The Global Energy Challenge: Reviewing the Strategies for Natural Gas

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Final Report

24th World Gas Conference

ARGENTINA | 2009

5-9 October

The 24th World Gas Conference was declared of national interest by the Presidency of the Argentine Republic and by the City Council of Buenos Aires.

The National Organising Committee would like to thank the following companies for their sponsorship of the 24th World Gas Conference

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24th World Gas Conference

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1.1. Overview by the 2006 – 2009 IGU President

Increasing Value for our Membership and Society

Introduction

In preparation for taking over this triennium we were faced with the challenge of deciding which would be the most adequate focus to concentrate IGU's energies during the 2006-2009 period.

Given the dynamic changes and trends affecting the global energy scenario in general and the gas industry in particular, we opted for a strategic standpoint, which is clearly reflected in our triennium's header:

The Global Energy Challenge: Reviewing the Strategies for Natural Gas

Looking into the events of these last three years, we are satisfied to conclude that the perspective assumed proved to be very fitting.

Indeed, in the triennium we have seen the global energy infrastructure stretched to its limits, only to be eased by an unprecedented financial crisis and subsequent economic downturn, which reaffirmed the role of IGU to participate actively in promoting timely decisions – particularly in regards to infrastructure expansion – as well as in developing the right policies.

IGU therefore had to set in motion solid actions aligned to this focus, which mainly comprised the following:

- **Increase its visibility as spokesman for the world gas industry, as established in its Vision**
- **Develop the means to address regional topics, besides the global ones**
- **Present a clear stance on climate change and the role of natural gas**
- **Promote awareness for the need of energy efficiency**

These objectives had to coexist with IGU's triennial responsibility of developing and delivering a technical programme that resulted both relevant and constructive for the Union's membership. In the following paragraphs I intend to provide a summary of the actions conducted.

Making it Happen

The start of the triennium was auspicious: at a very early stage we already had over 750 members proposed by the Charter and Associate members, to join IGU´s Technical Committees, from all over the world. This figure – a record in IGU – assured the necessary resources to embark on the ambitious 2006 – 2009 Triennial Work Programme, and support IGU's activities in assisting the world gas industry in these challenging times.

IGU's robustness was also evident in the growth of its membership. At the time of the World Gas Conference in Buenos Aires, it had reached a new record of 120 members from national associations, companies and affiliated organisations from 74 countries across all continents. South America contributed with the inclusion of Perú, the re-insertion of Venezuela, and substantial progress had been made to have Bolivia join the ranks of the Union.

One of the growing energy challenges our society is currently facing is how to balance two major – and opposing – realities: a growing demand of energy, and the need to decisively curb the global warming effects associated with this demand.

Natural gas is one of the key solution-enablers to address this, which has been one of the main messages IGU has worked hard to convey at the highest possible levels during the 2006-2009 triennium.

To effectively set in motion a global-reaching gas expansion project, an integrated approach which deals with both security of supply and security of demand is needed, both internally – between policy-makers and the industry – as well as between the countries that can be naturally networked by a regional gas industry.

With these principles foremost in the agenda – and following IGU's participation at the International Energy Forum (IEF) conference in Rome, in April 2008 – IGU organised jointly with the IEF, the first IEF-IGU Ministerial Gas Forum, in Vienna, in November 2008, which gathered energy ministers from major gas exporting and importing countries, together with CEO's of the industry's largest players. The constructive dialogue and the conclusions of the forum were hailed as a success, and both organisations are already in motion to prepare the next event during the 2009-2012 triennium.

This event was aligned with the spirit behind IGU's first Strategic Statement: Gas Market Integration - A Cornerstone for Sustainable Development, issued in December of that same year.

The environmental issues of Sustainable Development related to the gas industry and the society it services, have also been high in the agenda both internally – through the works of the technical committees – as well as in the participation of IGU in related external events.

Indeed, coupled with the regular and increasing participation of IGU in the Conference of Parties (COP) meetings, IGU has also participated in the Global Roundtable on Climate Change – which works in close collaboration with the UN Framework Convention on Climate Change (UNFCC)–, and endorsed the The Path to Climate Sustainability statement issued by that organisation in December 2006.

IGU's position on this highly sensitive issue was further enhanced when issuing its second Strategic Statement: Natural Gas in a Sustainable Energy Future, near the closing of the triennium.

Sustainability is also a concept closely entwined with efficiency. During the triennium, IGU took specific steps to reinforce its position as advocate for energy efficiency and conservation as one of the ways to promote sustainable development and support security of supply. Under the principle that Conservation and Efficiency are the Cheapest Forms of New Energy, IGU launched the IGU Efficiency Award, where individuals were invited through the vast network of the IGU membership to present novel but proven ideas that increased energy efficiency in gas utilisation.

Driven by the same idea but at an institutional level, the IGU Social Gas Award was later established under the motto "Encouraging Gas Efficient Behaviour", where organisations at all levels – both private and public – were invited to present an ongoing and original programme which effectively increases public awareness for energy saving.

But IGU is far from being alone in its quest for excellence in the gas and energy industry, and starting from initiatives taken in past presidencies, has reinforced its ties with several external organisations.

In the dynamic segment of Liquefied Natural Gas (LNG), besides having sponsored and collaborated in the organisation of the LNG 15 Conference in Barcelona, in April 2007, IGU has actively participated in joint meetings with other organisations, namely GIIGNL, SIGTTO, CLNG, GLE and Eurogas, developing a constructive exchange of information.

Along these lines, IGU increased its cooperation with the International Energy Agency (IEA), by contributing to IEA's Natural Gas Market Reviews, while IEA participated in the Steering Committee of the 2030 Natural Gas Industry Study, one of the key Special Projects of the triennium. The meetings held in Paris both in November 2006 and in October 2008 laid the grounds for developing other projects of mutual interest in the future.

Finally, the support to Research and Development occupied a significant position of IGU's triennium agenda, where the Task Force specifically established on this topic resulted as an ideal interface between our organisation and the IGRC conference, which contributed to its success in Paris, in October 2008.

It was clear to IGU that following its expansion – both in size and responsibilities – some structural changes were called for.

In order to aptly address regional topics, IGU created the position of four Regional Coordinators (Europe and CIS, Asia and Asia-Pacific, Middle East and Africa, and North and South America). Furthermore, the Executive Committee's role was enhanced, particularly on those activities which required a dynamic interaction with other organisations – both regional, supporting the work of the Regional Coordinators – as well as with global ones. It has also increased in the structure of the Secretariat, with two additional professionals coming from the Associate Membrship.

Natural gas has already proven to be the cleanest fossil fuel, and in recent years has shown its high potential both to develop energy efficiencies as well as to effectively interact with renewable fuels, providing a solid bridge to the coming generation of sustainable energy sources. It is the fuel that will enable solutions for the energy and environmental challenges ahead. However, the decisions to be taken at both government and corporate levels will not be fast or easy, and IGU's role as catalyst in this process will possibly prove to be crucial.

It is comforting to see however, that our Union's vital signs remain strong and solid to face the challenges ahead.

Ernesto López Anadón
IGU President
(2006-2009)

1.2. Triennium Authorities

E. López Anadón
Argentina
President

A. R. Hashim
Malaysia
Vice President

G. Verberg
The Netherlands
Immediate Past President

T. Indrebø
Norway
Secretary General

H. Riddervold
Norway
Senior Advisor

E. Gonder
Norway
Advisor and
Webmaster

R. Brandt
Argentina
Coordination Committee
Chairman

S. W. Ho
Malaysia
Coordination Committee
Vice Chairman

A. Kidd
Argentina
Coordination Committee
Secretary

V. Yakushev, Russian Federation, **K. Chikhi**, Algeria, **S. Leonov**, Russian Federation - WOC 1 Exploration & Production

V. Onderka, Czech Republic, **H. Giouse**, France, **P. Grigelová**, Czech Republic - WOC 2 Storage

H. Wolf, Germany, **E. Dam**, The Netherlands, **U. Klaas**, Germany - WOC 3 Transmission

J. Bending, United Kingdom, **A. Soresina**, Italy, **S. Vallender**, United Kingdom - WOC 4 Distribution

J. Schweitzer, Denmark, **T. Kume**, Japan, **A. Pedersen**, Denmark - WOC 5 Utilisation

J. Puertas, Spain (replaced K. Barland in July 2008), **K. Hunsbedt**, Norway - PGC A Sustainable Development

P. Moraleda, Spain, **C. Lyle**, United Kingdom, **F. Sichar**, Spain - PGC B Strategy, Economics & Regulation

M. Farid Amin, Malaysia, **J. Batista de Toledo**, Brazil, **R. Radzi**, Malaysia - PGC C Developing Markets

S. Uchino, Japan, **A. Abu Jbara**, Qatar, **Y. Shirakawa**, Japan - PGC D Liquefied Natural Gas

J. Doumanian, Argentina, **D. Spohn**, Germany, **J. Fernandez**, Spain - TF Gas Market Integration

M. Florette, France, **M. Ydreos**, Canada, **M. Fourniguet**, France - TF Research & Development

M. Hall, Germany, **B.Schmid,** Germany - IGU Gas Marketing Committee (IGM)

WOC: Working Committee **PGC**: Programme Committee **TF:** Task Force

1.3. Triennial Work Programme (TWP)

1.3.1. Overview by the 2006-2009 IGU Coordination Committee Chairman

In line with IGU's Mission, the 2006-2009 Triennial Work Programme (TWP) aimed to promote the exchange of knowledge and information, and to provide concrete reference tools for decision-makers. The scope covered all aspects of the gas value chain, comprising exploration and production, transmission, storage, distribution and utilisation, as well as issues regarding the preservation of the environment, long-term strategies, developing markets, Liquefied Natural Gas (LNG), Research and Development, and regional market integration.

The **Strategic Guidelines** defined for the 2006-2009 TWP were the following:

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 intention behind these principles was to provide a framework for a technical programme in which the outputs would 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.

The TWP comprised **28 study groups and topics** (listed in the chart of page 10), under the responsibility of the following 11 technical committees: Exploration and Production; Storage; Transmission; Distribution; Utilisation; Sustainable Development; Strategy, Economics and Regulation; Developing Markets; Liquefied Natural Gas (LNG); Gas Market Integration; and Research and Development. It also included the work from the IGU Gas Marketing Committee (IGM - formerly an external organisation that came under the auspices of IGU at the start of the triennium). The membership of these committees attained a record-high number of 751 experts of a wide range of disciplines, from all over the world.

Following over 3 years of continuous research and discussion, an extensive technical work was delivered at the 24th World Gas Conference (WGC) in Buenos Aires. These outputs included final reports from all the technical committees mentioned above.

In addition, the following **5 Special Projects** were developed during the Argentine Presidency, and their key findings were presented and debated at the 24th WGC:

1. Natural Gas Industry Study to 2030 - Enabling Solutions for Energy Demand and Environmental Challenges: A comprehensive report on the perspectives of the entire world gas industry to the year 2030.
2. Natural Gas - Unlocking the Low Carbon Future: A study on the role of the natural gas industry to mitigate the effects of climate change.
3. Proposed IGU Guidelines for Gas Market Integration: A thorough analysis of the variables behind the integration potential of gas markets in a region, based on several case studies around the world.
4. Best Practices of the Natural Gas Industry: A compilation of the highest-ranked best practice proposals submitted to the technical committees.
5. IGU Energy Efficiency Indicators - Conservation and Efficiency are the New Sources of Energy: A 'demo' of an IGU model under development, which allows a comparison of the efficiency (in terms of cost and emissions) of appliances fueled by gas against other forms of energy.

The WGC deliverables also included **340 papers from 51 countries**, which were selected by the technical committees from **692 submissions received** during the Call for Papers process.

Once again, we wish to extend our sincere appreciation to the dedication and commitment of all the committee leaders and members who made it possible to turn this ambitious technical programme into high quality outputs.

Roberto Brandt
IGU Coordination Committee
Chairman
(2006-2009)

1.3.2. TWP in Brief

IGU Committee Study Groups and Topics for the 2006 - 2009 Triennium

COMMITTEE	STUDY GROUP	TOPIC
WOC1	SG 1.1	Remaining conventional world gas resources and technological challenges for their development.
	SG 1.2	Difficult reservoirs and unconventional natural gas resources.
WOC2	SG 2.1	UGS Database.
	SG 2.2	UGS technology improvements.
	SG 2.3	Intelligent UGS (iUGS).
WOC3	SG 3.1	Impact of regulation on gas transmission, safety and security of supply.
	SG 3.2	Review of new technologies in pipeline and construction monitoring.
	SG 3.3	Contribution of gas transmission to climate protection and sustainable development.
WOC4	SG 4.1	Review of asset management strategies and practices.
	SG 4.2	Review of leakage reduction strategies and practices.
	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.
	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.
	SG 5.3	Natural Gas Vehicles (NGV): Continuation of pre-existing project.
PGCA	SG A.1	Evolution, expansion and promotion of IGU's Guiding Principles on Sustainable Development and Climate Change.
	SG A.2	Gas industry response to climate change: Greenhouse gases reduction case studies.
	SG A.3	Post-Kyoto Concept.
PGCB	SG B.1	Supply and demand to 2030 *.
	SG B.2	Gas price formation and trends *.
	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.
	SG C.2	Developing gas markets in South America.
	SG C.3	Developing gas markets in South Eastern Europe.
PGCD	SG D.1	LNG quality and inter-changeability.
	SG D.2	LNG contract clauses for more flexible global LNG markets.
	SG D.3	Creative solutions for new LNG facilities.
TF GMI	Objective 1	Harmonising the structures of the energy and gas business for regional integration.
	Objective 2	Governmental and corporate players, partners for success.
TF R&D	Objective 1	Role and structure of R&D within the gas industry.
	Objective 2	Focal point and support to the IGU Research Conference (IGRC).
IGM	M1	Natural Gas and renewables.
	M2	How can marketing contribute to promote natural gas in new areas and new technologies.

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

WOC: Working Committee
GMI: Gas Market Integration
PGC: Programme Committee
R&D: Research & Development
TF: Task Force
IGM: IGU Gas Marketing Committee

1.3.3. Key Deliverables

a) 2006-2009 IGU Technical Committee Reports

The full reports from the IGU Technical Committees on the studies developed during the 2006-2009 triennium were included in a DVD delivered at the 24^{th} World Gas Conference held in Buenos Aires. They can also be found at:

- WGC2009 webpage: www.wgc2009.com/downloadPost.asp (under "WGC2009 Proceedings") - Online until June 30^{th} 2010.
- IGU webpage: www.igu.org/html/wgc2009/index.html

b) Special Project Reports

The reports of the Special Projects listed below were delivered - in hard-copy and electronic versions - during the 24^{th} World Gas Conference. They can also be found at:

- WGC2009 webpage: www.wgc2009.com/specialProject.asp - Online until June 30^{th} 2010.
- IGU webpage: http://www.igu.org/wgc2009

The Special Projects developed during the 2006-2009 triennium were the following:

1. Natural Gas Industry Study to 2030: Enabling Solutions for Energy Demand and Environmental Challenges
2. Natural Gas: Unlocking the Low Carbon Future
3. Proposed IGU Guidelines for Gas Market Integration
4. Best Practices of the Natural Gas Industry
5. IGU Energy Efficiency Indicators: Conservation and Efficiency are the New Sources of Energy

2. 24th World Gas Conference (Buenos Aires, October 5 - 9, 2009)

2.1. Overview by the National Organising Committee (NOC) Chairman

It has been a great honour for us to host the 24th World Gas Conference.

This section summarises and highlights the outcome of the WGC2009 held in Buenos Aires during October 5-9.

Under "Conference Highlights" you will be able to review the Technical Programme, which included 14 Keynote Addresses, 4 Luncheon Addresses, 9 Strategic Panels and 42 Technical Sessions, held in one Auditorium and eight other rooms specially built for the WGC2009.

Over 3,500 people from 83 countries attended the Conference. 79% of the delegates were pre registered and 21% registered on-site.

The President of Argentina, Cristina Fernández de Kirchner, was present at the Opening Ceremony, which was further attended by local and foreign energy ministers, diplomats, officials, IGU Council members and Technical Committee experts, as well as special participants and guests.

From the early stages of the organisation, the Conference was institutionally sponsored by the Presidency of Argentina, the Government of the City of Buenos Aires and the National Tourism Secretariat.

Almost 1,000 rooms in the best hotels in Buenos Aires were occupied by the visitors, who were also able to travel around the city and took specially designed tours of the surrounding areas as well as of Argentina's main tourist attractions.

As far as the Exhibition is concerned, 270 companies presented their activities, products and services and was visited by over 16,000 people.

We thank all IGU Council Members and Committees for their constant and valuable support and are specially grateful to our sponsors, who made it possible to materialise the Conference. And last but not least, we would like to highlight the commitment and professionalism of our team, a key factor in the success of the WGC2009.

Eduardo Ojea Quintana
NOC Chairman
(24th WGC)

2.2. NOC Authorities

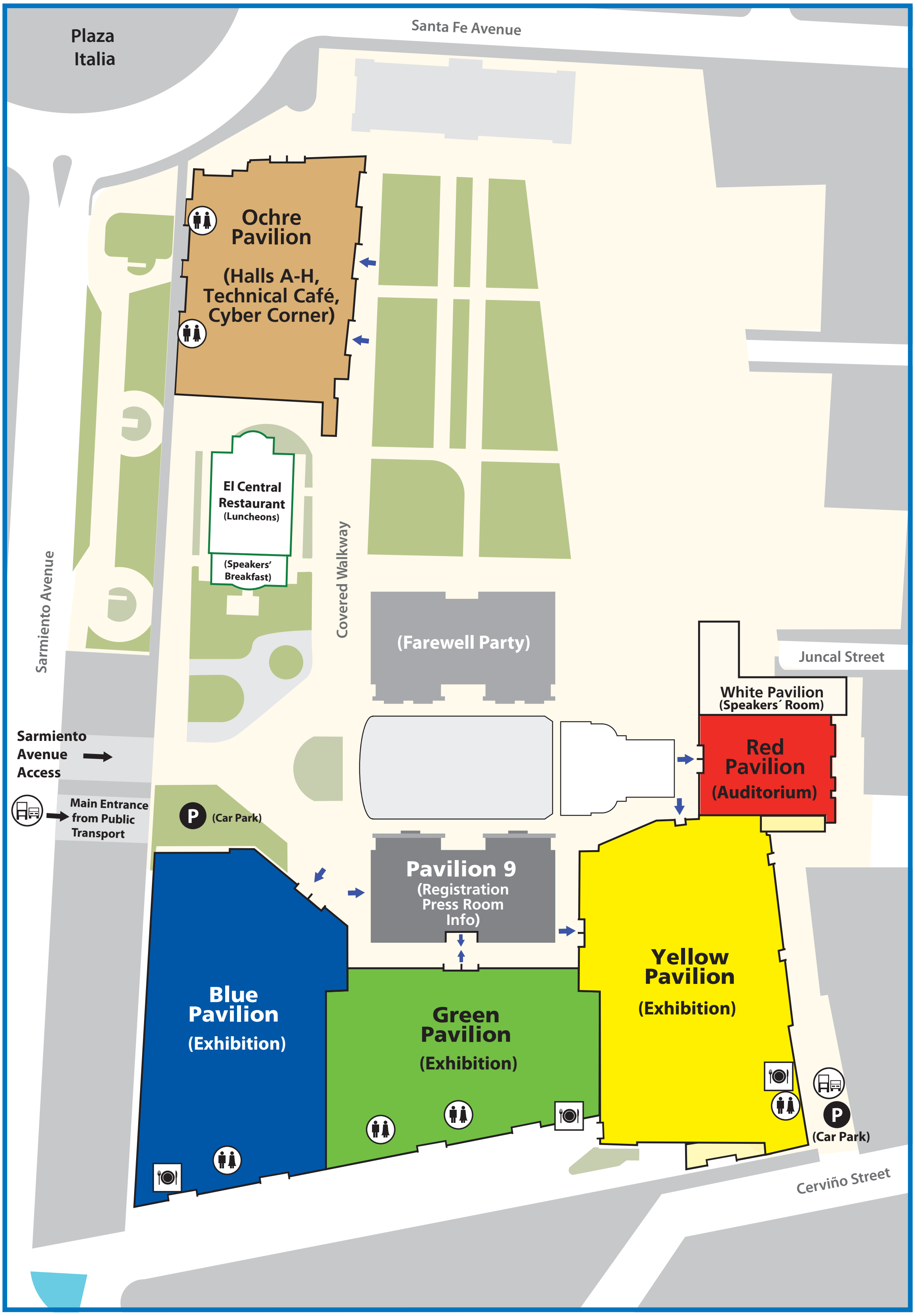
Eduardo Ojea Quintana
Chairman

Graciela Ortolá
Secretary

COMMITTEE DIRECTORS

Nino Barone, **Sales Committee**
Carlos Bechelli, **Management Supervision**
Rodolfo Berisso, **Financial Committee**
Jorge Doumanian, **Technical Committee**
Guillermo Lagier, **Safety and Security Committee**
Daniel Perrone, **Communications and Press Committee**
Domingo Sandoval, **Logistics and Exhibition Committee**
Carlos Serrano, **Promotions Committee**

2.3. Map of the Venue



2.4. Conference Highlights

2.4.1. Technical Programme

a) Overview

As detailed in the graph on the following page, the Technical Programme of the 24th World Gas Conference (WGC) comprised different types of sessions:

- 14 Keynote Addresses
- 4 Luncheon Addresses
- 9 Strategic Panels
- 1 Special Session by the incoming Malaysian Presidency, on IGU's 2009 - 2012 Triennial Work Programme
- 24 IGU Technical Committee Sessions
- 18 Expert Fora
- 10 Poster Sessions (with a total of 112 posters)

The Technical Committee Sessions and the Expert Fora, where the work of the IGU technical committees was presented, were allocated in such a way to avoid overlap with the Keynote Addresses and Strategic Panels, thus allowing the delegates to make the most of the Conference.

A further innovation was implemented in the arrangement of the Poster Sessions, by which a special area under the name of 'Technical Café', conveniently located in the midst of the conference rooms, provided a comfortable setting for consultation and discussion with the authors.

Four of the highest-graded papers, two of which were extracted from the "Best Practice" category -another innovation of the Argentine triennium-, received special prizes and awards during the Closing Ceremony of the Conference.

b) Technical Programme at a Glance

Meeting room →	Auditorium RED Pavilion	Hall A	Hall B	Hall C
Monday 5 October				
17.00 - 19.00	Opening Ceremony (Luna Park Stadium)			
20.00 - 22.30	Gala Dinner (Hilton Hotel)			
Tuesday 6 October				
08.30 - 09.15	KA1: REPSOL YPF KA2: QATARGAS OPERATING COMPANY			
09.15 - 09.30				
09.30 - 11.30		CS PGC B Gas Supply & Demand to 2030	CS WOC 3 News on Pipeline Transmission Systems: The Impact of Economic Regulation & Environmental Legislation, New Monitoring Technologies & Challenging New Pipeline Projects	CS PGC C Developing Gas Markets in South, West & Central Asia
11.30 - 12.00	Exhibition Opening			
12.00 - 13.30				
13.45 - 14.30	KA3: GAZPROM KA4: E.ON RUHRGAS			
14.30 - 16.00	SP1: Outlook to 2030: Reviewing the Strategies for Natural Gas		SP2: Innovation & New Technologies for Increasing Gas Competitiveness	
16.00 - 16.30				
16.30 - 18.30		CS PGC B Gas Price Formation & Trends	CS WOC 1 Difficult Reservoirs & Unconventional Natural Gas Resources	CS WOC 2 New Technologies for Underground Gas Storage (UGS)
Wednesday 7 October				
08.30 - 09.15	KA5: PETROBRAS KA6: THE JAPAN GAS ASSOCIATION			
09.15 - 09.45				
09.45 - 11.45			CS WOC 4 Gas Distribution Asset Management	CS WOC 1 Remaining Conventional World Gas Resources & Technological Challenges for their Development
12.00 - 13.30				
13.45 - 14.30	KA7: CHEVRON CORPORATION KA8: GDF SUEZ			
14.30 - 16.00	SP3: Adjusting the Balance between Security of Supply and Demand: Views from Energy Ministers	SP4: Natural Gas & the Sustainability Question: How Many Answers Can We Provide?		
16.00 - 16.30				
16.30 - 18.30			CS WOC 4 Review of Leakage Reduction Strategies & Practices	CS WOC 3 Evaluating Challenging New Off- & On-shore Pipeline Projects: Security of Supply in an Era of Growing International Gas Pipeline Networks & Energy-Hungry Markets
Thursday 8 October				
08.30 - 09.15	KA9: TOTAL KA10: PETRONAS			
09.15 - 09.45				
09.45 - 11.45			CS WOC 4 Prevention of Third Party Interference Damage to Distribution Assets	CS TF GMI Guiding Principles for Gas Market Integration
12.00 - 13.30				
13.45 - 14.30	KA11: BP KA12: AMERICAN GAS ASSOCIATION			
14.30 - 16.00	SP5: Finding the Links for Gas Market Integration	SP6: Liquefied Natural Gas (LNG): From Market Facilitator to Global Market Driver		
16.00 - 16.30				
16.30 - 18.30			CS PGC B Regulation & Future Industry Structure	CS WOC 3 Review of New Technologies in Pipeline Monitoring
Friday 9 October				
08.30 - 09.15	KA13: NATIONAL IRANIAN GAS COMPANY KA14: GASUNIE			
09.15 - 09.45				
09.45 - 11.45		SP8: Marketing Natural Gas in a Demanding Environment	SP7: Natural Gas: An Accomplished Driver for Vehicles Around the World	SP9: Gas to Liquids (GTL) & Unconventional Sources of Liquid Fuels
12.00 - 13.30				
14.00 - 16.00		Special Session: Triennial Work Programme 2009 - 2012		
16.30 - 18.00	Closing Ceremony			
18.00 - 21.30	Farewell Party (Opera Pampa)			

Notes and references:

KA:	Keynote Address	CS:	Committee Session	WOC:	Working Committee
LA:	Luncheon Address	EF:	Expert Forum	PGC:	Programme Committee
SP:	Strategic Panel	PS:	Poster Session	TF:	Task Force

Hall D	Hall E	Hall F	Hall G	Hall H	Technical Café
OCHRE Pavilion					
Coffee break					
CS PGC D LNG Quality		EF WOC 5 Micro CHP Knocks at the Door!	EF WOC 2 Major Trends in Underground Gas Storage (UGS) Development	EF WOC 4 Asset Management Topic Papers	PS WOC 1 Authors PS PGC A Authors
Luncheon (LA1) - **Rune Bjornson**, Executive Vice President, Natural Gas, **STATOILHYDRO**					
Coffee break					
CS WOC 5 Industrial Utilisation: Technologies for Tomorrow?		EF WOC 3 Impact of Regulation on Gas Transmission, Safety & Security of Supply	EF PGC D Operational Improvement	EF PGC A Gas Chain Sustainability	PS WOC 4 Authors PS PGC C Authors
Coffee break					
CS WOC 2 Main Drivers & Changing Role of Underground Gas Storage (UGS)	CS PGC D Economic Aspects in the LNG Industry	EF WOC 5 How Renewable will Support the Natural Gas Business!	EF PGC B Presentation & Discussion on Selected Papers	EF PGC C Future Impact of Geo-politics & Globalisation on Sustainable Gas Supply & Trade	PS WOC 3 Authors PS TF GMI Authors
Luncheon (LA2) - **Didier Houssin**, Director, Directorate of Energy Markets & Security, INTERNATIONAL ENERGY AGENCY (IEA)					
Coffee break					
CS PGC A The Gas Industry Reponse to Climate Change	CS WOC 5 Domestic & Commercial Utilisation: Appliances & Products for Tomorrow?	EF WOC 1 Exploration of New Reserves & Areas	EF PGC D New LNG Projects	EF PGC C Developing Natural Gas Markets: How Issues Including Security of Supply, Alternative Fuels, Pricing & Technological Improvements Interact for a Sustainable Development	PS WOC 2 Authors PS PGC B Authors
Coffee break					
CS PGC C Developing Gas Markets in South America (from a more integrated perspective)	CS WOC 5 Natural Gas Vehicles (NGV): Methane - A Global Eco-Efficient Mobility Solution	EF WOC 3 Contribution of Gas Transmission to Climate Protection & Sustainable Development	EF PGC B Presentation & Discussion on Selected Papers	EF PGC A Energy Efficiency, Gas & Renewables	PS PGC D Authors
Luncheon (LA3) - **Carlos Villegas Quiroga**, Executive President & Chairman of the Board, YPFB (BOLIVIA)					
Coffee break					
CS PGC C Developing Gas Markets in South Eastern Europe	CS PGC D Creative Solutions for New LNG Facilities	EF WOC 1 Production & Processing Techniques	EF WOC 2 UGS Technologies & Applications for CO_2 Sequestration	EF WOC 4 Leakage and Third Party Damage Management Topic Papers	PS WOC 5 Authors
Coffee break					
Luncheon (LA4) - **Claudi Santiago**, CEO, GE OIL & GAS					

c) Keynote Addresses

Tuesday, October 6th

"Long Term Prospects of World Gas Markets and the Increasing Role of LNG"

Antonio Brufau, Chairman & CEO, **REPSOL YPF** and Vice President, **GAS NATURAL SDG**
Faisal M. Al-Suwaidi, Chairman & CEO, **QATARGAS OPERATING COMPANY LTD**
Chaired by: **Abdul Rahim Hj Hashim**, Vice President, **IGU** and President, **MALAYSIAN GAS ASSOCIATION** (MGA)

"Key Issues to Address Sustainable Supply and Demand of Natural Gas"

Alexey B. Miller, Deputy Chairman of the Board of Directors, Chairman of the Management Committee, **GAZPROM**
Bernhard Reutersberg, CEO, **E.ON RUHRGAS**
Chaired by: **Antonio Gomis Saéz**, Chief Operating Officer & Director, **YPF S.A.**

Wednesday, October 7th

"Natural Gas Trade as a Catalyst for Regional Market Integration"

Maria das Graças Silva Foster, Director of Gas & Energy, **PETROBRAS**
Norio Ichino, Chairman, **THE JAPAN GAS ASSOCIATION**
Chaired by: **Tim Eggar**, Chairman, **NITOL SOLAR**

"Roles of Key Players in an Increasingly Inter-dependent Gas Industry"

George Kirkland, Executive Vice President, Global Upstream & Gas, **CHEVRON CORPORATION**
Jean-François Cirelli, Vice Chairman & President, **GDF SUEZ**
Chaired by: **George Verberg**, Immediate Past President, **IGU**

Thursday, October 8th

"Contribution of the Natural Gas Industry to a Sustainable Energy System"

Christophe de Margerie, Chairman & CEO, **TOTAL**
Tan Sri Hassan Marican, President & CEO, **PETRONAS**
Chaired by: **Décio Oddone**, CEO, **PETROBRAS ENERGIA**

"Management of Key Risks and Uncertainties for the Future Development of the Natural Gas Industry"

Tony Hayward, Group Chief Executive, **BP**
Thomas E. Skains, Chairman, **AMERICAN GAS ASSOCIATION**
Chaired by: **Daniel Yergin**, Chairman, **IHS CAMBRIDGE ENERGY RESEARCH ASSOCIATES** (IHS CERA)

Friday, October 9th

"Mechanisms to Secure Capital Availability and Affordability of Future Gas Infrastructure Developments"

Azizollah Ramezani, Deputy Minister & Managing Director, **NATIONAL IRANIAN GAS COMPANY**
Marcel P. Kramer, Chairman of the Executive Board & CEO, **GASUNIE**
Chaired by: **Jorge Ferioli**, Chairman of the Programme Committee & Chairman of the Argentine Committee, WORLD ENERGY COUNCIL (WEC)

d) Luncheon Addresses

Tuesday, October 6th

"Contribution of Natural Gas to Sustainable Growth"

Rune Bjørnson, Executive Vice President, **STATOILHYDRO**

Wednesday, October 7th

"World Energy Outlook: Future Challenges in the Role of Natural Gas"

Didier Houssin, Director, Directorate of Energy Markets & Security, **INTERNATIONAL ENERGY AGENCY (IEA)**

Thursday, October 8th

"Present Status and Prospects of the Bolivian Gas Industry"

Carlos Villegas Quiroga, Executive President & Chairman of the Board, **YPFB**

Friday, October 9th

"Technological Innovation in the Natural Gas Industry"

Claudi Santiago, CEO, **GE OIL & GAS**

e) Strategic Panels

Tuesday, October 6th

Strategic Panel 1: Outlook to 2030: Reviewing the Strategies for Natural Gas
Strategic Panel 2: Innovation and New Technologies for Increasing Gas Competitiveness

Wednesday, October 7th

Strategic Panel 3: Adjusting the Balance between Security of Supply and Demand: Views from Energy Ministers
Strategic Panel 4: Natural Gas and the Sustainability Question: How Many Answers Can We Provide?

Thursday, October 8th

Strategic Panel 5: Finding the Links for Gas Market Integration
Strategic Panel 6: Liquefied Natural Gas (LNG): From Market Facilitator to Global Market Driver

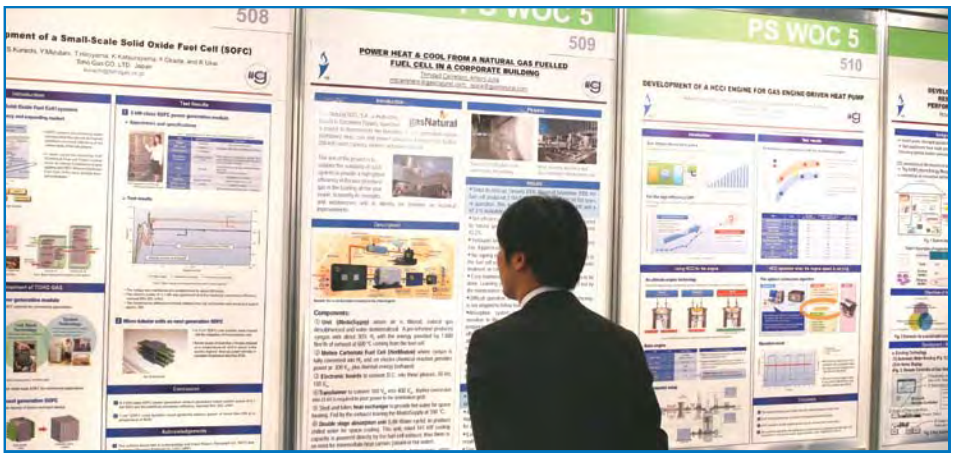
Friday, October 9th

Strategic Panel 7: Natural Gas: An Accomplished Driver for Vehicles Around the World
Strategic Panel 8: Marketing Natural Gas in a Demanding Environment
Strategic Panel 9: Gas to Liquids (GTL) and Unconventional Sources of Liquid Fuels

f) Technical Committee Activities

The IGU Technical Committees organised a number of sessions which were categorised as Committee Sessions, Expert Fora and Poster Sessions. A few of them were also responsible for some of the Strategic Panels of the Technical Programme. The following chart provides a detail of the activities conducted:

	Strategic Panels	Committee Sessions	Expert Fora	Poster Sessions (Number of Posters)
WOC 1		2	2	14
WOC 2		2	2	5
WOC 3		3	2	19
WOC 4		3	2	6
WOC 5		3	2	21
PGC A	1	1	2	13
PGC B		3	2	9
PGC C		3	2	5
PGC D		3	2	14
TF GMI	1	1		6
TF R&D	1			
IGM	1			



g) Key Outputs

I) Keynote and Luncheon Speaker Presentations *

Most of the presentations made by the Keynote and Luncheon Speakers can be found on the following links:

Keynote Speakers:

- WGC2009 website: www.wgc2009.com/postKeynote.asp - Online until June 30th 2010.
- IGU website: http://www.igu.org/wgc2009

Luncheon Speakers:

- WGC2009 website: www.wgc2009.com/postLuncheon.asp - Online until June 30th 2010.
- IGU website: http://www.igu.org/wgc2009

II) Strategic Panels *

Most of the presentations made by the speakers at Strategic Panels can be found on the following links:

- WGC2009 website: www.wgc2009.com/postStrategicPanels.asp - Online until June 30th 2010.
- IGU website: http://www.igu.org/wgc2009

III) Technical Sessions *

Most of the presentations made by the speakers at Committee Sessions and Expert Fora can be found on the following links:

- WGC2009 website: www.wgc2009.com/postCommittee.asp - Online until June 30th 2010.
- IGU website: http://www.igu.org/wgc2009

Below you may also find a detailed report from each of the IGU Technical Committees on their activities during the World Gas Conference.

Working Committee 1 (WOC1) – Exploration and Production

WOC1 organised two Committee Sessions, two Expert Fora and one Poster Session (with 14 posters).

Selection of the papers for the Sessions was carefully conducted by WOC1, from more than 140 abstracts that had been submitted, making competition high. Audience interest for the Committee Sessions was also high: about 140 attendees at the session “Difficult Reservoirs and Unconventional Natural Gas Resources” (October 6th), and about 120 attendees at Committee Session “Remaining Conventional World Gas Resources and Technological Challenges for heir Development” (October 7th) and more that 80 attendees at each Oral Expert Forum Session “Exploration of New Reserves and Areas” (October 7th) and “Production and Processing Techniques” (October 8th).

Committee Session 1.1 “Difficult Reservoirs and Unconventional Natural Gas Resources” was focused on resources assessment and problems of exploration and production of gas from unconventional sources and difficult reservoirs. Vice-Chairman of WOC1, Mr. Kamel Chikhi from Algeria presented results of the Study made by WOC1 on this topic in the triennium 2006-2009. Then there

* For all presentations available on these websites, the WGC organisers recieved explicit public distribution authorisation from their authors. Any missing presentations reflect, precisely, the absence of such authorisation.

were presentations on 4 of the most promising kinds on unconventional gas sources: hydrates, coalbed methane, tight gas and shale gas made by WOC1 member and invited independent experts. Key messages that come from this Session were:

1. Role of unconventional gas in general World energy balance is growing faster than it was expected in 2006.
2. Unconventional gas sources can be divided into 2 groups: real unconventional (coalbed methane, shale gas, gas hydrates, underground water-dissolved gas) and pseudo-unconventional (tight formation gas, deep (more than 4,5 km) gas, sour gas). This is important for future governmental regulation of production.
3. Investment approach for unconventional gas must be different from conventional ones: much more patience is required for profit appearance.

Committee Session 1.2 “Remaining Conventional World Gas Resources and Technological Challenges for their Development” was focused on mature regions, prospects of exploration and production there and innovative technologies of produced gas monetization. Study Group 1.1 Leader Mr. Dominique Copin made a presentation of the study results on mature areas and then there were 4 presentations of invited experts on prospects of remaining conventional gas resources development, gas production paradigm change (after unconventional gas production start), gas monetization, largest gas production project development in Yamal peninsula (Russia). Key messages that come from this Session are:

1. There is general trend in all mature areas studied: no considerable conventional gas reserves increase last years, although total number of discovered fields is growing constantly.
2. More and more gas is produced from smaller and more complex fields than earlier in mature areas.
3. New huge gas production projects are based on discoveries made decades ago.
4. Offshore areas are the most promising for new huge discoveries.
5. Hubbert Paradigm is true for conventional gas production, but should be reconsidered if unconventional gas production takes share.
6. Gas monetization technologies development and application are moving ahead, but slower than expected in 2006.

The 2 Oral Expert Fora was focused on Exploration of New Reserves and Areas (EF 1.A) and Production and Processing Techniques (EF 1.B). There were presentations on Different Approaches to E&P In Frontier & Mature Basins, The Resource Potential & Development Trend Of Unconventional Gas Resources, Implementation of the huge Shtokman Project, Utilisation Of The Methane From Working & Abandoned Coal Mines, Shale Gas, Ecological Solutions For Arctic Offshore Gas Resources Development, Gas Potential Of The Sub-Andean Basins, Application of New Technology To Tight Gas Development, Hydraulic Fracturing & Acidising Techniques in Complex Natural Gas Reservoirs, Sweetening Technologies, Complex Solution of the Problem Of Effective Development & Exploitation at huge gas field, Field Optimiser For A Complex Gas Production System, Management Of Flow Assurance Constraints In Remote Arctic Environment. All presentations were of high quality and caused great interest from audience.

WOC 1 Poster Session included 14 posters from 9 countries. There were presentations on unconventional gas resources, new techniques in exploration, production, processing and gas monetization.

In conclusion, WOC 1 Sessions have shown increasing interest to IGU from big gas producing countries such as Russia, USA, China, Brazil, and Iran. New findings in E&P were shown at the 24 WGC. Many of them concerned unconventional gas, showing its growing importance for world gas industry development.

Working Committee 2 (WOC2) – Storage

WOC2 organised two Committee Sessions, two Expert Fora and one Poster Session (with 5 posters).

Sessions related to Underground Gas Storage - the main task of WOC2 activities - were divided into four topics:

1. Major trends in UGS Development
2. New technologies for UGS
3. Main Drivers & Changing Role of UGS
4. UGS Technologies and Applications for CO_2 Sequestration

Major trends in UGS Development - the aim of this session was to present the Study Group 2.1 report and to give a brief introduction into new strategies in UGS business – where we are now and where the UGS business is going.
There were 6 contributions presented at this session. Study group report of SG 2.1 was brought to the participants' attention and the up-graded UGS database was introduced. Within the framework of this session the participants had the opportunity to listen to the contributions of top experts from USA, Germany, China, Russia and France. Not only representatives of companies but also EU institutions gave speeches at this very interesting session.

New technologies for UGS - the intention of this session was to make a clear overview of currently used technologies in UGS business and to show trends where UGS technology will probably move. In the frame of this session the SG 2.2 Final Report, where the results of the triennial works were summarized, was introduced. For this session there were speakers from France, the Czech Republic, Russia and Poland. Topics of their contributions were dedicated to presenting the experience from operating UGS's and new knowledge gained during operations.

Main Drivers & Changing Role of UGS - presentations and discussions in this forum were focused on the changing role of UGS in the supply policy and the need for its development in a growing market. Other aspects like legal rules and environment and safety regulations were also covered. For this session there was a keynote speaker from USA – Mr. Frederick W. Metzger, Vice president, Storage, Kinder Morgan Energy Partners.

The conditions on the European storage market were also described during this forum with a specific focus on the Netherlands. Two solutions based on advanced technologies were also presented as examples of possible technological approaches to an optimum UGS operation during the changing role of the UGS industry. The speakers were from the Netherlands, Austria, the Czech Republic and Russia.

UGS Technologies and Applications for CO_2 Sequestration – the speakers at this session assessed the current status of the knowledge and experience gained from almost a hundred years history of gas storage operation which might be applicable for CO2 sequestration. All contributions were focused on case studies of CO_2 storage, potentials and risk evaluation and applicable techniques for UGS. The main features were legal and policy framework, pricing for CO_2, emissions and lifecycle of CO_2 storage to promote necessary investments. Mr. Norbert Liermann from Clausthall University, Germany was invited as the keynote speaker. Together with him another four contributions were presented – from Russia, the Czech Republic, Poland and Germany.

Many well-known experts in the UGS industry have honoured us with their presentations. Our intention was to combine the existing practice and theoretical knowledge including new experimental methods, to show the trends of the UGS industry and to introduce new approaches.

We were pleasantly surprised with the increase of people interested in UGS business, in comparison with previous triennia. The reasons are probably due to new trends in this area which might be related to the security of supply as well as new trading opportunities with stored gas.

Working Committee 3 (WOC3) – Transmission

WOC 3 organised three Committee Sessions, two Expert Fora and one Poster Session (with 19 posters).

The quality of the vast majority of the reports, papers and posters presented was on an excellent professional level, and found a good response by the auditorium, in attendance figures and questions. In particular, the events were:

- **Session 3.1, 06-10-2009, Hall B:**
  - Attendance: 135
  - Subjects: Presentation of committee report WOC 3:
    Introduction, summary and outlook by E. Dam, vice-chairman of IGU WOC 3;
    Report study group 3.1 by study group leader, M. Kornalijnslijper;
    Report study group 3.2 by study group leader, J. Bonetto;
    Report study group 3.3 by study group leader, S. Apeland;
  - Paper presentation by A. Pijnacker Hordijk on a pipeline extension project form the Netherlands to the United Kingdom, crossing the English channel;
  - Paper presentation by G. de Hemptinne on the effects of regulation and controlling on gas markets.

- **Session 3.2, 07-10-09, Hall C, chaired by E. Dam, vice chairman of WOC 3:**
  - Attendance: 65;
  - Paper presentation by F.A. Velazquez Martinez about the construction of the CAMISEA pipeline in Peru, crossing over the Andes from the Amazonas jungle to Lima on the Pacific coast and thus including several thousand meters of difference in altitude;
  - Paper presentation by J. C. Arancon and D- Velez about the Balearic submarine pipeline construction from Denia (mainland Spain) to Mallorca via Ibiza, with the rather unusual restriction to be constructed only in the rather harsh conditions of winter in order not to disturb tourism;
  - Paper Presentation by V. Potocny about the pipeline transmission system operated by EUSTREAM in the Slovak republic which is significant for its huge capacity;
  - Paper presentation of A. Chepkasov and O. Aksyutin on the construction of the Bovanenko – Ukhta trunk pipeline through the arctic tundra, with large areas of permafrost soil and of swamplands to be con sidered;
  - Paper presentation by H. Yamanouchi on a tunnel for a gas pipeline under-crossing parts of central Tokyo, one of the densest populated areas worldwide and a renowned earthquake zone.

- **Session 3.3, 08-10-09, Hall C, chaired by J. Bonetto, study leader SG 3.2:**
  - Attendance: 95;
  - Paper presentation by V. Kharionovsky about stress corrosion detection and remedy;
  - Joint paper presentation by D. Fallabella and E. Carzoglio about the progress in detection of high pH stress corrosion cracking;
  - Paper presentation by P. Cosentino on electromagnetic ground conductivity techniques for pipeline integrity survey;
  - Paper presentation by A. M. Bin Abdullah on the management of the integrity of a condensate pipeline with on-line internal corrosion monitoring techniques, with N. Ali Napiah as co-author;
  - Paper presentation by I. Takeuchi on a new concept and test method on running ductile fracture arrest for high pressure gas pipelines;
  - Paper presentation by S. Ramesohl on behalf of P. Schwengler on CHARM, a helicopter based leak detection system, and GASCAM, a mobile device for detection even of small gas leaks.

- **Expert forum 3.A, 06-10-09, Hall F, chaired by. M. Kornalijnslijper, study leader SG 3.1:**
  - Attendance: 70;
  - Presentation by. P. Nienhuis on the planning of the transition from a n integrated gas company to an independent TSO at the example of Nederlandse Gasunie;
  - Presentation by E.K. Dale on the gas value chain under the aspects of quality management and the security of supply;
  - Presentation by M. Colomer on the effect of LNG market share increase onto the regulation of gas transport by pipeline;
  - Presentation by S. Pietrasz on robust investment decisions in gas network planning, introducing the network supporting tool PANDA;
  - Presentation by E. Carzoglio on the impact of the regulatory framework on the integrity management of gas transmission pipelines.

- **Expert forum 3.B, 08-10-09, Hall F, chaired by S. Apeland, Study leader SG 3.3:**
  - Attendance: 55;
  - Presentation by J. Vorgang of a study prepared by MARCOGAZ on the methane reductions in the EU natural gas industry;
  - Presentation by R. Nukovic on the identification and minimisation of methane emissions in the EUSTREAM gas transmission network in the Slovak republic;
  - Presentation by S. Mansouri Alghalandis on neural networks and artificial intelligence for the manage ment of energy consumption in pipeline networks in north western Iran;
  - Presentation by N. Mokhtaria on the reduction of gas flaring operations in the SONATRACH gas production and transport system in Algeria.

The poster session at the Technical Café enjoyed the presence of 19 posters selected by WOC 3 (2 more posters selected failed to show up) that touched a wide variety of subjects related to gas transport, from new formulas for more exact pipeline capacity calculation via interesting smaller pipeline projects to pipeline corrosion detection techniques to prevent pipeline failure. Although the location of the technical café was optimal, just opposite to the lecture halls B and C where many of the WOC 3 sessions were held, the posters were visited rather immediately before or after the paper presentations and not much attended during the allocated slot.

Working Committee 4 (WOC4) – Distribution

WOC4 organised three Committee Sessions, two Expert Fora and one Poster Session (with 6 posters).

The overall quality of the papers and reports presented has been of high level, as confirmed by the attention of the audience during them.
The three Conference Sessions have been attended by an estimated amount of attendees of 120 each.
The two Expert Fora have been attended by an estimated amount of attendees of 80 each.
All sessions saw an active participation of the attendees, as after each presentation Q&A sessions have seen a significant amount of relevant questions, helping to understand in more detail the contents of the presentations.

The first Committee Session was focussed on Asset Management.
After the introduction by the Vice-Chairman, that presented the work developed by the Committee during the triennium and its key findings, he presented a summary of SG 4.1 Report on Asset Management (Review of asset management and strategies).
Than have been presented four selected papers on Asset Management that approached the topic from different perspectives: Regulator, National Association and Company.

Key messages that come out from this session are:

- **Public safety remains the most significant driver of approach.**
- **Data and information management is a critical area of focus.**
- **Long term asset management strategies are key to underpinning long term investment programs.**
- **The industry is seeing significant potential for the intelligent management of distribution networks.**
- **The generic nature of asset management means that the gas industry can learn from other industry sectors.**
- **There is a trend towards adoption of accreditation under recognised Asset Management standards e.g. PAS55.**

The second Committee Session was focussed on Leakage Reduction.
The chairman of the session, who was the chairman of SG 4.2 (that worked on this topic), presented a summary of his SG report on Leakage reduction (Review of leakage reduction strategies and practices).
Than have been presented five selected papers on Leakage Management, that approached the topic from the different perspectives of technical and management solutions.

Key messages that come out from this session are:

- **Gas leakage is part of a wider issue of unaccounted for gas.**
- **From the responses to the survey, an indicative figure of 2.7% loss as a percentage of total throughput was estimated as the typical industry level of unaccounted for gas.**
- **The climate change agenda is leading to a sharper focus by stakeholders on levels of gas distribution network leakage.**
- **Pipe replacement programmes are making the most significant contribution to the reduction in the levels of leakage.**
- **A small number of companies use pressure management as a tool to minimise leakage.**

The second Committee Session was focussed on Leakage Reduction.
The chairman of the session, who was the chairman of SG 4.2 (that worked on this topic), presented a summary of his SG report on Leakage reduction (Review of leakage reduction strategies and practices).
Than have been presented five selected papers on Leakage Management, that approached the topic from the different perspectives of technical and management solutions.

Key messages that come out from this session, as best practices identified to minimise damage, are:

- **Use of call centres to afford ease of information exchange.**
- **Robust advertising to promote damage prevention programmes.**
- **Focus on education of field workers in damage prevention.**
- **R&D with the objective of driving improvements in locating underground plant.**
- **Strong legal approaches to third parties who damage plant and facilities.**
- **Installation of a tracer wire and warning signs.**
- **The continued exchange of best practice between member companies.**
- **Benchmarking performance levels on specific indicators.**

The two Expert Fora has been focussed on the presentation of papers related to the three topics.
It has been a very interesting showcase of technical innovations, as well of innovative management approaches, adopted or implemented by the different organisations to tackle the issues related with the topics.

The poster session at the Technical Café gave the possibility of presenting a group of six more papers. The quality level of these papers was comparable to those presented at the oral sessions, and had been appreciated by those who visited the poster area.
It must be said that, probably due to the location or to the formula itself, unfortunately only a small group of delegates visited the poster session.

Working Committee 5 (WOC5) – Utilisation

WOC5 organised three Committee Sessions, two Expert Fora and one Poster Session (with 21 posters).

The overall quality of the papers and reports presented were of high level, as confirmed by the attention of the audience.
The three Conference Sessions was attended by an estimated amount of attendees of 100 – 140 each.
The two Expert Fora was attended by an estimated amount of attendees of 80 – 120 each (at the Renewable workshop session it was a major problem with lack of seats with 100 seats in the room).
All sessions saw an active participation of the attendees, as each session included Q&A sessions where a significant amount of relevant questions were proposed, helping to understand in more detail the contents of the presentations.

The first Committee Session SG 5.1 was focused on industrial use of natural gas.
The Chairman for SG 5.1 introduced the content of the Committee report that presented the work developed by the Committee during the triennium and its key findings. It was followed by 8 short contributions with the following topics:

- **European standardisation and regulatory framework for industrial gas installations.**
- **Study on gas savings to reduce natural gas demand and enhance energy security.**
- **Development of technology for ultra-high efficiency natural-gas engine combined system.**
- **Flameless oxy-FGR : an energy-efficient combustion concept that complies with environmental regulation and offers direct CO_2 capture solution for existing and new gas furnaces.**
- **Efficient use of CHP for process & heating in industry in Italy and distributed cooling & CHP in cooling in Malaysia.**
- **Practical ways of improving effectiveness of natural gas utilisation in Russia.**
- **Rational use of energy for industrial processes in Japan.**
- **Development of technology related to biogas in order to enhance gas sales.**

The second Committee SG 5.2 was focussed upon domestic gas utilization.
The chairman of SG 5.2 introduced the content of the committee report followed by oral contributions upon the following subjects:

- **Gas Quality Standards in the European Union.**
- **Perspectives for Gas Utilization Under New German Climate Legislation.**
- **Gas Heat Pumps – The Renewable Energy Hearing System of the Future.**
- **Development of GHP Featuring a Generator Capable of Servicing External Loads.**

The third Committee Session SG 5.3 was focussed on natural gas in vehicles.
The chairman of SG 5.3 introduced the SG 5.3 Committee Report followed by contributions upon:

- **Best practices and state of the art of technology and breakthrough technologies.**
- **The successful NGV development in Europe through different country approaches.**
- **Prospects for extension of international transport corridors Russia- Europe with the use of natural gas as motor fuel.**
- **Challenges in development of CNG infrastructure - India's experience.**
- **Economic and administrative leverages for extension of CNG - 25-year experience of Ukraine.**
- **Monitoring CNG quality in Germany.**

The headline for the first expert Forum was: "Micro CHP knocks the door"
This workshop was chaired by chairman of WOC 5, and contained contributions upon:

- **Micro Central Heating Power & Electrical Vehicle; A Brilliant Future for the Gas Industry.**
- **Development Strategies toward Promotion & Expansion of Residential Fuel Cell Micro-CHP System in Japan.**
- **Technology State of the Art, Market & Trends: The Japanese situation.**
- **Technology State of the Art, Market & Trends: The European situation.**
- **Gas Industry Activity Examples: Field test.**
- **How Gas Industry Supports the mCHP Technologies.**
- **How Renewable will support the Natural Gas Business – chaired by the secretary of WOC 5.**

The headline for the second expert Forum was: "How Renewable Will Support the Natural Gas Business"
This workshop was chaired by the secretary of WOC 5 and contained contributions upon:

- **Biomethane and transportation - Example from Switzerland.**
- **Renewable and natural gas in Japan.**
- **Renewable (solar Energy) and Natural Gas in Spain.**
- **Renewable and natural gas in Germany.**
- **As introduction to the following round table discussion were presented short descriptions of production, transport and use of renewable:**
    - **Future production of "green" Natural gas - Biomass gasification etc.**
    - **Transport of renewable gas in the natural gas distribution system - (biomethane, hydrogen etc.)**
    - **Use of biomethane - Transportation sector in the future (biomethane and Hydrogen etc.)**

The poster session at the Technical Café gave the possibility of presenting a group of 21 more papers. The quality level of these papers was appreciated by those who visited the poster area.
Approximately 50 – 75 persons visited the poster session during the official opening hours of the poster session.

Programme Committee A (PGC A) – Sustainable Development

This report was prepared by the following PGC A committee members: Juergen Vorgang (Eon Ruhrgas), Elbert Huijzer (Aliander), Danielle Fontanelli (Snamrete Gas), Kari Lindøe Hunsbedt (StatoilHydro), Sigve Apeland (Gassco, WOC3 committee member).

PGCA organised one Strategic Panel, one Committee Session, two Expert Fora and one Poster Session (with 13 posters).

Strategic Panel 4
Natural Gas and the Sustainability Question: How Many Answers Can We Provide?
Estimated number of attendees: 250

Main highlights:
Focus on the contributions from the panellists overall was related to:

- **The need for new models for transit to a low carbon future.**
- **Natural gas can play a vital role as a low carbon energy source in mitigating environmental footprint.**
- **There is no "silver bullet" solving the climate challenge, there needs to be a "toolbox" of mitigating measures to beimplemented.**
- **Lack of knowledge and acknowledgement related to the climate challenges impose a significant threat to obtaining a low carbon future.**
- **Climate change is part of an overall global change, where major challenges related to population changes, weather changes, deforestation and other issues needs to be understood and linked to be able to mitigate the coming future challenges.**

Key messages from the speakers:

Trude Sundset:

- Natural gas is a highly diversified product and highly flexible for energy production.
- CCS may be included in the natural gas industry's contribution to mitigate the climate challenges by providing solutions for transport and storage of CO2 in depleted hydrocarbon fields as well as in saline aquifers.
- A significant contribution to mitigate climate change may be obtained by switching from coal to gas in power production.
- Renewables need to "team up" with other sources of energy production due to the variability of power production patterns.
- Natural gas can be a "perfect match" for "teaming up" with renewables due to its high flexibility of load capabilities.
- Thus, natural gas may be a bridge to a low carbon future.

Pablo Canziani:

- Climate change has also resulted in higher variations in weather patterns, i.e. that more extreme variations with respect to temperature within the year is taking place.
- We need to change the way energy is used and to evaluate different energy sources, not just depend on the main sources available today.
- Energy use needs to be distributed more evenly throughout the world, i.e. that the high developed parts of the world needs to reduce energy consumption dramatically, while more energy needs to be available in low developed areas.

Juan Villalonga:

- There is still time for the energy sector to change in order to mitigate climate change.
- We need however to reach a peek of emissions no later than 2015.
- Emission reduction targets should be established first, and then mitigating measures should be identified.
- Energy efficiency is one of the most important contributors to climate change mitigation.

Oswaldo Lucon:

- We can expect a more closer relationship between trade and environment.
- We need to consider how governments can/should give incentives related to climate change mitigation activities and/or penalties related to not fulfilling environmental requirements.
- Natural gas has the potential of contributing to climate change mitigation, but it will be challenging to obtain necessary infrastructure needed to utilise this potential.
- It is essential to address issues related to geopolitics to be able to realise the potential natural gas has in the climate debate.

Technical Café – Poster Session

Estimated number of attendees: 50

During the technical café of PGC A 13 posters were presented, where reducing methane emissions and introducing biomethane were the main topics. As an indication of the high quality of the posters two of them were awarded: "Methane's role in promoting sustainable development in the oil & gas industry" and "A Canadian unconventional gas development & example of environmental impact reduction".

Though the timing of the allocated slot at the Technical Café was not entirely favourable (being the first Poster Session on the first morning of the conference, at the same time as the first series of Committee Sessions and Expert Forums, around 50 people stopped by. However during the conference -especially during coffee and luncheon breaks- many people came to read the posters and discuss with the authors who were very satisfied at the result.

Expert Forum A.A
The Post-Kyoto Challenges of the Natural Gas Industry
Estimated number of attendees: 33

Chair: Katarzyna Steczko, OIL & GAS INSTITUTE, Poland

Opening by Chairwoman

1. Presentation: Anne Rocher, TOTAL E&P, France

Title: How to improve energy efficiency on oil & gas facilities.

Main points: Total greenhouse gas emissions of Total E&P consisted of two thirds of venting and flaring plus on third caused by combustion. For each asset an energy efficiency plan was made. The integrated view to minimize greenhouse gas emissions must start at design phase already.

Questions & answers: Total could learn from other industries, the program is still in progress to be implemented, savings can be up to 10 % depending on the location.

2. Presentation: Marion Papadopoulo, GDF SUEZ, France

Title: Life cycle assessment of the European natural gas industry.

Main points: Reasons for LCA are comparison with other fossil and renewable energies, demand of European legislation and competition.

Results show lowest greenhouse gases and acidification compared to other fossil fuels. Validation of input data for calculation is important and should be improved.

Questions & answers: Geographical focus of the study is EU, supplies from Russia, Norway, and Algeria is included; quality of data should be improved.

3. Presentation: Vladimir Bashkin, VNIIGAZ / GAZPROM, Russian Federation

Title: Geo-ecological risk management for stable development of gas industry.

Main points: Risk assessment in combination with critical load shows probability of environmental impact on nature. The effect of this impact to the productivity of the environment should be taken into account.

4. Presentation: Gabriel Marcuz, GASODUCTO NOR ANDINO, Argentina

Title: Working together.

Main points: A film showed the cooperation of the gas company intending to build a pipeline from Argentina to Chile with NGOs and local communities to improve social conditions while getting the right to build the pipeline.

5. Presentation: Oleg Andreev, GAZPROM DOBYCHA YAMBURG LLC, Russian Federation

Title: New well survey methods minimising techno-genic environmental impacts.

Main points: Technology developed for Russian wells must be able to work at minus 60 deg. C. The venting to detect moisture content in raw gas can be avoided by using modern sensor technology. Power supply of remote installations can be made also by solar or wind power generation.

6. Presentation: Martin Rotink, GASUNIE, Netherlands.

Title: Recompression of natural gas saving the environment & money.

Main points: A mobile compressor helps saving methane from venting or flaring into the atmosphere, restrictions come from the time available, costs, local legislation and practical feasibility. Gasunie calculates with an internally price of 0,34 € per m^3 of Methane. The compressor uses natural gas from the section to be evacuated as fuel. Savings of costs due to saving natural gas is important. A second recompression unit is ordered to reduce time requirements.

Questions & answers: The price of natural gas to be used at a Transport System Operator for his compressor stations is not low, because the gas is owned by the trading units.

Expert Forum A.B

Energy Efficiency and Renewables

Estimated number of attendees: 110

Chair: Elbert Huijzer, Aliander, Study Group A2 leader

Opening by Chairman

Main points: Explain the 2 target of the forum - find examples of Energy Efficiency and discover how gas and renewables can be used to reduce environmental impact.

1. Presentation: Vladislav Karasevich,

Main points: Russian Federation is making a lot of activities to substitute natural gas with renewables for generating electricity from hydropower, geothermal heat, biomass and wind.

Final Main highlights: Without renewables there is not a future for Russia. Legislative initiative to facilitate intensive implementation of renewables.

2. Presentation: Frank Graf,

Main points: The Biogas injection to gas grid in Germany is produced with good results.

- **4000 Biogas plants.**
- **22 injection plants.**
- **Target is 10% of energy supply by 2030.**

Final Main highlights: Technical feasibility of biogas injection was proven.

3. Presentation: Lori Smith Schell

Main points: Solar Energy to heat water. China is the biggest SWH. California uses solar only to heat swimming pool water. The potential for California to utilise more solar energy is enormous and will also lead to costs savings.

4. Presentation: Hiromichi Kameyama,

Main points: In Japan the CCS for city gas system. H2 production by using membrane reformer with CO_2 capture and liquefaction, will give 50% CO2 reduction.

5. Presentation: Sari Siitonen

Main points: Resume the role of natural gas in the energy efficiency improvement. Comparing two CHP plants.

- **Combined cycle gas turbine process.**
- **Solid fuel.**

Committee Session A.1
The Gas Industry Response to Climate Change
Estimated number of attendees: 40

Chair: Kari Lindøe Hunsbedt, STATOILHYDRO, Norway

Opening by Chairwoman

1. Presentation: Juan Puertas,

Main points: In general the gas industry has implemented the recommended Guidelines for Sustainable Development, but not sufficiently. It has to be increased focus among stakeholders. PGC A has therefore elaborated more comprehensive rules. It is also important to increase R&D efforts in the gas sector.

2. Presentation: Dr. Klaus-Robert Kabelitz,

Main points: Natural Gas is the fuel of lowest carbon content and should be more favoured in a future cap& trade system following the Post-Kyoto protocol. Several allocation methods for CO2 credits were discussed, and the different impact they would have on the gas industry.

3. Presentation: Dr. Dalia Stremikene

Main points: Presented the Lithuanian energy situation. Discussed the new policies to be developed post-Kyoto and the impact it would have on Lithuania. For Lithuania it will be challenging to meet the new ETS system.

Programme Committee B (PGC B) – Strategy, Economics and Regulation

PGC B organised three Committee Sessions, two Expert Fora and one Poster Session (with 9 posters).

The quality of the papers presented and the contribution of panellists were all of high level.
The large audience attending the meetings confirmed the expectations created and actively participated in the discussion, as ample time was reserved for questions from the floor.

The Committee Sessions dedicated to Supply & Demand to 2030 and to Gas Pricing attracted 700 persons who filled all the capacity of the room. The third Committee Session on Regulation and Future Industry Structure was held in a smaller room and gathered around 120 attendees.

The Committee Session on Supply & Demand to 2030 started with a brief presentation by Chairman of PGC B, Pedro Moraleda (GAS NATURAL/SEDIGAS), explaining the overall objective of the Committee and introducing the three Study Groups integrated in the Committee. The leader of the Supply and Demand Study Group, Jaap Hoogakker (GAS TERRA), presented its specific objectives, methodology and conclusions, and chaired a panel of six members who approached the topic from regional perspectives and the views of independent consultants.

The shared message was that natural gas is in a better position than ever before:

- **Abundant and increasing gas reserves.**
- **Production growing in almost all regions.**
- **Environmental advantages benefiting natural gas over coal and triggering higher demand.**
- **No shortage foreseen in the 2030 horizon.**

The second Committee Session addressed the issue of Gas Pricing mechanisms. The session was opened by PGC B's Chairman who made a brief presentation of the Committee. The leader of the Group, Runar Tjersland (STATOIL), introduced the work developed by its group and its objectives.

Michael Stoppard (IHS CERA) chaired a six members' panel who shared the following messages:

- **The history of gas price formation has had three main drivers: costs of exploration and production, competition with alternative fuels like oil, oil products and coal and, finally, regulated gas prices.**
- **Eight different gas price formation mechanisms have been analyzed: the observations based on global data from 2005 and 2007 gas-on-gas pricing formula is progressing, oil price escalation formula is losing ground worldwide.**
- **LNG growth will likely contribute to a more globalised pricing of natural gas, mainly based on a gas-on-gas competition mechanism.**
- **Volatility is becoming the norm and the challenge for the industry is to develop mechanisms that mitigate undesired risks associated with high volatility.**

The Committee Session of PGC B3, on Regulation and Future Industry was co-chaired by Margot Loudon (EUROGAS) and Jayesh Parmar (OLIVER WYMAN). The themes of B3's report were an overview of regulatory developments in different parts of the world and how these were having an impact on the gas value chain, among which company structures, business strategies, growing synergies between gas and electricity. Appropriately the six panelists drawn from North and South America and Europe reflected regulatory and industry perspectives.

The presentations allowed main contributors to the report to set out its contents in summary form to the audience, including the key recommendations to regulators and authorities. Among the issues highlighted in the panel were:

- **There was a growing broad commonality of regulatory issues and practices related to a trend towards more competition in the market. At detailed level, there are differences, especially depending on the maturity of the market, but at the same time the benefits of improved regional co-operation and co-ordination are increasingly acknowledged.**
- **There was a vigorous debate about levels of unbundling in Europe and what approach was necessary if a market were to be perceived as truly competitive.**
- **There was a need for a pragmatic approach to harmonized business practices among operators, arriving where possible at a consensus based approach that took account of the interests of different market participants and was sensitive to the costs issue. It was not evident that such harmonization necessarily had to be binding but if it were not there might be concerns about effective implementation.**

- **It was essential to have a predictable regulatory framework conducive to industry meeting the huge investment challenges.**
- **At distribution level, notably in the wake of the financial crisis, there were also particular issues about which regulators should be heeding industry's concerns.**
- **There was an increasing convergence of gas and electricity business strategies.**

The two Expert Fora were focused on the presentation of papers selected which were related to the topics dealt with by the three Study Groups of PGC B. Each Expert Forum was attended by about 60 people.

The supply and demand Forum was co-chaired by Jaap Hoogakker and Mark Robinson (JMR ENERGY INFRA). Seven panellists showed the perspectives of frame-breaking gas markets or markets that had significantly changed the structure recently due to regulatory changes.

The Forum on regulatory topics was co-chaired by Ottar Skagen (STATOIL), Margot Loudon (EUROGAS) and Jayesh Parmar (OLIVER WYMAN). There were eight panelists, whose contributions focused on the aspects of PGC B's report dealing with pricing methodology and commercial strategies of the gas industry.

Taken overall the presentations were informative, and they also reflected how, despite differing situations across regions and countries in respect of regulatory frameworks, market structures, and indeed economic circumstances, concerns about developing market growth and responding to the challenges of a changing market place were similar worldwide.

Speakers from Qatar, Japan, and Australia addressed LNG issues and strategies including development and pricing in their presentation, while other speakers chose to focus on regulatory frameworks and business models in relation to the challenges of infrastructure investment.

The poster session at the Technical Café gave the possibility of presenting a group of nine additional papers.

Programme Committee C (PGC C) - Developing Markets

PGC C organised three Committee Sessions, two Expert Fora and one Poster Session (with 5 posters), as follows:

Committee Sessions	
C.1	Developing Gas Markets in South, West and Central Asia
C.2	Developing Gas Markets in South America (from a more integrated perspective)
C.3	Developing Gas Markets in South Eastern Europe
Expert Fora	
C.A	Future Impact of Geo-politics and Globalisation in Sustainable Gas Supply and Trade
C.B	Developing Natural Gas Markets: How Issues Including Security of Supply, Alternative Fuels, Pricing and Technological Improvements Interact for a Sustainable Development
Poster Sessions	
A total of five posters were exhibited, covering developments in the Russian gas industry, as well as the role of natural gas in contributing towards energy sustainability in Argentina.	

The key messages and conclusions highlighted during **Committee Session C.1 – Developing Gas Markets in South, West and Central Asia** centred on the importance of geopolitical factors in shaping the future course of gas market integration in the region. In particular, recognition of gas interdependence between the region's gas producing and consuming countries was an important step in developing the region's gas markets and in providing the motivation to reduce existing barriers to integration. Geopolitical factors were considered the primary challenge in realising cross-border gas pipeline interconnections between Iran-Pakistan-India as well as from the Middle East and the Caspian Area to Europe via Turkey. Participants also noted that gas resources in Central Asia are becoming increasingly more attractive as several alternative evacuation options were now being developed. On the one hand, this will increase the value of the region's gas resources and encourage exploration activities but it could also create greater competition for the resources to support internal market integration. Views on the impact of alternative regulatory regimes on the attractiveness of upstream projects in the region were also presented – to this end, it was felt that Kazakhstan's present regime ranked amongst the most attractive. The growing importance of Turkey not only as a consuming market, but also as a natural energy bridge between East and West was also highlighted. Similarly, the state of gas market development in India, which is expected to make the largest contribution to this region's demand growth, was also discussed.

In **Committee Session C.2 – Developing Gas Markets in South America (from a more integrated perspective)**, discussions centred around the need for gas market integration to evolve beyond merely constructing interconnections and for it to be implemented at a systemic level, supported by effective co-ordination between governments, companies and other agents. Closer market integration was deemed as vital if the potential of recent discoveries both onshore and in the deepwater areas was to be harnessed in support of growing demand. The session noted that it was important for integration efforts are underpinned by a broad intergovernmental co-operation programme, with a proper, transparent balance of risks and benefits for all parties involved being thoroughly addressed. These themes were echoed in greater detail in specific presentations covering the gas markets of Argentina and Venezuela. The role that LNG could potentially play in complementing more traditional modes of integration was also considered.

In the **Committee Session C.3 – Developing Gas Markets in South Eastern Europe**, discussions centred on the importance of integrating gas markets in order to realise the region's potential as a gas market and beyond merely being an energy corridor linking the gas markets of Western Europe and resources to the east. While a key step in this direction was the creation of a common and comprehensive regulatory framework, it was noted that only a few countries had well-developed basic legislation; secondary legislation had generally yet to be sufficiently structured. One important aspect of this framework was the need to develop modern tariff systems to attract sufficient investments in transmission and distribution networks to support the development of the region's gas markets — the revenue cap methodology was considered the preferable regime in this regard. It was also argued that the region's industry players needed to play a more active role during the current phase of the regulatory architecture, instead of attempting to modify adopted regulations at a later stage as they were found to be inadequate. The uncertainties this piecemeal approach would create would, it was felt, deter timely investments.

During the **Expert Forum C.A on Future Impact of Geo-politics and Globalisation in Sustainable Gas Supply and Trade**, lively discussions centred around influence of geopolitical and security issues affecting the accessibility and sustainability of gas supplies. It was noted that more than two-thirds of the remaining proven gas reserves were located in politically-sensitive regions and that the Middle East (in particular, Iran) although well-placed to meet the world's gas supply challenges, could only make its contribution if various geopolitical barriers were surmounted. Other discussions on the subject touched upon the challenges of securing access to new reserves and maintaining that to existing ones. In this context, it was argued that "resource nationalism" should be seen as attempts by States to exercise their sovereign control over natural resources against the backdrop of changes in circumstances that had not been foreseen at a contract's inception and which resulted in a distribution of rents deemed as unfair compared to the spirit (if not letter) of that contract. Resource nationalism, therefore, far from being a "once off" phenomenon is more accurately thought of as a cyclical phenomenon. Mitigating this threat in future will require ensuring sufficient flexibility exists within contractual arrangements. Views were also expressed that, taking this line of reasoning further, the idea of international co-operation based on the principle of reciprocity should also considered.

Expert Forum C.B Developing Natural Gas Markets: How Issues Including Security of Supply, Alternative Fuels, Pricing and Technological Improvements Interact for a Sustainable Development provided a diverse collection of papers and presentations on various strategic options in developing natural gas markets, taking into consideration the interaction of various technological, economic, social and political drivers. Participants noted:

- **Turkey's experiences in liberalising its gas market following its Law on Natural Gas Market No. 4646 and how this played an instrumental rate in boosting gas utilisation in Turkey's residential sector.**
- **The possibility that successful implementation of various measures to curb rapid gas consumption growth in Iran could lead to a surplus situation emerging by 2013 and that this surplus could reach 320Bcm by 2025.**
- **The successes of the World Bank's Global Gas Flaring Reduction (GGFR) initiative in fostering more sustainable use of gas, as well as the challenges the initiative faces in attempting to enlist the participation of various major producing countries.**
- **That gas is one of the most realistic choices for China in its bid to promote cleaner energy, improving the efficiency of energy use, emissions reduction, for improving the quality of the environment and for achieving energy supply diversification.**

All sessions saw a respectable turnout, varying between 60 and 150 persons.

Programme Committee D (PGC D) – Liquefied Natural Gas (LNG)

PGC D organised three Committee Sessions, two Expert Fora and one Poster Session (with 14 posters).

Post Conference Report of PGCD 1 Session

The subject of the session was LNG Quality (and Interchangeability). It was chaired by Martin Josten of BP in the UK and co-chaired by Ted Williams of the American Gas Association in the USA, and was attended by approximately 160 conference attendees / delegates.

The following papers were presented:

- SG D.1 Triennium Report : LNG Quality & Interchangeability - Stephen Hull, BP, UK.
- Exporters View of LNG Quality Adjustment to Fit the End User Market - Tore Loland, StatoilHydro ASA, Norway.
- Accurate Determination of LNG Quality Uploaded in Receiving Terminals: An Innovative Approach - Juan Manuel Lopez Zurita, Enagas SA, Spain.
- Terminal Flexibility to Receive Different Kinds of LNG - Kazuhide Hori, Tokyo Gas Co Ltd, Japan.
- European Gas Interchangeability - Terry Williams, GL Industrial Services UK Ltd, UK.
- Manufacturer Testing of US Appliances on LNG Compositions and Other Gases - Ted Williams, American Gas Association, USA.

The above papers provided a balanced and interesting program. The main elements that the Program Committee had studied were overviewed and then complemented with papers from industry. This provoked an interesting Q&A session which was fielded by a knowledgeable panel. The session was also well attended by members of the IGU PGCD Study Group, which was pleasing in the current economic situation.

The Committee Sessions were supplemented by posters displayed at a "Technical Café" within the conference area, of which at least two were on the "LNG Quality" theme.

The full Triennium Report produced by Study Group D1 was issued on schedule and is a fair reflection of the study group's progress, although a couple of sections were adversely affected by travel limitations involving technical staff during 2009. The topic was studied in response to widespread industry interest in the implications of global gas/LNG commoditisation. We covered the ground comprehensively, and it is hoped that the report provides a useful tool for evaluation of the quality issue.

Post Conference Report of PGCD 2 Session

The session was chaired by Boyoung KIM and Alaa Abu Jbara, who also acted as panelists. Other members of the panel included:

- Stephen Thompson (Poten & Partners. Inc.): "The new LNG trading Model ; Short-Term market development & Prospects"
- Francois Ravel (Total): "Global LNG demand in a new economics environment: The forecasting challenges"

• Enrique Dameno & Frederio Sanz (Repsol-Stream): "A new business Approach to conventional small scale LNG"
• Christopher Holmes (Purvin & Gertz Inc.): "The impact of the Global Economic Crisis on Global LNG trade & spot LNG prices"

Discussion focus: "Economic Aspects in the LNG Industry"

Many of the world's major gas consuming nations have been affected by the ever worsening global economic crisis. Toward the end of 2008, evidence has started to emerge of weakening gas demand in the industrial and power generation sectors of many gas markets and it is fast becoming a real possibilities that gas demand in and, by implication, LNG imports into several LNG importing countries could fall, or at best stagnate, in 2009. An outlook for short term gas supply/demand fundamentals is presented based on analysis of gas and electricity demand by sector, domestic gas production and contracted imports of pipeline gas and LNG for which limited volume flexibility exists.
The global short term LNG supply/demand analyses concluded by quantifying the availability of and call on flexible and spot LNG supply to meet any gas supply shortfall that arises thereby determining the extent by which the global market is oversupplied and the length of time before supply and demand come back into balance.

Post Conference Report of PGCD 3 Session
Chairs : Rob Klein Nagelvoort (Shell) and Arrigo Vienna (ENI)
The session started with the presentation of the 2006-2009 committee report by Rob Klein Nagelvoort. The presentation followed the outline of the report, which covers LNG production, shipping, transfer and regasification. Technical innovations of the last three years were analyzed and a view was presented on what more was to expect in the coming years. The Chairman stressed that the report was prepared by a diverse team from various companies across the LNG chain and that it therefore presented an independent view. An acceleration of innovations was observed as compared to previous periods, underlining the inherent strength of the LNG business.
Subsequently four papers were presented, viz on LNG technology developments (Shell), large LNG trains (Qatargas), Shtokman development (Gazprom) and on small LNG plants (Repsol). A fifth paper on floating LNG was unfortunately withdrawn. By and large, the papers covered a wide range of the LNG business, which aligned well with the presentation of the committee report.
A joint panel of the chairmen and the presenters of the papers then fielded questions from the audience for the last half hour or so. There were lively debates in a workshop style.
Some 150 conference attendees participated (in a 250 persons room), which was better than we hoped for given the timing of this session. Attendees were really coming for this event and a number of them expressed interest in participating in the next PGC D3 team. After the conference we got more of such expressions of interest by e-mail. We will forward these to the new PGCD organization. Looking back, the session would have been ideal with five presentations of papers in addition to the presentation of the committee report.

Post Conference Report of EF DA
The session was chaired by Mr. Seiichi Uchino from Tokyo Gas and Mr. Luis Gorospe from Repsol.

During the Session there were about 100 attendees and the Technical Programme, including the main highlights were as follows:

Presentation 1: "*Growing challenges of heat exchanger´s operation and maintenance in LNG Plants*"
• **Panellist: Mr. Mohad Zaparel Awang from Malaysia LNG.**
• **Main highlights:**
1. Changing tube materials from aluminium brass to copper nickel alloy with a specific percentage of iron content has shown an excellent performance since last ten years in operation.
2. The specific iron content of copper nickel alloy has provided better corrosion resistance behaviour in sea water application.
3. The tube fins are easily fouled within one year after cleaning. Online chemical foam cleaning, changing components materials and good maintenance practices have improved the performance of the air cooled heat exchangers.

Presentation 2: "*A self-contained training system for LNG Receiving Terminal*"

- **Panellist: Mr. Takuji Takahashi from Tokyo Gas.**
- **Main highlights:**

1. Tokyo Gas has created virtual movie texts as learning materials that contain know-how of control system operations and field operations.
2. A self-contained training system has been established that enables trainees to train independently even if instructors or managers are absent.
3. The trainees improve their ability more effectively and quickly than before.

Presentation 3: "*Challenging the traditional approach to safety management and how leadership behaviour affects safety performance*"

- **Panellist: Mr. Charles Jones from RasGas.**
- **Main highlights:**

1. Management must be fully committed, visible and a champion of behavioural performance recognition.
2. A disciplined systematic approach utilizing management systems will provide an assurance of program effectiveness.

Presentation 4: "*How to develop a new Terminal in Europe in the context of globalising LNG markets and global societal sensitivity on safety and environment*"

- **Panellist: Mr. Yves Bramoullé from Gaz de Normandie.**
- **Main highlights:**

1. The Antifer project includes a liquefaction unit to avoid buying a costly spot cargo to keep the Terminal cool over long periods of zero send-out.
2. A mixed solution of tanks on gravity based structures (GBS) and the process Plant onshore, may be a good solution, depending on site conditions.
3. Consider the possibility for cold energy recovery system and design the Terminal for possible LNG ship loading.

Presentation 5: "*Improving energy efficiency of LNG Plants*"

- **Panellist: Mr. Christophe Thomas from Total**
- **Main highlights:**

1. Improving energy efficiency of LNG Plants is a major focus for operators.
2. Among the various options included in this presentation, the most important are:
    - o Heat recovery options.
    - o Large frame or aero-derivative driver for refrigerant compressors or power generation.
    - o Electric drivers for refrigerant compressors.
    - o Heat absorption systems.
    - o Cooling of gas turbine air inlet.
    - o Efficiency improvement of 30% compared to existing facilities can be achieved.

Key messages of the Session and conclusions:

The panellists insisted in the growing importance of:

- **Improvement of operation, maintenance and energy efficiency in LNG Plants.**
- **New training systems and training simulators.**
- **Engagement of managers and leaders in safety performance.**
- **Reducing environmental impact on new LNG Terminals.**

Post Conference Report of EF DB
Attendees : over 100 (room was actually over-flowing)
Highlights: a lot of interest in floating LNG project: regasification, but mainly for liquefaction: who will be the first one, when and how will it work? Floating LNG liquefaction plant is the new key technology prospect.
Key messages : There is a lot of interest in developing technology. PGCD will need to resurrect interest in sharing developing tech nology in future events. Need to bring in technology providers/licensors like APCI, Linde, Conoco Philips and the likes. Also key equipment manufacturers.

Task Force on Gas Market Integration (TF GMI)

TF GMI organised one Strategic Panel, one Committee Session and one Poster Session (with 6 posters).
The overall quality of the report and papers delivered by delegates and through the Call for Papers has been of high level, as confirmed by the attention provided by the audience.
The Committee Session was attended by an estimated 180 persons.
The Strategic Panel was attended by an estimated amount of 600 persons.
Both sessions saw an active participation from the attendees, as after each presentation Q&A sessions have seen a significant amount of relevant questions, helping to understand in more detail the contents of the presentations.

The Committee Session was focused on the report delivered by the Task Force on Gas Market Integration. After the introduction by Chairman Jorge Doumanian, who presented the conclusions delivered by the group on Gas Market Integration including the model represented by the "house blocks" each of the delegates explained all papers developed by the group:

- **Gulf Cooperation.**
- **Russia Turns east.**
- **Russia and Germany: A Solid Regional Energy Partnership.**
- **Canada – USA – Mexico: Different Integration Stages with a Common Partner.**
- **Exxon and Qatar Petroleum.**
- **The Evolution of the UK Gas Industry.**
- **Asia's LNG Market Integration.**
- **TAGP, Accelerating Gas Market Integration in ASEAN.**
- **Iran, Pakistan, India.**

The session finalised with the presentation of the Guiding Principles for Gas Market Integration.

Key messages that came out from the Committee Session were:

- **Every Integration process is an exchange process.**
- **About Gas Market Integration Model:**
    - o Stepwise nothing goes in big leaps forward.
    - o Communication and coordination needed.
    - o Continuous tweaking at every stage.
    - o Importance of having stability and predictability at all stages of the market phase.
    - o Determination in carrying out the execution plan.
- **Each case is unique due to variations in drivers, market conditions and policy options.**
- **Model and common language useful tools to aid progress.**

The Strategic Panel included interesting participation of Mr. Alexander I. Medvedev, Deputy Chairman of Gazprom's Management Committee, Mr. Gertjan Lankhorst CEO GASTERRA B.V. and Mr. Kazuo Kakehashi Senior Executive Officer, Member of the Board, Head, Energy

Resources & International Business Unit OSAKA GAS. Discussion evolved about the cooperation needed of all parts in the market integration processes and the benefits resulted in each case.

Last, the poster session was attended by six posters. Probably the management of this session can be improved in the future in order to benefit specific topic debates.

Both members of the Task Force and other delegates joined the discussion of the following posters:

- **Gas Markets of South America: Opportunities & Prospects of Integration. Working out the Common Development Strategy.**
- **First Results of the Integrated European Gas Market: One for All or Far from One.**
- **Journey of Ten Brothers Pursuing Energy Security within ASEAN Countries; Yesterday, Today and Tomorrow .**
- **What Can We Learn From the Context in which Gas Market Players Shall Confidently Invest from Regional "Virtual Test Case on North-West European Gas Pipeline Development"?**
- **Gas Hub as a Source of Regional Market Development in the CEE Region.**
- **Nigerian Gas Master Plan: Strengthening the Nigeria Gas Infrastructure Blueprint as a Base for Expanding Regional Gas Market.**

Task Force on Research and Development (TF R&D)

TF R&D was in charge of organising one Strategic Panel entitled "Innovation and New Technologies for Increasing Gas Competitiveness". More than 250 delegates attended the panel. Their active participation was highly appreciated ; in particular, a significant amount of relevant questions have been raised during the Q&A session and the moderator had to stop the questions in order to close the session on time.
Marc Florette, moderator and the chairman of the R&D Task Force, introduced the panel with a presentation of the Task Force's work and its four main recommendations:

- **Enhance dialogue between CEOS, regulators, investors and customers to emphasise the role of the R&D as a solution to business issues.**
- **Focus R&D programmes on topics of importance for the gas industry should be encouraged by IGU.**
- **Focus marketing efforts to gain corporate support for R&D by maintaining a direct dialog with CEOs, enhancing the dialog between R&D staff and business strategy divisions.**
- **Encourage International conferences such as IGRC and other technology based conferences.**

Many attendees asked for the written final report of the R&D Task Force.

Then the five panellists gave illustrations of the role of technology in future gas business:
Firstly, **Robert Catell**, Former Chairman, U.S., National Grid, Former Chairman and CEO, KeySpan Corporation, now Chairman of Advanced Energy Research and Technology Center (AERTC) and Chairman of New York State Smart Grid Consortium) emphasized how new technology can address key strategic challenges (new industrial boilers, micro-CHP, robotics, biogas, solar and wind) and took the example of the New York State SmartGrid consortium to explain the rapid changes expected with the smart grids breakthrough.

Then **Sam Bernstein**, Managing partner of Bernstein Enterprises LLC, newly formed alternative energy investment firm presented the view of venture investors in clean technologies : possible approaches, role of a cooperative technology watch between utilities and venture firms. He emphasized how venture investors could accelerate the development of emerging technologies.

Then **Carlos Fraga**, Executive Manager of Petrobras R&D Center, explained the role of technology face to the technological challenges in gas production in offshore deep pre-salt cavity and associated gas transportation routes.

Then **Shigeki Hirano**, Senior Executive Officer and a Member of the board of Osaka Gas and Head of LNG Terminal and Power Generation Business Unit, dealt with the answer of the Japanese gas companies face to the electricity competition which has drastically increased into the residential sector. He explained in particular how new technologies such as micro-cogeneration are part of the answer and raised the question of the future gas industry's strategic architecture.

Finally, **Walter Thielen**, Managing Director of DVGW, the German technical and scientific association on Gas and Water, focussed on the impact of regulations and of the opening of the European energy markets on technologies' needs and on customers and markets new requirements. He discussed the impact of the current change from simple gas utilisation to new energy systems.

Key messages that come out from this panel are:

- **Gas business needs new technologies: deep water drilling and offshore LNG for the upstream or smart grids for the downstream are clear illustrations.**
- **Electricity and gas convergence is a strong reality: smartgrids and microcogeneration are linked.**
- **We are facing a sudden change in competition which requires finding new gas consuming systems (natural gas vehicle, industrial applications, etc.).**
- **Sustainability is of growing interest; but methodologies like life cycle analysis (LCA) should be used to assess the effective sustainability of the different energy solutions.**
- **Several Research management models exist: collaborative research through dedicated associations is an answer to engage all stakeholders in the same development. Collaboration between venture investors and multi-utilities is necessary to accelerate the market penetration of new energy systems.**

IGU Gas Marketing Committee (IGM)

IGM organised one Strategic Panel with the title: Marketing Natural Gas in a Demanding Environment. The overall quality of the session was of high level, as confirmed by the audience.

The Session had been attended by an estimated amount of attendees of 340. Considering the time slot for the session - morning of the last day of the conference - this can be considered as an excellent result.

The session had been designed as a multimedia show with a presenter, keynote speaker, six panellists, films, several live acts, giveaways and brochures. The brochures which were available at the event sum up the main messages of the session.

In order to attract as many delegates as possible for the session, some advertising had been done such as handing out of promotional flyers for the session as well as special live performances of football artists at La Rural the day before.

In his keynote speech, Gertjan Lankhorst (CEO GASTERRA B.V.) emphasized the important role of natural gas as the back-bone for global energy transition. Furthermore he presented a long-term vision and a roadmap towards a sustainable energy future. He appealed to the industry's knowledge and capabilities to develop and apply new technologies and local energy solutions in order to support the natural gas sector.

In the following panel discussion, six high-level executives of the gas industry from different regions of the world discussed the advantages of natural gas and how to market it.

1. Vitaly Vasilev, CEO Gazprom Marketing & Trading LTD.
2. Stefan Judisch, CEO RWE Supply & Trading.
3. Ieda Gomes, Vice President New Ventures, BP Gas Asia and Middle East.
4. Marc Hall, Managing Director, Bayerngas GmbH, Chairman of the IGU Marketing Committee.

5. Khaled Abubakr, Managing Director, TAQA ARABIA.
6. Phillippe Sauquet, Senior Vice President Trading& Marketing & Coal for Gas & Power Division, TOTAL.

Geert Greving, Head Public Affairs, GASTERRA B.V. lead through the session as the presenter of the show.

Main Messages of the panel discussion:

1. Natural Gas is not a self selling product any more. Marketing becomes more and more important.
2. Future: Natural gas builds bridges into the future! The environmental pollution caused by burning fossil fuel and the need for sustainability requires new energy concepts worldwide. Natural gas is a transition fuel that offers the ideal approach.
3. Clean: Natural Gas offers great potential to clean up your town and your planet! Compared to other fossil fuels natural gas has the lowest emission combustion.
4. Flexible: Natural Gas can interact perfectly with other energy sources. Renewable energies have by nature irregular patterns of power production. Natural gas serves here as the ideal balancing partner.
5. Comfortable: Natural Gas is the fuel of cosy warmth and tasty cooking. Natural gas comes directly into your house and is there fore extremely convenient and space saving. No regular orders are necessary. 24-hours availability! Furthermore with modern gas stoves you can cook like celebrity chefs.
6. Efficient: Natural Gas is a driving force for technological improvement! Due to the high percentage of hydrogen in natural gas, this fuel is highly suitable for all kind of energy efficient solutions, for instance for modern condensing boiler technology which can achieve the highest energy efficiency.
7. Competitive: Natural gas offers great added value in competitive markets. In all competitive markets consumers and society recognize the high value of natural gas. It is used for thousands of products and millions of people use it.
8. Multifunctional: Natural gas is used for more purposes than ever before! Energy supply through natural gas has significant advantages to other fuels. Whenever comfort, reliability, good environmental performance and flexibility are demanded at home or at work, natural gas offers a winning solution.
9. Everywhere: Natural gas has no geographical boundaries: There is almost no place where natural gas can't get. The gas industry serves consumers everywhere in the world, in big towns and rural places. Creative approaches make it possible to find perfect solutions also for remote areas.
10. Innovative: Natural gas is an ever lasting power for innovative developments. By all its characteristics, its flexibility, its multifunctional and its ability to combine techniques, natural gas is a genuine engine of innovation, responding to future demands by new products, - production methods and –services.

The two study groups of the IGU Marketing Committee had contributed in different ways to this multimedia marketing session:

1. Study Group M.1: "Natural Gas and Renewables"
2. Study Group M.2: "How can marketing contribute to promote natural gas in new areas and new technologies?"

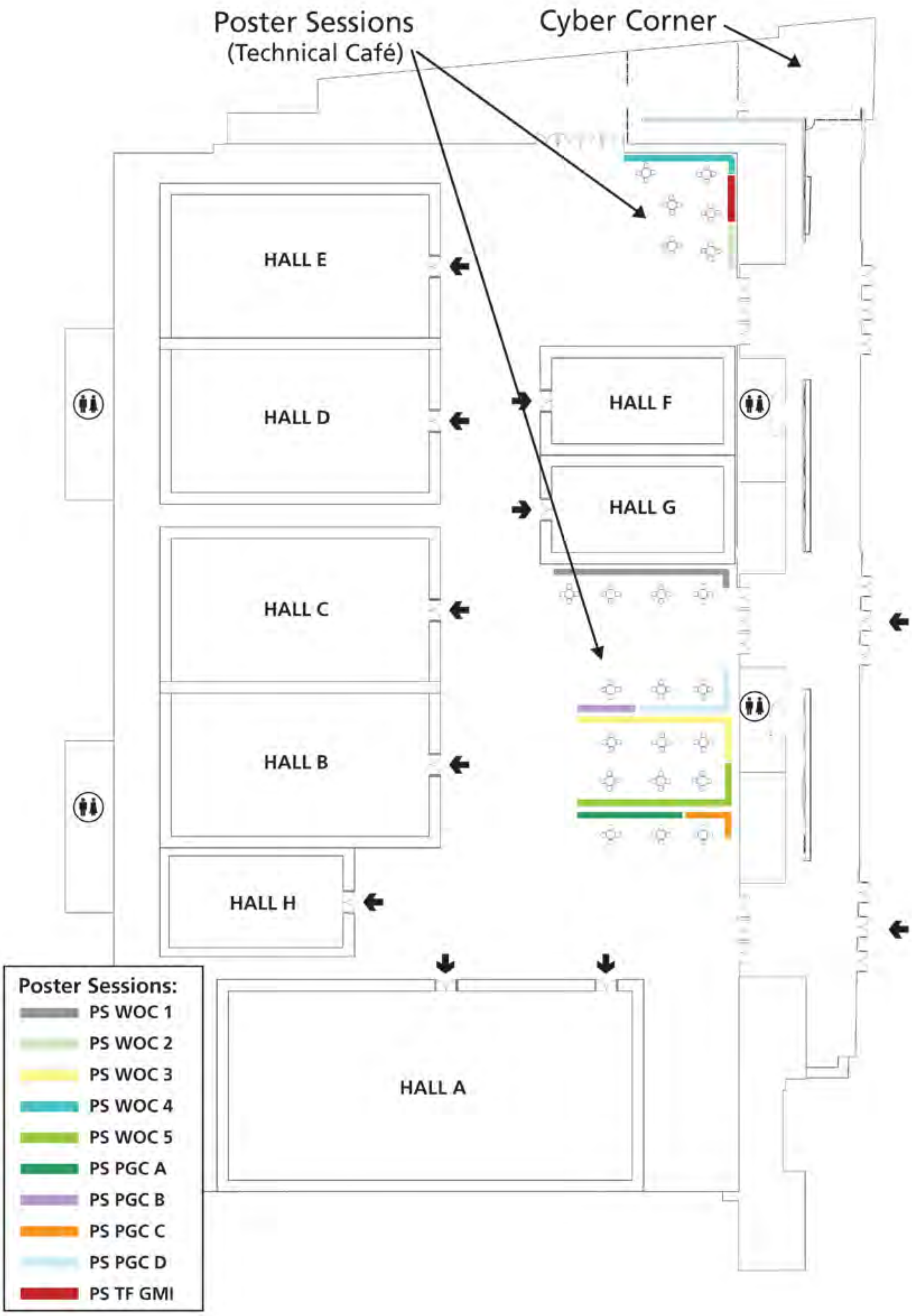
Members of Study group M.1. had developed the concept of "9 reasons why natural gas is the energy of the future". Those reasons served as the agenda for the panel discussion.

Members of Study group M.2. had produced little promotional movies introducing the gas technologies. Those movies were shown as teasers of three of the topics:

1. Topic "efficient": Micro-CHP in the Netherlands – movie.
2. Topic "everywhere": Mother-daughter systems in Austria and Iran – movie.
3. Topic "multifunctional": Movie about district cooling and heating in Egypt - movie.

h) Meeting rooms

I) Floor Plan *



* Ochre Pavillion (see "Map of the Venue", on page 14)

II) Capacity

Auditorium = 1800 (used for Keynote Addresses + some Strategic Panels)
Hall A = 700 (used for some Strategic Panels + some Committee Sessions)
Hall B = 250 (used for Strategic Panel 2 + 7 + Committee Sessions)
Hall C = 250 (used for Strategic Panel 9 + Committee Sesssions)
Hall D = 250 (used for Committee Sessions)
Hall E = 250 (used for Committee Sessions)
Hall F = 100 (used for Expert Fora)
Hall G = 100 (used for Expert Fora)
Hall H = 100 (used for Expert Fora)

III) Facilities

According to the pre-established policy, informed in advance by the NOC, simultaneous interpretation was offered in Spanish and Russian in the Auditorium and Halls A-E. Only in specific cases, Japanese and Portuguese were provided.

In the Opening and Closing Ceremonies French interpretation was also available.

The Auditorium and Hall A were equipped with 4 large screens for projection and a stage with speaker table for up to 10 places.
Halls B-H were equipped with 2 large screens for projection and a stage with speaker table for up to 8 places.
Halls F-H were equipped with 1 large screen for projection and a stage with speaker table for 4 places.

Handheld microphones were provided in each room, the quantity ranged from 1 to 4 depending on the size of the room.

IV) Speakers' Room

The main Speakers' Room was open the following hours:

Monday 5	10.00 – 17.30
Tuesday 6 to Thursday 8	07.30 – 19.00
Friday 9	07.30 – 12.00

The Speakers' Room was set up with:
• 12 computers networked to the centralised system for uploading presentations.
• Additional desks for private study.
• A lounge area of 6 armchairs.
• 2 boardroom tables for meetings.
• A coffee station.

A secondary and smaller 'back-up' Speakers' Room was provided in the Ochre Pavilion for last-minute arrivals/changes. It was not publicised or encouraged but was used if there was no time for a speaker to go to the main Speakers' Room in the White pavilion. It opened for 30 minutes before the start of each set of technical sessions.

V) Session Attendance

Keynote Addresses	
Keynote Address 1+2	1080
Keynote Address 3+4	1180
Keynote Address 5+6	820
Keynote Address 7+8	825
Keynote Address 9+10	650
Keynote Address 11+12	745
Keynote Address 13+14	400

Luncheon Addresses	
Luncheon Address 1	375
Luncheon Address 2	402
Luncheon Address 3	300
Luncheon Address 4	225

Strategic Panels	
Strategic Panel 1	1100
Strategic Panel 2	250
Strategic Panel 3	770
Strategic Panel 4	300
Strategic Panel 5	680
Strategic Panel 6	450
Strategic Panel 7	100
Strategic Panel 8	340
Strategic Panel 9	200
Special Session TWP 2009-2012	170

WOC1	
1.1	140
1.2	120
1.A	80
1.B	80
WOC2	
2.1	70
2.2	90
2.A	55
2.B	50
WOC3	
3.1	135
3.2	65
3.3	95
3.A	70
3.B	55
WOC4	
4.1	120
4.2	120
4.3	120
4.A	80
4.B	80
WOC5	
5.1	100
5.2	100
5.3	100
5.A	80
5.B	120

PGC A	
A.1	40
A.A	40
A.B	110
PGC B	
B.1	700
B.2	700
B.3	120
B.A	60
B.B	60
PGC C	
C.1	100
C.2	100
C.3	80
C.A	100
C.B	50
PGC D	
D.1	160
D.2	250
D.3	150
D.A	120
D.B	120

TF GMI	180

Courtesy of J. Schweitzer

2.4.2. Registration

a) General Information

The Conference registration opened on February 1st, 2009.

Delegates could register through a special link on the Conference's website that was available for new registrations. There was another link on the website called "Registration with access key" where registered delegates could modify their details and add accommodation bookings, social events, tours, etc.

A hard-copy registration form was also available to download from the website to be filled and sent via e-mail or fax to the WGC2009 Secretariat.

Courtesy of J. Schweitzer

Statistics:

Online Registration	56%
Hard-copy registrations	23%
On-site registrations	21%

Registration Categories and Fees:

Fee Category	Early Registration Before May 31st (authors before July 31st)	Regular Registration June 1st to September 18th and on-site
Regular Delegate	USD 2200	USD 2700
Accompanying persons	USD 500	
Students	USD 220	

Almost 1200 delegates registered before May 31st, 2009 with the early-bird registration.
The early bird registration was also extended until July 31st for authors whose paper was accepted.
Pre-registration was accepted until September 18th, 2009 and registration reopened on site on October 3rd, 2009.

Visas:

The NOC offered assistance with visa applications to participants requiring visas to enter Argentina. The Conference secretariat sent documents needed for visa applications and invitation letters to almost 450 registrants and provided information to the Ministry of Foreign Affairs and overseas embassies. Making early contact with the Ministry of Foreign Affairs smoothed the visa issuing process and ensured that procedures were usually completed without complications.

Registration Desks:

Registration desks were set up at La Rural from October 3rd to 9th, 2009 for all the attendees.
There was also another Registration desk at the Hilton Buenos Aires Hotel for the IGU Meetings participants from October 3rd to 5th, 2009.
Since the registration secretariat opened two days before the conference, queues were significantly reduced.

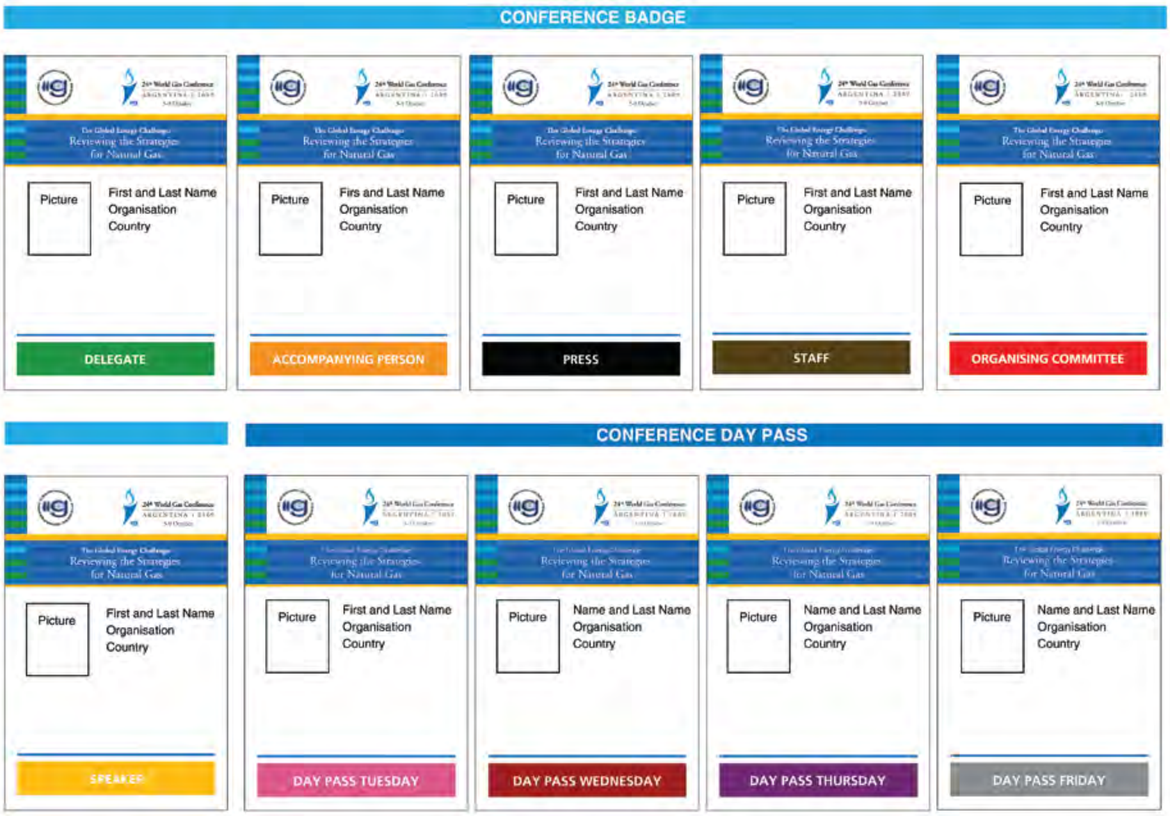
La Rural: registration desks were divided into the following categories:

- New Registrations (4 Desks)
- Pending Payments (1 Desk)
- Pre-Registrations (10 Desks)
- Speakers (2 Desks)
- Press Registrations (1 Desk)
- Group Registrations (1 Desk)
- Tourism (2 Desks)
- Bags Pick Up (4 Desks)

Hilton: registration desks were divided into the following categories:

- New Registrations & Pending Payments (2 Desks)
- Pre-Registrations & Speakers (3 Desks)

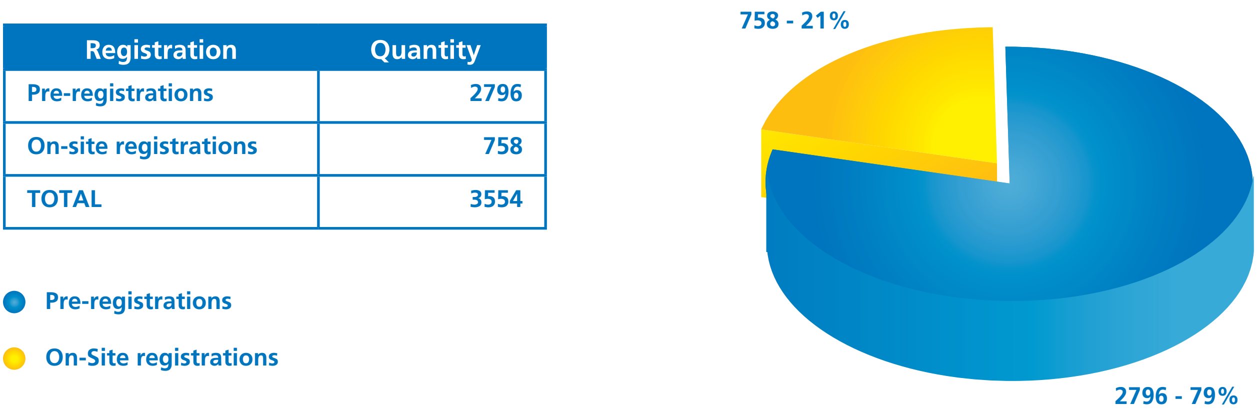
Name Badges:



Tours, Luncheons and a bags pick-up voucher were printed with the badge.

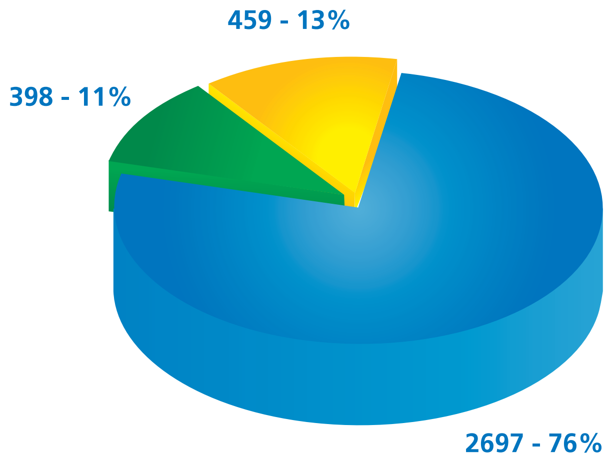
b) Number of Delegates

Registration	Quantity
Pre-registrations	2796
On-site registrations	758
TOTAL	3554



c) Breakdown of Type of Registrations

Category	Registrants
Delegates	2697
Accompanying Persons	398
Press	459
TOTAL	3554



d) Number of Registrations per Country

Country	Quantity
ALGERIA	46
ANGOLA	12
ARGENTINA	778
ARMENIA	3
AUSTRALIA	42
AUSTRIA	31
BANGLADESH	1
BELGIUM	52
BENIN	1
BOLIVIA	16
BRAZIL	154
BRUNEI	1
CAMEROON	1
CANADA	19
CHILE	24

Country	Quantity
CHINA	49
COLOMBIA	34
CROATIA	21
CUBA	1
CZECH REPUBLIC	17
DENMARK	46
ECUADOR	5
EGYPT	6
EQUATORIAL GUINEA	3
FINLAND	18
FRANCE	118
GHANA	4
GERMANY	110
HONG KONG	2
HUNGARY	4

Country	Quantity
INDIA	18
INDONESIA	9
IRAN	29
IRELAND	1
ISRAEL	1
ITALY	34
JAMAICA	2
JAPAN	231
KOREA	37
KUWAIT	3
LATVIA	13
LIBYA	1
LITHUANIA	19
LUXEMBOURG	7
MACEDONIA	6
MALAYSIA	121
MEXICO	8
MOLDOVA	1
MONACO	4
MOROCCO	2
MOZAMBIQUE	2
NETHERLANDS	124
NIGERIA	21
NORWAY	42
OMAN	30
PAKISTAN	2
PERU	20
POLAND	48

Country	Quantity
PORTUGAL	26
QATAR	69
ROMANIA	17
RUSSIAN FEDERATION	262
SAUDI ARABIA	2
SERBIA	1
SINGAPORE	9
SLOVAKIA	18
SLOVENIA	1
SOUTH AFRICA	8
SOUTH KOREA	3
SPAIN	98
SWEDEN	4
SWITZERLAND	36
TAIWAN, CHINA	3
THAILAND	22
TRINIDAD AND TOBAGO	8
TURKEY	8
UKRAINE	23
UNITED ARAB EMIRATES	2
UNITED KINGDOM	151
UNITED STATES	267
URUGUAY	13
VENEZUELA	20
YEMEN	28
TOTAL	3554

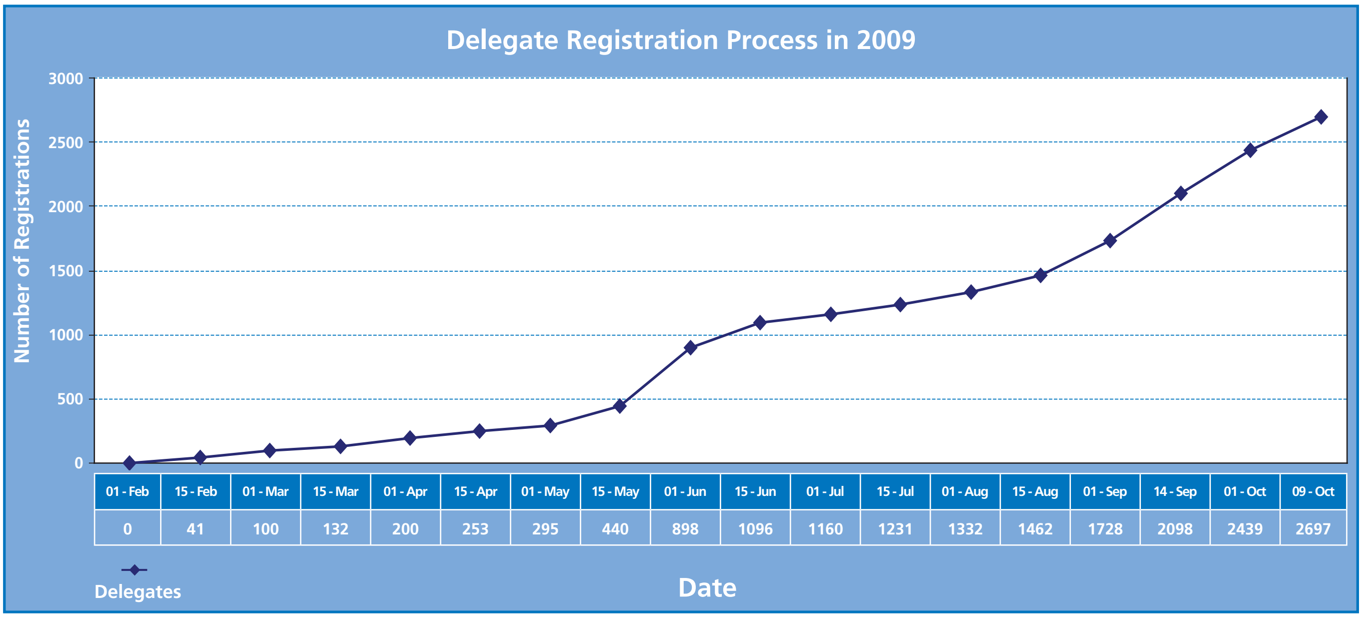
TOTAL NUMBER OF COUNTRIES: 83

e) Registration Timeline

Date	Delegates (ONLY)
01 - Feb	0
15 - Feb	41
01 - Mar	100
15 - Mar	132
01 - Apr	200
15 - Apr	253

Date	Delegates (ONLY)
01 - May	295
15 - May	440
01 - Jun	898
15 - Jun	1096
01 - Jul	1160
15 - Jul	1231

Date	Delegates (ONLY)
01 - Aug	1332
15 - Aug	1462
01 - Sep	1728
14 - Sep	2098
01 - Oct	2439
09 - Oct	2697



Courtesy of J. Schweitzer

2.4.3. Delegate Services

a) Transportation

Airport Transfer
Transfer was provided every hour to the hotels from Ezeiza International Airport.

There was a Hospitality Desk at the Airport with staff coordinating the transfers, helping delegates to take the bus.
The transfer service from Airport to City Centre was available from Saturday October 3rd to Tuesday October 6th from 06.00 am to 18.00. The frequency was one bus every hour.

If delegates requested a private car, they were guided to a recommended transfer desk.

Upon arrival at official hotels, delegates were welcomed by staff from the hospitality desks, who assisted them and provided information.

Shuttle Buses
There was a shuttle bus service from/to the venue to/from 5 pick-up points:

- Hilton Hotel
- Alvear Hotel
- Sheraton Buenos Aires Hotel
- Intercontinental Hotel
- Pestana Buenos Aires Hotel

Shuttle buses were running from Sunday 4th to Friday 9th.
Each route was identified with a colour for easy-use. At every bus stop there was signage with the timetable and each bus showed in the windscreen their route colour and destination. Staff was also at the bus stop to assist delegates with the timetable and general information.

Timetable Frequency to / from La Rural (Conference Venue)		
Sunday, October 4th	From 14.00 to 17.00	every 30 minutes
Monday, October 5th	from 10.00 to 16.00	every 30 minutes
Tuesday, October 6th	from 07.00 to 10.00 and from 16.00 to 19.00	every 15 minutes
Wednesday, October 7th		
Thursday, October 8th		
Friday, October 9th		

Timetable from the hotels to the Opening Ceremony at the Luna Park Stadium	
Monday, October 5th	from 15.30
Timetable from the Gala Dinner at the Hilton to the hotels	
Monday, October 5th	from 22.00
Timetable from the Farewell Party at La Rural to the hotels	
Monday, October 5th	from 21.00

b) Internet Centre

The Cyber Corner was set up in the ochre pavilion. There were 30 computers and desks with wifi ports to provide Internet access for those who had brought their own laptop.
There was staff and technical operators assisting the delegates on any issue related to the service.

c) Coffee Breaks

The coffee breaks took place in the sunny gallery of the ochre pavilion where coffee service was provided to delegates. There were two coffee breaks per day: one during the morning and one in the afternoon.

d) Delegates' Welcome Pack

The delegates' bag was a briefcase containing all the printed material and gifts. The number of delegates' bags available was 3000. It included:

- Final Programme
- DVD with Proceedings
- Natural Gas Industry Study to 2030: brochure and CD
- Natural Gas Unlocking the Low Carbon Future: brochure and CD
- IGU Proposed Guidelines for Gas Market Integration: brochure and CD
- Best Practices of the Natural Gas Industry: brochure and CD
- IGU Energy Efficiency Indicators: brochure and CD
- IGU Proposed Guidelines for Gas Market Integration: brochure and CD
- Notepad
- Mousepad
- Desk-clock
- USB
- Pen
- Key ring
- Chocolates
- Photographic Book of Argentina
- City map
- Petroleum Economist magazine
- Exhibition Catalogue
- World Energy Conference brochure
- Technical Visit Brochure
- Social Events invitations

The accompanying persons' bag included:

- Accompanying Persons' Programme
- Wallet
- City map
- Chocolates
- Social Events invitations.

The number of accompanying person bags available was 700.

2.4.4. Social Programme

a) Opening Ceremony and Gala Dinner

MONDAY 5 OCTOBER 2009

Opening Ceremony at the Luna Park Stadium

The Opening Ceremony was held on Monday October 5th, from 17.00 to 19.00 hs at the legendary Luna Park with an estimate of 2500 attendees.

The Luna Park was inaugurated in 1931, the same year as the creation of the International Gas Union (IGU) and has hosted countless internationally famous personalities, including Pope John Paul II, Frank Sinatra, Luciano Pavarotti and many more.

It was an event where formalities were combined with performances from Argentine artists.

The Ceremony opened with a video showing Argentine Images, followed by a show of the famous classic dancer Iñaki Urlezaga, who performed a blend of modern tango and classic music.

Ernesto López Anadón, President of the IGU and the 24th World Gas Conference, gave his welcome speech to the audience and invited Cristina Fernández de Kirchner, President of Argentina, on stage. She participated with a speech about the future of the global gas industry and its importance to Argentina.

Following the President´s remarks, Ernesto López Anadón and Torstein Indrebø, Secretary General of the International Gas Union, presented the following awards:

- **Gas Energy Efficiency Award**
- **IGU Social Gas Award**

Following this ceremony, the “Color Tango Orchestra” and the “Buenos Aires Tango Show Ballet” performed a typical Tango show with 8 dancers, 2 singers and 12 musicians on stage.

To finalise the ceremony, the “Argentine National Folklore Ballet and Orchestra” played and danced traditional Argentine folklore songs.

Gala Dinner at the Hilton Hotel

Following the Opening Ceremony, transportation was provided to take delegates to the Gala Dinner at the nearby Hilton Hotel. This Hotel is renowned for its contemporary design and style and it has an impressive view of the river in Puerto Madero.

Two rooms were used for the dinner: Pacifico and Atlantico. Delegates were guided by different entertainment spots with some performances and bands to entertain the walk to the dinner room.

The dinner menu was based on international cuisine, with an Argentine patagonic flavor.

In all rooms a looped video was projected with pictures of Argentine landscapes and gas industry images.

There were magicians around the tables doing close-up magic tricks to entertain the delegates during the dinner.

2100 was the number of attendees at the Gala Dinner

At the end of the dinner, transportation was provided to take delegates back to the city centre hotels:

- Alvear Hotel
- Sheraton Buenos Aires
- Intercontinental Hotel
- Pestana Buenos Aires Hotel

b) Closing Ceremony and Farewell Party

Closing Ceremony

The Closing Ceremony was held on Friday June 9th, from 16.15-17.00 and took place in the Auditorium at La Rural with an estimate of 1250 attendees.

Courtesy of J. Schweitzer

The ceremony started with the award-giving of:

- Best practices
- Best papers
- Photography contest
- University contest

It was followed by the recognition of the key members of the team responsible for the tasks carried during the 2006-2009 triennium and for the organisation of the 24th World Gas Conference.

A video was shown highlighting all the remarkable and memorable moments during the conference, reflecting the intense academic activities as well as the friendly interaction among colleagues.

Mr. Ernesto López Anadón gave his final speech during the handover ceremony to the incoming President, Datuk Rahim Hj Hashim, who launched WGC2012 that will be held in Kuala Lumpur, followed by a Malaysian dance show.

Farewell Party at Opera Pampa (La Rural)

Courtesy of J. Schweitzer

Around 1070 attendees participated in the evening programme which started with the Opera Pampa show, illustrating the epic adventure of the Gauchos and their traditions since the arrival of the horse in the Americas through to the declaration of Argentina´s independence. It was followed with a cocktail where delegates mingled while tasting the famous, exquisite meats of the Argentine Pampas, roasted using traditional Gaucho methods.

2.4.5. Hotels

The number of rooms booked per hotel category was the following:

Category	Hotel	Number of Rooms	Room - Nights
5 Star Luxury	Alvear Palace	50	300
5 Star Luxury	Faena	4	29
5 Star Luxury	Four Seasons	71	432
5 Star Luxury	Palacio Duhau	33	175
	TOTAL 5 Star Luxury	158	936
5 Star	Caesar Park	1	3
5 Star	Claridge	1	5
5 Star	Hilton	260	1166
5 Star	Emperador	12	62
5 Star	Intercontinental	19	143
5 Star	Madero	25	90
5 Star	Marriott Plaza	81	493
5 Star	Meliá	7	41
5 Star	NH City	10	52
5 Star	Panamericano	9	51
5 Star	Sheraton Buenos Aires	245	1656
	TOTAL 5 Star	682	3832
4 Star	Amerian	5	39
4 Star	Art Hotel	10	54
4 Star	Broadway	9	53
4 Star	Design Suites	9	48
4 Star	Esplendor	2	10
4 Star	Dazzler Suites	12	84
4 Star	Forcadell	16	118
4 Star	Savoy	2	12
4 Star	HJ Recoleta	6	44
4 Star	Holiday Inn	17	67
4 Star	NH Crillón	4	18
4 Star	NH Florida	8	48
4 Star	NH Jousten	7	51
4 Star	NH Latino	12	80
4 Star	Pestana	1	8
	TOTAL 4 Star	120	734
3 Star	Aspen	1	7
	TOTAL 3 Star	1	7
	TOTAL	961	5509

2.4.6. Tours

a) City Tours

Buenos Aires City Tour

The City Tour was included in the Delegates' and Accompanying Persons´fee and it was specially prepared for the WGC2009. It highlighted the city's architecture, history, culture and local customs. The tour included a visit to the National Library, the Fine Arts museum, the French-inspired neighbourhood of Recoleta, San Martín's green square, the Japanese Garden, the pink Government House, the neoclassical columns of the Metropolitan Cathedral, Old City Hall, the historical Tango district of San Telmo, the colourful houses of La Boca and the city's most modern and newest neighbourhood, Puerto Madero.

The Buenos Aires city tours were available from Saturday 3 to Wednesday 7, October. The buses departure was at La Rural entrance every hour.

Optional Tours

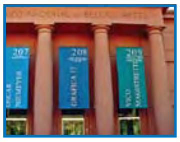
We had specially selected 4 half-day and 3 full-day optional tours. They were available to purchase with the pre-registration and onsite:

Recoleta and Palermo (3 hours)

Visiting the northern neighborhoods of Buenos Aires where "Aristocracy" from the XIX Century had their own private palaces.

San Telmo (3 hours)

Tango, popular culture and the extensive migration from Europe were the focal points of this trip to an area which holds a special charm.



Art in Buenos Aires (3 hours)

This tour introduced the attendees to a selection of the city's best art collections.

Buenos Aires Architecture (3 hours)

Inspired by international patterns and combined with the local tendency of free reinterpretation, this trip displayed the architectural scenery of Buenos Aires resulting in a wide and eclectic building legacy.

San Antonio de Areco (8 hours)

This trip visited the old land of the gauchos in the ancient frontier with the indigenous tribes: the area of San Antonio de Areco, a tiny colonial town that has majestic buildings from the early 20th century, when Argentina's economy was booming.

Tigre, Delta and San Isidro (7 hours)

Ancient quintas (country estates) and modern residences co-exist together in San Isidro – one of the oldest towns around Buenos Aires – and Tigre, the gateway to the mysterious Paraná's Delta. Our tour included these two fascinating villages and included a boat trip through their lush rivers.

Colonia, Uruguay (11 hours)

Colonia was founded by the Portuguese in 1680 during the dispute between Portugal and Spain for the supremacy over the River Plate (Rio de la Plata). During this tour we visited San Fernando Beach, downtown, the industrial area, and all the coastline until the Real San Carlos with its Plaza de Toros.

b) Post Conference Tours

We selected 6 different Post Conference tours covering some of the Argentina´s many attractions:

Iguazú Falls (3 days - 2 nights)

One of the world's natural wonders, declared a World Heritage Site by UNESCO, featuring 270 waterfalls over 3km of tropical jungle that join the Argentine and Brazil borders.

Bariloche and Villa La Angostura (5 days - 4 nights)

In the heart of the Nahuel Huapi National Park in the Province of Río Negro is located San Carlos de Bariloche, a city with a traditional alpine-village feel, situated in front of Nahuel Huapi lake.

Mendoza (4 days - 3 nights)

This tour visited the majesty of Aconcagua Mountain at almost 7000m high, making it the highest peak in America. The tour combined the imposing view of the Andes range and a taste of the local wine industry.

Península Valdés (4 days - 3 nights)

It was a trip to one of the main tourist attractions of the country, where the incredible abundance of animals is at arms' reach.

It included the sightseeing of the Franca Austral Whale, penguins, sea lions and elephant seals.

Salta and Jujuy (4 days - 3 nights)

One of the best-preserved corners of colonial life in our country. This tour offered the magnificent natural scenery of the North, declared a UNESCO world heritage site, and the possibility to wander through traditional villages where time seems to have stopped.

Ushuaia and El Calafate (5 days - 4 nights)

This trip visited the most southerly capital city in the world, Ushuaia. Its landscape littered with dense forests, snow-capped mountains, lakes and millennia-old glaciers. It included the world-famous Los Glaciares National Park, situated near the town of El Calafate.

c) Technical Visit

Cryogenic Gas Plant Storage (Peak Shaving)
Gas Natural Argentina - General Rodriguez – Buenos Aires

A half day visit to the Peak Shaving plant, owned and operated by the distributor Gas Natural BAN and strategically located in “General Rodriguez”, 60 km from Buenos Aires.

This plant was built in 1994 to satisfy seasonal peak consumption needs. It has a capacity of 25 million m^3 of natural gas storage and 200 000 m^3/hour of injection flow.

d) Participants per Tour

Buenos Aires City Tour (included in the registration fee)

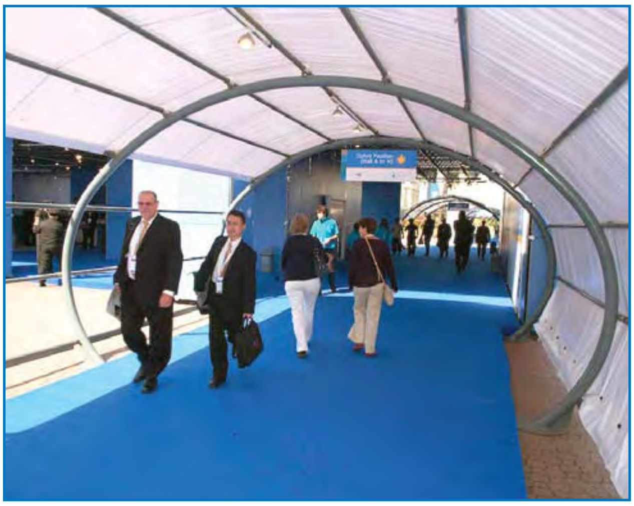
Saturday October 3rd		Sunday October 4th		Monday October 5th		Tuesday October 6th		Wednesday October 7th	
09.00 – 12.00	4	09.00 – 12.00	19	09.00 – 12.00	17	09.00 – 12.00	30	09.00 – 12.00	52
10.00 – 13.00	5	10.00 – 13.00	43	10.00 – 13.00	108	10.00 – 13.00	24	10.00 – 13.00	33
11.00 – 14.00	15	11.00 – 14.00	54	11.00 – 14.00	104	11.00 – 14.00	41	11.00 – 14.00	72
13.00 – 16.00	10	13.00 – 16.00	38						
14.00 – 17.00	26	14.00 – 17.00	29						
Total	60	Total	183	Total	229	Total	95	Total	157

Total Number of attendees 724

Optional Tours	Time	Mon 5	Tues 6	Wed 7	Thu 8	Fri 9	TOTAL
Recoleta & Palermo	09.30 12.30	14	11	3		20	48
San Telmo	10.00 13.00	11	5	7	5	14	42
Art in Buenos Aires	14.00 17.00		17	2	10		29
Buenos Aires Architecture	14.00 17.00		6	6	1		13
San Antonio de Areco	09.00 17.00		21		32		53
Tigre, Delta & San Isidro	09.30 16.30			20	38		58
Colonia - Uruguay	07.00 18.30			26			26
TOTAL		25	60	64	86	34	269

Post Conference Tours

Post Conference Tours	*No. of attendees*
Iguazú Falls	32
Bariloche and Villa La Angostura	2
Mendoza	10
Península Valdés	3
Salta and Jujuy	3
Ushuaia and El Calafate	15
Technical visit	17



2.4.7. Photography Contest

The 24^{th} **World Gas Conference** had the honour to launch **The International Photography Contest "Views on Gas Worldwide"**, for the first time in an event of this nature.

The contest aimed to display images of the natural gas industry interacting with people and the environment, while highlighting the major significance of this fuel for human life.

We received around 150 photos from around 30 countries.

The selection was conducted in London in June 2009 by the following panel of judges:

- Daniel Merle, Photography Director of the daily Newspaper La Nación - Argentina
- Jean Schweitzer, Project Manager of the Danish Gas Technology Centre - Denmark
- Kate Edwards, Photography Editor of Guardian Weekend Magazine -United Kingdom

The finalists were displayed in the Photographic Show and Slideshow during the Conference, in the foyer of the Ochre Pavilion at La Rural. The Winners were invited to attend the Conference, and the names of the three first places were announced at the Closing Ceremony of the 24^{th} World Gas Conference, when they received their NIKON digital camera:

1^{st} prize:

Mr. Miguel Monestés - Litoral Gas S.A., Argentina

"Natural Gas, a Right for Everybody"

2^{nd} prize:

Mr. Enrique Torres - Powerlam S.A., Argentina

"Gas Pipeline in Venezuela"

3^{rd} prize:

Ms. Olga Noskova – Gazprom, Russia

"In Chime with Nature"

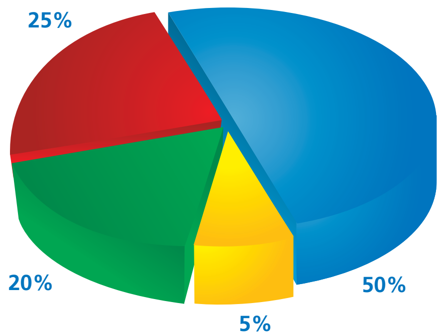
2.4.8. Press

a) List of Media Partners

43 media across North and Latin America, Europe, North America and Asia

Press Report

- Latin America - 50%
- North America - 25%
- Europe - 20%
- Asia - 5%



Media Partners		
Argus Media	Gas Magazine Latinoamérica	Palladian Publications (LNG Industry)
Brasil Energia	Gas Matters	Petroleo Internacional
Business News	Gas y Negocios	Petroleum Economist
C1 Energy	GASEX	Petroleum World
CompressorTech Two	Gerencia Ambiental	Petrotecnia
Dirigencia	Global LNG Info	Pipeline & Gas Journal
DMG	gwf Gas Erdgas	Prensa Energética
Edigar	ICIS Heren	Radio El Mundo
Editorial Control	IGEM (Institution of Gas Engineers & Managers)	Reporte Energía
Editorial Emma Fiorentino Publicaciones Técnicas	LNG Journal	Revista InterGas
El Pregón Energético	LNG Unlimited	Revista Petroquímica
Energia y Negocios	LNG World Shipping Journal / LPG World Shipping (Riviera Maritime)	Tecnoil
EnerNews	Matriz Energética	The News Says
Foro Ambiental	Oil & Gas Journal	Upstream
Futuro Sustenable		

b) Number of Press Registrations

a. **Total:** 454

b. Journalists: 353

c. Technical Support, e.g. photographers: 101

c) Press Conferences

Tuesday 6

9.30 to 10.15: Long Term Prospects of World Gas Markets and Increasing Role of LNG
- Faisal Al-Suwaidi, Chairman & CEO, Qatargas Operating Company LTD

16.00: At request of the Russian Gas Society
- Valery Yazev, Vice Chairman, State Duma of the Federal Assembly of the Russian Federation and President, Russian Gas Society, Russia

17.00 to 17.30: Outlook to 2030 – Reviewing the Strategies for Natural Gas
- Roberto Brandt, Chairman, Coordination Committee, International Gas Union

- Sylvie D'Apote, Managing Partner, Gas Energy & Associate Director, Global Gas Group, IHS CERA
- Colin Lyle, Managing Director, GAS MARKET INSIGHTS LTD.
- Daniel Yergin, President, IHS CERA
- Coby van der Linde, Director CLINGENDAEL INTERNATIONAL ENERGY PROGRAMME
- Shigeru Muraki, Director, Senior Executive Officer, Chief Executive, Energy Solutions Division, TOKYO GAS CO. LTD.
- Ian Cronshaw, Head, Energy Diversification Division Directorate of Energy Markets & Security, IEA
- Tim Eggar, Chairman, NITOL SOLAR

Wednesday 7

9.30 to 10.15: Natural Gas Trade as a Catalyst for Regional Market Integration
- María das Graças Silva Foster, Director of Gas & Energy, PETROBRAS
- Norio Ichino, Chairman, THE JAPAN GAS ASSOCIATION

16.15 to 17.00: Adjusting the Balance between Security of Supply and Demand – Views from Energy Ministers
- Noé van Hulst, Secretary General, IEF
- Chakib Khelil, Minister of Energy & Mines, Algeria
- João José de Nora Souto, Deputy Secretary for Oil, Natural Gas and Renewable Fuels, Ministry of Mines and Energy, Brazil
- Conrad Enill, Ministry of Energy & Energy Industries, Trinidad & Tobago
- Richard G. Newell, Administrator, Energy Information Administration, US Department of Energy
- Jean-Arnold Vinois, Head of Unit, Energy Policy & Security of Supply, European Commission, DG for Energy and Transport, European Union

Thursday 8

9.30 to 10.15: Contribution of the Natural Gas Industry to a Sustainable Energy System
- Cristophe de Margerie, Chairman & CEO, TOTAL
- Tan Sri Hassan Marican, President & CEO PETRONAS

14.00: At request of YPFB
- Carlos Villegas, President, YPFB

14.45 to 15.30: Management of Key Risks and Uncertainties for the Future Development of the Natural Gas Industry
- Tony Hayward, Group Chief Executive, BP
- Thomas E. Skains, Chairman, AMERICAN GAS ASSOCIATION
- Daniel Yergin, President, IHS CERA

Friday 9

9.30 to 10.15: Mechanisms to secure Capital Availability and Affordability of Future Gas Infrastructure Development
- Azizollah Ramezani, Deputy Minister & Managing Director, NATIONAL IRANIAN GAS COMPANY
- Marcel P. Kramer, Chairman of the Executive Board & CEO, GASUNIE

11.30 to 12.00: International Gas Union – WGC2009
- Ernesto López Anadón, President, INTERNATIONAL GAS UNION 2006-2009
- Roberto Brandt, Chairman, Coordination Committee, INTERNATIONAL GAS UNION 2006-2009
- Torstein Indrebø, Secretary General, INTERNATIONAL GAS UNION

12.00 to 12.30: International Gas Union – WGC2012
- Abdul Rahim Hj Hashim, President, INTERNATIONAL GAS UNION 2009-2012
- Ho Sook Wah, Chairman, Coordination Committee, INTERNATIONAL GAS UNION 2009-2012
- Torstein Indrebø, Secretary General, INTERNATIONAL GAS UNION
- Wan Ariffin Wan Zukiflee, Chairman, NATIONAL ORGANISING COMMITTEE, 25th WGC, MALAYSIA 2012

2.4.9. Security

A Security Committee was established to define all the safety measures for the security of participants.

The National Organising Committee signed up a private company that provided the guards responsible for the general security.

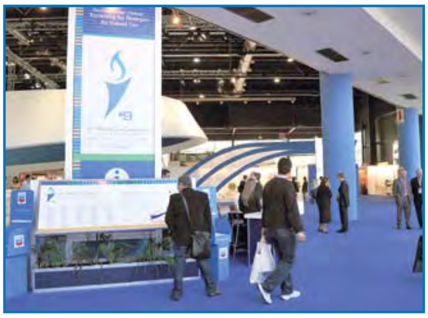
The principal measures taken involved:

- Control of badges by photographs and barcodes.
- Tent at the entrance of the venue with 6 detection stations to check goods and persons.
- 1 detection station to check goods and persons at the entrance of the car park.

An Emergency Plan was developed prior to the Conference specifying the person responsible, and actions to be conducted in the case of certain potential unforeseen events that might have occurred during the Conference.

2.5. World Gas Exhibition

2.5.1. Opening Ceremony



The exhibition opening took place at 11:30 on Tuesday, October 6th. The Chairman of the National Organising Committee, Eduardo Ojea Quintana thanked all the participants for their amazing efforts and then opened the exhibition with Ernesto Lopéz Anadón, President of the International Gas Union. The VIP tour took in some of the reamarkable exhibits and noted the general high standard.

2.5.2. Exhibition in Figures

The WGC2009 Exhibition covered 100% of the available space used:

- 270 exhibiting companies participated from 41 countries
- Total square metres 15,568 square metres net exhibition space used in the exhibition hall which had a gross area of 29,000 square metres
- 14,929 net square metres exhibition space was sold as commercial space
- 321 net square metres was allocated to the National Organising Committee
- 318 net square metres was provided to international and national media partners
- The World Gas Conference & Exhibition attracted 15,723 participants including exhibiting personnel, professional visitors and delegates to the conference

2.5.3. Floor Plan

Hardly no changes were made since the first plan drawn in 2006, which helped to avoid inconviniencies with the exhibitors during the layout.

The floor plan conformed to all the stringent health and safety regulations regarding corridor widths in La Rural. The floor plan passed all regulations with the venue health and safety checks as well as from the city fire department.

Map of the WGC2009 Exhibition


Cafe
SPONSORED BY ERNST & YOUNG
Cafe
ENTRANCE
N66
N70
N64
N68
P66
R70
R76
R75
R74
R73
R72
R66
R64
R78
R80
S80
S74
S76
S70
S68
S64
S66
T72
U72
U70
W74
Y74
W70
T68
T66
W68
Y68
W66
Y66
W64
Y64
Y62
Y61
Y60
Y58
S60
T60
U60
U58
W58
N50
P50
R50
S50
T50
W50
U48
W48
Y54
Y52
Y50
Y48
Y46
Y44
Y42
N44
P44
P46
P40
R44
S44
S46
S40
T44
T46
T40
U46
U40
W40
N30
N34
N32
P26
P28
P30
Q30
R30
S30
T30
W30
W36
W26
Y38
Y32
Y30
Y28
Y26
R24
S24
T24
U26
U24
W24
Q20
U20
W20
Y20
U18
W18
Y18
T20
S20
T12
T08
U10
W10
W06
U06
Y12
Y11
Y10
S02
T02
T03
U02
W02
W03
Y02

2.5.4. Exhibitors´ List

Company
A. Marshall Moffat S.A.
A.Hak
Ackron S.A.
AEM S.A.
Aeon International Limited
AESA (A - Evangelista S.A.)
AFG Association Française du Gaz
Albanesi S.A.
American Innovations
Andes Energía Plc
ANP
APATOR METRIX S.A.
Applus RTD
ARCAT - Portable Architecture
ARPEL
Aspen Technology, Inc.
Atmos International
AVK UK Ltd.
Beijing DongFang RuiJi International
BG Group
Blue Jetty
Bluewater Energy Services B.V.
Bombas Bornemann S.R.L.
BP Plc.
Brüel & Kjær Vibro
Bruno Schillig S.A.
BSS (Beijing) Petro-Chemical Equipment
BW Technologies by Honeywell
Canusa-CPS
CAPIPE
Capstone Turbine Corporation
Centro de Tecnologia em Dutos - CTDUT
Chart Energy & Chemicals, Inc.
Cheniere Energy, Inc.
Chevron Global Gas
China City Gas Society (CCGS)
China Gas Association
China Kelite Valve Co.,Ltd
China National Petroleum Corporation
China Welong Petroleum Equipment Co.
Chuchu-Decayeux
Cintolo Hnos. Metalúrgica S.A.I. Y C.
COMMON S.A.
CompressorTech Two
Constructora Norberto Odebrecht
Contreras
CPL Concordia Soc. Coop.
CWC School for Energy
Daeyoun Co.,Ltd.
Dalkia Argentina
Dastec S.R.L.
Dialog Group Berhad
Directorate Gen' Oil & Gas Indonesia
DMG
DONG Energy
Dresser, Inc.
Duralitte Group
E.ON Ruhrgas AG
EagleBurgmann Argentina
EconGas GmbH
Edelflex S.A.
EDF Gas Division
EDF Trading
Edigar S.A.
Elgas, s.r.o.
Elster - Instromet
ENARGAS
ENARSA - Energía Argentina S.A.

Company
EnBW
Endress+Hauser Instruments
Energía & Negocios
Energía & Soluciones S.A. - E&S
EnerNews / Mining Press
ENI S.p.A.
Enod S.R.L
Esferomatic S.A.
Estrella Group of Companies
Estudio Técnico Doma S.A.
Eustream A.S.
ExxonMobil
Favra S.A.I.C.
Flargent S.A.
Flousa S.A.
Fluxys
Fundación Vida Silvestre Argentina
Futuro Sustentable
Galperti Group The Original
Gaoli Gas Meter Co.,Ltd.
Gas Measurement Instruments Ltd.
Gas Natural SDG
Gas Technology Institute
Gas Transmission Operator GAZ-SYSTEM
Gascat Ind. Com. Ltda.
GasLeak Solutions / Opgal
Gastech 2011
GasTerra
Gazprom
GDF Suez
GE Oil & Gas
GeoFields
Georg Fischer Piping Systems
Gerencia Ambiental Magazine
GL
Global Gas Historical Network
Global Thermoelectric
GNC Galileo S.A.
Gorter Controls B.V.
Greenpeace
Guía de la Industria S.A.
Heath Consultants Incorporated
Hermann Sewerin GmbH
Holding Energy Petroleum Engineering
Holland Gasroundabant
IBP – Brazil
ICIS Heren
IEF - International Energy Forum
IGRC2011
IHS
Industrias 9 de Julio S.A.
Industrias Delgado S.A.
Industrias Epta S.R.L.
Industrias Juan F. Secco S.A.
Industrias Metalart S.A.
Inelectra Argentina S.A.
Ingeniería 2010
Institution Of Gas Engineers & Managers
Instituto Argentino del Petroleo y del Gas
International Energy Agency
International Gas Union
Itron
Jindal SAW Limited
Kerui Group Holding Co., Ltd.
Keymay Industries
KNM Process Systems Sdn Bhd
KROHNE & Instrument Flow Technology
Kuwait Oil Company

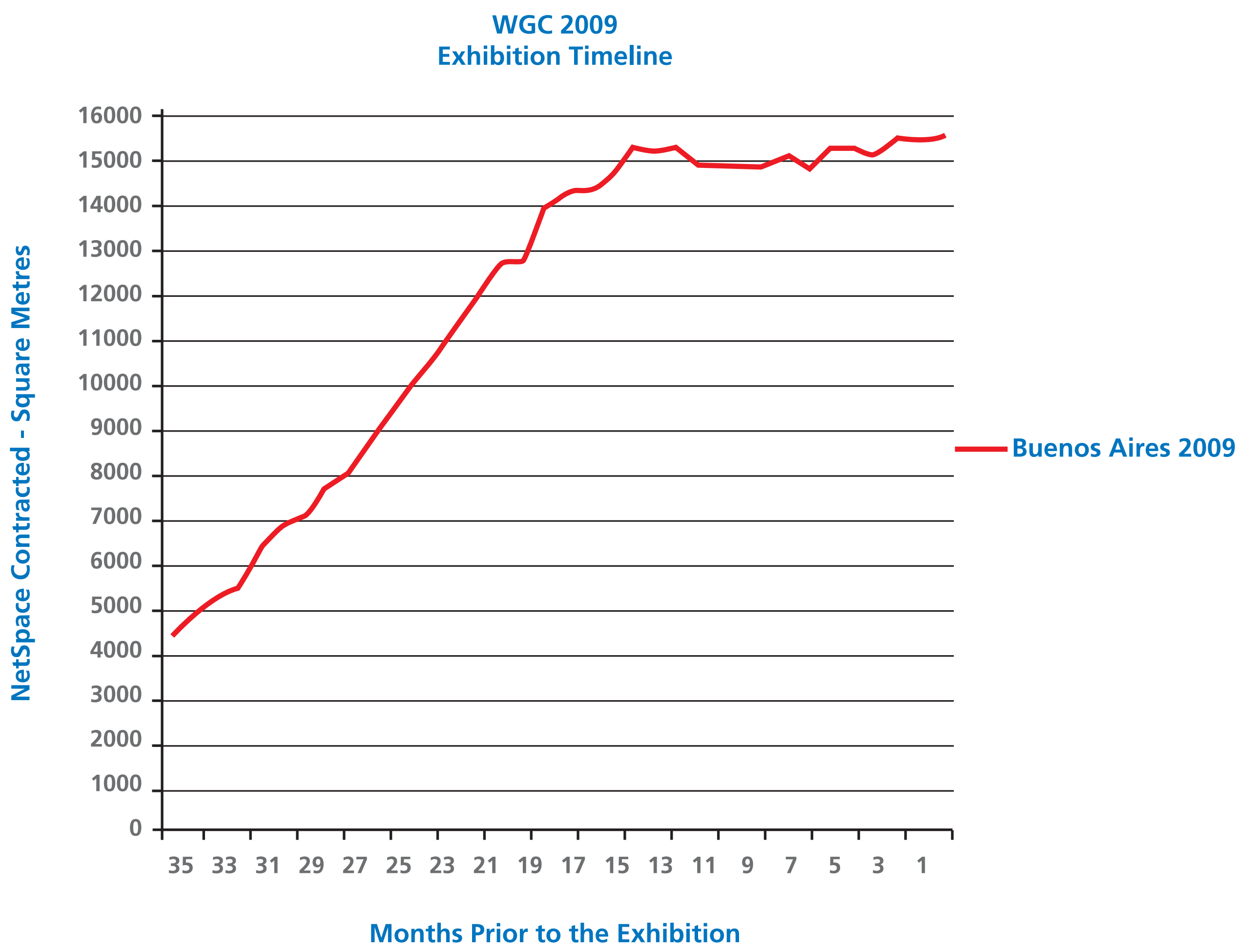
Company
LNG 16 Conference and Exhibition
LNG Journal
LNG Unlimited
Maintec S.R.L.
MATRIZenergética Multimedia
McElroy Fusion
MESURA S.A. Gas Solutions
MetroENERGÍA S.A.
MetroGAS S.A.
Mirbla S.A.
Mokveld Valves
Morken S.A.
N.V. Nederlandse Gasunie
Nacap b.v.
Naftogaz of Ukraine, National JSC
National Iranian Gas Company (NIGC)
Newpoint Thermal & Newpoint Gas
Nexant Ltd.
Nirmal Industrial Controls Pvt. Ltd.
NMi Certin B.V.
Nord Stream AG
Nuovagiungas S.R.L.
Nupigeco S.p.a.
OAO NOVATEK
OGM Proyectos S.R.L.
Olivero y Rodríguez Electricidad
OMV Gas & Power GmbH
ONIP
Pan American Energy
Pergam-Suisse AG
Petro Gas Parsa
Petrobras - Petróleo Brasileiro S.A.
Petrochemicals & Refinery Asia
Petrogreen S.A.
PETRONAS
Pietro Fiorentini S.p.a.
Pipeline & Gas Journal
PIRA Energy Group
Plast Italia S.p.a.
Pluspetrol S.A.
Polish Oil and Gas Company (PGNiG)
Polytec Co., Ltd.
PPA - Petrolera Piedra del Aguila S.A.
Prensa Energética
Promigas
Protan
PSI AG
Pyat S.A.
Qatar Petroleum
Qatar Science & Technology Park
Qatargas Operating Co. Ltd.
QHSE Energy Services S.A.
Radiatym
Radius Systems
RasGas Company Limited
Reporte Energía
Revesta S.A.I.C.
Revista Dirigencia
Revista Foro Ambiental
Revista Gas & Negocios
Revista Petroquímica, Petróleo, Gas
Rich Klinger S.A.A.C.I y F.
RMA Pipeline Equipment
Romet International Limited
Rongsheng Machinery Manufacture
ROSEN Europe B.V.
RWE Supply&Trading GmbH
Saga-PCE Pte. Ltd.

Company
Salzgitter Mannesmann Line Pipe
SAMGAS Group
Samtech S.R.L.
SBGI
SBM Offshore
Schütz GmbH Messtechnik
SENSIT Technologies
Servizi Misuratori Industriali
Shandong Dawang Jintai Group Co.
Shanghai Pan-China Fastening
Shenggui Valve Co., Ltd.
Shengli Oil Field Freet Petroleum
SIAM-ARCON
Siemens
Sistcon S.A.
Skanska
SNGN Romgaz S.A.
Society of Petroleum Engineers
Sonatrach / Soprep
Sperryn Gas Controls & WASK
Spetsneftegaz
StatoilHydro ASA
Suzhou Viza Valve Co.,Ltd.
Swagelok Argentina
Synthotech Limited
TAQA Arabia
Techint Engineering & Construction
Technolog Ltd.
TECNA
Técnica Armaq S.A.
Tecnoil
Tecpetrol
Tenaris
TEX Argentina S.R.L.
The News Says S.R.L.
The Petroleum Economist Ltd.
Tormene Americana S.A.
Total
TPCO - Tianjin Pipe Corporation
Transportadora de Gas del Norte
Transportadora de Gas del Sur
Turbodina Garrett
UK Trade & Investment
Upstream Oil & Gas Newspaper
Válvulas Worcester de Argentina S.A.
Vanasa Multigas
Ventil USA, Inc.
Veolia
Vescon Equipamentos Industriais
Vetek S.A.
Walworth Valves
Wartsila Argentina S.A.
WEC Montreal 2010 Congress
WEG Equipamentos Eléctricos S.A.
Wellstream International Limited
Wenzhou Libang Advertising Co.
Wenzhou Wurong Valve Co., Ltd.
Wenzhou Xiangjian Ball Valve Co.
World Gas Conference 2012
World Petroleum Council
Yemen LNG Company Ltd.
YPF
Zhejiang Chunhui Intelligent Control
Zhejiang CMK Valve Manufacture Co.
Zhejiang Rongxin Gas Meter Co.
ZYT Petroleum Equipment Co.

2.5.5. Timeline of Square Metre Booking

A strategic sales plan was put in place by the National Organising Committee and the exhibition organiser with sales opening in November 2006.

The exhibition sales strategy was entirely successful with the exhibition sold out 15 months prior to the event, maintaining the global nature of the event by securing 70% of exhibition space from outside the host country Argentina and with a healthy waiting list built up by May 2008. When the economic crises occurred through the second half of 2008 and early 2009, the organisers were then able to replace any exhibitors that withdrew through financial difficulties.



2.5.6. Visitors

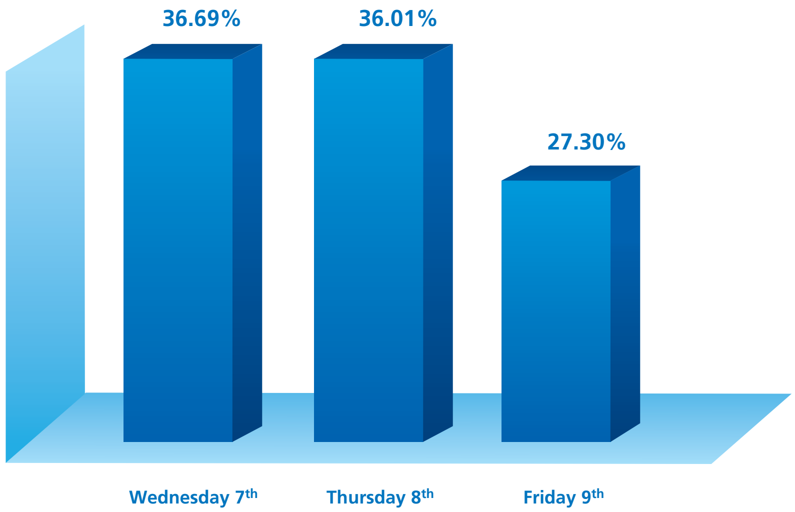
The Exhibiton of the 24th World Gas Conference received over 16,000 visitors, to the delight of the exhibitors.

As customary in IGU the first day of the exhibiton (October 6th) was open only to exhibiting personnel and conference delegates.

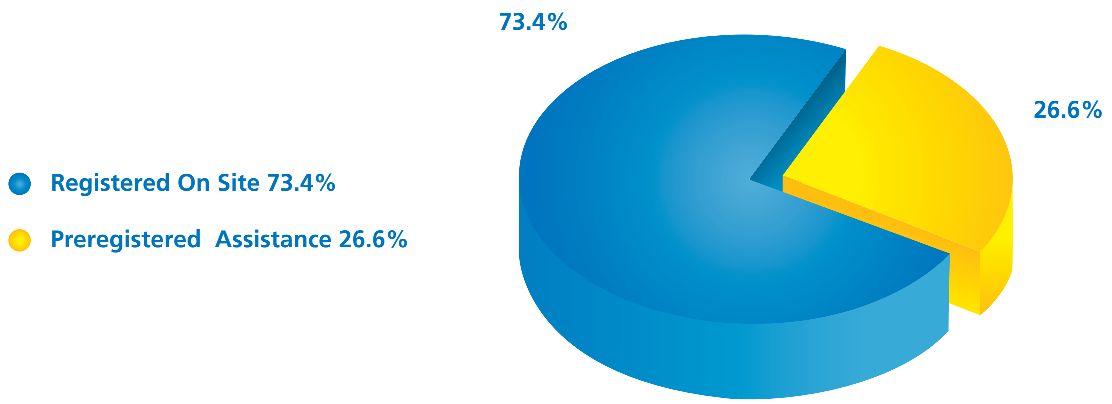
The exhibition timetables were defined to balance the regular World Gas Conference hours and the habits of the host country:

Tuesday, October 6th	11:30 – 19:00 Exhibiting Personnel and Delegates only
Wednesday, October 7th	11:00 – 19:00 Exhibition open to professional visitors
Thursday, October 8th	11:00 – 19:00 Exhibition open to professional visitors
Friday, October 9th	10:00 – 16:00 Exhibition open to professional visitors

DAILY FLOW: *The following chart shows the daily influx of visitors to the Exhibition.*



REGISTRATION: *The following chart shows the percentage of pre-registered visitors and the ones that registered on site.*



2.5.7. Exhibition Sponsors

The organisers are particularly gratefully to the following companies for their generous sponsorship of the 24th WGC Exhibition:

Chevron

ExxonMobil

RWE
The energy to lead

شركة نفط الكويت
Kuwait Oil Company
إحدى شركات مؤسسة البترول الكويتية
A Subsidiary of Kuwait Petroleum Corporation

الشركة العمانية للغاز الطبيعي المسال ش.م.م
Oman LNG L.L.C.

Yemen LNG Company

Ernst & Young



24th World Gas Conference (WGC2009)
Buenos Aires, Argentina
5 - 9 October 2009

Organisers

R. Santi y Asociados S.A.

CWC

mci