



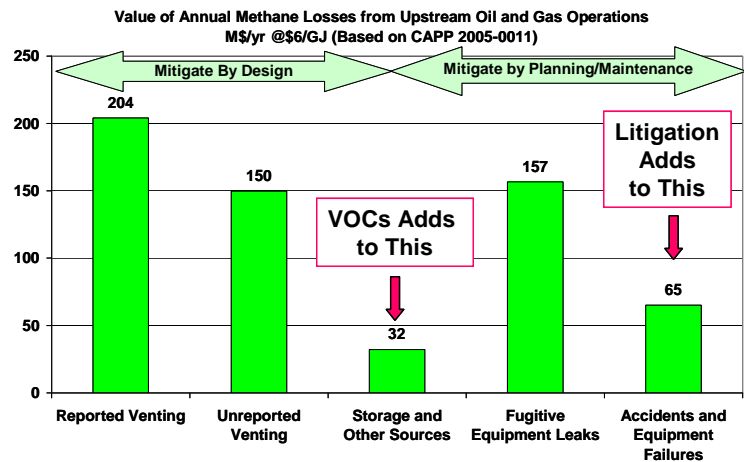
**PTAC Knowledge Centre  
Upstream Oil and Gas Energy Efficiency**

**Vent Gas Management = Reduce by Design**

**1. Quick Facts:**

➤ Over 40% of the GHG emissions of the oil and gas industry are from methane emissions. And most are economic to eliminate.

- Storage Losses – 235 kt/yr
- Reported Venting – 763 kt/yr
- Unreported Venting – 479 kt/yr
- Fugitive Leaks – 672 kt/yr
- 1 tonne of methane as a GHG is equivalent to 21 tonnes of CO<sub>2</sub>. Burning 1 tonne of methane with 4 tonnes of oxygen creates about 2.75 tonnes of CO<sub>2</sub> and 2.25 tonnes of water vapour.



➤ **AEUB Directive 60 covering Flare and Vent Emissions was revised in November 2006.** <http://www.eub.ca/docs/documents/directives/Directive060.pdf>

**2. Key General Documents on Vent Management Technology Issues**

- a. **“Vent Options for Oil and Gas Production Facilities”** – New Paradigm 2001. Provides flowsheets to help prioritize economic options to consider for various vent streams from field dehydration, battery, instruments and other controlled sources and also provide some contact information. This report may be viewed on the PTAC website: <http://www.ptac.org/links/EnergyEfficiencyKC/eekc0505.pdf>.
- b. **“Vent Options for Gas Plant and Compression Facilities”** New Paradigm 2001. This document discusses ways of detecting and mitigating fugitive leaks. This report may be viewed on the PTAC website: <http://www.ptac.org/links/EnergyEfficiencyKC/eekc0506.pdf>
- c. **“Heavy Oil Vent Gas Mitigation Options”** New Paradigm 2000. This document discusses options to reduce methane venting from heavy oil wells by using vent gas to displace outside energy, generate power, provide energy for small scale hot water flooding, or gas for sale. This report may be viewed on the PTAC website: <http://www.ptac.org/links/EnergyEfficiencyKC/eekc0504.pdf>

**3. Information on New Energy Options for Vent Gas Management**

- a. **Proven Solutions** – U.S. EPA Natural Gas Star program has information on best practices and tools to help reduce vent emissions from gas production and transmission sites. <http://www.epa.gov/gasstar/index.htm>
- b. **PTAC GHG Reduction Forums** – PTAC has hosted a number of forums with presentations describing new methods of reducing vent emissions. Presentations may be viewed on the PTAC website at <http://www.ptac.org/techeetf.html>.

- c. **Ask Your Equipment Vendor** – Many options are currently available for new equipment at a low incremental cost. Be sure to consider these options for your new facilities, as it is better to install low or no vent equipment into new facilities than to change the equipment later.

#### 4. Financial Support for Change

- a. Federal
- i. Financial Assistance for Industry <http://oee.nrcan.gc.ca/industrial/financial-assistance.cfm?attr=24> .

#### 5. Key Reports on Volumes, Trends and Environmental Impacts

- a. ***“Upstream Petroleum Industry Flaring and Venting Report - Industry Performance for Year ending December 31, 2003”***, AEUB May 2004 ST 2004-60B shows vent volumes by company. This only includes “reported venting”. Available on the EUB website: <http://www.eub.ca/docs/products/STs/st60b-2005.pdf>
- b. ***“Guide to Calculating Greenhouse Gas Emissions”*** CAPP April 2003. This document provides assistance in estimating of vent emissions to assist in prioritizing and targeting vents. Available on the CAPP website: <http://www.capp.ca/raw.asp?x=1&dt=PDF&dn=55904>
- c. ***“A National Inventory of Greenhouse Gas (GHG), Criteria Air Contaminant (CAC) and Hydrogen Sulphide (H<sub>2</sub>S) Emissions by the Upstream Oil and Gas Industry”*** – September 2004, Available on the CAPP website as follows:
- CAPP 2005-0011 - Volume 1 - Overview of the GHG Emissions Inventory [http://www.capp.ca/default.asp?V\\_DOC\\_ID=763&PubID=86220](http://www.capp.ca/default.asp?V_DOC_ID=763&PubID=86220)
  - CAPP 2005-0012 – Volume 2, Overview of the CAC Inventory [http://www.capp.ca/default.asp?V\\_DOC\\_ID=763&PubID=86222](http://www.capp.ca/default.asp?V_DOC_ID=763&PubID=86222)
- d. ***“Oil and Gas Industry Fact Finding Report on Fugitives”***  
This report highlights why flares, and other sources not usually considered being “Fugitives”, are fugitives for the purposes of IPCC reporting of GHG emissions. Report available on the PTAC website: <http://www.ptac.org/links/dl-eie/fugr0601.pdf>