

WORLD GAS CONFERENCE 2009
SPECIAL SESSION ON TWP 2009-2012
9 October 2009, Buenos Aires



- Introduction to the Malaysian Triennium
- Presentation on the Theme, Strategic Guidelines and main highlights of the Triennial Work Programme
- Work Programme of Technical Committees
- Task Forces – Special Projects
- Presentation on the 25th World Gas Conference



2009-2012 Triennial Work Programme

WOC 1 Exploration and Production



Buenos Aires, 9 October 2009



WOC 1 - Exploration and Production

Study Group	Topic
SG 1.1	Recent advances in exploration and production of natural gas e
SG 1.2	Most significant E&P new gas projects



Working Committee 1 – Exploration and Production Study Groups - Topics

Study Group 1.1: Recent Advances in exploration and production of natural gas

Scope and Purpose:

- Follow-up of the update of the existing database compiling both existing UGS and projects
- Collaboration with international organisations such as Gas Storage Europe or United Nations Economic Commission for Europe
- Analysis of the database to draw major trends in UGS developments

Working Committee 1 – Exploration and Production Study Groups - Topics

Study Group 1.2: Most significant E&P new gas projects

Scope and Purpose:

- Definition of best practices among dedicated fields of expertise:
 - Methane emissions
 - Methanol/glycol consumption
 - Gas conditioning
 - Well integrity assessment
 - Checking gas inventory
 - Input data for storage geological models
 - Content of safety and environmental report for permit allocation
- Collaboration with PGC A - Sustainability



WOC 1- Exploration and Production Key Authorities

Chair : Kamel Eddine Chikhi, Algeria



Vice-Chair: Marcio Felix C. Bezerra, Brazil



Secretary: Ilhane Dib, Algeria



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WOC 2 Gas Storage



Buenos Aires, 9 October 2009



WOC 2 - Storage

Study Group	Topic
SG 2.1	Updating and improving UGS Database and promoting it as a reference
SG 2.2	Definition of some best practices in UGS operations and design
SG 2.3	Skills and competencies for UGS activities

Working Committee 2 – Storage Study Groups - Topics

Study Group 2.1: UGS Database

Scope and Purpose:

- Follow-up of the update of the existing database compiling both existing UGS and projects
- Collaboration with international organisations such as Gas Storage Europe or United Nations Economic Commission for Europe
- Analysis of the database to draw major trends in UGS developments

Working Committee 2 - Storage Study Groups - Topics

Study Group 2.2: Best practices in UGS operation and design

Scope and Purpose:

- Definition of best practices among dedicated fields of expertise:
 - Methane emissions
 - Methanol/glycol consumption
 - Gas conditioning
 - Well integrity assessment
 - Checking gas inventory
 - Input data for storage geological models
 - Content of safety and environmental report for permit allocation
- Collaboration with PGC A - Sustainability

Working Committee 2 - Storage Study Groups - Topics

Study Group 2.3: Skills and competencies for UGS activities

Scope and Purpose:

- Description of skills, know-how and profiles of professionals requested
- Assessment of the number of professionals needed
- Review of the most relevant educational programs and degrees
- Organisation of training programmes and student exchanges
- Contribution to the work of Task Force 1 “Building Strategic Human Capital”



WOC 2 - Storage Key Authorities

Chair : H el ene Giouse, France



Vice-Chair: Ladislav Goryl, Slovakia



Secretary: Madeleine Lafon, France



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Working Committee 3 (WOC3)

Gas Transmission



Buenos Aires, 9 October 2009



WOC 3 – Gas Transmission

Study Group	Topic
SG 3.1	Strategic gas transmission infrastructure projects
SG 3.2	Integrity of gas transmission systems and environmental footprint reduction
SG 3.3	Securing sufficient expertise to operate gas transmission systems safely and adequately



Working Committee 3 – Transmission Study Groups - Topics

SG 3.1: Strategic Gas Transmission Infrastructure Projects

Scope and Purpose:

To share lessons learned and practices from strategic gas infrastructure projects and the construction of pipelines under extreme conditions. . These covers:

- Cross border pipeline systems:
 - Inquiry into existing and new planned systems
 - Investigation into experiences of planning, construction and operating .
- Pipelines under extreme conditions:
 - Investigation into experiences, codes applied, practices and problems in constructing pipelines
 - List of do's and don'ts



Working Committee 3 – Transmission Study Group - Topics

SG 3.2: Integrity of Gas Transmission Systems and Environmental Footprint Reduction

Scope and Purpose:

- Undertake Investigation into the most important threats to the integrity of pipelines and obtain more insight into the effectiveness of the threats reducing measures
- Investigate whether the national and international safety and environmental regulations are issued by authorities alone or in close cooperation with gas transmission companies
- Investigate the societal responsibility of gas transmission companies to measure environmental footprint and initiated actions to reduce emissions.

Working Committee 3 – Transmission Study Group - Topics

SG 3.3: Securing Sufficient Expertise to Operate Gas Transmission Systems Safely and Adequately

Scope and Purpose:

Qualified expertise is becoming in short supply for the purpose of operating and maintaining gas transmission systems safely and adequately. This study will examine the following issues:

- How to determine the required expertise level of personnel?
- Other organizational models necessary to provide for this scarcity?
- Do we need other equipment or systems that require less expertise?
- Does ageing of gas transmission systems require more personnel and other expertise?

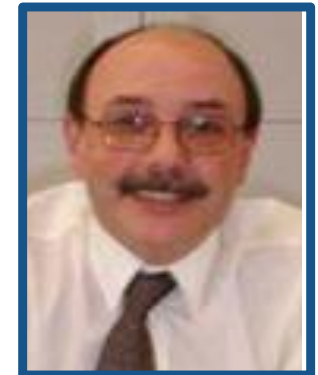


WOC3 - Transmission Key Authorities

Chair : Eric Dam, The Netherlands



Vice-Chair: Jorge Bonetto, Argentina



Secretary: Robert Badoux, The Netherlands



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Working Committee 4 (WOC 4)

Distribution



Buenos Aires, 9 October 2009



WOC4 – Distribution

Study Group	Topic
SG 4.1	Gas Distribution Safety Management Systems
SG 4.2	Smart metering systems: characteristics, technologies, costs
SG 4.3	Unaccounted For Gas: identification, measurement, calculation and management

Working Committee 4 - Distribution Study Groups - Topics

Study Group 4.1: Gas Distribution Safety Management Systems

Scope and Purpose:

This study will review processes and methodologies used to develop safety strategies for managing gas distribution pipeline systems. This covers:

- Evaluation and recommendation in the following areas:
 - Identification of ingredients and milestones of a management system devoted to safety
 - Identification of KPIs related to safety management
 - Definition of a set of units to measure KPIs
 - Influence of regulation and legislation
 - The possibilities and role of certification

- Drawing the basic steps to implement a Safety Management System and a list of main KPIs and relative set of units.

Working Committee 4 - Distribution Study Groups - Topics

Study Group 4.3: Unaccounted For Gas: identification, measurement, calculation and management

Scope and Purpose:

- This study will address the concept of UFG including:
 - Definition of UFG
 - Identification of main components of UFG
 - Definition of a set of units to measure or calculate UFG
 - Review approaches adopted for the management of UFG (technical and commercial)

- The study will design a tool that can be used by distribution companies to approach measurement or calculation of UFG in their distribution networks..

Working Committee 4 - Distribution Study Groups - Topics

Study Group 4.2: Smart metering systems: characteristics, technologies, costs

Scope and Purpose:

- The study will undertake a review of smart metering systems in gas distribution systems including:
 - Identification of operations that can be included in smart metering
 - Review of smart metering technologies and smart index solutions available
 - Identification of best practices
 - Availability and applicability of cost/benefit calculations
 - Added value for distribution operators and/or commodity business
- The study will set a list of operations that can be included in smart metering and draw a basic cost/benefit calculation model to be used by distribution companies to evaluate the opportunity of introducing smart metering systems in their networks.

WOC4 - Distribution Key Authorities

Chair: Alessandro Soresina, Italy



Vice-Chair: Dietmar Spohn, Germany



Secretary: Mario Pelizzoli, Italy



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Working Committee 5 (WOC5)

Gas Utilization



Buenos Aires, 9 October 2009



WOC5 – Gas Utilisation

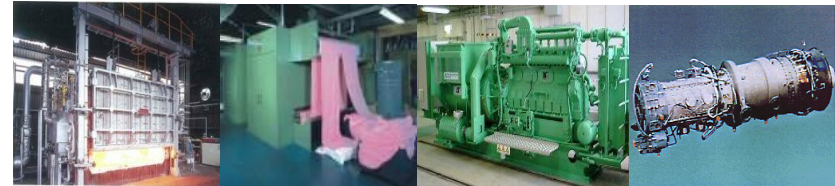
Study Group	Topic
SG 5.1	Industry Utilisation
SG 5.2	Domestic and Commercial Utilisation
SG 5.3	Natural Gas for Vehicles

Working Committee 5 – Utilization Study Groups - Topics

Study Group 5.1: Industry Utilization

Scope and Purpose:

- Significant energy saving by natural gas (case study)
- Harmonizing biogas and natural gas for the benefit of customers and gas industries.
 - **Continue the investigation of the biogas utilization by industrial customers**
- Investigating new technologies to promote gas sales.
 - **Gas cooling for process and flame- less combustion technology etc.**
- Integrating information of successful CHP by Industrial customers.
- Impact of quality variation on gas utilization
- Methods to control calorific variation at the customers



Working Committee 5 – Utilization Study Groups - Topics

Study Group 5.2: Domestic & Commercial Utilization

Scope and Purpose:

- Investigating DG Micro co-generation, opportunities and challenges
- Investigating new innovative appliances
 - **Future residential units providing pleasant living environment and eco-friendly lifestyles**
- Realizing harmonious coexistence of gas with renewables;
 - **Solar heat, solar power, geo thermal heat pump etc**
- Building up appliance data base
- Impact of gas quality variation on utilisation
- Survey on home fuelling appliances for NGV
- Efficiency indicators
- Energy service - value added services for retaining customers



Working Committee 5 – Utilization Study Groups - Topics

Study Group 5.3: NGV

Scope and Purpose:

- Monitoring and analysis of world, regional and local NGV markets
 - **Statistics, economics, technology, legislation etc. – update of existing databases – continuous work**
- Best practice on CNG refueling stations
 - **Experiences of a CNG refueling stations. Possible construction strategies and modular approaches for good case studies**
 - **Government and industrial applications.**
 - **Technical issues for successful fuelling business**
 - **Gas quality / composition**
- To investigate impact of bio methane on NGV
 - **Green gas principle and technology**
- NGV related technologies enhancing efficiency
- NGV for large fleets: its economic interest and incentive

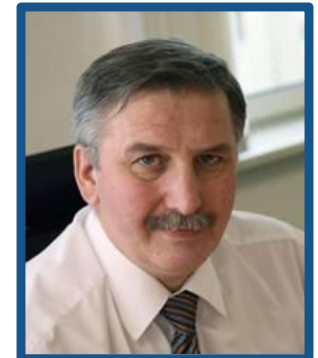


WOC5 - Utilization Key Authorities

Chair : Tatsuo Kume (Japan)



Vice-Chair : Eugene Pronin (Russia)



Secretary : Ichiro Baba (Japan)



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2009-2012 Triennial Work Programme

Programme Committee A (PGC-A)

Sustainability



Buenos Aires, 9 October 2009



PGC-A Sustainability

Study Group	Topic
SG A.1	Sustainability & Investment
SG A.2	Integrating other gases into the natural gas industry
SG A.3	Reduction of gas emissions



Programme Committee A - Sustainability Study Groups - Topics

Study Group A.1: Sustainability and investment

Scope and Purpose:

Three subtopics will be undertaken, namely:

1. The role of natural gas in a hydricity model - opinions will be gathered from experts about the viability of this model, and the role of natural gas as a transition fuel will be analysed and to design a model consolidate.
2. Natural gas and renewable energy policies and tools to boost economic growth - to present the best hybrid solutions between renewable energies and natural gas.
3. Carbon capture and storage (CCS) – the technology and economics - to study the state of development of CCS technology and analyse the implications to the gas industry.



Programme Committee A - Sustainability Study Groups - Topics

Study Group A.2: Integrating other gases into the natural gas industry

Scope and Purpose:

- To define the conditions required for the incorporation of biogases and unconventional gases into the transmission, distribution and utilization systems.
- To identify and distribute information regarding the best available technologies to produce biogas and the most efficient processes to generate synthetic gases.



Programme Committee A - Sustainability Study Groups - Topics

Study Group A.3: Reduction of gas emissions (A comprehensive industry guide)

Scope and Purpose:

- To capture the best practices in the gas chain and to develop a comprehensive industry guide to reduce gas emission that allows decrease in the gas emissions in each process and the environmental impact of each activity.



PGC – A Sustainability Key Authorities

Chair :

Juan Puertas, Spain



Vice-Chair:

Satoshi Yoshida, Japan



Secretary:

Naiara Ortiz de Mendíbil, Spain



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2009-2012 Triennial Work Programme

Program Committee B (PGC B) Strategy



Buenos Aires, 9 October 2009



PGC-B Strategy

Study Group	Topic
SG B.1	World gas supply, demand and trade
SG B.2	Wholesale gas price formation
SG B.3	Corporate strategy and regulation

Programme Committee B - Strategy Study Groups - Topics

Study Group B.1 – World Gas Supply, Demand and Trade

Scope and Purpose:

- Analyse regional gas supply, demand & trade, 2000-2030
- Explore drivers and develop scenarios (e.g. low CO₂ case)
- Identify government policies & corporate strategies for
 - Indigenous gas supply
 - Local market development
 - International trade
- Investigate establishing an IGU global gas model to 2050
- Work in close contact with IEA & other forecasting entities

Programme Committee B - Strategy Study Groups - Topics

Study Group B.2 – Wholesale gas price formation

Scope and Purpose:

- Analyse impact of globalisation on gas price convergence
- Investigate the political considerations of affordability as well as trading concepts of price elasticity and volatility
- Examine the impact of a CO₂ tax or cap-and-trade policies on gas price formation
- Develop regional pricing models for indigenous & international gas, (is gas just another commodity?)
- Continue the IGU global survey of wholesale gas prices

Programme Committee B - Strategy Study Groups - Topics

Study Group B.3 – Corporate Strategies and Regulation

Scope and Purpose:

- Review & share industry experiences over the last 10 years
 - Regulatory risk mitigation
 - Developing new commercial opportunities
- Identify economic effects of regulation on gas assets
- Explore industry and government responses to globalisation
- Analyse cases studies on responses to technical, commercial and regulatory change, and identify future key issues.
- How should companies along the gas chain respond in a changing business environment?



PGC – B Strategy Key Authorities

Chair:

Colin Lyle, UK



Vice-Chair:

Fethi Arabi, Algeria



Secretary:

Harry Whitaker, UK



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Program Committee C (PGC C) Gas Markets



Buenos Aires, 9 October 2009



PGC-C Gas Markets

Study Group	Topic
SG C.1	Gas markets in ASEAN and North-East Asia
SG C.2	Gas Markets in North America
SG C.3	Gas Markets in Europe and Russia



Programme Committee C Study Groups - Topics

Study Group C1: Gas markets in Southeast and Northeast Asia

Purpose

Review and analyse security of supply, identify local gas market drivers and explore additional supply from non-conventional sources.

Scope

- Assess security, reliability, and sustainability of gas supply and consolidating gas demand for the region.
- Identify emerging issues and challenges in developing and growing gas markets and potential LNG imports within the region.
- Identify opportunities to further develop and grow gas markets. Demand centres are away from supply sources. Long term availability depends on upstream development and downstream infrastructure.
- Identify investments/funding throughout the gas chain





Programme Committee C Study Groups - Topics

Study Group C.2 : Gas Markets in North America

Purpose

Investigate key drivers and practical issues related to the development of markets based on supplies from alternative sources such as CBM, tight gas sands and shale gas.



Scope

- Examine alternative gas supplies, identifying legal, technical and economic challenges faced by the largest and most price responsive gas markets in the world
- Examine shale gas as a vast resource that has become economic
- Identify emerging issues and challenges in growing gas markets such as
- Identify opportunities to further develop, grow and integrate the North American gas markets.



Programme Committee C Study Groups - Topics

Study Group C.3 : Gas Markets in Europe and Russia

Purpose

Identify and analyse gas markets in Europe and Russia with emphasis on energy security. List and address key market drivers, emerging issues and challenges.



Scope

- Assess the supply–demand balance in key parts of the region, where demand centres are not in the proximity of reserves;
- Identify emerging issues and challenges in developing and growing gas markets;
- Identify opportunities to further develop and grow gas markets taking into account that the countries are at different levels of economic development;
- Study investment, climate and funding needed to monetise gas fields and to build infrastructure across several nations to deliver gas to the downstream markets.



PGC-C Gas Markets Key Authorities

Chair: João Batista de Toledo, Brazil



Vice-Chair: Gi-Chul Jung, Korea



Secretary: Marcos de Freitas Sugaya, Brazil



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2009-2012 Triennial Work Programme

Program Committee D (PGC D) Liquefied Natural Gas



Buenos Aires, 9 October 2009



PGC-D LNG

Study Group	Topic
SG D.1	Enhance Terminal Compatibility
SG D.2	Penetrate New Markets for LNG
SG D.3	Enhance Efficiency in the LNG Value Chain



Programme Committee D - LNG Study Groups - Topics

Study Group D.1 - Enhance terminal compatibility

Scope and Purpose

- Gather information on existing loading and receiving terminals' compatibility with various ship sizes and configurations
- Develop recommendations to enhance compatibility between the full range of LNG ships and loading and receiving terminal facilities



Programme Committee D - LNG Study Groups - Topics

Study Group D.2 - Penetrate New Markets for LNG

Scope and Purpose

- Review and study new market entrants to identify market entry factors
- Apply new market entry lessons learned to new potential markets and develop creative solutions to bring LNG to markets and eliminate barriers of entry

Programme Committee D - LNG Study Groups - Topics

Study Group D.3 - Enhance Efficiency in the LNG Value Chain

Scope and Purpose

- Review and study alternative LNG project solutions to satisfy unique locations, environmental & public requirements.
- Review further efficiency enhancement to existing LNG operating facilities.
- Look for areas to enhance efficiencies through innovative solutions.



PGC-D LNG Key Authorities

Chair: Alaa Abu Jbara, Qatar



Vice-Chair: Dirk A van Slooten, the Netherlands



Secretary: Abdullah Ahmad Al-Husaini
Qatar



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2009-2012 Triennial Work Programme

Program Committee E (PGC E)

Marketing



Buenos Aires, 9 October 2009



PGC-E Marketing

Study Group	Topic
SG E.1	Natural Gas and Renewables
SG E.2	Marketing Campaigns
SG E.3	Image of Natural Gas



Programme Committee E - Marketing Study Groups - Topics

Study Group E.1 - Natural Gas and Renewables

Scope and Purpose

- Position of natural gas in combination with renewables
 - With solar
 - With wind
 - With biogas
 - With ambient heat

- Case studies focusing on marketing strategies



Programme Committee E - Marketing Study Groups - Topics

Study Group E.2 - Marketing Campaigns

Scope and Purpose

- Scan existing marketing strategies of natural gas across different sectors
- Optimize the value of natural gas within the sectors
- Analyze marketing campaigns and their key factors of success and pitfalls and possible failures



Programme Committee E - Marketing Study Groups - Topics

Study Group E.3 - Image of Natural Gas

Scope and Purpose

- Analyze of the positive and negative perception of natural gas
- Develop guidelines for improving the image of natural gas



PGC-E Marketing Key Authorities

Chair: Marc Hall, Germany



Vice-Chair: Roland Mett, Spain



Secretary: Barbara Schmid, Germany



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AGENDA



- Introduction to the Malaysian Triennium
- Presentation on the Theme, Strategic Guidelines and main highlights of the Triennial Work Programme
- Work Programme of Technical Committees
- Task Forces – Special Projects
- Presentation on the 25th World Gas Conference



2009-2012 Triennial Work Programme

Task Force 1

Building Strategic Human Capital

Buenos Aires, 9 October 2009



Task Force 1 – Building Strategic Human Capital

Objectives

- To understand the key issues impacting the attraction and retention of talent in the gas industry
- To develop a strategic approach to human capacity building.
- To share best practices on talent development and retention across the value chain



Task Force 1 – Building Strategic Human Capital

Scope

- Map critical talent and human resources necessary to deliver projects and business across the gas value chain
- Identify gaps and key human resource issues impacting the gas industry, particularly in recruitment and capability development
- Analyse the factors contributing to the shortages of manpower
- Assess the impact of the economic downturn in recruiting, development and retaining talent
- Compile best practices across the value chain segments and regions
- Assess the role of governments, industry associations, universities and private companies



Task Force 1 – Building Strategic Human Capital

Deliverables

- Worldwide Survey & Database
- Regional Workshops
- Articles for IGU magazine
- Compilation of Best Practices across the value chain
- Triennium Report 2012
- Strategic Roundtable during WGC2012



Task Force 1 – Building Strategic Human Capital Key Authorities

Chair : Ieda Gomes, United Kingdom



Vice-Chair: Rod Kenyon, United Kingdom



Secretary: Manu Kohli, India





2009-2012 Triennial Work Programme

Task Force 2

Nurturing the Future Generations

Buenos Aires, 9 October 2009



Task Force 2 – Nurturing the Future Generations

Objectives

- To develop a comprehensive approach on ***nurturing future generations'*** inclination towards the gas industry
 - The approach would include a study on best practices and factors that could stimulate the younger* generations interest towards science, technology, engineering, and mathematics (STEM) disciplines that will eventually lead them to the gas industry.
- To design and implement specific programmes to address Youths during the 2009-2012 triennium and at the 25th WGC
- To ensure that the gas industry will have deep talent pipelines to achieve the industry' objectives



Task Force 2 – Nurturing the Future Generations

Scope

- Examine and identify the factors that can stimulate young generations' interest and inclination towards Science, Technology, Engineering and Mathematics (STEM) and a full review of best practices adopted by the industry, government bodies and institutions of higher learning
- Develop a '**Generational Strategy Blueprint**' with ideas and proposals to industry players on how to attract and inspire young talents towards a career inclination in the O&G industry that can be suitably adopted by the gas industry
- Design and implement specific programmes for the Youths during the triennium and 25th WGC such as Youth forum, career talks, interactive cyber space programmes, and others to be determined by the Task Force 2 members
- Participation of young generation at the 25th WGC (2012) as an inaugural event



Task Force 2 – Nurturing the Future Generations

Deliverables

- A comprehensive **Report/Study** that will highlight best practices adopted by the academic institutions, government bodies, the industry and companies worldwide in their effort to stimulate the younger generations interest towards science, technology, engineering, and mathematics (STEM) disciplines as well as provide ideas and **recommendations** to the gas industry on how to attract and inspire young talents towards a career inclination in the O&G industry.
- Specific programmes and activities for the Youths during the triennium
- On-site event for Youths at the 25th WGC (2012) (*eg science and technology carnival, talks by industry experts to enhance Youths' understanding of the gas industry*)



Task Force 2 – Nurturing the Future Generations Key Authorities

Chair : Soh Mey Lee, Malaysia



Vice-Chair: Agnes Grimont, France



Secretary: Jasmin Ramli, Malaysia



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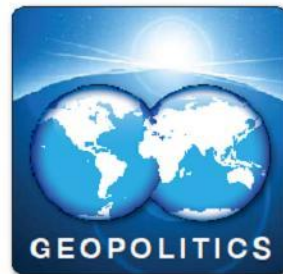


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2009-2012 Triennial Work Programme

Task Force 3

Geopolitics of Natural Gas



Buenos Aires, 9 October 2009

Task Force 3 – Geopolitics of Natural Gas

Objectives

- **Examine the interplay between economic and political factors in the development of Natural Gas resources**
- **Analyse the main political challenges, mega-trends, issues and consequences that may shape a future natural gas-intensive world.**
- **Engage the international stakeholder community in a dialogue aimed at:**
 - creating greater awareness of the potential hurdles to a growing international gas market, and
 - fostering co-operation between the industry and policy makers in producer and consuming countries
- **Distil potential recommendations for further advancement of cooperation between key stakeholders, for review at WGC 2012 Round Table**



Task Force 3 – Geopolitics of Natural Gas

Scope

- **Description of current landscape for governments, institutions and fora involved in gas policy development, and their interfaces.**
- **Analysis of degree of consistency on views of the value and potential of natural gas as the bridging fuel to sustainability**
 - Natural gas industry compared to national and regional energy policy influencers
- **Examination of key drivers affecting the development of natural gas resources**
 - Primary focus on the interplay between economics and politics
 - Within a ‘global energy security’ context



Task Force 3 – Geopolitics of Natural Gas

Scope

- **Examination and analysis to include:**
 - Regional geopolitics and unique features of different regions
 - Future gas business models and their implications
 - Development perspectives, including major regional markets of gas distribution and LNG
 - The role of renewables, clean coal and nuclear energy
 - Challenges for the future and potential pitfalls
 - Interdependency and transparency – Resource nationalism and market nationalism
 - International gas trade- Challenges and opportunities
 - Historical Case Studies and lessons learned for the future
 - Future threats, including terrorism
 - Gas cartels – Will they work?



Task Force 3 – Geopolitics of Natural Gas

Deliverables

- **During the next Triennium:**
 - 3-4 Regional Forums
- **Shortly before the 2012 World Gas Conference:**
 - Overall Report - Development trends, issues and challenges
 - Separate Regional Reports – 3-4 Regions (specific issues and alternative scenarios)
- **At the 2012 World Gas Conference:**
 - Strategic Round-table



Task Force 3 – Geopolitics of Natural Gas Key Authorities

Chair : Mel Ydreos, Canada



Vice-Chair: Geert Greving, Netherlands



Secretary: Jeff Okrucky, Canada



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CONCLUSION

25th World Gas Conference

**GAS:
SUSTAINING
FUTURE GLOBAL
GROWTH**

ROLE OF GAS

PGC A, B, C, D, E

**SUPPLY
WOC 1, 2,
3, 4**

**DEMAND
WOC5,
PGC-C, E**

HUMAN RESOURCE

TF 1, 2

Global
warming

**PGC-A,
Special WG**

Geo-
politics

TF 3

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&
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