Annual Report 2010

NaturalGas
EPA POLLUTION PREVENTER

Transmission Sector

Company Information

Company Name: _____

Contact: _____

Title: _____

Address: _____

_____

City, State, Zip Code: _____

Telephone: _____

Fax: _____

E-mail: _____

Annual Report Summary

☐ BMP 1: Directed inspection and maintenance at compressor stations

☐ BMP 2: Use of turbines at compressor stations

☐ BMP 3: Identify and replace high-bleed pneumatic devices

☐ Partner Reported Opportunities (*please specify*):

_____

_____

Period covered by report: From: _____   To: _____

Partner Signature Required:

*I hereby certify the accuracy of the data contained in this report.*_____

Date

- Because the implementation of some technologies reduces emissions for multiple years, Natural Gas STAR allows certain activities to count towards a company's emission reductions beyond the initial year of implementation. Natural Gas STAR designates the maximum length of time that these reductions may accrue as "sunset dates." The Appendix lists these sunset dates. Companies can report the corresponding methane emission reductions each year up to the allowable sunset date. Or, companies may wish to report reductions only once for the implementation year, and have EPA automatically apply the sunset date and count those emissions for the allowable number of years.

- In addition to reporting methane emissions reductions, you are welcome to include other information about your company's participation in Natural Gas STAR in the "Additional Program Accomplishments" section of this form. The Natural Gas STAR Program will use any information entered in this section to recognize the efforts and accomplishments of outstanding partners.

BMP 1: Directed inspection and maintenance at compressor stations

Current Year Activities

A. Facility/location identifier information:
(Note: Please use a separate page for each facility surveyed)

B. Leak summary:
Number of surveys conducted at
this facility for reporting period _____ surveys

Total number of leaks repaired: _____ leaks repaired

Total number of leaks found: _____ leaks found

C. Cost summary:
Total cost of surveys conducted: $ _____

Total cost of leak repairs: $ _____

D. Methane emissions reduction: _____ Mcf

* *BMP 1 must be reported on an annual basis according to actual survey activity.*

Please identify the basis for the emissions reduction estimate, using the space provided to show any calculations

☐ Actual field measurement

☐ Other *(please specify)*:

☐ Calculation using default

Methane emissions reduction = Average annual leak rate for facility (12,200 Mcf) × Reduction efficiency (70%)

E. Total value of gas saved: $ _____

Total value of gas saved = Methane emissions reduction (in Mcf) x Gas value (in $/Mcf) [If not known, use default of $7.00/Mcf]

F. Do you plan to survey this facility/location next year? _____ (Yes/No)

Previous Years' Activities

Use the table below to report any past activities implemented, but not previously reported to the Natural Gas STAR Program

Year	Total Cost of Surveys ($)	Total Cost of Repairs ($)	Estimated Reductions (Mcf/yr)	Value of Gas Saved ($)

BMP 1 Comments: *Please use the back of the page for additional space if needed.*

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OMB Control No. 2060-0328
Expires 07/31/2011

BMP 2: Use of turbines at compressor stations

Current Year Activities

A. Facility/location identifier information: _____

B. Turbine summary:
Number of turbines installed: _____ turbines

Total cost of turbine installations
(equipment and labor): $ _____

C. Reciprocating summary:
Number of reciprocating engines
retired: _____ engines

D. Equipment description: Please provide specifications for turbines installed and/or reciprocating engines retired

	Turbines	*Reciprocating Engines*
Model:		
Horsepower:		
Fuel Consumption:		

E. Methane emissions reduction: _____ Mcf

F. Are these emissions reductions a one-year reduction or a multi-year reduction? ☐ **One-year** ☐ **Multi-year**

If Multi-year:
☐ Partner will report this activity once and let EPA automatically calculate future emission reductions based on sunset date duration (BMP 2 has a sunset period of 20 years).

☐ Partner will report this activity annually up to allowed sunset date.

Please identify the basis for the emissions reduction estimate, using the space provided to show any calculations

☐ Standard Calculation

Methane emissions reduction per turbine installation = [Emissions rate from reciprocating engine per MMcf of fuel used × Fuel consumption for reciprocating engine (in MMcf/hr)] - [Emissions rate from turbine per MMcf of fuel used × Fuel consumption for turbine (in MMcf/hr)]

Please specify your data source:
☐ Field measurement
☐ Manufacturer specifications

☐ Calculation using default

Methane emissions reduction= [0.234 scf/hp/hr × Horsepower of turbine engines installed × Hours turbine engines were used] / 1000

☐ Other *(please specify):*

G. Total value of gas saved: $_____

Total value of gas saved = Methane emissions reduction (in Mcf) × Gas value (in $/Mcf) [If not known, use default of $7.00/Mcf]

H. Future activity summary:
How many turbines do you plan
to install next year? _____ turbines

How many reciprocating engines
do you plan to retire next year? _____ engines

Previous Years' Activities

Use the table below to report any past activities implemented, but not previously reported to the Natural Gas STAR Program

Year	# Turbines Installed	Total Cost of Installation ($) (incl. equipment and labor)	# Reciprocating Engines Retired	Estimated Reductions (Mcf/yr)	Value of Gas Saved ($)

BMP 2 Comments: *Please use the back of the page for additional space if needed.*

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BMP 3: Identify and replace high-bleed pneumatic devices

Current Year Activities

A. Facility/location identifier information: _____

B. Facility summary:
Number of devices replaced: _____ devices

Percent of system now equipped with low/no-bleed units: _____ %

C. Cost summary:
Estimated cost per replacement (including equipment and labor): $ _____ /replacement

D. Methane emissions reduction: _____ Mcf

E. Are these emissions reductions a one-year reduction or a multi-year reduction? ☐ **One-year** ☐ **Multi-year**

If Multi-year:
☐ Partner will report this activity once and let EPA automatically calculate future emission reductions based on sunset date duration (BMP 3 has a sunset period of 7 years).

☐ Partner will report this activity annually up to allowed sunset date.

Please identify the basis for the emissions reduction estimate, using the space provided to show any calculations

☐ Standard calculation

Methane emissions reduction = [Annual emissions from high-bleed devices replaced (in Mcf/yr) - Annual emissions for the replacement devices (in Mcf/yr)] x Number of devices replaced

Please specify your data source:
☐ Field measurement
☐ Manufacturer specifications

☐ Calculation using default

Methane emissions reduction = 124 Mcf/yr x Number of devices replaced

☐ Other (*please specify*):

F. Total value of gas saved: $ _____

Total value of gas saved = Methane emissions reduction (in Mcf) × Gas value (in $/Mcf) [If not known, use default of $7.00/Mcf]

G. How many high-bleed devices do you plan to replace next year? _____ devices

Previous Years' Activities

Use the table below to report any past activities implemented, but underlined not previously reported underlined to the Natural Gas STAR Program

Year	# Devices Replaced	Total Cost of Replacements (incl. equipment and labor) ($)	Estimated Reductions (Mcf/yr)	Value of Gas Saved ($)

BMP 3 Comments: *Please use the back of the page for additional space if needed.*

Partner Reported Opportunities (PROs)
For more details on PROs, visit epa.gov/gasstar/tools/recommended.html

Current Year Activities

A. Facility/location identifier information: _____

B. Activity description: Please provide a separate PRO reporting form for each activity reported. If reporting a DI&M activity, please use a separate page for each location/facility surveyed.

Please specify the technology or practice that was implemented (choose from the list in the appendix or describe your own):	Please describe how your company implemented this activity:

C. Level of Implementation *(check one)***:**

☐ Number of units installed: _____units
☐ Frequency of practice: _____times/year

D. Are emissions reductions a one-year reduction or a multi-year reduction? ☐ **One-year** ☐ **Multi-year**

If Multi-year:
☐ Partner will report this activity once and let EPA automatically calculate future emission reductions based on sunset date duration*.

☐ Partner will report this activity annually up to allowed sunset date.

E. Methane emissions reduction: _____ Mcf

F. Cost summary: Estimated cost of implementing this practice/activity *(including equipment and labor)*: $ _____

Please identify the basis for the emissions reduction estimate, using the space provided to show any calculations

☐ Actual field measurement

☐ Calculation using manufacturer specifications/other source

☐ Other (*please specify):*

G. Total value of gas saved: $ _____

*Total value of gas saved = Methane emissions reduction (in Mcf)
x Gas value (in $/Mcf) [If not known, use default of $7.00/Mcf]*

H. To what extent do you expect to implement this practice next year?

Previous Years' Activities

Use the table below to report any past implementation of this PRO, but not previously reported to Natural Gas STAR

Year	Frequency of Practice/Activity or # of Installations	Total Cost of Practice/Activity (incl. equipment and labor) ($)	Estimated Reductions (Mcf/yr)	Value of Gas Saved ($)

PRO Comments: *Please use the back of the page for additional space if needed.*

Because the implementation of some technologies reduces emissions for multiple years, Natural Gas STAR allows certain activities to count towards a company's emission reductions beyond the initial year of implementation. Natural Gas STAR designates the maximum length of time that these reductions may accrue as "sunset dates." The Appendix lists these sunset dates. Companies can report the corresponding methane emission reductions each year up to the allowable sunset date. Or, companies may wish to report reductions only once for the implementation year, and have EPA automatically apply the sunset date and count those emissions for the allowable number of years.

Additional Program Accomplishments

The Natural Gas STAR Program will use any information entered here to recognize the efforts and achievements of outstanding partners.

Please include any additional information you would like to share about your company's participation in Natural Gas STAR. Examples may include:

- **Activities to strengthen your program (e.g., training/education, innovative technologies or activities, pilot projects, employee incentive programs).**

- **Efforts to communicate your participation and successes (e.g., internal newsletters, press releases, company website).**

- **Participation in Natural Gas STAR program activities (e.g., contributions to case studies, presentation at annual workshop).**

Additional Accomplishments:

Additional Accomplishments Comments*: Please use the back of the page for additional space if needed.*

Appendix

Methane Emission Reduction Technologies & Practices—
Transmission Sector

The list below describes a variety of methane emission reduction technologies that Natural Gas STAR partners in the transmission sector have implemented and reported to Natural Gas STAR. You may use this list as a guide when completing your annual report. *Sunset dates (i.e., the length of time a technology or practice can continue to accrue emission reductions after implemented) are one year in duration unless otherwise noted in parentheses.* An asterisk (*) indicates that a technical document related to the technology or practice is available online at epa.gov/gasstar/tools/recommended.html.

Compressors/Engines
- Automate compressor systems operation to reduce venting*
- Eliminate unnecessary equipment and/or systems*
- Install automated air/fuel ratio control systems (10 years)*
- Install electric compressors (10 years)*
- Install electric motors (10 years)
- Install electric starters (10 years)*
- Install lean burn compressor (10 years)
- Lower compressor purge pressure for shutdown*
- Redesign blowdown/alter ESD practices*
- Reduce emissions when taking compressors offline*
- Reduce frequency of engine starts with gas*
- Replace compressor cylinder unloaders*
- Replace compressor rod packing systems*
- Replace gas starters with air (10 years)*
- Replace ignition/reduce false starts*
- Replace wet compressor seals with dry seals (10 years)*

Dehydrators
- Install condensers on glycol dehydrators (10 years)
- Install flash tank separators/controls on Tran. sector glycol dehydrators (10 years)*
- Install/convert gas-driven chemical pumps to electric, mechanical, or solar pumps (10 years)*
- Replace glycol dehydrator with separators & in-line heaters (10 years)*
- Reroute dehy./tank vents to flare or station suction (10 years)*
- Reroute glycol skimmer gas*

Directed Inspection and Maintenance
- DI&M at remote sites*
- DI&M: aerial leak detection using laser and/or infrared technology
- DI&M: inspect/repair compressor station blowdown valves*
- DI&M: leak detection using IR camera/optical imaging
- DI&M: leak detection using ultrasound*
- DI&M: survey and repair leaks

Pipelines
- Inspect/repair valves during pipeline replacement*
- Pipeline replacement and repair
- Recover gas from pipeline pigging operations*
- Reduce/downgrade system pressure
- Reduced emissions through third-party damage prevention
- Use composite wrap repair*
- Use fixed/portable compressors for pipeline pumpdown*
- Use hot taps for in-service pipeline connections*
- Use inert gas/pigs for pipeline purges*

Pneumatics/Controls
- Convert gas-driven chemical pumps to instrument air (10 years)*
- Convert gas pneumatic controls to instrument air (10 years)*
- Install no bleed controllers (10 years)
- Reduce meter run blowdowns
- Replace bi-directional orifice meter with ultrasonic meters*
- Use add-on controls to reduce emissions from pneumatics (10 years)

Tanks
- Install flash gas compressors (10 years)
- Install vapor recovery units on pipeline liquid/condensate tanks (10 years)*

Valves
- Close valves during repair to minimize blowdown*
- Design isolation valves to minimize gas blowdown volumes (10 years)*
- Move in fire gates at compressors (10 years)*
- Test and repair pressure safety valves*
- Use of YALE closures for ESD testing*

Appendix (continued)

Wells
- Switch from underbalanced to overbalanced drilling in gas storage fields

Other
- Convert natural gas fired generator to solar power (10 years)
- Improve system design/operation
- Inject blowdown gas into low pressure system*
- Install flares (10 years)*
- Replace aged heaters with new efficient gas fired heaters (10 years)
- Require improvements in quality of gas received*

Mailing Information:

<u>*Standard Mail:*</u>
The Natural Gas STAR Program
U.S. EPA (6207J)
1200 Pennsylvania Ave, NW
Washington, DC 20460
U.S.A.

<u>*Express/Overnight Mail:*</u>
The Natural Gas STAR Program
U.S. EPA (6207J)
1310 L Street, NW
Washington, DC 20005
U.S.A.