

The GGFR Partnership



Canadian Regulator's Workshop
Calgary, 14 September 2006

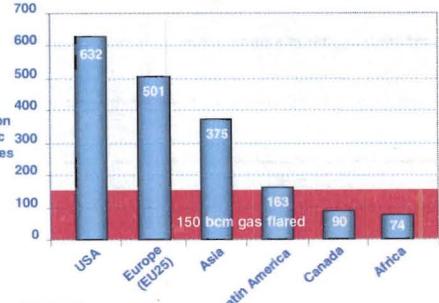


How Much Gas is Flared ?



- GGFR estimates that global flaring in 2004 was around **150 bcm** or **400 MtCO₂eq per year**, a level that has stayed relatively constant for the last 20 years
- 75% of global flaring occurs in fewer than 10 countries
- Major flaring areas are: Russia, Gulf of Guinea and the Middle East

How much gas is flared ? Gas Consumption in 2004



Source: CEDIGAZ for gas consumption.

Why have global flaring levels stayed relatively constant?

Many governments and companies have made significant investments in gas flaring reduction projects, **but**

Two key factors limit the impact of these efforts:

- **Global oil production increase** leads to associated gas production increase, offsetting efforts to reduce gas flaring
- Development of gas markets, gas infrastructure, and flaring reduction projects often requires **collaborative rather than individual action**

→ **A forum to improve cooperation between stakeholders was needed**

Collaborative Action: GGFR

- **August 2002** : GGFR Partnership was formed at the World Summit on Sustainable Development in Johannesburg
- **GGFR Objective** : To support governments and the petroleum industry in their efforts to reduce flaring and venting
- A **growing partnership** including governments, NOCs, IOCs and the WBG, now extended to end 2009

→ **Access to 80% of the sources of global flaring**

Phase I achievements

- Significant representation of world gas flaring in the Partnership
- Global deliverables
 - Global standard for flaring and venting
 - Regulatory best practices
 - Gas flaring data tool
 - Carbon credit financing
- In-country public-private partnerships
 - 17 demonstration projects

Is CNLOPB system equivalent?

? what is this

Phase II strategy (2007-2009)

- Identify and prioritize high-impact countries
- Concentrate on in-country projects
- Assist partner countries in development of CIPs
- Accelerate sustainability strategies in existing partner countries and global deliverables / activities (hand-off, mainstream, exit)
- Measure tangible results (KPIs)
- Publicize successes

Some current GGFR activities... The GGFR Data Tool

There is great uncertainty in reported flaring and venting data

- Partners decided to develop a web based data tool/data base to :
 - gather consistent data
 - better understand flared and vented gas volumes per country
 - Public reporting of data
 - track flaring reduction versus forecasts
- Data tool roll out in 2006/2007

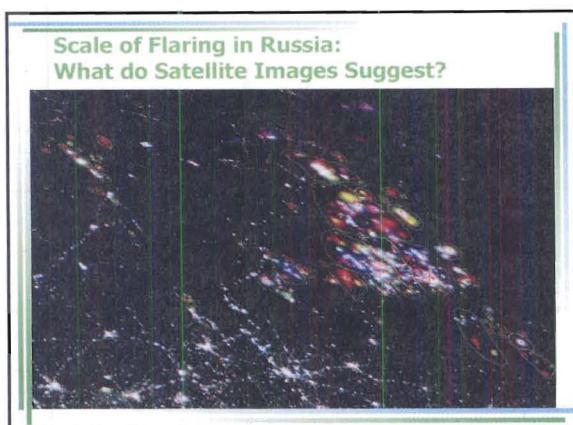
8 CNL OPB - annual Report

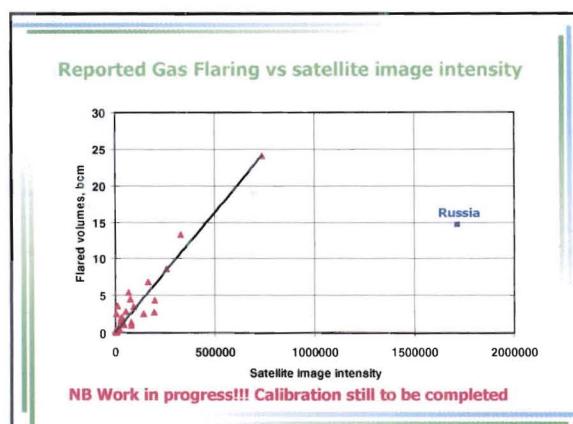
Some current GGFR activities... Satellite imagery

With the US National Oceanic and Atmospheric Administration (NOAA), a quantitative study is currently being carried out :

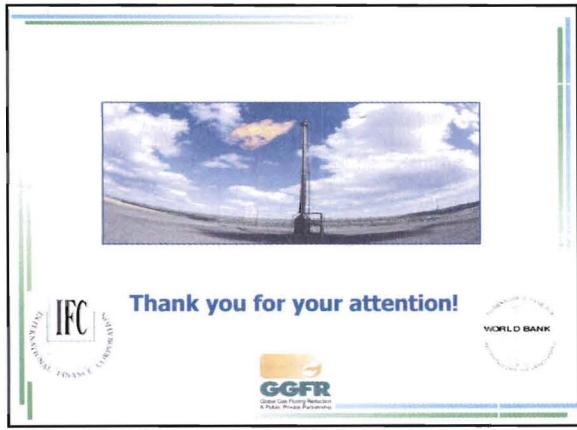
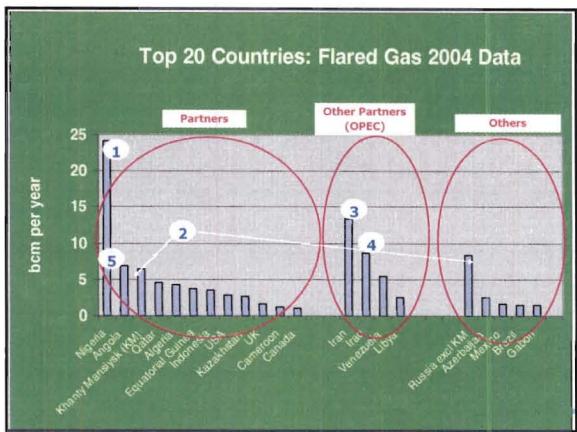
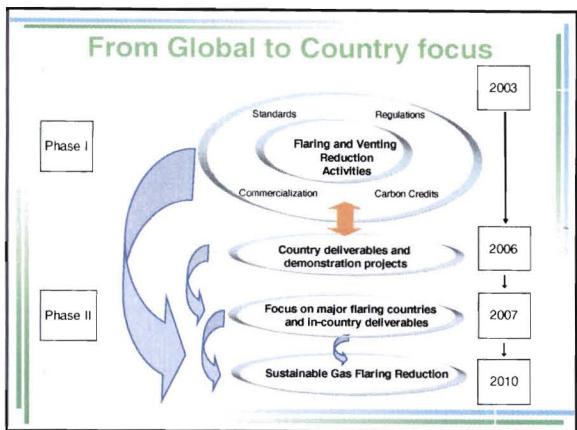
- ✓ GGFR partners are providing historical flare volume and location data
- ✓ NOAA is using these data to calibrate flare satellite image brightness

→ This calibration will allow global flare monitoring





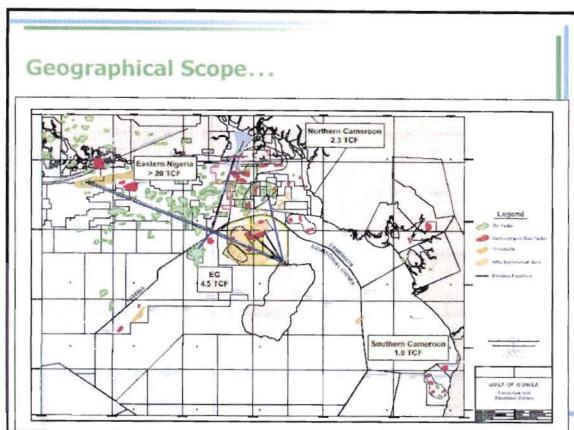




- Back up slides

Current GGFR Public and Private Partners	
Countries/NOCs	IOCs
Algeria (Sonatrach) Angola Cameroon (SNH) Chad Ecuador Equatorial Guinea Indonesia Khanty Mansiysk (Russia) Nigeria Kazakhstan Qatar	BP ChevronTexaco ENI ExxonMobil Norsk Hydro Shell Statoil Total Marathon Oil
Donors	Multilateral Organizations
Canada Norway UK (Foreign Commonwealth Office) USA	The World Bank OPEC

Gulf of Guinea	
Challenge:	→ Major gas flaring (~6 bcm) in the Gulf of Guinea (Nigeria, Cameroon, Equatorial Guinea)
Solution:	<ul style="list-style-type: none"> → Studies and facilitation in the individual countries over 2003-2004 failed to deliver results → Expanded the boundaries through a proposal mid-2005 for a Regional Gas Utilization Feasibility Study → As a result: <ul style="list-style-type: none"> → As a result, two MOUs have been signed between the countries → A regional study is planned with three governments and the IOCs



Demonstration Projects

Partner Countries	Projects	Carbon credit possibility	Potential Gas flare reduction
Algeria	Oranet		4.5 Bm ³
	TFT (oil)	✓	
	In Amenas	✓	
Nigeria	Gas pipeline South-North		
	Gas to Power, AFAM	✓	Approx. 4.6 Bm ³
	Ob re-injection project	✓	
	Ofon Phase II		
Angola	Angola LNG	✓	7 Bm ³ / y
Cameroun	P/L Rio del Rey to Limbe		3 Bm ³
Equatorial Guinea	Zafiro pipeline to ELNG		13 Bm ³
Gulf of Guinea	Regional Gas Transport system		4.5 Bm ³ / y
Indonesia	AG Recovery & utilization Project 1	✓	Approx. 1 Bm ³
	AG Recovery & utilization project 2		for C Finance only
	Surgutneftegas	✓ (JI)	
Russia (Khanty Mansiysk region)	TNK-BP	✓ (JI)	
	Danilovsk	✓ (JI)	6.5 Bm ³

Nigeria CDM Project Status

Project	Project Type	PCD-AM	Capacity Building
Nigeria- AFAM	Gas to power ER from flaring out and fuel switch 4.5 bcm	Pre drafted	+ 1 IOC/Govt training
Nigeria- Ob/Ob	Gas to re-injection in oil reservoir 3.5 bcm	Being prepared	DNA Guidebook on project preparation
Kwale	Gas to power ER from flaring out only	Validated. Next step registration / official endorsement by UNFCCC (1.4 MtCO2/y)	

Country Selection	
<u>Potential target countries for 2007-2009:</u>	
Africa	: Gulf of Guinea (Cameroon, Equatorial Guinea, Nigeria), Angola
Ex-CIS	: Russia, Kazakhstan, Azerbaijan
Middle East	: Libya, Qatar, UAE
Latin America	: Brazil, Mexico, Venezuela
Asia	: Indonesia

Country Selection					
Note: Data shown is purely for illustration					
High Impact Country Assessment Table					
Country	General	Regulatory Factors	Economic & Commercial Factors	Political Factors	Proposed Action
Better Known Countries					
Nigeria	25				
Kazakhstan	2.7				
Equatorial Guinea	3.6				
Cameroun	1.7				
Indonesia	3.5				
Some Information					
Russia	14.7				
Limited Information					
Azerbaijan	2.5	?			
Iraq	8.6		?		
Qatar	4.5+				
Brazil	1.5	?	?		?
Mexico	1.8			?	
Venezuela	5.4				
Libya	2.5	?	?		
Nomenclature					
Unfavorable					
Neutral					
Favorable					

Country Selection			
Activities	Effort		
Planning Phase	CT	C	OC
Convene preliminary meeting(s) with country contact to review assessment, introduce targeted GGFRI offerings, and secure membership. (For existing partner country, secure formal commitment to membership for extended period).	L	S	S
Identify champion(s) in the country who could own / drive the work program in the country.	L	S	L
Engage country to define tailored, country-specific strategy and work program, including specific project champions. Get buy-in of all key players – agree on ownership, roles, etc. (Note: Utilize Stakeholder Engagement Process ("Standard") where appropriate)	L	S	L
Develop country-specific communication / roll-out strategy.	L	S	S
Develop country-specific plan to evaluate GGFRI program effectiveness	L	S	S
Develop country-specific sustainability strategy (handoff, mainstream, exit.)	L	S	S