



25th world gas conference
"Gas: Sustaining Future Global Growth"

Scaling Up Global Gas Flaring Reduction

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CS6.2: PGCA GHG Emission Reduction Efforts



Patron



Host



Host Sponsor



- Created in 2002 at the World Summit on Sustainable Development in Johannesburg
 - 10 year anniversary 2012
- Objective:
 - Reduce carbon emissions and environmental impact of flaring
 - Monetization of a wasted resource
 - Improve energy efficiency and access to energy
- Means:
 - Public – Private Partnership to facilitate gas flaring reduction

Mission Statement

GGFR is a catalyst for reducing wasteful and undesirable practices of gas flaring and venting through policy change, stakeholder facilitation and project implementation

GGFR Partners

Countries/(NOCs)

Algeria (Sonatrach)
 Angola (Sonangol)
 Azerbaijan (SOCAR)
 Cameroon (SNH)
 France
 Gabon
 Indonesia
 Iraq
 Kazakhstan
 Khanty Mansiysk (Russia)
 Kuwait KOC
 Norway
 Mexico /Pemex
 Nigeria
 Qatar (QP)
 Rep. of Congo
 Uzbekistan
 Yamal Nenets (Russia)
 USA

Oil companies

BP
 Chevron
 ConocoPhillips
 Eni
 ExxonMobil
 Marathon Oil
 Maersk Oil & Gas
 Shell
 Statoil
 TOTAL

Associated Partner

Wartsila

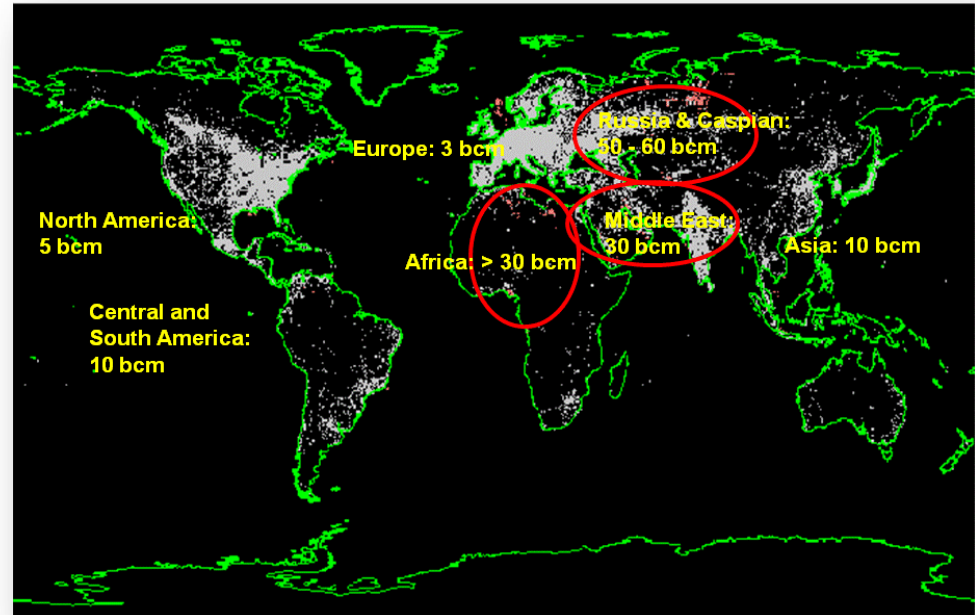
Organizations

The World Bank
 EBRD
 EC

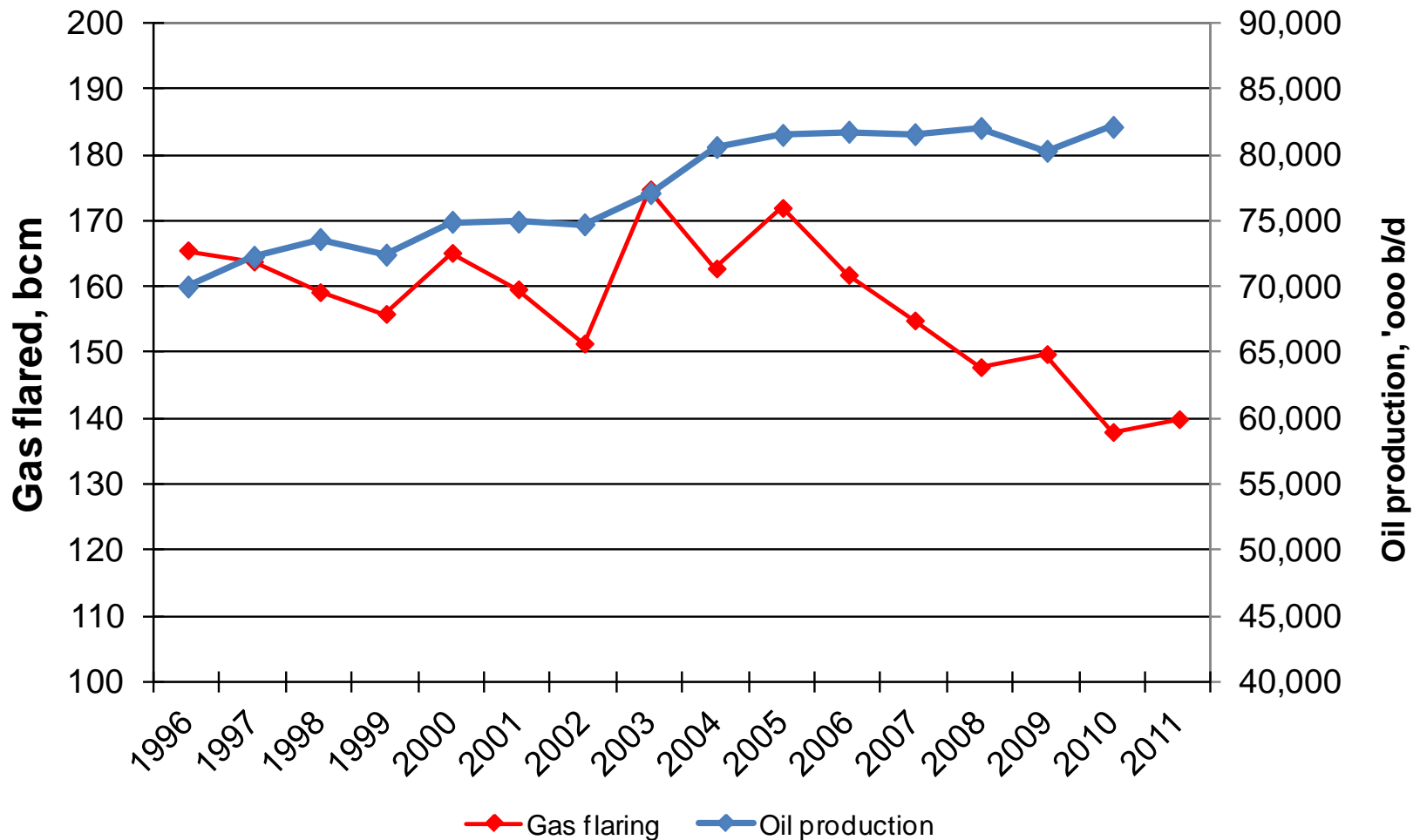


Gas Flaring – Magnitude of the Issue

- An estimated 140 billion cm of gas is being flared globally each year
 - Approx 30% of EU gas consumption
 - \$30 – 35 Billion per year loss value
- Approx. 360 million tons of carbon dioxide into the atmosphere each year
 - Annual emission from 77 million cars
 - Output from 125 medium sized coal power generation plants
- Potential risk of increased gas flaring
 - Oil production increases (Iraq)
 - New producing countries
 - Oil Shale and gas shale production



Global flaring – seen from satellites



Source : NOAA, BP Statistics

- **20% decrease in global gas flaring the last seven years**
 - according to satellite observations

- **Global awareness and understanding of the gas flaring and venting issues**
 - G8 statements
 - Major flaring countries have decided to tackle the issue: Russia (Pres. Putin 2007 statement), Nigeria (Gas flare committee), Angola (Major LNG project), ...
 - Change in companies' policy and regulations (No flaring on new developments)

- **Development of tools to monitor and measure the flaring worldwide**
 - Satellite images in partnership with NOAA
 - Improvement of metering and estimating tools and methodologies (Qatar, Russia, Kazakhstan, Mexico...)

- **New Regulations on Gas Flaring in several countries**
 - “No flaring” laws in Russia, Angola, Kazakhstan, Gabon
 - New laws being progressed in Indonesia, Cameroon, Nigeria

- **Gas Flaring Reduction Plans (AGRP/CIP)**
 - Canada, Nigeria, Kazakhstan, Azerbaijan, Uzbekistan completed or in progress
 - Russia (YN), Qatar, Gabon starting up

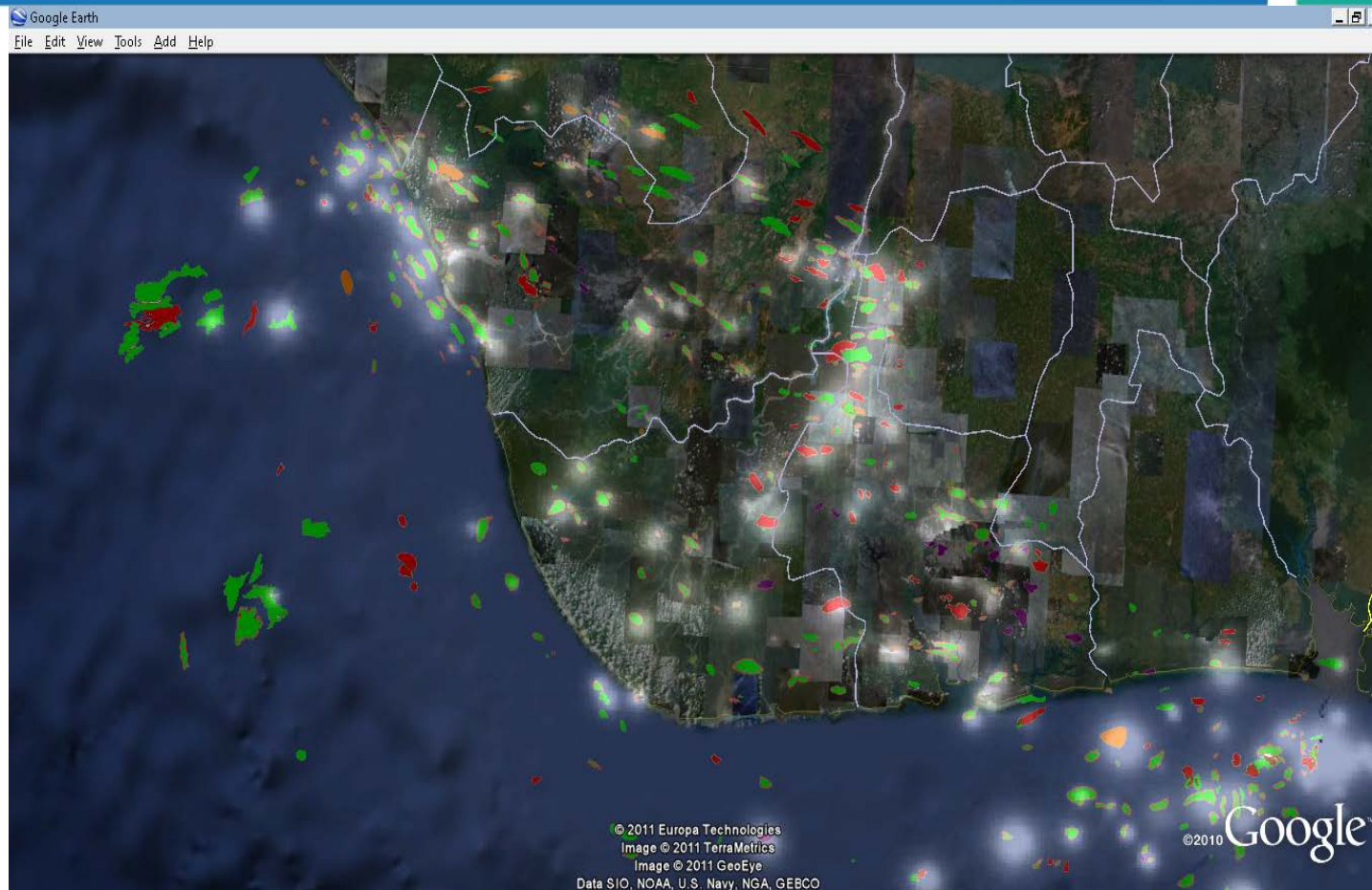
- **Identification and Development of Gas Utilization Projects**
 - Angola, Cameroon, Gabon, Nigeria, Kazakhstan, Qatar, Russia, Uzbekistan,

- **Improvement of understanding of CDM and Carbon Finance Mechanisms**
 - Russia (Danilovsk) , Rosneft Gas Flaring Reduction Project
 - Nigeria (Kwale)
 - Uzbekistan (Program of Activities)

GGFR Scales up efforts 2013-2015

- **Play a lead role in accelerating downward global trend**
- **Deepen GGFR's work in partner countries; more focus on:**
 - Both upstream and downstream
 - Champion the identification of, and help to advance **gas utilization projects**
 - Assist governments in drafting fair, balanced and efficient **regulations**
 - Work with governments and companies to **develop gas markets and infrastructure** to provide outlets for gas currently being flared
- **Deepen work along the gas value chain:** Nigeria, Gabon, Iraq, Russia, Indonesia, Mexico, Kazakhstan, Qatar, Kuwait
- **Share best practices:** Algeria, Azerbaijan, Cameroon and Uzbekistan
- **New countries:** Rep. of Congo joined recently, potential partners include: China, Egypt, Brazil, Ghana...
- **Global activities and Networks:**
 - Technical, Communication and Carbon Finance

Nigeria: Satellite image of 2010 flaring



Significant volumes of gas are still being flared

Nigeria – Facilitating collaboration

■ Government – Industry dialogue

- Continue to facilitate collaboration within the Nigeria Flare Reduction Committee

■ Small-scale associated gas utilization

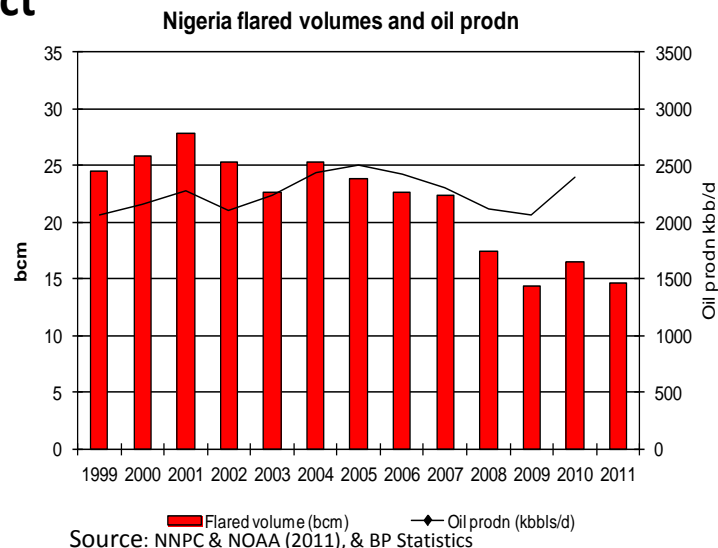
- Expand the current GEF program to investigate multiple potential projects using multiple gas sources
- Develop cooperation with other multi-laterals, aid agencies

■ Nigeria Electricity & Gas improvement Project

- Using synergies with Bank operations to ensure maximum utilization of flared gas
- Partial Risk Guarantee for gas payments

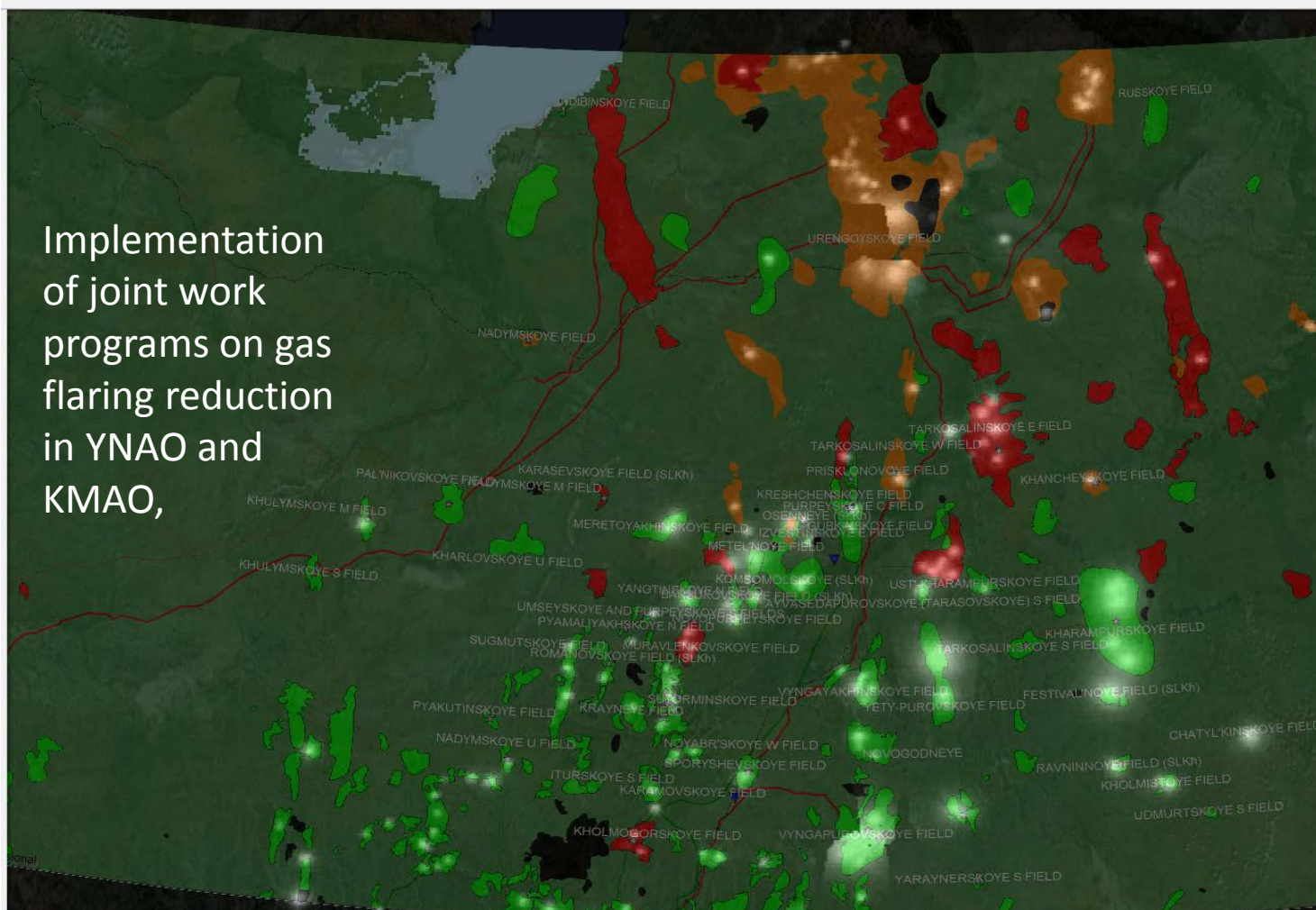
■ Other potential work program areas

- Support to FGN for implementation of low-carbon program



Russia: Yamal-Nenets and Khanty-Mansiysk

Implementation
of joint work
programs on gas
flaring reduction
in YNAO and
KMAO,



Joint study with EBRD:

Flaring situation

- Mostly in regions with sparse population and little local demand, but often with infrastructure nearby
- Discrepancies in flare estimates from different sources
- Likely that flaring has gone down even if national statistics show an increase

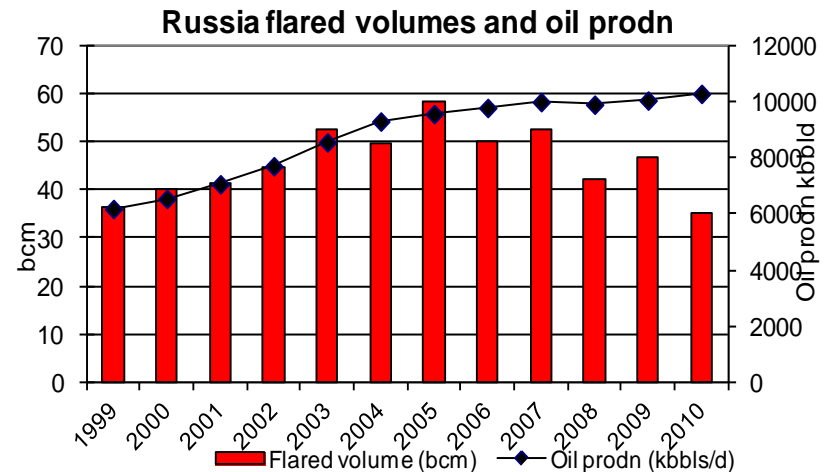
Regulations

- Utilization target of 95% embedded in half of License Agreements and in almost all new
- Regulatory pressures stepped-up

Flare reduction efforts

- Significant investments ongoing to improve gas infrastructure
- In mature areas: extending gas gathering networks, processing capacities and gas-fired plants
- In remote and new oil production regions: captive power generation and re-injection

Most companies will not achieve 95% 2012

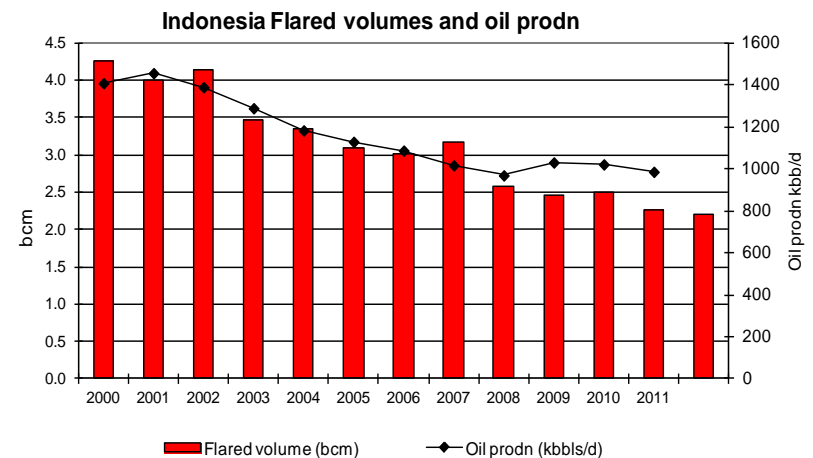


Committed to emission reduction including reduction in flaring in oil & gas upstream operations

- Indonesia's president Mr. Yudhoyono announced country's commitment to reduce GHG emissions by 26% or up to 41% with international support by 2020;
- Green Oil & Gas Industry Initiative (GOGII) targets 40% flaring reduction by 2014 and no routine continuous flaring by 2025;

Improving regulations

- MIGAS champions flare reduction work, and cooperates with GGFR
- GGFR study **"International Practices in Flaring and Venting Policy and Regulation and Their Adaptation for Indonesia"**:
 - 7 country case studies
 - Lessons learned
 - Features of effective regulation
 - Analysis of Indonesia current regulation
 - Stakeholder concerns
 - Recommendations
- MIGAS is working on the new regulation



Sustainable Energy for All

- Three inter-related goals to be achieved by 2030 constitute the vision of energy for all.
 - Universal access to electricity and clean cooking fuels
 - Doubling of the rate of gain in energy efficiency, and
 - Doubling the share of renewable in total energy
- GGFR's objectives are already well aligned with two of SEFA's main goals:
 - Supporting access to energy and improving energy efficiency.
- SEFA and GGFR share the same objectives on gas flaring reduction and will contribute toward such global efforts.
- Specific campaign on gas flaring reduction championed by Statoil and the World Bank under the SEFA initiative
- Commitments will be announced at the upcoming Rio Summit

Lessons learned over the past 10 years

- Government commitment to reduce flaring is critical to success
 - High-level support
 - Commitment means much more than simply setting targets for elimination
 - Government must follow through on institutional and regulatory measures and offer incentives for industry as well
 - Ensure that midstream and downstream markets support flared gas utilisation
- Effective partnerships with industry essential
 - Industry consultation mechanisms are important in ensuring flaring targets are feasible and regulations are realistic
- Better data required for flaring and venting
- Small scale gas utilization technologies need to be nurtured to commercialization

Global Forum in London Oct. 24-25, 2012

10th anniversary of the GGFR

GGFR's Vision is...



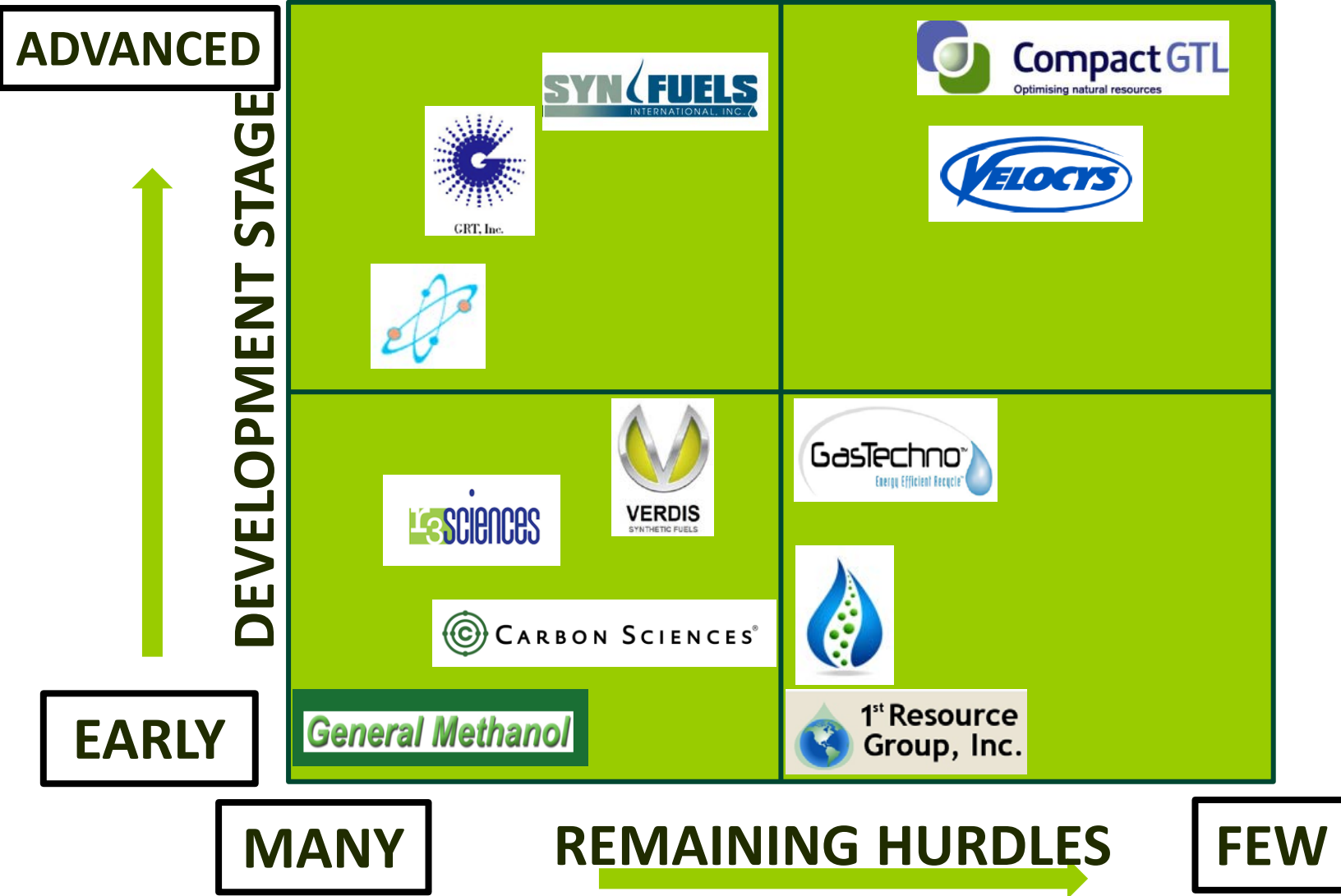
See you at the Global Forum in London

Oct. 24-25, 2012

Thank you for your attention!

Back up slides

Small-scale GTL technologies



Global Gas Flaring – 2007-2011 – Satellite estimate

Estimated flared volume from satellite data

Volumes in bcm	2007	2008	2009	2010	2011	Change from 2010 to 2011
Russia	52.3	42.0	46.6	35.6	37.4	1.8
Nigeria	16.3	15.5	14.9	15.0	14.6	-0.3
Iran	10.7	10.8	10.9	11.3	11.4	0.0
Iraq	6.7	7.1	8.1	9.0	9.4	0.3
USA *	2.2	2.4	3.3	4.6	7.1	2.5
Algeria	5.6	6.2	4.9	5.3	5.0	-0.3
Kazakhstan	5.5	5.4	5.0	3.8	4.7	0.9
Angola	3.5	3.5	3.4	4.1	4.1	0.0
Saudi Arabia	3.9	3.9	3.6	3.6	3.7	0.1
Venezuela	2.2	2.7	2.8	2.8	3.5	0.7
China	2.6	2.5	2.4	2.5	2.6	0.1
Canada	2.0	1.9	1.8	2.5	2.4	-0.1
Libya	3.8	4.0	3.5	3.8	2.2	-1.6
Indonesia	2.6	2.5	2.9	2.2	2.2	0.0
Mexico	2.7	3.6	3.0	2.8	2.1	-0.7
Qatar	2.4	2.3	2.2	1.8	1.7	-0.1
Uzbekistan	2.1	2.7	1.7	1.9	1.7	-0.2
Malaysia	1.8	1.9	1.9	1.5	1.6	0.2
Oman	2.0	2.0	1.9	1.6	1.6	0.0
Egypt	1.5	1.6	1.8	1.6	1.6	0.0
Total top 20	132	124	127	118	121	3.1
Rest of the world	22	22	20	20	19	(1.1)
Global flaring level	154	146	147	138	140	1.9