

# FLARE REDUCTION AT RASGAS

SINCE 2005, RasGas has focused hard on reducing the amount of gas flared. Flaring is an integral part of the LNG production process, but reducing the volumes flared has clear environmental and financial benefits: it reduces CO<sub>2</sub> emissions and makes more gas available for production.

Already, the RasGas flare-reduction programme has had a huge impact, reducing the proportion of sour feed gas flared from 4.29 per cent in 2005 to just 0.87 per cent in 2013. But more is to come: the goal of the current five-year plan is to cut flaring to 0.43 per cent by 2016.

Among the areas targeted are:

**Passing flared valves** A ‘passing’ valve is one through which gas or liquids can pass even when it is shut. Whether corroded or not closing fully, the valve doesn’t hold the pressure. RasGas launched a programme to check all 10,000 valves in the seven RasGas LNG trains and two Al Khaleej sales gas trains, repairing or replacing any defective valves. As passing valves make additional noise, acoustic leak detectors are being used to hear the extra decibels. “This a very cost effective programme,” says Abdulrahman



Alahmad, Specialist (Process Optimisation). “The initial checking took six months, and we identified 165 passing valves, some repairable while operations continue, some only during shutdown. So far we’ve fixed 60 valves, saving 3,285 million standard cubic feet [mmscf] per year of hydrocarbon gas.” The projected saving by 2016 is 5,804 mmscf per year.

Below: a contractor uses an acoustic leak detector to check a valve

**Sour water strippers** Instead of flaring sour gas removed from sour water, it is sent to the sulphur recovery unit incinerator. Projected saving: 1,278 mmscf per year.

**Start-up procedures** Optimising plant start-up procedures reduces the volume of gas used during start-up and cuts the time needed to bring LNG up to the required specification. Total projected saving across four projects: 1,277 mmscf per year.

**Nitrogen as a purge gas** Optimising the rate of gas used to purge flare piping, or using nitrogen to avoid using fuel gas which would ultimately be burnt in the flare stack. Projected saving is 949 mmscf per year.

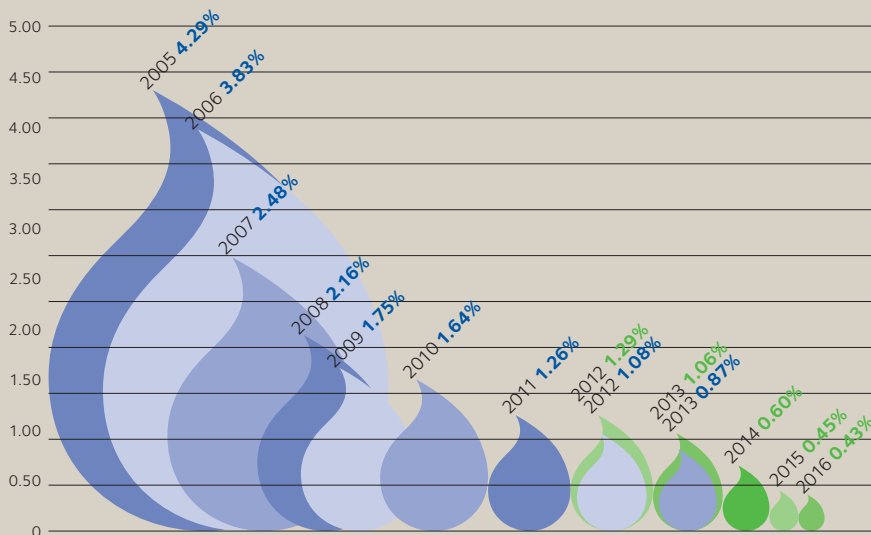
**Fuel gas control system** Improving the controllability of the fuel gas system to reduce excess fuel gas flaring. Projected saving: 548 mmscf per year.

**Reliability** Improving reliability is a key factor in the flare-reduction programme. Reliability is a function of many aspects of plant operations, so a variety of approaches are involved (see pages 18–20). A saving of 1,533 mmscf was achieved in 2012–13.

RasGas’ flare-reduction programme has already achieved excellent results, confirming the company as a genuine innovator in the sector and demonstrating its commitment to doing what is right for Qatar.

## BEATING THE TARGET

Onshore flaring as a percentage of sour feed gas ● Actual flaring % ● Target flaring %



## Reductions in 2013

