

The flare is one of the most visible parts of the refinery and an aspect that can cause concern to some individuals - particularly when it is high or producing smoke or noise.

However, the flare is actually a safety valve.

### **The role of the flare**

The flare is a pressure safety relief device used throughout the global petroleum refining industry.

Refining is a dynamic process and occasionally there are disruptions that cause excess gas to be generated. To relieve any pressure on the refinery system that this creates, the gas is diverted to the flare, combined with steam and burnt off.

### **So the flare is a good thing?**

Flares are used at refineries around the world as an approved and safe method of removing excess materials from the refinery system.

### **Why is the flare big at times?**

The flare is constantly ready in case it is needed – that is why, just like there is a pilot light on a gas hot water system at home, there is always a flame at the top.

However, when there is a disruption to operations – due to scheduled maintenance or an unplanned interruption – more gas is sent to the flare system. When this happens the flare is more active and will be larger.

### **Are there any effects?**

The most common effects are noise and smoke. Noise results from the mixing of vapours, air and steam during the flaring process. This is similar (though magnified) to the sound you hear when you light a gas oven.

Black smoke from the flare occurs when an insufficient amount of steam is available to help burn the gas sent to the flare. Usually monitoring equipment will detect an imbalance and automatically adjust the steam flowing to the flare. On rare occasions, there may be a delay in response before sufficient steam can be supplied, and black smoke will result.

### **Why is the flame often low?**

Flares do burn off gas that could otherwise be used, which can be a waste of energy. The refinery has installed flare gas compressors to catch material before it gets to the flare and returns it for use in the refinery. This results in a very low flame.

