



International Gas Union



2006 - 2009 Triennial Work Programme

The Global Energy Challenge: Reviewing the Strategies for Natural Gas



24th World Gas Conference
ARGENTINA | 2009

Buenos Aires, 5-9 October 2009

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I. Introduction



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Foreword from the IGU President

IGU is entering the last quarter on the way to complete its first century of existence.

Since its creation, IGU lived through the most diverse and contrasting world scenarios, and the global energy has always displayed a close reflection of these times. During the last decade, world analysts have agreed to call our age as the times of change, in truth, of permanent change, and again we find this reflected in the energy picture, and particularly in the global industry of natural gas.

In these lines, it is the purpose of IGU to contribute to a sharper insight on the new key energy and natural gas industry challenges, involving every representative stakeholder in this process, including governments and policy-makers.

Indeed, the changes referred to also trigger the conception of new rules to regulate our industry. This turns IGU's role as the most effective and influential spokesman evermore crucial, enhancing the quality of the dialogue between the regulatory bodies and the industry players. The final outcome should be a proper investment climate to ensure that the end consumer will receive a sustainable service with a consistent quality and competitiveness.

In this way IGU will continue to increase the value provided to its members, promoting a constructive exchange of know-how and information, and delivering reliable reference tools for decision-makers.

For the more immediate deliberations, IGU will also continue to promote the identification of best practices, persist in supporting the studies on R&D, and encourage the utilisation of new technologies oriented to improve the industry's performance in terms of competitiveness, environmental impact, and operational standards, particularly those related to safety and reliability. The scope will also include those practices associated to rational and responsible use of natural gas, establishing sensible parameters of utilisation.

Finally, the vigorous regional market developments have proved to be one of the strongest growing vectors of the gas business. However, it is clear that these have also encountered hurdles of differing nature: geopolitical, legal, regulatory and technical. IGU plans to address these issues directly during this triennium, with the purpose of supporting these developments, which we consider a source of regional growth and economic progress.

These are the driving ideas behind the decision of choosing the theme which we consider most representative of the work and efforts for the 2006-2009 triennium: *The Global Energy Challenge: Reviewing the Strategies for Natural Gas*.

We are living in times of change, and IGU reflects these changes in its own way. For the first time a triennium will be under the presidency of a Latin American country, a road that will end with the gas conference taking place in the Southern hemisphere, also for the first time.

This is a great honour bestowed on the Argentine gas industry, which we have assumed with commitment and responsibility.

Our Dutch predecessors have raised IGU standards of excellence one notch higher during this triennium and I am confident that - with the support of the whole membership of IGU, particularly through the manpower and input that we hope to receive in the technical working groups - we will be able to maintain these standards.

I am convinced that in the 2006-2009 triennium we will successfully address the major underlying issues of our industry, with the objective that we may all face the future, a future of change, in a better way.

Ernesto López Anadón
IGU President



Foreword from the IGU Coordination Committee Chairman

The 2006-2009 Triennial Work Programme (TWP) is based on the following *Strategic Guidelines*:

- 1. *The Global Energy Challenge: Reviewing the Strategies for Natural Gas towards 2030***
- 2. *Contribution of the Natural Gas Industry, in terms of Security of Supply, Safety and Environment***
- 3. *Regional Gas Market Integration, as a Key Driver for Sustainable Economic Growth***

The intent of these principles is to provide a framework for a technical programme in which the outputs display an adequate balance between the long-term strategic and policy issues, and the short and medium-term ones dealing with market and operational considerations.

Indeed, and as explained by the *2006-2009 Strategic Guidelines* that are presented below, the natural gas industry has to work simultaneously on a wide range of issues which will cause diverse effects along the timeline. These will have an impact on the industry itself, as well as on its relationship with the global society it services.

The dynamic world energy scenario has enhanced the need of IGU's role as spokesman expressed in the *Vision*, and its duties to develop and exchange knowledge, detailed in the *Mission*. It is our goal that this TWP effectively achieves these objectives for the 2006-2009 triennium.

The Work Programme for the 2006-2009 Triennium

We invite you to read the scope and objectives of the work of the committees for the triennium, detailed further along this document. These are the result of a highly constructive discussion with the outgoing committee authorities, coupled with the input that the new chairpersons gathered from their committee members, who voice the interests of organisations from diverse countries and regions.

We would like to acknowledge the continuous support received from the former Dutch authorities, with whom we have maintained a valuable exchange to ensure the necessary consistency and continuity between our works, with the objective of maximising the value of the output for IGU's membership.

In the *Introduction*, in the next chapter, we have detailed that the work will be divided into nine committees and two task forces who focus on a specific scope of the gas industry.

However, as can be expected, there is a considerable linkage between these, and we intend to structure the work process in ways to optimise this situation, continuing with the initiative established during the past triennium.

In a similar way, we intend to foster a productive exchange with other international organisations, such as the World Petroleum Council (WPC), the World Energy Council (WEC), the LNG Conferences (of which IGU is a major sponsor), the World Energy Forum on Regulation, the International Energy Agency (IEA), and several environmental entities.

In these lines, the cooperative studies with the International Association for Natural Gas Vehicles (IANGV) pose a clear example of what can be achieved from this. Natural gas utilisation for the vehicle segment has shown a robust growth, compelled by economic and environmental reasons, which result from policy definitions. IGU holds a vice-chair seat of the IANGV and is directly involved with the follow-up and promotion studies of this developing market, while Working Committee 5 (WOC5 – Utilisation of Gas) complements these with its own reviews and analysis.

New Responsibilities for IGU

During the past triennium, two gas-related organisations have been included within the auspices of IGU: the *International Gas Research Conference (IGRC)*, and *Intergas Marketing (IGM)*. Following this new development, these have now been renamed as the *IGU Research Conference* and *IGU Gas Marketing* respectively, though their acronyms remain unaltered.

During this triennium, IGM will be revising its statutes to establish the new way in which it will structure the organisation and future activities, but it remains clear that it will function as a “marketing arm” of IGU, focusing its studies on the issues surrounding market applications, for a wider and improved utilisation of natural gas. In these lines, we envisage a strong interaction with WOC5. Although IGM’s working programme will still be under development at the start of the 2006-2009 triennium, the overall theme will be: “*What does the market demand from the gas industry?*”

With regards to IGRC, it is already fully operational under its new organisational structure, and on its way to define the scope of work that will lead to the IGRC 2008, which will take place in Paris, in October of that year. The Task Force on Research and Development, which will continue operating under the Coordination Committee during this triennium, will act as the focal point between IGRC and IGU, to ensure a productive synergy between the studies to be conducted.

Conclusion

Like all vigorous organisations, IGU has changed to adapt to the times.

It is our ambition that the deliverables are also in line with the new interests of the stakeholders of the gas industry, providing reliable decision-tools and solid criteria for short and longer term considerations.

This is a challenge of considerable proportion, given the dynamic environment of the current energy business, but we are convinced that we have the human resources dispersed around the globe, with enough information, talent and commitment to step up to it, and strengthen further IGU's position as the recognised world reference and spokesman in natural gas.

Roberto Brandt
IGU Coordination Committee Chairman



Foreword from the IGU Secretary General

The International Gas Union (IGU) was founded in 1931 as a global, non-governmental and non-profit organisation registered in Switzerland and with the Secretariat currently located in Scandinavia.

IGU has the Vision that since natural gas has an important part to play in satisfying the global need for an environment-friendly energy source the Union will be the most influential, effective and independent organisation, serving as the spokesman for the gas industry world wide.

IGU will in other words directly and through its members promote the technical and economic progress of the global gas industry.

The Triennial Work Programme (TWP) for 2006-2009, which you are now holding, is in that context an important document, because it is establishing the framework for the work of the Union in the coming period and it is specifying the topics within that framework, which will be studied with the aim of getting IGU closer to its *Vision* and produce results, which are of interest to and beneficial for its members.

More than 500 leaders and specialists from the currently 93 members from 68 countries around the world are participating in these efforts.

A list of the Charter and Associate members is indicated below, followed by the Organisation Chart of IGU.

The Council is the main ruling body, meeting once a year, *the Executive Committee and the IGU Management Team, headed by the Presidency and the Secretary General*, govern IGU in accordance with the directives from the Council and within the Vision, Mission and Objectives of the Union.

The work in *the Working Committees and the Programme Committees*, as described in this Triennial Work Programme for 2006-2009, is managed and coordinated by *the Coordination Committee (CC)*.

Thus, the IGU Committees refer to the Coordination Committee, which in turn will coordinate with the Secretary General in matters of principle, of general policy or in issues of special importance to the Union.

The result of the work in the IGU Committees will be passed on to members, and in specific cases be published in accordance with the IGU publication policy.

However, the main results of the work in IGU in this Triennium will be presented at the World Gas Conference, which IGU convenes every three years.

The next World Gas Conference will, for the first time in the 75-year history of IGU, take place in South America, more precisely in Buenos Aires, Argentina, in the beginning of October 2009.

IGU is promoting Gas in many different ways. If you want to know more about that or about IGU in general I invite you to visit our web site at www.igu.org

But right now I suggest you spend a few minutes reviewing this booklet with the work programme for the coming years, which gives you a good idea of what IGU is all about.

Peter K. Storm
IGU Secretary General

List of Countries (IGU Charter Members)

(as at August 2006)

1. Algeria (Association Algérienne de l'Industrie du Gaz (AIG))
2. Argentina (Instituto Argentino del Petróleo & del Gas)
3. Australia (Australian Gas Industry Trust c/o Energy Networks Association)
4. Austria (Österreichische Vereinigung für das Gas- und Wasserfach (ÖVGW))
5. Bangladesh (Petrobangla - Bangladesh Oil, Gas & Mineral Corporation)
6. Belarus, Republic of (Beltransgas)
7. Belgium (Association Royale des Gaziers Belges)
8. Bolivia (Camara Boliviana de Hidrocarburos)
9. Bosnia and Herzegovina (Gas Association of Bosnia and Herzegovina)
10. Brazil (Associação Brasileira das Empresas Distribuidoras de Gás Canalizado (ABEGAS))
11. Brunei (Brunei LNG Sendirian Berhad)
12. Cameroon (Société Nationale des Hydrocarbures)
13. Canada (Canadian Gas Association)
14. China, People's Rep. of (China City Gas Society)
15. Croatia (Croatian Gas Association c/o INA Naftalin)
16. Czech Republic (Czech Gas Association)
17. Denmark (Dansk Gas Forening - Danish Gas Association)
18. Egypt (Egyptian Gas Association)
19. Estonia - (Estonian Gas Association)
20. Eurogas
21. Finland (The Finnish Natural Gas Association)
22. France (Association Française du Gaz (AFG))
23. Germany, Fed. Rep. of (Deutsche Vereinigung des Gas- und Wasserfaches e.V. (DVGW))
24. Greece (Public Gas Corporation of Greece S.A. (DEPA))
25. Hong Kong, China (The Hong Kong & China Gas Co. Ltd.)
26. Hungary (Association of Gas Distribution Companies)
27. India (Gas Authority of India Ltd. (GAIL))
28. Indonesia (Indonesian Gas Association (IGA))
29. Iran (National Iranian Gas Company (NIGC))
30. Ireland (Irish Gas Association - Bord Gais Eireann)
31. Israel (The Israel Institute of Petroleum & Energy)
32. Italy (Comitato Italiano Gas (CIG))
33. Japan (The Japan Gas Association)
34. Kazakhstan (KazTransGas)
35. Korea, Rep. of (The Korea Gas Union)
36. Latvia (Latvijas Gaze)
37. Lithuania (Lithuanian Gas Association)
38. Malaysia (Malaysian Gas Association - c/o Petronas)
39. Monaco (Société Monégasque de l'Électricité et du Gaz (SMEG))
40. Netherlands, The (Koninklijke Vereniging van Gasfabrikanten in Nederland KVGN))
41. Nigeria (Nigerian Gas Association c/o Nigerian LNG Ltd.)
42. Norway (Norwegian Petroleum Society - Norwegian Gas Association)
43. Oman, Sultanate of (Oman LNG L.L.G.)
44. Pakistan (Petroleum Institute of Pakistan)
45. Perú (Perupetro)

46. Poland (Polskie Zrzeszenie Inżynierów I Techników Sanitarnych (PZITS))
47. Portugal (GDP - Gás de Portugal, SGPS, SA)
48. Qatar (Qatar Liquefied Gas Company Ltd. (Qatargas))
49. Russian, Fed. (JSC Gazprom)
50. Saudi Arabia (Saudi Aramco - Development Department)
51. Serbia and Montenegro (Gas Association of Serbia and Montenegro)
52. Singapore (Power Gas Ltd.)
53. Slovak Republic (Slovak Gas and Oil Association)
54. Slovenia (GEOPLIN)
55. South Africa (CEF Ltd.)
56. Spain (Spanish Gas Association - Asociación Española del Gas (SEDIGAS))
57. Sweden (Svenska Gasföreningen - Swedish Gas Association)
58. Switzerland (Société Suisse de l'Industrie du Gaz et des Eaux)
59. Taiwan, China (The Gas Association of the Republic of China, Taipei)
60. Thailand (PTT Public Company Ltd. - Petroleum Authority of Thailand)
61. Trinidad and Tobago (The National Gas Company of Trinidad and Tobago Limited)
62. Tunisia (Association Tunisienne du Pétrole & du Gaz (ATPG) c/o ETAP)
63. Turkey (BOTAS)
64. Ukraine (Ukrainian Oil and Gas Academy/Naftogaz of Ukraine)
65. United Arab Emirates (Abu Dhabi Liquefaction Company Ltd. (ADGAS))
66. United Kingdom (The Institution of Gas Engineers and Managers)
67. USA (American Gas Association)
68. Venezuela (Petróleos de Venezuela S.A. (PDVSA))

List of IGU Associate Members

(as at August 2006)

1. BP Gas, Power & Renewables (United Kingdom)
2. Bursagaz (Turkey)
3. Cheniere Energy, Inc. (USA)
4. Chevron Corp. (USA)
5. ConocoPhillips Company (USA)
6. E.ON Ruhrgas AG (Germany)
7. Gaz de France (France)
8. IGDAS - Istanbul Gas Distribution Co. (Turkey)
9. Indian Oil Corporation Ltd.
10. Instituto Brasileiro Petróleo e Gás (Brazil)
11. Izgaz - Izmir Gaz Dgitim San. Ve Tic. (Turkey)
12. A.S.Naturgas Fyn A/S (Denmark)
13. NV Nederlandse Gasunie (the Netherlands)
14. NV NUON Asset Management (the Netherlands)
15. Petrochina (P.R. China)
16. Petróleo Brasileiro S.A. - Petrobras (Brazil)
17. Russian Gas Society (Russia)
18. RWE Gas AG/ RWE Energy (Germany)
19. Shell Gas & Power International B.V. (the Netherlands)
20. S.N.G.N. Romgaz S.A. (Romania)
21. Suez S.A. (Belgium)
22. TBG - Transportadora Brasileira Gasoduto Bolivia-Brasil S/A (Brazil)
23. TOTAL S.A. (France)
24. Union Fenosa Gas (Spain)
25. Union of Independent Gas Producers (Russia)



IGU COUNCIL



PRESIDENT



Mr. Ernesto A. López Anadón
Argentina

IGU MANAGEMENT TEAM

President, Vice President,
Immediate Past President,
CC Chairman, CC Vice Chairman,
Secretary General

EXECUTIVE COMMITTEE

SECRETARY GENERAL



Mr. Peter K. Storm
Denmark

COORDINATION COMMITTEE

IGU SECRETARIAT



Chairman:
Mr. Roberto D. Brandt
Argentina

Vice Chairman:
Mr. Ho Sook Wah
Malaysia



Mr. Petter Nore
Deputy Secretary General,
Norway



Mrs. Lotta Hällén-Kragh
IGU Webmaster

PGC C Developing Gas Markets



Chairman:
Dr. Mohd. Farid b. Mohd Amin
Malaysia



Vice Chairman:
Mr. Luis Carlos Lemos de Costamilan
Brazil

PGC D LNG



Chairman:
Mr. Seiichi Uchino
Japan



Vice Chairman:
Mr. Alaa Abujbara
Qatar

OUTGOING Programme Committees of the IGU

WOC 4 Distribution of Gas



Chairman:
Mr. Jeremy Bending
United Kingdom



Vice Chairman:
Mr. Alessandro Soresina
Italy

WOC 5 Utilisation of Gas



Chairman:
Mr. Jean Schweitzer
Denmark



Vice-Chairman:
Mr. Tatsuo Kume
Japan

GAS CHAIN Working Committees (WC of the IGU)

IANGV/ENGVA
IGRC Foundation
GERG
Marcogaz
GIE (Gas Infrastructure Europe)
PRCI (Pipeline Research Council International)



Datuk Abdul Rahim HJ Hashim
Malaysia

SPECIAL IGU ENTITIES

TASK FORCE R&D



Chairman:
Mr. Marc Florette
France

TASK FORCE Gas Market Integration



Chairman:
Mr. Jorge Doumanian
Argentina

IGU RESEARCH CONFERENCE (IGRC)

IGU MARKETING COMMITTEE (IGM)

President 2003 till June 2006



Mr. George H.B. Verberg
The Netherlands

CC SECRETARIAT



Secretary of CC:
Mr. Andrés Kidd
Argentina

PGC A Sustainable Development



Chairman:
Mr. Knut Barland
Norway



Vice Chairman:
Mr. Juan Puertas
Spain

PGC B Strategy, Economics and Regulation



Chairman:
Mr. Pedro Moraleda
Spain



Vice Chairman:
Dr. Colin D. Lyle
United Kingdom

WOC 1 Exploration & Production



Chairmen:
Dr. Vladimir S. Yakushev
Russia



Vice-Chairmen:
Mr. Boumediene Belkacem
Algeria

WOC 2 Storage



Chairmen:
Dr. Vladimir Onderka
Czech Republic



Vice-Chairmen:
Mrs. Hélène Giousse
France

WOC 3 Transmission



Chairman:
Mr. Helge Wolf
Germany



Vice Chairman:
Mr. Eric Dam
The Netherlands

IGU Organisation Chart
(as at August 2006)



II. 2006-2009 Triennial Work Programme (TWP)



24th World Gas Conference
ARGENTINA | 2009

Introduction

The Triennial Work Programme (TWP) is the central document that defines the action plan IGU will carry out during a triennium, whose objective is to support the *Mission* of the organisation, in its strive to reach the *Vision* of being “the most influential, effective and independent non-profit organisation, while serving as the spokesman for the gas industry world-wide”.

In these lines, it is the objective of the 2006-2009 TWP to promote progress, competitiveness and value in favour of the global society the gas industry services, through the development and exchange of knowledge and information.

The 2006-2009 TWP is based on the *Strategic Guidelines* which were endorsed by the Management Team and Executive Committee of IGU in New Delhi, India, in February 2006. The work for 2006-2009 is officially launched upon approval of the TWP by the IGU Council, on its first meeting of the triennium in Lima, in October 2006.

The workforces to develop this programme are the technical committees, whose description and work detail can be found along this document. Their fields of interest cover the entire gas chain, as well as all the major “horizontal issues” concerning the world gas industry.

The work is conducted through a network of knowledgeable professionals presented by the Charter and Associate members of IGU, which mostly provide an adequate global coverage. These identify and collect the relevant information on their fields of expertise related to the topics chosen for the triennium, and provide their findings to their respective groups for analysis and preparation of the deliverables detailed further below, focusing on the objectives formulated in the TWP.

The IGU Presidency and Secretariat keenly invite all Charter and Associate members to volunteer individuals from their ranks to join and support the work of the committees. We are certain that their effort will feed the “virtuous cycle”, whereby the members shall receive in return a lot of value-added information which will prove to be very useful for future decision making.

Strategic Guidelines for the 2006-2009 Triennium

Introduction

The Argentine Triennium of the International Gas Union (IGU) begins on the landmark date of the Union’s 75th anniversary, a suitable foothold to look into the challenges and prospects of the world gas industry, on the way to the first century of IGU’s existence.

The triennium will end at the 24th World Gas Conference in October 2009, in Buenos Aires, Argentina, under the theme “**The Global Energy Challenge: Reviewing the Strategies for Natural Gas**”. This is the first time the conference will be held in a developing country, as well as in the Southern Hemisphere, a fact that provides a clear indication of the increasingly global nature of the gas industry.

Indeed, natural gas has evolved dramatically, from the “nuisance only fit to be flared” of the early days to its present role as a key source in the global energy balance, in terms of competitiveness, operational alternatives and contribution to sustainable development.

The gas industry is still on the growth stage, and the dynamics of the geopolitical and economic developments across the world pose both a challenge and a responsibility of defining the optimal role for natural gas in the future global energy mix.

In this context, IGU has an important part in promoting gas market integration as a means to facilitate economic growth, social development and sustainability. Furthermore, its objectives of fostering a healthy business environment within the industry, and a constructive dialogue spirit with governments and regulators, are well in line with this role.

It is therefore crucial that IGU continues to strive in reaching for its **Vision** to be the most influential, effective and independent non-profit organisation, while serving as the spokesman for the gas industry worldwide.

Objectives and Principles

In line with its **Mission**, during the 2006-2009 triennium IGU will continue to increase its value to the membership, promoting the exchange of knowledge and information, and providing solid and concrete reference tools for decision-makers.

It is the purpose of IGU to contribute to a clearer insight on the key energy and natural gas industry challenges, and the alternative ways to tackle them, while highlighting those issues which require greater attention from representative stakeholders.

Although it is expected that energy-related issues will face changes during the next decades, the course of the natural gas industry in the medium and long term will greatly depend on the short term decisions to be taken in the sector, and it is IGU’s objective to play a very strong role in this process. Furthermore, it will take an active stance to appease supply-related concerns as those related to gas reserves and exploration, infrastructure, international gas contracts and regulation, and geopolitical aspects of security of supply.

IGU will continue to promote the development and application of best practices and new technologies designed to optimise the economics of the entire gas chain, while emphasising sound environmental performance, safety and reliability. In the same way, and inspired by the principles of sustainability, IGU encourages the rational and responsible use of gas as a non-renewable energy source, scouting actively for the best practices, and establishing reliable parameters of utilisation.

Finally, IGU will continue to expand and diversify, increasing its membership both on the regional and corporate arenas.

The Strategic Guidelines for the 2006-2009 Triennium

IGU is focusing its objectives and activities within three time perspectives:

- a) the short term, where little can be done on infrastructure, but a lot can be accomplished at a policy level;
- b) the medium term, where new technologies and planned system expansion are considered;
- c) the longer term, where major energy-domination shifts are likely, and where IGU's policy recommendations should have its more relevant impact.

These three time perspectives are underlying the 2006-2009 Triennial Work Programme (TWP) concept, which is focused on *the* analysis of the world gas industry's experiences and challenges, and will include the development of a prospective outlook to 2030, as shown in the figure below.

The 2006-2009 TWP is based on the following Strategic Guidelines:

- 1. *The Global Energy Challenge: Reviewing the Strategies for Natural Gas towards 2030***
- 2. *Contribution of the Natural Gas Industry, in terms of Security of Supply, Safety and Environment***
- 3. *Regional Gas Market Integration, as a Key Driver for Sustainable Economic Growth***

These Strategic Guidelines are briefly described below.

1. *The Global Energy Challenge: Reviewing the Strategies for Natural Gas towards 2030*

The recent developments of the global energy scenario induce the diverse players involved in natural gas around the world to pose and answer a basic strategic question: *where is the gas sector placed and in which direction should it evolve?*

This is critical, considering the magnitude and long-term nature of gas- chain investments, for which reason decision-makers need to maximise market intelligence in order to become more effective.

IGU must work on the favourable perception of the winning transition fuel, overcoming with sound examples and arguments the questions related to supply sources and geopolitical risks, sizeable and flexible international transport systems, and distribution.

A prospective analysis of the key drivers for the next 25 years will be developed on the following issues:

- a. World energy needs, tendencies and prices
- b. Supply and demand of natural gas: Exploration and production, infrastructure, trade (LNG and pipelines) and market segments
- c. Global security of supply concerns
- d. Frame-breaking markets
- e. Competitiveness against and cooperation with alternative energy sources, and "de-linking" of gas prices from oil references

- f. Regulatory trends
- g. Environmental and climate policy regimes
- h. New technologies
- i. Development of new uses for natural gas

The 2030 natural gas industry outlook study will aim to become a key reference for policy and corporate decision-makers. Simultaneously, it will help integrate IGU's Working and Programme Committees, by building on the complementary insight of the different industry segments, and contributing to ensure the overall consistency of the 2006-2009 deliverables.

2. Contribution of the Natural Gas Industry, in terms of Security of Supply, Safety and Environment

Although there are different views on the future energy requirements, there is little debate that the related industries face the need to service increasing market demand, and - in addition to being competitive - must demonstrate that the sourcing is reliable, safe and environmentally sound.

While the previous strategic guideline addresses, among other topics, the global framework in which such challenges may have to be faced, the short term intricacies of supply will be analysed from a more technical and operational perspective.

Building on what has been developed in earlier programmes, particularly during the very productive Dutch triennium (2003-2006), IGU will tackle these issues along the entire supply chain.

On exploration and production, the TWP will aim to deliver a realistic estimate of reserves on a regional basis, and identify economic, technological and political challenges for their development. Difficult reservoirs and unconventional gas sources (methane hydrates, coal-bed gas and aquifer gas) will also be investigated, given their increasing significance for the assessment of the world's gas resource base. In addition, the work programme will cover some environmental issues related to natural gas production which are high on the current agenda of the upstream gas business, such as sustainable development in Arctic conditions or carbon dioxide sequestration.

The ongoing evaluation on underground storage will continue, with the purpose of providing a practical picture of how these facilities can effectively service the gas chain in terms of supply flexibility and feedstock of reserves for the world's largest markets. New technologies will also be addressed.

Further downstream, transmission and distribution infrastructure expansion and asset management will continue to be studied, with a strong emphasis on safety, environmental implications and development of new technologies.

The dramatic growth of LNG opens a whole new perspective on global supply, inducing to engage key issues related to its role in the reliable provision of natural gas. These comprise gas quality and standards, safety and reliability in liquefaction plants and ter-

minals, new technologies (including off-shore and remote plants), contractual issues and new trading practices, among others.

Safety and the policy on zero-tolerance for accidents rank very highly on IGU's agenda, and will continue to be engaged throughout the entire gas chain.

At the utilisation level, IGU will continue to study and highlight key gas market developments at both segment and regional levels and will pursue the elaboration of representative efficiency indicators.

Finally, it should be noted that these studies will be conducted under a "sustainability umbrella" - which encompasses the whole chain, from gas field to burner tip -, considering environmental issues related to sustainability, such as emissions, energy efficiency and clean development mechanisms. IGU will also focus on compatibility and cooperation with the development of renewables.

3. *Regional Gas Market Integration, as a Key Driver for Sustainable Economic Growth*

During the 2003-2006 triennium, the Dutch Presidency rightly pointed to the role of the gas industry as a responsible corporate citizen.

Governments across the world, either on their own initiative, driven by public opinion, or by following a particular trend – as occurred with the drive towards liberalisation -, are changing the structure and rules of the energy and gas businesses, with diverse final outcomes.

Entire regions - with Europe as the main exponent - have realised the importance of harmonising these rules, although the process is proving to be far from simple.

Large natural gas projects often involve many countries and require appropriate investment and operational conditions. Solid public and private sector partnerships, guarantees and international contractual agreements are therefore of paramount importance to help solve major regional energy issues.

The clear trend towards greater import dependence and related exploration abroad, the remoteness of supply sources, transit and transmission agreements, and complex geopolitical, social and security issues, are strongly suggesting that IGU should take further steps to promote regional gas market integration . Recognising this as a driver to sustainable social and economic development, IGU will support a healthy investment and business climate, and high-quality dialogue between governmental and corporate players.

For this purpose, IGU's 2006-2009 TWP will also address how to favour regional energy and gas integration ventures, through balanced international treaties, regulation and financing mechanisms.

Cooperation with Other International Energy Organisations

IGU will continue to work closely with other international energy organisations such as the World Petroleum Council (WPC), the World Energy Council (WEC), the LNG Conferences (of which IGU is a major sponsor), the World Energy Forum on Regulation, the International Energy Agency (IEA) and several regional and environmental entities.

Following the inclusion of the new IGRC (recently renamed IGU Gas Research Conference), IGU plans to increase the perception of all players along the gas chain about the need for ongoing research, particularly in the areas related to the environment, rational and efficient use of natural gas, and safety. To this end, and aiming to increase its organisational efficiency, IGU will encourage a positive interaction with the working groups of the Coordination Committee (CC).

In a similar manner, the insertion of the new IGM (IGU Gas Marketing) will help develop favourable synergies with the CC, in issues related to the marketing of natural gas.

Conclusion

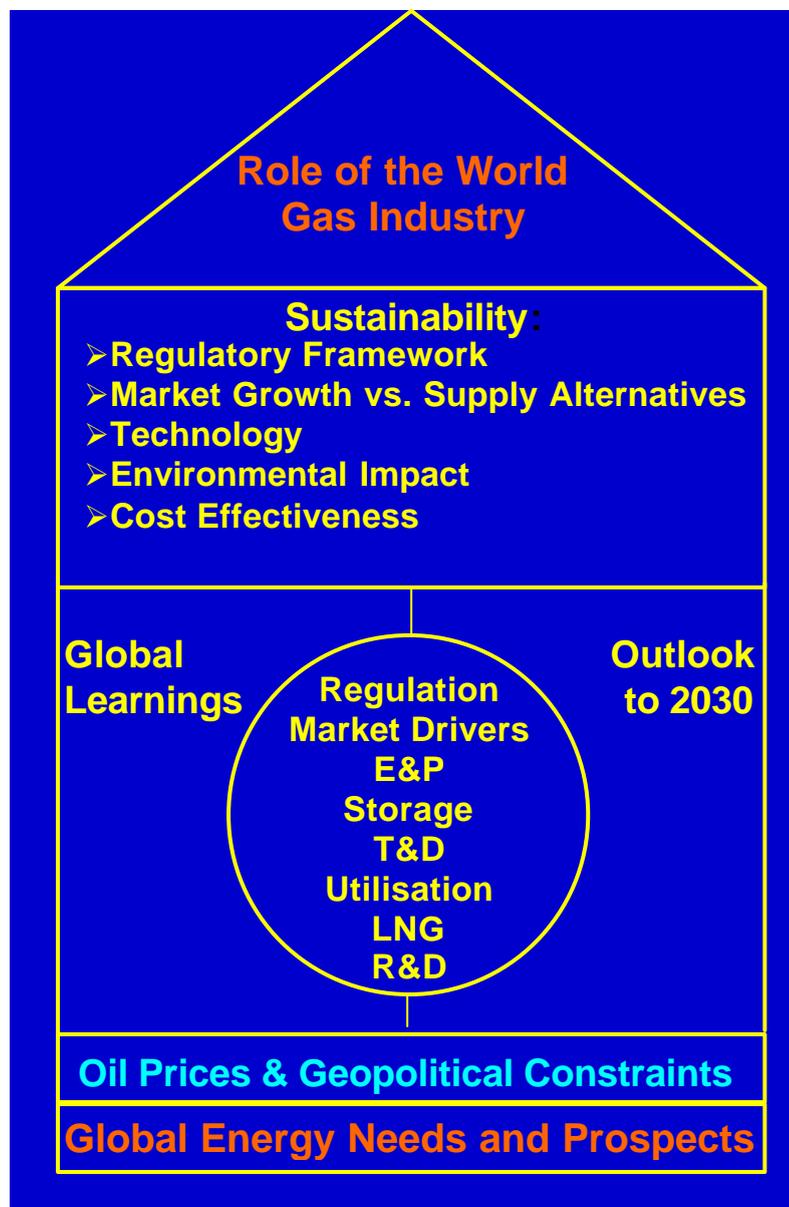
The world is undergoing a time of change, and neither the global energy scenario nor the gas industry have been an exception.

Although these changes can be exciting and loaded with possibilities, they can also be the cause of uncertainty and hesitation.

It is in this context in which IGU will act as a beacon, generating valuable tools for medium and long term decision-making. IGU must continue strengthening its role as spokesman for the world gas industry and increasing its contribution to the development of future energy markets, while reinforcing the synergies among its members, generating conditions for continuous improvement and competitiveness.

IGU has the resources, especially regarding the human potential distributed around the world, to increase the value of the gas industry for the international community. For this reason, **the 2006-2009 work programme will focus on Reviewing the Strategies for Natural Gas**, as a means to enhance the industry's significant contribution to economic growth, social development and sustainability.

The Global Energy Challenge: Reviewing the Strategies for Natural Gas



Structure and Organisation

In September 2002 the IGU Council approved a new structure for the working groups carrying out the work established by the TWP, which was successfully set in motion during the last triennium. This structure will be maintained during 2006-2009.

There are two different kinds of committees. One group consists of five *Working Committees* (WOC) that cover the entire gas chain, from exploration and production, storage, transmission, and distribution, to the utilisation of gas. The other comprises four *Programme Committees* (PGC), that deal with topics which are external to the gas chain, but intimately related to the gas industry. These committees address issues on sustainable development; strategy, economics and regulation; gas in developing markets; and LNG. Within the committees, *Study Groups* (SG) are usually established to divide out the workload.

Coupled to this structure, the Presidency is entitled to propose the constitution of *Task Forces* (TF), with the objective of addressing specific topics of particular interest. For the 2006-2009 triennium two of these special work groups have been established, one to continue the studies initiated during the last triennium on research and development (TF R&D), and another to conduct an extensive analysis on the issues behind gas market integration (TF GMI), a theme of increasing interest to those involved in the decision process in international energy business.

During the Dutch triennium, three special projects were established to cover the highly strategic themes of *Gas to Power*, *Sustainable Development* and *Regulation*. The valuable output from these groups will provide a solid starting point to some of the committees who will elaborate further and generate an updated review on these topics of consistent interest to the gas industry.

The overall responsibility for the performance of the committees lies with the Coordination Committee (CC), which is composed by the chairpersons of the WOC, PGC and TF, and is headed by the CC Chairman.

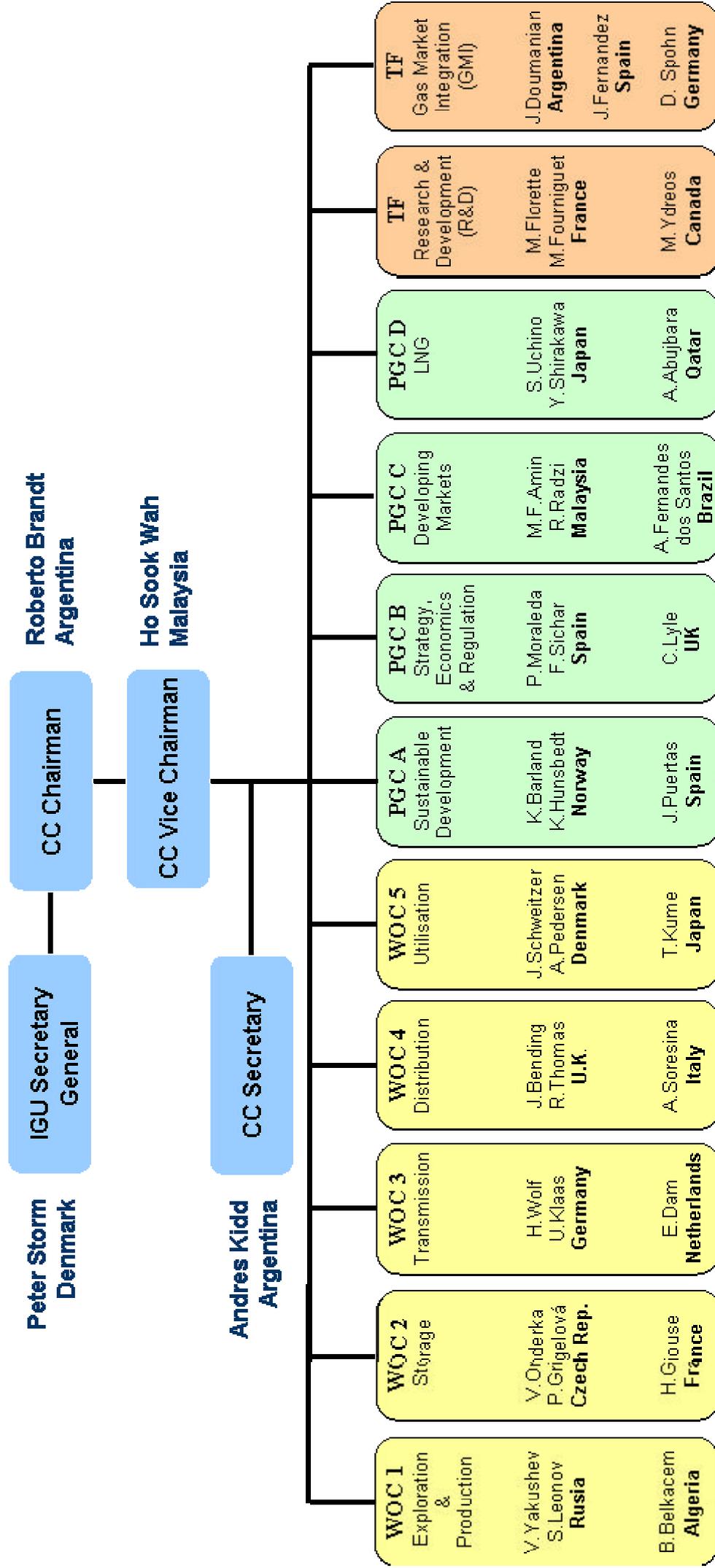
A figure detailing the CC team as at the World Gas Conference 2006 is displayed at the end of this section.

The working groups described hold at least two meetings every year, to evaluate the progress of their projects and to define or adjust the action plans so as to optimise the value of the deliverables. Given that between a number of committees there are some relevant common issues which link a share of their work, we envisage that a few of these meetings will be jointly held between the related groups to establish common grounds and develop synergy between their work, as already occurred during the previous triennium.

Finally, a number of committees support and nurture several of the close relations IGU holds with a number of energy-related and external organisations, by participating at their conferences and other activities, and through a constructive sharing of information.

2006-2009 Coordination Committee Team

(as at August 2006)



WOC: Working Committee

PGC: Programme Committee

TF: Task Force

Scope and Deliverables

The bulk of the work from the committees will be delivered during the 24th World Gas Conference, which will be held in Buenos Aires, Argentina, in October 2009.

The deliverables will consist mainly on comprehensive reports which provide a sharp insight on the topics selected, identifying key learnings and, in some cases, delivering a set of proposals for future development or improvements.

Other deliverables include case and benchmarking studies, best practices listings and statistical data.

The objective is that the deliverables display an adequate balance between strategic considerations, business issues and technology aspects.

The information produced will be made accessible to IGU members via the website (www.igu.org), among other means. Information of special importance and general interest may be published in accordance with the IGU publication policy.

In addition, intermediate partial deliveries on specific issues are also a possibility through symposia, seminars and workshops.



III. Committee and Task Force Study Groups and Terms of Reference



24th World Gas Conference
ARGENTINA | 2009



WORKING COMMITTEE 1: EXPLORATION AND PRODUCTION

Introduction

Over the recent decades, the natural gas industry has been developing intensively throughout the world, responding to commercial, economical, operative and environmental drivers.

This trend is expected to continue in varying degrees, whereby security of natural gas supply from available resources to the major markets, and the major challenges this poses for the future, is a key issue for discussions, and has been selected as one of the strategic guidelines for the 2006-2009 Triennial Work Programme (TWP).

Reserves and resources of natural gas are spread irregularly around the globe, displaying a strongly general pattern, where the major sources are significantly distant to the main consuming centres.

Furthermore, the need for alternative resources, coupled with new technologies and the increase of energy prices, promote the conscientious study of reservoirs discarded in the past for their lack of technical and economic feasibility.

It is for this reason that Working Committee 1 (WOC1) will divide its work in two groups:

- 1. Remaining conventional world gas resources and technological challenges for their development**
- 2. Difficult reservoirs and unconventional natural gas resources**

Environmental issues, especially those related to CO₂ and methane emissions, will also be addressed by both groups.

Our objective is that our deliverables at the end of the triennium will provide a deeper knowledge and understanding of the situation of gas reserves, and the potential which can be expected from resources of diverse nature and origin.

Study Group 1.1 (SG 1.1)

Remaining conventional world gas resources and technological challenges for their development

Scope and Purpose

Following up on the research conducted by this working committee during the past triennium, the group will focus on the results and expectations deriving from exploration and production of additional reserves of natural gas from known gas-bearing fields and formations, as well as from the intensive search for new deposits around the main world consumption regions, which currently present considerably exhausted resources (North America, Europe, Far East Asia).

It will also address the production from the most significant remote natural gas reserves and the development of new alternative options of gas processing and transportation at

field localities, including LNG, gas-to-hydrates, gas-to-wire, gas-to-liquids and compressed gas.

Technologies like the injection of CO₂ from sequestration of emissions or from the exhaust of fossil fuel use, amongst others, will be evaluated as an alternative to decrease production costs, while reducing negative environmental impact.

The study intends to provide a summary of the situation of these reserves in terms of production expectations and economic feasibility.

Study Group 1.2 (SG 1.2)

Difficult reservoirs and unconventional natural gas resources

Scope and Purpose

The study will focus on the technical and economic feasibility of unconventional and difficult resources, in the light of the latest technological breakthroughs, and the new energy scenario.

Resources of the Arctic region and deep-water (more than 4,500 metres) gas deposits pose a huge potential growth for world reserves, and recent upgrading of existing technologies, as well as the development of new methods of exploration, production and transportation of gas, increase the potential to make them an actual sourcing possibility.

The group will also include reserves of intermediate complexity (basin centre and tight reservoirs), and shallow gas deposits (<500 m).

Among unconventional gas sources, the potential of gas hydrates continues to attract attention, so a detailed delineation and estimation of the potential resources, hydrate gas production, treatment and transportation are on the agenda. Although already a small but growing resource, coal-bed methane projects and aquifer gases (prospects and ways for their industrial development) will also be studied in terms of their significance for resource base development.

Technologies of sour gas reservoir treatment and production, as well as drilling and production of HT/HP reservoirs will also be included.



WORKING COMMITTEE 2: UNDERGROUND GAS STORAGE (UGS)

Introduction

The purpose of Working Committee 2 (WOC2) is to monitor the advances and improvements developed that will promote underground storage as an effective means to support both a secure and flexible gas market demand, as well as sound environmental practices in the global natural gas industry.

These developments will be focused on concrete issues of interest, including technology, performance and cost reduction. Furthermore, underground storage can potentially play a major role in providing alternatives to decrease the emissions of CO₂.

The working committee will also continue to expand the UGS Database which has been developed during the past two triennia.

The work of the committee will be divided and grouped into three topics:

- 1. UGS Database**
- 2. UGS Technology Improvements**
- 3. Intelligent UGS (iUGS)**

Study Group 2.1 (SG 2.1)

UGS Database

Scope and Purpose

This study group will be in charge of the continuation of the IGU UGS database development, in order to obtain a reliable picture of UGS worldwide, and provide a background for additional analysis and benchmarking.

This includes covering the main parameters of storage reservoirs, encompassing output rates, capacities, type and number of production wells, and surface facilities, as well as basic information about ownership and operators.

An extensive revision and updating will be conducted on the parameters and facts which have already been stored. Furthermore, additional new sections will be included such as:

- Splitting UGS between oil and gas fields
- Incorporation of pipeline systems related to UGS
- Emergency events and remediation
- Describing national trends of the UGS industry
- Enlarging the existing glossary of terms

Study Group 2.2 (SG 2.2)

UGS technology improvements

Scope and Purpose

The intent of this particular group will be to review the technological improvements focusing on the following features:

- Well stability
- Well potential
- Remediation practices
- Operational cost reduction

Both the new emerging technologies applied on UGS and the already ongoing ones related to wells and reservoirs will be evaluated, including:

- Horizontal drilling and long term stability of wells
- Well completion and formation damage mechanisms and remediation practices
- New technologies in down-hole logging, well-bore integrity monitoring, cement binding etc.
- Possible reduction of UGS cost by using alternative cushion gases
- Environment friendly technologies

The objective is to obtain information that will support reliable and safe operation of UGS with its maximum potential and minimised operational cost, identifying reservoir/technology weaknesses and limits.

Study Group 2.3 (SG 2.3) ***Intelligent UGS (iUGS)***

Scope and Purpose

This topic will address the possible connections between all technologies controlling the operation of UGS, and the utilisation of existing knowledge and tools to optimise automation and develop cost savings.

To this purpose, the group will investigate all levels of storage dataflow and workflow such as:

- Automation in dataflow from the SCADA system to the reservoir engineering desktop, and continuous analyses and process evaluation
- ICT, reservoir management and technology
- Data mining and artificial intelligence
- Coupled simulations, technology/reservoir
- Optimisation, monitoring, operational safety
- Cost savings, economic modelling



WORKING COMMITTEE 3: GAS TRANSMISSION

Introduction

The purpose of Working Committee 3 (WOC3) is to gather information and analyse the development of technology, legislation and economics behind pipeline transmission systems.

In the past, IGU has adequately approached this topic as a system which integrates these issues, whereby any development on a given area will have an immediate impact on the rest, and it is our intention to continue doing so during the 2006-2009 triennium.

Furthermore, and recognising that the gas industry is encompassed within the larger system of the global society it services, we intend to include environmental aspects and other issues related to sustainable development, continuing the trend established by our Union during the past triennia.

The recent decades have witnessed a robust development of the natural gas infrastructure to face an increasing market, and the continuing trend of this energy demand compels us to keep a vigilant attitude to both asset management and the challenges for future expansion, in the goal of ensuring security of supply, within safe and environmentally friendly sets of practices, as established within the Strategic Guidelines of the 2006-2009 Triennial Work Programme.

To address these issues in a comprehensive manner, the studies will be divided into three different groups:

- 1. Impact of regulation on gas transmission, safety and security of supply**
- 2. Review of new technologies in pipeline and construction monitoring**
- 3. Contribution of gas transmission to climate protection and sustainable development**

Study Group 3.1

Impact of regulation on gas transmission, safety and security of supply

Scope and Purpose

As described during the introduction, it is unrealistic and even precarious to conceive a set of regulations, without considering the impact these will pose to the operability of transmission assets, as well as the feasibility of future expansions.

The aim behind the studies of this group will be to identify the extent to which regulatory activities may influence gas transmission with respect to safety and security of supply.

To achieve this, the group will propose an encompassing selection of relevant case studies, which will provide significant information to:

- Identify and describe which regulatory activities have an impact on gas transmission
- Analyse whether and to what extent there is any impact on safety and on security of supply
- Evaluate alternatives aimed to minimise negative consequences of regulation on these issues, within reasonable cost competitive considerations
- Propose a set of recommendations for the regulators on how to structure a set of regulations related to gas transmission that comply with all parties involved, in terms of cost, safety and security of supply

During the previous triennium it has been demonstrated that harmonisation of pipeline incident databases is necessary and feasible. The activities needed for the harmonisation will also be initiated and coordinated by Study Group 3.1.

Study Group 3.2

Review of new technologies in pipeline and construction monitoring

Scope and Purpose

Expanding the work of the past triennium in regards to asset management and control, this group will conduct during this triennium a review on new technologies in pipeline and construction monitoring, identifying the benefits of each for gas transmission operations and maintenance.

Particularly, the team will investigate new monitoring technologies in the field of:

- Pigging systems and so-called NOPIG methods
- Air and ground-based pipeline monitoring systems
- IT-based pipeline integrity management systems (PIMS)
- Systems of prediction of pipeline conditions

Study Group 3.3

Contribution of gas transmission to climate protection and sustainable development

Scope and Purpose

Operation and maintenance of transmission infrastructure are not free from greenhouse gas emissions, particularly CO₂ and methane.

The objective of this group is to identify the best practices that reduce the industry's impact on this environmental issue, at transmission level. We expect a positive exchange with Programme Committee A (Sustainable Development), on the studies of these issues.

The activity will be centred on investigating all areas of gas transmission with and adverse impact on sustainable development, particularly climate change. These include CO₂ emissions during fuel gas use and the reduction of methane emissions during pipeline maintenance or repair.

The deliverables will include a detailed description of the different methods and techniques to achieve such emission reductions.



WORKING COMMITTEE 4: DISTRIBUTION

Introduction

Distribution main and service pipes form the major part of many gas transportation systems, providing individual gas supplies to domestic, commercial and industrial premises. The presence of distribution systems in urban environments requires construction and maintenance to be carried out in the public highway, where particular risks arise from the close proximity of property, construction works and the presence of other utilities plant.

Public safety and security of supply have always been the key drivers of distribution integrity management, however environmental, economic and other sustainability issues are becoming increasingly important as energy markets develop.

The primary role of Working Committee 4 (WOC 4) will be to support the promotion of safety, efficiency and sustainability across the gas distribution community. The success in achieving this objective also serves as a driving force towards achieving the other strategic objectives of promoting gas as the fuel of choice, and ensuring the industry's role as a responsible corporate citizen.

Gas distribution companies operate in an environment of increasing change in market regulation, globalisation and growth of the gas industry while also considering its impact on climate change. The work of WOC 4 must consider these influencing factors when conducting studies and developing conclusions and recommendations. The concept of benchmarking operational performance data and finding leading practices to improve results will be key elements of the committee's work.

The committee will concentrate on the following areas:

- 1. Review of Asset Management strategies and practices**
- 2. Review of Leakage Reduction strategies & practices**
- 3. Development of best practices for the prevention of third party interference damage to distribution assets**

Study Group 4.1.

Review of Asset Management strategies and practices

Scope and Purpose

The study will review the processes and methodologies used to develop strategies for operating, maintaining and replacing gas distribution networks. This will build on the Distribution Integrity study from the previous triennium. The study will recognise the influence of differing regulatory frameworks both in defining local good practice and assessing the applicability of "best" international practices.

The main objective of this study will be to evaluate and make recommendations in the following areas:

- The definition of distribution integrity performance measures
- The use of available information systems, data and the management of data quality
- The availability and applicability of cost/benefit calculations
- The influence of national and international technical standards
- The influence of economic regulation and competitive markets
- The range of approaches within legal frameworks; prescriptive vs. risk-based.
- Basis for maintenance and replacement philosophy e.g. Reactive ? Time-based ? Condition based ? Risk-based prioritisation

Study Group 4.2

Review of Leakage Reduction strategies & practices

Scope and Purpose

The study will determine the process necessary for the evaluation and determination of leading practices used in the industry for the management of leakage from gas distribution systems. These leading practices will be based on reviewing commonly defined metrics of operational performance. Methane is a significant greenhouse gas and leakage is perceived to contribute to depletion of the ozone layer. Leakage also presents safety, economic and operational challenges to distribution operators.

The study will provide:

- A review of leakage management strategies across member countries
- Assessment of the ability to quantify leakage from distribution systems
- Specific focus on the effectiveness of leakage survey methodologies
- Identification of best practices in leakage management systems
- Review of existing and emerging technologies for leakage control

Study Group 4.3

Development of best practices for the prevention of third party interference damage to distribution assets

Scope and Purpose

This is a study to evaluate how each of the IGU member countries approach the management of third party interference damage to gas distribution systems. This emerged as a major integrity issue from the 2003-2006 triennium study.

It is important to determine the various approaches, funding levels, legal requirements and collaborative efforts currently in place.

The study will provide a review of damage control activities associated with gas distribution systems including:

- Provision of plant records and information to enable location
- Legal/regulatory requirements driving plant location
- Measures of effectiveness of plant protection systems

- Resourcing requirements for site attendance where provided
- Review of existing and emerging technologies for damage control
- Identification of best practices in plant and damage location systems across all utilities



WORKING COMMITTEE 5: UTILISATION

Introduction

The overall objective of Working Committee 5 (WOC5) will be to describe the situation in the diverse areas of gas utilisation, identifying the trends, tendencies, technologies and practices, and evaluate and propose actions for further market development.

Moreover, and in line with IGU's permanent address on sustainable development, the promotion of renewables (biomass, biogas, solar, wind, etc.) persuade us to evaluate cooperation and complementation schemes between natural gas and this growing energy source. *To a certain extent* hydrogen will also be addressed in a similar way. We envisage a productive exchange with Programme Committee A (Sustainable Development) on this aspect of our works.

During this triennium, the Presidency has also designated WOC5 to develop an *IGU Utilisation Standard Parameter* to provide a key reference tool to natural gas users and stakeholders in general.

The works will be largely based on success stories developed in diverse markets, evaluating the key drivers behind them, together with the market considerations (regulation, relative prices/taxation, promotion schemes) that made these possible.

The deliverables will include reports and other managerial tools (evaluation models, references, databases, parameters, etc.) that will further support and promote the use of natural gas.

The working committee will divide the work into three groups:

- 1. Industrial utilisation**
- 2. Domestic and commercial utilisation**
- 3. Natural Gas Vehicles (NGV)**

Note that distributed generation will have a strong priority in both Study Groups 1 and 2.

Study Group 5.1

Industrial utilisation

Scope and Purpose

The group will present several case studies to be selected from the most significant proposals submitted by the members of our committee, with success stories on:

- Fuel switching: electricity or oil to gas, providing energy efficiency indicators when possible to enable comparison between gas and other energy sources
- Integration of CHP in the industry
- Combination of gas and renewables. Biogas: case studies

- Gas quality variation impact on utilisations. EASEE gas proposal and consequences
- Comparison in tariff, regulations, etc. by areas like EU and Asia
- Hydrogen, a summary of the present situation for utilisation

The paper will also include an analysis on the actual need for R& D and the present regulatory situation and impact, and recommendations on these grounds for further market development. A close interaction with Task Force R&D will be fruitful to this regard.

Study Group 5.2

Domestic and commercial utilisation

Scope and Purpose

This group will continue the action carried out during the last triennium on evaluating the market penetration of innovative use and new technologies related to the use of natural gas in domestic and commercial segments. This market evaluation will include:

- DG Micro co-generation, chances and challenges
- Appliances data base
- Efficiency indicators
- Home fuelling survey
- Gas quality variation impact on utilisations. EASEE gas proposal and consequences
- Energy services as a way to keep the gas in the domestic sector: delivering heat, cooling, electricity produced in small units for a group of houses/buildings (case studies/success stories)

Regarding the review on technologies, the study will encompass:

- DG, Micro co-generation technologies: micro-grids and larger projects
- Cooling
- Garden application (grill, patio heater, gas light)
- Solar and biogas combination with natural gas: case studies / success stories

Study Group 5.3

Natural Gas Vehicles (NGV)

Scope and Purpose

The scope of Study Group 5.3 is to develop a global strategy for NGV commercialisation in the wide variety of international markets, using different appropriate technologies (i.e. for different levels of sophistication in vehicles, retrofit-fit and originally manufactured), covering on-and-off-road applications, including cars, trucks and buses, as well as fork-lifts, boats, trains and other kind of vehicles.

The strategy would take into account Compressed Natural Gas (CNG), Liquefied Natural Gas (LNG) and biogas. Part of this proposed activity would build upon the work of the predecessor group during the last triennium. Other aspects of this activity should consider

and build upon the ongoing IANGV work to develop a *Global NGV Strategy* for the association itself.

The range of potentially ambitious options might include, but not necessarily be limited to:

- Market – Vehicle Match-up: To identify country (regional/continental) vehicle stock and potential for appropriate NGV technologies, both vehicles and fuelling stations and also to identify retro-fit market potential. Also, to determine gas supply options for piped gas (hence CNG), Liquefied Natural Gas (from existing LNG terminals), and biogas where various feedstock is available for sustainable gasification.
- Regulations, Standards and Codes (RCS): To perform gap analyses of NGV regulations, codes and standards, where existing standards need to be harmonised across international boundaries. The analysis would focus first on the international institutions (United Nations, ISO, SAE, etc.) and then on national standards, and also suggest a process of global harmonisation through a variety of international standards organisation (activity underway between IANGV and ISO), and finally identify new areas/new equipment that need standards to be created.
- Identification and/or Development of Decision Tools and Models to Aid Commercialisation: To identify existing decision models and tools from various international sources (associations, ministries, private sector) and to determine if the existing tools can be brought forward for expanded use in the market place (or if they need to be updated) and to consider the development of new tools that could help key decision makers with their decisions about alternative fuels and NGVs.
- Identification of Fuelling Station Models: To identify computer models (or other guidance documents) regarding fuelling station construction (CNG, LNG, or LCNG) and to survey compressor station manufactures and installers regarding their input regarding cost-cutting measures. Finally, to determine if any of the identified models can be used internationally (or need to be updated) and develop a resource list of these for application in the international NGV sector).
- Scenarios of NGV development: To develop scenarios for methane use in transport (in figures: vehicles, consumption, for CNG, LNG and bio-methane) region by region, up to 2025.

The study group will work in cooperation with IANGV (ongoing IANGV work to develop a *Global NGV Strategy* for the association itself) and regional NGV Associations (ALGNV, ANGVA, ENGVA, NGVRUS. etc.).



PROGRAMME COMMITTEE A: SUSTAINABLE DEVELOPMENT

Introduction

The International Gas Union has taken a strong stance in favour of sustainable development within the energy sector in general, and particularly in the global gas industry it represents.

In addition, and following its objective to function as an information clearing-house, it will also promote the exchange of knowledge among the stakeholders of the gas industry worldwide, to support them in adjusting to the increasingly demanding standards imposed in the different regions, particularly since the formal approval of the Kyoto Protocol, which entered into force on February 16th 2005.

In line with the work conducted during the past triennium, the goal of Programme Committee A (PGC A) is to monitor and promote sustainable development through the following drivers:

- *Environmental*: Reduction of greenhouse gas emission, in terms of energy efficiency, CO₂ sequestration and methane control.
- *Cooperation with renewables*: Combination and complementation of energy sourcing between natural gas and renewable energy alternatives like solar, wind, and biomass.
- *Economic and social development*: To become a long-term sustainable industry, the gas sector has to contribute to sound economic growth in the countries it operates, while meeting its own economic targets. It should make a lasting contribution to human welfare, including the socio-cultural development of groups and communities that until now have been unable to benefit from the achievements of the developed world.

Programme Committee A will also be covering a role within IGU, providing support when needed, to the other committees that deal with the entire gas chain, on any particular topic related to environmental issues and sustainable development.

Externally, our committee will also promote a positive exchange between IGU and other international bodies working on sustainable development and climate change, as a means to keep updated the database on performance indicators and standards.

These include:

- WEC (World Energy Council)
- ICET (International Council for Engineering and Technology)
- IPCC (Intergovernmental Panel on Climate Change)
- GRI (Global Reporting Initiative)
- WBCSD (World Business Council for Sustainable Development)

To carry through this work programme, the committee has divided the responsibilities into two groups:

- 1. Evolution, expansion and promotion of IGU's Guiding Principles on Sustainable Development and Climate Change**
- 2. Gas industry response to climate change: Greenhouse gases (GHG) reduction case studies**

Study Group A.1

Evolution, expansion and promotion of IGU's Guiding Principles on Sustainable Development and Climate Change

Scope and Purpose

Following the initiative launched during the 2000-2003 triennium, the Dutch Presidency developed IGU's formal position regarding sustainable development, which will be published as the Guiding Principles on Sustainable Development and Climate Change.

Given the dynamic nature of this topic, this paper will be a "living document", and is expected to evolve and expand with future inputs and developments.

PGC A will be the custodian of this evolution, which during 2006-2009 will be nurtured by the committee through the following actions:

- Conduct a global review and identify examples of best practices in the gas industry on sustainable development where economic, environmental and social factors are integrated in the business practices. How these best practices may be extended to other regions in the world, recognising the obstacles in different regions, and proposing ways to overcome them.
- Discussions with sustainable development scientists on how the gas industry can contribute to a sustainable future. These could include:
 - Invite one specialist on sustainable development to every PGC A meeting to do a presentation on a specific subject (the specialist could be invited from the company hosting the meeting).
 - Look into new publications on sustainability and bring these into the PGCA group meetings. Presentation by one member in every meeting.
- Interaction with other IGU committees, particularly on issues like Greenhouse Gases (GHG) emissions and cooperation with renewables.
- Interaction with external international organisations

The output will be an updated version of the guidelines by the end of the triennium.

We also expect to provide coherent "sustainability filtering criteria" to the studies developed by the other committees.

Study Group A.2

Gas industry response to climate change: Greenhouse gases (GHG) reduction case studies

Scope and Purpose

The gas industry is continuously improving in terms of energy efficiency and emissions control.

PGC-A will identify examples of new ways to reduce GHG emissions from the gas industry even further.

Such examples will include:

- New power generation plants in Norway with CO₂ sequestration
- Algeria/Nigeria cooperation to reduce gas flaring
- Others (to be determined further on)

The case studies will be approached by using the LCA (Life Cycle Assessment) methodology, developed by PGC A during the last triennium.

The resulting report will detail the main issues and learnings of these experiences, and state the conditions of applicability of these in other regions in the world.



PROGRAMME COMMITTEE B: STRATEGY, ECONOMICS AND REGULATION

Introduction

The work of Programme Committee B (PGC B) in the triennium 2003-2006 has brought light into many important issues but has also opened questions on matters the gas industry had taken for granted in preceding triennia.

The world is not running out of gas, but it is not so clear whether gas demand can maintain the high rates of growth predicted in the past. By the same token, it is neither clear that natural gas would remain the fuel of choice for power generation. In other words, there might not be security of gas demand in the long run if price increases and high volatility remain.

The traditional confidence in the ability of the gas industry to grant a continuous flow of gas to the market may be under question. Could gas companies afford the needed investment once margins in national markets have been curtailed due to competition and separation of business? Will wholesale suppliers be in an equal position to negotiate purchase contracts if the purchasing side of the deal has been fragmented?

According to the above scenario, PGC B has a wide and challenging job ahead and shall try to shed some light into these questions, focusing the attention on the most sensitive issues such as the new drivers for supply and demand, the key role of gas prices and the kind of company structures that best fit the new business environment in different parts of the world.

The Argentine Presidency has established as the first strategic guideline of the 2006-2009 Triennial Work Programme the following:

The Global Energy Challenge: Reviewing the Strategies for Natural Gas towards 2030

PGC B will act as one of the key custodians of this guideline, and concentrate most of the scenario analysis within this time frame, a period in which not only a lot can be done at policy level and on infrastructure, but also where major energy-domination shifts are hinted, and where IGU's policy recommendations should have its more relevant impact.

The slightly adjusted name and structure of PGC B which we understand reflects, in a more accurate way, our intended focus for the 2006-2009 triennium will be "Strategy, Economics and Regulation" and we will develop its work through three Study Groups:

- 1. Supply and Demand to 2030?**
- 2. Gas Price Formation and Trends?**
- 3. Regulation and Future Industry Structure**

[?] The outputs from these Study Groups will be used as partial inputs for a **2030 National Gas Industry Outlook** study, which will be coordinated by PGC B (and the CC Chairmanship), with support from all other Committees.

It is our intention that the corresponding deliverables will act as effective and accurate decision-making tools, for all stakeholders of the gas industry.

Study Group B.1

Supply and Demand to 2030

Scope and Purpose

The Group will cover both supply and demand based on existing information from reliable sources, and will analyse major supply and demand drivers with respect to strategies developed in different regions.

The approach will be from regional to global estimations with the aim to provide IGU associates a comprehensive view of market trends in supply, demand and inter-regional trade until 2030.

Taking into account the specific horizontal nature of this task, the Group will need to maintain close contact with the IGU Coordination Committee and with the other Working Groups and Programme Committees, as well as close relations with international energy institutions and forecasting entities.

Study Group B.2

Gas Price Formation and Trends.

Scope and Purpose

The reduction of price peaks has currently been considered the gas industry's biggest challenge; therefore, a deep analysis of medium and long-term gas price economics is needed.

Price formation models, price indexation, price drivers, price arbitrage and elasticity for achieving a sustainable growth are some of the key issues to be studied by this Group.

The intrinsic quantitative nature of this topic will somehow determine the professional profile of experts best suited for joining this Study Group.

Study Group B.3

Regulation and Future Industry Structure

Scope and Purpose

Changes in the gas regulatory frameworks are prompting radical adjustments in the traditional structure of the gas industry worldwide.

Being one of the key objectives of PGC B to provide a vision of the gas industry in the horizon of 2030, the supply and demand forecasts will be complemented by a perspective view of the developing regulatory regimes and the ensuing industry and market structures.

This Study Group will take stock of the work carried out during the last triennium on regulatory models around the world and focus on their influence on companies' structures.

Study Group B.3 will first highlight the driving forces for structural changes: opening of the markets, separation of transmission from supply, synergy between electricity and gas, growing role of LNG and globalisation of gas markets, increasing financial needs for energy projects and, not least, growing environmental sensitivity.

Finally, from a micro economic approach, the Group will examine the kind of companies best suited to the projected business environment, along the whole gas supply chain. To this purpose we look forward to a productive interaction with the Task Force of Gas Market Integration and with PGC A (Sustainable Development).



PROGRAMME COMMITTEE C: DEVELOPING GAS MARKETS

Introduction

The basic objective of Programme Committee C (PGC C) is to analyse and identify key market levers and drivers, emerging issues and challenges in developing gas markets and offer strategic options based on lessons learnt from other regions in the world.

We intend to develop knowledge that can be useful to a wide extent of IGU's members, and in general to stakeholders of the gas industry, including international investors and developers, utilities, governments and regulators.

During this triennium, we will conduct case studies within regions which comprise several countries, given that gas market developments are seldom an isolated event. It is also in line with one of the strategic guidelines for the 2006-2009 triennium: "*Gas market integration as a key driver for economic and social development*," for which we expect a constructive exchange with Task Force Gas Market Integration.

The analysis for each region will generally cover a wide spectrum of topics involved, mainly:

- Natural gas sourcing
- Infrastructure
- Market and economic drivers
- Competing fuels
- Legal and regulatory aspects
- Development opportunities (e.g. power generation)
- Environmental issues
- Geopolitical situation

PGC C has considered three different regions from where IGU can develop some useful learnings and knowledge:

- 1. South West and Central Asia (India, Pakistan, Iran, Turkmenistan and Azerbaijan)**
- 2. South America**
- 3. South Eastern Europe**

Following the prospective horizon defined by the Argentine Presidency, the group will focus the gas supply/demand outlook through 2030.

Study Group C.1

Developing gas markets in South West and Central Asia (India, Pakistan, Iran, Turkmenistan and Azerbaijan)

Scope and Purpose

This group will review, analyse and identify key market levers and drivers, emerging issues and challenges in developing the gas markets in India, Pakistan, Iran, Turkmenistan and Azerbaijan, and the extent of market integration. This assessment will also include geopolitical risks in some cases.

Through this work, the group will aim to:

- Offer suggestions on strategies for natural gas in terms of security and reliability of gas supply, market integration, sustainable development, and promotion of rational and responsible use of natural gas
- Submit objective views and suggestions on strategic options and action plans to promote the development of gas markets in South West and Central Asia
- Identify necessary investments in gas supply/demand chain and infrastructure, especially with regards to competition between LNG and pipelines in the transportation of gas
- Identify issues and challenges in developing gas markets in the region
- Offer strategic options in developing and expanding the gas markets

Study Group C.2

Developing gas markets in South America (from a more integrated perspective)

Scope and Purpose

Expanding from the study conducted on Brazil during the past triennium, the group will analyse and identify key market levers and drivers, emerging issues and challenges in developing the gas markets in South America from a more integrated perspective.

Through this work, the group will aim to:

- Provide an overview of key gas markets in the region
- Examine possible strategies to enhance security and reliability of gas supply, promote market integration and encourage sustainable development and the efficient utilisation of natural gas
- Offer objective views and suggestions on strategic options and action plans to promote the development of gas markets in South America, from a more integrated perspective
- Identify the necessary investments in gas supply and demand chain and infrastructures to support further growth in gas utilisation, especially on the potential of LNG (Camisea, Peru), and pipelines in the transportation of gas
- Identify issues and challenges in developing gas markets in the region, including those relating to market integration, gas pricing, financing, and the role of foreign investment
- Propose strategic options in developing and growing gas markets

Study Group C.3

Developing gas markets in South Eastern Europe

Scope and Purpose

This study will analyse and identify key market levers and drivers, emerging issues and challenges in developing the gas markets in South Eastern Europe. Particularly, it will assess the impact of the Energy Community South Eastern Europe (ESCEE) Treaty in developing the gas markets in South Eastern Europe, including, Albania, Bosnia & Herzegovina, Bulgaria, Croatia, Macedonia, Romania, and Serbia & Montenegro.

Through this work, the group will aim to:

- Provide an overview of key gas markets in the region, including the impact of regulatory changes following compliance with the ESCEE Treaty
- Assess the role gas could play in sustainable enabling economic development in the region, and recommend strategies to enhance security and reliability of gas supply, foster market integration and promote rational and responsible use of natural gas
- Offer objective views and suggestions on strategic options and action plans to promote the development of gas markets in South Eastern Europe
- Identify and assess the key market levers or drivers that shape the gas markets, including geopolitical risks in some countries
- Identify necessary investments in gas supply/demand chain and infrastructures
- Identify issues and challenges in developing gas markets in the region



PROGRAMME COMMITTEE D: LIQUEFIED NATURAL GAS (LNG)

Introduction

LNG has experienced a sustained increase in demand during the past decade, with a sharp upturn in recent years. The reason for this is twofold: on the one hand natural gas, as a source of energy, has gone through a robust growth due to environmental and economic drivers; coupled to this, we find the versatile aspects of LNG, given the flexibility it provides as energy storage and in transportation, as well as for international trading.

Following the productive work of the past triennium, PGC D will continue to monitor the LNG industry closely by issuing a report, which will provide past and future statistics as well as highlight the trends of LNG trade and LNG shipping. This report will also address development of LNG liquefaction plants and receiving terminals and provide the future prospective study of LNG industry, which is one of the key goals for this triennium. The studies will also provide some necessary input on the issue of security of supply, one of increasing concern to policy makers and the market in general, and which has been specifically included in the Strategic Guidelines of the Triennial Work Programme.

PGC D will also lead the LNG activities of IGU, in cooperation with other international LNG organisations, in an attempt to exchange information and develop synergies on the ongoing activities. These organisations include:

- LNG Conferences
- International Group of Liquefied Natural Gas Importers (GIIGNL)
- Society of International Gas Tanker and Terminal Operators (SIGTTO)
- World Energy Council (WEC)

PGC D will also perform, during this triennium, studies on LNG topics of interest to IGU Members. For this triennium, the following three topics have been selected.

- 1. LNG quality and inter- changeability**
- 2. LNG contract clauses for more flexible global LNG markets**
- 3. Remote and offshore LNG facilities**

These study topics will achieve the significantly valuable outcome for the LNG industry regarding LNG quality, flexibility of LNG contracts and new technology.

Study Group D.1

LNG quality and inter-changeability

Scope and Purpose

Qualities of LNG differ considerably from the various markets around the world (Asia-Pacific, Europe and USA). To avoid unnecessary and expensive processing at the LNG export plants and import terminals, we should promote flexible LNG trading and lower LNG cost. This study continues the 2003-2006 triennium study to fill in some of the gaps by

extending the work to more countries, review issues highlighted by some recent projects, and propose harmonisation, following the recommendations in the former study group report.

Study Group D.2

LNG contract clauses for more flexible global LNG markets

Scope and Purpose

There are several barriers to obstruct the sound growth of the LNG market. One of them is 'LNG Contracts.' Such a circumstance was acknowledged among sellers and buyers and there was almost no alternative before early 2000. However, the LNG market itself has changed more rapidly than what was expected. The extension of these conditions in the future will generate important obstacles which will complicate future growth and development of the world LNG market.

To avoid this, one of the most important objectives is to make LNG world trade more active. In these lines our study will include the revision of LNG contract clauses in detail such as the destination clause, the take or pay clause, or the restriction of flexibility in quantity.

Study Group D.3 *Creative solutions for new LNG facilities*

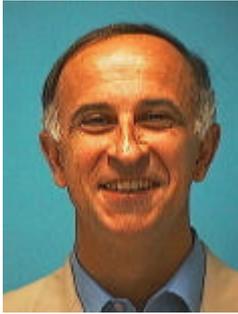
Scope and Purpose

New LNG projects will find it increasingly hard to meet the key criteria of profitability and public acceptability.

LNG plants are likely to be in more remote locations, involve more difficult gases, or not have economy of scale – and they will be challenged by high construction costs.

LNG terminals are subject to increasing public opposition, and schemes may have to include new ways of providing buffer capacity in markets with large variations.

This study group will explore various alternatives (such as new onshore and offshore technologies, and different construction approaches) that can address these issues and provide some promising ideas and guidance.



TASK FORCE ON RESEARCH AND DEVELOPMENT (R&D)

Introduction

At the end of the 2003-2006 triennium, the work undertaken by the Task Force on Research and Development (R&D) was summed up in the following deliverables:

- Review of recent gas industry trends on the conduct and financing of R&D
- Survey amongst IGU members of their views about areas in the gas sector which are in need of R&D
- Strategic Round Table on R&D, at the World Gas Conference 2006, in Amsterdam

During the initial design of the 2006-2009 Triennial Work Programme (TWP), the total output of these deliverables had still not been fully assimilated, especially the valuable conclusions from the Strategic Round Table, where business and technology representatives met to debate about the common grounds they see between them in the future.

However, the results from the studies conducted until now do provide relevant and consistent information regarding trends and tendencies of R&D within the gas industry. These will be the starting point of the Task Force R&D for the 2006-2009 triennium, which include the following:

- Over the last decade there has been a decline in R&D investment in the gas industry
- Liberalisation of energy markets has made R&D to be considered irrelevant if it is not directly related to gaining immediate competitive advantages
- Gas utilisation is the area where the decline is most pronounced
- Drivers still exist for R&D in areas like security of supply, asset integrity, safety, and sustainability
- Financing of R&D is an issue which should involve gas companies and governments
- Gas companies, however, have the lead role in ensuring that R&D issues are raised and prioritised

Purpose and Objectives

From the starting base detailed above, the Task Force R&D for 2006-2009 will largely focus on two areas:

- 1. Review, identify and assess means for the effective promotion of R&D throughout the gas industry**
- 2. Support and contribute to the success of IGU Gas Research Conference (IGRC)**

The first objective is strongly linked to IGU's mission of promoting technological development, and its aim of encouraging research and development towards new and

better technologies for the gas community. These goals have been ratified and highlighted by the Strategic Guidelines of the 2006-2009 TWP, specifically on the development and application of new technologies designed to optimise the economics of the entire gas chain, while emphasising sound environmental performance, safety and reliability.

Different themes will be considered, which could be divided into two groups: the transverse topics which cut across the entire axis of the gas industry (like safety and sustainability), and those related to specific gas chain segments. We envisage therefore a strong interaction with the other working and programme committees (WOC/PGC). In a similar way we look forward to a fruitful exchange with the IGU Gas Marketing (IGM) and WOC 5 (Gas Utilisation), with the intention to draw a fair picture of the need for enhancing R&D in gas usage.

On the corporate policy side of R&D, we also intend to explore the management aspects together with the connection between R&D and the strategy of the company, and how it is being conducted by the senior leadership.

Finally, and in view of the downside effect of deregulation on private R&D investment, we will also gauge the possibilities and manner of direct or indirect government involvement.

On the second objective for the triennium, our Task Force will support the activities of the IGRC, which will hold their conference in Paris in October 2008. This support will consist mainly on monitoring the interest and reaction of the gas industry on the topics selected by the IGRC, providing feedback from their observations and proposals.

The Task Force will be composed by a limited number of members with R&D experience and qualifications, from companies who have shown sustained interest and investment in the subject. We also intend to develop a reasonable global coverage from the designated team.



TASK FORCE ON GAS MARKET INTEGRATION (GMI)

Introduction: Finding the keys to favour regional energy and gas integration

Either because the gas market in their region is still on an early stage of development, or because they are facing an increasingly demanding energy prospect, stakeholders in the global gas industry, including policy-makers and private enterprises working along the gas chain, are seriously drawing or reviewing their strategies to face the challenges to come.

The dynamics of the geopolitical and economic developments across the world, the consolidation of trading blocks, the trends to define a new set of rules and regulations that structure the energy business, the mergers and shifts of strengths among the energy players, and the technological developments that enable new trading possibilities, provide additional complexities to this decision process. However, there is little disagreement on the basic premise that this analysis is better based upon trans-national, if not regional considerations.

Security of supply has been defined as one the key issues to be tackled during the 2006-2009 triennium. Zooming out from the safety and operational side of this topic which will be dealt separately by other committees, our Task Force will engage this issue from the international market integration perspective, both from the geopolitical side and considering the role and relations with the governments, as with the commercial relationships between major gas companies involved in regional gas market developments.

The goal of the Task Force on Gas Market Integration (GMI) for this triennium consists in identifying the possible keys to favour regional energy and gas market integration.

To this purpose, we have divided this study into two major, inter-linked themes impacting on regional gas market integration, which are *the structure harmonisation of the gas business and key goals and objectives that the private and public players should reach to ensure a sound, long-term integration process.*

1. Structure harmonisation of the energy and gas business to facilitate regional integration

The drive towards liberalisation and de-regulation, amongst other trends, is changing the structure and rules of the energy and gas businesses, and trading blocks of diverse sizes and nature around the world are realising the importance of harmonising these rules, although the process shows all the signs of being complex, and with no certainties for the long-term.

Furthermore, the clear trend towards more import dependence in the natural gas market and the related need for exploration abroad, the remoteness of supply sources, the major projects involving trans-national investment, followed by transit and transmission agreements, all this within complex geopolitical, social and security issues, further enhances the need to develop common grounds of discussion.

The gas exporting nations need certain long-term delivery assurance to be able to endorse an equally long-term investment in exploration, while the gas importers request a similar assurance to cope with their developing markets. On the other hand, the trends to liberalisation and increasing competition induce naturally to focus on the immediate gain of market interactions. It is therefore one of the key issues of success that governments, policy-makers and corporate gas players develop creative schemes that balance these objectives.

In these lines, the study of this topic will include the following issues:

- New and flexible regulation
- Regional stability concerning institutional and economical aspects
- Trading development between different regions
- Gas supply and demand markets
- Gas supply security
- Optimisation of the utilisation of energy resources
- Investment opportunities
- Time drivers and progressive agendas/objectives to reach

2. The goals that governmental and corporate players must reach to be successful in the integration process of gas markets

We often encounter that it is hard to discern the causes of difficulties in security of supply, especially when geopolitical forces are in play. However, there is little doubt that the more effective the gas industry is in managing the relationships between the stakeholders (both public and private), the smaller are the chances that the end user will be affected.

The role of governments in energy integration processes and regulation becomes crucial as a structural driver to promote natural gas markets' development, and create the context in which private corporations will have confidence to invest.

Governments also have a fundamental role of including geographical, environmental, social and cultural aspects that have a particular importance for energy integration, while ensuring - at the same time - the sustainability of these processes and the interests of the consumers.

On the other hand, the profit-driven action of the private corporations acts as a key economic agent for infrastructure and market development, where open and fluid communication channels and objective-sharing within a region proves to be of paramount importance for the sustainable integration of gas markets.

Triennium Objectives

The Task Force will be composed of a limited number of specialists, carefully selected to provide a suitable global coverage.

During the 2006-2009 triennium, we will analyse a number of specific leading cases around the world, that will provide solid learnings from past experiences, and identify the key success factors that will improve the possibilities of developing a healthy gas market integration in the future.

In line with IGU's objective of fostering a healthy business environment within the industry, and a constructive dialogue spirit with governments and regulators, our ambition is that the deliverables from our Task Force in this triennium will provide IGU with the necessary tools to promote gas market integration as a means to facilitate economic growth, social development and sustainability.

In this way, we intend to support IGU in reaching for its ***Vision*** to be the most influential, effective and independent non-profit organisation, while serving as the spokesman for the gas industry worldwide.



IV. General Information



Study Group Summary for the 2006-2009 Triennium (as at August 2006)

Committee	Study Group	Topic
WOC1	SG 1.1	Remaining conventional world gas resources and technological challenges for their development
WOC1	SG 1.2	Difficult reservoirs and unconventional natural gas resources
WOC2	SG 2.1	UGS Database
WOC2	SG 2.2	UGS technology improvements
WOC2	SG 2.3	Intelligent UGS (iUGS)
WOC3	SG 3.1	Impact of regulation on gas transmission, safety and security of supply
WOC3	SG 3.2	Review of new technologies in pipeline and construction monitoring
WOC3	SG 3.3	Contribution of gas transmission to climate protection and sustainable development
WOC4	SG 4.1	Review of asset management strategies and practices
WOC4	SG 4.2	Review of leakage reduction strategies and practices
WOC4	SG 4.3	Development of best practices for the prevention of third party interference damage to distribution assets
WOC5	SG 5.1	Industrial utilisation: Distributed Energy and other specific issues (fuel switching, technical research, regulatory aspects, H2). Efficiency indicators
WOC5	SG 5.2	Domestic and commercial utilisation: Distributed Energy and other specific issues (new appliances, home fuelling, air cooling, combination with renewables, tariff/regulation). Efficiency indicators.
WOC5	SG 5.3	Natural Gas Vehicles (NGV): Continuation of current project
PGCA	SG A.1	Evolution, expansion and promotion of IGU's Guiding Principles on Sustainable Development and Climate Change
PGCA	SG A.2	Gas industry response to climate change: Greenhouse gases reduction case studies (examples, as at August 2006): <ul style="list-style-type: none"> • Norwegian new generation plants • Algeria/Nigeria cooperation to reduce gas flaring • Others (to be determined further on)
PGCB	SG B.1	Supply and demand to 2030 *
PGCB	SG B.2	Gas price formation and trends *
PGCB	SG B.3	Regulation and future industry structure
PGCC	SG C.1	Developing gas markets in South West and Central Asia: India, Pakistan, Iran, Turkmenistan and Azerbaijan.
PGCC	SG C.2	Developing gas markets in South America
PGCC	SG C.3	Developing gas markets in South Eastern Europe
PGCD	SG D.1	LNG quality and inter-changeability
PGCD	SG D.2	LNG contract clauses for more flexible global LNG markets
PGCD	SG D.3	Creative solutions for new LNG facilities
TF R&D	Objective 1	Role and structure of R&D within the gas industry
TF R&D	Objective 2	Focal point of IGRC
TF GMI	Objective 1	Harmonising the structures of the energy and gas business for regional integration
TF GMI	Objective 2	Governmental and corporate players, partners for success

* SG outputs will be used as partial inputs for a **2030 Natural Gas Industry Outlook** study, that will be coordinated by PGC B (and the CC Chairmanship), with support from all other Committees.

WOC: Working Committee

PGC: Programme Committee

TF: Task Force

R&D: Research & Development

GMI: Gas Market Integration

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Venues of IGU Meetings during the 2006-2009 Triennium

Year	Event⁽¹⁾	Venue
2006		
16-19 October	IGU Council meeting	Lima, Peru
2007		
3-5 May	IGU Executive Committee	Vevey, Switzerland
22-25 October	IGU Council meeting	St. Petersburg, Russia
2008		
26-28 March	IGU Executive Committee	Trinidad & Tobago
Sept. 30 - Oct. 2	IGU Council meeting	Gyungju, Korea
2009		
3 - 5 June	IGU Executive Committee	London, United Kingdom
5 - 9 October	24th World Gas Conference	Buenos Aires, Argentina

⁽¹⁾ All Council and Executive Committee meetings will be preceded by Coordination Committee Meetings.

V. The 24th World Gas Conference



24th World Gas Conference Buenos Aires, Argentina 5 – 9 October 2009

The 2006-2009 triennium of the International Gas Union will end at the 24th World Gas Conference in Buenos Aires, Argentina.

Emphasizing the increasingly global nature of the gas industry, this is the first time the conference will take place in the Southern Hemisphere, with the additional attractions one can expect from a young country with a mature and vigorous gas industry.

The Opening Ceremony that will take place on Monday, October 5th 2009, will be the prelude to the Conference and Exhibition, which start on the following Tuesday 6th, and end with the Closing Ceremony on Friday 9th. All programmed activities will take place in the comfortable and elegant premises of the *Sociedad Rural Argentina*, the country's most traditional convention centre, conveniently located in the heart of its capital city.

The conference will mark the conclusion of an ambitious task embarked upon by the Argentine Presidency, through the joint efforts of nearly all the companies that are comprised in the gas chain operating in Argentina, organised through the National Organising Committee (NOC).

In the growing and dynamic global energy business, the International Gas Union is firm in its objectives of promoting a positive and enriching exchange between the stakeholders of the world gas industry. Our goal at the NOC is to provide the perfect setting for this to be a success.

We will keep you informed on how we are preparing this global event, and invite you to visit us at www.wgc2009.com.ar.

A warm welcome awaits you in Buenos Aires!

Eduardo Ojea Quintana
National Organising Committee Chairman

