Paris Agreement Overview & Timeline

- The Paris Agreement on Climate Change is a first of its kind binding legal framework on global climate change action, with **196 countries**, representing **90% of global fossil fuel demand** and **almost 80% of production**.
- Individual country pledges vary significantly in levels of specificity and ambition for energy related actions, hence creating a high level of uncertainty over implementation.
- Gas is facing the biggest uncertainty with possible outcomes ranging from the golden age to loss in market share.

196 Parties to the UNFCC sign the new legally-binding Framework

Agreement enters into force when ratification threshold is met

IPCC will table *Special Report on Global Warming* for 1.5°C (Sep.)

COP 24 Collective Progress Status Check-in Meeting

Parties Required to Communicate Long-Term low GHG emissions development Strategies

Collective Progress Status Review

169 Parties have ratified of 197 Parties to the Convention

On 5 October 2016, the threshold for entry into force of the Paris Agreement was achieved. The Paris Agreement entered into force on 4 November 2016. The first session of the Conference of the Parties serving as the Meeting of the Parties to the Paris Agreement (CMA 1) took place in Marrakech, Morocco from 15-18 November 2016. More information
Case Studies in Improving Urban Air Quality

Istanbul
Improving Air Quality

Beijing
Improving Air Quality

Graphs showing improvements in air quality and gas consumption over time.
NDC Overview

The variety of pledges range from:

- Absolute GHG reduction targets
- Deviation from BAU trajectories
- Emission intensity targets
- Per capita reductions or caps
- Statements / aspirations regarding policies and measures

Groups of NDC’s

Major Exporters (e.g. Saudi Arabia, Iran):
- Claim special status due to heavy economic reliance on fossil fuels
- Argue that their contributions cannot be measured on the same terms, as non-exporting economies
- Include general economy diversification as contribution and request assistance

Developing Countries:
- Mostly general (e.g. lower carbon intensity with economic growth) commitments to reduce the carbon intensity of their future economic development compared to the present (some give a target for the change in carbon intensity).
- The level of detail varies, from specific policies (such as those on renewables in the power sector or efficiency standards for vehicles) to the very general (intentions to transform the economy).

Developed Countries:
- NDC’s largely an agglomeration or extensions of existing policies.
- Generally choose a baseline date for GHG emissions (a different date from country to country) and make a commitment to reduce those emissions by a specified percentage by a future date (again not necessarily the same date).
- They outline policies by which this is to be achieved, with varying degrees of detail.
There is significantly higher uncertainty for impact on gas than on oil on use demand

• Oil demand projections can be completed with a high degree of certainty through assessing achievable emissions and fuel efficiency regulations in transport and EV penetration

• For gas demand, the range is very wide – from a high gain - if it secures the winning position and capitalizes on key opportunities, to a loss, if it fails to do so

• The markets available for gas are highly dependent on policy decisions, and are often positioned in the “residual” space, after aggressive renewables policies, and government decisions on new nuclear and legacy coal plants.

Coal will bear the highest costs, and gas is at crossroads between a “golden age” and losing market share

The extent of strong and coordinated advocacy will determine if the industry is a policy taker as opposed to shaper.
• Advocate and secure a space for gas in the generation systems of developed countries – where it would be a substitute for existing assets (largely coal); and gain a share of generation growth in developing markets (driven by pressure for improved air quality, and/or diversity of supply) sufficient to justify the infrastructure investments that gas needs.

• Promote the strong role and contribution gas can make in reducing emissions in industrial applications, buildings, road and marine transport and in enabling the adoption of renewables as a secure and reliable fuel addressing seasonal and daily renewable variability.

• With the ongoing development of LNG, a flexible and diverse supply of energy enhancing security of supply. Focus on small scale LNG opens new smaller market opportunities.

• Renewable gas (bio-gas) presents an opportunity to reduce the carbon footprint of natural gas while utilizing the existing gas infrastructure.
However, not without a set of challenges

Market Challenges

• In mature markets, new infrastructure investments are challenged by flat market demand, coupled with renewables promotion and a mostly lacking managed coal exit.

• While the biggest opportunity for new gas markets is in developing countries, gas is not the default option. The gas industry must persuade the governments that gas has a place, especially where coal is very cheap, and achieve volumes sufficient to fund infrastructure investment.

Other Challenges

• Greater investor scrutiny is likely in light of greater demand uncertainties

• Credit worthiness of counter parties in developing economies

• The fear of “stranded assets”

• The methane challenge
Share of Natural Gas Air Pollutant & CO₂ Emissions
Significant Advantage

IEA analysis

Share of natural gas in total energy-related emissions of air pollutants & CO₂

- **Particulate matter**:
  - Gas: 20%
  - Coal: 10%
  - Oil: 30%
  - Bioenergy: 40%
  - Non-combustion: 10%
  - Total: 31 Mt

- **Sulfur dioxide**:
  - Gas: 10%
  - Coal: 20%
  - Oil: 20%
  - Bioenergy: 40%
  - Non-combustion: 10%
  - Total: 79 Mt

- **Nitrogen oxides**:
  - Gas: 10%
  - Coal: 20%
  - Oil: 20%
  - Bioenergy: 40%
  - Non-combustion: 10%
  - Total: 108 Mt

- **Carbon dioxide**:
  - Gas: 10%
  - Coal: 20%
  - Oil: 20%
  - Bioenergy: 40%
  - Non-combustion: 10%
  - Total: 32 Ct

Data are for 2015. Mt = million tonnes; Ct = gigatones
Natural Gas compared to Coal
Average Global Natural Gas Emissions Intensity 1.7%

IEA analysis

Greenhouse-gas emission intensity of natural gas compared with coal

GWP20 = global warming potential over a 20-year timeframe
GWP100 = global warming potential over a 100-year timeframe, based on the ranges from the Fifth IPCC Assessment Report (IPCC, 2014).
Marginal Cost Abatement Curve
“40-50% reduction at no net cost” IEA

Marginal abatement cost curve for oil & gas related methane emissions, 2015
IEA analysis

Source: IEA methane emissions model developed in collaboration with ICF
Two Recent IGU Publications

THE NATURAL GAS INDUSTRY
METHANE EMISSIONS
CHALLENGE

UNDERSTANDING METHANE’S
IMPACT ON CLIMATE CHANGE
Over 1000 papers submitted from the Call for Papers Early-bird registration now open.