

# SCOTTISH ENVIRONMENT PROTECTION AGENCY

## Regulatory Evidence Strategy

### **1. Aim**

- 1.1. This Strategy will promote the collection and analyses of information in a consistent manner so as to improve the evidence required to support regulatory decisions and thereby deliver greater environment benefits.

### **2. Introduction**

- 2.1. SEPA needs to collect information on regulated activities in order to:
- understand the scale the risk to the environment and to human health and wellbeing so as to inform decision-making by SEPA, operators and stakeholders;
  - monitor the performance of the operator in managing their environmental risks on the site, in particular, their compliance with licence conditions;
  - identify where new mitigation measures are required;
  - detect incidents or environmental crime so as to allow effective intervention by SEPA;
  - comply with legal obligations and international agreements;
  - aim to reassure interested parties that SEPA understands the activities that it regulates and can therefore protect people and the environment; and
  - inform our monitoring of the state of the environment.
- 2.2. Sections 3 and 4 explain the principles and the building blocks which will form the framework of the strategy. Section 5 and 6 provide a high level plan which will allow SEPA to move towards the deliver the strategy's aim. The strategy is supported by annexes which provide definitions and then a more detailed objectives and delivery plans for the building blocks of the strategy.

### **3. Principles**

- 3.1. SEPA's approach to routine evidence collection will be based upon the following principles.
- SEPA will ensure that the overall level and quality of monitoring undertaken is sufficient to assess the environmental risks posed by the site or activity.
  - All SEPA regulated activities which pose a significant risk of harm to the environment should be subject to monitoring.
  - It is the responsibility of operators to understand the environmental risks associated with their site/activity and to put in place means of monitoring the effectiveness of the controls used to mitigate those risks. This information should be made available to SEPA.
  - SEPA should audit the monitoring undertaken by operators. The scale of SEPA audit monitoring should be driven by operator compliance and the environmental risk posed by an activity.
  - SEPA should fully utilise the different sources of information on regulated sites and should aim not to be dependent upon a single source of information on any regulated activity.

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- SEPA should publish the information collected on regulated sites so that SEPA and stakeholders can develop a common understanding of regulated activities.

### 4. Building blocks

4.1. There are five possible sources of information on regulated sites which provide the building blocks of our evidence strategy. Each source of information has its own strengths and weaknesses.

- Operator self-monitoring information. This provides the operator with information to understand the performance of the environmental protection measures on the site. It may be cost-effective for the operator to take samples and make observations and there is an incentive to take more samples and observations to fully understand performance. Self-interest, however, also creates an incentive to present a site in its best light and there is a risk that reporting will be biased with operators avoiding monitoring/reporting poor performance.
- SEPA regulatory monitoring of sites/activities. Monitoring is independent and objective. Monitoring can be planned as part of a broader geographic and cross-sector assessment of impacts upon the environment. However, the resources available to SEPA constrain the number of visits and time period during which visits are made.
- SEPA environmental monitoring of the impacts of regulated activities. Monitoring is independent and objective and un-biased; however, the resources available to SEPA constrain the number of visits and time period during which visits are made.
- Third-party monitoring. Some industries have a well-developed quality assurance programmes which require visits by independent auditors. There will also be situations where other regulators visit sites and can monitor on SEPA's behalf.
- Public observations of a site and/or of impacts upon environment. This has the potential to provide SEPA with "eyes and ears" everywhere, although, the public can only identify the more severe/visible problems. Individuals, however, may not be impartial and their reports can be biased.

4.2. In addition to the collection of information on sites the Regulatory Evidence Strategy also covers the analysis and provision of data to stakeholders and the public. The information that we collect should provide the basis of a common understanding of the risks to the environment.

### 5. Routine evidence collection

5.1. This section provides a high-level plan which describes how SEPA will develop its routine collection of evidence from regulated sites. The intention is to use the different sources of information described in section 4 so as to increase the information available on regulated activities that pose a significant risk to the environment.

5.2. All regulated activities should be subject to a combination of self-monitoring and SEPA audit monitoring. The balance between the two types of monitoring will vary between sites/operators.

5.3. SEPA will require operators to undertake a level of self-monitoring which provides sufficient information to allow the operator and SEPA to understand what is happening at the site. This provides the baseline monitoring of a site. The operator

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will set out a programmed schedule of inspections and sampling; the scope and frequency of which will be agreed with SEPA in advance. The information collected from self-monitoring cannot be used to prosecute a case but can provide supporting background information. SEPA uses operator monitoring to inform the development of its audit and enforcement monitoring programme.

- 5.4. The level of SEPA audit monitoring will depend upon SEPA's assessment of the environmental risks associated with a regulated activity. This would include consideration of the level of compliance (as indicated by self-monitoring), complaints and the incentive to cheat. SEPA will also use information collected by third party sampling and observations by the public to inform its assessment of risk (see Figure 1).
- 5.5. SEPA should provide the baseline information on the environment. The design of SEPA's environmental monitoring programme will also be informed by the risk assessment.

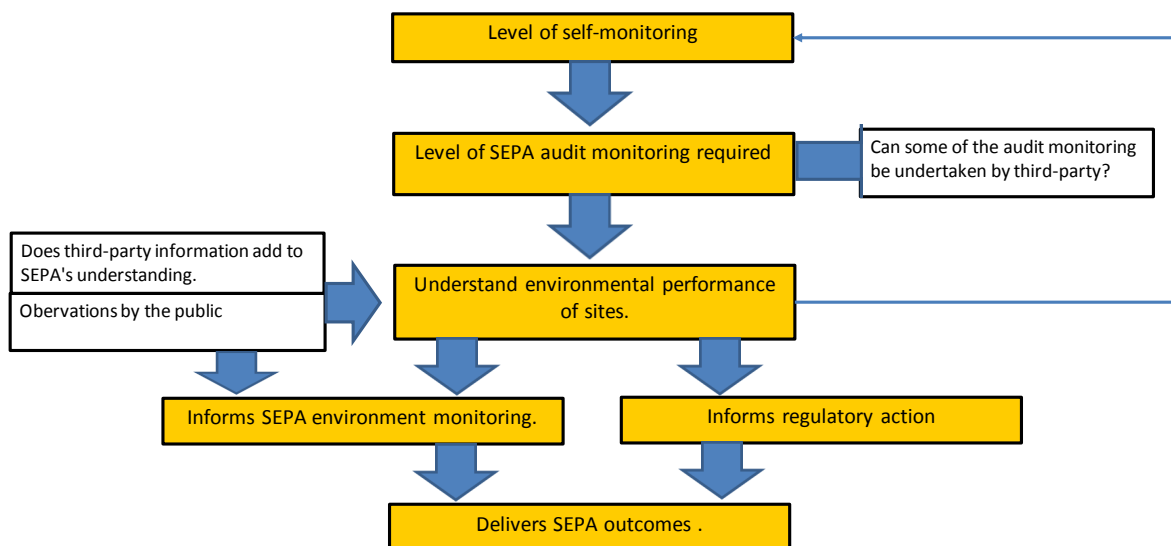


Figure 1. High level plan for the delivery of routine regulatory evidence collection

## 6. Investigative evidence collection

- 6.1. This section provides a high-level plan which describes how SEPA will develop its approach to investigative monitoring. The intention is to direct more resources towards the identification and assessment of environmental problems.
- 6.2. The investigative monitoring programme will aim to deliver information to support the delivery of SEPA outcomes. There will be four main types of investigative monitoring programme.
  - Supporting the delivery of change as projected by the environmental plans which aim to deliver improvements in Scotland's environment. The most significant plans are the RBMP, Low Emission Strategy and Zero Waste Plan. Where the RBMP anticipates improvements in the status of water bodies, SEPA will undertake monitoring to ensure that investment in assets is based upon a firm understanding of the position and will also monitor the results of the investment to ensure that new licence conditions are complied with and projected

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environmental deliverables are achieved. SEPA's analysis and modelling of air quality data will help inform action by local authorities and Transport Scotland and thereby contribute to the delivery of the Low Emission Strategy's objectives. The Zero Waste Plan will drive behaviour change across the waste sector and SEPA monitoring programme needs to detect and quantify potential criminal action.

- SEPA's regulatory functions require monitoring support to investigate the cause and consequences of environmental incidents. This involves a reactive forensic approach to incidents but also an investigative function which uses evidence to intervene in sectors where incidents are expected.
- SEPA science functions need monitoring data to develop tools and models which enhance our understanding of the environment. For example, SEPA is progressively implementing the river water quality modelling tool, SIMCAT, which will allow us to understand water quality changes at a catchment level. These catchment-scale models will require monitoring programmes to help with model calibration.
- Finally SEPA wants to focus on the most important environmental problems. Many of these will be picked up by the previous two bullets. However, there will be a role for assessing which current and future environmental problems have the potential to cause most damage and then to develop scoping studies and more focused monitoring programmes. A good example of this type of monitoring is the hazardous substance monitoring programme which will identify the most hazardous substances and then institute a monitoring programme which will quantify the scale of emission and the environmental consequences.

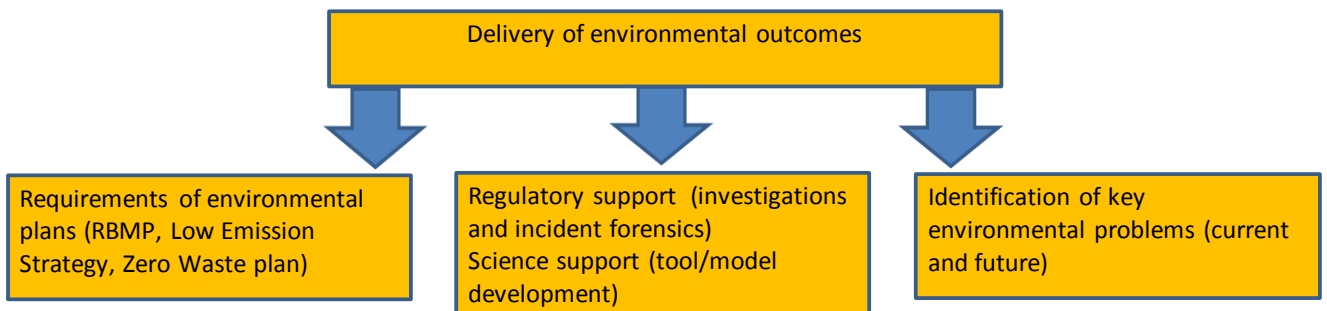


Figure 2. High level plan for the delivery of the investigative monitoring programme

## Annex I Definitions

### What do we mean by regulated activities?

- 6.3. This strategy covers all activities regulated by SEPA including:
- permits;
  - notifications and registrations;
  - general binding rules;
  - non-permit regulation such as special waste consignment notes.

### What do we mean by monitoring?

- 6.4. For example:
- observations/ inspections covering the effectiveness of mitigation measures, emission/discharges, types of waste;
  - data on the scale/effectiveness of key processes/movement of waste;
  - audits of procedures;
  - samples of emissions, discharges or waste throughput; and
  - environmental monitoring of the impacts of regulated activities.

### What do we mean by risk?

- 6.5. In this context we mean the 'risk' that the environment will be harmed beyond acceptable levels. This harm can be acute (e.g. a catastrophic failure of abatement equipment) or chronic (persistent exceedances of set emission levels). This 'risk' is a product made up from the consideration of a number of factors, listed below.

When using 'risk' in considering the resources that we will devote to a site we will consider:

- scale of the regulated activity; (*the what factor*)
- vulnerability of the receiving environment and reversibility of impacts (eg classification, risk assessment designations); (*the where factor*)
- actual or perceived effect upon human health and wellbeing (eg public profile of the site); (*a modifier for the where factor*)
- our assessment of the unmitigated impact posed by the site/sector; and (*the circa worst case scenario*)
- likelihood of licence non-compliance. (*the how often factor*)

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## Annex II. Planning the delivery of the Strategy's objectives for routine evidence collection

### 1. Introduction

- 1.1. This section considers the objectives for each of the possible components of the evidence strategy and provides an initial plan for delivery. :

### 2. Operator self-monitoring

#### Aim

- 2.1. It is the responsibility of operators to understand the environmental risks associated with their site/activity and to put in place means of monitoring the effectiveness of the controls used to mitigate those risks.

- 2.2. SEPA will require regulated activities which pose a risk of harm to the environment to monitor their activities and will require some of this information to be reported to SEPA. In particular, operators must ensure that they have sufficient information to ensure that they remain compliant with the conditions of their authorisation.

- 2.3. The type of monitoring will vary according to the legislative obligations, environmental risks posed by the activity. The hierarchy of monitoring could include:

- inspections of site;
- report on performance of mitigation measures;
- sampling of emissions/throughput; and
- continuous monitoring of emission, abstraction or waste throughput.

- 2.4. An appropriate combination of these monitoring tools should be used by the operator to ensure that they maintain an understanding of the environmental risk associated with a site or activity.

#### How can we deliver this?

- 2.5. Self-monitoring obligations will be phased in on a sectoral basis. SEPA would initially define the monitoring obligations in discussion with the sector and then set a timetable for delivery. They will be developed as "codes of practice" or schedules which would be referred to in licences.

#### Constraints

- 2.6. The information collected by the operator and reported to SEPA cannot be used as evidence to prosecute a case. It can, however, be used as supporting evidence. SEPA will use self-monitoring data to further develop its understanding of the site and the risks that it poses to the environment. This understanding will form the basis of the design of SEPA's audit monitoring programme.

- 2.7. As a regulatory mechanism GBRs offer limited capacity to require self-monitoring. SEPA cannot impose a reporting obligation upon operators covered by GBRs: for example the GBR covering agricultural diffuse pollution. This is because the concept of GBR does not include a requirement to contact SEPA. GBRs could include a requirement to keep records which SEPA could inspect when visiting a site.

### 3. SEPA Regulatory monitoring

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### Aim

3.1. All activities which pose a significant risk to the environment should be subject to SEPA audit visits in order to independently assess performance.

3.2. SEPA needs to develop an appropriate level of audit monitoring of regulated activities. This will be supplemented by an enforcement monitoring programme to collect information required to support potential enforcement/prosecution. This audit programme will be investigative in nature varying from year to year and focusing on areas of high risk or concern. SEPA monitoring will be less regular and predictable. Some lower-risk operators may not experience a visit by SEPA for several years and then be subject to a period of intensive monitoring.

3.3. Audit monitoring may include:

- inspections;
- sampling; and
- audit of self-monitoring facilities and procedures.

3.4. SEPA will prioritise its regulatory monitoring so as to focus upon the following regulated activities.

- Sites or sectors which pose a high environmental risk (see section ?).
- Sites or sectors with a poor compliance record.
- Sites or sectors where the operator does not have the capability to undertake self-monitoring at a sufficient level of technical detail.

### How can we deliver this?

3.5. SEPA can progressively develop the right balance between routine regulatory monitoring programme and self-monitoring. This will be an iterative process dependent upon the rate at which self-monitoring and other forms of monitoring can be developed.

## 4. SEPA Environmental Monitoring

### Objective

4.1. Part of SEPA's environmental monitoring programme will be designed to identify where sites/activities are causing a significant impact upon the environment

4.2. SEPA does not have the resources to monitor the environmental impact of every licenced site. Consequently, monitoring needs to assess cumulative impacts of multiple sites using a combination of monitoring and modelling. More detailed assessments can be carried out when problems are experienced. There also needs to be an investigative component to environmental monitoring which is informed by the same factors which will inform the allocation of regulatory monitoring resources.

4.3. Environmental monitoring data should provide complementary information which is not available from site emission monitoring. For example, environmental monitoring will include ecology monitoring which will pick up a wider range of environmental impacts.

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## How can we deliver this?

SEPA's water monitoring programme already provides a cumulative impact assessment of multiple emissions. The partnership monitoring programme for radioactive substances also provides a similar environmental monitoring programme. Relatively little monitoring is carried out to assess the impacts of emissions to air. An enhanced SEPA monitoring programme is required to complement the local authority air quality monitoring.

## 5. Third-Party monitoring

### Objective

5.1. SEPA will look for opportunities to develop shared-services with other public body regulators who also monitor SEPA regulated sites. Where possible SEPA will aim to rationalise visits to share the resource demands and to reduce the administrative burden upon operators.

5.2. Similarly SEPA will work with organisations which provide auditing services to particular sectors. The amount of value that SEPA will get from such arrangements depends upon the relationship that SEPA can build with the organisation and the type of monitoring undertaken and the potential some audit data being made available to SEPA directly.

### How can we deliver this?

5.3. The opportunities to use independent monitoring data will be identified opportunistically on a sectorial basis.

## 6. Public observations

### Objective

6.1. The public in the vicinity of regulated sites will know that they can report unusual activity at a site to SEPA. They will be able to report via SEPA's website or by phone.

6.2. SEPA will look for sites/sectors where simple observations by the public would help inform SEPA's understanding of sites. For example, we may ask for observations on the:

- colour of the smoke from a stack;
- colour of the water downstream of a discharge;
- amount of sewage debris or dead fish downstream of an overflow;
- number of times an overflow is seen operating; or
- type of traffic entering an inert landfill site.

6.3. Depending upon the type of observation, the data return system will acknowledge the observation and let them know the action we will be taking. This may include registering the report as an observation on the site or considering it as an incident which requires investigation.

### How can we deliver this?

6.4. This work is dependent upon providing a data entry system. SEPA would then need to raise public awareness of the role that people can take to protect Scotland's



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environment. It will also be important to set expectations of the way their observations will be used.

### 7. Data management, analysis and reporting

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| <p><u>Aim</u></p> <p>7.1. SEPA will have developed web-based tools to collect information from a wide range of sources and present appropriate level of analysis to SEPA staff, operators and the public.</p> |
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- 7.2. The delivery of this Strategy is dependent upon investment in systems for specifying monitoring requirements and managing data returns. Currently much of the self-monitoring data (for example from PPC sites) received by SEPA is held locally and not assimilated into SEPA systems. As a result it is not possible to apply automated data-analysis tools.
- 7.3. The Strategy requires the development of a system which allows the definition of an annual monitoring programme for each site together with “forms” which specify the information to be provided to SEPA. These “forms” will allow the submission of monitoring data or they may specify a list of observations required at the site. Operators, other agencies or the public would then access the appropriate forms via computer or smart phone technology and be able to submit the required information to SEPA.
- 7.4. The intention will be to hold the data on SEPA systems rather than access data held by operators. SEPA will be collecting information from a wide range of operators. It is important that historic data is maintained and not lost by companies going bankrupt or changing ownership.
- 7.5. SEPA’s data management and analysis functions (eg EQ, hydrology, chemistry) will then provide assessment and visualisation of the results for Operational staff.
- 7.6. An important part of this Strategy will be the provision of an appropriate level of information on the environmentally significant regulated activities. The intention will be to provide information on:
- permit conditions;
  - compliance;
  - monitoring (self, SEPA, and public monitoring)
- 7.7. The level of information provided will vary according to the audience. For operators and SEPA staff the intention will be to bring together all the information on a site to allow a common understanding of the issues at a site. For the public, SEPA will provide contextual information on the site together with visualisation tools which explain SEPA’s assessment of the site.