



Methane International

The Methane to Markets Partnership Quarterly Update

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Welcome New Partners!

The Methane to Markets Partnership is continuously growing. The Partnership would like to welcome its newest Partners; Mongolia, Pakistan, the Philippines, and Thailand. Each country brings something unique to the Partnership, and Methane to Markets is looking

forward to working with these countries. Mongolia and the Philippines are both looking to introduce cost-effective methane recovery technologies in the area of municipal solid waste landfills and in their agricultural waste sectors.

Pakistan, on the other hand, is looking to work with the coal, landfill, and oil and gas subcommittees. Thailand will bring its experience with methane capture and use projects in the livestock production sector as the country is now working on a Livestock Waste Management in East Asia Project, funded by Global Environment Facility.



About Methane International

Methane International is the quarterly newsletter of the Methane to Markets Partnership. Published by the Administrative Support Group, *Methane International* delivers news and information about the Methane to Markets community of Partners and Project Network members. We welcome your news, commentary, and contributions. Please send them to the Administrative Support Group (ASG) at asg@methanetomarkets.org.



For more information about these new partners, visit the Documents and Resources section of the Methane to Markets Web site at www.methanetomarkets.org/resources/news/index.htm.

Partnership Expo Exceeds Expectations, Catalyzes Activity

The Methane to Markets Partnership Expo, held in Beijing, China, in late 2007 attracted hundreds of attendees from around the world to network and collaborate on launching new methane capture and use project opportunities. While the Expo exceeded expectations by attracting huge numbers of methane professionals and showcasing more than 90 projects, the true measure of the Expo's success is now unfolding as international and cross-disciplinary linkages are catalyzing methane project activity.

For example, as a result of the Expo, several coal and landfill projects are moving forward or are in negotiations with potential investors. Within the landfill sector, facilities in South America are moving forward with prefeasibility studies and technology transfer while several



Minister Xie (NDRC) gives opening remarks.

EC Signs Partnership Terms of Reference

At the International Renewable Energy Conference held in Washington, DC, in March 2008, European Union Energy Commissioner Andris Piebalgs [center] signed the Methane to Markets Partnership Terms of Reference, making official



EU Energy Commissioner Andris Piebalgs signs Methane to Markets terms, formalizing the EC's participation in the Partnership.

the Commission's status as Partner. The Commission will be active in the Methane to Markets Steering Committee as well as in the Coal Mine and Oil and Gas Subcommittees. "The Methane to Markets Partnership will directly contribute to the European Commission's goal of limiting global warming to 2° Celsius," said Commissioner Piebalgs in his remarks.

Chinese landfills have been approached by investors interested in landfill gas recovery and the associated certified emission reductions. Coal mines in China, Mexico, and Ukraine are reportedly in negotiations to implement emissions reduction projects showcased on Expo posters.

In the oil and gas sector, following the Expo, China Petroleum and Chemical Corporation or "Sinopec"—China's largest producer and supplier of oil products—announced plans to use infrared cameras to aid in methane leak detection from its gas processing facilities. Insight gained at the Expo aided in Sinopec's decision to deploy this emerging technology.

Methane to Markets Partnership Expo Task Force Update

Based on the resounding success of the 2007 Partnership Expo, the Expo Task Force unanimously approved holding another Partnership Expo in late 2009 or early 2010. The Task Force would like to invite all interested Partners and Project Network members to join the planning effort. This involves establishing the timeframe and location for the next Expo. If your country can host the next Expo, please notify the ASG at asg@methanetomarkets.org, who can more fully explain the host's roles and responsibilities. To view the Expo Task Force's assessment of the 2007 Partnership Expo, visit www.methanetomarkets.org/resources/steering/index.htm.

Complete Expo proceedings can be found at www.methanetomarkets.org/expo/proceedings.htm. Visit www.methanetomarkets.org/events/2007/all/expoprojects.htm to view the projects showcased at the Expo.



Meet the International Energy Agency

This is the first in a series of profiles highlighting Project Network Members and their important work.

Nestled in the northwest corner of Paris, a modestly sized but elegantly designed building is the headquarters of the International Energy Agency (IEA), one of the newest and perhaps most internationally renowned Methane to Markets Project Network members. Established by several countries, including the United States, more than 30 years ago in response to the 1970s oil crisis, the IEA currently serves as the energy

policy advisor to 27 member countries—of which, more than a quarter are Methane to Markets Partners—to promote reliable, affordable, and clean energy to the world's consumers. The IEA's role is perhaps most prominent in its Programme of Work that is underway following the 2005 Gleneagles G8 Summit, where leaders tasked the IEA with helping to define the pathways toward a clean, clever, and competitive energy future.

As a result, the IEA is a natural participant in the Methane to Markets Partnership. As with Methane to Markets Partners, methane capture and use as local source of clean energy is of particular interest to IEA. Thus, IEA is working closely with the U.S. Environmental Protection Agency and other leaders to raise awareness of the important role that methane mitigation can play in an overall strategy to combat climate change. The best evidence of this will come in July 2008, when the IEA releases its new publication *Energy Technology Perspectives 2008*, which will include for the first time IEA's analyses on the role of energy sector methane emissions in the larger climate change technology response. The IEA is also expanding its work with Methane to Markets Partner countries like China, Russia, and India, helping to spread its energy technology network and associated international collaboration on basic science, research and development, energy technology demonstration/deployment, and information dissemination to these countries.

Methane to Markets thanks the IEA for its sponsorship of the 2007 Partnership Expo and assistance with the Leadership Roundtable. Methane to Markets looks forward to coordinating with the IEA on future endeavors!

For more information about the IEA and its work on methane, visit www.iea.org/textbase/subjectqueries/methane.asp.

Poland Hosts Coal Mine Methane Workshop

Methane to Markets recently sponsored a hands-on workshop entitled "New Trends in Coal Mine Methane Recovery and Utilization" in Szczyrk, Poland. Featuring presentations on CMM global opportunities and discussions on ways to overcome barriers to CMM project development, the workshop included a site visit to the gassiest mine in Europe (Pniowek). Approximately 100 attendees from 12 countries participated. For more information on the workshop and its featured presentations, visit www.epa.gov/cmop/conf/index.html.



U.S. EPA Partners with India's Largest Oil and Gas Company to Promote Methane Emission Reductions

India's largest oil and gas company, Oil and Natural Gas Corporation (ONGC), recently announced a partnership with U.S. EPA to carry out a range of projects to promote technology transfer, build capacity, and encourage methane emission reduction activities. Producing more than 70 percent of India's oil and gas from extensive on- and offshore operations, ONGC offers significant potential for methane emissions reduction in India.

To initiate collaboration, in early December 2007, ONGC and U.S. EPA conducted four technology transfer workshops at different ONGC production assets across India: Mumbai (Maharashtra), Ahmedabad (Gujarat), Nazira (Assam), and Rajahmundry (Andhra Pradesh).

Infrared Leak Detection Cameras



An infrared camera detects and measures thermal energy emitted from an object. Thermal, or infrared, energy is light that is not visible to the human eye. In oil and natural gas systems, infrared cameras are being used to provide real-time imaging and video recording of methane gas leaks that are invisible to the human eye. These cameras can be used in direct, onsite applications (e.g., handheld devices) or attached to aircraft to quickly inspect large areas and miles of pipeline.

The workshops provided training to ONGC staff in methane reduction technologies and practices, including vapor recovery units, directed inspection and maintenance with optical imaging, reduced emissions completions, plunger lifts, and smart well automation.

U.S. EPA and ONGC are reviewing and analyzing field data to identify the specific opportunities for methane reductions within ONGC assets. This work will culminate in a May 2008 measurement study at four ONGC sites. Methane detection equipment, such as the infrared (IR) camera, will be used to identify fugitive and vented methane emission sources. Identified emission sources will be quantified with actual measurements such that ONGC can fully evaluate and prioritize methane emission reduction opportunities. Being able to "see" these emissions with the IR camera will have multiple benefits, including guiding the measurement activities, allowing field personnel and management to see and understand their emission sources, and building capacity within ONGC personnel to replicate such studies in the future. Measurement information will serve as the basis for U.S. EPA recommendations for future methane emission reduction projects.

The Methane to Markets Partnership is built on concepts of international cooperation to facilitate projects that advance methane capture and use. In this spirit, these collaborative efforts between two founding Methane to Markets Partner Countries will not only increase the quantity of natural gas for sale or use by ONGC but will also provide a platform for greater methane emissions reductions. Both the Methane to Markets Partnership and Natural Gas STAR International would like to congratulate ONGC on its leadership in this area.

For more information, visit www.epa.gov/gasstar/news/press_releases_news.htm and select "India's Oil and Natural Gas Corporation Ltd. (ONGC) joins Natural Gas STAR International—August 14, 2007."

Beyond Kyoto: International Climate Community Gathers in Bali to Chart New Roadmap

In December 2007, more than 10,000 government officials and representatives of United Nations (UN) bodies and agencies, intergovernmental organizations, and nongovernmental organizations from around the world gathered in Bali, Indonesia, to plan for multilateral action to combat climate change beyond the Kyoto Protocol. The conference was host to multiple side events, including a presentation by the U.S. delegation on the Methane to Markets Partnership.

Outcomes from this Climate Change Conference covered a wide range of topics, including:

- Finalizing the Adaptation Fund under the Kyoto Protocol, with the Global Environment Facility (GEF) as the secretariat and the World Bank as fund trustee.

- Reducing emissions from deforestation in developing countries.
- Increasing technology transfer and strengthening capacity building.

The main focus of the Bali conference, however, was on long-term cooperation and the post-2012 period, when the Kyoto Protocol's first commitment period expires. Negotiators spent much of their time seeking agreement on a process—referred to as the "Bali Roadmap"—to provide guidance and direction over the next two years, with the final aim of adopting a global climate change agreement for the post-2012 period in 2009.

The Bali Roadmap is a compendium of decisions and processes that can be divided into three categories:

- Negotiating Tracks (e.g., ease tensions between developed and developing countries; develop innovative engagement mechanisms and incentives for emerging economies).
- Building Blocks (e.g., mitigation, adaptation, finance, technology).
- Supporting Activities (e.g., reducing emissions from deforestation and land degradation).

Work on the Bali Roadmap will begin immediately, with four major meetings planned for 2008, including one in Poznan, Poland, for which the ASG and Polish representatives are planning a Methane to Markets event featuring many Partners.

For more details about the UN conference and Bali Roadmap negotiations and final decisions, visit http://unfccc.int/meetings/cop_13/items/4049.php.

Latin American Landfill Reps Visit Virginia Landfill, Participate in U.S. Conference

U.S. EPA invited five municipal landfill representatives from Brazil, Colombia, and Ecuador to visit a local landfill and participate in the 11th Annual U.S. EPA Landfill Methane Outreach Program (LMOP) Conference and Project Expo in Washington D.C. on 9-10 January, 2008 (www.epa.gov/lmop/conf/11thconf.htm). Visitors toured the I-95 Landfill in Fairfax County, Virginia, which showcases several best practices for landfill operations and maintenance. It has been using landfill gas to generate electricity since 1991, and in 2005, the landfill constructed landfill gas-fired infrared heaters to provide comfort heat to the onsite maintenance shelter. U.S. EPA recently awarded two grants in support of the Methane to Markets Partnership to demonstrate landfill-gas fired infrared heaters in Argentina (www.methanetomarkets.org/projects/project_detail.aspx?id=214) and Ukraine (www.methanetomarkets.org/projects/project_detail.aspx?id=224).



Latin American guests view a U.S. wellhead design and learn about dewatering methods.

Featuring simultaneous Spanish translation, the 11th Annual U.S. EPA LMOP and Project Expo's technical program provided visitors with a wide range of case studies on award-winning landfill gas energy projects. The municipal representatives left the conference with significant examples of how to use the gas in nearby direct use or onsite applications.

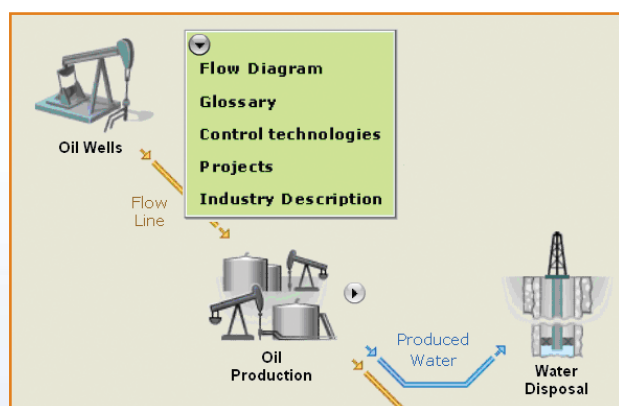
For information on the 11th Annual U.S. EPA LMOP Conference proceedings, visit www.epa.gov/lmop/conf/11thconf.htm.

For more information about the landfills that were featured at the conference, visit www.methanetomarkets.org/events/2007/all/expoprojects.htm#landfill3.

New Resource for Oil and Gas Sector: The Nodal Analysis Tool

Following through on a suggestion made during an Oil and Gas Subcommittee meeting in Tomsk, Siberia, Mike Layer, vice chair of the subcommittee, is delighted to announce the launch of a new online resource: the Nodal Analysis Tool. The Oil and Gas Subcommittee hopes that the tool will quickly become one of the key international "go-to places" to find credible, cost effective technologies and projects that will significantly reduce methane emissions from the global oil and gas industry.

Originally conceived as a high-level flow diagram illustrating how facilities and sections of the oil and gas industry interrelate, the tool will eventually become a multifaceted database. The tool's present level of development allows policy makers, project developers, project financiers, and others in the oil and gas industry to pull up information on all facets of the oil



This flow diagram shows the "Oil Well" drop-down menu. Users click on the different menus to access additional information. The tool is housed on the Methane to Markets Web site at www.gastool.methanetomarkets.org/m2mtool/index.html.

and gas production process. Eventually, the tool will be modified to enable users to track the entire project development process, from identifying project opportunities to subsequently verifying the methane emission reductions from a completed project.

Currently, users can visually navigate the step-by-step production process: from oil and gas being extracted from the ground through the final step of delivery to market for consumptive use. For example, looking at traditional petroleum extraction pumped from an oil well, the Nodal Analysis Tool shows six steps (or nodes) that are part of the petroleum production process. Each step has its own drop-down menu, allowing the user to drill down to additional information on each step in the process, such as a built-in glossary of key terminology, background information on ways to reduce methane emissions in the oil

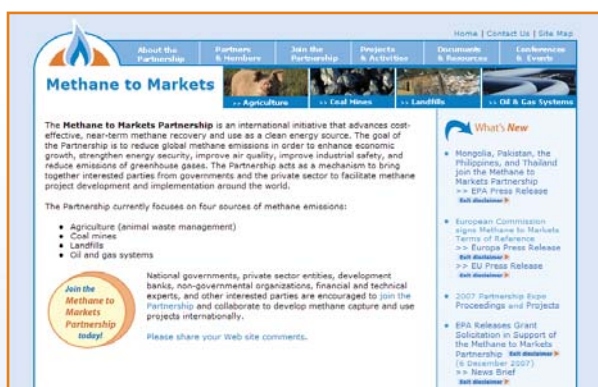
and gas sectors, and more detailed flow charts for most of the steps in the oil production process.

Developed by Environment Canada's Oil, Gas and Energy Division, the tool is especially useful to those who might not thoroughly understand the oil and gas industry but who want or need to participate in methane reductions projects in this sector.

The Oil and Gas Subcommittee is currently finalizing a project submittal form, so that project hosts can use the Nodal Analysis Tool to easily share basic project opportunity data with developers, financiers, and other Project Network members.

The Oil and Gas Subcommittee invites the Methane to Markets community to visit and use the tool at any time. Housed on the Methane to Markets Web site at www.gastool.methanetomarkets.org/m2mtool/index.html, the tool will evolve according to the needs of the Project Network and Subcommittee members. User feedback is critical to improving and enhancing the tool, so please send your comments to the ASG at asg@methanetomarkets.org.

The Methane to Markets Partnership would like to acknowledge the government of Canada for sponsoring the development of the Nodal Analysis Tool, as well as all the individuals and organizations that contributed time, resources, and creativity in creating this very important resource.



Other New Features on www.methanetomarkets.org

The Methane to Markets Web site, www.methanetomarkets.org, is one the Partnership's primary tools in collecting and sharing information. As such, the ASG is continually working to enhance and expand the Web site. Be sure to note these new features:

- **Sector pages.** The Partnership's four sectors (Agriculture, Coal, Landfills, and Oil and Gas) each have Web pages that have been revamped to include all relevant sector information and resources. Links to Technical Subcommittee Contacts, Project Network members, projects and ideas, and conferences and events have been added to each sector page. Links to sector-specific conferences and events have been added to the site's "Conferences and Events" page.
- **Documents and Resources.** The Documents and Resources section (www.methanetomarkets.org/resources) and navigation have been reorganized for easier access to funding opportunities, fact sheets, news, steering committee, and links and resources.

If you have specific suggestions on how the Web site can be improved, please send your comments to asg@methanetomarkets.org. We welcome your comments and suggestions!

Methane in the News

Do you have any news to share? This section of *Methane International* features press releases and new stories from the international methane community. Please e-mail your contributions to asg@methanetomarkets.org.

- U.S. EPA received more than 80 proposals in response to its Methane to Markets Partnership request for proposals, which was issued in February 2008. These proposals represent requests for more than \$35 million, although U.S. EPA will only be able to fund up to \$7 million in methane emission reduction projects. U.S. EPA has selected finalists for potential award and will notify winners in September 2008. For more information, visit www.epa.gov/methanetomarkets/grants.htm.

Upcoming Methane to Markets Conferences and Related Events

Visit www.methanetomarkets.org for the most up-to-date information on Partnership conferences and events.

Methane to Markets Meetings

17 – 18 April 2008

International Workshop on Methane Emissions Reduction Technologies in the Oil and Gas Industry
Huadong, China

www.methanetomarkets.org/events/2008/oilgas/docs/17apr08_wrkspflyer_eng.pdf

22 – 24 April 2008

Agriculture Subcommittee Meeting, Site Visit, and Workshop
Morelia, México

www.methanetomarkets.org/events/2008/ag/ag-22apr08.htm

29 – 30 April 2008

Coal Mine Methane Subcommittee Meeting
Cagliari, Italy

www.methanetomarkets.org/events/2008/coal/coal-29apr08.htm

20 May 2008

Oil and Gas Subcommittee Meeting
Rome, Italy

www.methanetomarkets.org/events/2008/oilgas/oilgas-20may08.htm

18 June 2008

Landfill Subcommittee Meeting
Buenos Aires, Argentina

www.methanetomarkets.org/events/index.htm

Other Related Meetings

Agriculture Meetings

15 – 17 April 2008

International Biomass Conference & Trade Show
Minneapolis, Minnesota, United States

www.methanetomarkets.org/events/2008/ag/ag-15apr08.htm

5 – 7 June 2008

World Pork Expo
Des Moines, Iowa, United States

www.methanetomarkets.org/events/2008/ag/ag-5jun08.htm

3 – 5 June 2008

High-Level Conference on World Food Security and the Challenges of Climate Change and Bioenergy
Rome, Italy

www.fao.org/foodclimate/conference.html

Coal Mine Meetings

14 – 15 April 2008

6th Annual CoalTrans China
Beijing, China

www.coaltrans.com/default.asp?Page=11&eventid=ECK179

16 – 18 April 2008

Miningworld Russia
Moscow, Russia

www.primexpo.ru/mining/eng

9 – 11 June 2008

12th U.S./North American Mine Ventilation Symposium
Reno, Nevada, United States

www.unr.edu/ventsymp2008

16 – 17 July 2008

CMM Recovery and Utilization Workshop
Guiyang, Guizhou, China

www.gzcmm.org

Landfill Meetings

7 – 10 September 2008

Global Waste Management Symposium
Copper Mountain, Colorado, United States
www.wastesymposium.com/gws2008/public/enter.aspx

Oil and Gas Systems Meetings

29 April 2008

Production Technology Transfer Workshop
Denver, Colorado, United States
www.epa.gov/gasstar/workshops/tt_workshops.htm

1 May 2008

Production Technology Transfer Workshop
Rock Springs, Wyoming, United States
www.epa.gov/gasstar/workshops/tt_workshops.htm

6 May 2008

Offshore Production Technology Transfer Workshop
New Orleans, Louisiana, United States
www.epa.gov/gasstar/workshops/tt_workshops.htm

25 June 2008

Transmission and Distribution Technology Transfer Workshop
Charlotte, North Carolina, United States
www.epa.gov/gasstar/workshops/tt_workshops.htm

23 July 2008

Production and Processing Technology Transfer Workshop
Midland, Texas, United States
www.epa.gov/gasstar/workshops/tt_workshops.htm

General

15 – 16 April 2008

Carbonmarkets Americas
Sao Paulo, Brazil
www.greenpowerconferences.com/carbonmarkets/carbonmarkets_americas_2008.html

7 – 9 May 2008

Carbon Expo
Cologne, Germany
www.carbonexpo.com

2 – 13 June 2008

Subsidiary Body for Scientific and Technological Advice Meeting
Bonn, Germany
unfccc.int/meetings/items/2654.php