

26th World Gas Conference

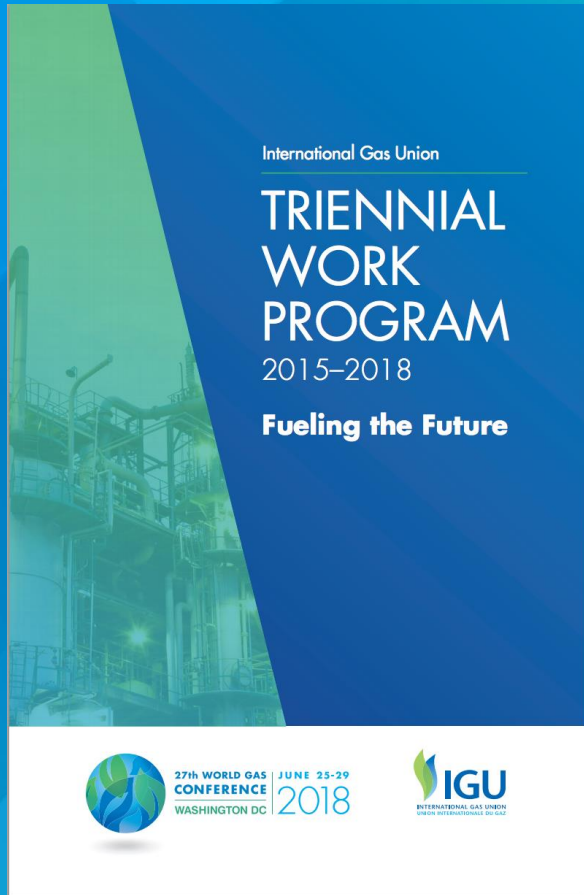
1 – 5 June 2015, Paris, France



SPECIAL SESSION –
TRIENNIAL WORK PROGRAM 2015-2018

Menelaos (Mel) Ydreos
Chairman, Coordination Committee





The Triennial Work Program (TWP) lays out the work and activities that the IGU Committees and task forces will carry out during the next three years. The aim is to support the mission of the organization while at the same time contributing to the IGU's efforts towards becoming the global voice of gas.



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JUNE 25-29 2018



PURPOSE OF SESSION

Provide an overview of the work and activities that will be carried out during the next three years.

This work will support the mission of the IGU while at the same time contributing towards the IGU becoming the global voice of gas.

While traditionally the objectives of the committees and task forces has been to deliver and present their work at the World Gas Conference, the reality of today's energy markets demands that the committees and task forces become much more dynamic, active and engaged in supporting the Presidency and the Secretariat efforts during the triennium.

The USA Triennium

Respecting the history and traditions of IGU

Realizing the tremendous opportunities facing the global gas industry

Leveraging the strengths of the North American team and the broader IGU organization

Building On the Momentum From the French Presidency in making the IGU the “Global Voice of Gas”

Key Opportunities Driving the USA Work Plan

Shorter-term dynamics are becoming increasingly important requiring the need for timely and topical work products that address current issues in these debates and discussions

In collaboration with the Secretariat and Regional Coordinators greater engagement by IGU with outside organizations such as the World Bank and the UN

Tying all the efforts into the key areas of strategic focus for the USA triennium while Raising the Global Voice of Gas

Enhance member value by improving the level of engagement, communications and through regional workshops and symposiums in support of regional advocacy efforts

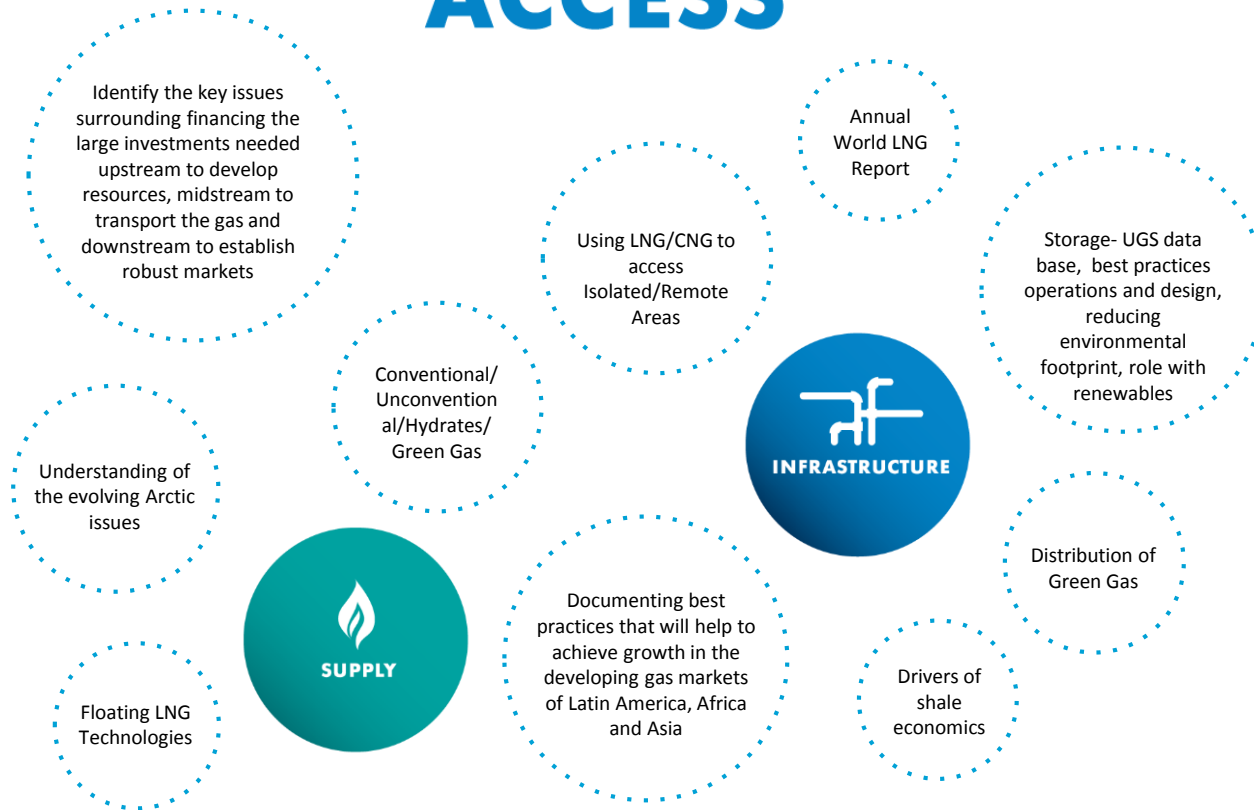
Additional Strategic Activities

Creation of a Financial Advisory Board that will focus on the key issues surrounding financing the large investments needed upstream to develop resources, midstream to transport the gas and downstream to establish robust markets

Creation of a Washington based Honorary Global Ambassadors Network for annual discussions on key issues facing the gas industries in their respective countries

Make greater use of the Regional Coordinators and IGU Wise Persons to better understand the timely and topical issues facing the global gas industry

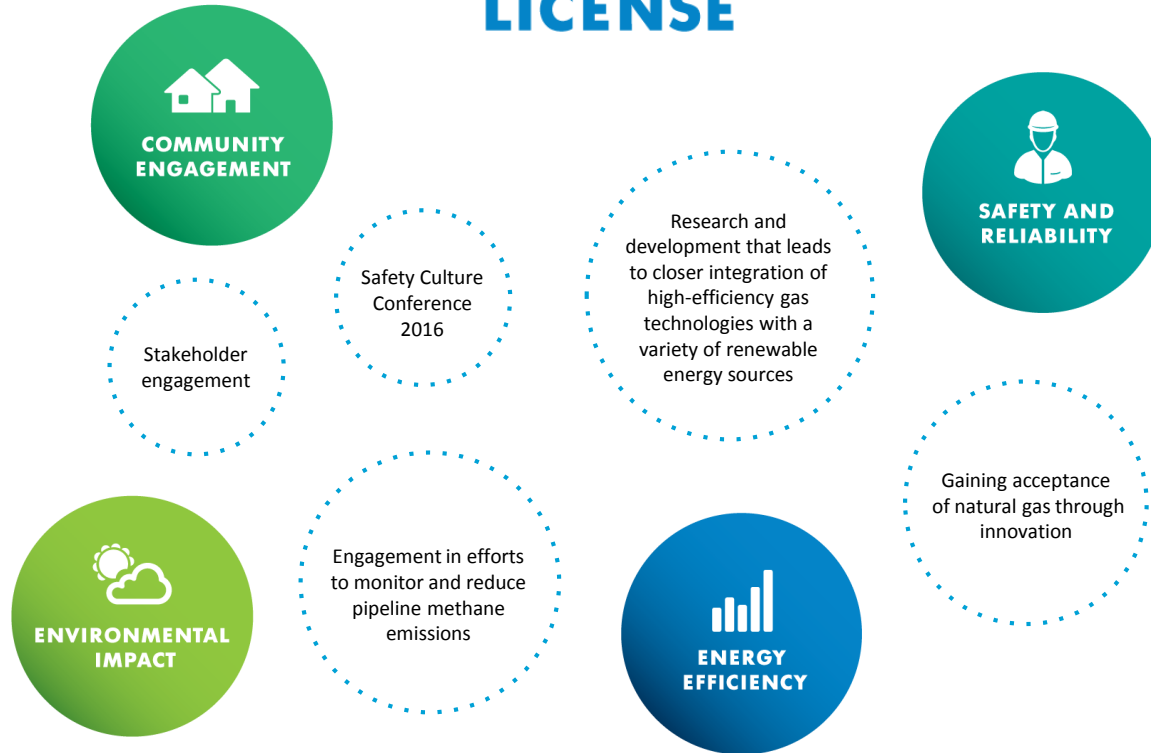
ACCESS



MARKETS



SOCIAL LICENSE

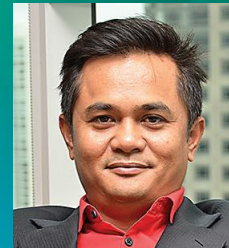


The IGU Committees and Task Forces

- Exploration and Production Committee
- Storage Committee
- Transmission Committee
- Distribution Committee
- Utilization Committee
- Sustainability Committee
- Strategy Committee
- Gas Markets Committee
- LNG Committee
- Marketing and Communication Committee
- Research and Development and Innovation Committee
- Strategic Communications and Outreach Task Force
- Workforce Development Task Force



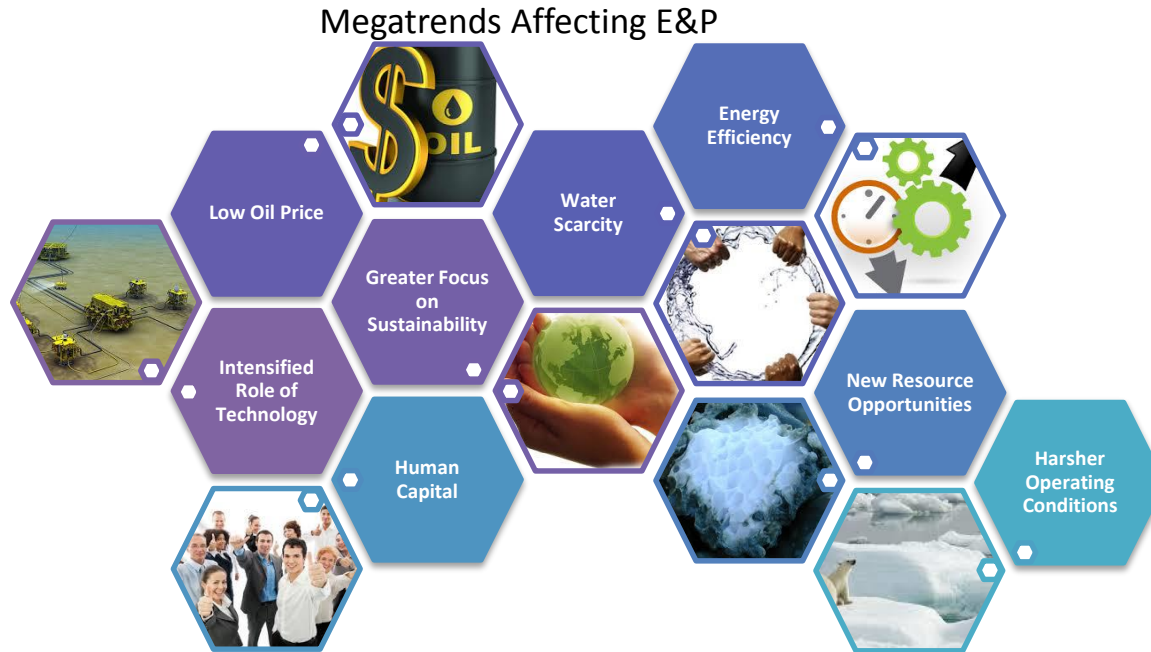
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Exploration & Production (E&P) Committee

Chair:	Mohd. Redhani A. Rahman (Malaysia)
Vice Chair:	Ekaterina Litvinova (Russia)
Secretary:	Im Xaxanuhani Zulkifli (Malaysia)
1 st Meeting:	Kota Kinabalu, Malaysia (early Sept 2015)

Megatrends Affecting Exploration & Production



The Committee will organize three study groups on the following topics:

Conventional

- Potential new hotspots for gas exploration
- Technological advances that allows further exploration in new areas
- Challenges & Best practices in ensuring sustainability of conventional resource

Unconventional

- Assessment of unconventional gas potential outside US & Canada
- Assessing the key success factors in unconventional in North America and the potential for replication outside US & Canada
- Technological advancement that allows the success

The Next Big Thing

- Potential new source of unconventional gas
- Technological advancement to allow more efficient exploration & exploitation
- Challenges in ensuring faster adoption by industry mainstream





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Storage Committee

Chair:	Nikita Barsuk (Russia)
Vice Chair:	John Heer (USA)
Secretary:	Marina Barisova (Russia)

Focus of the Storage Committee

The Storage Committee will focus on monitoring the UGS industry in the areas of market trends and technological issues and advocate the development of the UGS business. The committee will focus on the technical aspects of the underground storage (UGS) of natural gas, market trends and technological issues, the evolving role of storage particularly in support of the expanded use of renewable energy and advocating the development of UGS.

LINKS TO THE U.S. TRIENNIUM AREAS OF STRATEGIC INTEREST

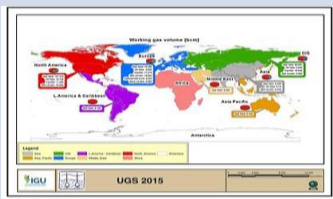
- **ACCESS** – Spatial geo-referenced visualisation of storage data in ARC GIS software;
- **MARKETS** – Focus on business innovations for UGS on current market uncertainties, opportunities and constraints likely to impact the deployment of these UGS solutions;
- **SOCIAL LICENSE** – Define “best practices” in UGS operation including: Industrial Safety and Reliability, Environmental Impact, Energy Efficiency.



Focus of the Storage Committee

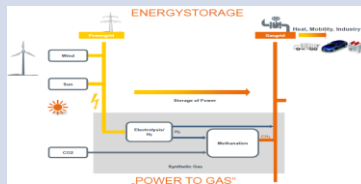
IGU UGS database on UGS

- Updating and improving the interactive IGU UGS database on UGS
- The enhancements could include UGS geo-referenced mapping of LNG and transmission infrastructure and main gas reservoirs
- <http://ugs.igu.org/>



Best practices in UGS operations

- Energy efficient operation gas storage can lead to a reduced environmental footprint, better integrity management, integrated asset performance, new technologies and efforts to create “energy storage.”



New roles for UGS

- Operating UGS today can include support for renewable energy and new LNG projects, grid balancing, and reducing flaring while operating in the traditional UGS business model based on summer/winter spreads.





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Transmission Committee

Chair: Martin Slaby (Czech Republic)

Vice Chair: Patrick Pelle (France)

Secretary: Daniel Rein

1st meeting: Chantilly, France; September 29 – October 1, 2015

Focus of the Transmission Committee

- The Transmission Committee will focus on all aspects of transit pipeline installations and operations including technology, economics and environmental and societal impacts
- The Committee focus recognizes that the long distance transportation of natural gas will continue to be an essential precondition to supply and demand growth as well the further development of global natural gas markets.

Focus of the Transmission Committee

Transmission pipeline diversification

- New transmission pipelines on a global scale
- Role of regional transmission networks and bidirectional pipelines
- Other gases in traditional pipeline systems, in kind and quality

Effective operations—a precondition for market competitiveness

- Cost-effective operation of gas transmission systems
- Gas balance, identification and reduction of losses
- Asset management approach (ISO 55001)

Safety and environmental performance of gas transmission systems

- Pipeline integrity management
- Corrosion protection
- Reduction of emissions
- Global standards and practices for improving safety





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Distribution Committee

Chair:	José Maria Almacellas (Spain)
Vice Chair:	José Carlos Broisler (Brazil)
Secretary:	Carlos Villalonga (Spain)

1st Meeting: Barcelona, Spain September 15-18

Focus of the Distribution Committee

Recognizing that the distribution industry is in close proximity to present and potential consumers, the Distribution Committee will focus on issues surrounding the safe, reliable and efficient delivery of natural gas to end-users through the distribution networks.

The Committee will organize three study groups on the following topics:

Promotion and development of the gas market and facilitation of the market

Chair: Nicholas Biederman (USA)

- Market creation: New supply chains and new laying techniques
- Market facilitation: Promotion of new connections and activities linked to market facilitation

Operational excellence in Distribution activities

Chair: Ben Lambregts (NL)

- The quality management of the distribution activity is then essential for the improvement of gas image
- A revision of the different quality and safety management systems used by Distribution System Operators is proposed

System integration of Gas and other Energies

Chair: Libor Cagala (CZ)

- Utilization of the gas distribution networks as a tool for the RES integration as one of the main challenges of the gas industry
- Injection of biomethane
- H₂ from Power to Gas





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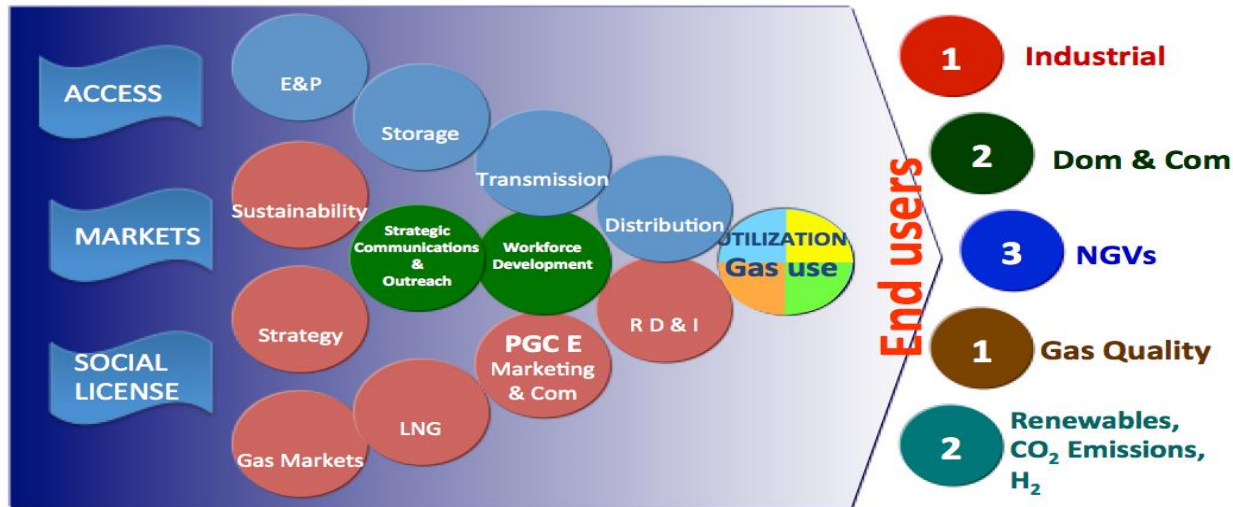
Utilization Committee

Chair:	Mohammed Reza Ghodsizadeh ((Iran)
Vice Chair:	Marcisco Prieto Cabajo (Spain)
Secretary:	Bijan Ochani (Iran)

1 st Meeting	Teheran, Iran October
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Focus of the Utilization Committee

The Utilization Committee will focus on issues related to the utilization of gas in residential, commercial, and industrial markets, and the use of natural gas as a land and marine transportation fuel.



The Committee will organize three study groups on the following topics:

Industrial Utilization

- Analyze trends in gas utilization in industrial sector
- Compare international experience on energy efficiency (technologies & regulation)
- Explore combination of natural gas and renewable
- Study 'gas to power' technologies & techniques
- Investigate the role of energy services in industry

Domestic and Commercial Utilization

- Monitor the results of the market introduction of gas heat pumps and micro-CHP
- Investigate gas appliances with condensing and modulating properties in combination with other appliances like the electric heat pump (hybrid systems)
- Monitor adsorption heat pump will be monitored Study "smart" features of micro-CHP
- Check and investigate business models regarding new technologies and associated services

Natural Gas Vehicles

- Monitor world NGV market and propose Action plan for NGV/CNG in Europe (5% of market in 2020/2025)
- Examine CNG/LNG/BioM technologies, economics, local policies & incentives
- Study LNG potential for ground, air, water, rail , etc...
- Observe 'NG +' concept: NG + H2, BioM , Diesel, e-power Hybrid CNG
- Promote synergy between OEM and retrofit vehicles
- Spread real life experience: success and failure stories from fleet operators, drivers, local authorities, etc.



The Committee will organize two sub-task forces

Renewables, CO2 Emission, Hydrogen

- Gather information about global production and use of "green gases" in combination with natural gas.
- Monitor global technology, sources, efficiency, costs for production of hydrogen/methane from renewable power; electrolyzing technologies (ALE, PEM and SOEC); technologies to convert CO₂ + H₂O to CH₄.
- Prepare global overview of ongoing projects for integration of renewable gas into the local natural gas grid – inclusive a status for upgrading technologies

Gas Quality

- Gather information about new regulations or initiative to harmonize gas quality
- Studies about the impact of gas quality variation on existing appliances
- Studies & knowledge about impact of gas quality on new technologies as fuel cell
- Impact of adding hydrogen or new gases in the grid
- Liaise with other WOCs dealing with gas quality





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Sustainability Committee

Chair:	Maria Gabriela Rosello (Argentina)
Vice Chair:	Nor Hazleen Madros (Malaysia)
Secretary:	Benjamin Guzman (Argentina)
1st Meeting:	September 8-10

Focus of the Sustainability Committee

The Sustainability Committee will conduct studies and analysis in support of efforts to demonstrate that natural gas will continue to play an important role in the world's future sustainable energy mix and for public acceptance of unconventional gas supplies.

Specifically the Committee will:

- Advocate for the development of natural gas as a key fuel for sustainable energy mix.
- Improve public acceptance of the development of unconventional gas, through stakeholder engagement and applying common standards and proper technologies to address environmental concerns.
- Promote natural gas as partner of renewable energies.



The Committee will organize three study groups focusing on the following topics:

Leader: Nor Hazleen Madros,
Petronas, Malaysia

1) Success stories and best practices for community engagement. In cooperation with Marketing and Communication Committee

Leader: to be confirmed

2) Identify best practices applied by the O&G industry to address environmental concerns. In cooperation with E&P Committee



Leader: Elbert Huijzer, Liander,
The Netherlands

3) Develop policies and guidelines to position natural gas as enabler of renewable energies. In cooperation with Distribution and Utilization Committees





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Strategy Committee

Chair:

Ulco Vermeulen (Netherlands)

Vice Chair:

Klaus-Dieter Gebhard (Germany)

Secretary:

Jeanet van Dellen (Netherlands)

1st meeting:

Amsterdam, Netherlands September 7-9 (Jt. Meeting with
Marketing and Communications Committee)

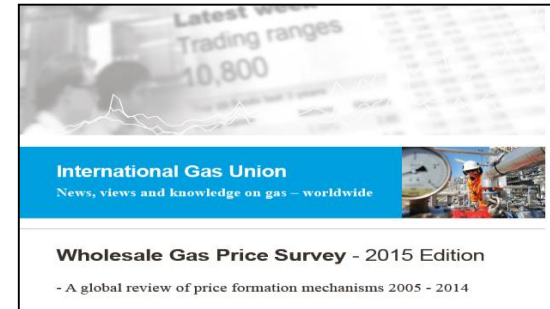
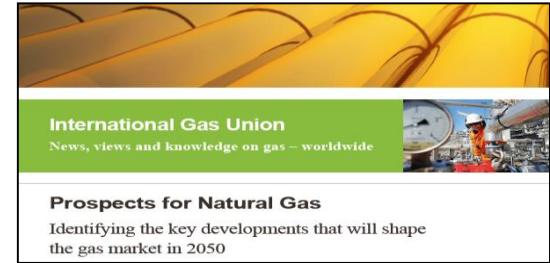
Focus of Strategy Committee

- The committee will focus on issues related to accessing and transporting new gas supplies such as long-term market development, gas pricing policies and best practices in governance and regulation. Of special interest will be gas resource development in the Arctic.
- The Strategy Committee will produce the Wholesale Price Survey—a report that provides an understanding of natural gas pricing mechanisms and worldwide wholesale gas price formation trends in gas traded internationally and for gas produced and consumed in country. The survey covers 65 countries representing 93 percent of world gas consumption.



The Committee will organize three study groups focusing on the following topics:

- 1) Long term Global Gas market study
 - Development of gas demand and supply
- 2) Gas Pricing
 - Annual Wholesale Gas Price Survey
- 3) Best Practices in Governance & Regulation
 - Case studies
 - Analysis of global regulation practices along the gas value chain





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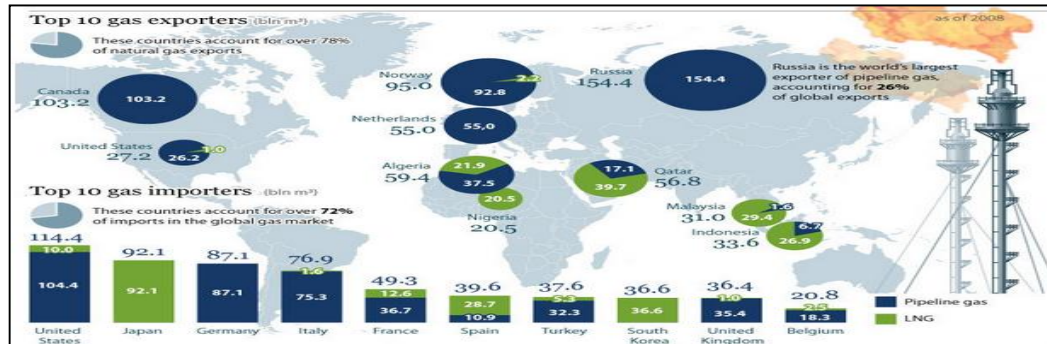
Gas Markets Committee

Chair:	Réda Bouchair (Algeria)
Vice Chair:	Christina Liu Zhaoyan (China)
Secretary:	TBN
1 st Meeting:	Oran, Algeria October 12 - 14

Focus of the Gas Markets Committee



- ❑ Analyze and report how to position natural gas as a primary fuel source in the future global energy mix;
- ❑ Investigate how to overcome the obstacles for expanded gas use in emerging markets;
- ❑ Analyze the security of gas supplies in terms of sources, (LNG, gas pipelines) as compared to other energy sources.



The Committee will organize three study groups on the following topics

The role of gas markets (Demand) for the development of new sources of supply

- Regional analysis of factors needed for the development of gas hubs, particularly in South America and Asia;
- The assessment of competitive position of Asia as LNG market mainly indexed to oil;
- Studying and analyzing the impact of regional prices' divergence on LNG global market, including the extension of Panama Canal ;
- The study of GNL development impact on global markets.

Principally new sources of gas (biogas, methane hydrates) and their impact on global energy

- Assessing and analyzing new gas source reserves and producing areas ;
- Studying the impact of the development of biogas and methane industries on the ecosystems ;
- Identifying the regulatory and institutional frameworks , economic , technical and legal challenges in relation to the development of these new gas sources ;
- Examining the competitive impact of new gas sources on traditional and unconventional fossil energy market, especially natural gas.

Newly emerging gas markets - Latin America, Middle-East and South-East Asia

- Identifying the gas use potential in emerging countries and the growth and development opportunities taking into account the different stages of development for each country ;
- Analyzing gas' competitiveness in these countries with regard to other energy sources, in connection with parameters, such as price, environment, distance ...etc. ;
- Identifying the new issues and challenges in the development of emerging markets and their growth ;
- Examining the potential impact of the development of these markets on the global natural gas market.





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LNG Committee

Chair:	Shuzo Maeda (Japan)
Vice Chair:	Leulmi Agoudjil (Algeria)
Secretary:	Ichiro Baba (Japan)

1st Meeting

Focus of the LNG Committee

The LNG Committee will focus on the activities of the LNG industry in the areas of market trends and technology developments and promote new ideas or viewpoints concerning the expansion of the LNG business.

The Committee work will be done in an LNG market that has seen LNG trade volumes doubling in the last ten years, a US shale revolution dramatically impacting prices and flows, and new supply sources scheduled to enter the market in the near future. 19 countries now export LNG and 29 countries import LNG.

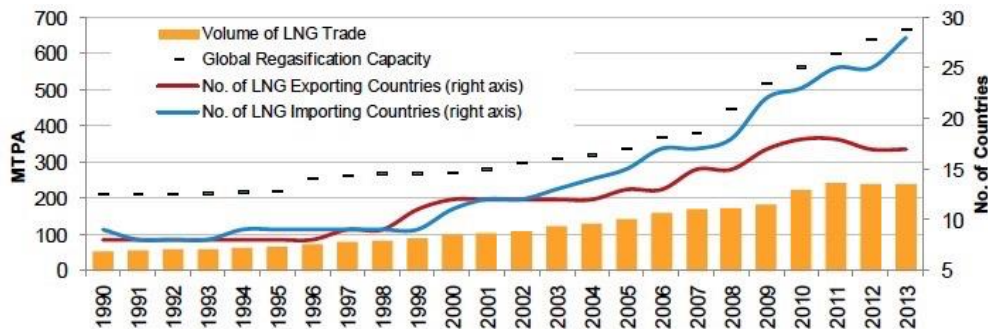
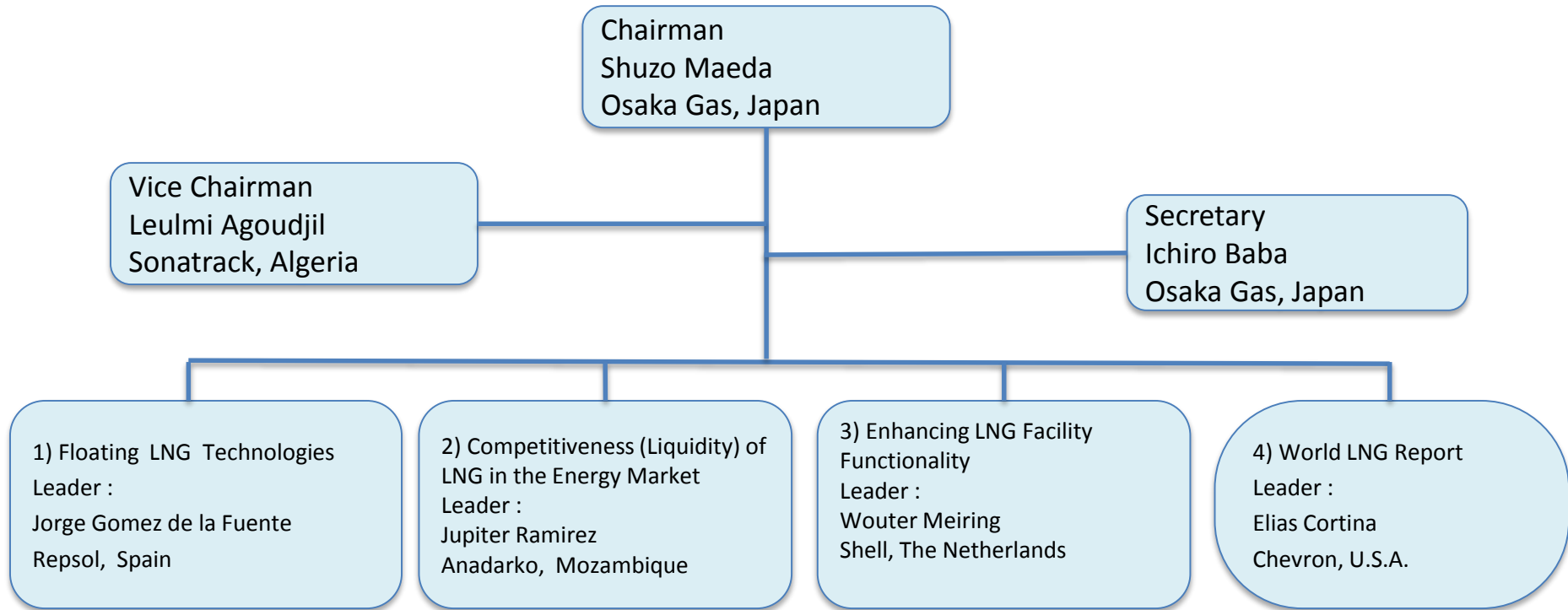


Figure 3.1: LNG Trade Volumes, 1990-2013

Source: IHS, IEA, IGU

The Committee will organize four study groups focusing on the following topics:





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Marketing and Communication Committee

Chair:	Barbara Jinks (Australia)
Vice Chair:	Hansch van der Velden (Netherlands)
Secretary:	Hansch van der Velden (Netherlands)

1st Meeting: Amsterdam, Netherlands September 7-9 (Jt. Meeting with Strategy Committee)

Focus of the Marketing and Communications Committee

The Marketing and Communications Committee will focus on new methods to successfully market gas, including recommendations on potential strategic affiliations, how to reach stakeholders through new conversations, and how new marketing and communication methods can be used.

The Committee will work closely with the Strategic Communications and Outreach Task Force supporting the efforts to establish the IGU as the global voice of gas.

Focus of the Marketing and Communication Committee

A Natural Partnership: Gas and Clean Air

- Examples of where gas has improved quality of life
- Campaigns that have successfully marketed the impact of gas to cleaner air in mega-cities
- Explore potential affiliations with organizations that have an interest in improving life quality through cleaner air

Social License NXT: Building Common Ground Through Conversation

- This group will focus on how the gas industry can improve its public image and acceptance

Successful Gas Marketing- What is Next?

- This group will look at new conversations for the successful marketing of natural gas through the promotion of innovation and the use of social media and new marketing methods





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Research and Development and Innovation Committee

Chair:

Dr. Gerald Linke (Germany)

Vice Chair:

Dr. Hisataka Yakabe

Secretary:

Uwe Klaus (Germany)

Focus of the Research and Development and Innovation Committee

The Research and Development and Innovation Committee will support the 2017 International Gas Research Conference by encouraging input from R&D institutes and researchers and creating and executing the conference program.

The Research and Development Committee will also work closely with the Marketing Committee to advance the higher acceptance of gas through the promotion of technical innovation.

The Committee will promote exchange and collaboration in global natural gas research, technology transfer, and emerging technology and innovation that is occurring across the entire natural gas value chain. The Committee will catalyze the international exchange and improve the “time to market” of new natural gas-based energy concepts and technology solutions.

The Committee will organize three study groups and two sub-task forces

Study Groups

- 1) Research radar- the group will focus on the identification of current R&D topics along the gas chain and will work with all relevant committees including exploration and production, storage, distribution and utilization.
- 2) Supporting natural gas marketing through innovation- this group will select samples of technologies that improve the general acceptance for natural gas as a fuel including:
 - Power to gas and convergence of energy systems
 - Efficiency increases through advanced technologies
 - Gases from renewables (biogas, hydrogen) and carbon management
- 3) Gas driven mobility- this group will examine the potential of natural gas as an across the board transportation fuel with a focus on LNG, hydrogen and hythane.

Sub-Task Forces

- 1) Renewables, CO2 emissions and hydrogen
- 2) Gas quality





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Strategic Communications and Outreach Task Force

Interim Chair: Mel Ydreos (Canada)

Vice Chair: Ieda Gomes (Brazil)

1st Meeting Cartagena Columbia October 2015

Focus of the Strategic Communications and Outreach Task Force

The Strategic Communications and Outreach Task Force will support the IGU leadership in developing a communication and advocacy plan to promote natural gas as a key component of the world's energy mix. The task force will develop a strategic triennium calendar identifying the key events and opportunities for greater and more impactful advocacy and engagement with key strategic partners and decision makers. Deliverables from the task force will include a Global Gas Playbook, development of policy positions on key strategic areas of focus and the development of an annual communication strategy.

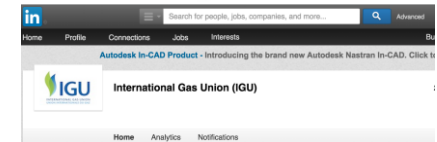
Focus of the Strategic Communications and Outreach Task Force

Strategic Communications and Outreach

- Continue the transformation of the IGU from a member services organization to a global industry advocate.
- Support institutionalizing the global voice of gas.
- Develop a triennium calendar of strategic engagement opportunities and create proactive plans consistent with the overall advocacy strategy
- Develop an integrated and comprehensive influencer and outreach strategy.
- Raise the IGU's profile among key external stakeholders, including the media.
- Increase level of engagement by IGU representatives with media, policy makers and regulators
- Utilize the IGU website and social media channels for sharing and disseminating IGU messaging and content
- Leverage IGU member-generated content



NATURAL GAS, A PARTNER FOR RENEWABLES & ENERGY
Proposed Gas
ENERGY AND DEVELOPMENT BY WORKING TOGETHER
GAS - TOGETHER PROGRESS





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Workforce Development Task Force

Chair: Reham Ahmed Gharib abd El-Hamis (Egypt)

Focus of the Workforce development Task Force

The Workforce Development Task Force will build on the work accomplished by the Human Resources Task Forces that were established under the Malaysian and French Presidencies. The aim of the task force will be to implement many of the recommendations contained in the previous work. The task force will focus on the three areas of attracting new talent to the industry, enhancing the existing workforce and finally assisting in competence transfer to areas seeking to introduce natural gas into their energy mix. The task force will be accountable for developing the Young Professionals program related to the WGC.

Focus of the Workforce Development Task Force

Work Force Development

- Preparing for the Future Workforce
 - Enhancing Energy Education and Career Awareness Best Practices
 - 2018 World Gas Conference Young Professional Program
- Strengthening the Existing Workforce
 - Best Practices for Imbedding a Positive Safety Culture
 - Executive Leadership Safety Summit in 2016/2017
- Preparing the Competence to Serve New Energy Markets
 - Organize Competence transfer seminars in collaboration with strategic partners
 - Develop a Competence Curriculum

