

2008 Activity Report

I. Introduction

2008 was another good year for GERG. It continues to expand its membership and its project portfolio and, although it's slow, at least it's positive:

- membership now stands at twenty, representing a doubling of the membership since 1999 and we have a number of organisations currently considering membership;
- as anticipated, there has been an increase in activity in the Programme Committees resulting in the number of GERG projects increasing from twenty-eight to thirty-six;
- the value of the GERG R&D programme has risen beyond €30 M, mainly as a result of the new EC-funded project, Integ-Risk.

II. General Matters

- Mr M Florette, GDF SUEZ¹, was President of GERG during 2008.
- Dr K Altfeld, E.ON Ruhrgas, was Vice-president of GERG during 2008.
- Mr T Williams replaced Mr M Seed as the Advantica Board/Plenary representative.
- Mr D Deberdt replaced Mr E Van Ingelghem as the Synergrid² Board/Plenary representative.
- National Grid became a member of GERG in 2008. They are represented in the Board/Plenary by Dr S Bernstein.

III. Programme Committees

The Programme Committees each met twice in 2008; a list of their current and proposed projects is attached as an appendix to this report. They were chaired as follows:

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|-----------------------------|---------------------------------------|
| • 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, Advantica Technologies |

IV. GERG Secretariat

Mr D Pinchbeck was General Secretary of GERG during 2008.

¹ Formerly known as Gaz de France

² Formerly known as ARGB

V. Highlights

- The GERG Research Roadmap was published in mid-2008 and has been widely circulated to gas industry contacts worldwide. The objective is to outline key research topics and indicate how R&D on various gas-related issues can contribute to strategic objectives in reinforcing the European gas market. Crucially, Roadmap distribution has also been targeted at key contacts in the European Union, both Parliament and Commission.

The Research Roadmap focuses on four areas considered necessary to meet the Gas Industry challenges to 2030:

- securing the European gas supply;
 - improving the safety and integrity of gas networks;
 - developing smart gas uses / managing energy demand;
 - improving the sustainability of natural gas supply and use.
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- GERG was requested to make an additional specific contribution to the European Commission's Strategic Energy Technology (SET) Plan with regard to allocating greater prominence to biogas in the natural gas system.
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- Collaborations have been set up with two U.S. gas research organisations:
 - GTI - Gas Technology Institute, Chicago;
 - NYSEARCH – part of the North-east Gas Association.
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- GERG has begun the process of establishing a GERG Academic Network to strengthen links between selected universities and the European gas industry's research centres. It will hold a 'by invitation only' annual Event in Brussels targeted at high quality Ph. D. level students and their supervisors.
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- The Secretary continued his involvement in the following committees:
 - IGU R&D Task Force, chaired by M Florette, GDF SUEZ;
 - organising committee of the European Forum Gas (EFG 2008) conference, Bratislava and EFG 2009, to be held in Madrid;
 - as an invited member of the IGRC Technical Programme Committee.
 - GERG had a significant involvement in preparations for IGRC 2008, Paris. The Secretary was a member of the marketing committee and also had joint responsibility for setting up the Innovation Exhibit at IGRC. GERG sponsored a number of students, nominated by its members, to attend IGRC.
 - More than 800 people attended IGRC 2008 and it was considered a great success.
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- Lobbying activities with regard to R&D issues have been targeted on specific topics:
 - Underground technology activities related to gas distribution - a position paper was produced for delivery to the Commission in early 2009. The Secretary prepared the paper and coordinated input from members of GERG and ESWRAC;
 - Biogas - GERG has been involved in activities relating to two GERG projects, BONGO and IBIS, which ensured that relevant topics were eventually covered in the Commission's Calls for Proposals;

- Strategic Energy Technology Plan - GERG was requested by the European Commission to make an additional specific contribution to the Strategic Energy Technology (SET) Plan with regard to allocating greater prominence to biogas in the natural gas system.
- The GERG Secretary has been actively involved in dissemination activity on two current EU-funded R&D projects, including very well attended workshops:
 - “Naturalhy - Preparing for the hydrogen economy by using the existing natural gas system as a catalyst” <http://www.naturalhy.net/> This workshop, chaired by the Secretary, formed part of IGRC, Paris, and was attended by more than 200 delegates.
 - “ORFEUS - Optimised Radar to find every utility in the street” <http://www.orfeus-project.eu/> Workshops were held in Birmingham and Pisa.
- The Secretary accepted invitations to present and/or co-author the following papers/presentations:
 - “Naturalhy - the first step in assessing the potential of the European natural gas network for hydrogen delivery,” Tiekstra G.C., Gasunie Engineering and Technology, Pinchbeck D., GERG - The European Gas Research Group, International Hydrogen Conference, Sept. 2008, Wyoming, USA;
 - “The ORFEUS Project”, G Manacorda, D Pinchbeck et al, GPR 2008, June, 2008, Birmingham, UK;
 - “The ORFEUS project”, G Manacorda, D Pinchbeck et al., The International Gas Research Conference (IGRC2008), October 2008, Paris, France;
 - “Street Works R&D – a Multi-Sectoral Problem” D Pinchbeck, NO-DIG 2008, June 2008, Moscow;
 - “Collaborative R&D in the European Gas Industry”, D Pinchbeck. JGA meeting, Oct '08, Paris;
 - “Collaborative R&D in the European Gas Industry”, D Pinchbeck. R Liberalli meeting, DG RTD, May '08, Brussels;
 - “Integration of Collaborative R&D into the European Gas Industry”, D Pinchbeck, Energy Delta Convention, Nov. 2008, Groningen, Netherlands.
- GERG set up an R&D session chaired by the President, Mr Florette, at European Forum Gas, Bratislava, September. The session presented elements of the GERG Research Roadmap and consisted of the following papers detailing GERG projects:
 - “Heating appliance efficiency & CO₂ indicators”, J Schweitzer, Danish Gas Technology Centre;
 - “Development of polyamide (PA) pipeline systems for gas systems at pressure between 10/20 bar”, M Wolters, Kiwa Gas Technology;
 - “Pipeline security using unmanned aerial vehicles (UAVS)”, M Zarea, Gaz de France;
 - “LNG ageing – MOLAS”, A Benito, Enagás.
- GERG helped set up and was a sponsor for the IGU/Marcogaz/GERG micro-CHP seminar that took place in St Denis, France, in May. GERG is also a partner in the micro-CHP platform that has since been established.
- The GERG Board met twice during 2008:
 - Spring Zurich;
 - Autumn Stratford upon Avon.

VI. Members – 2008

- Advantica Technologies U.K.
- 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
- 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 – 2008

1. GERG PROGRAMME COMMITTEE TOPICS: Current

Programme Committee:- General Studies for the Gas Industry
Projects in execution:
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. Hydrocarbon dew-point – a comparison of experimental measurements with available models for calculation of hydrocarbon dew points based on the composition of natural gas
Projects in preparation:
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. Identifying possibility and range of correlative devices for determination of physiochemical parameters for custody transfer and to compare with fast gas chromatography.

Programme Committee:- Transmission and Storage
Projects in execution:
1. Gas camera
2. Measurement of dust particles and aerosol mist in pipeline (Ph. II)
3. Cathodic protection under AC/DC interference conditions (Ph I)
4. Cathodic protection under AC/DC interference conditions (PH II)
5. Validation of ECDA (External Corrosion Direct Assessment)
6. Inspection of non-piggable pipelines
7. Long range guided waves
8. Secure-Pipe Ph 3 (non-armoured cable, no conduit)
9. Inventory of natural gas emissions measurement method
10. Regulatory pre-feasibility study for H.P. intercontinental gas mains
11. 'Integ-Risk' Pipeline R.O.W. surveillance
12. Fibre-optic detection systems validation tests
13. Friction-stir welding applied to pipeline steels
14. Shock detection on pipelines with Threadscan
15. C.A.T. (Compact Active Transponder) field evaluation
Projects in preparation:
1. FBE v. Polyethylene coating
2. TPI guidelines
3. ALMA field test

Programme Committee:- Distribution	
Projects in execution:	
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.	Shallow trenches with conventional material and conventional depths
5.	Influence of non-conventional pipe laying on the service life of PE pipes (NIKO)
6.	NATURALHY (Part)
7.	Review of non-destructive test techniques for quality assessment of existing pipe line materials
8.	Integrity of joints (butt welds and electro-fusion joints) in existing PE systems
9.	Methodologies for methane emission estimations in European gas distribution
10.	Improvement of quality by using hydraulic binders for backfilling gas distribution trenches
11.	Biogas injection in gas distribution grids including effects on the gas distribution system
12.	ORFEUS - Optimised Radar to Find Every Utility in the Street
Projects in preparation:	
1.	Integrity of excavated PE pipes in existing gas distribution systems under external loading conditions
3.	Quality control of PE pipe and fitting materials at manufacturer plants
4.	Notched ring testing of PE gas pipe grades
5.	High pressure plastic pipe systems
6.	Automatic blocking components for municipal gas distribution systems
7.	Construction of new gas mains and service pipes in new residential areasEnergy metering
8.	Energy metering
9.	Optimizing the analysis and monitoring of Biogas upon injection in the natural gas grid
10.	Determination of the effects of adjustment of the biogas heating value on the gas grid and on appliances
11.	Natural gas dispersion in soils – how to use the data
12.	No dig for service lines
13.	Autonomous inspection of gas distribution pipelines by use of robots
14.	Integrity management program basics for cast iron and steel gas distribution buried pipelines

Programme Committee:- Utilisation	
Projects in execution:	
1.	NATURALHY (Part)
2.	LABNET
3.	Clean engine technology
4.	ASUE
5.	Methane/octane number of NG
6.	CNG Tanks
7.	Micro-CHP
Projects in preparation:	
1.	GASQUAL - Gas interchangeability
2.	LABNET TQ quality mark
3.	Domestic water heater label testing
4.	Gas equipment for eco-design directive
5.	GERG academic network
6.	Fuel cell testing facilities
7.	DCHP integration into buildings
8.	DCHP field test – collaborative information exchange
9.	Workshops with Gas Industry bodies
10.	Gas/solar cooling
11.	Expert network on biogas/NG metering & sensors

2. APPROXIMATE VALUE OF GERG PROGRAMME - BY PC, OCTOBER 2008

	Value (M€)	EC funding (M€)	% of total
General Studies	1.196	0	0
Transmission & Storage	2.674	0.725	0
Distribution	7.536	2.95	39.1
Utilisation	18.90	10.65	56.3
Totals	30.306	14.325	47.2