



## 2009 Activity Report

### **I. Introduction**

GERG continues to thrive and 2009 was no exception. Both the membership and the project portfolio continue to grow which, given the economic climate, are positive signs. We now have twenty one members, representing a significant increase over the past ten years, and several organisations currently considering membership.

### **II. General Matters**

- Dr K Altfeld, E.ON Ruhrgas, was President of GERG during 2009;
- Mr T Williams, GL<sup>1</sup>, was vice-President of GERG during 2009;
- Mr D Salisbury replaced Dr S Bernstein as the National Grid representative in the Board/Plenary;
- Mr G de Hemptinne replaced Mr Deberdt as the Synergrid Board/Plenary representative;
- Ms M Beltran replaced Dr L Gorospe as the representative of Gas Natural in the Board/Plenary;
- Gasunie will, in future, be represented in the Board/Plenary by P Bartholomeus, KEMA, who have merged with Gasunie Engineering and Technology;
- IGDAS, the Istanbul Gas Distribution company, became a member of GERG in 2009. They are represented in the Board/Plenary by Mr V Turkel.

### **III. Programme Committees**

The Programme Committees each met twice in 2009; a list of their current and proposed projects is attached as an appendix to this report. They were chaired as follows:

- |                             |                              |
|-----------------------------|------------------------------|
| • PC General Studies        | Mr S Dalsager, DONG          |
| • PC Transmission & Storage | Mr A Rovelli, Snam Rete Gas  |
| • PC Distribution           | Mr J-P Capdevielle, GDF SUEZ |
| • PC Utilisation            | Mr T Williams, GL            |

### **IV. GERG Secretariat**

Mr D Pinchbeck was General Secretary of GERG during 2009.

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<sup>1</sup> formerly known as Advantica

## V. Highlights

- Opportunities have been taken on a regular basis to make presentations on the GERG Research Roadmap, both to specific, targeted Commission contacts to keep them up to date on gas industry issues, principally to contacts in various Directorates-General of the European Commission, including the JRC, Petten, and to a wide range of MEPS in the European Parliament.
- GERG became a founder member of K4i, the Knowledge for Innovation platform, early in 2009 and the Secretary has been appointed to its Governing Board.

K4I, is an organisation that enables stakeholders in the knowledge and innovation economy to meet and exchange experiences with the common objective of improving Europe's innovation performance. K4I is a recognised part of the Lisbon Forum which was designed specifically to help ensure that policy makers and the business and science communities interact and, together, address the most pressing issues concerning Europe's knowledge base economy and society. The K4I platform has been designed to help define a future innovation strategy for Europe including fundamental issues such as innovation culture, education and communication.

GERG representatives have made presentations at important K4I events:

- European Innovation Summit, European Parliament, Presentation in the session: "Reshaping Research & Development for Excellence in Innovation - Key Actors from the Research Ecosystem"; K Altfeld, President, GERG. GERG also had a stand in the exhibition and, with the objective of showing that the gas industry is active in R&D, was able to display some gas industry technological developments;
- Dinner Debate, European Parliament on the subject of "Talent and Innovation for a Sustainable Energy Future". Presentation on "Energy Efficiency - Get-Smart Homes and Get-Smart Consumers" - T Williams, Vice President, GERG.
- During 2009 GERG took steps to establish an academic network with the objective of enlarging and strengthening links between selected universities and the European gas industry's research centres. Its objectives are many, but key amongst them are:
  - to ensure that the academic community is aware of gas industry R&D issues;
  - to encourage a dialogue between experts in industry and academia;
  - to demonstrate that the gas industry:
    - promotes sustainable energy solutions;
    - is high-tech;
    - invests in R&D;
    - to show post-graduates that the gas industry offers challenging and rewarding careers.

A major part of the new activity is the GERG Academic Network 'Event', the first of which was held in Brussels in June. Post-graduate students working towards a Ph.D. or a M.Sc., funded by, or relevant to, the gas industry were invited to present their work. Twenty students were invited with their supervisors to present their work to a select audience made up of their peers and gas industry R&D experts. The oversubscribed Event comprised two days of high quality presentations on research topics, debate and discussion in an intimate atmosphere that encouraged interaction and conviviality. All of the papers presented can be viewed on the GERG website at: [www.gerg.eu](http://www.gerg.eu)

The 2009 Event was the first in what has become a regular date in the diary. The 2010 Event will take place on June 3<sup>rd</sup> & 4<sup>th</sup> in Brussels.

- The Secretary continued his involvement in the following committees:
  - IGU R&D Task Force, chaired by M Florette, GDF Suez, which ended at the WGC, Buenos Aires, October;
  - organising committee of the European Forum Gas (EFG 2009) conference, Madrid and EFG 2010, which will be held in the UK.
- The Secretary has joined one of the new IGU Task Forces, TF1 - Building strategic human capital, helping to address the shortage of talent in the industry, which is rapidly becoming a critical business issue.
- GERG was represented in the Steering Committee of the European Forum Gas 2009, which took place in Spain in June, and contributed to the R&D content of the conference with the following papers:
  - “The effect on safety of adding hydrogen to the natural gas system”; Dr B Lowesmith, Loughborough University;
  - “Gas distribution grids safety indicators: Dutch approach”; Dr M Wolters, Kiwa Technology.
- Closer links have been established between GERG and Marcogaz, with joint meetings of the respective utilisation committees and a meeting of committee chairmen. Efforts will be made to ensure that close links are maintained, even strengthened.
- GERG has continued its support of DG TREN by representing the European gas industry at a meeting of the EU-GCC (Gulf Coordination Council) Energy Experts Group. The objective of the meeting held in Brussels was to exchange information on R&D topics and R&D funding experiences with senior representatives from the Gulf States.
- The Secretary was invited to speak at, and assist in the preparation of, INGAS 2009 – the 3<sup>rd</sup> International Symposium on Natural Gas, organised by IGDAS, the Istanbul Gas Distribution Company, in Istanbul in June. The following papers were presented by GERG members:
  - “Consistent Asset Management and Harmonised European Gas Quality”, T Williams, Advantica, UK;
  - “The NATURALHY Project; a First Step in Assessing the Potential of the Existing Natural Gas Network for Hydrogen Delivery”, O Florisson, Gasunie Engineering and Technology, The Netherlands;
  - “The GERG Research Roadmap for the 2030 European Gas Industry Vision”, D Pinchbeck, GERG, Belgium.
- The GERG Secretary has been actively involved in dissemination activity on two current EU-funded GERG R&D projects, including a presentation to the European Parliament and two well attended workshops:
  - “ORFEUS - Optimised Radar to find every utility in the street” <http://www.orfeus-project.eu/>  
A workshop was held in Granada, Spain in May, in conjunction with the International Workshop on Advanced Ground Penetrating Radar (IWAGPR) conference;
  - NATURALHY:
    - The Secretary, set up a presentation of the NATURALHY project’s latest results to the European Parliament’s influential ITRE Committee on Industry, Research and Energy, during which it was possible to present and discuss some of the significant results achieved and their implications;
    - A workshop which was the final public presentation on the project, chaired by the GERG Secretary, took place in the Gasunie Headquarters in Groningen, The Netherlands, in November; it was attended by a wide range of delegates, including representatives from the USA.

- The GERG Board met twice during 2009:
  - Spring Copenhagen, Denmark;
  - Autumn Haugesund, Norway.

**VI. Members – 2009**

- |                                    |                 |
|------------------------------------|-----------------|
| • BP                               | U.K.            |
| • Danish Gas Technology Centre     | Denmark         |
| • DVGW                             | Germany         |
| • Enagas                           | Spain           |
| • E.ON Ruhrgas                     | Germany         |
| • Eni Gas & Power                  | Italy           |
| • Gas Natural                      | Spain           |
| • Gassco                           | Norway          |
| • Gasunie Engineering & Technology | The Netherlands |
| • Gaz System                       | Poland          |
| • GDF SUEZ                         | France          |
| • GL                               | U.K.            |
| • IGDAS                            | Turkey          |
| • Kiwa Gastec                      | The Netherlands |
| • National Grid                    | U.K.            |
| • Naturgas Energia                 | Spain           |
| • Shell Global Solutions           | The Netherlands |
| • Snam Rete Gas                    | Italy           |
| • Statoil                          | Norway          |
| • SVGW/SSIGE                       | Switzerland     |
| • SYNERGRID                        | Belgium         |

## Appendix

### GERG Activities Report – 2009

#### 1. GERG PROGRAMME COMMITTEE TOPICS: Current

<b>Programme Committee:- General Studies for the Gas Industry</b>
<b>Projects in execution:</b>
1. Development of a high quality reference calorimeter to be used for determination of calorific values for natural gas components – a metrological standard instrument.
2. LNG ageing - development of physical and statistical models to predict the changes of composition of LNG as a function of expected evaporation during transportation
3. Review of olfactory methods – an assessment of methods currently used for determination of odour intensity of odorants added to natural gas.
4. Correlative techniques – to identify possibility and range of correlative devices for determination of physiochemical parameters for custody transfer and to compare with fast gas chromatography.
<b>Projects in preparation:</b>
1. Uncertainty determination of response factors for gas components determined by gas chromatography.
2. Aqueous dew-point - development of a method for determination of water dew point for natural gas taking into account the impact of trace materials
3. Biogas integration in natural gas systems
4. Field validation method for hydrocarbon dew point analysers
5. LEL value of natural gas
6. LCA of entire supply chain – with and without H <sub>2</sub>
7. Formation of elemental sulphur
8. Development of densimeter for LNG

<b>Programme Committee:- Transmission and Storage</b>
<b>Projects in execution:</b>
1. Measurement of dust particles and aerosol mist in pipeline (Ph. II)
2. Validation of ECDA (External Corrosion Direct Assessment)
3. Inspection of non-piggable pipelines
4. Long-range guided waves
5. Inventory of natural gas emissions measurement method
6. 'Integ-Risk' - Pipeline R.O.W. surveillance
7. Friction-stir welding applied to pipeline steels
8. C.A.T. (Compact Active Transponder) field evaluation
9. Cathodic protection under AC/DC interference conditions (Ph. 2)
10. FBE v. Polyethylene coating
11. Inspection and test of two old concrete LNG tanks
12. Test of integrity on the FOS-St Martin de Crau pipeline
13. Performance of shock detection systems
<b>Projects in preparation:</b>
1. ALMA field test
2. Measures against TPI

<b>Programme Committee:- Distribution</b>		<b>GERG DOCUMENT</b>
		<b>CODE: 10 - 03</b>
		<b>A</b>
1.	Permeation of methane and hydrogen through plastic pipes used for higher pressures	
2.	Evaluation of the suitability of PA pipe systems for distribution at pressures between 10 & 20 bar	
3.	ALTMETER - Development of new test procedures for domestic meters	
4.	Influence of non-conventional pipe laying on the service life of PE pipes (NIKO)	
5.	NATURALHY (Part)	
6.	Review of non-destructive test techniques for quality assessment of existing pipe line materials	
7.	NDT to measure integrity of joints (butt welds and electro-fusion joints) in existing PE systems	
8.	Methodologies for methane emission estimations in European gas distribution	
9.	Qualification procedure for self-compacting backfill	
10.	Biogas injection in gas distribution grids including effects on the gas distribution system	
11.	ORFEUS - Optimised Radar to Find Every Utility in the Street	
<b>Projects in preparation:</b>		
1.	Assessment of standard PE pipes subjected to point loads	
2.	Lifetime of plastic liners in renovated gas pipelines	
3.	Factors affecting the quality of electrofusion joints in PE pipe systems	
4.	Effects of combined loading on lifetime of PE pipe systems	
5.	Test methods for lifetime prediction of advanced plastic pipeline systems	
6.	Installation of new gas mains and service lines in new residential areas	
7.	Technological and economical benchmark of plastic and steel pipeline systems for high pressure gas distribution systems	
8.	Impact of the gas stop on the availability of the grid – Automatic blocking components	
9.	Service pipes: Trenchless vs. open-trench connections to existing buildings	
10.	Technologies for dismantling gas mains and services lines	
11.	Use of remote detection technology for monitoring gas distribution systems Module: Helicopter-based laser system	
12.	Gas dispersion in soil – tools to analyse situations at risk due to gas leakage in the soil	
13.	Analysis of electronic tools used for a long-term assessment of technical condition of gas distribution pipelines	
14.	Examining the Potential for Application of Micro-Electro-Mechanical Systems (MEMS) in Gas Distribution Systems	
15.	Assessment of new gas metering system from an intelligent gas billing perspective	
16.	Feasibility and effectiveness of gas leak detection vehicles in gas distribution leak survey activities	
17.	Network decompression – software to help incident management	
18.	Effects of traffic loading on gas pipeline systems	
19.	Investigating the Possibilities of Radio Frequency Identification (RFID) for Locating Underground Gas Distribution Assets	
20.	Mobile inspection systems for municipal gas grids	
21.	Benchmarking the safety indicators for gas grids	
22.	No dig for service lines	

<b>Programme Committee:- Utilisation</b>	
<b>Projects in execution:</b>	
1.	ECO-DESIGN - Gas equipment for eco-design directive
2.	GASQUAL - Gas interchangeability
3.	NATURALHY (Part)
4.	LABNET
5.	LABNET TQ – Quality mark
6.	ASUE
7.	Academic Network
<b>Projects in preparation:</b>	
1.	mCHP testing & application
2.	Expert network on biogas/NG metering & sensors
3.	Methane octane number of NG

## **2. APPROXIMATE VALUE OF GERG PROGRAMME - BY PC, OCTOBER 2009**

<b>PC</b>	<b>Value (k€)</b>	<b>EC funding (k€)</b>	<b>% of total</b>
General Studies	1,033	0	0
Transmission & Storage	2,483	715	0
Distribution	7,581	2,950	38.9
Utilisation	19,439	12,077	62.1
<b>Totals</b>	<b>30,536</b>	<b>15,742</b>	<b>51.6</b>