



LGC  
Latin America  
& Caribbean  
Gas Conference  
& Exhibition

# Digital Dialogue

## The Role of Natural Gas in Colombia's energy transition



# Introduction

The Digital Dialogue “**The Role of Natural Gas in Colombia’s energy transition**” is the third delivery of a monthly dialogue series which has been held virtually since May 2021. This initiative is part of the Latin America Gas Conference & Exhibition, an event co-organized by ARPEL, IGU, and EnergyNet, with the support of OLADE.

[See full webinar](#)

The **goal** of these dialogues is

**To promote the development of natural gas as an energy capable of reducing emissions, contributing to the energy transformation, and boosting economic recovery in Latin America and the Caribbean through dialogue and cooperation between companies, governments, and other stakeholders.**

Each delivery focuses on specific countries, regions, or topics, bringing together the main players of the sector in the region, from both companies and governments.

## MODERATOR



**Carlos Cortés**  
Regional Coordinator Latin America  
International Gas Union  
IGU

## PANELISTS



**Andrés Sarmiento**  
President  
Naturgas



**Alexandra Hernández**  
Vice President of Economic and  
Regulatory Affairs  
Colombian Petroleum  
Association (ACP)



**Andrés Pontón Venegas**  
Gas and LPG Manager  
Ecopetrol



**Juan Pablo Henao**  
Vice President of  
Commercial Development  
TGI

# The role of natural gas in Colombia current and future energy matrix

## What will be the role of natural gas in Colombia energy matrix and economic recovery?

In tune with international expectations, **natural gas in Colombia is expected to continue growing along with non-conventional renewable energy.**

According to the 2020-2050 National Energy Plan published by UPME:

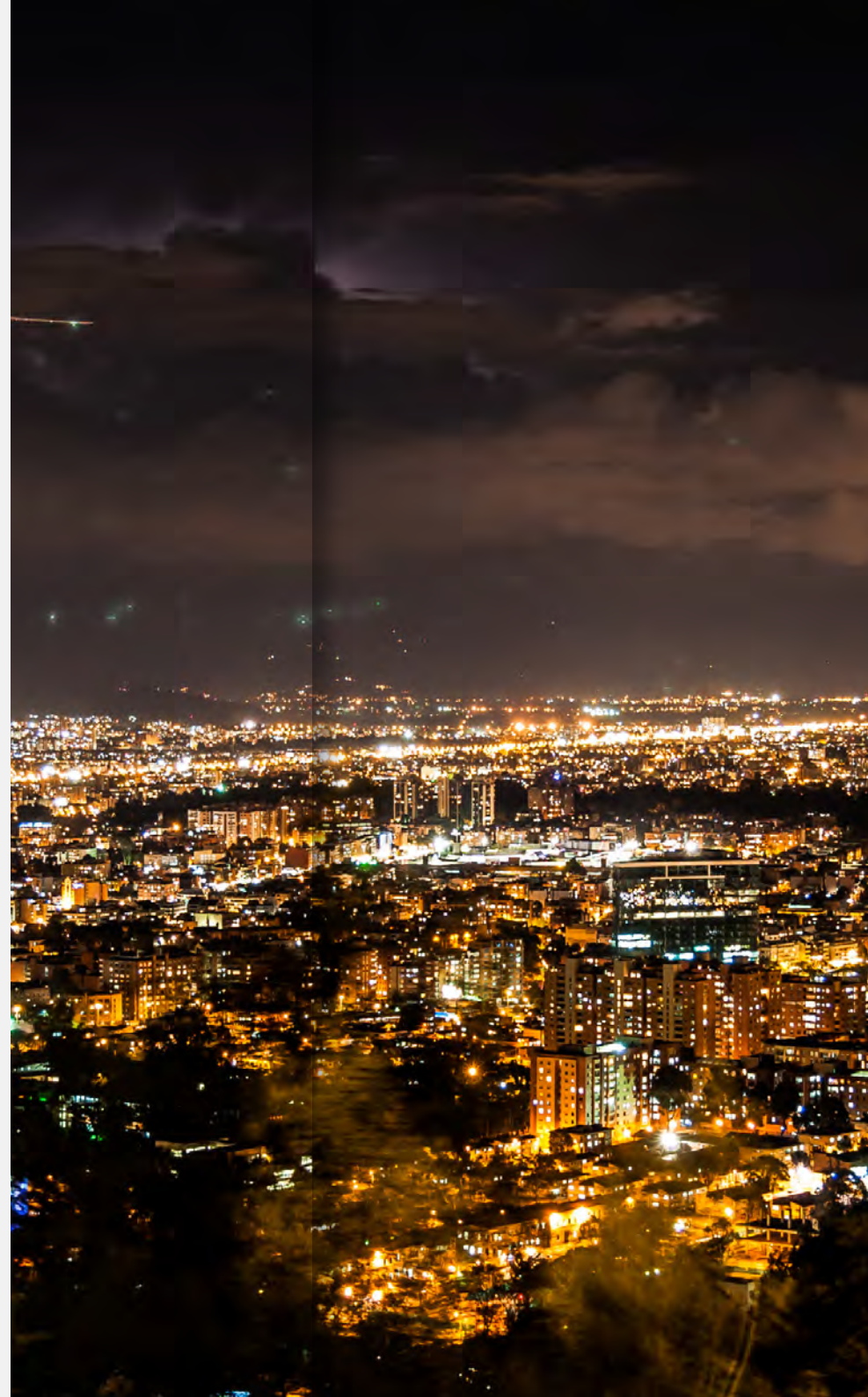
### Colombia 2050 Energy Matrix

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Natural Gas  
**16% to 25%**

implies at least  
doubling the current consumption.

Hydrocarbons  
**56% to 67%**



The main drivers are:



## Decarbonization

**Substitution**  
of more polluting fuels

**Back up**  
the development of  
non-conventional renewable energy

**Country's commitment**  
to net-zero emissions



## Environmental

Substantial improvement  
of **air quality** in the  
cities.



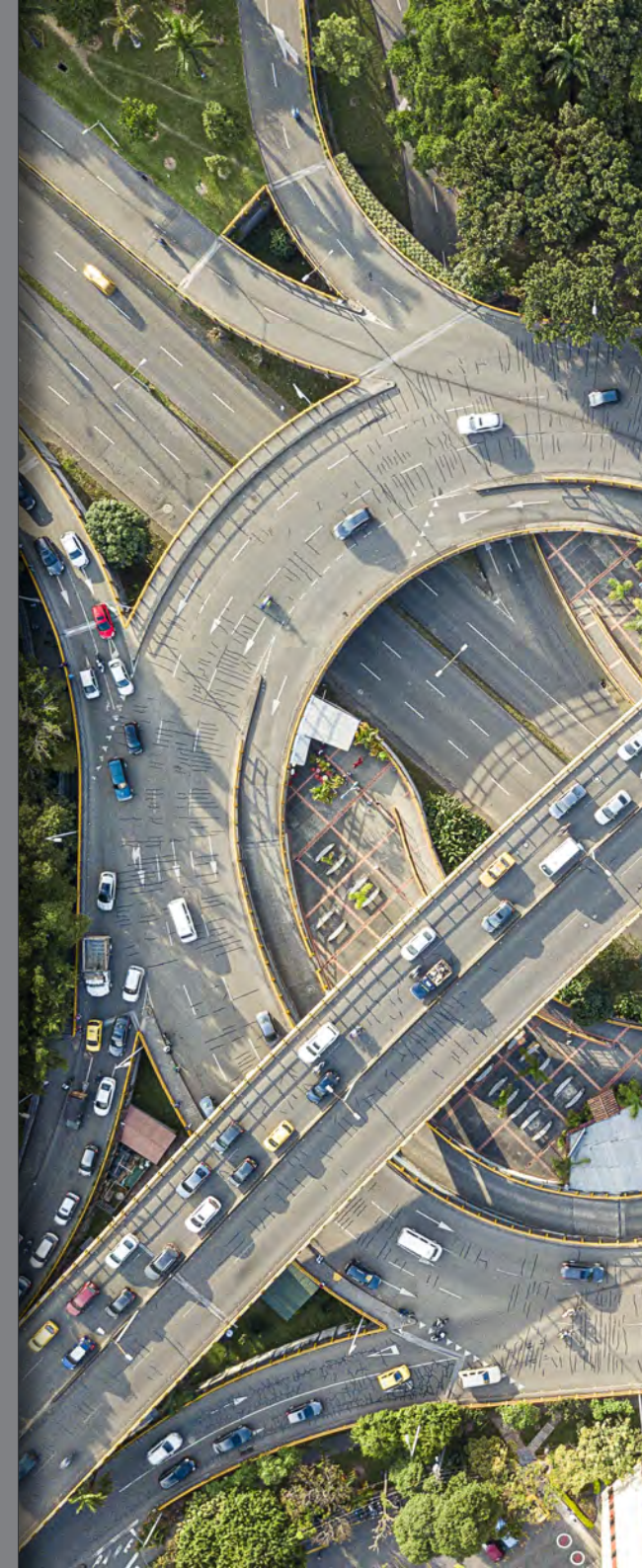
## Socioeconomic

**1.7 million households**  
still rely on  
**on firewood and other  
biomass**  
for cooking, with their subsequent  
health consequences.

The sector already generates  
**100,000 jobs**  
and represents 1% of GDP  
**10.2 million**  
Colombians are natural gas users.

**Cost-effectiveness,  
availability of infrastructure,  
development and natural  
resources.**

Maintaining the expected growth levels implies acting as a coordinated sector, equalizing the development of supply and demand. It is, therefore, necessary to establish key economic and regulatory signals to manage risks and deploy investment projects.



# Upstream

## The reserves and supply dilemma

### Resource Potential

Reserves to production ratio

**7.7 years**

Incorporating proven reserves and contingent resources could almost double that level, increasing the R/P ratio to

**more than 10 years.**

The potential of exploratory resources—offshore, unconventional, and conventional—could

**increase the current level of reserves by a factor of 9.**

The ACP study “**New natural gas projects: A key to Colombia energy self-sufficiency**” identifies



if their contingencies are resolved:

	Projects	MCF/D
Need to develop transportation infrastructure	4	250
Community relations	4	250
Business decision to invest in offshore	1	150
Conditional on exploratory success	2	85



<https://acp.com.co/web2017/es/asuntos/economicos/831-informe-economico-acp-reservas-de-gas-2020-hoja-de-ruta>

(\*) MCF/D:  
Million Cubic Feet per Day

# Upstream

The reserves and supply dilemma

## The importance of exploration investment

### In the last 5 years

40

gas fields  
were put into  
production

2  
billion  
USD

in investments

Representing

22%

of the current gas supply, which allowed to replace declining gas fields, mainly in La Guajira.

## Regulatory Aspects

It is estimated that:

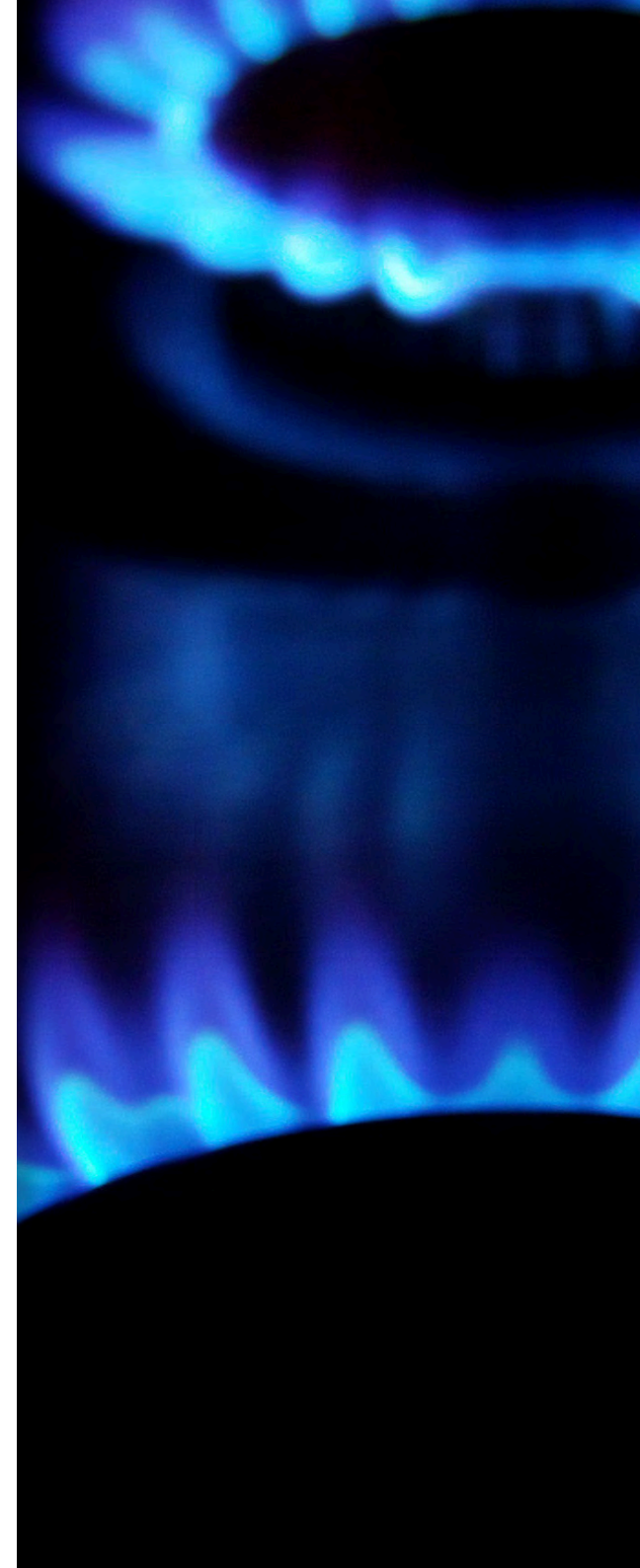
83%

of exploratory projects' time is spent on paperwork and permitting

2/3

of the unconventional contingent gas does not require hydraulic stimulation

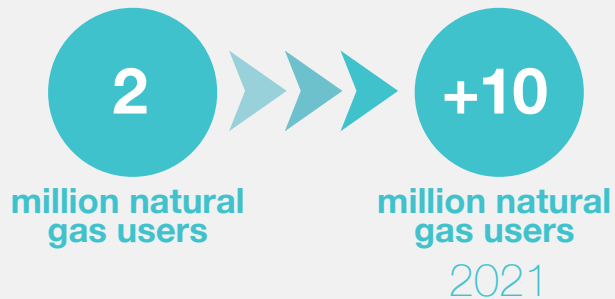
There is a need for revision of regulations regarding permits and hydraulic stimulation, to speed up the development of exploratory projects.



# Midstream / downstream

Creating new demand and developing infrastructure

In the **last 10 years**, Colombia went from



Growth consolidation involves:

## 3 growth drivers

Transportation

Industry

Electric Power Generation

## Transportation

50%

of the growth in gas demand could come from the transport sector

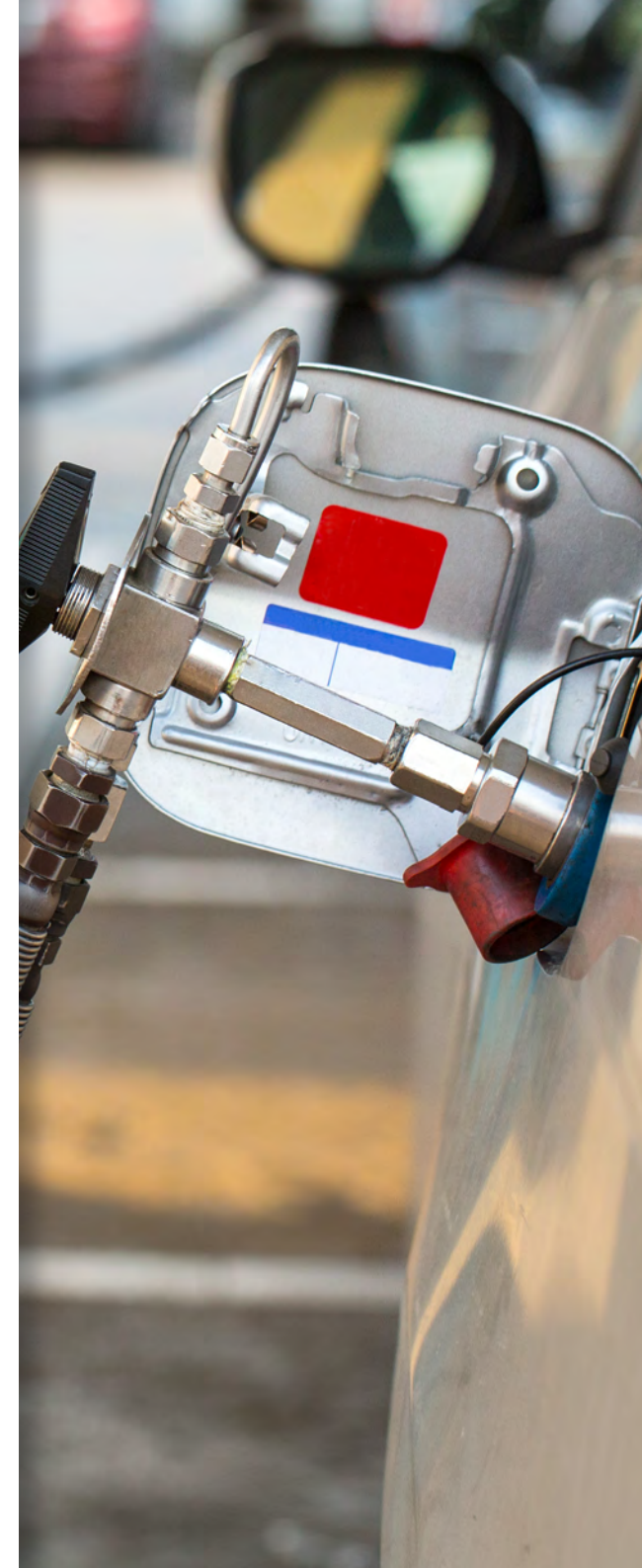
2021

+3.000 vehicles powered by natural gas

mainly buses, but with great potential for cargo transportation.

-80%

of particulate matter emissions in mass transportation systems in Bogota.



# Midstream / downstream

Creating new demand and developing infrastructure

## Industry

30%

of the growth in natural gas demand could come from substitution in the industry, mainly due to the substitution of coal use.

## New Projects

Naturgas has identified potential investments in all the value chain:

**3.000** billion

**4 years**

**300 thousand** new users

Benefitting **360** municipalities

**Ecopetrol** has committed

**1.3** billion

in investments in the natural gas sector over the next

**3 years**

## Electric Power Generation

### Thermal backup

to support the important boost of electric power generation through non-conventional renewable energy.

### Resilience

to climate change effects and to *El Niño* and *La Niña* phenomena on water availability for hydroelectric generation.

## New Pacific Regasification Plant

Expected investment

**700 million USD**

Regasification capacity:

**400 million** cubic feet/day

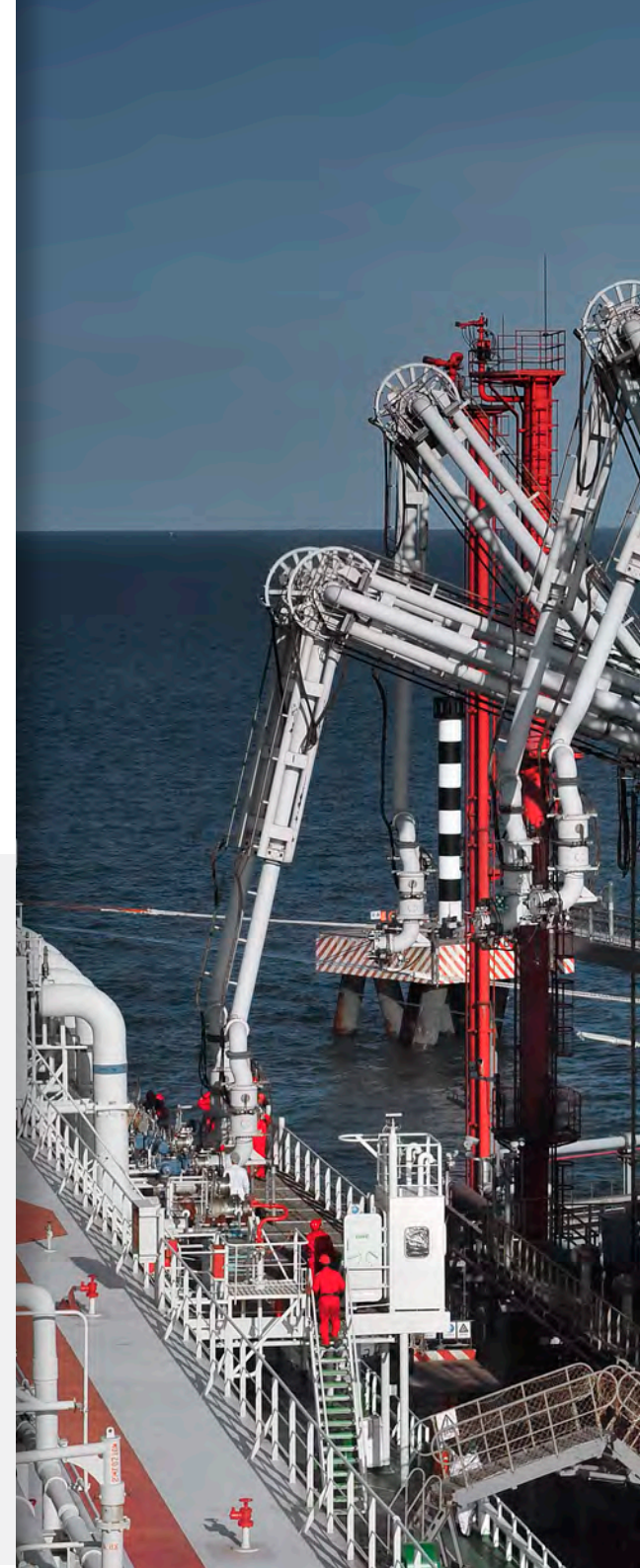
Storage

**170 thousand m<sup>3</sup>**

Start-up

**2026**

This project seeks to, alongside other alternatives, create a secure gas supply in the medium and long term, and it is expected to be awarded by the end of 2021.





## Key messages

Natural gas will play a **key role in the Colombia energy matrix**, which could reach 25% by 2050, driven mainly by the transportation sector, the substitution of coal in the industry, and support for non-conventional renewable electric power generation.

The development of contingent resources could rapidly **expand the natural gas reserve horizon** in the short term, bringing the R/P ratio from the current 7.7 to more than 10.

Sustaining the development of natural gas in Colombia implies **acting as a coordinated sector** and establishing clear economic and regulatory signals to manage risks and deploy the identified investments.

The challenge of the energy transition implies a **high level of public policy articulation** that allow the competitive development of the different energy alternatives.



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## What is **ARPEL**

ARPEL is a non-profit association gathering oil, gas and biofuels sector companies and institutions in Latin America and the Caribbean. Founded in 1965 as a vehicle of cooperation and reciprocal assistance among sector companies, its main purpose is to actively contribute to industry integration and competitive growth, and to sustainable energy development in the region.

Its membership currently represents a high percentage of the upstream and downstream activities in Latin America and the Caribbean and includes national and international operating companies, providers of technology, goods and services for the value chain, and national and international sector institutions.

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## What is **EnergyNet**

EnergyNet has been producing investment forums and executive dialogues for Latin America and Africa's power sector for the last 25 years - in Europe, the USA, China and across Africa and Latin America.

We work with governments and national utilities to facilitate investment summits where international investors can build relationships with credible public sector stakeholders to advance access to power. We facilitate investment into the energy sector to get projects moving and bring electricity to global communities.

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## What is **IGU**

The mission of IGU is to advocate for gas as an integral part of a sustainable global energy system, and to promote the political, technical and economic progress of the gas industry. The more than 160 members of IGU are associations and corporations of the gas industry representing over 95% of the global gas market. The working organisation of IGU covers the complete value of gas chain from exploration and production, transmission via pipelines and liquefied natural gas (LNG) as well as distribution and combustion of gas at the point of use.

IGU has the vision of being the most influential, effective and independent non-profit organisation, serving as the spokesperson for the gas industry worldwide. The IGU is the "Global Voice of Gas"

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## What is **OLADE**

The Latin American Energy Organization (OLADE) is an intergovernmental public body of cooperation, coordination and technical advisory, established on November 2, 1973 by signing the Lima Agreement, ratified by 27 countries in Latin America and the Caribbean, with the fundamental objective of promoting the integration, conservation, rational use, commercialization and defense of the region's energy resources.



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August 5, 2021

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