



Shell in Nigeria

# GAS FLARING

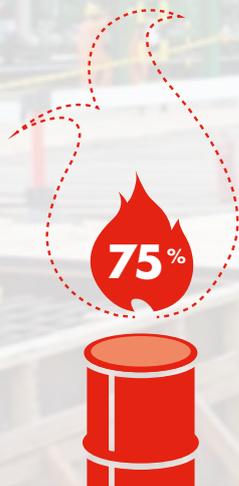
## Associated Gas

The Shell Petroleum Development Company of Nigeria Limited (SPDC) has delivered substantial reductions in gas flaring over the last decade and is committed to reducing it further.

### Why flaring happens

In many oil fields gas is produced with crude oil when it is brought to the surface. When SPDC first built production facilities in the 1950s and 1960s, there was little demand or market for this 'associated' gas in many parts of the world, including Nigeria. So, associated gas was usually burned off – a process called flaring. There is a distinction between continuous flaring and the occasional burning of small amounts of gas for safety and other operational reasons.

## Progress



**Reduction in gas flaring volume by SPDC over the last decade**

**60%**

**reduction in gas flaring intensity over last decade**

**All new SPDC facilities designed to have no continuous flaring since 2000**





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In recent years demand for gas in Nigeria and other countries has grown whilst the technology to harness, liquefy and export natural gas to distant markets has become commercial. Climate change has meanwhile become an increasingly important issue and today there is a consensus around the objective of working towards the elimination of continuous flaring of associated gas. Since 2000 SPDC has designed all new facilities to have no continuous flaring, and we have worked with the Federal Government of Nigeria and our joint venture partners on achieving the objective of ending continuous flaring of associated gas as soon as possible.

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**IN SPITE OF CHALLENGES, THE OVERALL TREND IN FLARING REDUCTION IS POSITIVE AND WE HAVE A WORK PLAN IN PLACE TO DRIVE FURTHER REDUCTIONS.**

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### **What is SPDC doing to reduce flaring?**

SPDC reduced flaring volume from its facilities by about 75% between 2003 and 2012 and flaring intensity (the amount of gas flared per barrel of oil produced) by around 60% over the same period. These reductions were the result of a multi-year programme introduced in 2000 to install equipment to capture associated gas from its oil producing facilities. When completed these projects are expected to take SPDC flaring to below current industry average levels.

2013 was a challenging year for the flares reduction programme. Although there was a reduction of about one-fifth in volume of gas flared, this was largely due to lower than expected oil production caused by sabotage, theft and related deferment (meaning there were reduced volumes of associated gas), and also improved operational efficiencies from the functional facilities. However, frequent pipeline sabotage disrupted our gas processing systems and impacted negatively on performance, contributing to about a 5% increase in flare intensity compared to 2012.

Joint venture funding challenges have resulted in delays to some gas-gathering projects: two of these projects, which were expected to gather an additional 35% of associated gas by 2014-15, are likely to be delayed.

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**FREQUENT PIPELINE SABOTAGE DISRUPTED OUR GAS PROCESSING SYSTEMS AND IMPACTED ON PERFORMANCE IN 2013, CONTRIBUTING TO A 5% INCREASE IN FLARE INTENSITY COMPARED TO 2012.**

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In spite of these challenges, the overall trend in associated gas gathering and flaring reduction is positive and SPDC has a work plan in place to drive further reductions. SPDC will continue to work closely with its joint venture partners and other stakeholders to minimise delays to the key projects on which further flare reduction depends.

### **Helping create demand for Nigeria's gas**

Harnessing gas is only half the story; gas needs customers too. SPDC was the first venture to supply gas inside Nigeria and remains a pioneer in developing gas for power, with its Afam VI power plant using gas from SPDC's Okoloma gas plant, which has the capacity to increase the nation's current electricity power supply by approximately 20%. In 2010, SPDC began producing oil and gas from the Gbaran Ubie integrated oil and gas plant in Bayelsa State. This plant is helping to reduce continuous flaring of associated gas from nearby fields.

### **Flaring and Health**

SPDC has monitored ambient air quality levels around its flare sites since 1998 and regularly reports the results to government authorities, as required by Nigerian regulatory standards. SPDC monitoring data shows that air quality around SPDC flare sites complies with these standards barring occasional operational issues. Overall, these standards are equivalent to international air quality standards followed in the EU, US and those set by the World Health Organisation. Monitoring work is also carried out by licensed and competent independent contractors.

SPDC recognises the importance of addressing local communities' perceptions and concerns about flaring, in addition to complying with regulations. Thorough consultation with all stakeholders, including communities, is an integral part of SPDC's Environmental Impact Assessment process and is done for all major projects.