The Revised RBME Risk Model 2020

for determining the Enforcement Category of a licensed facility relative to the risk it poses to the environment

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Introduction

The EPA uses a Risk Based Methodology for Enforcement, or "RBME model", for determining an Enforcement Category for a licensed facility relative to the risk it poses to the environment. In turn, the licensed facility's Enforcement Category is used to calculate the annual Enforcement Charge which the licensee must pay to offset the costs of the EPA's regulatory activities.

The revised RBME model comes into effect as of the 2020 calendar year. The main differences between the new methodology and the previous methodology are that

1. the 'P' Enforcement Category, which was previously applied to all licensed Intensive Agriculture operations, has been dropped, and

2. an additional Enforcement Category, 'D', has been added to cater for the relatively lower polluting potential of poultry units and any other licensed activities in other sectors that may have a similar risk profile.

This means that an intensive agriculture site will now be allocated to one of the standard Enforcement Categories.

Each of the overall Enforcement Categories A - D are divided into subcategories of decreasing risk, e.g. A1, A2 and A3.

Calculating a Licensed Facility's Enforcement Category

The Licensed facility's Enforcement Category is based on a combination of a **Complexity** rating and a **Location** score, which generates the 'Initial' or 'Default' category; this may then be adjusted further by reference to the facility's **Enforcement History** and **Accreditation Status**.

Methodology

- The **Complexity** rating reflects the complexity of the activity on site [See Appendix 1].

- The **Location** score, obtained from the EPA's location data (see http://gis.epa.ie/SeeMaps), is based on
    - the proximity of the nearest sensitive receptor,
    - the proximity of a protected area, if relevant, and
    - the type of aquifer, if present, and its vulnerability rating [See Appendix 2].

- These scores produce an initial Default Enforcement Category of **A2, B2, C2 or D2** to each licensed activity.

- A further assessment is then applied, based on indicators of the site's environmental performance and operator management:
    - the previous 12 months' **Enforcement History** and
    - the site's **Accreditation Status**.

The further assessment may result in lowering or raising the Default category to determine the **Final Enforcement Category**.

The scoring system is outlined following a description of the component parts of the RBME model.

Elements of the Methodology

Complexity

Complexity is a measure of risk based on the type of activities carried out on the site, with more complex operations resulting in a higher Enforcement Category. This is because, in general, we find that more regulatory effort is required to enforce the licence conditions of more complex sites.

Each scheduled activity has been assessed and assigned one of six Complexity grades, ranging from G0 (the least complex) to G6 (the most complex). Where the site carries out an activity which is not considered by the EPA to be typical of the sector (e.g. in terms of size or scale), the EPA will consider a reduction or increase in the assigned grade as appropriate.

Automatic defaults to **A1** (the highest Enforcement Category) for waste transfer stations and incinerators have been removed.

Location

The **Location** attribute uses data from the EPA's GIS databases [see http://gis.epa.ie/SeeMaps].

These databases contain a location in Irish Grid (Easting and Northing) for each site, which is normally taken from the licence application, and is often taken at the main gate of the site. We consider the location that the licensee supplied to be accurate unless demonstrated otherwise.

It is important to note that this is a Point location and not a "Polygon" (that is, a 2-dimensional area such as a site boundary), so distances to areas of interest are conventionally measured from that point rather than a site boundary. The bands for applying scores to distances from areas of interest take this convention into account.

The areas of interest used are:

- **Nearest sensitive receptor - nearest one of**
  - House
  - Education
  - Residential health (hospital, nursing home)
  - Note that population density is not accounted for; e.g. 1 house is treated in the same way as 100 houses.

- **Nearest protected site**

  o Protected Sites Datasets

    ▪ Natural Heritage Area (NHA)
    ▪ Special Areas of Conservation (SAC)
    ▪ Special Protection Areas (SPA)

  - These are Polygon datasets, so the nearest point on the protected site boundary to the facility is used

- **Groundwater**

  o The importance of and risk to the area's groundwater is measured in two ways:

    ▪ Aquifer type
    ▪ Vulnerability

Enforcement History

Enforcement History is derived from selected Indicators of Environmental Performance (complaints, incidents, and non-compliances):

- All **Compliance Investigations** (CIs) over a 12-month period are included; CIs are given a higher weighting relative to other Enforcement History attributes;

- All **complaints**, up to a maximum of 20, that are linked to 'Medium' or 'High' CIs are counted, whether Open or Closed;

- All **incidents** which are scored at or above 'Limited' rating; and

- **Non-compliances** linked to the failure to notify the EPA of incidents receive a higher score than other non-compliances.

Satisfactory environmental performance will result in a licensee's 'final' risk rating remaining unmodified, that is, the Final Enforcement Category will be the same as it's 'Default' Category.

A poorly-performing licensee is penalised by moving up to a higher-risk subcategory, whereas compliance with the licence is rewarded with movement to a lower-risk sub-category, shown as follows:
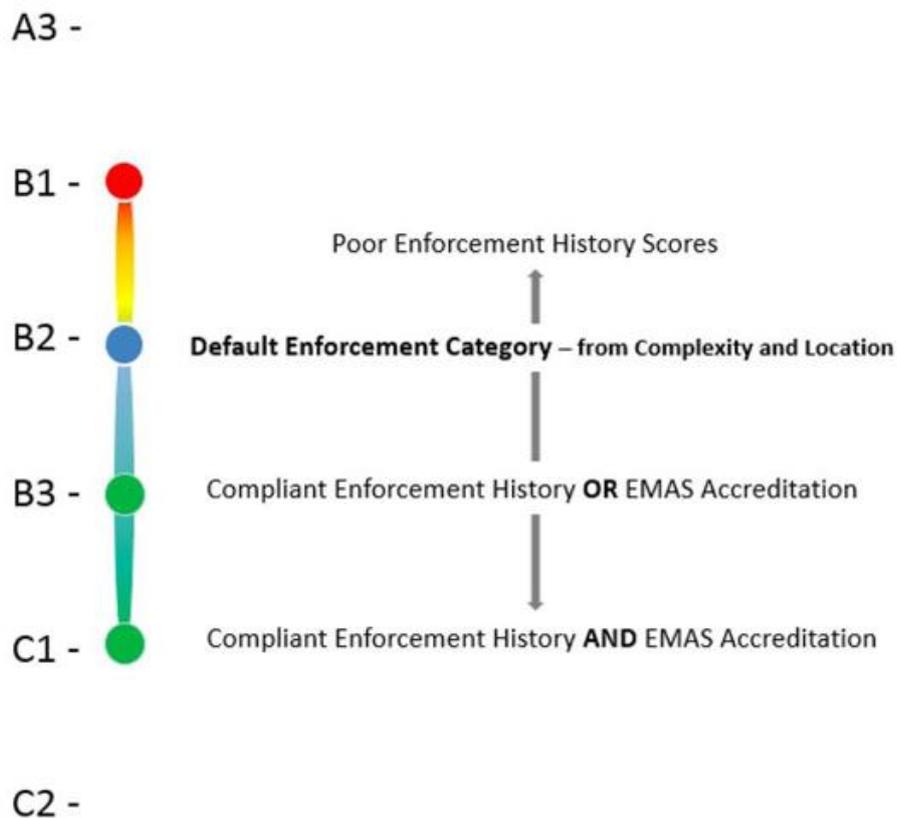
Figure 1 Range of Adjustment of Default Enforcement Category by Enforcement Performance

Operator Management

A credit for **Operator Management** is applied for sites that have EMAS Accreditation, by reducing the Enforcement Category by one Minor category.

Scoring of Attributes

The following schema sets out how the Scores and associated risk bandings for each of the attributes are determined.

Initial / Default Enforcement Category

An initial Default Enforcement Category score is calculated using the Complexity and Location information, which puts the site in one of the four Median Subcategories: A2, B2, C2 or D2.

The Default score is calculated as follows:

- **Complexity**

    - G0 = -15
    - G1 = 2
    - G2 = 10
    - G3 = 20
    - G4 = 30
    - G5 = 40
    - G6 = 40

- **Location (sum of)**

    - Nearest sensitive receptor
        - <250m = 4
        - <1000m = 3
    - Nearest protected site
        - <500m = 3
        - <1000m = 1
    - Ground Water - Aquifer type
        - Regional = 3
        - Local = 1
        - Poor = 0
    - Ground Water - Vulnerability
        - Extreme = 2
        - Extreme (rock near surface or Karst) = 2
        - High = 1
        - Moderate = 0
        - Low = 0

These two scores are added together and applied to the following table to give the Default score:

Default Category	Combined Complexity + Location Score (greater than)
A2	35
B2	20
C2	0
D2	-15

The Final Enforcement Category is then calculated from the Default Category, by applying any adjustments deriving from the assessment of the site's **Enforcement History** and **Accreditation Status**.

Scoring of the Enforcement History Attribute

The **Enforcement History** attribute is evaluated over the 12 Calendar month period preceding the assessment, and provides for an adjustment of <u>plus 1</u> or <u>minus 1</u> Subcategory.

This means that <u>a site will not move outside of its Major Category</u> [1]. For example, a site with a Default Category of B2 can only move to either B1 or B3 based on Enforcement History; it cannot move either upwards to an A or downwards to a C.

The RBME Enforcement History assessment applies a slight variation of the Performance Criteria that are used for the determination of National Priority Sites for Enforcement (NPS), which may be found at

https://www.epa.ie/industrialwastedata/nationalprioritysites/prioritysitessystem/ [=FAQ's related to National Priority Sites]

The RBME Enforcement History scoring system contains the following modifications of the NPS system, which are intended to provide for an assessment of the overall compliance history of the site over the assessment period:

- All Compliance Investigations (CIs) over the 12-month assessment period are included, and are given a higher weighting relative to other enforcement history attributes.

  The NPS assessment is concerned with the current status of the site and it is reactive; therefore, Open and Closed CIs are scored differently. RBME is concerned more about the broader status of sites over an annual timescale, so Open CIs and Closed CIs are allocated the same scores for RBME purposes.

- All complaints linked to Medium or High CIs, irrespective of Open or Closed status, are counted, up to a ceiling of 20 complaints, over the 12 months of the assessment period.

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[1] There is one rare exception to this; it is possible that a site with an excellent enforcement history who also has EMAS accreditation (see operator management below) could possibly drop one Major Category. Further details of this exception are discussed later.

The NPS procedure, conversely, differentiates between 'Closed' and 'Open' complaints at the time of the NPS assessment, and counts all complaints that are linked to high and medium CIs.

- All incidents which are scored at or above 'Limited' rating; and

- Non-compliances linked to the failure to notify the EPA of incidents receive a higher score than other non-compliances.

  Note that **Prosecutions** are no longer used as an Enforcement History attribute, as it was in the previous RBME system. The recent review concluded that this was inappropriate, as the reason for the prosecution would, in most cases, already be accounted for in the site's Enforcement History. The inclusion of an additional score for the prosecution was considered to be effectively a double penalty for the same set of breaches. Furthermore, the licensee was already penalised by way of the prosecution itself, which likely included a financial penalty.

This Table sets out the RBME Enforcement History Assessment threshold values against which the site's Enforcement History score for the period of the assessment are evaluated.

Default Enforcement Category	RBME Enforcement History Assessment Threshold Scores (greater than or equal to)
A2	25
B2	15
C2	5
D2	5

How the Enforcement History threshold values are applied

With reference to the threshold values in the above Table:

- ✓ **An Enforcement History score of zero will have the effect of moving the final risk category down to the next lower risk category**. Put another way, the Default risk category be given a -1 for Enforcement Category which means that the site receives a "down one" adjustment of Minor category. For example, a site with a default of category of A2 and zero enforcement score will have a category adjustment down to A3.

✓ **An Enforcement History score that is between 1 and the threshold for the Default risk category in the Adjustments Table results in the Default category remaining unaltered**.

✓ **An enforcement history score that is equal or above each of those thresholds results in a raising of the Default category up to the next higher minor category**. For example, a site with a default of category of A2 and an enforcement score greater than 19 will receive a category adjustment up to A1.

The principal reason for establishing different thresholds is to reduce the potential bias in detecting more non-compliances due to the increased frequency of visits to A or B sites respectively compared to C and D sites.

Application of the Enforcement History Attribute

The **Operator Management** attribute is simply applied by reducing the Default Enforcement Category by one Minor category for sites that have EMAS accreditation.

This adjustment is applied IN ADDITION TO any adjustment on the basis of enforcement history, either up or down.

For example,

- a site with an interim category of A2 and EMAS accreditation will have a category adjustment down to A3.

- a site with an excellent enforcement history (a Zero Enforcement History score) who also has EMAS accreditation could possibly drop one Major category. For example, a site with a default score of B2 could drop to B3 based on Enforcement History, and drop a further Minor category for EMAS accreditation giving it a final rating of C1.

    o The exception to this is a D3 site with EMAS accreditation – it's already at the lowest Enforcement Category; it is performing at the top of the RBME assessment system – well done!

- Conversely, a site with a poor enforcement history but which who also has EMAS accreditation could increase by one Minor category on Enforcement History and then drop by one Minor category for EMAS, leaving its default rating unaltered.

The table below shows some examples for further illustration of how the RBME scoring system operates:

Default Enforcement Category	Enforcement History Score	Final Enforcement Category without EMAS	Final Enforcement Category with EMAS
A2	28	A1 ↑	A2 ↙
A2	19	A2 ←	A3 ↓
A2	0	A3 ↓	B1 ↓↓
B2	15	B1 ↑	B2 ↙
B2	1	B2 ←	B3 ↓
B2	0	B3 ↓	C1 ↓↓
C2	10	C1 ↑	C2 ↙
C2	3	C2 ←	C2 ←
C2	0	C3 ↓	D1 ↓↓
D2	10	D1 ↑	D2 ↙
D2	3	D2 ←	D3 ↓
D2	0	D3 ↓	D3 ←