



## A guide to **Flaring**

The high level flares at Grangemouth, over 100m in height, are a feature of the site's skyline. Typical of petrochemical plants and refineries (like those at Grangemouth), the flares serve an important function in the safe management of such industrial installations.



# A guide to Flaring

## What is the purpose of our flares?

The site's flare network serves two purposes. The first is to provide a safe disposal route for hydrocarbon gases during plant upsets and removes the potential for over pressure in the plant. The second is to provide a safe discharge route for off-specification product that can't be recovered or re-processed during shutdowns and start-ups.

## What is flared?

Gases such as methane, propane and butane.

## What happens during flaring?

When these gases are burnt, water and carbon dioxide are produced. Occasional black smoke or soot is caused by incomplete combustion of these gases. Statutory environmental regulations require us to minimise smokey flaring; therefore steam is injected into the flame to aid combustion and so greatly lessen the amount of smoke.

## Does the addition of steam create any side effects?

The addition of steam can increase the noise that arises from the flaring.

## Are there any alternatives to flaring?

While flaring is recognised as the industry standard as a technically sound safety measure, we are always investigating ways of reducing its impact on the community. As a responsible operator, where possible we will recover and recycle material before it reaches the flare.

## How long does flaring normally last?

Following a shutdown, re-start or plant upset, flaring typically lasts several hours. While we strive to minimise both the amount and duration of any flaring event, some may last up to 48 hours or longer.

## Regulating flaring

The Scottish Environment Protection Agency (SEPA) strictly regulates emissions from the site, including those from the site's flare stacks.

## Moving to ground level

The site actively employs various measures to reduce the impact of flaring on the local community, including specially designed flare tips. Another measure taken by the site has been the commissioning of a ground flare. Material disposed of via the ground flare is burnt at ground level within a circular enclosure and leads to significantly less noise being emitted and much lower luminosity. The ground flare has been very effective in contributing to the reduction of high level flaring.

Over the last decade, flaring from the Grangemouth site has reduced by almost 60%.



Ground flare and high level flare