

# Role of Natural Gas

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# Role of Natural Gas Workstream

*Exploring the lower carbon role that natural gas can play in the energy mix - we share best practices on methane emission management, gas flaring reduction and energy efficiency to minimize greenhouse gas emissions.*

Use of NG in the short/mid-term

Flaring

Methane

Energy Efficiency

## Participating Companies



# Use of Natural Gas

- Exploring the lower carbon role that natural gas can play in the future energy mix



Power  
Generation

Residential

Transportation  
Fuel



## Opportunities

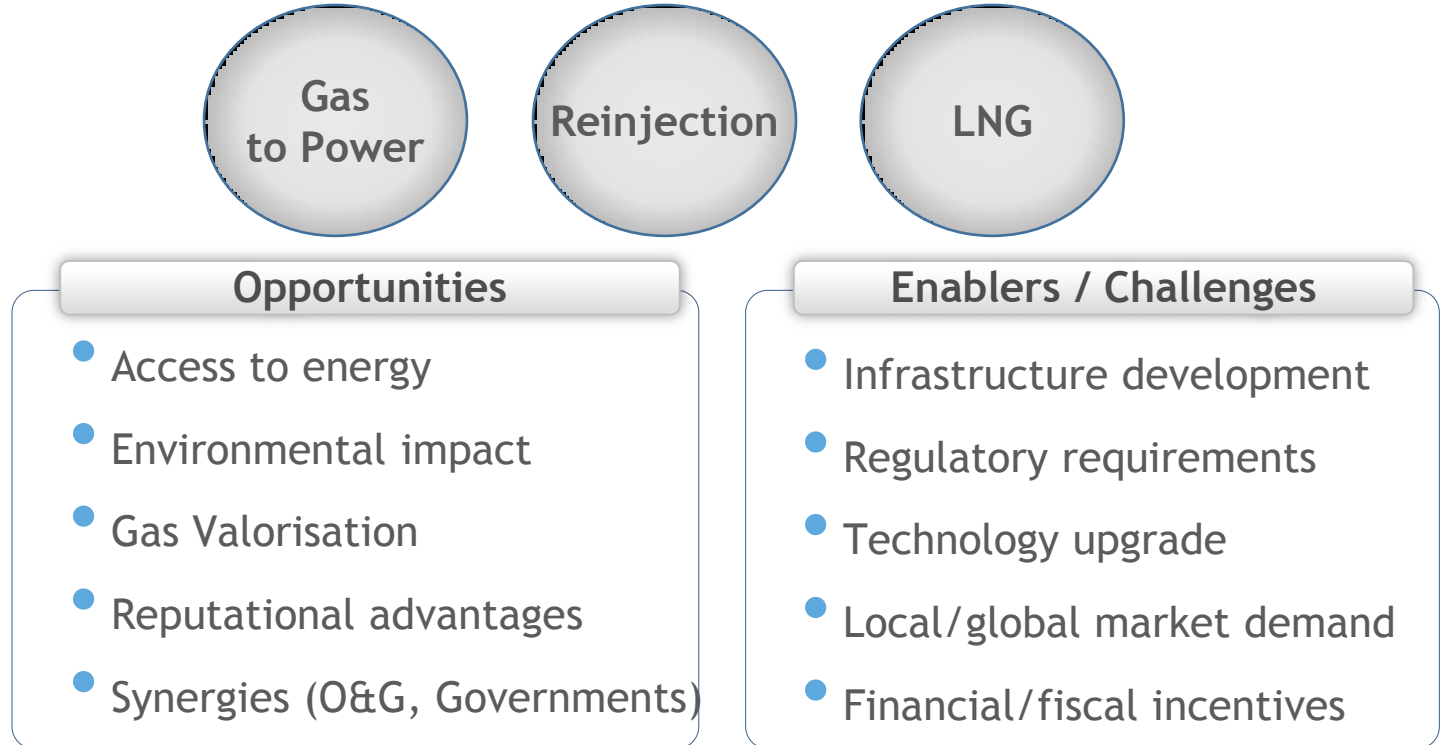
- Access to Energy
- Improved Air Quality and carbon footprint
- Energy Efficiency
- Enabler for Renewables
- CCS

## Barriers

- Infrastructure needs
- Potential methane emissions (leakage)
- Prices of gas and CO2
- Security of supply
- Safety issues
- Technological gaps

# Flaring

- Flared Gas reduction options are extremely variable and depend on external factors (i.e. geopolitical context, market opportunities, site specific quality of associated gas, existing infrastructure, etc)
- Different approaches for Flaring Down Projects by O&G initiative members



# Flaring Case Studies

## Gas to Power

Okpai (Nigeria)  
Flaring Down project

## Technologies

Replicant FPSO's  
in Brazil designed  
with flare gas  
recovery system

Zero discharge  
technologies at  
well site  
operations

## Management

Azerbaijan Flaring  
Down Project

## Collaboration success stories

KPO



VICO



## Monitoring

Corporate flaring  
monitoring system

## Operations and Maintenance

Review and  
reduction of flare  
purge rates in Egypt

Identification and  
repair of passing  
valves in Tunisia

## LNG

Ofon (Nigeria) LNG  
gas export project

# Methane

- Methane emissions reduction plans can be implemented in a cost-effective way, achieving climate benefits in the short term with low pay-back periods (depending on the source of methane) for required investments
- A better understanding of size and sources is required to implement efficient methane abatement strategies

## Focus on different issues

Monitoring

Abatement  
Technologies

R&D



### Opportunities

- Cost-effective mitigation technologies available
- Short pay-back period for fugitive emissions
- Monetary value of NG
- Co-Benefit on air quality (i.e. VOC)

### Challenges

- Lack of regulatory requirements
- Lack of reliable data
- Variability of sources at site-specific level
- Feasibility of mitigation options



# Methane Reduction Project - Case Studies

## Collaboration success stories



## Monitoring

Infrared fugitive emissions monitoring campaigns

Upstream voluntary LDAR activities

Continuous infrared survey (camera connected with meteo station) for detecting fugitive emissions

Mapping of fugitive emissions with SOF/LIDAR

## Research & Development

Participate in methane measurement studies with EDF and CSIRO

Develop cost effective technologies for methane detection with EDF

Research activities in Brazil (Research Centre for Gas Innovation)

## Abatement options

Design requirements (no venting)

Methane recovery in new onshore dispersed facilities

# Conclusions

## Anticipated Results of the Role of Gas Workstream

- Highlight O&G industry engagement on natural gas topics
- Benefit from knowledge sharing (best practices, methodologies, R&D joint projects)
- Continuous improvement around monitoring and reporting
- Achieve and communicate concrete reduction performances

## 2015 Deliverables

- Contribute to the general OGCI Report - collect global figures on flaring and methane emissions, best practices and case studies
- Optimize efforts to find synergies with other initiatives (meetings with GGFR, CCAC, etc.)
- Explore potential opportunities for joint R&D activities in 2016