

# PARTNER UPDATE

## SUMMER 2009



## Partner Profile

### Chesapeake Energy Shares Implementation Experiences



**P**artner company Chesapeake Energy has closely integrated its Natural Gas STAR participation with its core business activities and as a result has realized significant efficiency improvements, methane emissions reductions, and corresponding increases in sales.

Chesapeake is comprised of three operating divisions spanning 17 U.S. states from the east coast to the mid continent. It is the top producer of U.S. natural gas, with an estimated 2009 net

production of 2.4 billion cubic feet (Bcf) per day and is the most active U.S. driller with 94 rigs operating as of mid-June, 2009.

Chesapeake co-sponsored the May 14, 2009, technology transfer workshop in Oklahoma City and hosted the event at its headquarters. At the workshop, Chesapeake explained its integrated approach to Natural Gas STAR. Chesapeake has formed a strong and cross-functional implementation team, and this structure has realized

*Continued on page 5 ★ ★ ★*

#### In This Issue:

Partner Profile.....	1
Prospective Projects Spotlight.....	1
Methane's Near-Term Climate Impact.....	2
Climate Policy Update.....	3
In the News.....	9
Workshop Summaries.....	10
Calendar.....	11

## Prospective Projects Spotlight

### Capture Additional Sources with Storage Tank Vapor Recovery Unit

**O**il and natural gas facilities, both upstream and downstream, share similar types of methane emissions sources such as vents and blowdowns. These releases may individually go unnoticed but collectively represent a significant product loss and often offer an economic capture opportunity. Emissions from tanks can be captured with a vapor recovery unit. This article describes a project

concept that extends vapor recovery duty solely from tanks to these other methane emissions sources.

Operators have explored capture projects for discrete sources ranging from open-ended lines to compressor blowdowns; this project concept explores the versatility of vapor recovery units to accommodate the combination of such emissions that may be present

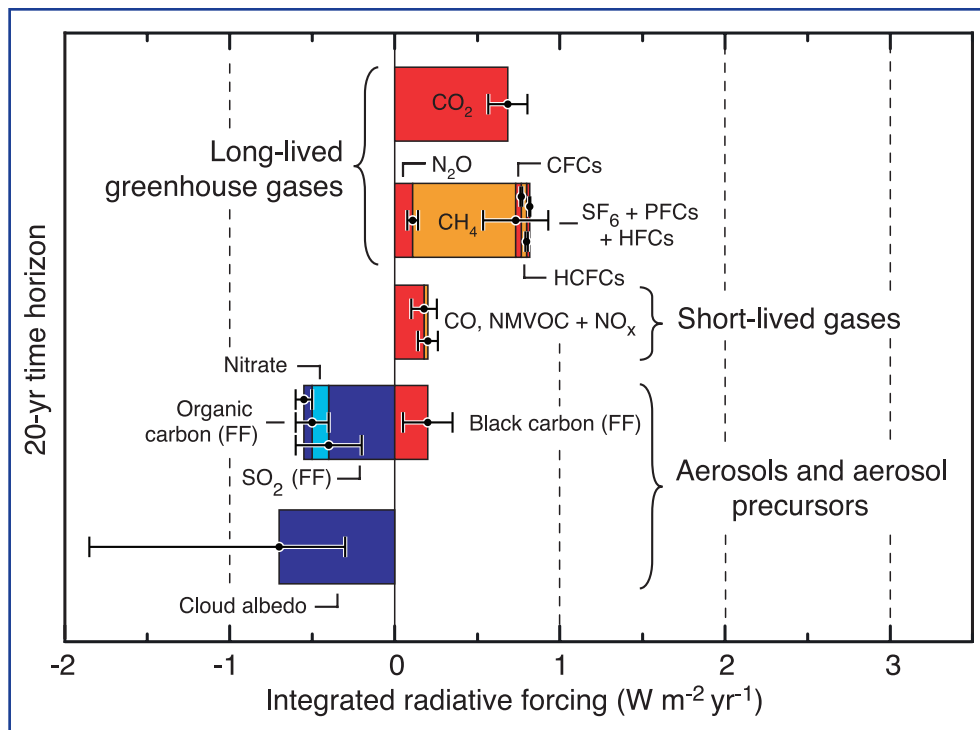
*Continued on page 4 ★ ★ ★*

# Methane's Near-Term Climate Change Impact: Greater or Equal to Carbon Dioxide

Two estimates show that methane emissions have a climate impact similar to carbon dioxide when considered over a short-term time horizon. Methane's long term atmospheric effects over a 100 year period have been a basis of analysis in the past. Studies on short-term climate change impact reinforce the significance of methane and its role as a powerful greenhouse gas.

The Intergovernmental Panel on Climate Change (IPCC)'s Fourth Assessment Report examines methane's potential to contribute to climate change. Global Warming Potentials (GWPs) are one measure of climate change impact. Scientific modeling of GWPs is based on chemical persistence in the atmosphere and radiative effects, and GWPs are dependent on factors such as the time horizon under study, the type of greenhouse gas, and its atmospheric lifetime. The Fourth Assessment Report estimates that the 20-year GWP of methane is 72, more than three times higher than the 100-year GWP. This means that methane is 72 times more effective at trapping heat in the atmosphere when compared to the same mass of carbon dioxide over a 20 year period.

Exhibit 1. Integrated RF of year 2000 emissions over a 20 year time horizon, Watts per square meter per year. Methane's RF over this time period is approximately equal to that of carbon dioxide. Source: IPCC



GWPs are derived from another measure of overall climate change impact, radiative forcing (RF). Methane's RF is expressed by the change in the net irradiance in the atmosphere due to a change in the concentration of methane. The Fourth Assessment Report examines the separate RF components associated with each long-lived greenhouse gas. Over the 20 year time horizon following year 2000 emissions, methane's impact is modeled to be approximately equal to that of carbon dioxide (see the top two bars in Exhibit 1). This is a significant find-

ing given that globally, methane is only about 1 percent of greenhouse gases by mass while carbon dioxide is about 99 percent. This means that targeting the fewer methane emissions for reduction can have substantial near term climate change results.

Similarly, a study completed for the Pew Center on Global Climate Change by the Massachusetts Institute of Technology modeled a scenario of 50 percent emissions reductions in methane (compared to a "business as usual"

Continued on page 7 ★ ★ ★

## Global Warming Potentials:

EPA typically uses the 100-year GWPs listed in the IPCC's Second Assessment Report (SAR) to be consistent with the international standards under the United Nations Framework Convention on Climate Change (UNFCCC). According to the SAR, the 100-year GWP of methane is 21.

## Useful Resources:

International Panel on Climate Change: Forth Assessment Report: [ipcc-wg1.ucar.edu/wg1/Report/AR4WG1\\_Print\\_Ch02.pdf](http://ipcc-wg1.ucar.edu/wg1/Report/AR4WG1_Print_Ch02.pdf)

Pew Center on Global Climate Change: Multi-gas Contributors to Global Climate Change: Climate Impacts and Mitigation Costs of Non-CO2 Gases: [pewclimate.org/docUploads/Multi-Gas.pdf](http://pewclimate.org/docUploads/Multi-Gas.pdf)

# Climate Policy Update

**B**elow is a summary of recent climate policy developments related to the natural gas industry and methane emissions reductions.

## Economic Analysis of Draft Waxman-Markey Bill

On June 26, 2009, the United States House of Representatives passed the American Clean Energy and Security Act. The draft bill was released on March 31, 2009, by Henry A. Waxman of the Energy and Commerce Committee and Chairman Edward J. Markey of the Energy and Environment Subcommittee and Select Committee on Global Warming. At the request of the Committee, EPA conducted a preliminary economic analysis of the draft bill. EPA's analysis focused on the Title III market-based emission reduction program and did not address all of its provisions. Key findings of the core analysis are made on energy efficiency, renewable energy penetration, carbon capture and storage technology, and emission allowances. More information on the draft bill and EPA's analysis can be found at [epa.gov/climatechange/economics/economicanalyses.html#wax](http://epa.gov/climatechange/economics/economicanalyses.html#wax).

## EPA Greenhouse Gas Reporting Rule Update

On April 10, 2009, the proposed greenhouse gas reporting rule was published in the Federal Register under Docket ID No. EPA-HQ-OAR-2008-0508. Two public hearings were held during the comment period, one on April 6 to 7, 2009, in Arlington, VA, and the second on April 16, 2009, in Sacramento, CA. Comments were accepted through June 9, 2009, 60 days following publication in the Federal Register. EPA is reviewing all comments and will respond by early autumn.

## Method 21 Alternative Work Practice – Elements of Interest

The winter 2008 Partner Update reported on the Alternative Work Practice (AWP) for Method 21. The AWP allows use of gas imaging instruments for monitoring of volatile organic compound fugitive emissions. Below are several elements of interest in the AWP; refer to the code of federal regulations parts 60, 63, and 65 for the entire AWP final rule.

## Alaska Climate Change Policy Update

Alaska's climate change strategy development process continues to move forward with study of policy options for different economic sectors and quantification of approximate policy option costs and greenhouse gas emissions reductions. In 2007, Alaska created a sub-cabinet to advise the governor on the preparation and implementation of an Alaska climate change strategy. Two advisory groups—mitigation and adaptation—were formed to make recommendations to the sub-cabinet. The Mitigation Advisory Group (MAG) is examining greenhouse gas emissions reduction methods for different sectors of the economy. Oil and natural gas industry greenhouse gas mitigation options under study include fuel consumption conservation practices, fugitive methane emissions reduction, energy efficiency, and sequestration. Draft narrative descriptions of the policy options, including estimates of the cost-effectiveness, were discussed at the May 14, 2009, meeting of the MAG. The recommendations of the sub-cabinet will be presented to the governor later this year. Details are available at [akclimatechange.us/index.cfm](http://akclimatechange.us/index.cfm).

- ★ A daily instrument check is required to confirm that the gas imaging instrument can detect leaks at the necessary sensitivity level. For the check, the instrument is to be located a distance away from a measured gas release, not to be exceeded during the leak survey. The gas release through a flow meter must be viewable by the instrument and recorded. For bi-monthly monitoring, the measured gas release rate is 60 grams per hour. The daily instrument check is to be repeated for each instrument configuration used in the monitoring, such as for each lens type used.
- ★ During monitoring, the instrument must provide an image of both the leak and the leak source.
- ★ When the AWP is used, equipment must also be monitored annually using Method 21. Subsequent Method 21 monitoring must be conducted every 12 months from the initial period.
- ★ AWP recordkeeping includes a video with time and date stamp of leak survey results where each piece of regulated equipment can be identified. Records for the daily instrument check include the distance, flow meter reading, and video. Additional records include the equipment chosen to be surveyed under the AWP, the chosen detection sensitivity level based on monitoring frequency, and the analysis to determine the piece of equipment in contact with the lowest mass fraction of chemicals that are detectable.

## Capture Additional Sources with Vapor Recovery

Continued from page 1 ★★ ★

at a typical facility. The potential savings from capturing source types that may be present at any type of facility is estimated to be a minimum of about 4400 Mcf/year, an amount sufficient to accommodate a vapor recovery unit or spare capacity of existing units.

### Background: Methane Emissions

In Exhibit 1 below, Natural Gas STAR has compiled a list of candidate methane emissions sources for additional vapor recovery common to a variety of facility types (from production through transmission) along with typical emission factors. This list can be used to estimate the vapor recovery unit capacity and

Exhibit 1: Candidate Sources for Additional Vapor Recovery, Upstream through Downstream

Emissions source, continuous	Typical emission factor, Mcf methane / year
Casinghead gas	3,004
Dehydrator flash tank	146
Dehydrator reboiler vent	12
Pneumatic device	125
Pneumatic pump	90
Pig trap valve leak (as open ended line)	82 <sup>1</sup>
Compressor rod packing open ended line	865 <sup>1</sup>
Centrifugal compressor wet seals	44,150 <sup>1</sup>
Emissions source, intermittent	Typical annual emission factor for intermittent events, Mcf methane / year / unit
Vessel blowdown	0.08
Compressor starts	8
Compressor blowdown	4
Pigging emissions	not quantified
Unless noted, values taken from API Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Gas Industry, February 2004.	
<sup>1</sup> Natural Gas STAR Lessons Learned Studies.	

the magnitude of a location's potentially recoverable methane emissions.

### Extend Vapor Recovery to Capture Additional Methane Emissions: Major Considerations

Capture of emissions from these source types must address several operating requirements. First, a vapor recovery unit is required, either as a new installation or as the spare capacity of an existing unit. Each emissions source should be routed to oil/condensate tank ullage as a flow rate buffer for the vapor recovery compressor: the tank space and its working pressure (a few ounces per square inch) will provide some level of moderation to unsteady emission rates and protect the compressor from excessive on/off cycling.

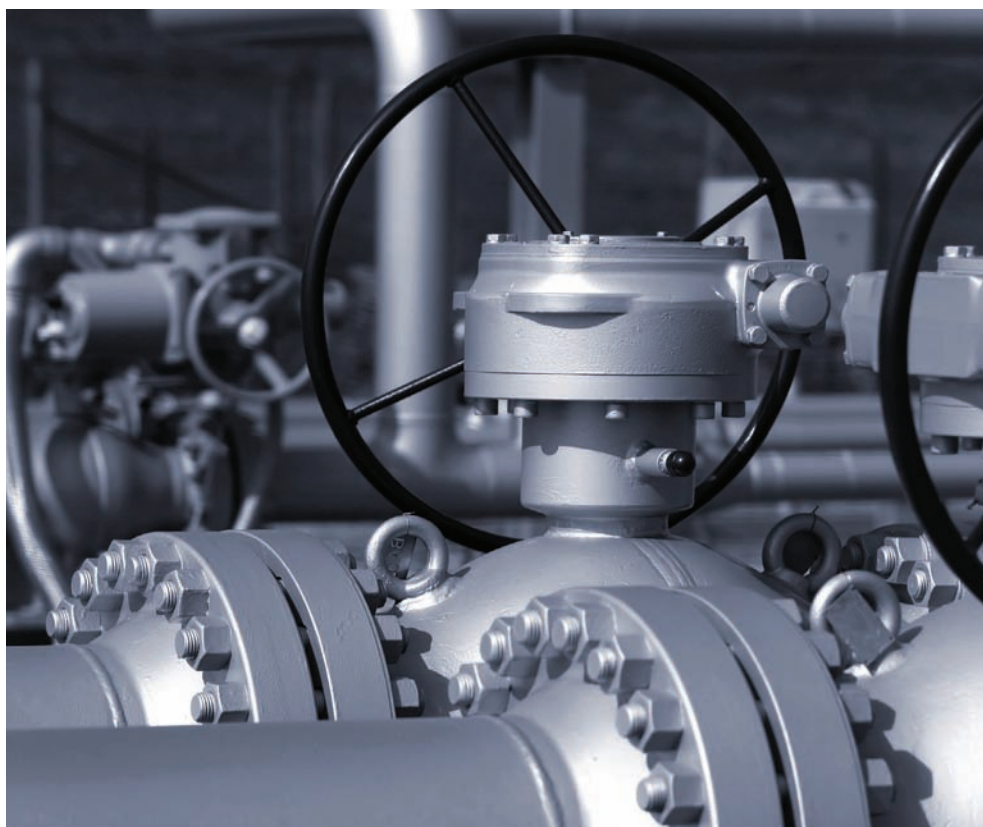
The ability to capture blowdowns of compressors, vessels, or fuel gas systems with this project may require a change in operating practice. A blowdown lasting on the order of 1 to 5 minutes may need to occur as a more gradual bleed down through a restriction orifice so that a gas surge

cannot overwhelm the vapor recovery compressor and activate overpressure protection in the tank.

The vapor recovery compressor must also be designed for a location's specific emissions sources. An analysis of the steady and the intermittent emissions sources is required for proper compressor capacity and turndown ratio or to establish suitability of an existing vapor recovery unit. Existing vapor recovery installations are also constrained by available spare operating time since vapor recovery compressors may not be designed for near-continuous operation to capture steady emissions sources.

Depending on the emissions sources to be captured, gas quality may also be a factor in vapor recovery compressor selection. Sources such as glycol dehydrator reboiler vent gas may require a still condenser to remove water vapor. Sources such as compressor seals or rod packing may require a coalescer or filter to remove oil mists, depending on the vapor recovery compressor type.

Continued on page 7 ★★ ★



## Partner Profile

Continued from page 1 ★★ ★

a number of successful project types, including a leak inspection and repair program and development of lean burn gas dehydrators.

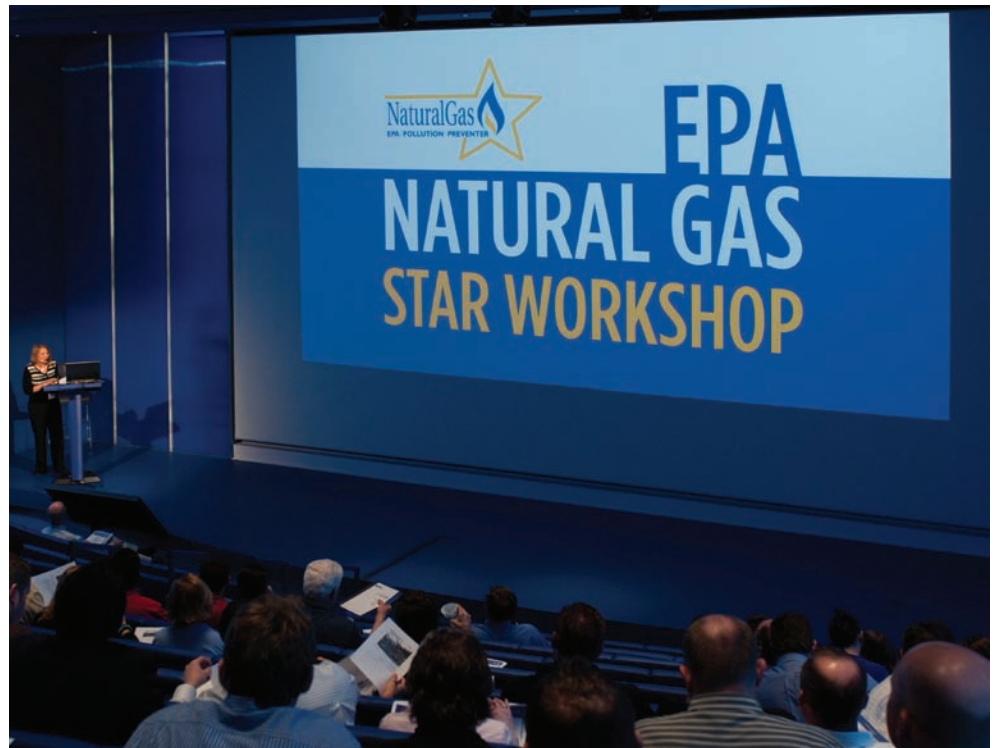
### **Approach to Natural Gas STAR**

Chesapeake joined the Natural Gas STAR Program and formed an operations driven implementation team in October, 2007. The team consists of an engineer from each operating district as well as representatives from purchasing and its environment, health, and safety department. The implementation team initially reviewed current and past activities applicable to Natural Gas STAR, identified new project ideas, educated field personnel, and set district-specific goals in an effort to establish a highly successful program.

Chesapeake's implementation team drew from the resources and case studies available on the Natural Gas STAR website. Following careful review of this information, the team identified 21 Best Management Practices (BMPs) currently in use, with many methane-saving activities dating back to 2001. Organizing information on these historical activities for its Natural Gas STAR annual report helped Chesapeake identify ways to expand this work as well as identify new BMPs. Chesapeake's implementation has also benefited from buy-in at the individual level, where team members have provided initiative and insight while upholding day-to-day obligations.

### **Use of Apogee Leak Detection System (LDS) for Pipeline Fugitives**

Through its involvement with Natural Gas STAR, Chesapeake has seen the benefits of methane leak detection and repair and employs a number of meth-



*May 14, 2009 technology transfer workshop in Oklahoma City, sponsored by Chesapeake Energy and Devon Energy*

ods to detect fugitives. Chesapeake's Eastern Division has successfully used the Apogee LDS to survey gathering lines in several operating areas within the Appalachian Basin.

The Apogee LDS unit can be mounted in various vehicle types, including helicopter, pickup, or all-terrain vehicle. It measures gas concentrations by continuously capturing samples of ambient air using a blower. The sample is analyzed with a series of mirrors and lasers to detect any appreciable hydrocarbon gases. Concentration measurements occur approximately 20 times per second with methane, total hydrocarbon, and carbon dioxide measured separately. Concentration data is relayed to a connected laptop running Apogee-developed software that records and graphs the results according to global positioning system (GPS) location. Some of Chesapeake's lines are in close proximity to other emissions such as coal bed methane releases, and comparison of survey data to other concentration signatures can rule out pipeline leaks. The software's point

of interest function allows tracking of other infrastructure issues such as slips, encroachments, and exposed lines in streams, maximizing the efficiency of each survey and helping Chesapeake eliminate line damage on a more proactive basis.

Chesapeake's decision to use Apogee LDS was based on a demonstration in December, 2007, and subsequent cost/benefit analysis for surveying forested and mountainous terrain such as in the Appalachia Basin. Chesapeake purchased a unit for use in the operating districts of its Eastern Division, contracted a flight service company experienced in using the unit, and prioritized pipeline segments to survey.

Chesapeake has thousands of miles of gathering lines in the Appalachian Basin, and segments can be as old as 100 years. Traditional means of inspection and maintenance have been employed successfully within this old gathering system, but these methods are not nearly as efficient as

Continued on page 6 ★★ ★

## Partner Profile

Continued from page 5 ★★ ★

the Apogee LDS proved to be in this forested and mountainous environment. One Apogee LDS flight in its Southeast District covered 616 miles in 64 hours, while a comparable ground patrol would require 3200 staff hours plus vehicles and fuel. This time savings also expedites leak repair and increases gas savings.

As of May, 2009, Chesapeake estimates a line loss recovery and leak repair of nearly 1500 thousand cubic feet (Mcf) of natural gas per day. At a value of \$4 per Mcf, this equates to a gross annual savings approximating \$2.2 million. Costs for the survey and repair work include purchasing an Apogee LDS, helicopter rates (approximately \$750 per hour), and the leak repair itself.

The next step for Chesapeake is to add gyro stabilized high definition video for leak survey documentation and to verify leak location. Video can also assist in identifying areas to target with



Helicopter mounted Apogee LDS

additional walking surveys using instruments such as Chesapeake's FLIR infrared camera.

### Employing Lean Burn Glycol Dehydrators

Chesapeake has also examined glycol dehydration from an air emissions standpoint and developed a comprehensive solution. The lean burn system, designed and implemented by Chesapeake, has the combined effect of reducing methane emissions as well as other air emissions such as VOCs and BTEX. It consists of a flash tank separator, 12-volt solar thermostat, low pressure and low temperature burner, Natco oversized still condenser, shortened stack to draw in less air, and the Patton Burner Management System (PBMS). The primary aim of the lean burn system is to minimize air pollutants throughout the glycol dehydration process, and the methane savings are realized in several ways:

- ★ capture of flash gas as fuel,
- ★ reduced fuel gas consumption,
- ★ reduced methane in the combustion exhaust through burner management, and
- ★ use of electronic thermostat in place of the typical continuous bleed gas pneumatic device.

The lean burn system was initially piloted at Chesapeake's Kovar facility near Marlow, Oklahoma. Based on the successful pilot, Chesapeake has been employing this technology in existing units on a case-by-case basis and as resources allow. All new and planned units are equipped with this technology upon startup.

Capture of flash gas into the fuel system results in a fuel gas savings of approximately 5 standard cubic feet (scf) gas per gallon of glycol circulated



for Kimray pumps, or 1 scf per gallon circulated via electric pumps. This typically equates to a range between 14,000 and 166,000 scf per day depending on reboiler size. Reduced fuel gas consumption is also realized with an oversized still condenser and a continuously operating (rather than intermittent) burner that provides VOC and BTEX abatement and heat energy to the fire tube. Thus total external fuel gas needs are reduced by approximately 36,000 scf per day (with typical incinerator usage). For a new burner installation, incremental costs are \$100 to \$500 excluding the PBMS. The cost to upgrade/retrofit an existing burner is \$500 to \$1,200. The PBMS costs \$7,500 installed. Payout will vary by project and is calculated for each unit under study.

Additional benefits of the Chesapeake lean burn dehydrator are: continuous destruction of VOC and BTEX, less thermal stress on the system due to lower burner temperatures, lower noise (40 to 60 decibels), eliminating the need for purchased electricity through use of 12 volt solar power, and convenient telemetry management through PBMS.

### Conclusion

Chesapeake's structured approach to methane emissions reductions has resulted in a number of cost-effective innovations, including aerial leak detection and glycol dehydrator optimization.

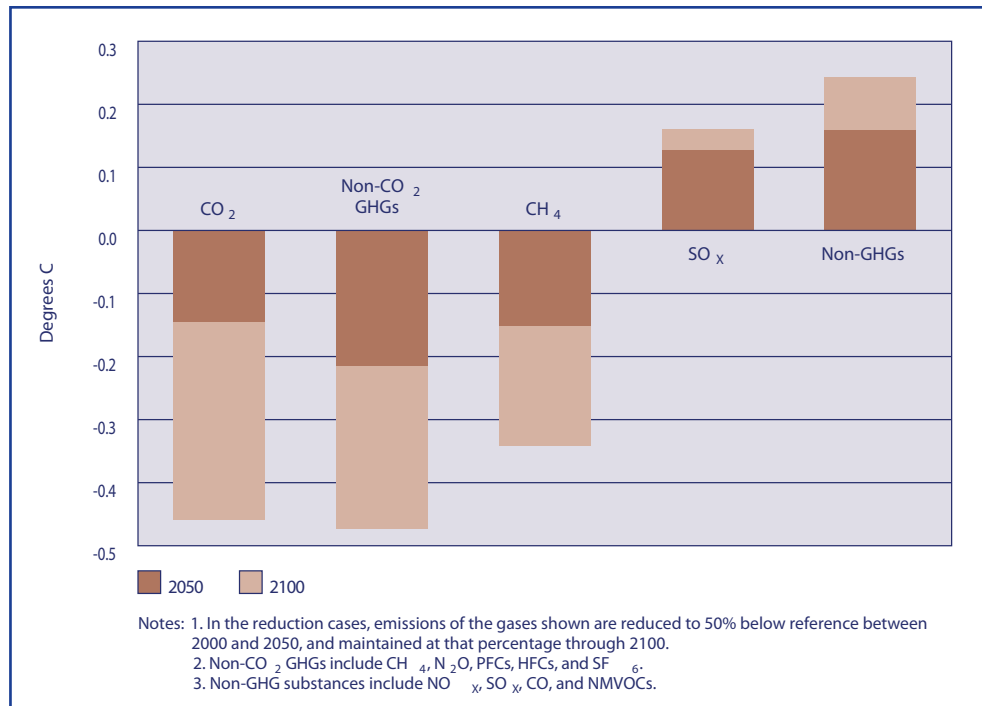
# Methane's Near-Term Climate Impact

Continued from page 2 ★★ ★

scenario) by 2050. The methane case results in a slightly greater decrease in temperature for this short-term case (see the first and third bars in Exhibit 2).

In cases depicting a longer time frame, maintaining the 50 percent reductions in both carbon dioxide and methane through 2100 results in carbon

*Exhibit 2. Global mean temperature effects of a 50 percent emissions reduction between 2000 and the date specified (i.e., 2050 or 2100). Non-GHG include NO<sub>x</sub>, SO<sub>x</sub>, CO, and NMVOCs. Note that a 50 percent reduction in methane emissions between by 2050 leads to a greater decrease in global temperature than a 50 percent reduction in carbon dioxide over the same time period. Source: Pew Center on Global Climate Change.*



dioxide having a larger temperature effect, though methane's climate change impact over this time horizon is still significant.

Together, IPCC and Pew/MIT studies show that in addition to the economic benefits of methane savings, reducing methane emissions may have powerful effects on climate change goals, especially in the near term. For more information on proven methane-reducing project opportunities, visit the Natural Gas STAR Web site at [epa.gov/gasstar](http://epa.gov/gasstar).

# Capture Additional Sources with Vapor Recovery

Continued from page 4 ★★ ★

Sources such as pigging emissions may also require similar treatment of the gas stream to limit flow rate and/or remove liquids.

This project must also consider the differing pressures of each emissions source. Higher pressure streams such as from blowdowns or casinghead gas will require the addition of a flow/pressure restrictor orifice and shutoff valve before the stream enters the tank or joins other low pressure sources. Other streams such as compressor seal degassing or pneumatic pump discharges cannot accommodate significant backpressure.

Including gas-driven pneumatic devices into this type of capture project will require additional design work and consultation with vendors for a practical way to connect an instrument's gas discharge to piping so that it can function properly with a slightly variable discharge pressure.

Each methane emissions source to be captured must be sufficiently proximate to a vapor recovery unit because the low pressure streams limit the gas flow distance, and additional piping can be a significant expense.

## Example Implementation and Economics

To illustrate this project concept, a surrogate facility was created and its emissions estimated. Exhibit 2 depicts a surrogate capture project with several types of methane emissions sources broadly applicable to many oil and natural gas facilities, the equipment count for each source, and the emissions rate.

Continued on page 8 ★★ ★

# Capture Additional Sources with Vapor Recovery

Continued from page 7 ★★ ★

Units are provided as Mcf methane/year as a consistent basis for continuous and intermittent emissions, since intermittent emission factors from literature are aggregated to an annual basis to reflect blowdown frequencies. Total gas to be captured from continuous and intermittent sources is 4382 Mcf/year, or about \$30,700/year at \$7/Mcf. Thus, 12 continuous sources and 2 intermittent sources are readily identifiable, in close proximity, and constitute a significant revenue stream.

Exhibit 2 shows example economics for the surrogate facility at different gas values. The gas volume is assumed to

be captured by existing vapor recovery unit capacity; typical vapor recovery unit capacities range from 10 to over 500 Mcf/day (3,650 to 182,500 Mcf/year). For scoping purposes, piping is estimated at \$15/foot installed cost for 2 inch diameter lines, with each source requiring a run of 150 feet. For 14 emissions sources to capture, piping cost is \$31,500. Incremental compressor power cost is represented as the fuel gas required and is determined from vapor recovery unit product literature to be 715 Mcf/year or \$5,000 at \$7/Mcf.

Many natural gas facilities have equipment sized for initial rates, and throughput declines over time. The decline may move main line compressors out of their optimal performance ranges or require that gas be recycled to maintain sufficient feed rate. Capture of addition-

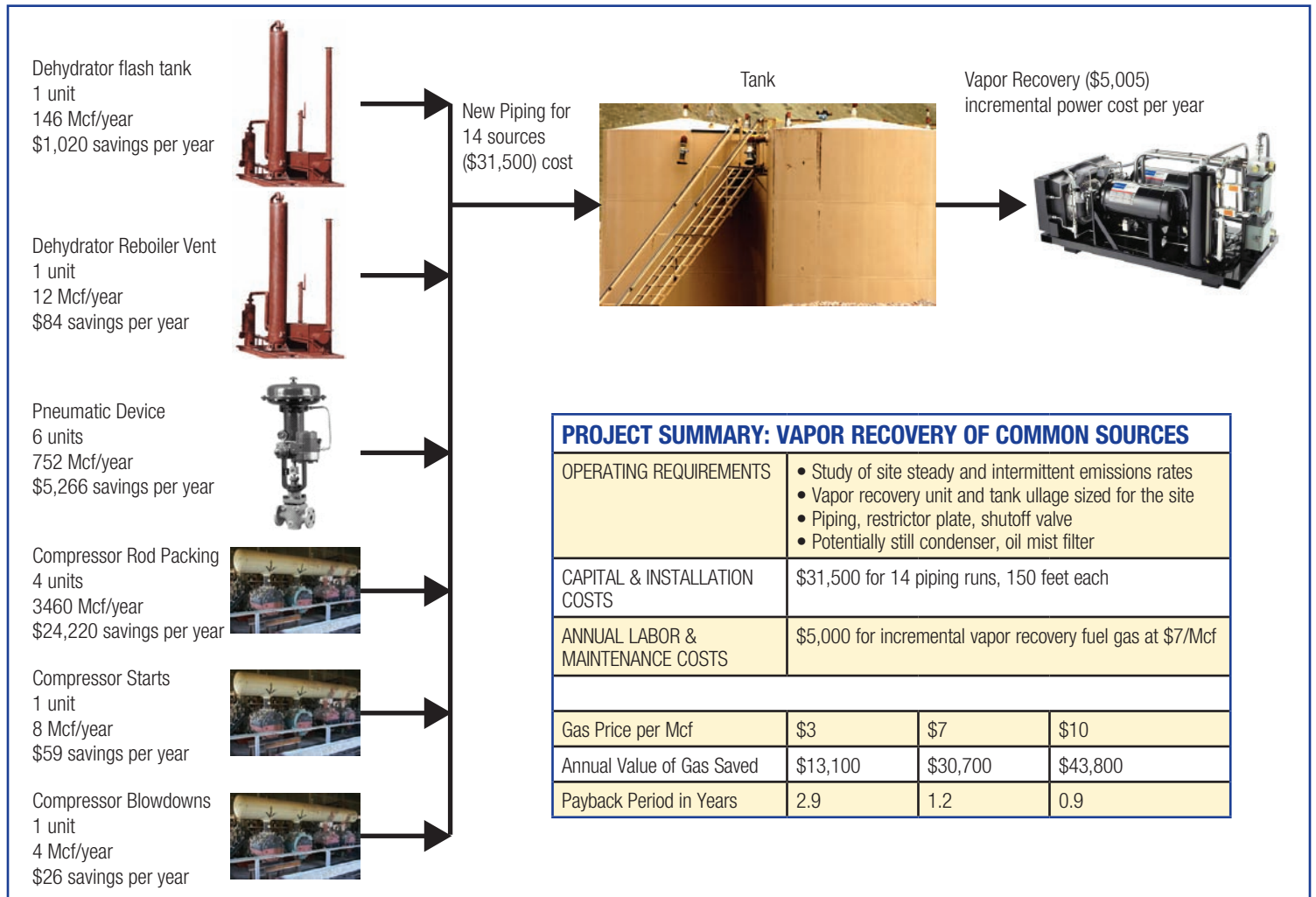
al methane emissions sources can help eliminate this inefficiency by collecting new gas sources.

## Conclusion

Oil and natural gas facilities from the wellhead to the compressor station contain a variety of methane emissions sources that can be routed to vapor recovery after confirming their emissions rates and proximity. Collectively, these sources represent a methane emissions capture project with potentially significant returns on the investment and environmental benefit.

We would like to hear from you on your implementation experiences. If your company has already implemented this project or wishes to further explore this concept further, please contact Jerome Blackman, EPA [Blackman.Jerome@epa.gov or (202) 343-9630].

Exhibit 2: Surrogate facility, \$7/Mcf





## Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2007

In mid-April, EPA finalized and submitted the 2009 U.S. Greenhouse Gas Inventory to the United Nations Framework Convention on Climate Change (UNFCCC). The inventory is prepared annually by EPA, in collaboration with other federal agencies, and tracks annual greenhouse gas emissions. This inventory of anthropogenic greenhouse gas emissions provides a common and consistent mechanism through which parties to the UNFCCC can estimate emissions and compare the relative contribution of individual sources, gases, and nations to climate change.

As reported in the inventory, overall emissions increased by 1.4 percent from 2006 to 2007. 2007 methane emissions from natural gas systems are reported as 104.7 teragrams carbon dioxide equivalent and decreased by 0.1 percent from 2006 to 2007. For this reporting year, key changes to the natural gas systems sector included updating activity factor calculation methods. The inventory reflects 47.8 teragrams carbon dioxide equivalent of methane emissions reductions by Natural Gas STAR Partners in 2007.

2007 methane emissions from petroleum systems are reported as 28.8 teragrams carbon dioxide equivalent and increased by 2 percent from 2006 to 2007. Calculation methodology remained the same as the previous year's inventory, though activity data was updated for the 2007 reporting year.

For more information the Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2007 is available at [epa.gov/climatechange/emissions/usinventoryreport.html](http://epa.gov/climatechange/emissions/usinventoryreport.html).

---

## Two Environmental Technology Verification (ETV) Programs to Test Airborne Leak Detection

The United States EPA Environmental Technology Verification Program (ETV) Advanced Monitoring Systems (AMS) Center and ETV Canada are planning joint verification testing of airborne natural gas leak detection technologies. The test will involve field testing under a variety of conditions. Test collaborators are being sought. A teleconfer-

ence will be conducted on Monday, July 20, 2009, from 1:00 to 3:00 p.m. eastern time, to present an outline of the test design to interested technology vendors. Although the focus of the call is joint U.S./Canada verification test design, vendors interested in U.S.-only or Canada-only verification are also welcome and can be considered for verification. Please contact Ken Cowen,

Battelle, at (614) 424-5547 or [cowenk@battelle.org](mailto:cowenk@battelle.org), or Mona El Hallak, ETV Canada, at (905) 822-4133 ext. 239 or [melhallak@etvcanada.ca](mailto:melhallak@etvcanada.ca), with questions or interest in participating on the teleconference by no later than Wednesday, July 15.

---

## The Federation of Indian Chambers of Commerce and Industry Launches Methane to Markets India Web Portal

Project network member Federation of Indian Chambers of Commerce and Industry (FICCI) has launched a web portal of India's Methane to Markets resources and projects. The website includes

India sector profiles, Methane to Markets projects, methane emissions reduction technologies, case studies, and events, and it is available at [methanetomarketsindia.com/index.html](http://methanetomarketsindia.com/index.html).

### EPA Administrator's Tour of Wyoming Energy Production Sites

EPA Administrator Lisa P. Jackson and Wyoming Governor Dave Freudenthal toured several energy production sites in Wyoming on May 20 and 21, 2009. The tour included Jonah Field natural gas drilling operations of Natural Gas STAR Partner Encana. Other sites visited by the administrator and governor included a wind farm near Cheyenne and the Black Thunder coal mine in the Powder River Basin.

# Workshop Summaries

## **Methane to Markets Partnership-wide and Steering Committee Meeting**

**January 27 to 29, 2009  
Monterrey, Mexico**

Methane to Markets began 2009 with a partnership-wide meeting that brought together diverse organizations for the purpose of identifying and developing methane emissions reduction projects. The meeting began with tours of active oil and gas, agricultural, coal, and landfill project sites that showed the successful partnership between member countries and experts from the Methane to Markets project network. The oil and gas tour visited a modern gas processing plant operated by PEMEX. The second day of the meeting included technical workshops discussing the latest advances in methane capture and use. Topics discussed during the oil and gas technical workshop included methods for reducing emissions from production wells, oil and condensate storage and holding tanks, reciprocating and centrifugal compressors, and natural gas transmission pipelines. The oil and gas technical program also covered ideas for financing emissions reduction projects through carbon markets. The last day of the meeting included steering committee and technical subcommittee meetings. For more information, including a full agenda and presentations visit [methanetomarkets.org/events/past.htm](http://methanetomarkets.org/events/past.htm).



## **2009 ARPEL Conference**

**April 23 to 24, 2009  
Punta del Este, Uruguay**

ARPEL, the Regional Association of Oil and Natural Gas Companies in Latin America and the Caribbean, held its Annual Conference, "Sustainable Development – The Role of the Oil and Gas Industry in Latin America and the Caribbean," this spring in Punta del Este, Uruguay. The conference was an opportunity to promote dialogue between governments, goods and services suppliers, financial entities, consulting companies, universities, and non-governmental organizations about the inter-relation among economic, environmental, and social issues and what it means to address them at the strategic, operational and management level. EPA presented infrared optical leak detection technologies for methane emissions detection in a technical panel on new and emerging technologies. For more information, visit the ARPEL Conference web site at [conferenciaarpel.com](http://conferenciaarpel.com).

## **Natural Gas STAR Producers Technology Transfer Workshop**

**May 14, 2009  
Oklahoma City, Oklahoma**

Cosponsored by Chesapeake Energy, Devon Energy, and EPA, this workshop was attended by over 150 industry representatives. Topics discussed included Chesapeake Energy and Devon Energy's experience in methane emission reductions, as well as a discussion of Natural Gas STAR producer best management practices. In addition, EPA staff gave an update presentation on the Mandatory Greenhouse Gas Reporting Rule. Presentations can be found at [epa.gov/gasstar/workshops/techtransfer/index.html](http://epa.gov/gasstar/workshops/techtransfer/index.html).

## **Natural Gas STAR Producers Technology Transfer Workshop**

**February 27, 2009  
Charleston, West Virginia**

This half-day workshop, held in conjunction with the Interstate Oil & Gas Compact Commission's Source Reduction Training, focussed on methane emissions reduction opportunities for small and independent producers. Presentations can be found at [epa.gov/gasstar/workshops/techtransfer/index.html](http://epa.gov/gasstar/workshops/techtransfer/index.html).

## **CDM Methodologies for Oil and Gas Industry Projects Workshop**

**May 6, 2009  
Washington, DC**

Thirteen experts, including representatives from the Methane to Markets Partnership, World Bank's Global Gas Flaring Reduction (GGFR) initiative, the oil and gas industry, and Clean Development Mechanism (CDM) project developers, met with the purpose of discussing the relatively low representation of oil and gas industry approved methodologies in the CDM program and ways to help reduce barriers. The workgroup members agreed that most important strategies for overcoming barriers to CDM project development are methodology improvements and CDM Board member education. Moving forward, the workgroup will work primarily towards advancements in these areas. Building on input from this meeting and a similar meeting held in Paris in April, the workgroup will develop a work plan, timetable, and institutional framework, to be further discussed at the Carbon Expo in Barcelona, Spain on May 27 to 29.



## UPCOMING EVENTS

Below are scheduled Natural Gas STAR Program events. For updates and further information, visit [epa.gov/gasstar/workshops](http://epa.gov/gasstar/workshops) or contact Suzie Waltzer at [Waltzer.Suzanne@epa.gov](mailto:Waltzer.Suzanne@epa.gov) or (202) 343-9544. Additionally, are you a Natural Gas STAR endorser and have an event you would like listed here? Please notify Natural Gas STAR.



**Technology Transfer Workshop & Subcommittee Meeting**  
Co-Hosted by Methane-to-Markets, U.S. EPA, and Environment Canada  
Lake Louise, Canada  
Sept. 14 to 16, 2009



**Production and Processing Workshop**  
Sponsored by the Montana Petroleum Association  
Billings, MT  
Aug. 31, 2009



**Annual Implementation Workshop**  
San Antonio, TX  
Oct. 19 to 21, 2009



**Methane to Markets Partnership Expo**  
New Delhi, India  
Mar. 2010



**World Gas Conference 2009**  
Buenos Aires, Argentina  
Oct. 5 to 9, 2009

**For more information, visit [epa.gov/gasstar/workshops](http://epa.gov/gasstar/workshops)**

## ★ ★ ★ SAVE THE DATE ★ ★ ★

### Natural Gas STAR 2009 Annual Implementation Workshop

*October 19 to 21, 2009*

**Westin Riverwalk  
San Antonio, Texas**

The Annual Implementation Workshop is an opportunity for information exchange about cost-effective methane emissions reduction methods. It will bring together Natural Gas STAR domestic and international Partners and industry experts to discuss the latest technologies and practices. This year, the workshop will feature an expanded exhibitor area in addition to the optional facility site tours highlighting various methane emissions detection, measurement, and reduction methods at nearby operating facilities.

Conference updates, registration, and hotel information will be posted to the Natural Gas STAR web site later this summer: [epa.gov/gasstar/workshops](http://epa.gov/gasstar/workshops).

For information about sponsorship and exhibition at this high-visibility event, please contact Jerome Blackman, [blackman.jerome@epa.gov](mailto:blackman.jerome@epa.gov).

## Natural Gas STAR Contacts Program Managers

**Jerome Blackman** ★ (202) 343-9630  
[blackman.jerome@epa.gov](mailto:blackman.jerome@epa.gov)

**Carey Bylin** ★ (202) 343-9669  
[bylin.carey@epa.gov](mailto:bylin.carey@epa.gov)

**Roger Fernandez** ★ (202) 343-9386  
[fernandez.roger@epa.gov](mailto:fernandez.roger@epa.gov)

**Suzie Waltzer** ★ (202) 343-9544  
[waltzer.suzanne@epa.gov](mailto:waltzer.suzanne@epa.gov)

Natural Gas STAR Program  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW (6207J)  
Washington, DC 20460

For additional information  
on topics in this *Update*,  
please contact Jerome Blackman.

