

Environmental Guideline on Bakery



Department of Environment

The purpose of this environmental guideline is to provide guidance to prospective developers in the bakery sector to operate on the basis of self-adherence and to assist Local Authorities at the Building and Land Use Permit stage.



1. Background

Bakeries produce bread, cakes, pizza, pastries and biscuit products using flour as the basic ingredient. They vary in size and scale from small shop bakeries to in-store supermarket bakeries to very large scale bakeries. Some bakeries also offer customers on premise consumption of baked products and beverages (tea, coffee, juice).

The main activities carried out in a bakery include, amongst others:

- Loading and unloading of raw materials and finished products
- Storage of raw materials (flour, water, eggs, yeast, leavening agents, preservatives and other ingredients such as onions, herbs, olives)
- Preparation (mixing, shaping, placing in tins)
- Baking (removing from tins, cooling, frosting, decorating)
- Packing (slicing, wrapping, packaging)
- Selling of products

The major environmental concerns associated with bakeries are:

- Site selection
- Solid waste
- Wastewater
- Noise
- Odour and sanitary nuisances
- Vehicular movement
- Emissions and dust nuisances
- Energy and water consumption

2.0 Objectives of the guideline

This guideline is meant to ensure that prospective developers:

- adopt appropriate mitigating measures.
- comply with provisions of the relevant laws/ regulations/ standards.
- adopt environment-friendly practices to optimize use of resources.

3.0 Applicable Legislation

Bakeries do not warrant a Preliminary Environmental Report (PER) Approval or an Environmental Impact Assessment (EIA) Licence. It requires, amongst others, a Building and Land Use Permit under the Local Government Act 2011. Bakery operations have to be carried out in accordance with the provisions under the Planning Policy Guidance and Outline Planning Scheme.

Note:

The development shall also comply with relevant provisions under the Local Government Act 2011, the Building Control Act 2012, the Mauritius Fire and Rescue Service Act 2013, the Food Act 1998 and all applicable guidelines & regulations.

4.0 Location and Siting

- (i) Bakeries should preferably be located in commercial areas or in predominantly commercial areas within settlement boundaries.
- (ii) The existing development context of the site/land should be compatible with the activity.
- (iii) The site should not be located within any Environmentally Sensitive Area (ESA) and its prescribed buffer zone as per ESA Study 2009 such as wetland, steep slope and in areas that are likely to be affected by hazards such as inland flooding, landslide and storm surges, amongst others.
- (iv) Appropriate wastewater disposal facility such as septic tanks and absorption pits/ leaching fields shall be located not less than 30 m from any water course as per Rivers and Canals Act 1863.
- (v) Existing natural drains and watercourses on or in the vicinity of the site shall not be tampered with.

5.0 Mitigation of Environmental Impacts

5.1 Solid waste management

Wastes may be generated at all stages from the production process (spoiled raw materials, egg shells, spillages) to packaging wastes (carton boxes, egg trays, plastic wrappings/bottles).

Mitigating measures include:

- Domestic solid wastes to be collected in bins or waste handling receptacles of an appropriate size, rodent-proof and be able to cater wastes for up to 7 days and disposed of to the satisfaction of the Local Authority.
- No waste of any type to be disposed of in any watercourse including drains, canals and the surrounding environment.

5.2 Wastewater management

Wastewater arising from cleaning and spillages contain suspended solids, fats, oils and greases which if discharged without treatment will potentially pollute watercourses.

Mitigating measures include:

- Wastewater arising from cleaning should be disposed of to the satisfaction of the Wastewater Management Authority.
- Installation of grease traps or oil water separators for removal of floatable solids.

Note: Maintenance of the grease trap or oil water separator is to be carried out by the owner / promoter.

5.3 Noise abatement

The bakery sector may be associated with noise emanating from electric appliances, air extractors and electric motors. Necessary precautions shall be taken to ensure that noise emissions are within permissible limits as per the Environmental Standards for Noise Regulations under the Environment Protection Act (EPA) as follows:

Industrial Noise		Neighbourhood Noise	
Time	Noise exposure limits	Time	Noise exposure limits
07.00-21.00 hrs.	60 dB (A) L_{eq}	07.00-18.00 hrs.	60 dB (A) L_{eq}
21.00-07.00 hrs.	55 dB (A) L_{eq}	18.00-21.00 hrs.	55 dB (A) L_{eq}
		21.00-07.00 hrs.	50 dB (A) L_{eq}
A tonal character adjustment of +5 dB (A) should be applied to the measured value where the noise has a definite continuous note such as a whine or hiss.			

Mitigating measures include:

- Provision of appropriate noise attenuating materials/structures to abate noise generated from equipment such as electric appliances and extraction systems.
- Bakeries operating at peculiar hours (very early in the morning) should ensure that operations are carried out with minimal noise disturbance to the surrounding environment.

5.4 Odour and sanitary nuisances

Odours may be released from cooking, baking as well as from the inappropriate storage and disposal of wastes, which attract rodents and flies. Abatement measures shall be taken to avoid such nuisances.

Mitigating measures include:

- Good housekeeping within the premises should be maintained at all times with the adoption of good cleaning and work practices such that there is no cross contamination of food.
- Wastes should be kept in closed waste handling receptacles.
- The necessary sanitary measures shall be taken as per the provisions of the Food Act 1998.
- Provision of extractors and hoods to reduce odours from cooking and baking processes.
- Odour controlling equipment (such as but not limited to scrubber or activated carbon filter) should be incorporated in the hood system.
- Installation of bait stations/traps to control pests and rodents.

5.5 Vehicular movement

Loading and unloading of raw materials and finished products and vehicular movement from customers may cause traffic congestion or excessive noise potentially leading to complaints. Necessary precautionary measures should be taken to avoid such nuisances.

Mitigating measures include:

- Provision for adequate parking, loading and unloading facilities.
- Loading and unloading of raw materials/ goods should be carried out in such a way that no disturbance is caused to the neighbourhood.

5.6 Emissions and dust management

Bakeries have ovens which may be electric or diesel-fired or gas-fired. Emissions from diesel-fired ovens include volatile organic compounds and oxides of carbon, nitrogen and sulphur, which are associated with various environmental and health impacts. Dust may arise from raw material storage, handling, drying activities as well as from unloading of flour.

Mitigating measures include:

- Gaseous emissions from boiler stacks shall be as per prescribed standards under the **Environment Protection (Standards for Air) Regulations 1998**.
- All necessary precautions should be taken at all times to avoid dust emission.
- Flour should be properly stored in an enclosed structure with ventilation/extraction equipment.
- Good housekeeping should be maintained at all times in all areas with adoption of good cleaning and working practices.
- Chimney stacks should be located furthest away from adjoining buildings and should be consistent with good engineering practices.

5.7 Other mitigating measures

- Necessary precautions should be taken to avoid disturbance to the neighbourhood by way of odour, dust, noise or traffic during construction and operation phase.
- Safe storage of materials on site and stored materials not unduly visible or intrusive in the street scene.
- Necessary bunded wall to be provided around any fuel storage tank.

5.8 Eco-friendly Measures and Sustainability

Bakeries need to adopt best environment friendly practices such as supply of eco-friendly carry bags (paper, certified biodegradable/ compostable plastic bags) to customers, renewable energy source (solar water heaters and photovoltaic cells), energy efficient appliances (fridges, ovens, Air-Conditioners), energy saving devices (LED lamps), ozone-friendly appliances, waste segregation for recycling, rain water harvesting for washing of premises and use of eco-friendly detergents.

Note:

- Relevant organizations shall be consulted as regard food hygiene, fire, occupational health and safety, traffic implications among others prior to embarking on the project to ensure compliance with their respective laws/ regulations / standards.
- Exempted plastic packaging bags shall **solely** be used for packaging purposes while certified biodegradable/ compostable plastic bags, with printed particulars, shall be supplied to customers to carry goods purchased at bakeries as per the Environment Protection (Banning of Plastic Bags) Regulations 2015.
- Non-compliance with the standards for noise and air and the banning of plastic bags regulations is an offence under the EPA.

Copies of this guideline are available at the Department of Environment, on the website of the Ministry (<http://environment.govmu.org>), on the Government Portal (<http://www.govmu.org>) and on the websites of all Local Authorities.