Programme (10:30-13:00)

- Welcome address
- Panel discussion 1
  “Current Status and updates on the Natural Gas Industry”
- Panel discussion 2
  “The Role of Gas in Fueling Sustainable Growth in Asia”
Panel discussion 1

Current Status and updates on the Natural Gas Industry
IGU’s Regional Coordinators

**Timothy Egan**  
President & CEO, Canadian Gas Association

**Andrea Stegher**  
Sr. Vice President, SNAM Italy

**Marcel Kramer**  
President, Energy Delta Institute, Netherlands

**Graeme Bethune**  
Chairman, Australian Gas Industry Trust

**Orlando Cabrales**  
President, Columbia Natural Gas Association

**Khaled AbuBakr**  
Chairman, Egyptian Gas Association
Australia now produces nearly a quarter of global LNG and has achieved a major milestone last year in becoming the largest exporter.

In the meantime, there are concerns over possible supply shortages and price escalation in the domestic market and is this influencing the state of Australian projects

What is your take on this complex situation? What are the lessons here for other jurisdictions?
Australian Domestic Supply vs. Imports: Infrastructure Challenges & Opportunities

Combined nameplate capacity of Australia’s 10 LNG projects: 88 Mtpa

Australia exported 75 Mt of LNG in FY 2019 making it the 2nd largest exporter in the World.

Domestic demand: 1,010 PJ
Export demand: 4,070 PJ

Approximate Distances

Australia:
East - West: 4,000 km
North - South: 3,700 km

Equal to:
San Francisco to Washington DC
Ottowa to Mexico City
What is the latest outlook for the East Med gas developments,

and,

what are the perspectives of creating a gas trading hub for the Mediterranean?
East-Med Developments & Prospects of a Trade Hub
The supply picture continues to improve in North America, keeping prices very low.

How is this affecting the producer side of the industry?
Projected N. American Production & Price Trends

A Appalachian
Production grows at 6% p.a. as the basin is debottlenecked in 2018-19

B Western Canadian Sedimentary Basin (WCSB)
Steady growth in Montney production with possible upside with Western Canadian LNG

C Haynesville
Renewed interest due to close proximity to LNG export terminals and attractive well economics

D Associated gas/Permian
Permian production will increase by ~7.2 bcf/d from 2018 to 2030


Natural Gas Prices: $/Mcf

Source: US Energy Information Administration
There are high expectations on the development of the huge shale gas resources in the Vaca Muerta formation in Argentina.

What are the main challenges to fully develop this potential?
Latin America & the Caribbean: Prospects in Argentina

ARGENTINA WIDENING SEARCH FOR OIL, NATURAL GAS

- **Tarija Basin**
  - Los Monos (shale gas)

- **Northwest Basin**
  - Yacoraite (shale/tight oil and gas)

- **Chaco-Paranaense Basin**
  - Devonico-Permico (shale oil)

- **Cuyo Basin**
  - Cacheuta (shale oil)

- **Neuquen Basin**
  - Vaca Muerta (shale and oil gas)
  - Los Molles (shale gas)
  - Agrio (shale oil)

- **San Jorge Gulf Basin**
  - D-129 (shale oil, tight oil)
  - Neocomiano (shale oil and gas)

- **Austral Basin**
  - Inoceramus

Source: Technological Institute of Buenos Aires
East Europe, Russia, Black Sea and Caspian: New Pipelines

Marcel Kramer
President, Energy Delta Institute, Netherlands

With the pending completion of the Turkish Stream pipeline, Turkey’s role as a market and transit country for natural gas from Russia and the Caspian seems to become even more important.

Could you give us a quick update on the status of the project and its implications?
Russia-Turkey gas pipeline plans

Moscow and Ankara seek to develop Turkey as a transit route for Russian gas to Europe, avoiding Ukraine.

- **Russia-backed gas pipelines**
  - TurkStream
  - Blue Stream

- **Rival EU-backed pipeline**
  - Southern Gas Corridor

Existing: solid line; Planned: dashed line

Sources: BP, Entso-g, GIE
East Europe, Russia, Black Sea and Caspian: Russian LNG

Marcel Kramer
President, Energy Delta Institute, Netherlands

We read a lot about Russian pipeline projects, but how about the outlook for LNG exports from Russia?
East Europe, Russia, Black Sea and Caspian: *Yamal LNG*
The Commission and 22 member states support a Net Zero CO\textsubscript{2} target by 2050.

Obviously there are some hold out to this, but can you please comment on how gas can fit in this scenario?
More Than 60 Countries Say They’ll Zero Out Carbon Emissions. The Catch? They’re Not the Big Emitters.

How does Gas Fit in Europe’s Net Zero CO2 2050 Target?
Europe’s Progress toward meeting GHG Emissions Commitments

Fig. 1: Greenhouse gas emission trends, projections and targets in the EU

<table>
<thead>
<tr>
<th>GHG</th>
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<td>Historic GHG emissions</td>
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<td>GHG emissions (proxy)</td>
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<td>Projections with existing measures</td>
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<td>Projections with additional measures</td>
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<td>2030 Target: -78.6 Mt CO2eq per year</td>
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<td>2050 target: -157 Mt CO2 eq/year (-80%)</td>
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<td>2050 target: -157 Mt CO2 eq/year (-95%)</td>
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European Environment Agency (EEA)

North American municipalities are starting to pass resolutions banning natural gas hook-ups because of concerns about climate change.

How is industry responding
Municipality Gas Bans Trend

Plans to phase out natural gas in buildings gain traction

The next target in the climate-change debate: your gas stove

The next target in the climate-change debate: your gas stove

‘It is possible:’ Victoria mayor says fossil-free future not optional

San Jose Becomes the Largest City in the US to Ban New Natural Gas Lines

Natural gas soon to be outlawed in almost all new Menlo Park buildings

By Jan. 1, 2020, heating systems in all new homes and buildings in the city must run on electricity

Santa Rosa homebuilders urge city officials to rethink potential natural gas ban on new homes

A jogger runs past the Scattergood power plant, Feb. 12, 2019, in Los Angeles. Los Angeles will abandon a plan to spend billions rebuilding three natural gas power plants as the city moves toward renewable energy, Mayor Eric Garcetti said Monday.
Latin America & the Caribbean: Lessons from Bogota

Orlando Cabrales
President, Columbia Natural Gas Association

Bogota has the most dense Bus Rapid Transit (BRT) system in the world. Recently, more than 50% of the new fleet has been renewed with articulated and bi-articulated buses powered by natural gas.

What are the main drivers that made this possible?
Latin America: Transmilenio – World’s most intense BRT powered by natural gas

- 114km of exclusive lanes for TM
- 12,9 million km travelled per month
- 2,5 million passengers per day
- 26,6 Km/hour on average in the system

- 741 articulated and bi-articulated buses powered by natural gas
  - 1,4 km per m³ bi-articulated
  - 1,5km per m³ articulated
- 300km average autonomy
- Near 0 PM2,5 emissions
Africa & Middle East

Khaled AbuBakr
Chairman, Egyptian Gas Association

This is a region which promises to be critical for the natural gas industry, from both supply and demand sides, and it is also one where some of the largest economic opportunities lie and can bring people out of energy poverty.

How can the industry seize this opportunity?