

Alberta Energy and Utilities Board

**Canada's Contribution to a World Solution**

Canadian Regulator's Workshop – Flaring and Venting Reduction

September 14, 2006

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Alberta Energy and Utilities Board

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**From an Alberta Problem to a World Solution**



**Topics for Discussion**

- Background - local issue
- The approach
- The local success
- Expanding the scope locally
- The global issue
- Canada's involvement thus far
- The road ahead...



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**The Alberta Issue and Solution**



- Concerns about solution gas flaring
  - Health and environmental impacts
  - Wasted resource
- Could do better – progress slow
- CAPP asked CASA to form Team
- Multistakeholder consensus** – key
- Developed trust amongst team members
- Unique solutions, all parties supported
- Implemented - EUB Guide/Directive 60



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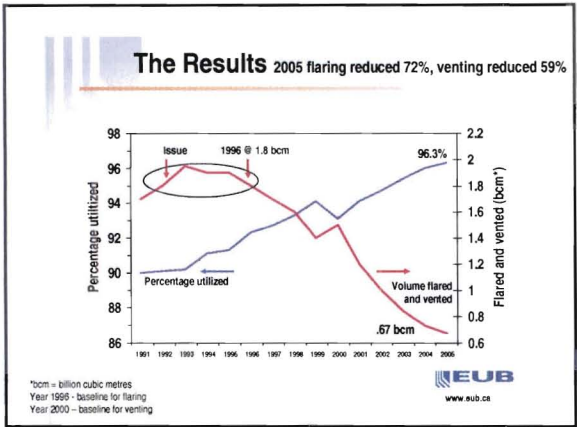
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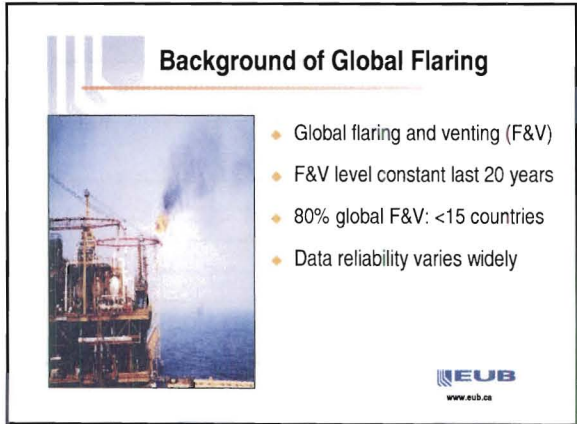
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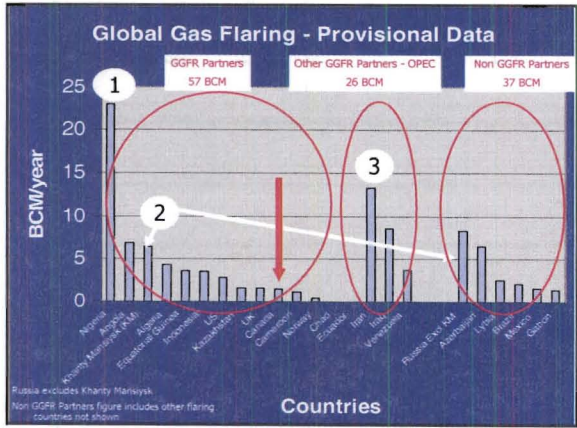
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## Global Review Regulation in 44 Countries

- WB carried out **study** of 44 oil producing countries
- Objective:** regulations and other factors that effected the flare and venting volume
- Findings:** countries that managed to reduce flaring and venting volumes adopted a **combination** of
  - Efficient regulation
  - Other incentives (fiscal policies and reform of energy markets)

  
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## Global Lessons Learned

- GGFR development of best practices: **regulation, Carbon Credits, Standard, commercialization** were very effective
- As for the Partner organizations
  - Country buy-in** and high level government **support** essential
  - Ownership and leadership** in key stakeholder organizations
- An effective local partnership** is key
  - stakeholders involved in all aspects of associated gas utilization

Even with all of the above factors present, it takes **time, effort, and persistence** to effect change.

  
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## History of Canadian Involvement

- Global review of best practices = Alberta
- Invited to present Alberta experience @ 2002 (Initial) Global Flaring Reduction Conference
- Invited on original Steering Committee 2003 and ongoing since then
- Applied and received CIDA funding = World Bank
- Active participant and supporter of GGFR

  
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### EUB & CIDA Commitments to World Bank

- Steering Committee representation
- Conference and Workshop participation
- Participation in World Bank Missions
- Conduct annual Alberta training session if asked
- Consult and assist on standards
- Cash and in-kind contributions \$300k US/yr



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### Adoption of the Global Standard

Adoption of the Global Gas Venting and Flaring Reduction Voluntary Standard means that the endorsers (governments and companies):

- Endorse the principles set forth in the Standard
- Support collaboration with other stakeholders - utilization of associated gas and reduction of flaring and venting
- Agree to publish flaring data for transparency
- Achieve Canadian endorsement



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### Current Canadian Endorsers

- NEB
- BC O&GC
- EUB
- Saskatchewan
- Manitoba
- Newfoundland Offshore Petroleum Board



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### Canada and the World Bank



- 2003 Training (Calgary)  
Nigeria, Cameroon, Algeria, Angola, Italy, and Indonesia
  - Major Sponsors: Environment Canada, CIDA, and EUB
- Invited by Indonesia, Russia, Kazakhstan and World Bank to assist in kick-off workshops



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### Canada and the World Bank



- Assist drafting Global Standard
  - Standard consistent with Alberta practice
- Assisting in sharing best practices here
  - Delegations visiting EUB (e.g. Nigeria, Mexico)



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### Canada and Methane to Markets

- Alberta working with Environment Canada to provide advice and experience in areas of emissions reduction and policy development
  - Alberta sharing Lessons Learned based on our experience
  - Encouraging sharing of Best Practices
  - Showcasing Alberta technologies and expertise for emissions reduction
- Oil and Gas Subcommittee meetings



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### The Road Ahead...

- World Bank's Global Voluntary Standard challenges partners to implement country-wide and company-wide plans for associated gas recovery
- Canada demonstrate country-wide implementation
  - Publish results
- Interprovincial regulators share plans, practices and issues for implementation of Standard
  - Continue to be a leader
  - Expertise implementing the Voluntary Standard
- Global Best Practices Conference Dec 06 (Paris)

  
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### Back Home... Continuing to Raise the Bar

- CASA process - source of ideas for improvement
  - Latest recommendations will deliver:
    - Tougher test for solution gas conservation (-\$50,000 vs. zero)
    - Clear, short time limits for well test flaring (72 hours in most cases)
    - Clear rules for Coal Bed Methane well test flaring and venting
- Current solution gas conservation at record levels: 96% +
- Latest recommendations continue to bring improvements on the remainder of flaring and venting in Alberta
- Continue to address our issues, bring results and help globally

  
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### Further Information...

- World Bank Global Gas Flaring Reduction Partnership
  - [www.worldbank.org](http://www.worldbank.org), search for 'GGFR'
- Methane to Markets International Partnership
  - [www.methanetomarkets.org](http://www.methanetomarkets.org)
- Clean Air Strategic Alliance
  - [www.casahome.org](http://www.casahome.org)
- Alberta Energy and Utilities Board
  - [www.eub.ca](http://www.eub.ca)

  
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### Canada and Methane to Markets

- ♦ Methane to Markets: International partnership for
  - cost-effective, near-term methane capture and
  - use as a clean energy source
- ♦ Argentina, Australia, Brazil, China, Columbia, India, Italy, Japan, Mexico, Nigeria, South Korea, Russia, Ukraine, United Kingdom, and United States
- ♦ Potential reduction CH4 emissions by 50 million metric tonnes of carbon equivalent by 2015
- ♦ Canada invited to join and provide expertise



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### GGFR Target Dates

**New Projects:** No continuous production flaring starting within 1 year of endorsement or April 1, 2005

**Existing Projects:** No continuous flaring and venting unless no feasible alternatives

**Within operational boundaries within 5 years** of endorsement of January 1, 2010 and

**Within expanded project boundaries by January 1, 2011:**

**Completion of Associated Gas Reduction Plans by operators:**

**within 2 years of endorsement** or January 1, 2006 (within operational project boundaries) or

**within 3 years of endorsement** (with expanded boundaries) or January 1, 2007

**Country implementation plans within 2-3 years of endorsement or 2006-2007**



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### Work Program First 2 ½ years : From Global deliverables to Country and Local PPPs



The diagram illustrates a three-phase work program for methane management. Phase I (2003) focuses on 'Flaring and Venting Reduction Activities', which includes 'Standards', 'Regulations', 'Commercialization', and 'Carbon Credits'. Phase II (Today) focuses on 'Country Deliverables and Demo projects'. Phase III (2006) focuses on 'Sustainable Gas Flaring Reduction'. Arrows indicate a sequential flow from Phase I to Phase II to Phase III, with a feedback loop from Phase III back to Phase I. A timeline on the right shows the progression from 2003 to Today to 2006.

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Partner Countries	Projects	Carbon credit options
Algeria	3 fields: Ohanet, TFT and In Amenas	Exploring carbon credits for the same three fields
Nigeria	2 projects: Gas Pipeline and Gas to power	2 power projects AFAM, Kwaile
Angola	Angola LNG	Angola LNG
Cameroon	Rio del Rey pipeline to Limbe	
Equatorial Guinea	Zafiro pipeline to ELNG	
Gulf of Guinea	Regional Gas Transport system	
Chad	Sedigui	
Russia	Gas projects in Khanty Mansysk	Gas to Power Surgut, TNK-BP
Indonesia	tbd	tbd

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Country	Country	Flaring & Venting 2012 (BCM)	Flaring & Venting 2013/2014 (BCM)	Flaring & Venting 2015 (BCM) - projected data
		Source: Cedigaz	Source: GGFR	Source: GGFR
1	Nigeria	16.5	16.9	16.5
2	Indonesia (total)	0.6	13.5	13.7
3	UK	0.5	0.8	13.2
4	YEM	1.6	0.6	0.6
5	Algeria	4.2	0.2	0.2
6	Australia	0.2	1.1	0.1
7	Algeria	4.2	0.3	0.2
8	Qatar	0.1		0.1
9	Indonesia	4.4	0.1	0.1
10	Indonesia	0.1	0.1	0.1
11	Regional Gas	1.0	0.8	0.8
12	YEM	0.6	0.1	0.1
13	Libya	1.2	0.2	0.2
14	Canada	0.2	0.2	0.1
15	Mexico	0.8	0.2	0.2
16	UK	1.0	0.1	0.1
17	Kuwait/KSA	1.0	0.1	0.1
18	Brunei	0.1	0.1	0.1
19	Malawi	0.1	0.1	0.1
20	Cameroon	1.0	0.1	0.1
Total		4.1	3.1	3.1

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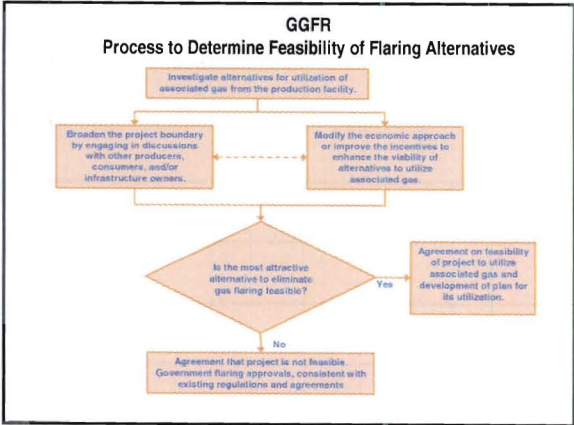
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### Current GGFR Public and Private Partners

<b>Countries/NOCs (10)</b> <ul style="list-style-type: none"><li>Algeria (Sonatrach)</li><li>Angola</li><li>Cameroon (SNH)</li><li>Chad</li><li>Ecuador</li><li>Equatorial Guinea</li><li>Indonesia</li><li>Nigeria</li><li>Khanty Mansiisk (Russia)</li><li>Kazakhstan</li></ul>	<b>IOCs (9)</b> <ul style="list-style-type: none"><li>BP</li><li>ChevronTexaco</li><li>ENI</li><li>ExxonMobil</li><li>Marathon Oil</li><li>Norsk Hydro</li><li>Shell</li><li>Statoil</li><li>Total</li></ul>
<b>Donors (4)</b> <ul style="list-style-type: none"><li>Canada</li><li>Norway</li><li>UK (Foreign Commonwealth Office)</li><li>USA</li></ul>	<b>Multilateral Organizations (2)</b> <ul style="list-style-type: none"><li>The World Bank</li><li>OPEC Secretariat</li></ul>

  
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### CASA Flaring Team – Continuing Success

- Successes on solution gas flaring acknowledged
- Followed by addressing solution gas venting
- Most recently, addressing additional areas:
  - Coal Bed Methane
  - Well test flaring time limits
  - Fugitive emissions

  
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### Global Gas Flaring Reduction (GGFR) Public–Private Partnership

- GGFR formed at World Summit on Sustainable Development (Johannesburg, August 2002 )
- Supports national governments and petroleum industry to reduce flaring and venting of associated gas
- Leading to sustainable resource development
  - Promoting efficient use
  - Reducing environmental effects
  - Reducing poverty
- Canada - world leader in successful F&V reduction
- World Bank studies – identified Alberta’s successful approach and invited Alberta to join and provide expertise

  
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### The Global Voluntary Standard

- Provides framework for governments, companies, and other key stakeholders
  - To consult each other and take collaborative/complementary actions
  - Reduce barriers to associated gas utilization
- Encourages integrated approach
  - Market and infrastructure development, commercialization, legal and fiscal regulations, carbon credits
- Allows for flexibility for local conditions
  - Balancing ambitious timescale with realistic constraints

  
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### Global Review - Flaring and Venting Regulation

- Many countries that flare gas have inadequate institutional capabilities
  - Often overlapping responsibilities
  - Lack clear and transparent *operational* processes and lacks efficient *regulatory* procedures
- Issues
  - Contractual rights to assoc. gas (preemptive rights)
  - Lack effective regulation: monitoring, measuring, and enforcing
  - Lack of financial resources and technical expertise to introduce comprehensive monitoring programs

  
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