

Phasing out routine flaring and putting the gas to productive use

By Dr Pierce Riemer

Director General, World Petroleum Council



In the 1990s I worked on a methane venting flaring reduction programme with the IEA, World Bank and industry partners. At that time, just Africa – and mainly Nigeria – flared and vented more natural gas than Europe consumed every year. The project only lasted a few years, but satellite photographs showed some significant early results.

But we remain concerned about the waste of flaring and its impact on the climate, because although the emissions are now only the equivalent of 25 per cent of what Europe consumes, Europe is consuming much more than it did in the 1990s. Thousands of gas flares at oil production sites around the globe still burn approximately 140 billion cubic metres of natural gas annually, causing more than 300 million tons of CO₂ to be emitted into the atmosphere.

To try to phase out this habitual flaring of gas for other than safety or technical reasons, the United Nations and the World Bank last year introduced the “Zero Routine Flaring by 2030” initiative. This has now won the endorsement of some 20 governments, an equal number of oil companies with the active encouragement of the WPC, and more than a dozen leading development aid agencies.

By way of explanation of the problem, it should be remembered that natural gas is a mixture of several hydrocarbon gases, including methane (normally around 90 per cent), ethane, propane, butane and pentane, as well as carbon dioxide, nitrogen and hydrogen sulphide. The composition of natural gas can vary widely, depending on the oil or gas field. Natural gas is referred to as “wet” when hydrocarbons other than methane are present, “dry” when it is almost pure methane, and “sour” when it contains significant amounts of hydrogen sulphide.

During conventional and unconventional oil production, associated gas is produced from the reservoir together with the oil. Much of this gas (mostly methane) is now utilised or conserved because governments and oil companies have made substantial investments to capture it. Nevertheless, some of it is flared because of safety, technical, regulatory, or economic constraints.

Flaring of gas contributes to climate change and impacts the environment through emissions of CO₂, black carbon and other pollutants. It also wastes a valuable energy resource that could be used to advance the sustainable development of producing countries. For example, if this amount of gas were used for power generation, it could provide about 750 billion kWh of electricity, or more than the African continent’s

current annual electricity consumption. While associated gas cannot always be used to produce power, it can often be used in a number of other productive ways or conserved (for instance, re-injected into an underground formation).

The “Zero Routine Flaring” brings together governments, oil companies, and development institutions which recognise the flaring situation described above is unsustainable from a resource management and environmental perspective, and which agree to cooperate to eliminate routine flaring no later than 2030.

The Initiative pertains to routine flaring and not to flaring for safety reasons or non-routine flaring, which nevertheless should be minimised. Routine flaring of gas is flaring during normal oil production operations in the absence of sufficient facilities or amenable geology to re-inject the produced gas, utilise it on-site, or dispatch it to a market. Venting is not an acceptable substitute for flaring, because uncombusted methane is an even more powerful greenhouse gas than flared gas.

Viable markets needed for the gas

Governments that endorse the Initiative undertake to provide a legal, regulatory, investment, and operating environment that is conducive to upstream investments and to the development of viable markets for utilisation of the gas, and the infrastructure necessary to deliver the gas to these markets. This will provide companies the confidence and incentive to invest in flare elimination solutions. Governments will require, and stipulate in their new prospect offers, that field development plans for new oil fields incorporate sustainable utilisation or conservation of the field’s associated gas without routine flaring. Furthermore, governments will make every effort to ensure that routine flaring at existing oil fields ends as soon as possible, and no later than 2030.

Oil companies that endorse the Initiative will develop new oil fields they operate according to plans that incorporate sustainable utilisation or conservation of the field’s associated gas without routine flaring. Oil companies with routine flaring at existing oil fields they operate will seek to implement economically viable solutions to eliminate this legacy flaring as soon as possible, and no later than 2030.

Development institutions that endorse the Initiative will seek to facilitate its implementation through the use of financial instruments and other measures, particularly in their client countries. They will endeavour to do so also in client countries that have not endorsed the Initiative.

Governments and oil companies that endorse the Initiative



The aim is to eliminate all routine flaring of natural gas by 2030 to reduce emissions

will publicly report their flaring and progress towards the Initiative on an annual basis. They also agree to the World Bank aggregating and reporting figures on flaring.

Representing the WPC, we were in Paris for the COP21 climate conference to put forward our point of view. We support and encourage governments and all stakeholders in their efforts to reduce greenhouse gas emissions and manage the risks of climate change. We also appreciate that they have a challenge ahead to meet their growing populations' energy demands and support economic development in their countries.

Our global membership will have a role to play in the transition to a low-carbon future. With oil as the main fuel for transport around the world, it will remain a key part of the energy mix while alternative technologies continue to be developed further. We also must not forget all of the oil and gas based items, around us every day, such as pharmaceuticals, clothing, polymers, fertilisers – the list is endless.

In cooperation with the OPEC Fund for International Development (OFID), WPC is working to showcase how

the oil and gas industry is helping to bring people out of energy poverty in order to achieve the Sustainable Energy for All goal of the UN. This fits in nicely in an environment, particularly in Africa, where any methane saved from flaring could be utilised for power generation, for use as a compressed or liquefied gas, or converted to chemicals.

We were also in Paris to lend our support to this World Bank initiative. The well attended COP side meeting highlighted the high number of WPC member countries that have already signed up to the Initiative and illustrated how well this fits in with our energy poverty alleviation work.

The oil and gas sector has the technical know-how to develop solutions which will have an important part to play in contributing to a sustainable energy future and we will help all stakeholders meet the challenges ahead. For hundreds of years, energy has enabled growth which has led to economic and social wellbeing. Our challenge for the future is to achieve this in a clean and sustainable manner. We are all committed to playing our part. ●