



## **Gas Flaring Reduction projects in UAE- Barriers and experiences with CDM**

Shuvendu Bose  
Masdar

Next 15 minutes

Overview of Gas flaring Reduction projects

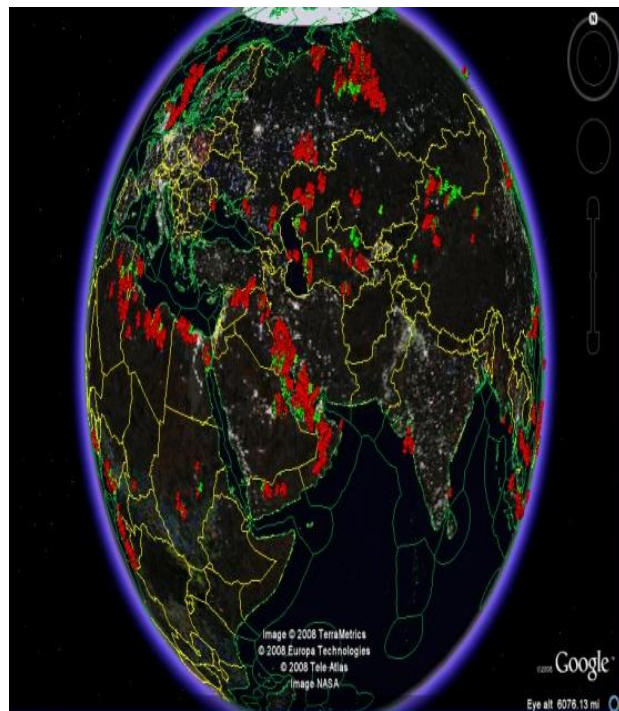
Gas flaring projects registered as CDM

Role of MASDAR

Way forward

# Top 20 Flaring Countries

## Estimated flared volumes from satellite data



Volumes in bcm	2005	2006	2007	2008	Change from 2007 to 2008
Russia	58.6	50.3	51.6	40.3	-11.3
Nigeria	21.4	18.8	16.1	14.9	-1.2
Iran	11.9	12.5	10.9	10.3	-0.6
Iraq	7.5	7.7	7.2	7.0	-0.2
Algeria	5.6	6.3	5.4	5.5	0.1
Kazakhstan	6.2	6.1	5.4	5.2	-0.2
Libya	4.6	4.4	3.8	3.7	-0.1
Saudi Arabia	3.2	3.4	3.5	3.5	0.0
Angola	4.9	4.2	3.6	3.1	-0.5
Qatar	2.8	2.8	3.0	3.0	0.0
Uzbekistan	2.7	2.9	2.1	2.7	0.6
Mexico	1.0	1.2	1.8	2.6	0.8
Venezuela	2.2	2.1	2.2	2.6	0.4
Indonesia	2.8	3.1	2.5	2.3	-0.1
USA	2.2	2.0	2.0	2.3	0.3
China	2.9	2.9	2.5	2.3	-0.3
Oman	2.6	2.2	1.9	1.9	0.0
Malaysia	1.7	1.9	1.7	1.9	0.1
Canada	1.2	1.6	1.8	1.8	0.0
Kuwait	2.6	2.6	2.2	1.8	-0.4
Total top 20	149	139	131	118	-12.7
Rest of the world	23	22	20	20	-0.3
Global flaring level	171	161	151	138	-13.0

### Other Partner countries

Gabon	2.3	2.0	1.6	1.5	-0.1
Eq. Guinea	1.3	1.3	1.3	1.2	-0.1
Cameroon	1.2	1.2	1.2	1.2	0.0
Ecuador	1.1	1.1	1.1	1.1	0.0
Azerbaijan*	0.2	0.1	0.2	0.4	0.2

\* Associated gas is mainly vented in Azerbaijan

# Status of CDM Projects in MENA

## CDM projects in MENA

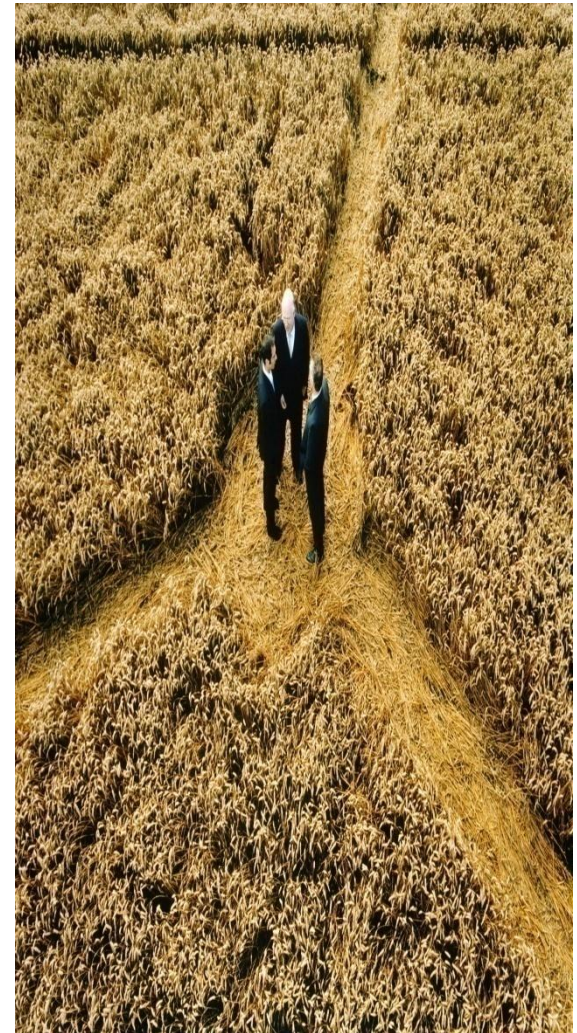
MENA Total CDM project	No.	2012 kCERs
Egypt	13	17161
Iran	3	2051
Israel	28	11663
Jordan	4	2873
Morocco	9	2582
Qatar	1	13748
Syria	2	456
Tunisia	2	2
UAE	9	1773
MENA total	71	52309

## Global Oil and Gas CDM projects

Status	At Validation	At Regis registration	Registered	Total
<b>Projects</b>				
Oil field flaring reduction	6	1	7	<b>14</b>
Oil and gas processing flaring	1	0	2	<b>3</b>
Natural gas pipelines	4	0	1	<b>5</b>

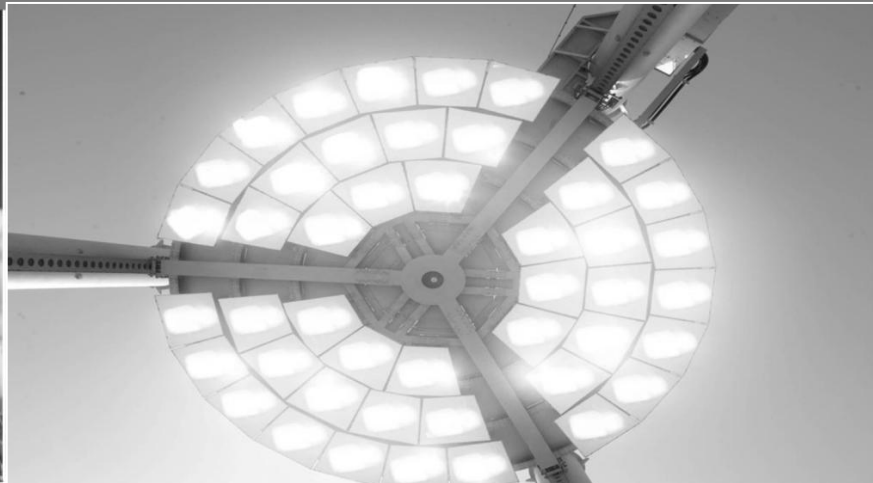
# Why less?

- Return and Infrastructure
- Low price of natural gas in host countries
- Complex and uncertain process – associated gas quantity etc
- Less number of CDM methodologies available
- Specific methodologies and generally not matching with the project cases
- Additionality Justification
- Time consuming and rigorous process



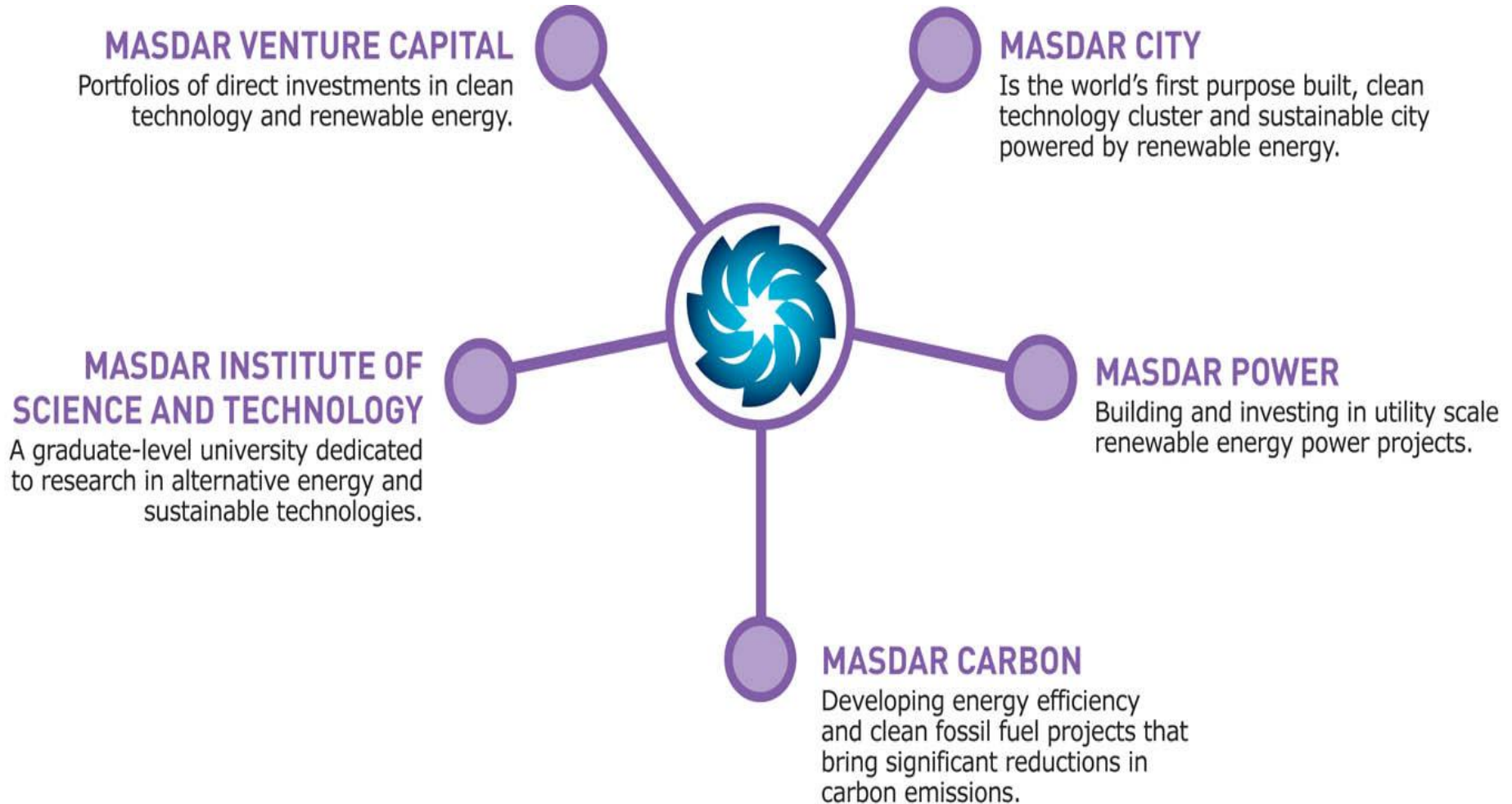


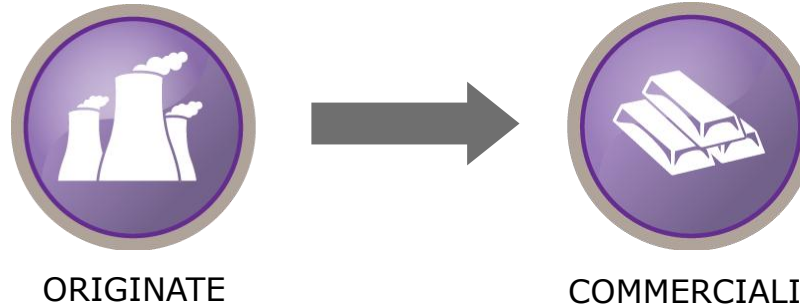
## What role MASDAR Initiative is playing



“It is our duty, as an oil-producing country, to make strenuous efforts to maintain a clean environment by reducing levels of pollution during the various stages of production of hydrocarbons industry, to improve the standards of energy products so that they are environmentally- friendly.”

- HH Sheikh Zayed bin Sultan al Nahyan





- **Capacity Building:** Institutional setting for governments (DNA building), capacity building and training of asset owners
- **Project Identification:** Opportunity assessment, project screening, feasibility studies and site inspections
- **CDM Project Registration:** All CDM project cycle services including Project Design Documents (PDDs) and new Methodologies, interface with 3<sup>rd</sup> parties, local/UN approvals, verification, monitoring of emissions
- **Project Management:** Technology sourcing, physical project management, execution capabilities
- **Finance:** Investment, project finance, carbon finance & monetization (carbon credit purchase)

## What MASDAR Is trying to contribute

### CDM TECHNOLOGY FOCUS – GLOBAL MARKET

#### Investment

- Fuel Switching
- Open Cycle to Closed Cycle gas turbine
- Gas leak reduction
- Gas flare reduction

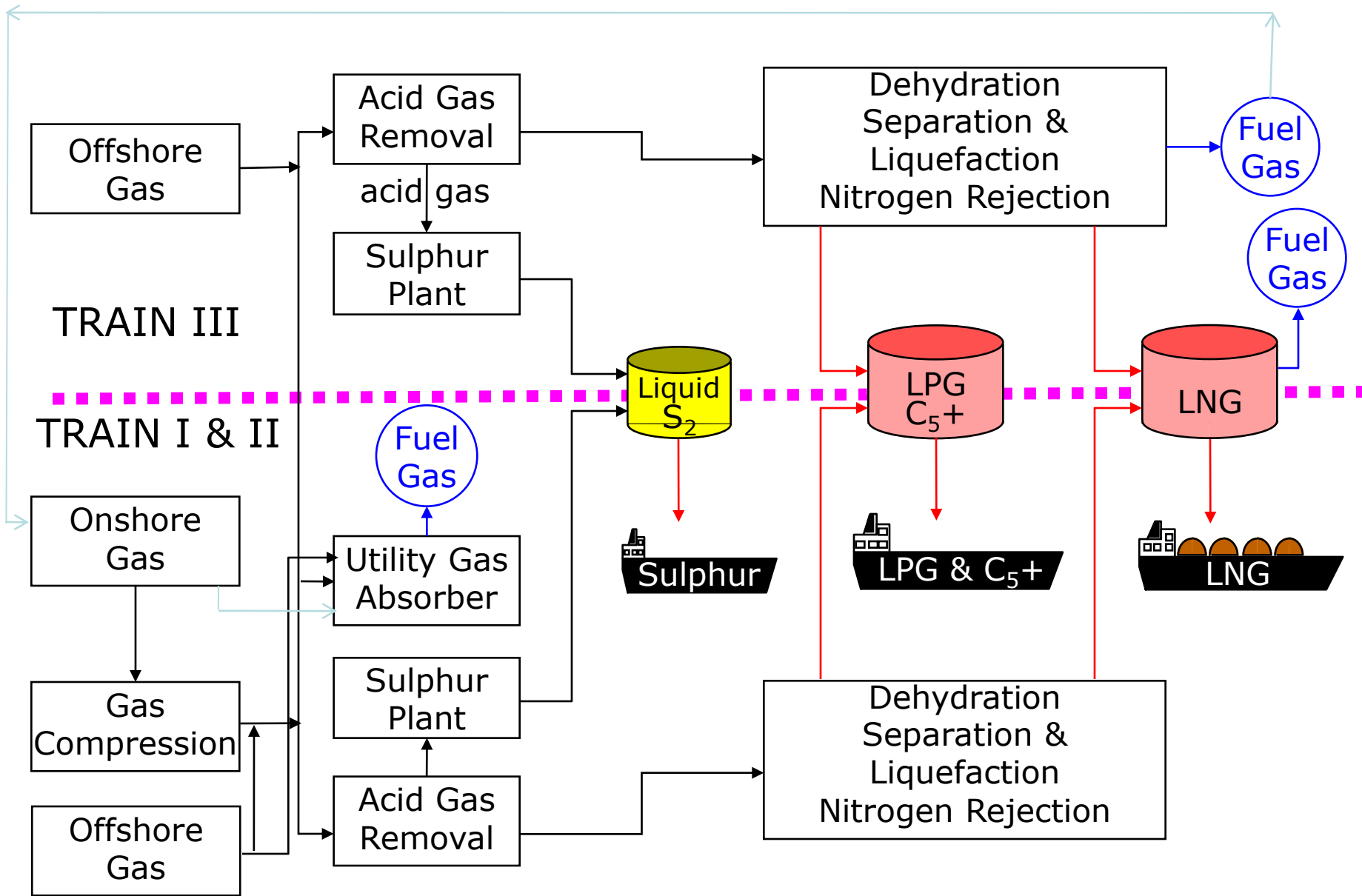


#### Advisory / Offtake

- Recovery and utilization of flare gases
- Fuel switch in industrial facilities
- Energy efficiency improvements
- Waste heat recovery
- CO<sub>2</sub> recovery
- Pipe leak reduction
- Waste to energy
- Renewable energy
- Sustainable Cities

## Masdar and ADNOC's initiative

Project Participant	ADGAS (Abu Dhabi Gas liquefaction Company)
Project Title	ADGAS Recovery and utilization of flare waste gases
Project Description	<ul style="list-style-type: none"> <li>• The proposed project activity is recovery and utilization of waste gas currently flared in the ADGAS gas refinery complex on the DAS Island.</li> <li>• The recovery and utilization of waste gases will reduce the natural gas consumption in the plant and save green house gas (GHG) emissions.</li> <li>• The project reduce the environmental footprint by reducing flaring of 6.59 million standard cubic foot per day</li> </ul>
Project location	Das Island (180 kms from Abu Dhabi)
UNFCCC project status	In validation
CER volume per year	151,000
CER issuance expected	Q1 2012



## Masdar and ADNOC's initiative

Project Participant	GASCO (Abu Dhabi Gas Industries Ltd)
Project Title	Recovery and utilization of flare waste gas at GASCO Habshan refinery
Project Description	<ul style="list-style-type: none"> <li>• The purpose of proposed project activity is to recover flare/waste gases from Habshan 0, 1 and 2 trains using flare gas recovery compressors (FGRC) reduces carbon dioxide emissions.</li> <li>• Recovered waste gases will be used for process heating</li> <li>• The project will improve gas efficiency and conserve natural gas</li> </ul>
Project location	Habshan (300 kms from Abu Dhabi)
UNFCCC project status	PDD development
CER volume per year	70,000
CER issuance expected	Q2 2012

## Masdar and ADNOC's initiative

Project Participant	GASCO (Abu Dhabi Gas Industries Ltd)
Project Title	Implementing energy efficient measures to reduce fuel gas consumption at GASCO
Project Description	<ul style="list-style-type: none"> <li>• The project activity aims to install new energy efficient velocity seals on flare systems (bur pits) and conserve Natural gas at ASAB and BAB.</li> <li>• The technology to be implemented is environment friendly initiative, reduces GHG (CO<sub>2</sub>-) emissions and promotes to sustainable resource management.</li> </ul>
Project location	Asab and Bab (300kms from Abu Dhabi)
UNFCCC project status	In Validation
CER volume per year	12,500
CER issuance expected	Q1 2012

## Other Methodologies and successes in Gas flaring reduction .....not exhaustive

Date of reg	Project	Methodology	CER	Ref no
04 Jun 06	<a href="#"><u>Off gases utilisation from C – 03 washing tower in Primary Reformer as fuel</u></a>	<a href="#"><u>AMS-III.D. ver. 8</u></a>	7226	0382
04 May 09	<a href="#"><u>Flare Gas Recovery system (FGRS) at Barauni Refinery of Indian Oil Corporation Limited</u></a>	<a href="#"><u>AMS-III.P</u></a>	11968	1597
30 Oct 09	<a href="#"><u>Flare Gas Recovery and Utilization of Recovered Flare Gas for process furnace and other heating applications</u></a>	<a href="#"><u>AMS-III.P</u></a>	27834	2768
19 Feb 09	<a href="#"><u>Flare Gas Recovery and Utilization of Recovered Flare Gas for process heating requirements at IOCL, Haldia Refinery</u></a>	AMS-IIIP	15528	2234

Masdar is working with GGFR on expanding scope of methodologies



We are hopeful and we will achieve