



Methane to Markets

Oil & Gas Subcommittee Report to Steering Committee

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Overview

- **Sector Overview and Future Action Plan Discussion**
- **Issues for Consideration/Decision by the Steering Committee**
- **Activities since the 2009 Monterrey Meeting**
 - Recent Subcommittee meetings
 - Partnership Expo Involvement/Marketing Efforts
 - Selected Subcommittee Achievements
 - Activities by Country
- **Next Steps and Conclusions**

Oil & Gas Subcommittee Overview

- The Oil and Gas Subcommittee is engaged globally in a broad array of projects and project-related activities such as:
 - Raising international awareness of collaborative Methane to Markets projects
 - Engaging on projects to identify and reduce emissions at the company level
 - Increasing Country and Project Network membership
 - Supporting the Project Network as it continues to demonstrate commitment to the Partnership by providing capacity to reduce global methane emissions from Oil and Gas industry infrastructure

- As the Partnership re-considers its Terms of References and long term future for the Partnership in global climate change discussions, the Oil & Gas Subcommittee would like to:
 - Support Steering Committee directives and initiatives
 - Promote and increase its successes to date by engaging country “champions”
 - Bring forward and resolve obstacles which have been identified
 - Collaborate in developing strategies and actions to demonstrate the credible benefits of the Partnership and how to integrate Partnership concepts into existing and emerging climate change programs and mechanisms

Oil & Gas Subcommittee Overview

- **Key obstacles to project development in this sector**
 - **Jurisdictional**
 - Methane emissions reductions have not been effectively linked to domestic or international climate change policy
 - Partnership’s value added proposition is not well understood and necessary resources (personnel and financial) to implement emissions reduction projects are not made available at the Subcommittee level
 - Pattern that results is Partnership project activity being marginalized rather than prioritized because **“zero results = zero resources”**
 - Credible results exist but they are often not legitimized within existing climate change objectives
 - Regulatory uncertainty as policy develops at the Country, State and Regional levels

Oil & Gas Subcommittee Overview

- **Key obstacles to project development in this sector**
 - **Within Industry**
 - Lack of awareness about emissions sources, volumes and/or mitigation options
 - **National inventories often highly inaccurate & understated for oil and gas related CH₄ emissions**
 - **Policy developers often convinced that quantification and verification not possible**
 - Companies tend to be more focused on energy efficiency and flare reduction projects
 - Perception that opportunity costs are too high for project implementation; lack of awareness of financial opportunity
 - Lack of consideration to methane emissions reduction objectives as part of operational incentive
 - Project implementation is a significant cost and resulting increased sales volumes and carbon credits or offsets are often not monetized

Considerations for the Steering Committee

- **Possible Actions for Consideration**
 - Revise Subcommittee Action Plan and country-specific strategic plans to more effectively link Partnership complementarities to existing and emerging national policies. Specifically:
 - Methane emissions reductions can have significant near-term environmental and economic benefits to complement other mid- and long-term emissions reduction activities such as CCS or energy efficiency measures
 - Existing, ongoing and alignment of future Partnership solutions can help jurisdictions put climate change policy into immediate global action to realize credible results
 - Raise awareness of implementable Partnership solutions and their linkage to emerging international policy
 - Work collaboratively to position the Partnership globally as a platform whereby international jurisdictions can put into action universal climate change policies

Considerations for the Steering Committee

- **Possible Actions for Consideration**
 - Strategically evaluate complementarity of M2M outputs to other Partnership Objectives
 - Partnerships identified as synergistic to and able to benefit from M2M outputs should be further evaluated to determine if:
 - They are perhaps more effectively integrated into a partner jurisdiction's domestic or international Climate Change or Energy Security & Supply policy activities
 - They are more sustainably resourced and provide long term integration of M2M developed solutions into already funded objectives

Considerations for the Steering Committee

- **Possible Actions for Consideration**
 - Strategically inform ourselves of jurisdictional policy objectives to which M2M is perhaps not directly aligned but to which it is highly complementary
 - Examples of this are:
 - Helping CNPC align project scope with the NDRC Energy Efficiency objectives in current Five Year Plan
 - Helping PEMEX align project scope with corporate and regulatory energy efficiency targets

Subcommittee Achievements since January 2009

- Technology Transfer Workshop and tour of the TAQA NORTH East Crossfield Gas Plant: 14 – 15 September 2009 in Lake Louise, Alberta, Canada
- Discussion topics included:
 - Opportunities for Companies and Governments
 - Science Based Development of a DI&M Program
 - Research to Develop Continuous Methane Monitoring and Source Location
 - Techniques & Technologies for Identifying, Quantifying and Repairing Fugitive Emissions
 - Implementation of DI&M under Alberta Regulation Directive 60
 - Tanks: Prediction of Evaporation Losses and Rationale for Improvements to Existing Tools
 - Methane Emissions Reductions through Vapor Recovery
 - Reduced Emission Completions in Gas Wells and Smart Automation of Gas Well Plunger Lifts
 - Gas Transportation, Storage and Distribution Fugitive Emissions Best Monitoring Practice Guidelines
 - Reducing Emissions from Compressors

Subcommittee Achievements since January 2009 (continued)

- Subcommittee Meeting 16 September 2009 in Lake Louise, Alberta, Canada
 - 22 Oil & Gas Subcommittee and Project Network members attendees
 - Countries represented included: Australia, Canada, India, Mexico, Poland, Russia, and the United States
 - Brief description of results: each partner country was encouraged to support Expo preparation activities and attend, ASG will develop outreach material demonstrating the business value of the Partnership and the ASG and US EPA will consider developing a compendium of standards for emissions identification and measurement

Subcommittee Achievements since January 2009 (continued)

- **Support for the Partnership Expo, Technology Transfer Workshop and Subcommittee Meeting in Delhi, India**
 - Developed targeted invitation letters to list of key potential Expo participants supplied by Subcommittee members
 - Prepared meeting material to work with Country and Project Network members on planning for the 2010 Partnership Expo
 - Developed agendas for the Technology Transfer Workshop and Subcommittee meeting
 - Showcased 9 posters that highlight O&G projects

Subcommittee Achievements since January 2009 (continued)

- **Overall Partnership Outreach**
 - Methane to Markets and Partnering Companies won “Best Paper” award at World Gas Conference
 - Paper on “Designing Ideal Emissions Reductions Strategy for Offshore Platforms” accepted to SPE HSE conference to be held April 18th in Rio de Janeiro, Brazil

- **Strategic Project Development and Implementation**
 - Projects and cooperation with Argentina, Brazil, Canada, Chile, China, Ecuador, India, Italy, Mexico, Poland, Russia and Ukraine-based oil and gas companies

Subcommittee Achievements since January 2009 (continued)

- ***ON TIME Tool***
 - Re-launched the *ON TIME Tool* on the Methane to Markets Web site to include enhanced/additional flow diagrams, definitions and industry descriptions
 - *ON TIME Tool* identifies methane emissions reduction technologies and practices at each operational node in the entire oil and gas industry.
 - *ON TIME Tool*
 - Methane to Markets
 - www.ontime.methanetomarkets.org

Activities by Country

■ **Australia**

- Established working groups among their Methane to Markets contact groups for each sector
- Sent promotional flyers to industry contacts seeking support for the Expo

■ **Brazil**

- Paper on “Designing Ideal Emissions Reductions Strategy for Offshore Platforms” accepted to SPE International conference on HSE in oil and gas exploration and production to be held April 18th in Rio de Janeiro, Brazil, Petrobras is a principal sponsor

Activities by Country (continued)

- **Canada**

- Domestic Activity**

- Secured \$1.8 million (50% gov't & 50% industry) over 4 years to further develop continuous monitoring quantification and source location technology for CH₄
 - \$600K for development of a Storage Tanks BMP
 - Fugitive Emissions BMP for UOG operations now a regulated requirement in Alberta
 - Ongoing development of the M2M *ON TIME* web based analysis tool

- International Activity**

- Engaged with US EPA and China National Petroleum Company in ongoing China based projects
 - Engaged with US EPA and PEMEX in ongoing Mexico based projects
 - Methodology development for Oil and Gas operations in Mexico & China

Activities by Country (continued)

- **Chile**

- Recent addition to the Partnership
- ENAP Sipetrol is a new Natural Gas STAR International Partner with significant emissions reduction opportunities
- ENAP Sipetrol is showcasing their Partnership activities at the Expo

Activities by Country (continued)

■ **China**

- Continued support of the identification and analysis of methane emissions reduction opportunities at all three major Chinese oil and gas companies
 - Work with CNPC has shifted towards creating and institutionalizing a sustainable program
 - Guideline development
 - Engineering analysis
 - Study Tour
 - Work with CNOOC and Sinopec expected to accelerate in coming year
- CNPC is showcasing their Partnership activities at the Expo

Activities by Country (continued)

- **India**
 - US EPA and ONGC collaborated on:
 - Seven pre-feasibility studies to identify emissions sources
 - Developed CDM project
 - Hand-on training on measurement techniques
 - Four field measurement studies (Uran and Kallol)
 - Five table-top analyses of new installation
 - Procurement of measurement equipment
 - Four Technology Transfer Workshops
 - ONGC is showcasing two posters at the Expo

Activities by Country (continued)

- **Italy**
 - ENI is showcasing their validation of IR video imaging techniques for fugitive emissions monitoring at the Expo and presenting on their emissions management program

Activities by Country (continued)

■ Mexico

- PEMEX recently completed a greenhouse gas emissions inventory and detailed Marginal Abatement Curves covering all methane sources at its subsidiaries companies. PEMEX has hosted training events on the underlying calculations and operation of the Marginal Abatement Cost Model and to promote its emissions management activities
- PEMEX is showcasing and presenting on three projects at the Expo

Activities by Country (continued)

■ **Poland**

- Government is considering incentives to advance projects
- GAZ-SYSTEM has completed its first emissions inventory

■ **Russia**

- VNIIGAZ has completed a comprehensive emissions inventory covering the major greenhouse gases and all emissions sources
- Gazprom is showcasing their compressor conversion activities at the Expo

Activities by Country (continued)

■ **United States**

- EPA completed translations of technical documents into Arabic. Technical documents are also in Chinese, Russian, and Spanish
- Enhanced *ON TIME* to include additional flow diagrams, definitions and industry descriptions
- Continued collaborative activities in Argentina, Brazil, Canada, Chile, China, Ecuador, India, Mexico, Poland, Russia and Ukraine to identify, analyze, promote, and track methane emission reductions from projects. Worked with Environment Canada in Mexico and China
- Actively engages all U.S. oil and gas companies in the production, processing, transmission and distribution sectors to encourage the identification, measurement and mitigation of methane emissions in their operations
- Natural Gas STAR methane emission reduction numbers for 2008 - domestic partners (based in the United States) reported emission reductions of 114 billion cubic feet (BCF) and international partners reported emission reductions of 51 BCF

Next Steps

- **Fall Subcommittee Meeting**
 - Possibly in the United States in conjunction with the Natural Gas STAR Annual Implementation Workshop

- **Partnership Expo**
 - ?

Summary and Conclusions

- **Focus on:**
 - Planning for the future, focusing on completion of country-specific strategic plans
 - Greater engagement of Subcommittee members and non-participating country members
 - Providing ongoing assistance to Partner countries
 - Continue to participate actively in international discussions to address climate change

- **Questions?**