



## Field Trip November 2011

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# The Development Project Pipeline

**Luis Cabra**

**MD Development & Production**





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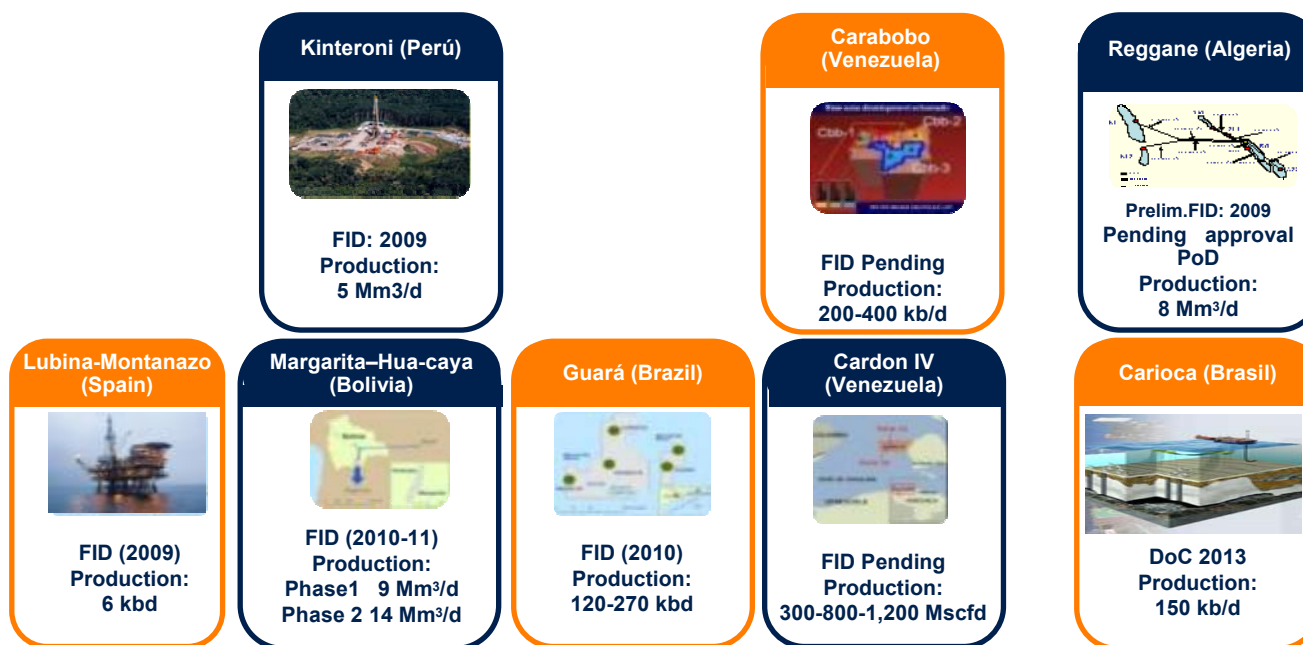
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# A pipeline of Development Projects in Repsol portfolio to feed Upstream future growth



## On-going projects

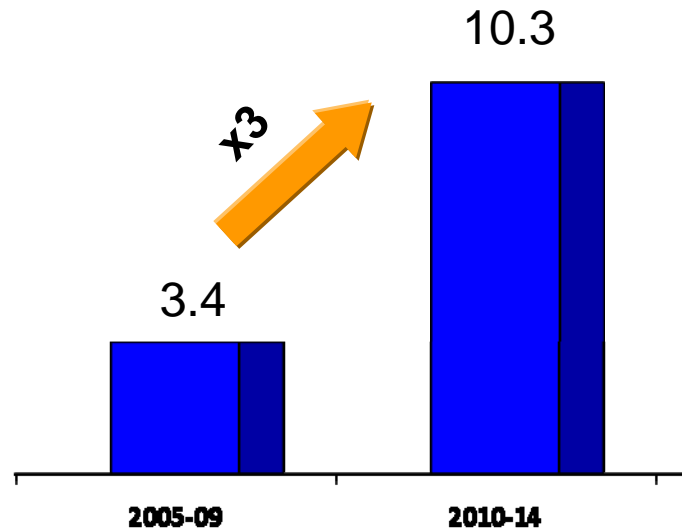


■ Liquids      ■ Gas

# Impact of development projects



Capex Development Projects (Billion US\$)



- ❑ Development Projects will account for:
  - ❑ Half of the reserve additions in 2010-2014
  - ❑ One-third of total production in 2015-2019



# Project summary

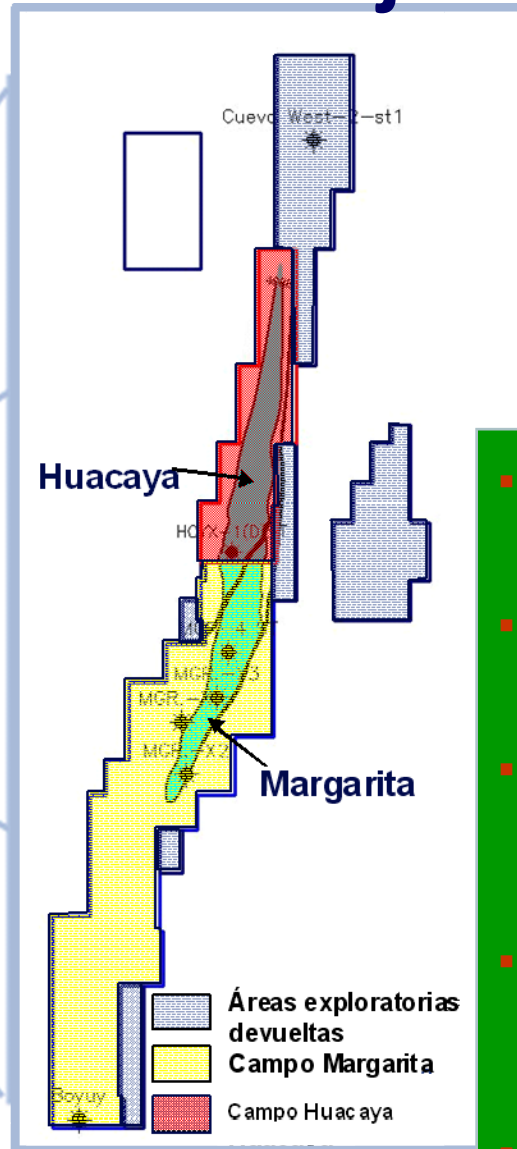
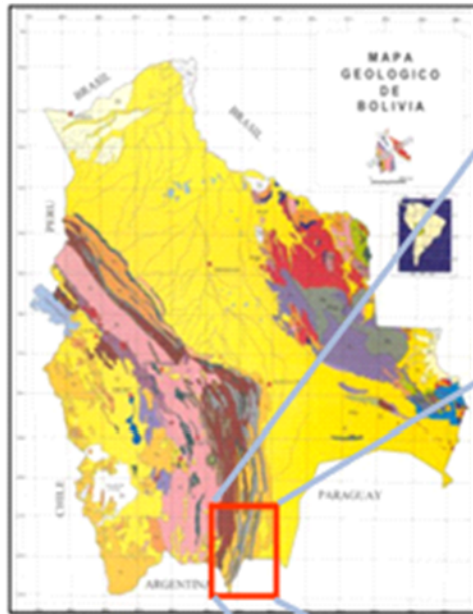


	Location	First Oil/ Gas date (Forecast)	Production Plateau 100%	Repsol WI %	Operated Joint Operated Non Operated
<b>Margarita Phase I</b>	Bolivia	2012	+210 Mscfd	37,50	Operated
<b>Lubina-Montanazo</b>	Spain	2012	+6 kbpd	100 (L) 75 (M)	Operated
<b>Kinteroni</b>	Peru	2012	175 Mscfd 9 kbpd	53,84	Operated
<b>Guará</b>	Brazil	2013	270 kbpd 400 Mscfd	25,00	Non Operated
<b>Cardon IV</b>	Venezuela	2014	1,200 Mscfd	32,50 *	Joint Operat.
<b>Carabobo</b>	Venezuela	2014	370 kbpd	11,00	Joint Operat.
<b>Reggane</b>	Algeria	2016	290 Mscfd	29,25	Operated

\* PDVSA entry of 35% foreseen



# Margarita Phase 1 Project Description

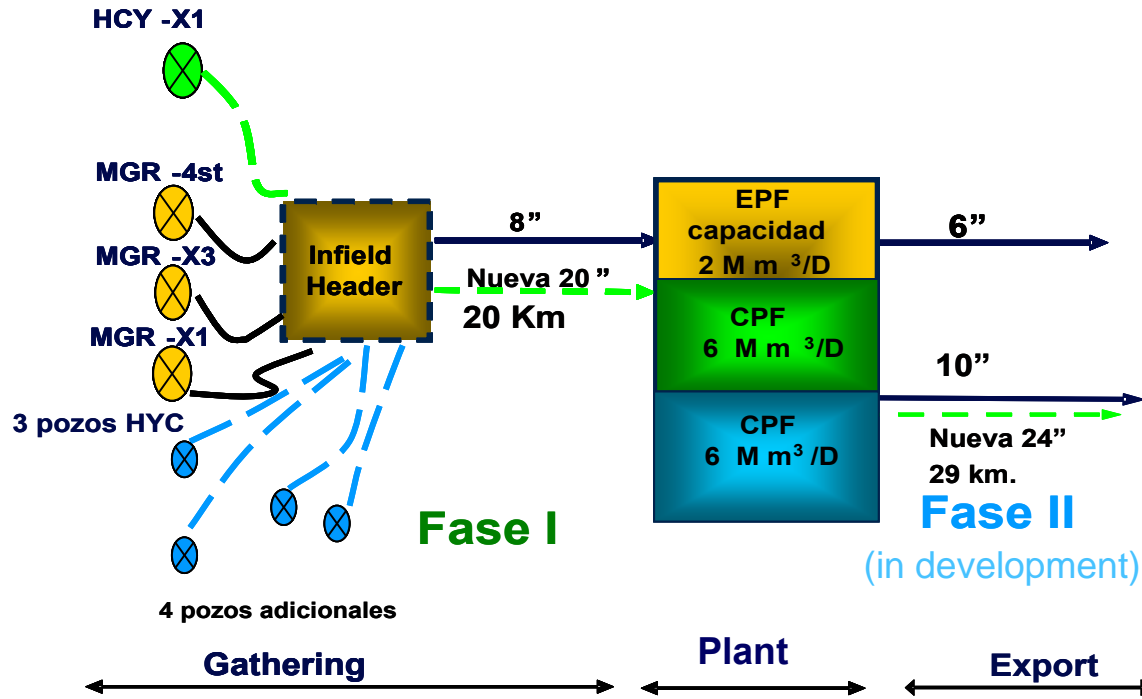


Margarita	
Company	Development & Production (wi)
Repsol	37,50%
BG	37,50%
PAE	25,00%

- Development of gas/condensate field (16% liquids) in SE Bolivia.
- Current facilities capacity: 3,0 Mm<sup>3</sup>/d (increased from 2,3 Mm<sup>3</sup>/d in May 11).
- Development unlocked by Gas Sales Agreement and new transport network with Argentina (2010).
- Phase I (+6 Mm<sup>3</sup>/d) under execution: new module CPF of 6Mm<sup>3</sup>/d and flow lines to 4 existing wells.
- Phase II (+6 Mm<sup>3</sup>/d) FID adopted Sept.11: new wells, module CPF, flowlines and compression/pumping



# Margarita Phase 1 Technical Scope



MGR-X1 Discovered Well 1998.  
DST#1 Oct-1998



HCY-X1D DST#1 Dic-2007



MGR-X4st Well Testing Oct-2011



# Margarita Phase 1 Highlights

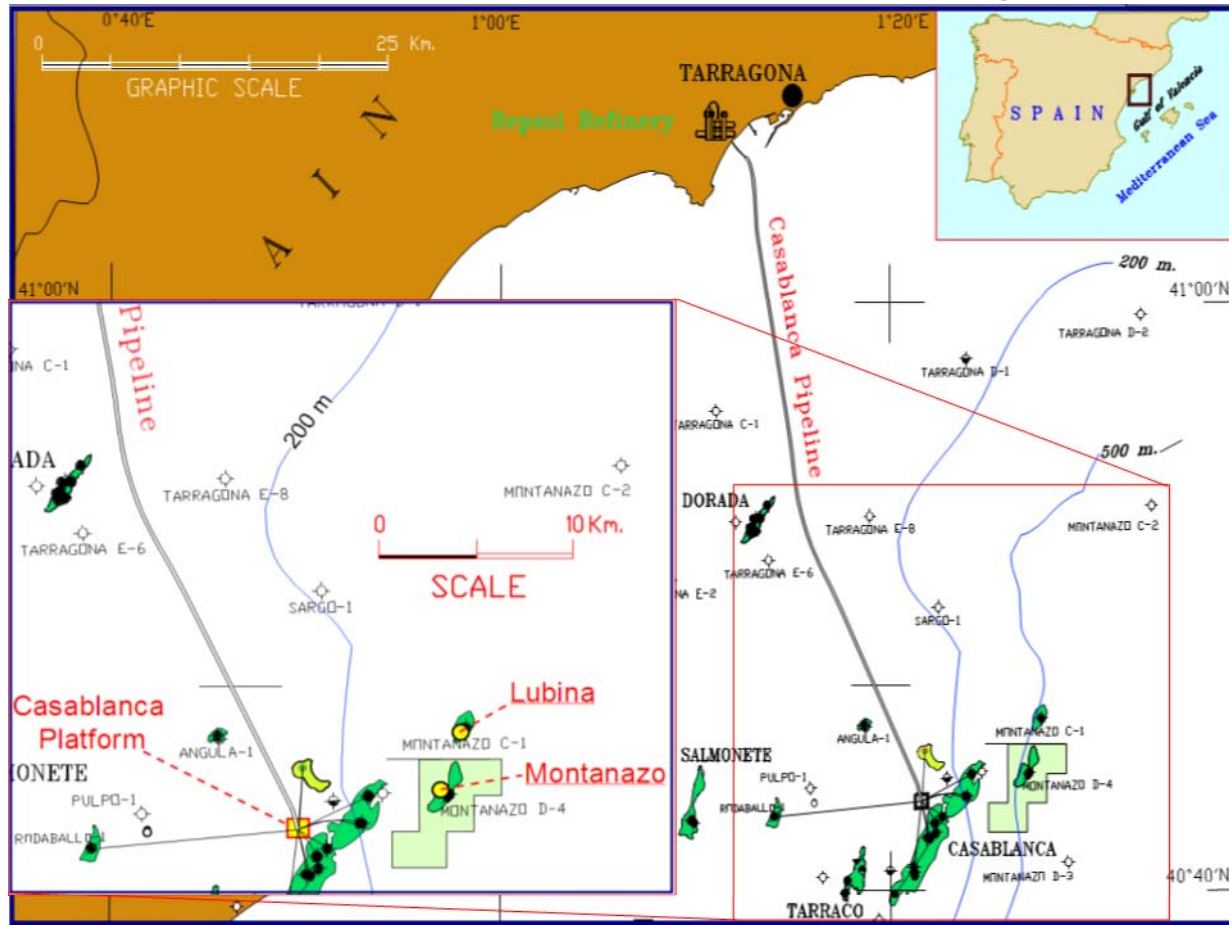


- Current status:
  - First phase progress 70%. First gas April 2012 as planned
  - Capex below budget
  - HSE: LTFI=0, no incidents
- Challenges:
  - Ensure Process Facilities (CPF) completion on time
- Opportunities:
  - Leverage on project resources (management team, local contractors) from Phase 1 to Phase 2
  - Geological quality of asset and related upsides





# Lubina & Montanazo Project Description



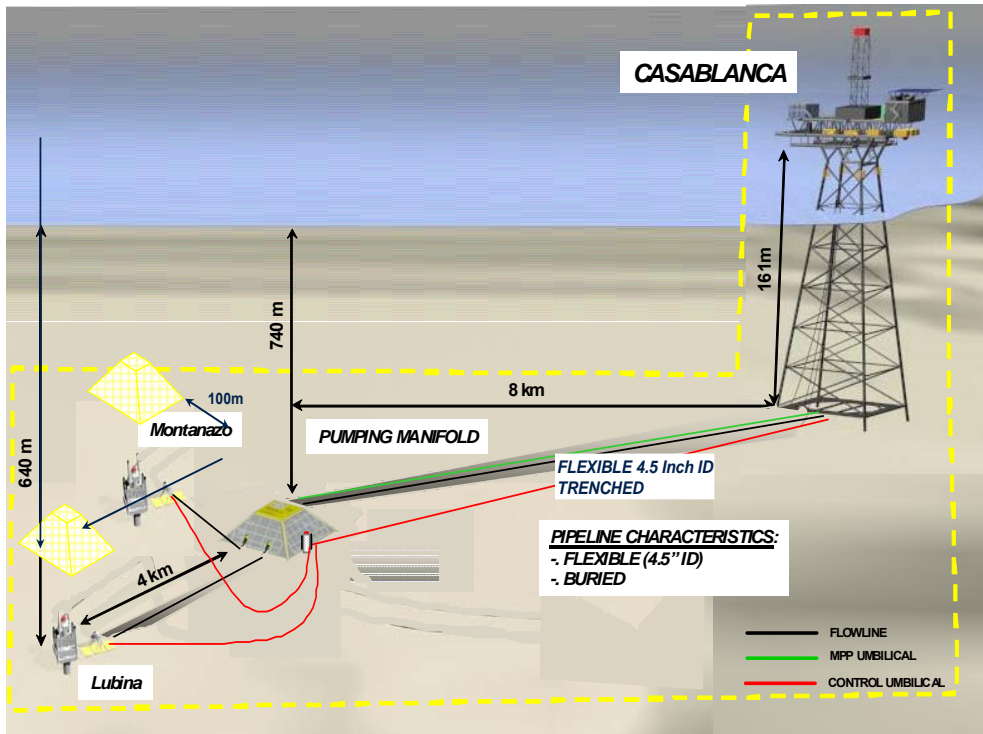
Montanazo	
Company	Development & Production (wi)
Repsol	75,06%
Gas Natural	17,68%
CEPSA	7,26%

Lubina	
Company	Development & Production (wi)
Repsol	100%

- Development of the Lubina & Montanazo fields discovered in 2009
- Located 3 km from Casablanca existing field and platform, 43 km off Spain SE Med coast



# Lubina & Montanazo Technical Scope



3  
**Piping**

**Casablanca**



**Pumping Manifold**

**Lubina**

**Montanazo**



# Lubina & Montanazo Highlights



## ➤ Current status:

- 83% progress, all platform activities completed. Subsea works on-hold due to delay in enviro permit (project delay foreseen: one year)
- HSE: LTFI= 0, no incidents

## ➤ Challenges:

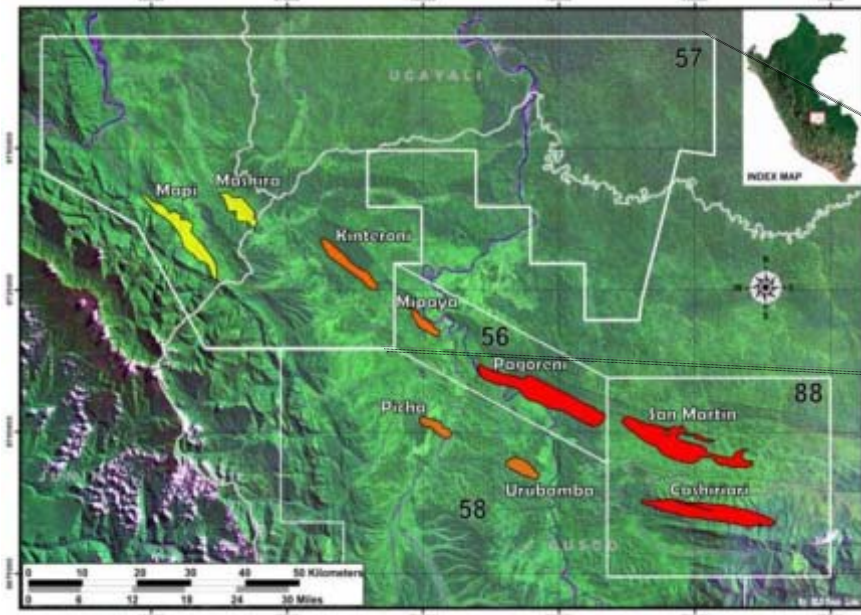
- Obtain enviro permit and start operations in oct.2012

## ➤ Opportunities:

- Extended life of a mature asset that was nearing abandonment
- High economic return even with delay due to very favourable contract/fiscal regime in Spain



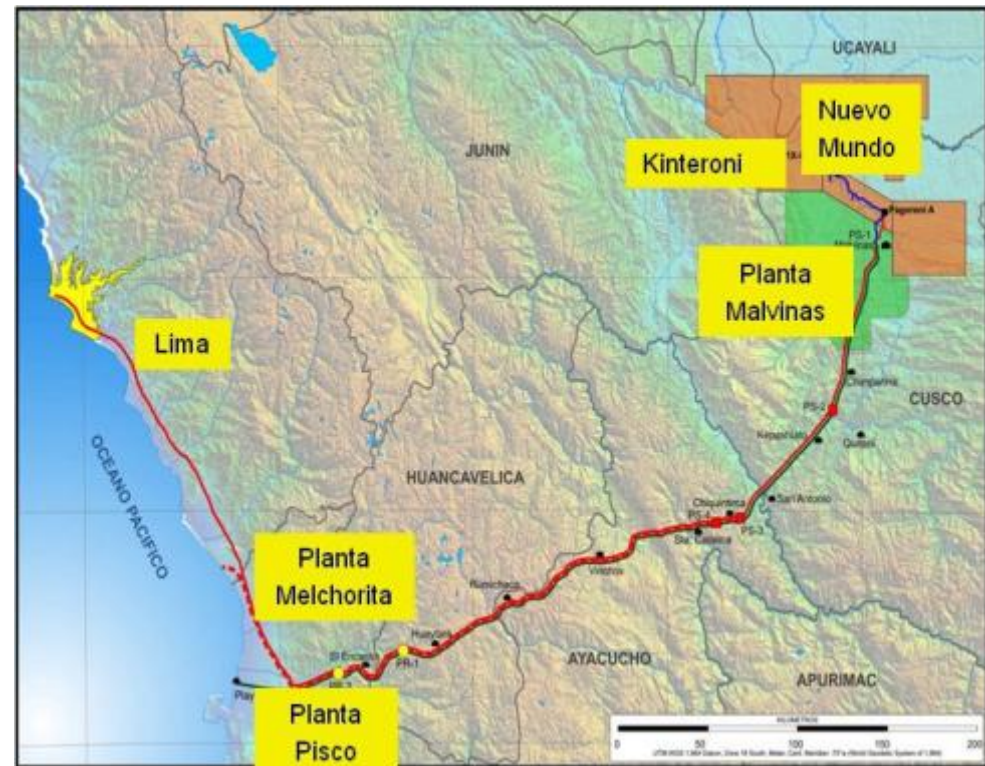
# Kinteroni Project Description



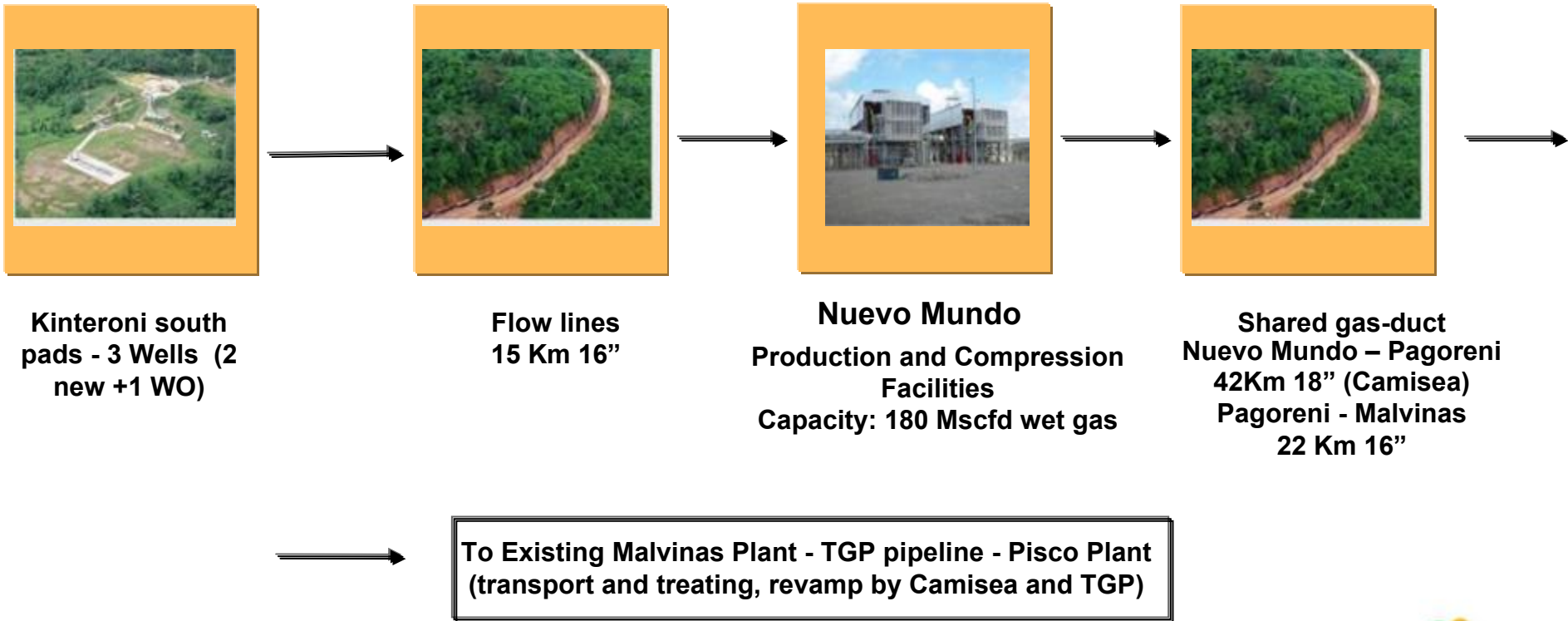
Block 57

Kinteroni	
Company	Development & Production (wi)
Repsol	53,84%
Petrobras	46,16%

- Kinteroni field discovered in January 2008 in Block 57. Early development of Kinteroni South (5M m<sup>3</sup>/d gas and associated liquids) by making use of existing transport and processing infrastructure (Malvinas, Pisco).
- Further exploration and appraisal of the north zone already initiated. Block 57 also contain Mapi and Mashira prospects.



# Kinteroni Technical Scope



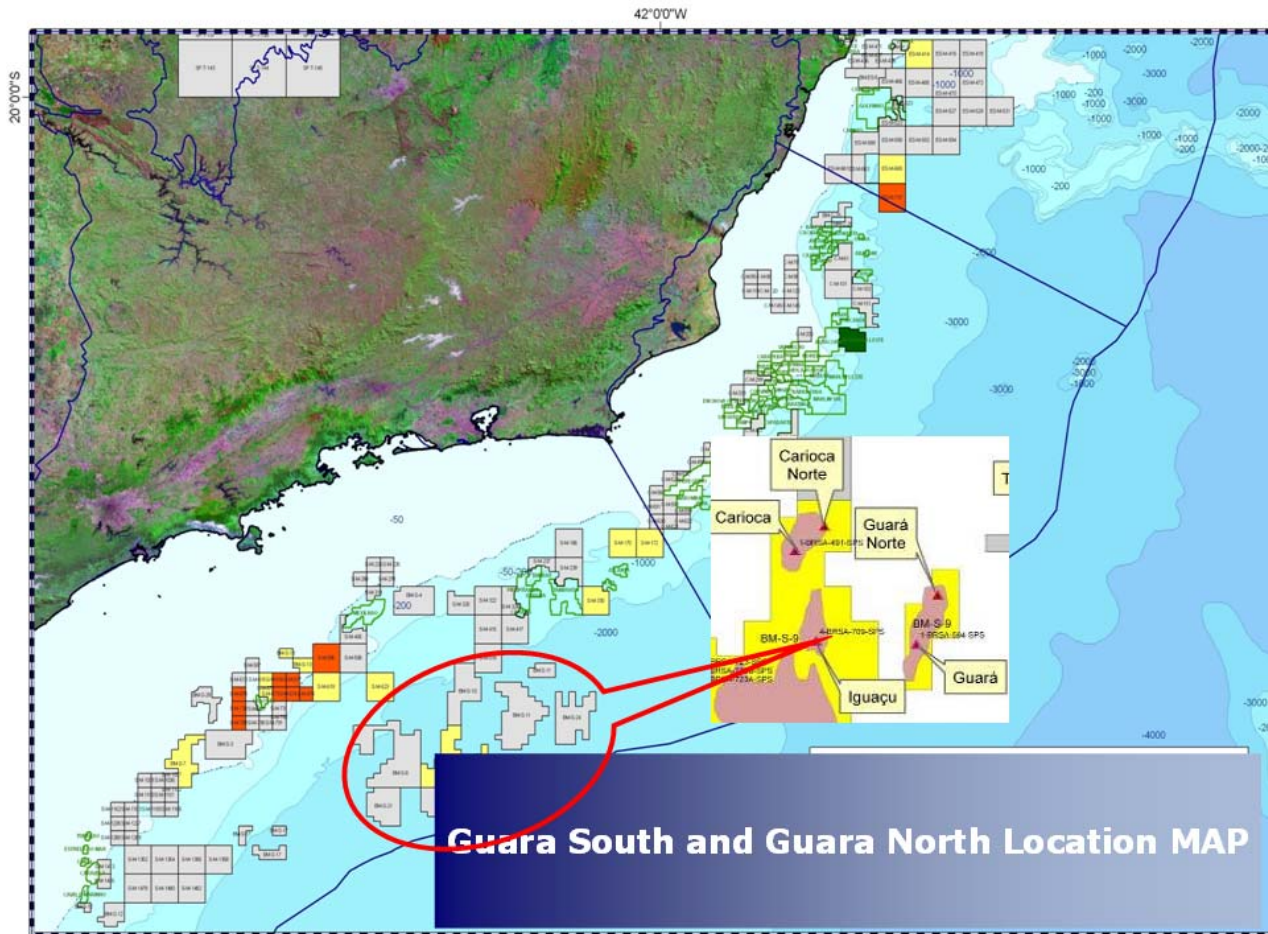
# Kinteroni Highlights



- Current status:
  - Physical progress 50%. Project on schedule and on budget
  - HSE: LTFI=1.0, no incidents
- Challenge:
  - Ensure third party projects are completed on time for first gas
- Opportunities:
  - Sinergies with other Repsol gas assets in Peru (Camisea, Perú LNG)
  - Further development of Kinteroni field and new prospects



# Guara Project Description



Guará	
Company	Development & Production (wi)
Repsol-Sinopec Brasil	25,00%
Petrobras	45,00%
BG	30,00%

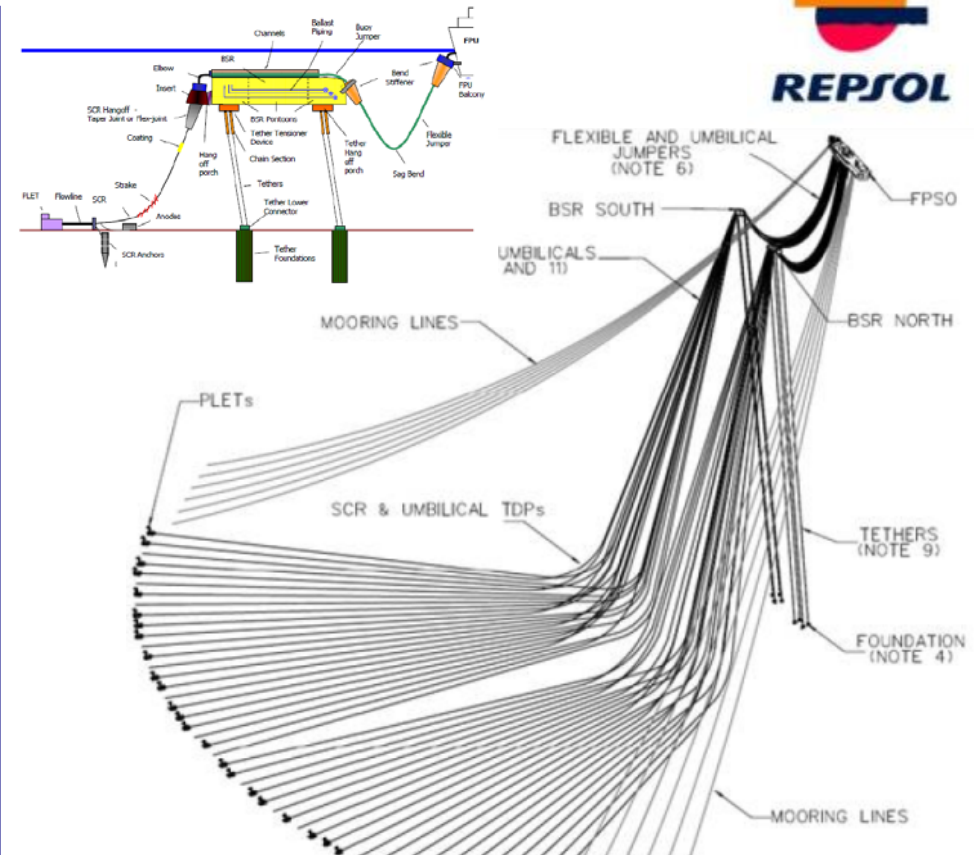
- Block located 310 km offshore deep water in Santos Basin
- Development plan of Guara field discovered in 2008: first oil 2013 120 kb/d, reach plateau in 2015 270 kb/d. Crude oil 27-28°API. 16% (in Mboe) of associated gas
- Gas evacuation by connection Guara (block S9)-Lula (block S11)



# Guara Technical Scope - 2013

## GUARA PILOT

FPSO	Cidade de São Paulo
WD FPSO	2.140 m
Capacity	
Oil	120.000 bpd
Gas	5 Million m <sup>3</sup> /d
Oil density	30° API
Production Wells	6 (+ 2 temporary)
Injection Wells	5 (+1 temporary)
WD Wells	2.144 m
Gathering System	<b>New technology: Decoupled Riser System</b>
Export System	Oil → Offloading Gas → Export + Consumption + Injection
Gas export pipeline	Guara-Lula 18" 54km 28mm WT

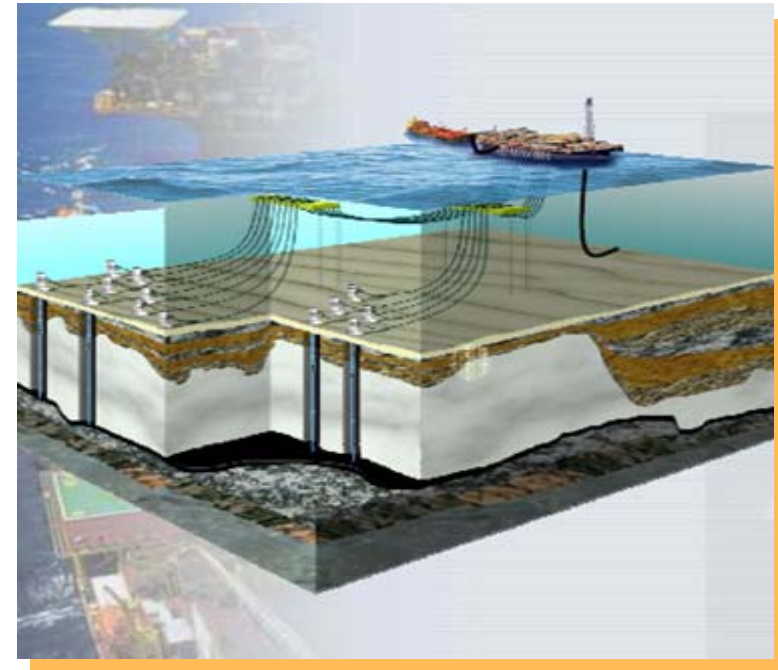




# Guara Technical Scope - 2015



GUARA NORTE PD	
FPSO ("Plan B")	Cidade de Ilhabela
WD FPSO	2.140 m
Capacity	
Oil	150.000 bpd
Gas	6 Million m <sup>3</sup> /d
Oil density	29° API
Production Wells	8 (+ 2 temporary)
Injection Wells	7
WD Wells	2.119 to 2.193 m
Gathering System	Unique technology: Decoupled Riser System
Export system	Oil → Offloading Gas → Export + Consumption + Injection



# Guara Highlights



## ➤ Current status:

- Project on-schedule by operator. Ramp-up to reach 120,000 bpd in 2013
- HSE: LTFI=0.4

## ➤ Challenges:

- Market saturation and local content requirements
- Repsol and partners have effectively promoted “Plan B” for 2nd FPSO (by Modec) and for Decoupled Riser System (at least two conventional flexible risers)

## ➤ Opportunities:

- Participation in one of the biggest Brazilian crude oil developments



# Cardon IV Project Description



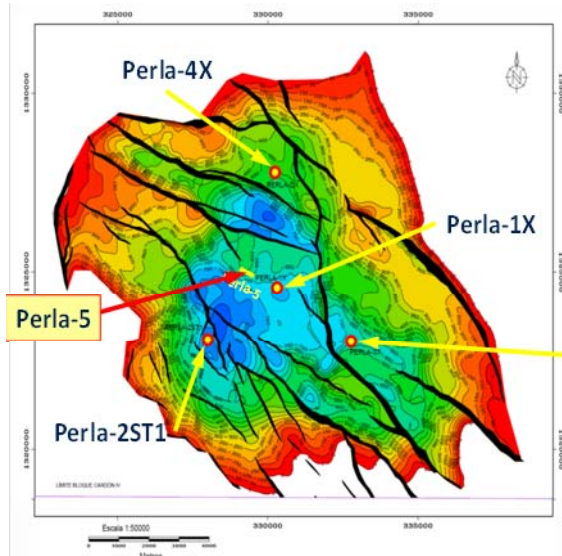
Cardon IV	
Company	Development & Production (wi)
Repsol	32,50%
ENI	32,50%
PDVSA	35,00%

PDVSA entrance planned at DoC

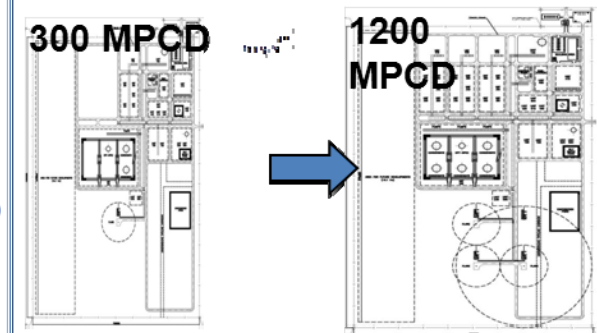
- Perla field discovered in Oct 1999, dry gas recovery of 8 TCF as per Development Plan, plus additional volume development potential.
- Development in 3 phases (300-800-1200 Mcfd). FID phase 300 planned by end 2011 after Gas Sale Agreement and DoC.



# Cardon IV Technical Scope



- 1 4-leg Central Hub for 6 wells
- 3 tripod Satellites (Max. 6 wells each one)
- Flow lines 14" to Central Hub
- Sub-sea multiphase duct (62 Km) 30"
- Onshore gas treatment plant (modular 300-800-1200)
- Wells :
  - Phase 300 = 5-6
  - Phase 800 = 13 additional (19 total)
  - Phase 1200 = 7 additional (26 total)
  - Compression (from 2025 on)



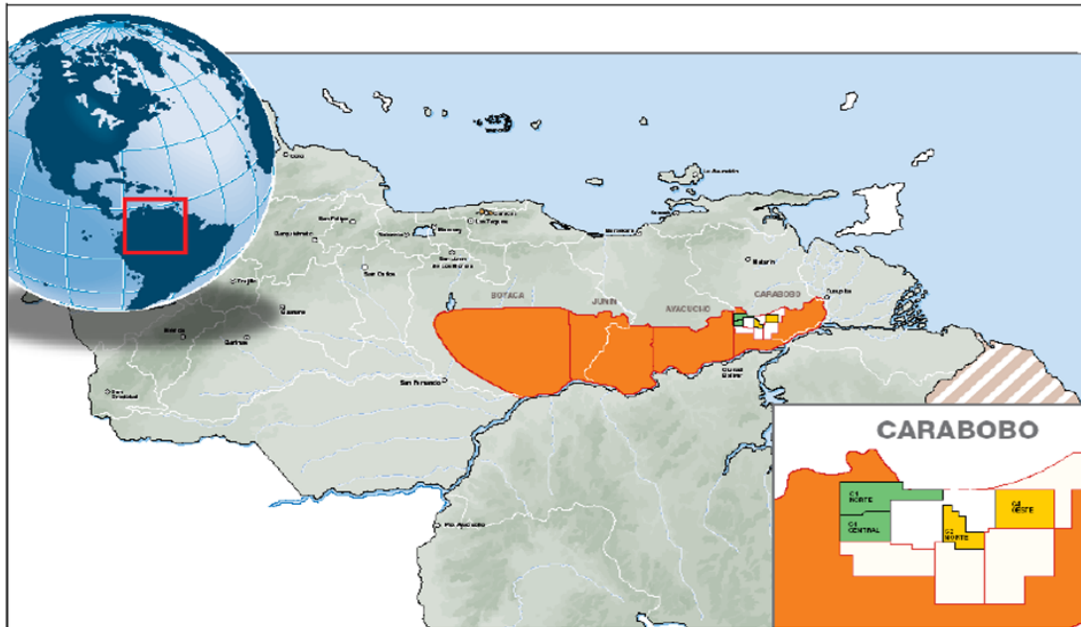
# Cardon IV Highlights



- Current status:
  - Phase 300 progress 35% (5 wells drilled, FEED completed, EPC ITB's ready)
  - Termsheet for Gas Sales Agreement (GSA) signed. GSA and Declaration of Comerciality expected before year end
  - HSE: LTFI=0.5, no incidents
- Challenge:
  - Close follow-up of local demand evolution to match with timing of project phases and likely export project
- Opportunities:
  - Participation in a huge gas field development with future reserve and production upsides



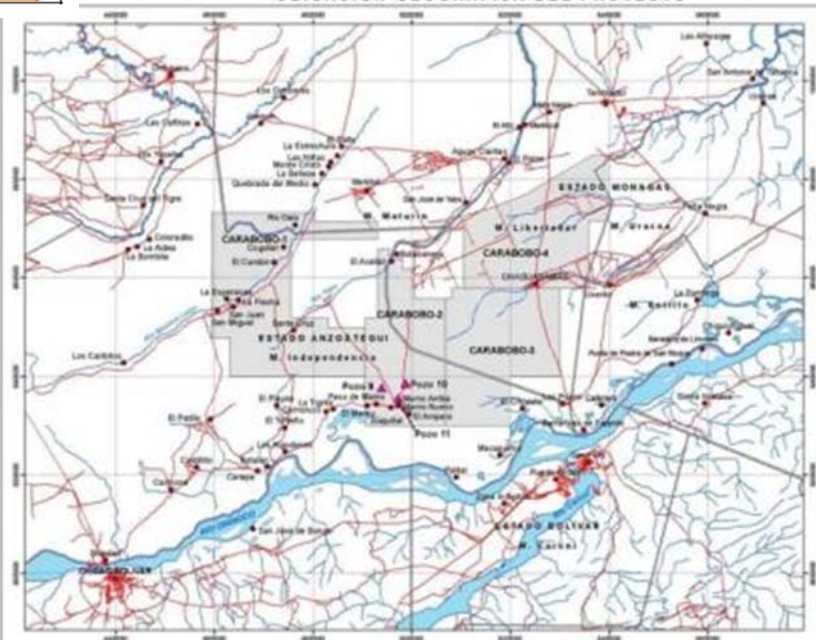
# Carabobo Project Description



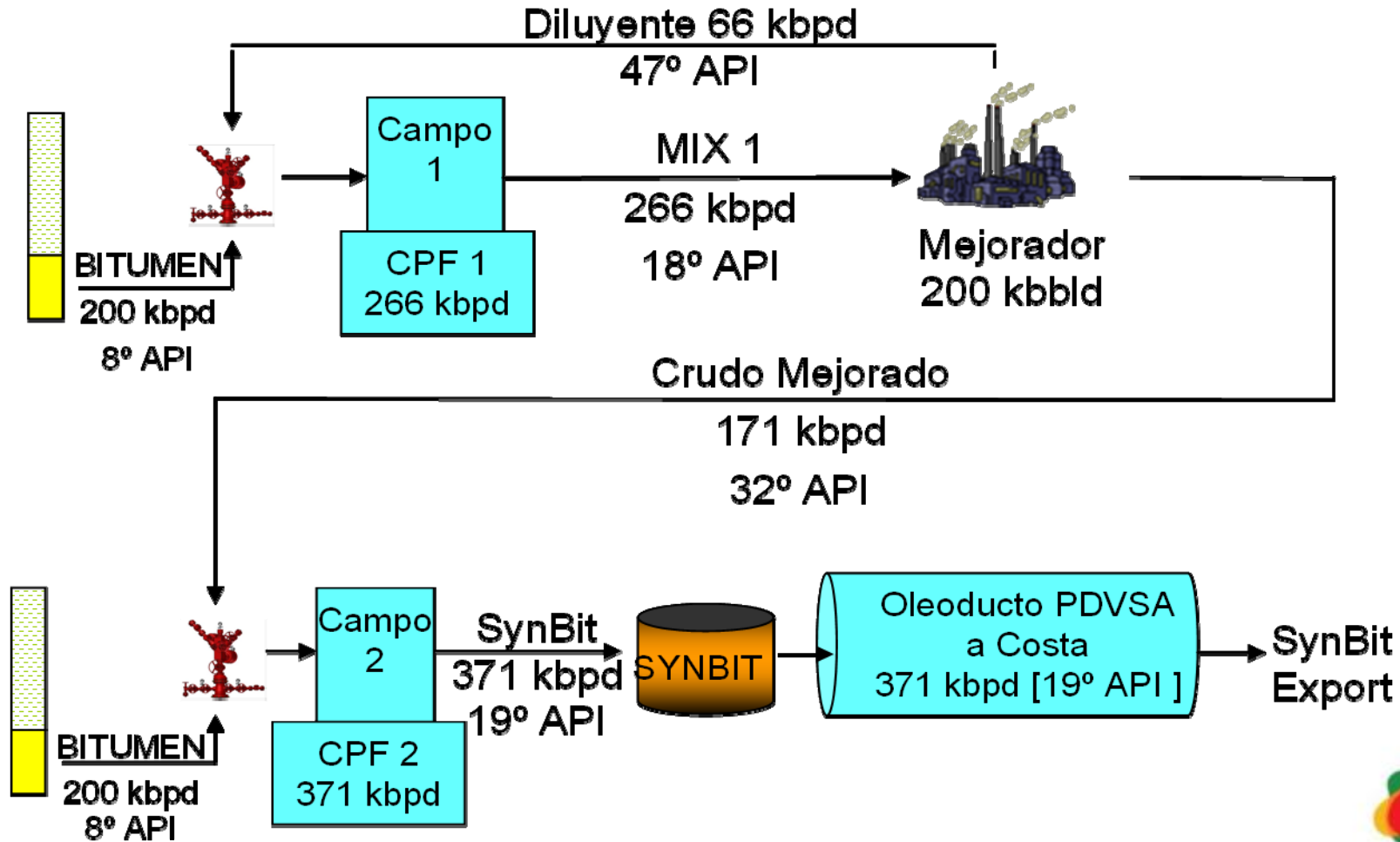
Carabobo	
Company	Development & Production (wi)
PDVSA	60,00%
Repsol	11,00%
ONGC VIDESH	11,00%
PETRONAS	11,00%
OIL INDIA Ltd	3,50%
INDIAN OIL Corp	3,50%

- Extra heavy oil production 8°API (400 kbpd) in two fields.
- Early production 2014 diluted with light crude (up to 200 kbpd XH oil). Pursuing acceleration of 10-60 kbpd using existing infrastructure.
- Construction of a crude upgrader to produce in 2017-18 syncrude crude of 32 °API (input=200 kbpd XH oil; output=171 kbpd). To be mixed with 200 kbd XH oil to obtain 371 kbpd 19°API.
- Repsol off-take of up to 165 kbbl/d for Repsol refineries in Spain.

UBICACIÓN GEOGRÁFICA DEL PROYECTO



# Carabobo Technical Scope



Phase 1: 165 wells approx.  
 Phase 2: 535 additional wells approx



# Carabobo Highlights



- Current status:
  - Project in conceptualization phase. Proceeding with preFEED activities and award of seismic and stratigraphic wells for early production.
  
- Challenges:
  - Match with other infrastructure Projects by PDVSA
  - Project Management
  
- Opportunities:
  - Presence in one of the largest crude oil reserves in the World



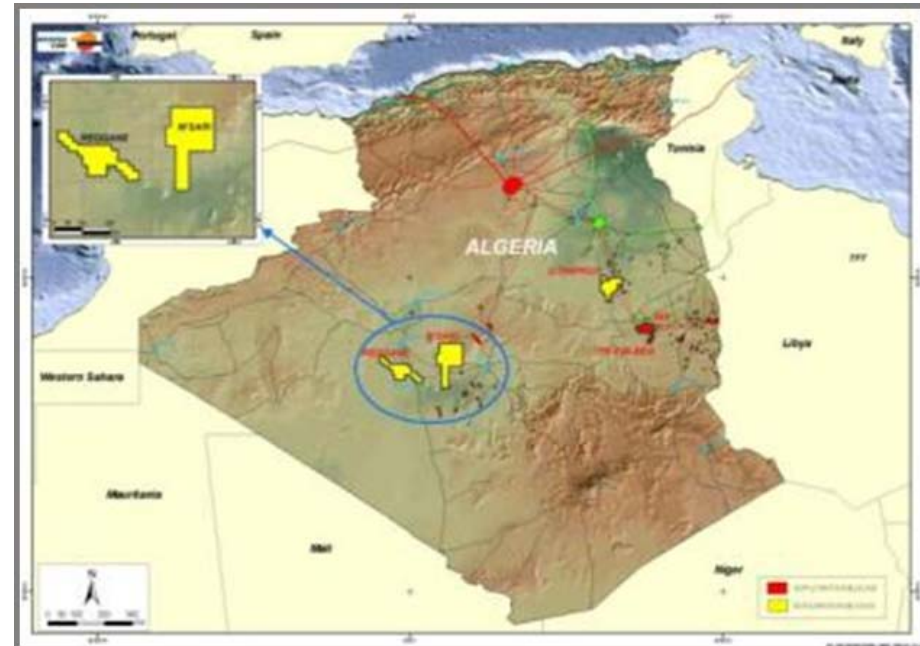


# Reggane Project Description



Company	Exploration (wi)	Development & Production (wi)
Repsol	45%	29.25%
RWE	30%	19.50%
Edison	25%	11.25%
SH	-	40.00%

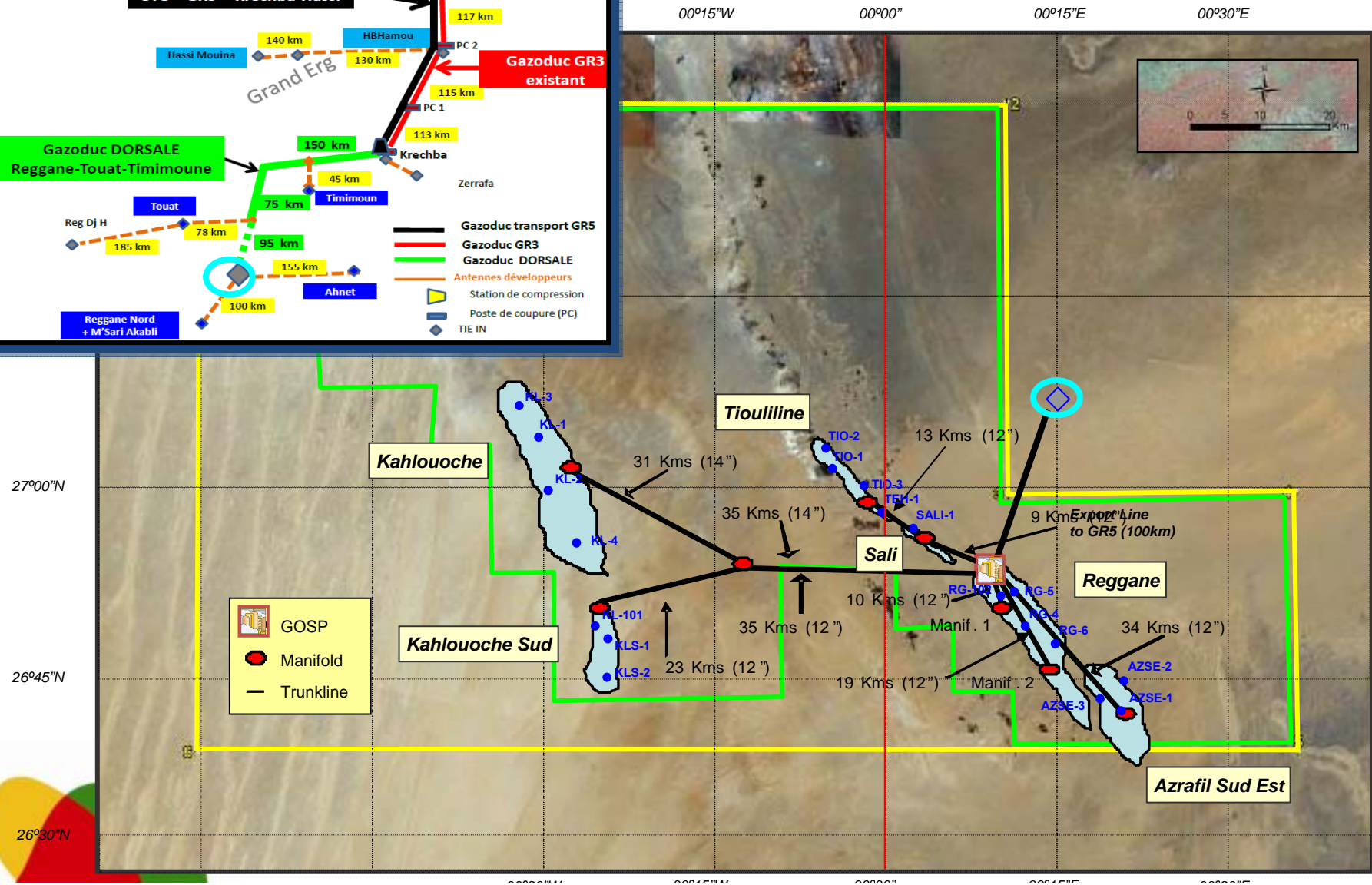
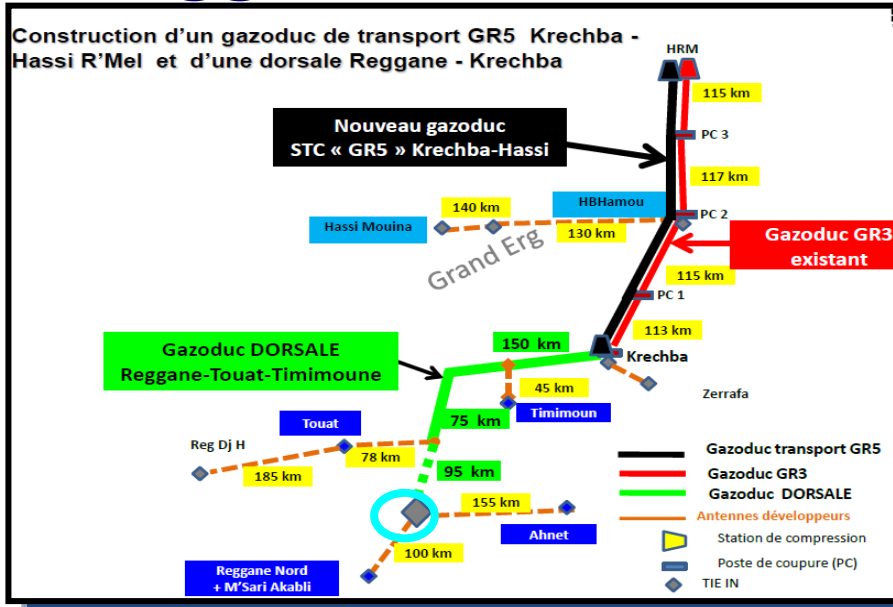
**Development Plan 2009**  
**Reserves 1.7 tcf**  
**Approval estim. 2010**  
**First Gas estim. 2014**



- Development of 6 dry gas fields discovered between 2005 and 2009. Early FID by Repsol in Dec. 2009 after gas sales agreement to propose Development Plan.
- Scope: Intensive plan of development wells and surface facilities connecting to gas trunkline of SH.



# Reggane Technical Scope



# Reggane Highlights



## ➤ Current status:

- Project Conceptualization phase completed, ready to launch Definition phase (FEED). First gas 2016

## ➤ Challenges:

- Get approval of Development Plan before year end, as expected







## ➤ Opportunities:

- Increase our presence in gas supply from Algeria, a key gas source for Spain



# Our people

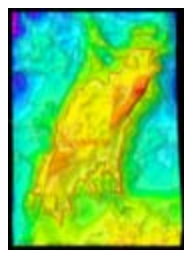
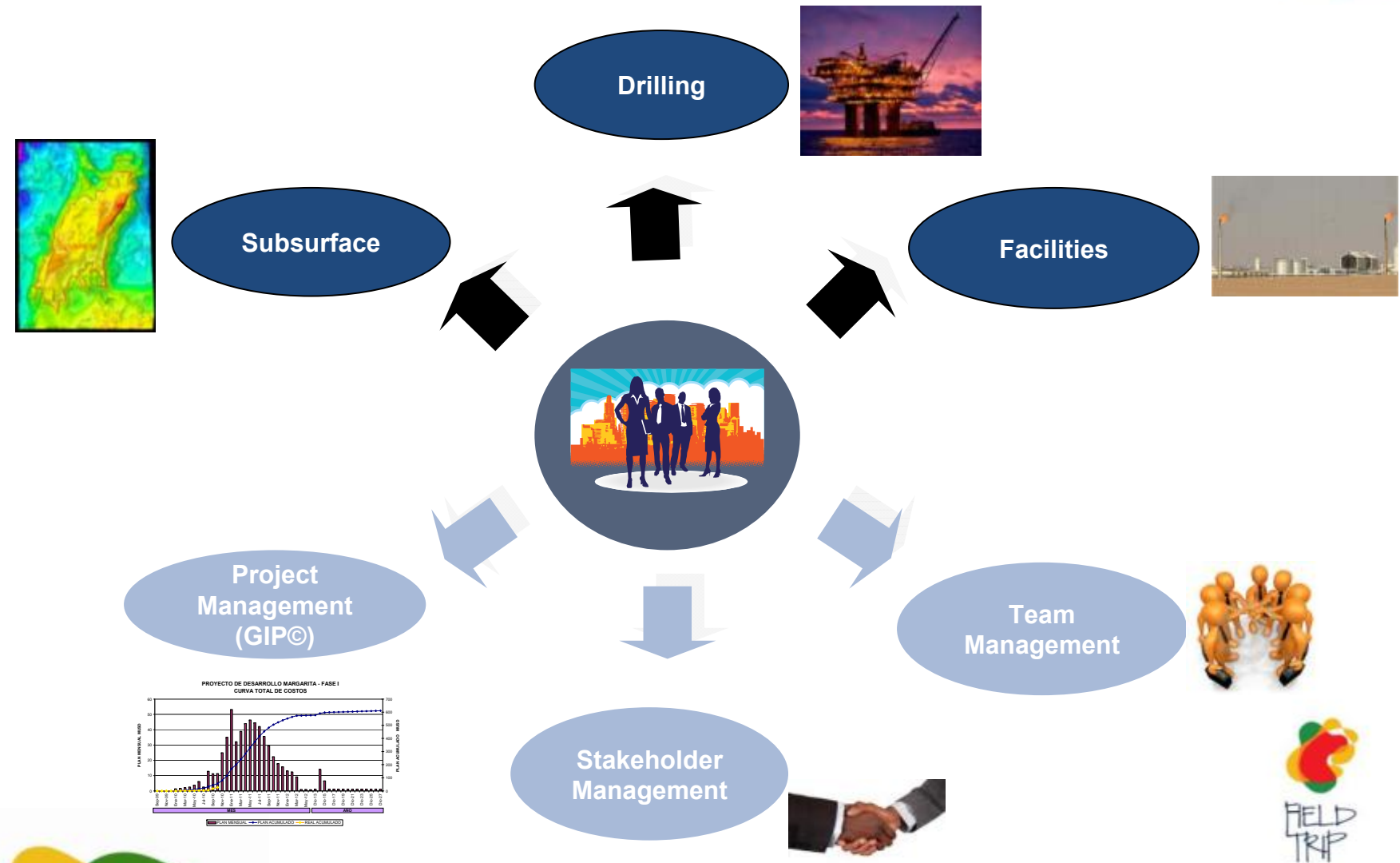


Peru	Bolivia	Venezuela	Spain	Algeria	Brazil	
Kinteroni	Margarita	Cardon	Carabobo	Lubina & Montanazo	Reggane	Guara
Project Manager	Project Manager	Project Manager	Project Manager	Project Manager	Project Manager	Project Manager
						
Staff 85	Staff 76	Staff 98 (32 Repsol)	Staff 80 (42 Repsol)	Staff 8	Staff 20	Staff 12 (shadow team)

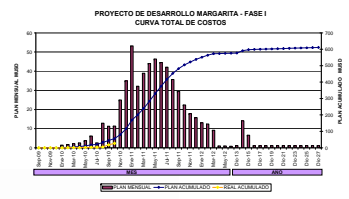
- ▶ Ad-hoc project organization
- ▶ Intensive recruitment and rotation to projects
- ▶ Reinforced training in technical and management competences



# Technical and management competences



Project Management (GIP©)



Stakeholder Management



  Technical competences

  Management Competences

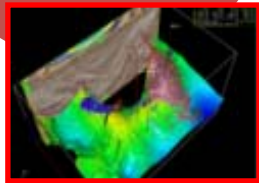
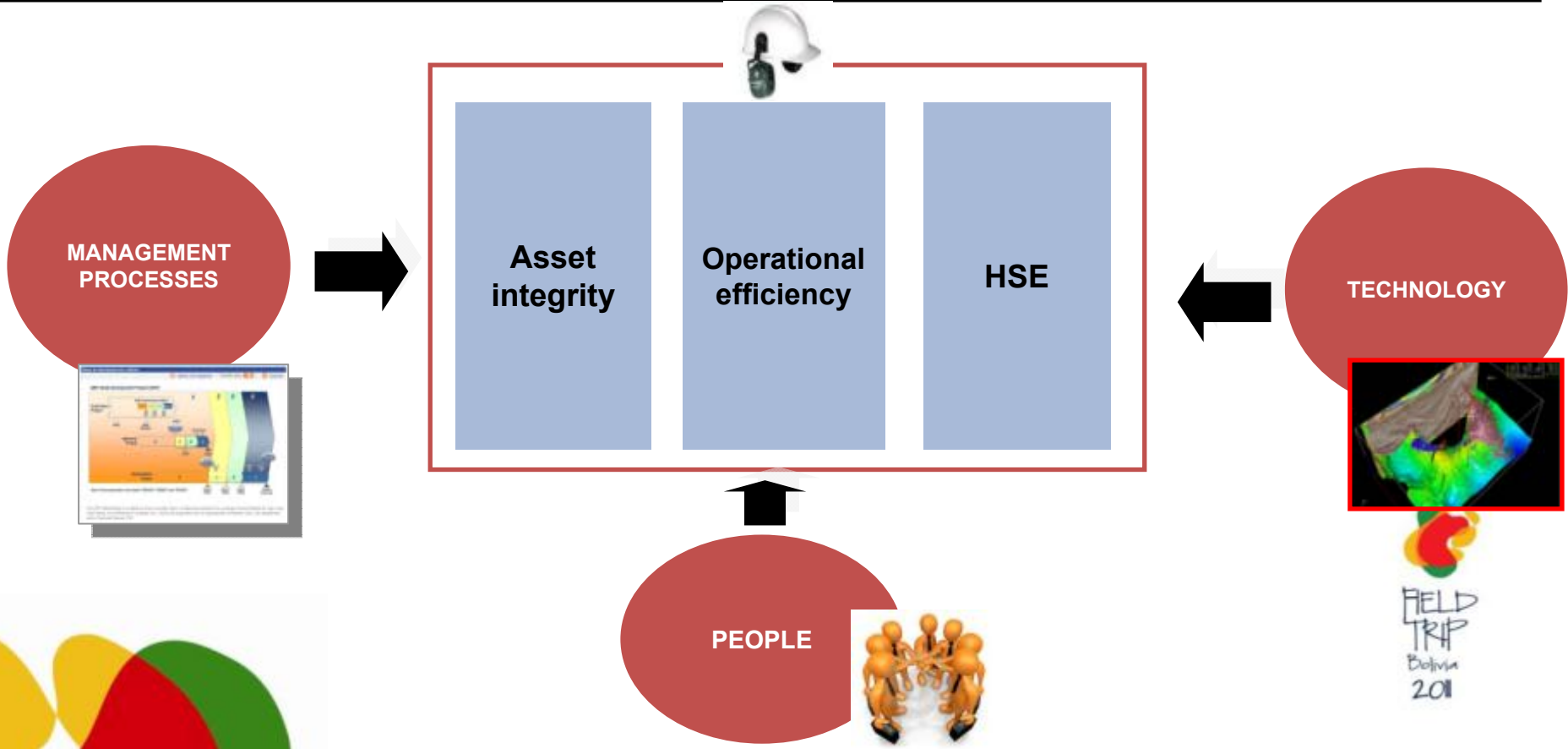


# ...and now moving to reinforcing Operations Management



TARGETS

Economic return  Sustainability 



FIELD TRIP Bolivia 2011

# Excellence in operations: the PISA project



- The PISA project: **P**roduction **I**ntegrity and **S**afety **A**ssessment
- Launched in 2011 for all Repsol-operated production assets and selected joint operations
- Identify, plan and resource improvements in:
  - Asset physical integrity
  - Gap operation vs design window
  - Updated and quality operating procedures and manuals
  - Technical standards and specifications in place
- Action plans for 2012 approved and resourced



# Concluding remarks



- Projects already in the pipeline to ensure growth in reserves and production
- Organization and project management practices in place
- Intensive recruiting and training done to staff projects
- **Projects on schedule and on budget to start delivering new production from 2012**







## Analyst Trip November 2011

# The Development Project Pipeline

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