

# FACTS ON FLARING

## Longford Plant

### Flare facts

To the general community outside Esso Australia's Longford Plant, the sight of flames from the plant's flare stacks may cause concern.

This is especially the case when the flame fluctuates in size or is quite large, or smoky, or noisy.

While ideally the flame should be quite small, having a visible flare is a normal and vital part of keeping the plant running safely and reliably.

### What do the flares do?

Flares are safety devices. They function as safety relief valves for the plant, which means that they help us avoid unstable situations. There are no safe alternatives to flare systems, which is why they are used by petroleum refineries, chemical plants and gas processing facilities everywhere around the world.

During normal operations, hydrocarbons are constantly flowing through our units. Whenever there is an interruption to the usual operation of the plant, such as an equipment or power stoppage, the constant flow is interrupted and any excess hydrocarbons are sent to the flare and safely ignited via a pilot light.

Burning the excess hydrocarbon gases in this way ensures that the gases are safely combusted and do not escape into the atmosphere.

Likewise, when we need to shutdown (which means we empty the contents) and start-up our units again, (which means we reintroduce product) for maintenance – known as a turnaround – flaring helps us safely manage the wide range of gas production that can occur during these times.

### Is flaring dangerous?

No. Flares are commonly used by refineries, chemical plants and gas processing facilities around the world as an appropriate and safe way to deal with excess gas generated as part of the production or refining process.

### Does the flare create a noise?

It can, but the plant continues to make improvements to the way its flares work in order to reduce noise and operate more effectively.

The rumbling noise often associated with flares is caused by the mixing of gases, air and water mist. This process allows for the maximum combustion of hydrocarbons while minimising the environmental impact.



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### Why is black smoke visible from the flare?

Black smoke from the flare may occur if there is an insufficient amount of water spray available to help the gas burn efficiently.

A sophisticated monitoring system is in place to automatically adjust the water flowing to the flare, but if there is a sudden, significant increase in gas it can take a little while for the water rate to catch up, leading to increased black smoke for a short period. Smoke is also produced when heavier fractions are burnt and/or when the flare volume is high. In many flaring events, smoke will be visible for the duration of the event.

### Why does the flare flame vary in size?

The flare is kept alight continuously, similar to the pilot light in a gas heater or hot water system at home, thus there is always a flame visible at the top.

Changes in the size of the flame are due to changes in the amount of excess gas which is being sent to the flare as a result of either planned or unplanned interruptions to the normal process. Our objective is to keep that amount of gas as small as possible at all times.

### Does the flare pollute the environment?

Use of the flare minimises any impacts on the environment by safely burning excess gas during interruptions to plant operations.

The Longford Plant takes seriously its responsibility to minimise the impact of its operations on the local community. If you have any concerns about Longford Plant's operations, please call 03 5149 6211 (available 24 hours a day).

For more information about Esso's Longford operations please visit [www.exxonmobil.com.au/longford](http://www.exxonmobil.com.au/longford)



### Did you know...

- Over the long term Longford has reduced flaring, however in the past five years flaring has generally remained at a consistent level. Flaring at Longford dropped 20 per cent in 2012 from 2011 levels as we returned to levels previously experienced.
- The EPA does not explicitly licence flaring volumes as the flare system is required to ensure the safety of the plant. However, the amount and type of material that is flared factors significantly in the assessment of the total emissions produced at Longford. Esso has always, and continues to operate the Longford Plant within the emission limits set within our EPA licence. We continue to strive to improve our performance year on year.
- Smoke from the Longford Plant has reduced over the years as modernised process control systems, compressor upgrades and improved flare systems have improved plant stability and performance.