

What Happens in a Refinery or Chemical Plant

During regular operations, materials from the refining process are collected and sent to the oil recovery tanks for further processing. There, they are converted into products such as gasoline and jet fuel.

For chemical plants, by products from the chemical process are collected and then further processed. They are then converted into products such as polyethylene or polypropylene (plastics) for industrial and manufacturing use.

How Flaring Works

When the refining operation experiences an interruption (such as an unplanned power outage), the materials being refined sometimes cannot be retained for further processing.

Instead, for safety reasons, these materials need to be channeled to the flare system and burnt. The flare is designed to ensure maximum combustion while minimising unburnt hydrocarbon emissions into the air.

The use of flaring for safe disposal of hydrocarbons that cannot be processed is widely recognised in the industry as the preferred approach to adopt to avoid hazardous over-pressurisation of equipment. The flare system therefore acts as a safety relief valve. Think of it as providing an internal opening that helps to relieve the pressure from building up and from being bottled up.

Managing Flares

Shell has a Health, Safety, Security and Environment Policy and is strongly committed to abiding by it. We are continually looking for ways to reduce the environmental impact of our operations. At Shell, flaring is actively managed and all Shell sites strive to avoid flaring as part of day-to-day operations. This way, flaring is kept to those occasions when they are needed as a safety measure.

One instance when flaring might be necessary is during the commissioning and start-up phase of a new plant.

During such commissioning, substantial flaring could occur. Some black smoke may be visible for a short duration during some of these flaring sessions. Occasionally, a low rumbling sound similar to far-off thunder might be heard as well. This occurs when the flame encounters oxygen and is then fanned by the wind.

Most importantly, at no time will the health and safety of the public be put at risk during this process. Rather, the flaring should be seen as part of an important process to allow the new facility to get up and running safely.

For more information, please contact Shell at tell-shell@shell.com.