

Response to the
Mossmorran best practice review
by the Irish Environmental Protection Agency
March 2021

Every day SEPA works to protect and enhance Scotland's environment, helping communities and businesses thrive within the resources of our planet.



We call this **One Planet Prosperity**

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Background

On Wednesday, 13th May 2020, SEPA announced its intention to submit a report to the Crown Office and Procurator Fiscal Service for consideration of prosecution in relation to the flaring at the Mossmorran complex during April 2019.

SEPA is firmly focused on addressing the root causes of unacceptable flaring. SEPA confirmed it was working closely with the Health and Safety Executive which has responsibility for site safety as part of the Competent Authority under the Control of Major Accident Hazards Regulations.

A broader package, announced the same day, included an independent technical assessment of the ground flare installation timeline from ExxonMobil Chemical Limited.

The agency confirmed that the actions of ExxonMobil Chemical Limited will continue to be under continual review during the coronavirus pandemic with an intensified compliance programme to focus on the steps the company is taking to prevent and minimise flaring.

SEPA confirmed support for Fife Council's review of formal groups for community liaison aimed at refreshing community participation and engagement around the Mossmorran complex and that it would collaborate with Fife Council to review monitoring with input from local communities and other public partners as soon as is safely practical to do so

SEPA reaffirmed that monitoring reports would continue to be published on a fortnightly basis on its sepa.org.uk/mossmorran hub and that it would seek an external review by the Irish Environmental Protection Agency to share best practice and advise on further actions that may be taken to drive compliance.

A culture of international collaboration and continuous improvement

“Compliance with Scotland’s environmental laws is simply non-negotiable. Over a number of years, communities across Fife have repeatedly been exposed to unacceptable flaring. Whilst flaring is an important safety mechanism of such facilities, it must become the exception, rather than routine”, SEPA Chief Executive Terry A’Hearn said on announcing the intention to submit a report to the Crown Office and Procurator Fiscal Service for consideration of prosecution and the next steps package of regulatory measures.

In commissioning the best practice review, SEPA was clear that what mattered to communities was actions and outcomes. Whilst the agency had used the full force of its powers, from regulatory requirements and operating permit variations to Final Warning Letters and submission of a report to the Crown Office for consideration of prosecution, SEPA’s culture of international collaboration and continuous improvement led to the review seeking to share best practice and advise on any further actions that may be taken to drive compliance at the Mossmorran site.

We welcome the report’s conclusions and recommendations and thank the independent Irish team for their work. Whilst in most cases recommendations are already underway, we welcome further suggestions, with only a small number not appropriate in this instance.

Laura Burke, Director General of the Irish Environmental Protection Agency, said:

“The regulation of complex industrial facilities is important for the protection of communities and our environment and it is good practice for regulatory authorities to draw on each other’s expertise and to share experience. Following our review, we have considerable confidence in SEPA’s approach to ensuring compliance at the Mossmorran complex. Our recommendations reflect that sharing of regulatory expertise and experience and it is clear that many of them are already being incorporated into SEPA’s approach or will be taken forward by the Agency.”

A clear pathway to compliance

- **June 2018** : Notices of variations to Permits were served on ExxonMobil Chemical Limited and Shell UK Limited which included the requirement to complete an evaluation of the Best Available Techniques (BAT) to prevent and, where that is not practicable, reduce emissions of noise, vibration and smoke associated with flaring.
- **April 2018** : Final Warning Letters to both ExxonMobil Chemical Limited and Shell UK Limited.
- **January to April 2019** : SEPA air quality monitoring programme undertaken.
- **April 2019** : SEPA receives the Best Available Techniques (BAT) assessments from Shell UK Limited and ExxonMobil Chemical Limited.
- **April 2019** : ExxonMobil Chemical Limited commits to the installation of a fully enclosed ground flare.
- **August 2019** : Operating permit variations served on ExxonMobil Chemical Limited and Shell U.K. Limited to require both operators to achieve 'Best Available Techniques' at Mossmorran.
- **August 2019** : ExxonMobil Chemical Limited and Shell UK Limited each submitted environmental monitoring programmes.
- **August 2019** : SEPA deploys monitoring network, at three locations around site and commences regular publication of reports concluding no significant impacts on local air quality.
- **July 2020** : Submission of report to the Crown Office for consideration of prosecution in relation to the flaring at the Mossmorran complex during April 2019.
- **April 2021** : £140m ExxonMobil Chemical Limited investment programme including installation of a noise reducing flare tip.
- **2022** : ExxonMobil commitment to complete the installation of a fully enclosed ground flare in 2022 which the company states will reduce the use of the elevated flare by 98%.

A clear pathway to compliance for the Mossmorran industrial complex in Fife now exists following years of unacceptable flaring.

A £140m upgrade of the ExxonMobil Chemical Limited Fife Ethylene Plant is to commence next month (April) to improve site reliability and reduce the impacts of flaring which SEPA has said must become the 'exception rather than routine.' The investment will see over 1,000 workers deliver over 300,000 hours of work as part of a major investment at the site.

The improvement programme will see the installation of a noise reducing flare tip this spring, with the installation of a fully enclosed ground flare that ExxonMobil has committed to install in 2022 which the company states will reduce the use of the elevated flare by 98%.

The move follows Final Warning Letters in 2018, the submission of a report to the Crown Office for consideration of prosecution in July 2020 in relation to the flaring at the Mossmorran complex during April 2019 and a series of stringent regulatory requirements and permit variations on both operators requiring defined actions.

Taken together, the package will significantly improve the reliability of the ExxonMobil Chemical Limited Fife Ethylene Plant, reducing the requirement for flaring and significantly reducing the community impact of flaring when it does occur.

SEPA has specialist monitoring, compliance, enforcement and support staff involved in work on the industrial complex and the agency has committed to further strengthen the regulation and monitoring of both sites across the investment period in response to the agency's peer review by the Irish Environmental Protection Agency.

From the recommendations of the Irish Environmental Protection Agency best practice review, some nine actions are already underway by SEPA, a further eight will be taken forward, one will be considered and two are rejected. Key recommendations will see SEPA's programme of environmental monitoring extended with community participation in its design, enhanced visibility of regulatory monitoring results and investment in a refreshed online community information hub.

SEPA's response and comments

RECOMMENDATION	UNDERWAY	TO BE TAKEN FORWARD	CONSIDERED	REJECTED
SITE INFRASTRUCTURE / PROCESS / INSTALLATION				
1a. Assess whether the current ethylene production throughput at the facility is a significant contributory factor to the increased flaring and associated off-site impacts.		✓		
1b. Update the inventory of key infrastructure and risk assess each with a view to their replacement/upgrading on an ongoing basis to ensure a proactive approach towards management of the root causes of flaring.	✓			
1c. Provide a dedicated plan of works which focuses on the continued deployment of key BAT requirements at the installation. SEPA should consider the use of Article 14(6) of the Industrial Emissions Directive if any production process carried out within the installation is not covered by any of the BAT conclusions or where those conclusions do not address all the potential environmental effects of the activity or process.	✓			
1d. Provide proposals to limit/reduce the quantities of gas being fed to the ExxonMobil Chemical Ltd Fife Ethylene Plant installation during periods of prolonged elevated flaring. The potential cessation or reduction in intake of feedstock gas to the ExxonMobil Chemical Ltd Fife Ethylene Plant during periods of	✓			

process instability / flaring may mitigate prolonged flaring events.				
1e. Provide regular (i.e. no less than monthly) written updates regarding progress towards the installation of the low noise and vibration flare tip that has been proposed for the ExxonMobil Chemical Ltd Fife Ethylene Plant installation and is required by Permit.		✓		
ON-SITE TECHNICAL EXPERTISE				
2a. Consider the deployment of a suitably qualified and experienced expert(s) to act as site agent(s) on the ExxonMobil Chemical Ltd Fife Ethylene Plant installation. Their duties would include the observation and assessment of the day to day operation of the installation, to assess compliance with the PPC Permit for the facility and to monitor impacts on the surrounding locality and environment. The selection and appointment of the site agent(s) would be undertaken by SEPA.				✓
REGULATORY APPROACH				
3a. Record all visits by SEPA regulatory personnel to the ExxonMobil Chemical Ltd Fife Ethylene Plant installation and its environs (e.g. odour assessments, complaint investigations, etc). Reports of all such visits, including the main findings, should be prepared and published on the SEPA web site.		✓		
3b. Undertake a review of 'Permit Variations' process and, in particular, whether on-site changes are considered to be substantial or				✓

otherwise. This review should clearly establish the criteria for deciding on what warrants a review of the PPC permit for key aspects (e.g. installation of ground flare).				
3c. Non-Technical summaries should be included in all 'Permit variations' issued by SEPA together with a report from the inspector for each "Permit variation" and made available to the public on the SEPA website.		✓		
COMMUNITY LIAISON				
4a. SEPA should undertake a review of the community liaison and communications programme and have regard to the delivery of a more comprehensive and improved programme, including more workshops and meetings chaired by an independent facilitator agreeable to interested parties.	✓			
4b. The appointment and deployment of community liaison personnel who are sourced from within the community should be considered. This can act as a communication conduit between the ExxonMobil Chemical Ltd Fife Ethylene Plant operators, SEPA and the local communities.	✓			
COMMUNICATIONS				
5a. Maintain appropriate records of all key compliance and regulatory actions in a standardised format and make these available to the public via the SEPA website. Likewise, all key information from ExxonMobil Chemical Ltd Fife Ethylene Plant which is submitted to SEPA should		✓		

<p>be made available to the public on the SEPA website where appropriate.</p>				
<p>5b. SEPA should consider an upgrade of its website to allow clear and easy access to different types of information (e.g. permit applications, permit variations, compliance and regulatory information). This will enhance the ability of data to be shared and information to be exchanged with the key stakeholders.</p>	✓			
<p>5c. While the review team recognise that SEPA have a service charter and instructions on how to make an environmental complaint on the SEPA website, it is recommended that SEPA publish additional details on its complaint handling procedure for investigating and responding to complaints from the public.</p>		✓		
AMBIENT MONITORING				
<p>6a. A continuous noise monitoring network, which provides real-time and historic monitoring data, compliance management and audio playback should be installed in the vicinity of the ExxonMobil Chemical Ltd Fife Ethylene Plant installation. This data should be used to assess compliance with noise limits (at noise sensitive locations) which should be included in the PPC permit for the ExxonMobil Chemical Ltd Fife Ethylene Plant installation.</p>			✓	
<p>6b. A network of real time VOC monitors should be installed in the vicinity of the ExxonMobil Chemical Ltd Fife Ethylene Plant installation in order to enhance the air quality</p>		✓		

monitoring programme around the area.				
6c. Continue to undertake field testing and investigations of any alleged off-site odour impact (using SEPA's guidance) at and in the vicinity of the ExxonMobil Chemical Ltd Fife Ethylene Plant installation. The odour assessments should continue to be carried out by ExxonMobil Chemical Ltd Fife Ethylene Plant and SEPA personnel who are specifically trained in the relevant method. Formal records of all such assessments should be maintained and included in inspection reports.	✓			
EMISSIONS MONITORING				
7a. A detailed assessment of emissions from the ground flare at the Shell UK Ltd installation (that is used by ExxonMobil Chemical Ltd) should be carried out in order to assess the efficiency and capacity of the flare and to quantify the emissions from the flare.	✓			
7b. Periodic assessments of the emissions to air from permitted point sources at the ExxonMobil Chemical Ltd Fife Ethylene Plant installation and the ground flare at the Shell UK Ltd installation should be carried out at least annually by SEPA and the reports of the monitoring should be made available on the SEPA website.	✓			
MODELLING				
8a. Undertake a revised assessment, including appropriate air dispersion modelling, using actual emission		✓		

<p>data, to predict the impact of emissions from the ExxonMobil Chemical Ltd Fife Ethylene Plant installation from both point and fugitive sources (and including emissions from the ground flare at the Shell UK Ltd installation). Modelling should be used to model a number of different scenarios (e.g. worst case scenario, prolonged flaring impact scenario, etc).</p>				
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RECOMMENDATION	SUMMARY
SITE INFRASTRUCTURE / PROCESS / INSTALLATION	
<p>1a. Assess whether the current ethylene production throughput at the facility is a significant contributory factor to the increased flaring and associated off-site impacts.</p>	<p>The permitted maximum throughput of the Fife Ethylene Plant (FEP) has not changed since the permit was issued in 2007. While there is no indication that increased flaring has been linked to production throughput, we will review if changes are a significant contributory factor to more recent flaring incidents.</p>
<p>TO BE TAKEN FORWARD</p> <p style="font-size: 2em;">✓</p>	
<p>1b. Update the inventory of key infrastructure and risk assess each with a view to their replacement/upgrading on an ongoing basis to ensure a proactive approach towards management of the root causes of flaring.</p>	<p>What we do now:</p> <p>We have regularly reviewed and discussed plant infrastructure and its maintenance with ExxonMobil Chemical Limited (“ExxonMobil”) and this is a component of our regulatory work. To further strengthen this we were already considering changes to the permit to make requirements clearer.</p> <p>What we will do next:</p> <p>Whilst ExxonMobil already maintains an inventory of key infrastructure and has a maintenance programme in place we agree that the inventory at the Fife Ethylene Plant would benefit from a review. We will ensure that ExxonMobil;</p> <ol style="list-style-type: none"> 1. Reviews the inventory to ensure that all environmentally critical infrastructure is included. 2. Check each item in the inventory has an appropriate maintenance strategy and performance review cycle to ensure that it performs satisfactorily and is replaced or upgraded as required. <p>We will continue to check that this inventory and maintenance programme is updated and implemented through our programme of inspections.</p>
<p>UNDERWAY</p> <p style="font-size: 2em;">✓</p>	
<p>1c. Provide a dedicated plan of works which focuses on the continued deployment of key</p>	<p>What we do now:</p>

<p>BAT requirements at the installation. SEPA should consider the use of Article 14(6) of the Industrial Emissions Directive if any production process carried out within the installation is not covered by any of the BAT conclusions or where those conclusions do not address all the potential environmental effects of the activity or process.</p>	<p>SEPA is committed to ensuring the content of our permits make operators' legal obligations clear. We review Best Available Techniques (BAT) for the Mossmorran complex in line with the requirements of the Pollution Prevention and Control (Scotland) Regulations 2012 (PPC).</p> <p>The Fife Ethylene Plant site permit contains a condition requiring ExxonMobil to apply BAT to prevent noise and vibration emissions, which was added in 2018 to provide clarity in response to flaring events. However, PPC requires operators to use BAT to prevent or reduce emissions whether there is a specific condition in the site permit or not. This means that ExxonMobil should be regularly reviewing all operations to ensure they meet BAT. We will ensure that ExxonMobil documents these reviews and, if required, any associated improvement plans.</p>
<p>UNDERWAY</p> <p style="text-align: center;">✓</p>	<p>Because of the impact on local communities our recent regulatory focus has been on the prevention and minimisation of flaring. A BAT review in 2018 resulted in us setting improvement conditions in the permit to ensure that BAT requirements for flaring are delivered.</p> <p>This strong regulatory action has resulted in the ongoing work to install a low noise flare tip and new totally enclosed ground flare(s), and the submission of a flaring prevention and minimisation plan. ExxonMobil has provided us with a plan of works and a flaring prevention and minimisation plan and we regularly review progress with the company.</p> <p>What we will do next:</p> <p>We will continue to review the permit at the appropriate time.</p> <p>Article 14(6) of the Industrial Emissions Directive enables regulators to set additional conditions based on BAT, even where these are not covered by a BAT Reference Document (BREF) or BAT conclusions. Currently, all production processes carried out at the site and all the potential environmental effects from the activities at the Mossmorran complex are covered by BREFs, and so there is no need to consider Article 14(6) but we will keep this under review.</p>
<p>1d. Provide proposals to limit/reduce the quantities of gas being fed to the ExxonMobil Chemical Ltd Fife</p>	<p>What we do now:</p> <p>In 2019, as part of a package of regulatory action, we required ExxonMobil to produce and maintain a flaring prevention and minimisation plan. A copy of this plan</p>

<p>Ethylene Plant installation during periods of prolonged elevated flaring. The potential cessation or reduction in intake of feedstock gas to the ExxonMobil Chemical Ltd Fife Ethylene Plant during periods of process instability / flaring may mitigate prolonged flaring events.</p>	<p>was provided to us in January 2020, as required by the permit, and flaring prevention and minimisation has been the focus of our regulatory work during 2020. The plan includes how they will limit/reduce the quantities of gas being flared during events.</p> <p>We have reviewed ExxonMobil's plans and procedures and how they have applied them during recent flaring events and have seen a significant reduction in the amount of gas being flared via the elevated flare and the duration of flaring events.</p>
<p>UNDERWAY</p> <p style="text-align: center;">✓</p>	<p>What we will do next:</p> <p>We will be providing feedback to ExxonMobil on the improvements it needs to make to the flaring prevention and minimisation plan and this will continue to be a focus of our regulatory work in 2021.</p> <p>We will continue to work with ExxonMobil to ensure gas feed rate to the Fife Ethylene Plant is minimised during planned and unplanned flaring to reduce flaring rates and thus reduce the impact of flaring.</p> <p>ExxonMobil Fife Ethylene Plant is unable to stop taking feed from Shell Fife Natural Gas Liquids Plant (FNGL) without action being taken further up the pipeline to both safely manage offshore operations and maintain a supply of gas to the national gas grid. This may take a number of days and may not prevent flaring during this period. In addition, in some cases a full plant shutdown may prolong a flaring event. Where a full Fife Ethylene Plant shutdown is required, such as that in August 2019, we liaise with both operators to ensure flaring is minimised.</p>
<p>1e. Provide regular (i.e. no less than monthly) written updates regarding progress towards the installation of the low noise and vibration flare tip that has been proposed for the ExxonMobil Chemical Ltd Fife Ethylene Plant installation and is required by Permit.</p>	<p>What we do now:</p> <p>SEPA specialist regulatory staff meet regularly with ExxonMobil to review progress towards the installation of the low noise and vibration flare tip and the totally enclosed ground flare.</p> <p>What we will do next:</p> <p>We will require ExxonMobil, likely through a variation to the Fife Ethylene Plant PPC permit, to provide monthly written updates on progress to be made available to the public.</p>
<p>TO BE TAKEN FORWARD</p>	<p>The new flare tip will be installed during the plant shutdown commencing in Spring 2021, and we will continue to ensure that updates are also made available on</p>

✓	<p>progress with designing and delivering new ground flares as these will make a real difference to local communities.</p>
ON-SITE TECHNICAL EXPERTISE	
<p>2a. Consider the deployment of a suitably qualified and experienced expert(s) to act as site agent(s) on the ExxonMobil Chemical Ltd Fife Ethylene Plant installation. Their duties would include the observation and assessment of the day to day operation of the installation, to assess compliance with the PPC Permit for the facility and to monitor impacts on the surrounding locality and environment. The selection and appointment of the site agent(s) would be undertaken by SEPA.</p>	<p>What we do now:</p> <p>The resource we have committed to regulation of the Mossmorran Complex is significant and exceeds that dedicated to any other single site we regulate.</p> <p>We constantly review our regulatory approach at the Mossmorran Complex to ensure our staff are deployed with the greatest effect to tackle the issues that matter most to communities and deliver the greatest improvement for the environment and communities.</p> <p>SEPA already uses a range of tools to assess and drive compliance at the Fife Ethylene Plant.</p> <p>This includes deploying expert officers to the site and its vicinity on a regular basis to:</p> <ul style="list-style-type: none"> • inspect the plant itself and relevant records; • speak with operational staff and observe how the plant is operated; • monitor any impacts on the environment and local community. <p>This is part of our regulatory work alongside other tools including desk-based assessments of reports, regular meetings with the operator, permit reviews and ongoing monitoring.</p>
REJECTED ✓	<p>In addition we obtain additional expertise by working with our partners, such as the HSE, and by bringing in specialist technical expertise if or when needed. For example, we commissioned an independent technical specialist to review the timeline for installation of the new totally enclosed ground flares as this will make a real difference to communities.</p> <p>What we will do next:</p> <p>Whilst we can see there may be benefit in deploying a site agent at other types of sites we regulate we do not consider it would add value at the Mossmorran Complex.</p> <p>In considering this recommendation we have identified potential opportunities to enhance our regulatory approach, for example more targeted inspections by our</p>

	<p>expert officers during flaring events and unannounced site visits, and we will further strengthen our resource commitment at the Mossmorran Complex to implement these where appropriate.</p>
REGULATORY APPROACH	
<p>3a. Record all visits by SEPA regulatory personnel to the ExxonMobil Chemical Ltd Fife Ethylene Plant installation and its environs (e.g. odour assessments, complaint investigations, etc). Reports of all such visits, including the main findings, should be prepared and published on the SEPA web site.</p>	<p>What we do now:</p> <p>SEPA officers carry out frequent assessments of the impacts of the Fife Ethylene Plant in and around communities near the Mossmorran complex. This includes investigating reports of odour and noise in response to public complaints and during flaring events. All of these visits are recorded by SEPA but not all have been made public.</p> <p>What we will do next:</p> <p>Subject to any legal constraints we will make reports publicly accessible in the future so local communities are aware of this significant part of our regulatory effort.</p>
<p>TO BE TAKEN FORWARD</p> <p style="font-size: 2em;">✓</p>	
<p>3b. Undertake a review of 'Permit Variations' process and, in particular, whether on-site changes are considered to be substantial or otherwise. This review should clearly establish the criteria for deciding on what warrants a review of the PPC permit for key aspects (e.g. installation of ground flare).</p>	<p>What we do now:</p> <p>The permit variation process is set out in the Pollution Prevention and Control (Scotland) Regulations 2012 (PPC). SEPA has published guidance to support this process, including guidance on identifying a substantial change. This sets out the criteria for deciding when a change is substantial, and therefore when we would follow the additional regulatory requirements that apply in that case.</p> <p>While a substantial variation does not, necessarily, trigger a review of all Permit conditions under PPC we already review all parts of the permit relevant to the change. Therefore, when we have made variations related to preventing and minimising flaring, we have reviewed all the conditions that are relevant to flaring in the permit.</p>
<p>REJECTED</p> <p style="font-size: 2em;">✓</p>	<p>Although PPC sets out the certain specific circumstances which will trigger a permit review, it also allows us to carry out a permit review at any time if we believe it is</p>

	<p>required. We will continue to review relevant conditions to ensure the permit makes the operators’ legal obligations clear.</p> <p>What we will do next:</p> <p>We will assess our guidance to ensure it is clear what criteria we use to decide when a permit review is required. We will make this guidance publicly available and will carefully consider how we will engage with the community so they are informed about decisions made about sites in their local area.</p>
<p>3c. Non-Technical summaries should be included in all ‘Permit variations’ issued by SEPA together with a report from the inspector for each “Permit variation” and made available to the public on the SEPA website.</p>	<p>What we do now:</p> <p>We call a “report from the inspector” a decision document. Decision documents, that include a non-technical summary and an explanation of our decision, are made available on the public register for new permits and substantial changes to permits falling under the Pollution Prevention and Control (Scotland) Regulations 2012.</p> <p>What we will do next:</p> <p>In future we will go beyond the requirements of the legislation and make our decision documents for all variations to the Mossmorran complex permits available on our public register.</p>
<p>TO BE TAKEN FORWARD</p> <p style="text-align: center;">✓</p>	
COMMUNITY LIAISON	
<p>4a. SEPA should undertake a review of the community liaison and communications programme and have regard to the delivery of a more comprehensive and improved programme, including more workshops and meetings chaired by an independent facilitator agreeable to interested parties.</p>	<p>What we do now:</p> <p>We have continuously reviewed our communications programme and community liaison, based on feedback received.</p> <p>Our communications activities have included:</p> <ul style="list-style-type: none"> • attending and speaking at every public meeting; • our Mossmorran hub; • providing air quality monitoring data; • community newsletters; • leaflets; • radio adverts; • liaison with elected representatives; • engagement with community representatives; • updates to local media.
<p>UNDERWAY</p>	

<p style="text-align: center;">✓</p>	<p>What we have heard from communities is that it is important to have coordinated support from all the organisations that have a role in assessing and managing the issues that concern them. SEPA regulates the Mossmorran Complex alongside a number of organisations and we recognise the importance of working closely with partners to share information and views to support our regulatory work.</p> <p>What we will do next:</p> <p>We are already supporting Fife Council in its review of the Mossmorran and Braefoot Bay Community and Safety Liaison Committees, and together we are committed to strengthening community engagement. This includes exploring workshops and meetings chaired by an independent facilitator with our partners as part of our engagement programme.</p>
<p>4b. The appointment and deployment of community liaison personnel who are sourced from within the community should be considered. This can act as a communication conduit between the ExxonMobil Chemical Ltd Fife Ethylene Plant operators, SEPA and the local communities.</p>	<p>What we do now:</p> <p>We endeavour to engage with communities on the best way to support them and address their concerns and aim to support whatever arrangements communities consider work best for them. We already engage with communities through a range of means including:</p> <ul style="list-style-type: none"> • attending and speaking at every public meeting; • our Mossmorran hub; • liaison with elected representatives; • engagement with community representatives. <p>However, we consider the people best placed to engage well with the community about their activities are the businesses that operate them. Across the wide range of businesses we regulate we see many examples of good community liaison, and see the benefits to businesses that engage well.</p>
<p style="text-align: center;">UNDERWAY</p> <p style="text-align: center;">✓</p>	<p>We have consistently encouraged ExxonMobil to improve how they engage with the local community and we consider the approach to community engagement has recently improved.</p> <p>What we will do next:</p> <p>We will continue to encourage ExxonMobil to engage with the community in ways the community considers would benefit them most.</p>
<p>COMMUNICATIONS</p>	

<p>5a. Maintain appropriate records of all key compliance and regulatory actions in a standardised format and make these available to the public via the SEPA website. Likewise, all key information from ExxonMobil Chemical Ltd Fife Ethylene Plant which is submitted to SEPA should be made available to the public on the SEPA website where appropriate.</p>	<p>What we do now:</p> <p>SEPA makes information required under the Pollution Prevention and Control (Scotland) Regulations 2012 (PPC) available to the public through our public register - accessible on our website. We already go beyond PPC for the Mossmorran complex and provide updates, monitoring results and other information on the Mossmorran hub.</p> <p>What we will do next:</p> <p>We already make most records of key compliance and regulatory actions available to the public via our website but whilst we carry out frequent on the ground assessments of the impacts of the Fife Ethylene Plant, such as odour and noise assessments, we do not currently make records of these visits available on our public register. Subject to any legal constraints, we will make reports of all such visits available to the public.</p> <p>Likewise, information submitted to us by ExxonMobil under a condition of the permit or in response to a formal notice is already made available to the public on our public register (subject to any commercial confidentiality limitations). We recognise that not all these documents were available on our website and we will work to update this as we bring our public register back online following a cyber-attack.</p>
<p>TO BE TAKEN FORWARD</p> <p style="text-align: center;">✓</p>	<p>What we do now:</p> <p>The establishment of our Mossmorran Hub was of huge importance to our communications with communities and has been widely welcomed by stakeholders as a way to share information and keep the local community updated.</p> <p>We have been planning, and are now accelerating, reviewing the hub as part of a broader web refresh project.</p> <p>What we will do next:</p> <p>We welcome this timely recommendation, which is particularly welcome as we are considering the best ways to bring our public register back online following a cyber attack. We plan to embed the public register within the website to develop a refreshed online community information hub.</p>
<p>UNDERWAY</p>	

✓	<p>We will engage the local community in conversation and encourage feedback to help shape our decision making, including what would assist them most and how that might be best presented as we review the hub and our public register.</p>
<p>5c. While the review team recognise that SEPA have a service charter and instructions on how to make an environmental complaint on the SEPA website, it is recommended that SEPA publish additional details on its complaint handling procedure for investigating and responding to complaints from the public.</p>	<p>What we do now:</p> <p>Our understanding is that the review team found that the Service Charter, and its supporting procedures and guidance (available on our website), is clear as to how we handle service level complaints (complaints made to us about ourselves).</p> <p>They also found that information is provided on how to report an environmental incident/pollution complaint, however information is not currently provided on how we then investigate and respond to such complaints.</p> <p>What we will do next:</p> <p>We will update our website to provide clearer information on how we respond to environmental incident/pollution complaints and what people submitting them can expect.</p>
<p>TO BE TAKEN FORWARD</p> <p>✓</p>	
AMBIENT MONITORING	
<p>6a. A continuous noise monitoring network, which provides real-time and historic monitoring data, compliance management and audio playback should be installed in the vicinity of the ExxonMobil Chemical Ltd Fife Ethylene Plant installation. This data should be used to assess compliance with noise limits (at noise sensitive locations) which should be included in the PPC permit for the ExxonMobil</p>	<p>What we do now:</p> <p>Since March 2020 SEPA has permanently deployed a noise monitor in Lochgelly. This provides continuous monitoring data and audio playback.</p> <p>Between December 2019 and March 2020, SEPA carried out noise monitoring in Lochgelly, gathering data over a number of extended periods during that time.</p> <p>Where possible, trained staff attend community locations during periods of flaring to carry out assessments.</p> <p>In addition to SEPA's continuous and periodic noise monitoring in communities around the complex, ExxonMobil has a network of three noise monitors (with two located at sensitive receptors).</p>

<p>Chemical Ltd Fife Ethylene Plant installation.</p>	<p>We were already planning how to expand our continuous noise monitoring network to most effectively supplement our and ExxonMobil's existing noise monitoring in order to further strengthen the noise monitoring network, and will now accelerate this work.</p> <p>The permitting approach we have taken in the current permit is to set a requirement for the operator to apply BAT to prevent noise and vibration emissions and also to ensure that significant pollution due to noise and vibration is not caused. Our continuous and periodic noise monitoring programme is designed to assess compliance with this noise condition in the permit.</p> <p>Setting specific numeric noise limits at sensitive receptors is not always practical or the best approach to regulating industrial noise, particularly where there are other sources of noise, such as busy roads.</p> <p>What we will do next:</p> <p>We are reviewing the noise data currently available and considering whether reviewing the permit to set numeric noise limits at sensitive receptors might be of benefit.</p> <p>We will also review our noise monitoring network to ensure suitable data would be available to assess compliance with any new conditions.</p>
<p>CONSIDERED</p> <p style="text-align: center;">✓</p>	
<p>6b. A network of real time VOC monitors should be installed in the vicinity of the ExxonMobil Chemical Ltd Fife Ethylene Plant installation in order to enhance the air quality monitoring programme around the area.</p>	<p>What we do now:</p> <p>The Mossmorran and Braefoot Bay Independent Air Quality Monitoring Review Group was formed to provide advice and recommendations regarding the monitoring of air emissions arising from operations at the Mossmorran Complex and the Braefoot Bay terminal facilities. It includes an independent Chair from St Andrews University and specialists from NHS Fife, Institute of Occupational Medicine, SEPA and Fife Council.</p> <p>While the structure of the Group is part of Fife Council's ongoing review, the group routinely considers:</p> <ul style="list-style-type: none"> • substantive changes in the facilities and their likely impact on local air quality; • changes in air quality regulation and changes in knowledge on health effects from possible emissions from the plants; • other information about local air quality; • pollutant dispersion.
<p>TO BE TAKEN FORWARD</p> <p style="text-align: center;">✓</p>	

	<p>The group has said that it is satisfied that SEPA’s measurement campaign is robust, uses recognised sampling, analysis and quality control methodologies.</p> <p>SEPA has carried out monitoring for VOCs on a number of occasions. The results, which include the prolonged period of flaring when ExxonMobil was shutdown then restarted over 2019 and 2020, show VOC levels are within relevant air quality standards.</p> <p>The results from this period of monitoring were in the process of independent review prior to publication, so were not available to the review team other than the summary report published on our Mossmorran Hub. These results have now been published on our hub.</p> <p>What we will do next:</p> <p>While there is no evidence of VOC levels breaching air quality standards, SEPA understands that this remains an area of concern to local communities. We will work with Fife Council through the new Mossmorran and Braefoot Bay Community and Safety Liaison Committee air quality sub group to design a VOC monitoring programme, in the vicinity of the Mossmorran complex in order to enhance the air quality monitoring programme around the area and engage with the local community in designing any network, including considering and reviewing the value of continuous VOC monitors.</p>
<p>6c. Continue to undertake field testing and investigations of any alleged off-site odour impact (using SEPA’s guidance) at and in the vicinity of the ExxonMobil Chemical Ltd Fife Ethylene Plant installation. The odour assessments should continue to be carried out by ExxonMobil Chemical Ltd Fife Ethylene Plant and SEPA personnel who are specifically trained in the relevant method. Formal records of all such</p>	<p>What we do now:</p> <p>We already undertake an investigation of any alleged off-site odour impact (using SEPA's guidance) at and in the vicinity of the Fife Ethylene Plant, including field odour assessments when appropriate. Compliance is assessed against a permit condition that requires that “all emissions to air from the Permitted Installation shall be free from offensive odour, as perceived by an Authorised Person, outside the Site Boundary”. Compliance assessments are carried out and recorded by SEPA personnel who are specifically trained in the relevant method.</p> <p>What we will do next:</p> <p>Subject to any legal constraints, we will make reports of such visits available to the public.</p>

<p>assessments should be maintained and included in inspection reports.</p>	<p>We continue to require ExxonMobil to manage their operations so that there is no offensive odour outside the site boundary.</p> <p>Whilst ExxonMobil commonly undertakes odour investigations of its own in response to complaints about odour any assessments carried out by them are not used to assess compliance.</p>
<p>UNDERWAY</p> <p style="text-align: center;">✓</p>	
<p>EMISSIONS MONITORING</p>	
<p>7a. A detailed assessment of emissions from the ground flare at the Shell UK Ltd installation (that is used by ExxonMobil Chemical Ltd) should be carried out in order to assess the efficiency and capacity of the flare and to quantify the emissions from the flare.</p>	<p>What we do now:</p> <p>We have already required Shell to undertake a BAT assessment of the provision of ground flaring and review the performance of the current ground flares, including the efficiency and capacity of the flare, and identify any actions that are required to improve their performance and reliability.</p> <p>What we will next:</p> <p>An improved capacity has been demonstrated during recent flaring events and we are reviewing with Shell what can be done to ensure that this is delivered when required.</p>
<p>UNDERWAY</p> <p style="text-align: center;">✓</p>	
<p>7b. Periodic assessments of the emissions to air from permitted point sources at the ExxonMobil Chemical Ltd Fife Ethylene Plant installation and the ground flare at the Shell UK Ltd installation should be carried out at least annually by SEPA and the reports of the monitoring should be made available on the SEPA website.</p>	<p>What we do now:</p> <p>We already have a programme for the periodic monitoring of point source emissions from permitted sites, and these monitoring reports are already available to the public on the public register.</p> <p>What we will next:</p> <p>We review the programme regularly and will increase the frequency of periodic assessment for the Fife Ethylene Plant to annually.</p>

<p>UNDERWAY</p> <p>✓</p>	
<p>MODELLING</p>	
<p>8a. Undertake a revised assessment, including appropriate air dispersion modelling using actual emission data, to predict the impact of emissions from the ExxonMobil Chemical Ltd Fife Ethylene Plant installation from both point and fugitive sources (and including emissions from the ground flare at the Shell UK Ltd installation). Modelling should be used to model a number of different scenarios (e.g. worst case scenario, prolonged flaring impact scenario, etc).</p>	<p>What we do now:</p> <p>Several modelling and monitoring studies have been undertaken, over many years, both for the Mossmorran complex itself but also for surrounding developments.</p> <p>These studies have included:</p> <ul style="list-style-type: none"> • air dispersion modelling using actual emissions data, to predict the impact of emissions from the Fife Ethylene Plant, including emissions for a number of different scenarios (including prolonged elevated flaring events); • air quality monitoring by Operators, Developers, Fife Council and SEPA to assess the impact of emissions from the complex and other local sources (for example local developments such as the Little Raith Windfarm.). <p>This work has been used to assess potential impacts on, and review actual air quality in, the local community. The modelling predicted that emissions would not lead to exceedances of air quality objectives and monitoring has shown that the concentrations of pollutants are currently below the air quality objectives at local residential areas. This conclusion is backed up by the Mossmorran and Braefoot Bay Independent Air Monitoring Review Group.</p> <p>What we will do next:</p> <p>We will ensure a further assessment is carried out using the most up to date emissions data to model emissions from fugitive and point sources, including the Shell ground flare, for a number of scenarios including worst case scenario and prolonged flaring impact scenario. This will be required for both the existing and future arrangements (i.e. with and without the proposed new ExxonMobil Ground Flare). In the event that modelling is carried out by the companies we will carry out validation checks to ensure it has been carried out correctly and appropriately.</p>
<p>TO BE TAKEN FORWARD</p> <p>✓</p>	