An international partnership:
The “Zero Routine Flaring by 2030” Initiative

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Gas Flaring – Why Should It Stop?

The large volumes wasted annually
- About 149 billion cubic meters in 2016
- Enough to produce 750 billion kWh power
  - More than the entire power consumption on the African continent

The CO₂ emissions
- About 350 million tons annually
- Equivalent to about 77 million cars

The methane emissions
- Methane traps 84 times more heat than CO₂ in 20-year perspective, and 25 times more in 100-year perspective
- Un-combusted methane considered a major concern with flaring

The black carbon emissions
- In and near the Arctic impacting the reflective power of the snow and ice cap (albedo)

...and health impacts when people live near flares (Photo from the Niger Delta)
Research indicates that gas flaring contributes 40% or more to the black carbon/soot deposition on the snow and ice cap in the Arctic, thus impacting its reflective power

2013 study (Stohl et al)
2015 Paris Climate Agreement Sets Direction

• Nationally Determined Contributions (NDCs)
  • “Efficient gas utilization”
    • Many countries aim for it in NDCs

• Associated gas utilization targeted in NDCs
  • Algeria, Bahrain, China, Ecuador, Egypt, Gabon, Iran, Iraq, Nigeria, Oman, Saudi Arabia

• The Potential
  • 43 countries produce more than 100,000 barrels oil/day – i.e. have flaring/methane emission reduction potential

• Gas flaring – the “low-hanging fruit” in a global climate action plan
Satellite detection of gas flares.
Compilation for 2015
(VIIRS Satellite)

Flares
Global gas flaring – improvements stalling – new efforts needed

Since 1996: Oil +32%
Since 1996: Flaring -10%

2016: +2.1 bcm (1.4%)

Source: GGFR, based on NOAA/GGFR/BP/EIA data
The *new* ranking – top 30 flaring countries (2013-16)

Source: NOAA/GGFR
Flaring in Latin America
Satellite estimated volumes (VIIRS Satellite)

<table>
<thead>
<tr>
<th>Country</th>
<th>Flaring (million cubic meters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venezuela</td>
<td>9,350</td>
</tr>
<tr>
<td>Mexico</td>
<td>4,776</td>
</tr>
<tr>
<td>Brazil</td>
<td>1,444</td>
</tr>
<tr>
<td>Ecuador</td>
<td>1,154</td>
</tr>
<tr>
<td>Colombia</td>
<td>612</td>
</tr>
<tr>
<td>Argentina</td>
<td>559</td>
</tr>
<tr>
<td>Trinidad &amp; Tobago</td>
<td>190</td>
</tr>
<tr>
<td>Bolivia</td>
<td>38</td>
</tr>
</tbody>
</table>

Source: NOAA/GGFR
Global Initiative Launched: “Zero Routine Flaring by 2030”
Launched April 17, 2015, in Washington DC by UN Secretary General Ban Ki-moon and representatives of 25 early endorsers
Global Initiative: “Zero Routine Flaring by 2030”

The essence

**Oil companies**
- **New oil fields:** Make development plans with zero routine flaring
- **Existing oil fields:** Seek economically viable solution to end routine flaring as soon as possible and no later than 2030

**Governments**
- **New oil fields:** Require development plans with zero routine flaring
- **Existing oil fields:** Make every effort to end legacy flaring as soon as possible and no later than 2030
- **Policies:** Provide legal/regulatory/investment/operating environment conducive to upstream investments and the development of energy infrastructure and markets

**Development institutions**
- Facilitate cooperation and implementation
- Consider the use of financial instruments and other measures
Media Coverage: “Zero Routine Flaring by 2030” Initiative

The World Bank is aiming to set a global standard to stop the routine flaring of unwanted gas from oil wells, in an attempt to end the pollution and waste of resources that it creates.

The bank’s executives hope to persuade all the world’s largest oil-producing countries and companies to sign up to the plan, arguing that it would both cut greenhouse gas emissions and improve access to energy in low-income countries.

About 140bn cubic metres of gas per year, or about 4% of global production, is still being flared today, with the figure not expected to fall below 100bn cubic metres until 2020.
“Zero Routine Flaring by 2030” Initiative – current endorsers (71)

Governments (24):
- Angola
- Azerbaijan
- Bahrain
- California (USA)
- Cameroon
- Canada
- Republic of Congo
- Denmark
- Egypt
- France
- Gabon
- Germany
- Indonesia
- Iraq
- Kazakhstan
- Mexico
- Netherlands
- Nigeria
- Norway
- Oman
- Peru
- Russian Federation
- Turkmenistan
- United States
- Uzbekistan

Companies (32):
- BP
- DEA Deutsche Erdoel
- Eni
- Entreprise Tunisienne d’Activités Pétrolières (ETAP – Tunisia)
- Frontier Oil Limited (Nigeria)
- Galp Energia
- KazMunayGas (Kazakhstan)
- Kuwait Oil Company
- LUKOIL
- MOL Group
- Niger Delta Petroleum Resources Ltd. (Nigeria)
- Nigerian National Petroleum Corporation (NNPC)
- Nile Petroleum Corporation (South Sudan)
- Oando Energy Resources
- Oil India Limited
- OMV Group
- ONGC (India)

Companies (cont’d):
- Pan Ocean Oil Corporation (Nigeria) Ltd.
- Petroamazonas EP (Ecuador)
- Petroleum Development Oman (PDO)
- Repsol
- Seplat Petroleum Development Company (Nigeria)
- Seven Energy (Nigeria)
- Shell
- Société Nationale des Hydrocarbures (SNH – Cameroon)
- Société Nationale des Petroles du Congo (SNPC)
- Sonangol (Angola)
- State Oil Company of the Azerbaijan Republic (SOCAR)
- Statoil
- TOTAL
- Uzbekneftegaz (Uzbekistan)
- Wintershall
- Woodside

Development Institutions (15):
- African Development Bank (AfDB)
- Agence Française de Développement (AFD)
- Asian Development Bank (ADB)
- Asian Infrastructure Investment Bank (AIIB)
- CAF Development Bank of Latin America
- East African Development Bank (EADB)
- ECOWAS Bank for Investment and Development (EBID)
- European Bank for Reconstruction & Dev. (EBRD)
- European Investment Bank (EIB)
- Inter-American Development Bank (IDB)
- Islamic Development Bank (IsDB)
- OPEC Fund for International Development (OFID)
- United Nations Sustainable Energy for All (SE4ALL)
- West African Development Bank (BOAD)
- World Bank
“Zero Routine Flaring by 2030” Endorser Map

- Endorsing country/government (25)
- Other country with oil production > 0.5 million barrels/day
- Endorsing oil company (33)
- Endorsing development institution (15) (not shown on map)
Governments: Benefits from endorsing the “Zero Routine Flaring by 2030” Initiative

• **Better resource management.** Implementing the Initiative increases and sustains effective monetization of hydrocarbon resources.

• **Environment-friendly oil production.** An endorsement sustains and underpins an exemplary practice already in place in your country, or sets in motion a process to ensure cleaner operations, reducing your country’s carbon footprint.

• **Global recognition.** An endorsement communicates to the world that despite an industry downturn, your country is a responsible oil producer with strong environmental stewardship.

• **Regional impact.** Your government’s endorsement demonstrates leadership and sets an example for others to follow, thereby impacting flaring practices in other countries.

• **Nationally Determined Contribution (NDC) implementation.** An endorsement of the Initiative supports implementation of your government’s NDC to the Paris Climate Agreement.

• **Attract experienced oil industry investors.** The many international oil companies that already have a no-flaring policy for new oil field developments consider the Initiative a positive contribution because it will level the playing field – other companies would adopt the same good practice and governments would require it. The Initiative reduces regulatory uncertainty and risk.

• **Foster innovation.** Implementing the flaring Initiative could foster innovation in gas monetization.

• **Network advantages.** An endorsement connects your government to a network of leading oil-producing countries and companies that sets a de facto new global industry standard for gas flaring. This will provide governments valuable opportunities to exchange knowledge and experience, and to interact with the world’s leading multilateral financial institutions.

• **Your legacy.** The Initiative provides your government an opportunity to establish a positive environmental legacy; one that will be carried on well into the future.
“Zero Routine Flaring by 2030” Initiative

The ambition:

– A new global industry standard
Towards a world free of routine flaring

More information:
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www.worldbank.org/ggfr

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Initiative to Reduce Global Gas Flaring: “Zero Routine Flaring by 2030”

During oil production, associated gas is produced from the reservoir together with the oil. Much of this gas is utilized or conserved because governments and oil companies have made substantial investments to capture it; nevertheless, some of it is flared because of technical, regulatory, or economic constraints. As a result, thousands of gas flares at oil production sites around the globe burn approximately 140 billion cubic meters of natural gas annually, causing more than 300 million tons of CO₂ to be emitted to the atmosphere.

Flaring of gas contributes to climate change and impacts the environment through emission 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 utilized in a number of other productive ways or conserved (re-injected into an underground formation).

This “Zero Routine Flaring by 2030” initiative (the Initiative), introduced by the World Bank, brings together governments, oil companies, and development institutions who recognize the flaring situation described above is unsustainable from a resource management and environmental perspective, and who 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 minimized. 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, utilize it on-site, or dispatch it to a market. Venting is not an acceptable substitute for flaring.

Governments that endorse the Initiative will provide a legal, regulatory, investment, and operating environment that is conducive to upstream investments and to the development of viable markets for utilization of the gas and the infrastructure necessary to deliver the gas to these markets. This will provide companies the confidence and incentive as a basis for investing in flare elimination solutions. Governments will require, and stipulate in their new prospect offers, that field development plans for new oil fields incorporate sustainable utilization 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 utilization 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 facilitate cooperation and implementation, and consider the use of financial instruments and other measures, particularly in their client countries. They will endeavor to do so also in client countries that have not endorsed the Initiative.

Governments and oil companies that endorse the Initiative will publicly report their flaring and progress towards the Initiative on an annual basis. They also agree to the World Bank aggregating and reporting the same.

The parties that endorse the Initiative acknowledge that its success requires all involved – governments and oil companies, with the support of development institutions – to fully cooperate and take the action described herein to eliminate routine flaring no later than 2030.