

2009-2012 WOC2 report

1rst WOC2 Meeting of the 2012-2015 triennium

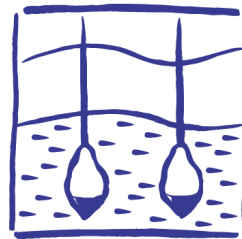
24 th October 2012


Bratislava, Slovakia



2009-2012 Triennium WOC 2 - Underground gas storage

Past Triennium Work Program and 2012 WGC



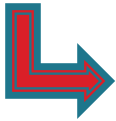
- **1. Team**
 - Key authorities
 - Membership
- **2. Meetings**
- **3. Triennium Work Program**
- **4. Storage Sessions in WGC (Kuala Lumpur , June 2012)**
-  ***Feed-back from 2009-2012 triennium***

2009-2012 WOC2 authorities

Chair : Hélène Giouse, France



Vice-Chair: Ladislav Goryl, Slovakia



2012-2015 Chairman

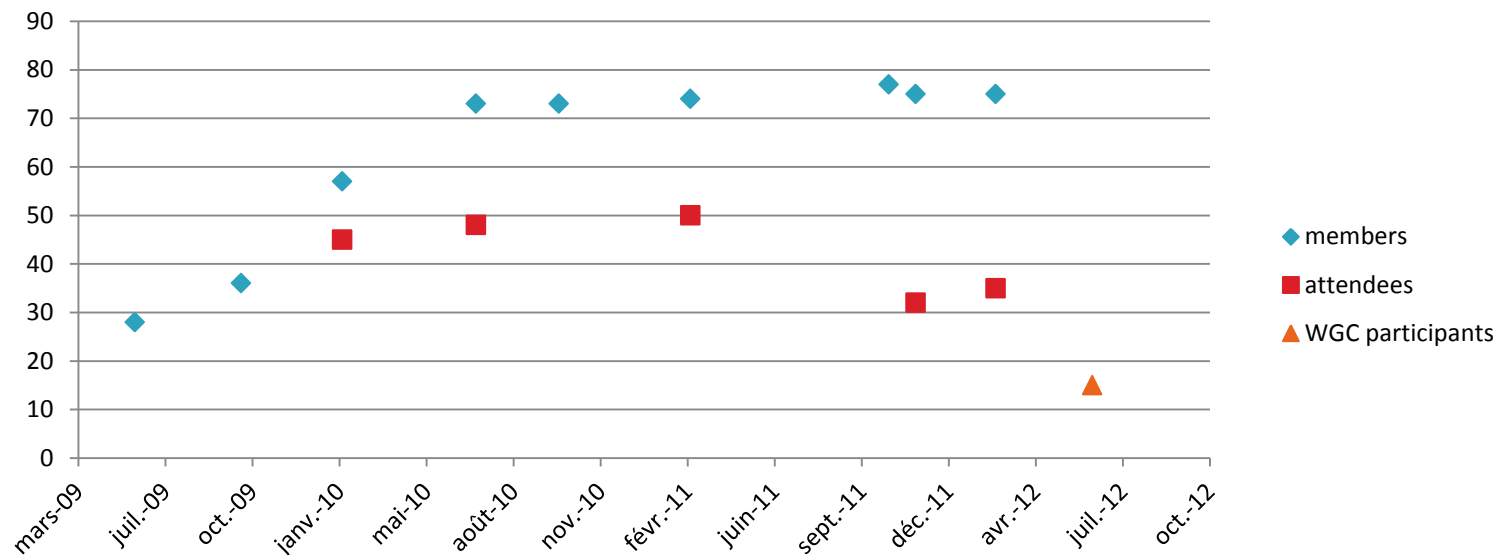


Secretary: Madeleine Lafon, France





EVOLUTION OF THE MEMBERSHIP



Members from 29 nations, mainly from Europe, CIS and Asia.
Only a corresponding member from North America



The membership is growing during the first year

Membership of WOC2 is different than WGC participation

Date of WOC 2 Meetings

Meeting	Date	Venue
1st Meeting:	25-26 January 2010	Paris- France
2nd Meeting:	28-30 June 2010	St Petersburg - Russia
Interim Meeting (with sub-group leaders)	12 October 2010	Conference call
3th Meeting	March 2011	Bratislava –Slovakia
4th Meeting	2,3,4 Nov 2011	Essen - Germany
5th Meeting	Mid-Feb 2012	Madrid - Spain

➤ **“short” triennium >> 5 meetings only**

Including Work-shops and technical tours

Meeting	Work-Shop	Technical tour
PARIS / January 2010	What's new ?	Gournay-sur-Aronde (UGS in operation)
ST PETERSBURG/June 2010	Well Integrity Management	Gatchinskoie (UGS in operation+work-over)
BRATISLAVA/ March 2011	March 2011	Lab complex (UGS in operation)
ESSEN/November 2011	2,3,4 Nov 2011	Epe (UGS in operation + development)
MADRID/February 2012	Mid-Feb 2012	Yela (UGS under construction)

 ***Work-shops and technical tours add value to meetings***

Study Group 2.1: UGS Database

➤ **Leader: Ladislav Goryl– Slovakia**

➤ **Key steps:**

- ✓ Questionnaire to UGS operators
- ✓ Cooperation with UNECE was not a success (due to UNECE)
- ✓ Collecting and processing data is a real job...
- ✓ Data base updated
- ✓ Prognosis of trends toward 2030

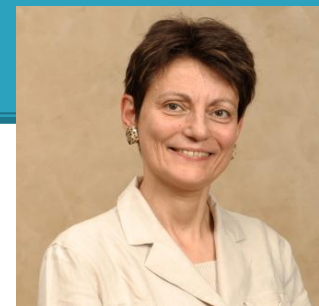


The interest of this database is high but difficult to value

UGS Database : How to get it?

- **<http://proceedings.wgc2012.com>**
- **Password: MalaysiaWGC2012**
 - ✓ **Technical Committee Reports**
 - ✓ **WOC2**
 - ✓ **ZIP**
 - ✓ **Excell files and Acces files**
 - ✓ **Maps (Arcgis)?**

WOC2 SG 2.2: Best practices



- **Leader: Hélène GIOUSE**
- **Topic 1 : Methane emissions of UGS (Pierre Marion – France)**
 - Questionnaire was sent (8 answers)
 - progresses realized during the past years, emissions due to UGS activity are low, investigations and efforts currently done
- **Topic 2 : Well integrity assessment methods (Hélène Gious-France)**
 - Analysis of the workshop (meeting 2),
 - proposal of a “methodology
- **Topic 3 : CO2 sequestration (Herman Spreckels – Germany)**
 - Contribution to PGCA (Sustainability) activity (report and session in the WGC)
- **Topic 4 : Maximum range of cavern operation**
 - *This topic was finally not adressed*



WOC2 SG 2.3: Skills and competencies



- **Leader: Vladimir Onderka – Czech Republic**
- **The first triennium to address this crucial topic**
- **Young professional exchange programme**
 - 3 courses on Geosciences, reservoir engineering and treatment of gas to be organised from 20 June 2011 to end of July 2011 in Russia and Czech Rep
 - 15 candidates from 7 countries participated
 - the 3 best participants awarded and participate to WGC.
- **Analysis of a questionnaire sent in December 2010 to know more about human resources policies of storage companies. 15 answers obtained.**



About Questionnaires

- ***Sending questionnaires and waiting for answers is difficult***
- ***Using a website rather than mails or e-mails***
- ***Limiting the questions at a minimum***
- ***Be sure that people will answer before sending the questionnaire***
- ***The most interesting is the topic , the most difficult is to have answers***

- **Committee session 2.1: Underground Gas Storage (UGS) projects for new gas markets** Chair: Ladislav Goryl, NAFTA, Slovakia and Co-chair: Sergey Khan, JSC GAZPROM, Russia
 - Around 100 people attending
 - Report presented (from SG2.1) Trends in underground storage business and new projects
- **Papers**
 - UGS : A Resilient Business at the Crossroads of Gas and Electricity, Jean-Marc Leroy, Gas Storage Europe, France
 - Gazprom's Underground Gas Storages: European Focus, Sergey Tregub (on behalf of Alexander Medvedev), JSC Gazprom, Russian Federation
 - Demands & Challenges of UGS Construction in China for the Next Two Decades, Guosheng Ding CNPC (Research institute of petroleum exploration & development - langfang), China

- **Committee session 2.2: Optimising UGS activities: challenges for operators and clients** Chair: H el ene Giouse, Storengy, France and co-chair: Ladislav Goryl, Nafta, Slovakia
 - Report presented (from SG2.1): the trends resulting of the update of the UGS database
- **Papers**
 - The Shale Gas Revolution and Gas Storage in North America, Julie Dill, Spectra Energy, USA
 - Debottlenecking of UGS Lab 3, Synergy Effects of Interconnected Storages UGS Lab 3 and Reservoir Gajary-Baden, Tomas Ferencz, NAFTA, Slovakia
 - Simulation and Practice of the Gas Storage in Low Quality Gas Reservoir, Jerzy Stopa, Agh University of science & technology, Polish oil & gas company, Poland
 - Better Water Production Forecasts for Enhanced Performances, Patrick Egermann, Storengy, France





- **Committee 2.3: Competencies & innovative technologies for efficient UGS** Chair: Vladimir Onderka, RWE Gas Storage, Czech Republic and co-chair: H el ene Giouse, Storengy, France
 - Reports presented :SG2.3 on Competencies and SG2.2 Best practices in the field of methane emissions and well integrity management system.
- **Papers**
 - Educational System in the Field of UGS, Nikita E. Barsuk, JSC Gazprom, Russian Federation
 - Application of Advanced Technologies for Evaluation of Underground Natural Gas Storage Wells` Integrity and Operational Safety at 'Latvijas Gaze' as Facilities, Sergey Vlasov, Gazpromenergodagnostika LLC, Russian Federation
 - Obstruction in a Salt Cavern: Solution is Dissolution, Ivan Charnavel, Storengy Deutschland GmbH, Germany
 - Isotopic Techniques to Monitor Gas Releases at Diadema UGS – Argentina, Juan Rodriguez, YPF S.A., Argentina

Interactive expert showcase (IES) =“ Poster Session”

- Sergey A Khan, JSC Gazprom, Russian Federation, Gaseous Helium Storage in Salt Caverns: Influence of Physical Properties
- Fatih Unluuysal, IGDAS, Turkey, Evaluation of Feeding Istanbul European Side Natural Gas Distribution Network from Tpaosilivri Underground Storage Facilities during Peak Demands
- Yusheng Zhang, CNPC (BGP), China, Application of 3D Seismic Exploration Technique in Evaluating and Optimising Favorable Areas for Salt Cavern Gas Storages
- Georgy Ruban - Sergey Khan, Gazprom VNIIGAZ LLC, Russian Federation, Modeling Hydrogeochemical Processes in the UGS Reservoir under the Project of Partial Replacement of Cushion Gas for CO₂
- Jerzy Stopa - Piotr Kosowski, AGH University of science and technology, Poland, Using Gas Storage to Manage the Production of Natural Gas
- Stanislav Bilik, NAFTA AS, Slovakia, Lessons Learned from the Optimisation of the Suchohrad-Gajary Storage Object
- H el ene Giouse, Storengy, France, Technology and Modeling Serving Customer Satisfaction; Developing a Flexible Offer in Underground Gas Storage
- Andrii Datsyuk - Petro Galii, Ukrtransgas AC, Ukraine, Role of Underground Gas Storage Facilities of Ukraine to Ensure Reliable and Efficient Gas Consumption
- Oleg Aksyutin, Gazprom, Russian Federation, New Technologies and UGS Development in Russia
- Martin Z uhlke - Volkmar Neumann, Gazprom Germania GmbH, Markus St ower, UGS GmbH, Germany, Changing the Game - Case Study of State of the Art Exploration of an Aquifer Storage Site in Germany and Impact of High Resolution Data on the Initial Development Plan Based on Vintage Data

- **Expert Forum 6.B/ 2.A: CO2 capture, transport & sequestration: technologies involved & project developments to increase gas industry sustainability.** chaired by Gro J T Amundsen from Statoil, Norway and Co-chaired by Jacques Grappe from Geostock, France.
 - 100 people.
 - Report presented : WOC2-SG2.2 +PGCA
- **Papers**
 - CCS options for electricity generation in South Eastern Europe by Mario Tot, IAEA and Damir Pesut, Energy Institute Hrvoje Pozar, Croatia.
 - A field case of CO2 storage & EOR by Abel Lins Jr, Petrobras, Brazil
 - Setting up electronic data bases of global CO2 sequestration projects by Vera Khvostova, Gazprom Vniigaz,
 - Development of innovative membrane for offshore high CO2 sequestration by Fauzi Mat Isa, Fadhli Hadana Rahman, PETRONAS, Malaysia.



-  ***The number of sessions have been reduced, with regards of the weakness of storage activity in Asia***
-  ***The topic of the sessions are not the same as the topic of the study groups***
-  ***Building a common session with another committee (PGC A on CCS) is interesting but demand a precise coordination***
-  ***The audience of the Interactive Expert Forum exceeded the seats available (small rooms in the Exhibition Hall)***



***Excellent feed-back of Slovakian
wine-testing in March 2011!!***

THANK YOU

KUALA LUMPUR
2012
WORLD GAS CONFERENCE



4-8 June 2012
Kuala Lumpur
Malaysia