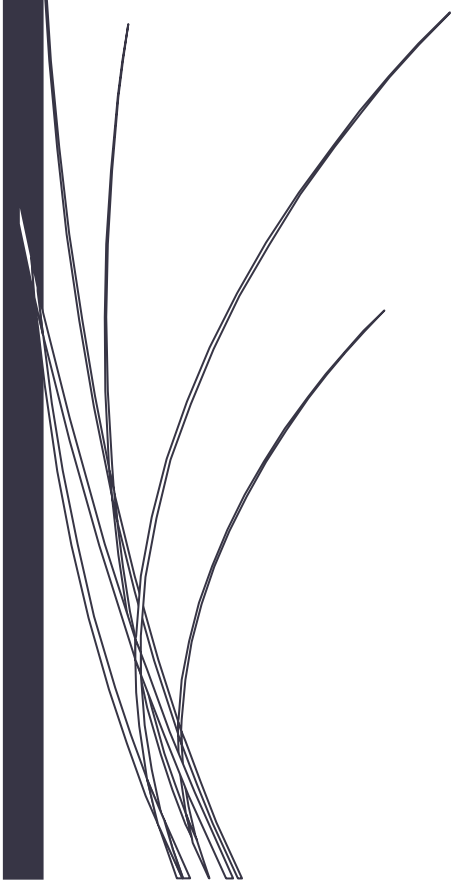
Guidance Notes for SMEs

(Waste Management Sector)

In answering the due diligence questions for Guiding Principles 3 and 4 for SMEs

Note: This document is developed to assist financial institutions **("FIs")** in supporting small and medium enterprise **("SME")** clients to provide data and input in answering the CCPT Due Diligence Questions **("CCPT DDQ")**. The focus of this document is to provide additional clarifications, practical guidance and simplified approaches where needed, to further facilitate assessment of SME clients.



Introduction to Waste Management Sector

Term	Impact of the Waste Management Sector to Climate Change
Pollution	If waste is poorly managed, they will cause disastrous effect including air pollution, water and soil contamination. Hazardous waste can also cause depletion of natural resources, bring serious illness to human and animal health and fire (if waste is flammable).
Ecosystem & Biodiversity	Indiscriminate waste disposal practices can introduce hazardous chemicals into soil, water bodies and the air, causing long-term, potentially irreversible damage to local flora and fauna, negatively impacting biodiversity, harming entire ecosystems, and entering the human food chain.
Efficient Use of Resources	Reducing the environmental impacts associated with resource consumption is an important part of our environmental stewardship responsibilities. The growing demand for products and services is placing considerable strain on resources, as well as the land space to accommodate waste accumulation.
GHG Emissions	Solid waste contributes directly to greenhouse gas **("GHG")** emissions through the generation of methane from the anaerobic decay of waste in landfills, and the emission of nitrous oxide from our solid waste combustion facilities.

Due Diligence Questions: GP3 – No Significant Harm to the Environment	
No	**Guidance Notes**
GP3 – General	
1.1 Risk identification (General)	

a)	Use existing internal databases or any other publicly available sources to screen for the Client's related legal/ negative news vis-à-vis climate/ environment related issues (e.g., media publications such as newspapers, specialised climate/environmental news sites, NGO reports).
	
	• The Client is to provide details of the nature of any adverse incident, and whether there is/was any corresponding regulatory action (e.g., enforcement/ prosecution/ quantity of fine/ pending court decision/ pending appeal by the Client), to be backed by documentary evidence; and
	• The FI is recommended to verify the Client's information through the following websites:
	  ○ **https://www.doe.gov.my/en/court-case-list/**; and/or
	  ○ **https://www.doe.gov.my/penguatkuasaan/paparan-kes-mahkamah/**
	
	Indicate if there are any matching records and data in the database(s). Any discrepancies with the Client's statements should be explained by the Client and documented accordingly.

1.2 Risk management (General)	
a)	The Client should list down measures being taken to address any climate/ environmental concerns. This should include obtaining necessary legal approvals and/or permits under the jurisdiction where it operates.
GP3 – Pollution	
2.1 Risk identification (Pollution)	

a)	The following are ways to identify whether the Client's business operations use/ release hazardous chemicals/ material and create waste/ pollutants that cannot be recovered, reused and/or disposed of in a sustainable manner in the waste management sector in accordance to its value chain/ life cycle, including but not limited to: -
	
	1. <u>At waste collection stage</u>
	  • Types of waste collected including hazardous waste, electronic waste, organic waste or non-recyclable materials. For more details on the categories of hazardous waste, please refer to the hazardous materials listed in EQA 1974;
	  • Poor labelling or identification or inspection of waste containers meant for toxic chemicals at the point of collection may result in accidental exposure and leakage. The leakage could contaminate soil composition and fertility, leading to long-term environmental damage.
	
	2. <u>At waste transportation stage</u>
	  • During waste transportation, spills and leaks from waste transportation vehicles can also cause soil contamination. This can occur when harmful substances such as oil or fuel leak into the ground, contaminating soil and topical vegetation.
	  • Improperly secured loads may result in litter & potential release of harmful materials into the environment.

	3. <u>At waste treatment stage (e.g., recycle, repurpose of waste, composting, incineration)</u> • Poor combustion and mishandling of incineration plants may emit toxins and carcinogens such as polyaromatic hydrocarbons, dioxins, and heavy metals. 4. <u>At waste disposal stage</u> • Anaerobic degradation of waste in landfills creates biogas, with comprises mainly methane that has a 100-year gwp 28-34 times that of CO_2. • Incineration of waste produces a large amount carbon emissions and harmful particulates that are hazardous to humans.
2.2 Risk management (Pollution)	
a)	The following can be the mitigation measures undertaken by the Client in addressing the identified pollution: 1. <u>At waste collection stage</u> • Frequent collection at scheduled times (based on extreme weather forecasts) reduces risk of waste bags sitting at the curb side for too long and being carried away into streets or waterways by heavy rainfall, heavy wind, or landslides. • Frequent collection is possible when shorter routes are designed making use of multiple decentralised transfer stations. • Covered collection trucks and underground waste containers prevent waste from drifting away with extreme wind. • Disposal sites must be compacted each day to force waste disposed of to settle, preventing deadly landfill slides (most dangerous for communities living off waste salvaged in or around dump sites). • Protected and well aerated sorting facilities for resource salvagers/ waste pickers to sort waste. • Landfill leachate collection system planned with enough capacity for heavy rainfall events. • Availability of designated depots and parking sites for the waste collection vehicle fleets, such as areas for maintenance of vehicles with or without oil and water retention and treatment capacity. • Washing activities for waste collection vehicles. 2. <u>At waste transportation stage</u> • Decentralised waste transfer stations to allow for smaller waste collection vehicles and shorter trips for each worker, especially when the city relies on a labour-intensive system. • Covered collection trucks to prevent leakages during transportation. • Complaint resolution mechanism. 3. <u>At waste treatment stage (e.g., recycle, repurpose of waste, composting, incineration)</u> • Establish a disaster waste management plan. Extreme weather events often generate immense amounts of debris waste from buildings as well as other destroyed materials and landscapes. The plan helps prepare cities for these extreme waste loads and better plans for recycling materials. • Advanced waste processing technologies such as mechanical-biological treatment or anaerobic digestion to minimise environmental pollution. • Ensure appropriate distance between other adjacent properties and residential areas. • Implement pollution control technologies such as scrubbers, filters, and containment systems to minimise air and water emissions from waste treatment processes. • Monitor and manage hazardous waste streams to prevent contamination of soil, groundwater, and surface water bodies.

	4. <u>At waste disposal stage</u> • Quality inspection checks should be implemented. • Leachate collection system to drain off leachate from the secure landfill and the leachate treatment facility. 5. <u>General measures in waste management</u> • Waste management policy and procedure. • Scheduled waste disposal and collection tracker. • Standard procedures for safe handling, storage, and disposal of waste.
GP3 – Ecosystem & Biodiversity	
3.1 Risk identification (Ecosystem & Biodiversity)	
a)	Environmentally sensitive areas **("ESAs")** or key biodiversity areas **("KBAs")** typically refer to geographic regions or locations that are recognised for their high ecological significance and the presence of diverse and often unique species of flora and fauna. Such areas are considered important for the conservation of biodiversity due to the richness and variety of life forms they support. To identify whether the Client's operations located in or near ESAs and KBAs**,** FIs can make use of tools such as **Integrated Biodiversity Assessment Tool ("IBAT")** and **Global Forest Watch**. Maps of ESAs can be referred to those published in the **National Physical Plan 3 and 4 (page 94)**. Alternatively, FIs may conduct any online (e.g., Google Earth Pro) and offline map search to determine if the following example types of ESAs or KBAs are near the Client's business location(s) (e.g., within a 10 kilometre radius): - • Marine and coastal biodiversity • Mangrove forests • Coral reefs • Marine parks • Critical coastal erosion areas • Turtle landing sites • Highlands and forested wetlands • Economic and ecological significance In addition to the above, FIs may refer to Reference List of Protected Areas (**https://www.mybis.gov.my/one/pamaps.php**) to identify whether the Client's business operations has impacted the ESAs and KBAs.
b)	Examples of tools and sources that can be used to assess whether the Client's operations have negative impacts on biodiversity and the surrounding ecosystem include: • Exploring Natural Capital Opportunities, Risks and Exposure Tool **("ENCORE")** (**url: https://encorenature.org/en)*** • WWF's Biodiversity Risk Filter **(url: https://riskfilter.org/biodiversity/home)** • High Conservation Value **("HCV")** assessment • High Carbon Stock **("HCS")** assessment • International Union for Conservation of Nature **("IUCN")** red list species • On-site/desktop biodiversity assessment • Environmental Impact Assessment **("EIA")** report • Erosion and Sedimentation Control Plan **("ESCP")** • Strategic Environmental Assessment **("SEA")** and Cumulative Effects Assessments

- Guidance Document for Fuel Burning Equipment and Air Pollution Control Systems DOE

** Please note that when using the tools (a) above, please select the 'Impacts' (alludes to the ways in which the Client's activities impact ecosystem services and natural capital) option as opposed to the 'Dependencies' option (used for GP4.1 & GP4.2).*

FIs may also consider the occurrence of any of the following events before determining if the Client's business operations have caused any negative impact on the biodiversity and its surrounding ecosystem: -

1. At waste collection stage
   - Untimely or unsegregated waste can potentially disrupt the ecosystem (e.g., toxic chemicals, non-biodegradable waste not separated from biodegradable waste and sent to landfills).
   - Improper segregation can lead to improper disposal which can contaminate the surrounding soil and water resources with toxic chemicals. It can have harmful effects on the health of plants and animals that rely on these resources.

2. At waste transportation stage
   - The type of transportation (e.g., the dump truck) used to deliver the waste may destroy the ecosystem and wildlife habitats.
   - Waste transportation can result in pollution that can harm wildlife and their habitats. For instance, when waste is transported to landfills or incinerators, it can release pollutants such as heavy metals, organic compounds, and GHG into the environment. These pollutants can contaminate soil and water, killing or harming plants and animals that live in these ecosystems.
   - Transportation of waste management can also result in habitat destruction, particularly when waste facilities are located in ecologically sensitive areas. This destruction can lead to the fragmentation of habitats, which can have significant impacts on biodiversity by reducing species' access to food, water, and breeding grounds.

3. At waste treatment stage (e.g., recycle, repurpose of waste, composting, incineration)
   - Landfills have negative impacts on biodiversity due to the release of methane, and leachate, a toxic liquid that can contaminate groundwater and nearby surface waters. The presence of leachate and other contaminants can harm soil microbes, reduce soil microbial biomass and activity, which can lead to changes in soil structure and function, and ultimately affect plant growth and ecosystem stability.
   - Incinerators can release toxic pollutants such as dioxins and heavy metals, which can harm human health and wildlife through change a of soil and water quality.
   - Composting, if not managed, can release greenhouse gases such as carbon dioxide and methane, and can also attract pests such as rodents and flies.

4. At waste disposal stage
   - Conversion of habitable land into landfills, impacting biodiversity, wildlife and overall ecosystem.
   - Landfills can release harmful pollutants into the air, water, and soil. These pollutants include methane (a potent GHG that contributes to climate change) and leachate (a toxic liquid that can contaminate groundwater and surface water). Landfills can also alter soil structure and chemistry, which can affect plant communities and soil microorganisms, leading to changes in local biodiversity.
   - Incinerators can release toxic pollutants into the air, including dioxins and furans, which can harm local wildlife populations. Additionally, incinerators require a constant supply of waste to maintain their operations, which can contribute to overconsumption and resource depletion, further exacerbating biodiversity loss.

3.2 Risk management (Ecosystem & Biodiversity)	
a)	Internal remedial measures incorporated into the processes by the Client may include any one or more the following (non-exhaustive): - 1. <u>At waste collection stage</u> • Extreme weather events generate a lot of waste from single use emergency equipment (e.g., water bottles, tents, plastic sheets). Adapting these materials to be biodegradable or easily reusable and recyclable means lowering the impact of such disasters in a city's systems. • Establish procedures in managing hazardous waste. • Implement frequent organic waste segregate collection, distributing food waste caddies (reduces odours, pests, and insects from rapidly degrading material) and promoting home composting where collection is not present. 2. <u>At waste transportation stage</u> • Planned waste transportation routes to minimise the impact on ecosystem and biodiversity. • Road maintenance practices minimise soil erosion along the route. • Decentralized organic waste treatment plants (e.g., composting and anaerobic digestion) to reduce transporting distances, increase organic waste recovery and reduce risk of dumpsite fire. 3. <u>At waste treatment stage (e.g., recycle, repurpose of waste, composting, incineration)</u> • Diverting organic waste from landfill through segregated organics collection contributes to preventing landfill fire outbursts. • Location of the treatment plant – create buffer zones from sensitive ecological areas, protected habitats, and areas with high biodiversity. • Implement landscaping and revegetation measures to restore and enhance ecological functions around treatment facilities. • Monitor the impact on the aquatic ecosystems during water treatment and discharge processes. 4. <u>At waste disposal stage:</u> • Location of the landfill sites that are away from ecologically sensitive areas, wetlands, and wildlife habitats to minimise habitat disruption and biodiversity loss. • Habitat restoration and conservation measures in and around landfill sites. • Monitor and manage potential impacts on wildlife and migratory bird populations near landfill sites. For mitigating measures involving land clearance, soil erosion, encroachments on protected or high conservation values, wildlife habitats, biodiversity hotspots and others, please refer to VBIAF Sectoral Guide: Waste Management for more details.
GP3 – Efficient Use of Resources	
4.1 Risk identification (Efficient Use of Resources)	
a)	Clients with high dependencies on water/ energy/ other natural resources must show good resource management within their business to ensure sustainability of the natural resources. Sectoral data/ trends can be used as a benchmark or basis in assessing the significance of water/ energy/ other natural resource consumption within the Client's business operations. The tools below can be used to identify and assess the Client's dependence on specific natural capitals based on its sector as well as geographic location: -

- Exploring Natural Capital Opportunities, Risks and Exposure Tool ("ENCORE", url: **https://encorenature.org/en**); and
- WWF's Biodiversity Risk Filter (url: **https://riskfilter.org/biodiversity/home**)

Please note that, when using the tools above, please select the 'Dependencies' (alludes to the ways and extent to which the Client's activities rely on certain resources/ natural capital) option as opposed to the 'Impacts' option (used for GP3.1 & GP3.2).

Note: Resource efficiency refers to sustainable use of natural resources such as land, minerals, water, fuels, timber, fertile soil, clean air and biodiversity. Common use in overall industry context is the use of fuel (energy) and water. Where possible, the Client should measure and compare the use of essential resources against an appropriate benchmark (e.g., a recognised local or international standard or industry best practice).

*For more information pertaining to green certifications that are relevant to SMEs, please refer to: **https://www.jc3malaysia.com/esg-jumpstart-for-smes**.*

FIs may also consider the occurrence of events or risks set out below before determining if the Client's business operations have high dependencies on water/ energy/ other natural resources: -

1. At waste collection stage

   Water
   - Ill-managed collection of waste can result in leakage. The leakage pours into water sources and flows into the ocean can cause pollution, such as plastic debris.
   - Insufficient waste collection services can contribute to the obstruction of drainage and sewerage systems by waste, leading to flooding.

   Resource use and efficiency
   - Lack of separation of waste materials at source knowledge can lead to the wastage of materials that can be recycled or recovered, leading to the depletion of natural resources and contributing to environmental degradation. The longer time spent by turnkey operators to segregate the waste for a later stage.
   - Limited resources can impact waste collection by making it difficult to invest in efficient collection systems, such as mechanised collection or efficient routing. This can lead to higher collection costs and longer collection times, which can result in increased environmental impacts and health risks.

2. At waste transportation stage

   Water
   - Use of freshwater to transport industrial waste away from the facility, causing a release of harmful substances such as lead, mercury, sulphur, and petrochemicals into the natural environment affecting water life, including biomass.

   Land-use, land-use change
   - The development of new infrastructure to be built to accommodate waste transport, like the construction of new roads, railways, or airports, can lead to the fragmentation of natural habitats and the loss of biodiversity.

   Resource use and efficiency
   - Limited resources can impact waste transportation by making it difficult to invest in efficient and reliable transportation systems. This can lead to longer travel times, increased emissions, and higher

transportation costs. For example, with sufficient resources, a company can invest in electric-powered vehicles, to avoid the usage of fossil fuel-powered vehicles, which negatively contribute to air pollution and increase GHG emissions.

3. At waste treatment stage (e.g., recycle, repurpose of waste, composting, incineration)

Water

- Poor waste treatment disposal management has resulted in marine pollution such as natural and synthetic polymers and plastic debris.
- Poorly designed landfills can result in discharge of leachate which pollutes groundwater, contaminating water supply.

Land-use, land-use change

- The construction of waste treatment facilities, such as incinerators or composting plants, can take up valuable land and can have negative impacts on land use change to the surrounding environment.

Resource use and efficiency

- Limited resources can impact waste treatment by making it difficult to invest in advanced treatment technologies or infrastructure prioritise the usage of minimal resources, whereby the usage of large resources such as water and energy for waste treatment will lead to depletion of these resources.

4. At waste disposal stage

Water

- Poor waste treatment disposal management has resulted in marine pollution such as natural and synthetic polymers and plastic debris.
- Poorly designed landfills can result in discharge of leachate which pollutes groundwater, contaminating water supply.

Land-use, land-use change

- Difficulty in properly reclaiming land after waste management operations have ended can exacerbate these land-use change risks. If waste management facilities are not properly closed and reclaimed, they can continue to have negative impacts on the surrounding environment for years or even decades after they have been decommissioned.

Resource use and efficiency

- Limited resources can impact waste disposal by making it difficult to invest in sustainable disposal practices, such as landfill gas capture or leachate treatment. This can result in increased environmental impacts and health risks, as well as increased costs for waste management authorities.

4.2 Risk management (Efficient Use of Resources)

a) The measures which can be undertaken by the Client to mitigate the risks identified in 4.1(a), may include but not limited to: -

1. At waste collection stage
   - Implement frequent organic waste segregate collection, distributing food waste caddies (which reduces odours, pest and insects from rapidly degrading material) and promoting home composting where collection is not present.

	• Organise waste segregation programmes at the source to facilitate recycling. • Optimise waste collection routes and schedules. • Diverting organic waste from landfill through segregated organics collection contributes to preventing landfill fire outbursts. 2. <u>At waste transportation stage</u> • Transition to low-emission waste collection vehicles, utilise fuel-efficient vehicles and optimise transportation routes to minimise carbon emissions and fuel consumption. • Planned waste transportation routes to optimise the use of the transportation vehicle. • Decentralised organic waste treatment plants (e.g., composting and anaerobic digestion) to reduce transporting distances, increase organic waste recovery and reduce risk of dumpsite fire. 3. <u>At waste treatment stage (e.g., recycle, repurpose of waste, composting, incineration)</u> • Implement water recycling and reuse systems to minimise freshwater consumption and wastewater discharge from treatment operations. • Invest in energy-efficient equipment and technologies to reduce energy consumption and minimise resource use during waste treatment processes. 4. <u>At waste disposal stage</u> • Explore alternative waste disposal methods such as incineration with energy recovery or advanced thermal treatment technologies.
GP3 – GHG Emissions	
5.1 Risk identification (GHG Emissions)	
a)	The production and consumption of energy contribute significantly to GHG emissions, primarily through the burning of fossil fuels such as coal, oil, and natural gas. For a comprehensive assessment on whether the Client's core activities produce GHG emissions, please apply the below tools: • Exploring Natural Capital Opportunities, Risks and Exposure Tool **("ENCORE")**. *Please note that when using the tools (a) above, please select the 'Impacts' (alludes to the ways in which* the C*lient's activities impact ecosystem services and natural capital) option as opposed to the 'Dependencies' option (used for GP5.1 & GP5.2).* *For the implementation of CCPT classification and 2024 CCPT reporting requirement for SMEs, FIs must prioritise the identified 6 high carbon emitting sectors, namely agriculture, construction, manufacturing, energy, transport & waste management.* <u>General guidance on GHG emission in waste management sector based on its value chain/ life cycle</u> 1. <u>At waste collection, assembly and storage and transportation stage</u> • Inappropriate collection and storage methods (e.g., containers) may release methane and other gases harmful to exposed communities. • The collection and transportation of waste from households, businesses, and other sources to waste treatment facilities require the use of vehicles that run on fossil fuels. These vehicles emit GHG emissions such as carbon dioxide, nitrogen oxide, and particulate matter.

	• Inefficient waste collection can result in the unnecessary use of resources, such as fuel and labour, as well as increased GHG emissions. Poorly planned routes or inadequate collection schedules can lead to increased fuel consumption and emissions from waste collection vehicles. 2. <u>At waste treatment stage (e.g., recycle, repurpose of waste, composting, incineration)</u> • Open landfills without baseline sealing systems and improper treatment facilities may cause waste material landslides or explosions and fires, further emitting harmful gases into habitats. 3. <u>At waste disposal stage</u> • The anaerobic decomposition at landfill produces methane as a by-product (a potent GHG) and releases carbon dioxide, and other GHG emissions such as nitrogen oxide and particulate matter. *For the implementation of CCPT classification and 2024 CCPT reporting requirement for SMEs, FIs must prioritise the identified 6 high carbon emitting sectors, namely agriculture, construction, manufacturing, energy, transport & waste management.*
5.2 Risk management (GHG Emissions)	
a)	The measures which can be undertaken by the Client to reduce GHG emissions or as part of its decarbonisation strategy in mitigating the identified impact of GHG emissions in 5.1(a), may include but not limited to: - 1. <u>At waste collection stage</u> • Transition to low-emission waste collection vehicles, utilise fuel-efficient vehicles and optimise transportation routes to minimise carbon emissions and fuel consumption. • Install water fountains and water sources across the city to reduce consumption of disposable bottles that steeply increase during heat waves. 2. <u>At waste transportation stage</u> • Efficient waste collection routes and schedules to minimise fuel consumption and emissions from collection vehicles. • Implement vehicle maintenance programs to ensure optimal performance and minimise emissions from transportation fleets. • Transition to low-emission waste collection vehicles, utilise fuel-efficient vehicles and optimise transportation routes to minimise carbon emissions and fuel consumption. 3. <u>At waste treatment stage (e.g., recycle, repurpose of waste, composting, incineration)</u> • Locating the treatment plant close to major sources of waste generation to minimise fuel consumption. 4. <u>At waste disposal stage</u> • Ensure the location of new waste disposal sites (historically close to rivers) is not vulnerable to sea level rise projected over the lifetime of the site. • Implement landfill gas capture and utilisation systems to capture methane emissions from landfills.

Due Diligence Questions: GP4 – Remedial Measures	
No	**Guidance Notes**
Plans undertaken for remediation of significant harm to the environment	
b)	In assessing whether the Client has clearly defined remedial measures and realistic timeline for completion to address the harm identified in GP3, FIs may enquire the following questions (non-exhaustive): - • Any time-bound targets set and specific steps to achieve the planned remedial measures. • The suitability of the remedial measures with the Client's business activities and strategy. • Sufficient resources (e.g., cash flow, expertise, data, technology) to execute the planned remedial measures in accordance with the timeline.
c)	In assessing whether the Client has proper tracking mechanism on the effectiveness of the planned remedial measures, the Client needs to provide timely progress updates on its milestones for achieving the targets set and to report any deviations during the execution of the remedial measures.

In Malaysia, Waste Management Sector are classified into: -

- sewerage/sewage;
- scheduled waste;
- nuclear waste; and
- controlled solid waste,

which are governed by different set of laws as set out below: -

Waste Category	Relevant Act	Authority	Operators
Sewerage/sewage	Sewerage Services Act 1993, Water Services Industry Act 2006	Department of Environment **(DOE)**, Ministry of Environment and Water	Indah Water Konsortium (Indah Water or IWK)
Schedule Waste	Environmental Quality Act 1974 **(EQA 1974)**		Cenviro
Nuclear Waste	Atomic Energy Licensing Act 1984	Ministry of Science, Technology & Innovation.	Malaysian Nuclear Agency
Controlled Solid Waste	Solid Waste and Public Cleansing Management Act 2007	Jabatan Pengurusan Sisa Pepejal Negara ("JPSPN")/Department of National Solid Waste Management, Perbadanan Pengurusan Sisa Pepejal Dan Pembersihan Awam/or Solid Waste And Public Cleansing Management Corporation (SWCorp).) in Ministry of Local Government Development.	Environment Idaman Sdn Bhd, Alam Flora Sdn Bhd, SWM Environment Sdn Bhd