

The background of the slide is a photograph of an industrial facility, likely a refinery or gas processing plant. It features a complex network of silver pipes, some with yellow and black safety markings. There are several tall distillation columns and a platform with railings. The facility is surrounded by lush green trees, and in the far background, there are large, forested mountains under a clear blue sky with a few wispy clouds. A white diagonal shape on the right side of the image contains the Repsol logo and the company name.

# The Caipipendi Project in Bolivia, a successful case of integration

UR Pacífico - UN Bolivia Integrating operational efficiency  
with environmental and social aspects, all the marks checked





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## AGENDA

1. Remarks about Bolivia
2. Repsol in Bolivia
3. Caipipendi Block Background
4. Project Execution and Third-party Valuation
5. Economics of the Project
6. Environment and Safety
7. Stakeholders
8. Conclusions

# 1. Remarks about BOLIVIA

## Plurinational State of Bolivia

- Independent since 1825
- Population: 10.4 Million people
- The last 20 years it has been a democratic country.
- Evo Morales, the first indigenous president elected in 2005 and reelected in 2009 with 64% support, and now he is going for a third period.
- In January of 2009 the New Plurinational State of Bolivia was founded and a new Constitution was enacted (Integrating 36 indigenous communities)
- Organized in 9 departments (provinces), whose governors are directly elected



### Economical & Political Data <sup>(1)</sup>

GDP 2013(p) → \$29.5 billion  
GDP Growth rate (p) → 4.8 %  
Unemployment 2013 (p) → 5.4%  
External Debt 2012 → \$4.3 billion

### Oil and Gas data

Total Production → 457.6 KBOE/d <sup>(1)</sup>  
Internal consumption → 126 KBOE/d <sup>(1)</sup>  
Current Export (NG) → 51.4Mm3/d <sup>(1)</sup>

### E&P Main Operating Companies

YPFB Andina  
Petrobras  
Total

BG Bolivia  
PAE  
YPFB Chaco

## 2. Repsol in Bolivia

- Present in Bolivia since 1997.
- Suscribed 6 Operation Contracts.
- Owner of 48.9% of YPFB Andina S.A (the biggest oil company in Bolivia), including :
  - 21 Operation Contracts.
  - 24.5% of Rio Grande Plant, gas compression service to Brazil market.
  - 21.8% of Transierra S.A , gas transportation service to Brazil market.
- Working force : 265 people
- Indirect employment : more than 3,000 people



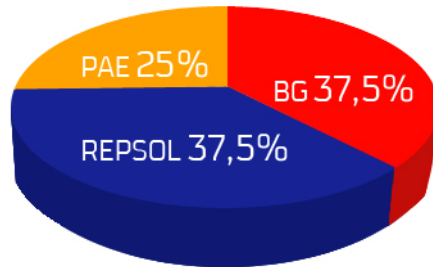
### 3. Caipipendi Block Background

Challenging project

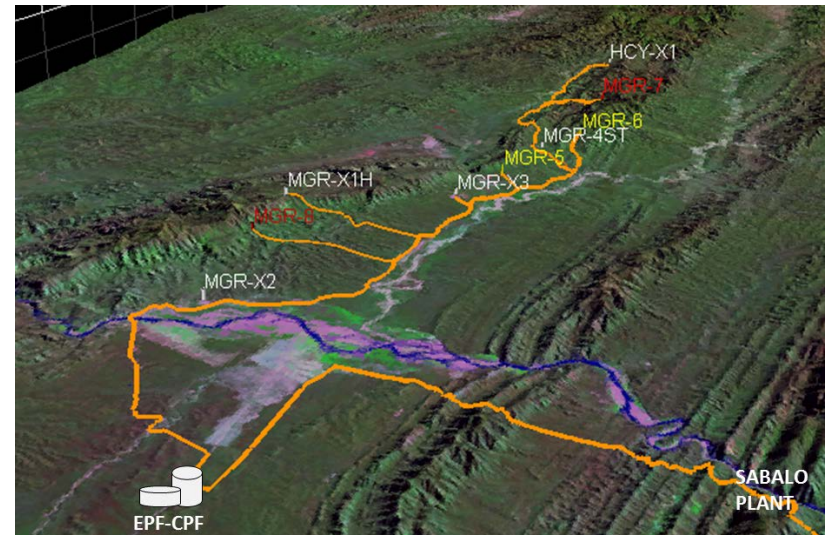
Geologically complex

Remote location

Indigenous communities



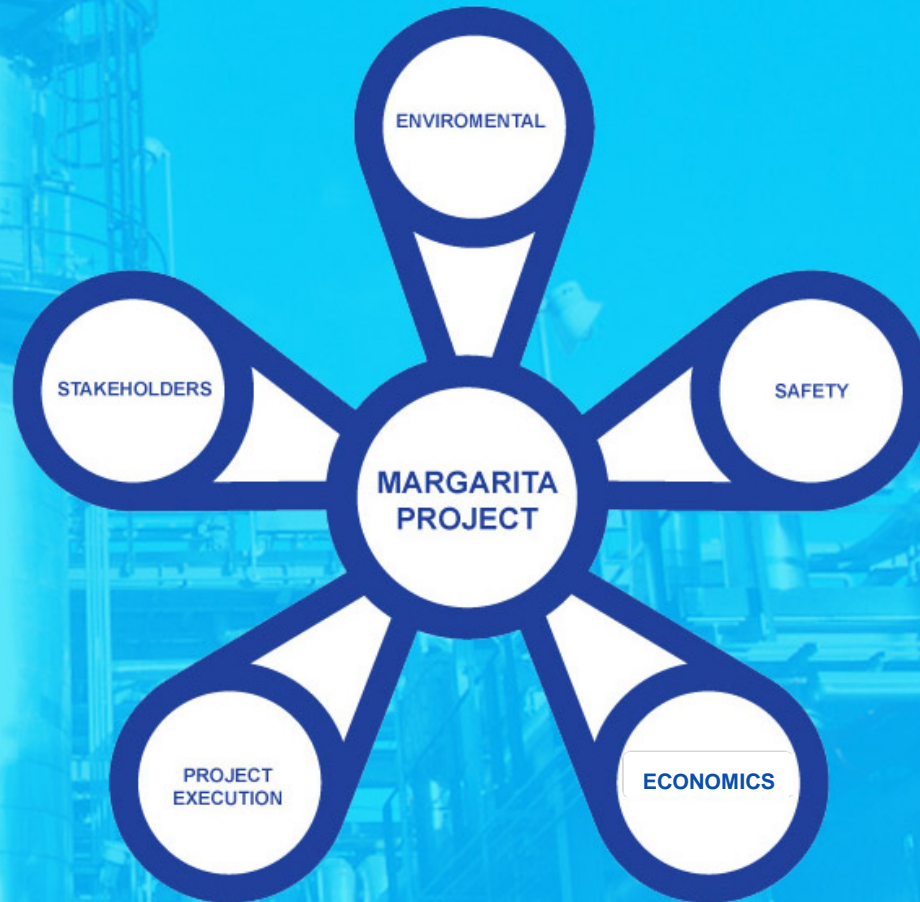
- Operated by Repsol in the Caipipendi Consortium with Partners BG and PAE.
- 7 wells drilled and 3 Huamampampa reservoir repetitions discovered.
- Original Processing capacity 2.3 M m<sup>3</sup>/day, expanded to 3.0 M m<sup>3</sup>/day in May 2011.
- Two pipelines, 10" and 24", connect Margarita to Sábalo, operated by Petrobras, where production is delivered to the national transporter.



*Current daily production:*

- 15 MM m<sup>3</sup>/day of gas
- 20,500 Bpd of liquids







## 4. Project Execution and Third-party Valuation

### VISION

To execute the most technical and economical efficient gas field development project in Repsol

### STRATEGIC OBJECTIVES

#### SUBSURFACE

To capture and develop the necessary reservoir knowledge to optimally develop the field.

#### DRILLING AND SURFACE INSTALLATIONS

#### TECHNOLOGY

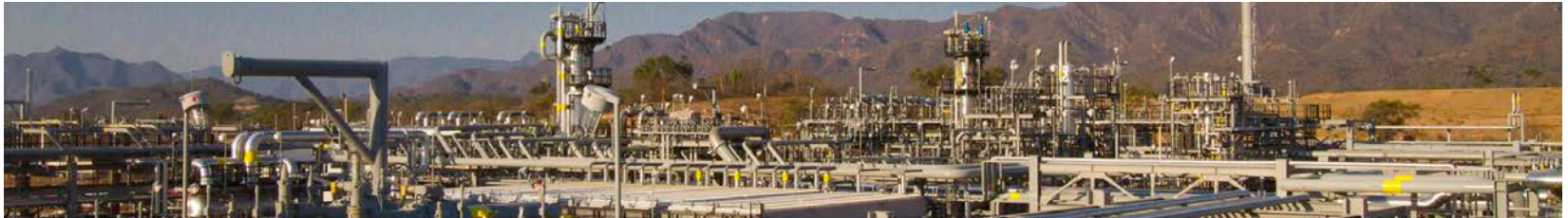
To identify and apply the commercial available technologies to reduce drilling, completion and surface facility costs.

#### BUSINESS

Maximize value generation within Bolivian political context and complying with the contract regulation.



# 4. Project Execution and Third-party Valuation



## STRATEGIES FOR PROJECT EXECUTION

### CONTRACTORS

- EPC Lump Sum:
  - Main contractors international,
  - Local subcontractors.
- Safety Indicators highly weighted in technical evaluation.
- Repsol's community relations policy as a basis to work.
- "Shock wave" hiring strategy based in local man power hiring.

### RESERVOIR STRATEGY

- Reservoir model quantified by risk and reliability.
- Improve deep Seismic interpretation.
- Fracture system modeling.
- Identify applicable secondary recovery process.

### WELLS

- Well design and completion for maximum productivity and recovery.
- Evaluate CO2 impact in well completion.
- Systematic process evaluation for cost reduction.

### SURFACE FACILITIES

- Modular facilities to adapt growing production milestones.
- Flexibility for down and up sizing.
- Full process and field management automation for appropriate data collection, surveillance and monitoring.
- Promote synergies with external stakeholders.

PEOPLE PROTECTION, FACILITIES INTEGRITY AND ENVIRONMENT PRESERVATION

# 4. Project Execution and Third-party Valuation

## BASE

2011

Installation of the EPF2.3MMm3d (activities 1997- 2004) with a revamp to 3.0 MMm3d in 2011

## PHASE I

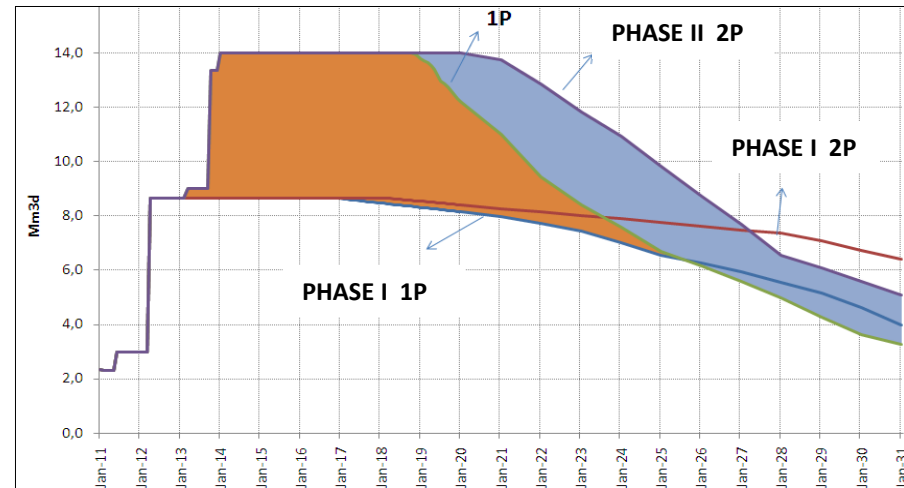
2012

6MMm3d processing module, for monetizing 2012 associated reserves of existing wells.

## PHASE II

2013

- 6MMm3d module.
- Target: to 15 MMCD October 2013.
- Plateau Maintenance Well Drilling Activities. (as needed and expected by 2020).



RESERVES				
MGR & HCY TOTAL	OGIP BCF	OOIP MMbbl	Sale Gas BCF	Condensate MMbbls
1P	5.103	168	2.548	84
2P	7.252	239	4.239	140
3P (EUR)	12.560	414	7.420	245

2012 CERTIFIED by



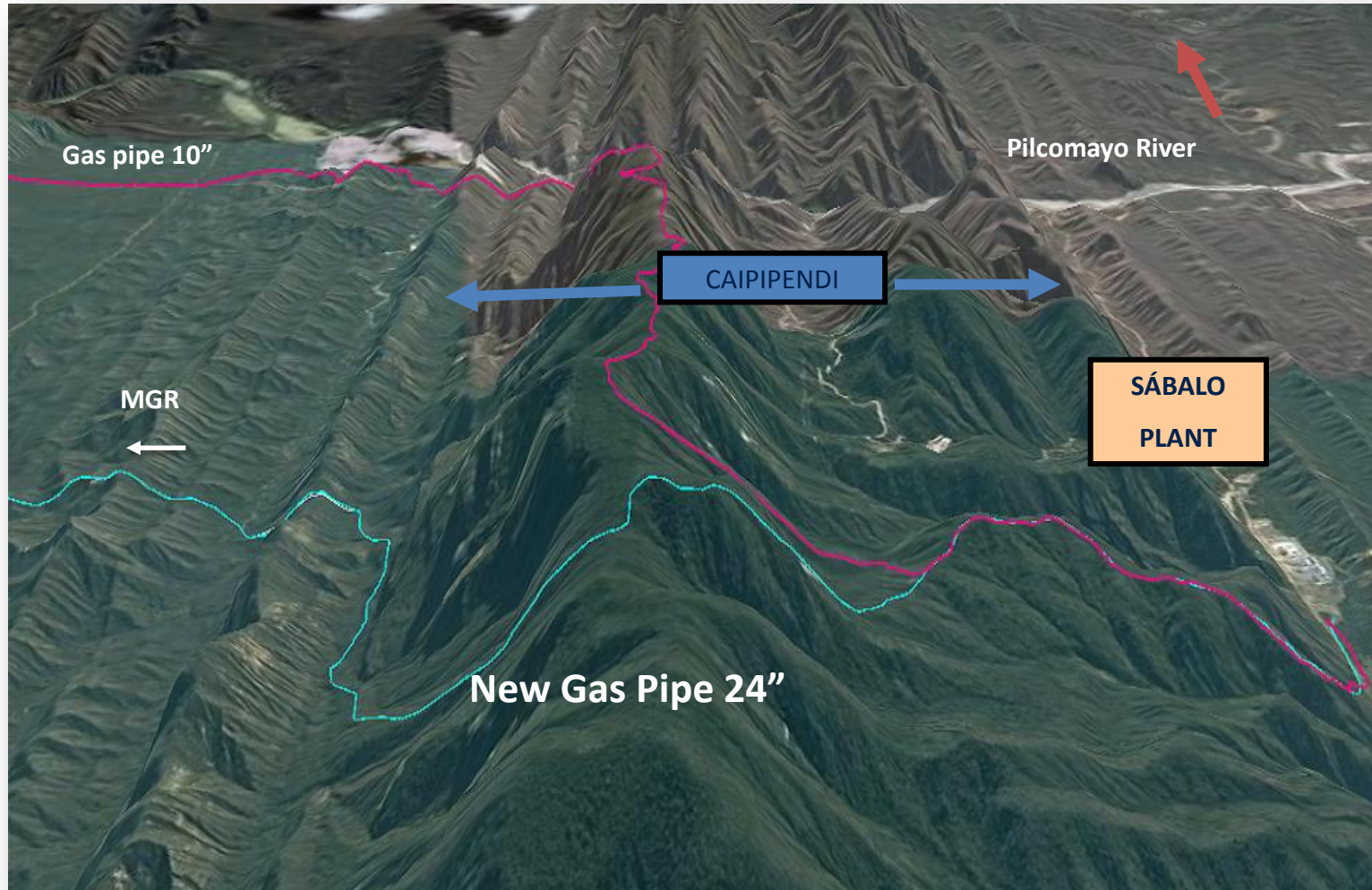
# 4. Project Execution and Third-party Valuation

## CPF





# 4. Project Execution and Third-party Valuation Pipelines





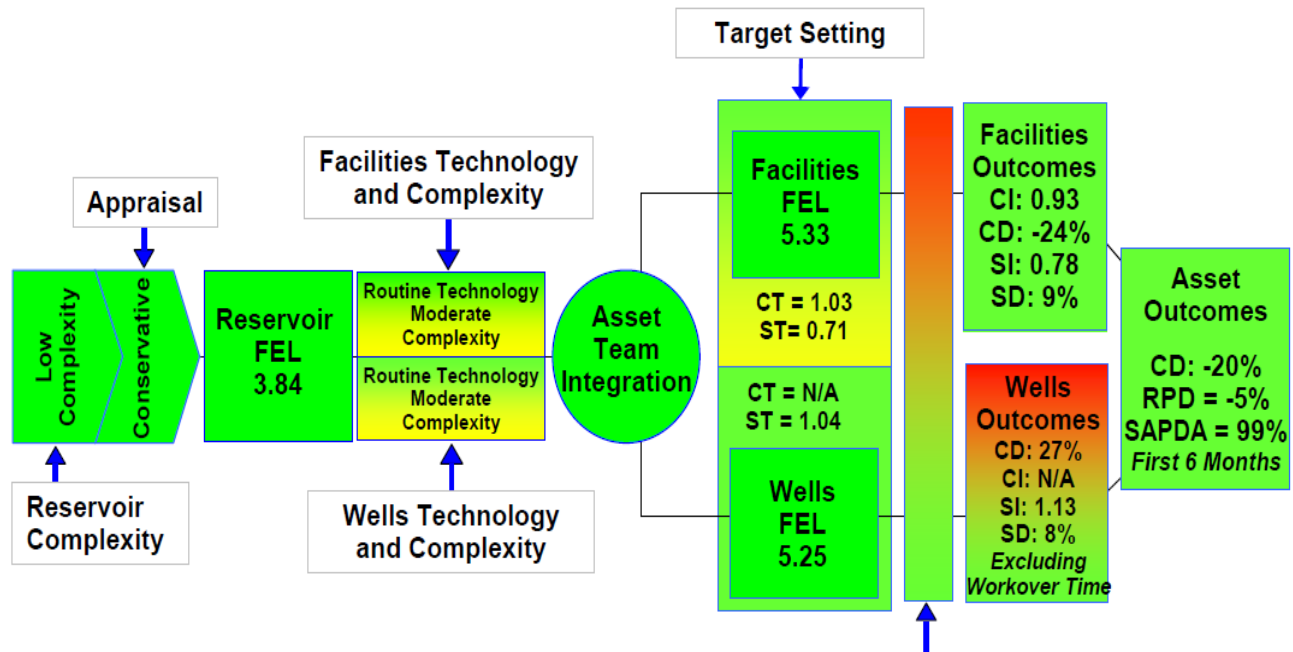
## 4. Project Execution and Third-party Valuation Pipelines



# 4. Project Execution and Third-party Valuation

## BENCHMARK – IPA Consulting

- Good drivers translated into good outcomes:



### INDEX

Best (3-4,75)
Good (4,75-5,75)
Regular (5,75-6,75)
Fair (6,75-7,75)
Screening (7,75-12)

12 GIP events: PR y

Risk	<<< Less	-----	More >>>
Results	<<< Better	-----	Worse >>>
	Low	Medium	High

Project Execution Discipline  
 Project Controls Index: **Good**  
 Project Manager Turnover: **Yes**  
 Major Late Change: **Yes**

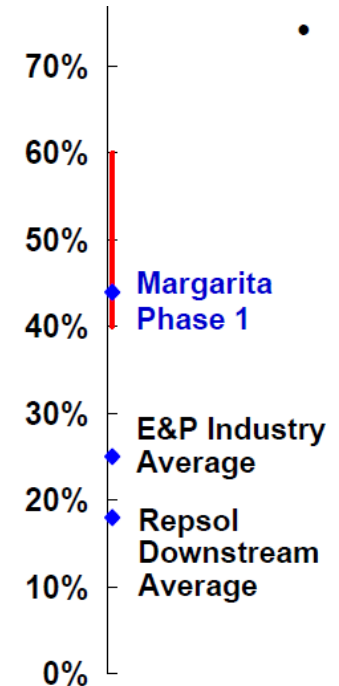
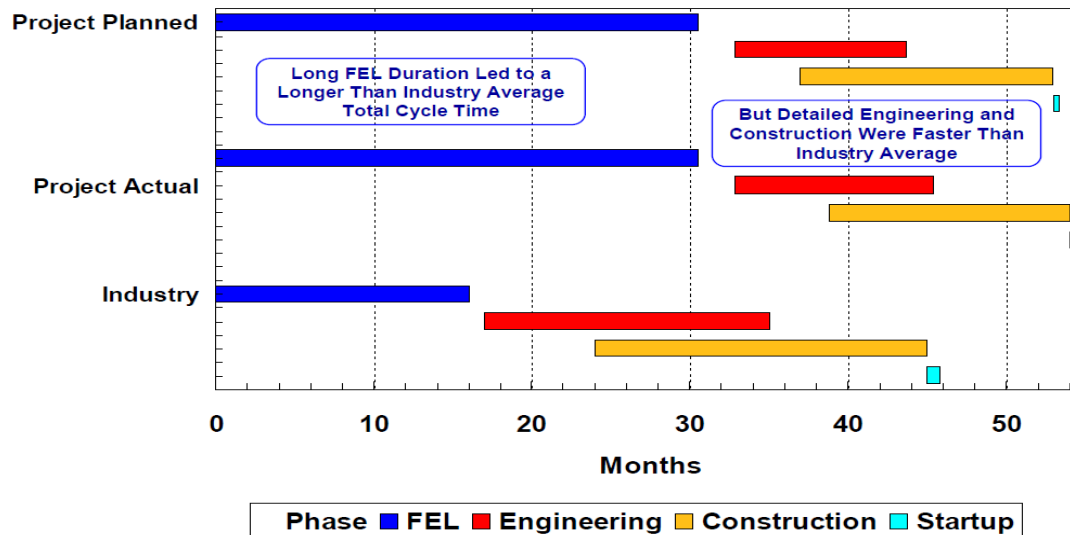
Legend:  
 ST = Schedule Target  
 SI = Schedule Index  
 CT = Cost Target  
 CI = Cost Index  
 SD = Schedule Deviation  
 CD = Cost Deviation  
 RPD = Resource Promise Deviation  
 SAPDA = Schedule Adjusted Production Attainment



# 4. Project Execution and Third-party Valuation

- Lessons to replicate:

**Total Cycle Time**  
*Margarita Phase 1 Project*



**Percentage of Opportunities**  
*(Red line represents recommended range of VIPs use)*

- IPA Consulting conclusions on the project:

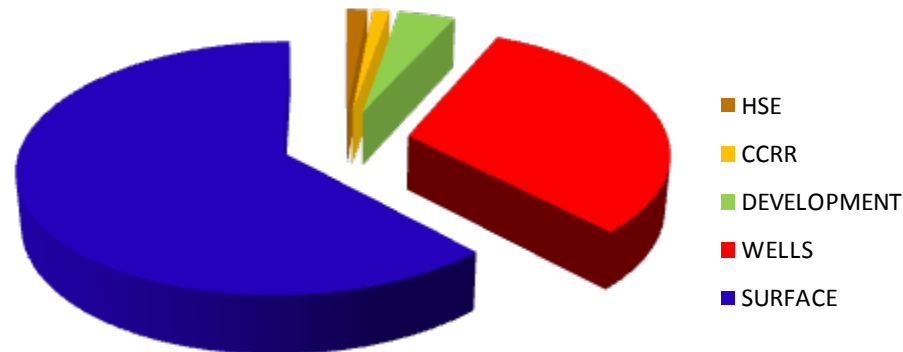
- Good management of Stakeholders
- Disciplined application of the methodology and practices GIP and increase in Value
- Detailed Planning of Project Execution
- Good definition of FEL leads to good results Reservoir Operations

# 5. Economics of the Project

## Margarita Project Gross Investment

### Margarita Project Investment

Margarita Development Project	Cost estimate USD
HSE	18.793.011
CCRR	15.373.019
DEVELOPMENT	51.103.609
WELLS	392.720.296
SURFACE	782.368.838
<b>TOTAL</b>	<b>1.260.358.773</b>





## 5. Economics of the Project

### Productivity

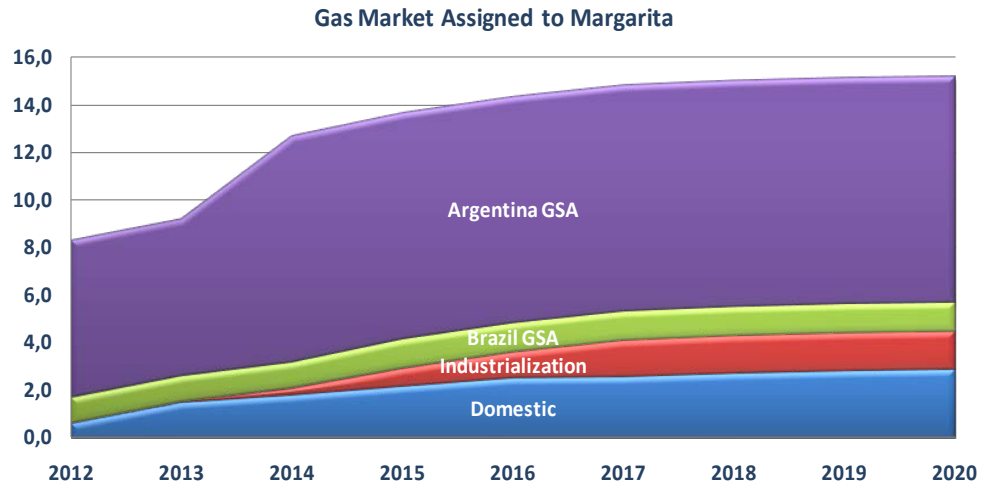
- Margarita 6 well produces six million cubic metres of gas a day and becoming the **most productive well in the whole Sub-Andean basin.**
- A series of **new technologies** have been used during the work on the well to optimize drilling times and guarantee a longer useful life, estimated at 20 years:
  - Seven-inch diameter pipes were used to allow the production of high gas flows without risk of erosion.
  - Furthermore, they are manufactured with Cr13 steel which protects the installation from the effects of corrosion caused by the carbon dioxide in the gas.





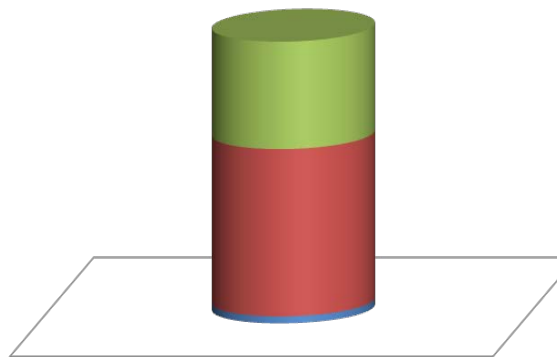
# 5. Economics of the Project

## Most Favorable Markets in the Region



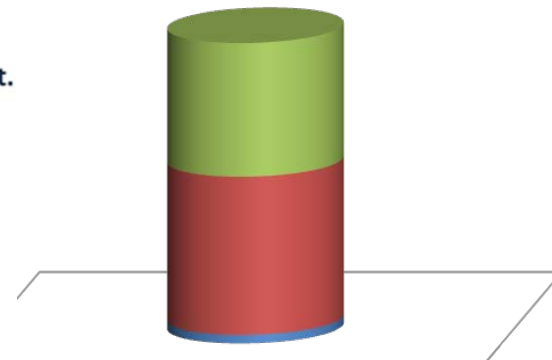
7,7 USD/MBTU (vs. \$ 3,7 HH)

7,6 USD/MBTU



2013 Price Mix\*

- Argentina GSA - 10,3 USD/MBTU (f(FO and Diesel int. Prices))
- Brazil GSA - 8,8 USD/MBTU (f(FO int. Prices))
- Domestic - 1,0 USD/MBTU Regulated



2016 Price Mix\*



## 6. Environment and Safety

### STRATEGIES FOR PROJECT EXECUTION

#### E&S Planning

Safety and environmental strategies, plans and resources.  
Corporate Safety and Environmental standards.

#### Monitoring and assessment of E&S performance

To ensure that the Project's E&S performance is evaluated systematically, and that the required continuous improvement actions are put in place.

#### Stakeholders Relations

To ensure effective interaction with the Company's internal and external environment and interest groups on issues relating to Safety and the Environment, taking their needs and demands into consideration.

#### E&S Risk and Impact Management

To ensure that the level of risk and impact are identified, assessed and controlled in order to prevent and mitigate the consequences.

#### Incident Management

To communicate, register and investigate incidents according to Company criteria in order to ascertain the cause.

#### E&S audit

To check how E&S risk and impact is identified, evaluated and controlled to define corrective actions

#### Corrective actions and lessons learned management

To check the effectiveness of corrective actions defined and carried out in order to avoid repetition.  
To identify, draw up and disseminate lessons learned in order to enhance understanding of risks and how to control them, and so avoid repeating events.

## 6. Environment and Safety

- Emissions Reduction Project
- Repsol Bolivia, made investments in equipment and facilities, as well as changes in the implementation of the well testing, in order to recover some of the gas and direct it safely to the Margarita processing plant, thus minimizing the volume of gas burned.
- This project was first implemented in the MGR-5 and MGR-6 wells , having recovered over 300 MMPC of gas, which is equivalent to reducing the emissions in 20.588 t of CO<sub>2</sub>. This represents 35% of total emissions for the whole Margarita Field in 2012.

- Recomposition-restitution of land for pipelines route.
- Landscaping, recovery of native species.
- Recovery of gray and black waters.
- Thermal integration.
- Efficient and low-emissions combustion.





# 6. Environment and Safety

## Safety Management

### Main aspects

- Emergency Response
- Emergency response plan for each project component
- Over one hundred drills,
- Specialized rescue emergency group for working at height and steep slopes pipeline construction.

## Integrated Project Management

- E&S deliverables on each phase of the project
- technical reviews to ensure that risks have been properly identified, evaluated and controlled.

## Permit to work

- Over one hundred thousand permits approved with the associated job safety analysis and toolbox talks.

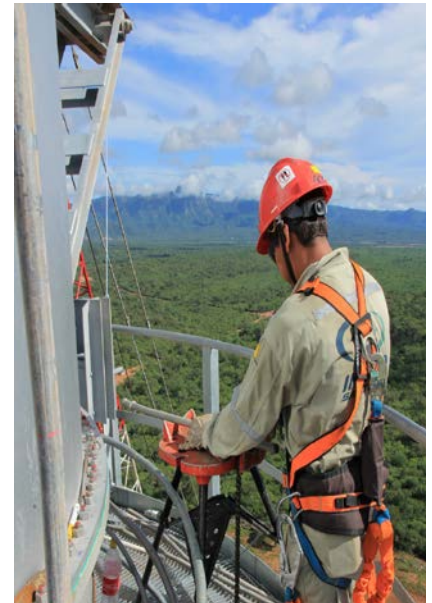


## Contractors

- Bidders pre-qualification considering E&S criteria,
- E&S requirements on bidding package
- Contractors E&S management, audits and inspections

## Land transport management

- Over five thousand truck journeys inspected and escorted,
- Route hazard assessment,
- In vehicle monitoring system as a contract requirement,
- Drivers and vehicles assessment,
- route speed control,
- Safety campaigns in the local communities

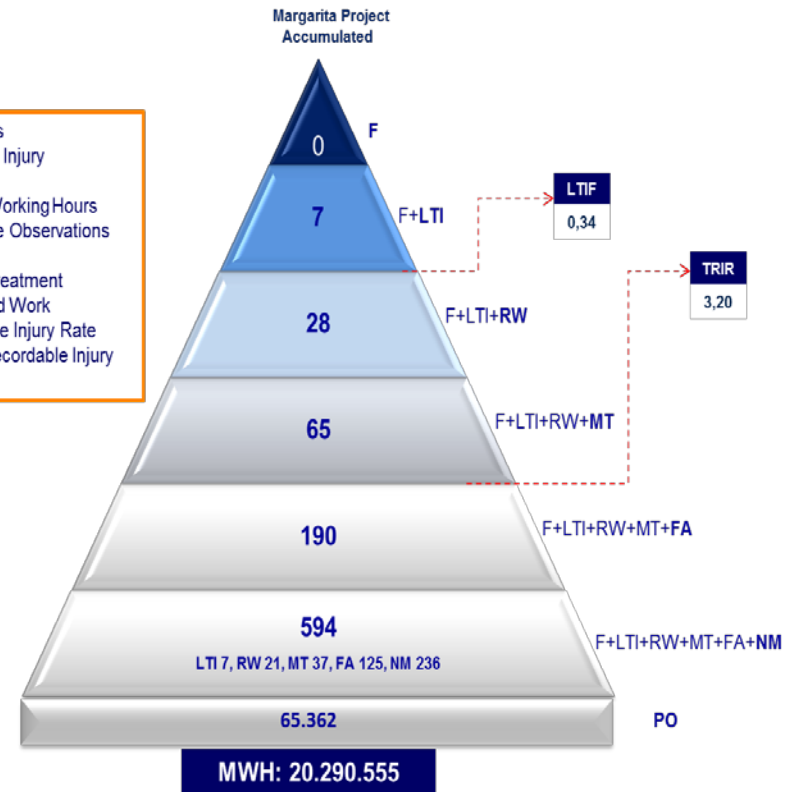


# 6. Environment and Safety

## MAIN INDICATORS

<b>7 Lost Time Injuries</b>	<b>LTI FR: 0.34</b>	<b>Zero fatalities</b>
<b>370,000 Hours Owner PMT</b>	<b>20 million Hours Worked</b>	<b>18,813,674 km traveled in the field</b>
<b>100,000 permits to work issued</b>	<b>100% Incidents investigated (176)</b>	<b>3,800 peak workers on site</b>
<b>100% Improvement actions implemented (486)</b>	<b>120 Thousand hours of safety training</b>	<b>21 safety stand downs</b>

**NM:** Near Miss  
**LTI:** Lost Time Injury  
**F:** Fatality  
**MWH:** Man Working Hours  
**PO:** Preventive Observations  
**FA:** First Aid  
**MT:** Medical Treatment  
**RW:** Restricted Work  
**LTIF:** Lost Time Injury Rate  
**TRIR:** Total Recordable Injury Rate



# 7. Stakeholders

Our community relations & social responsibility

## Government

National Government

Local Governments

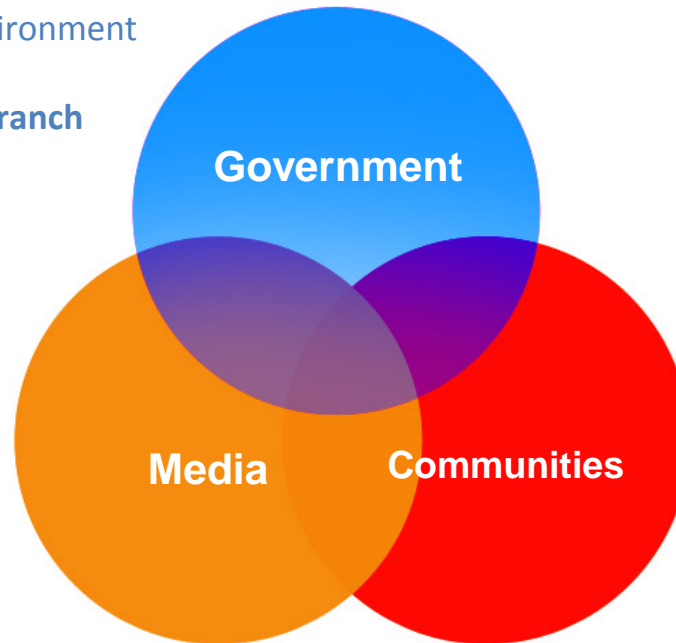
Ministries:

Energy & hydrocarbons

Water & Environment

Presidency

Legislative Branch



## Media

Opinion Leaders (10)

Especialized Magazines (3)

Newspapers (5)

News Agencies (5)

Radios (10)

## Communities

National APG\*

Palos Blancos Huacaya

Ancahuasu Villa Mercedes

Entre Ríos

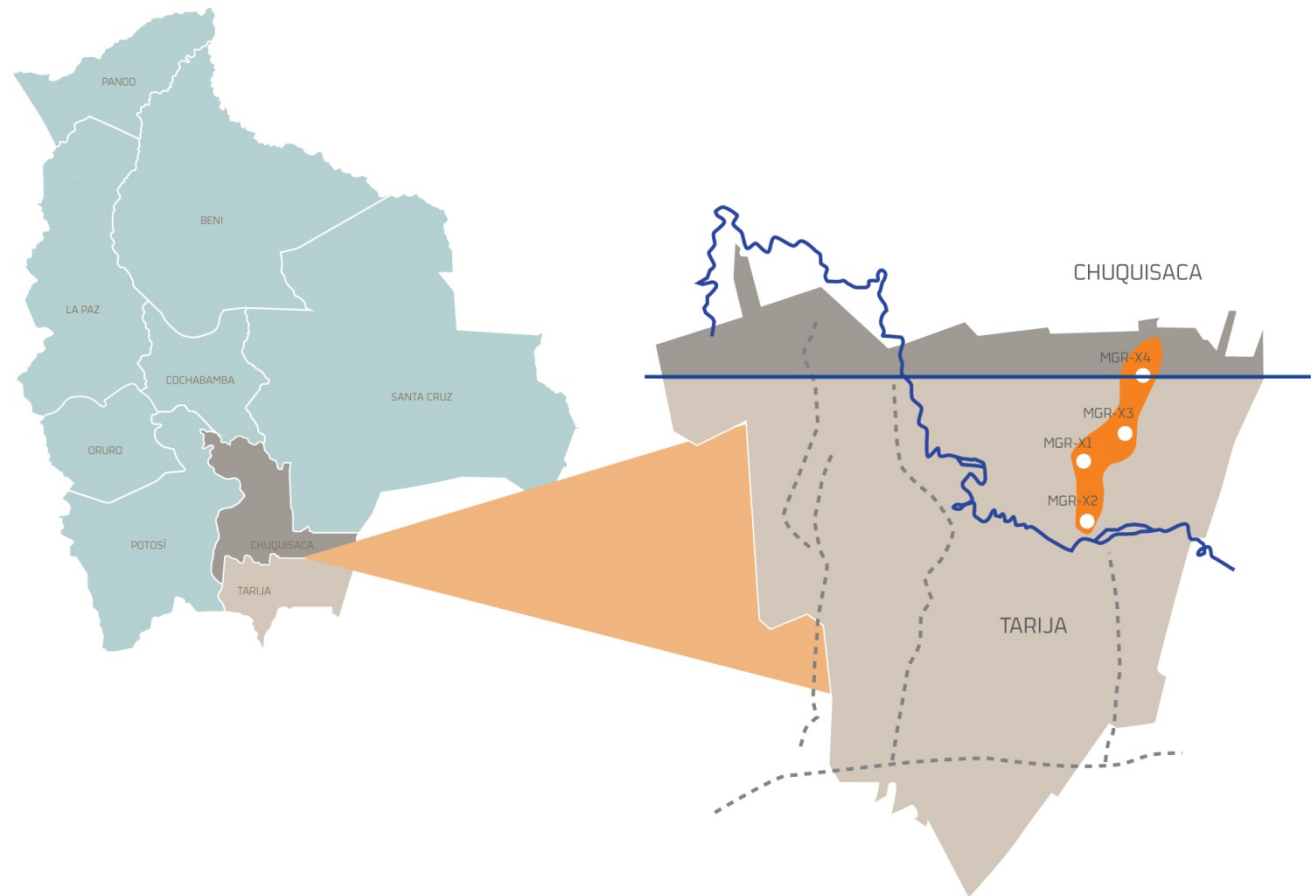
\* Guarani People Association



# 7. Stakeholders

## Map of communities

The Margarita Field is within the Autochthonous Community Territory (TCO), belonging to the **Guaraní People Assembly of the Itika Guazu (APG IG)**. The Assembly unites 3 Zonal “Capitanías”, distributed in three zones and 36 Communal “Capitanías”, where 965 families live. Communities nearer to our operations are: Itaparara, Kumandaroty, Yuati and Zapaterambia.



## 4. Project Execution and Third-party Valuation : Communities Realationship

Repsol Bolivia, manages its relationships with communities following the following Repsol guidelines:

Community Relations Policy.  
Policy on relations with indigenous communities.

Repsol Bolivia has a social management system oriented in three strategic guidelines:

- Social Impact Management
- Contribution to local well-being
- Stakeholder Engagement

Tools:

- Training guidelines on management of social issues
- Assessment and monitoring of social corporate standards.
- Grievance mechanisms procedures



# 7. Stakeholders

## Local content

- As stated on the Operation Contract, Repsol gives preference to Bolivian personnel.
- Foreign personnel hired by the companies participating in the project cannot exceed 15%.
- Repsol's "shock wave" hiring strategy consists of hiring first personnel from the communities where there is a "direct influence" (those closer by), and then as more personnel is needed, it is hired from communities further away where there is an "indirect influence".
- In case there was an area where the required specialization was not found, it is looked for in other cities or, if necessary, it will be hired internationally, always keeping in mind the 15% maximum allowed.



## Conclusions

Margarita-Huacaya Project, was safely on stream, on time, completed with a 12% reduction on the original estimated budget and with a throughput far exceeding original expectations.

Logistic issues and local constraints challenges were overcome to comply with the tight project schedule, enabling the delivery of gas and condensate production as per the Development Plan approved by the Bolivian authorities.

Several factors contributed to the project success: good subsurface definition, detailed execution planning, rigorous gatekeeping and project management processes, project team integration, disciplined change management, good management of external stakeholders, etc.

Efficient multinational Team Integration (76 people) and High Project Management standards (Safety, Scope, Quality, Cost and Schedule) resulted in a Project complying with all the objectives established; excellence was confirmed through an external benchmarking developed by IPA.





Building trust between actors:  
Case Study: Margarita





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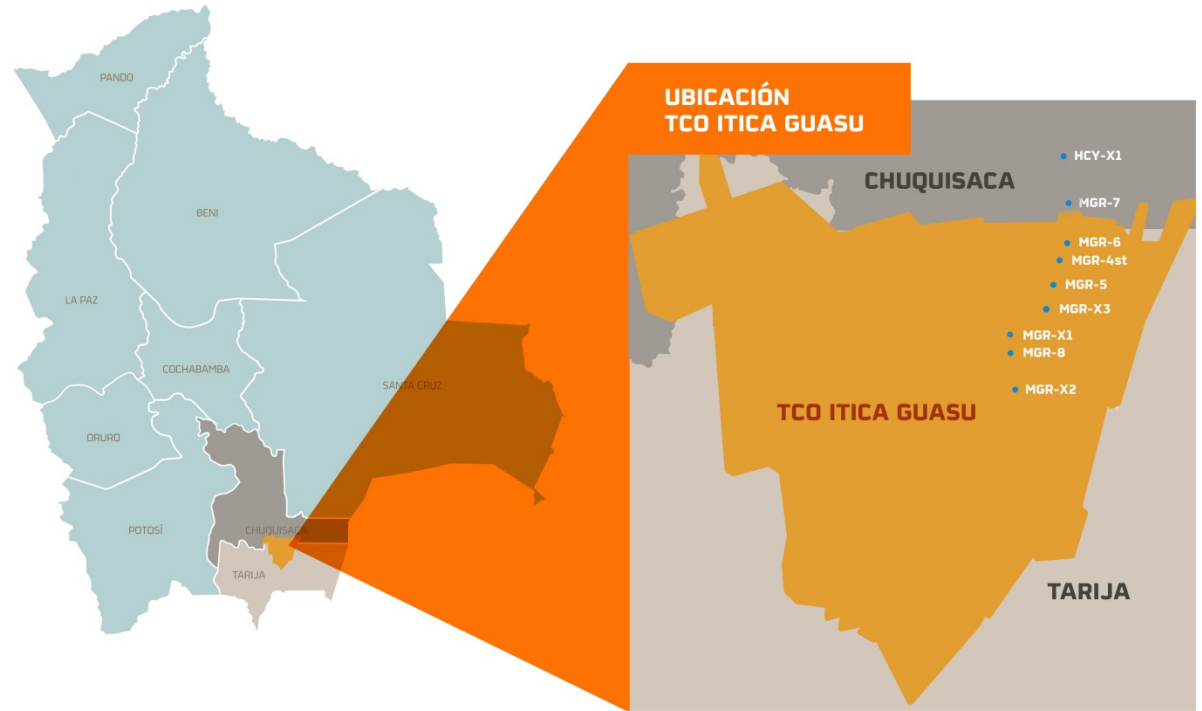




# Caipipendi

## Margarita Field location

The Margarita Field lies within the 'TCO' Original Community Territory, belonging to the Assembly of the Guaraní People of Itika Guazu (the 'APG IG').

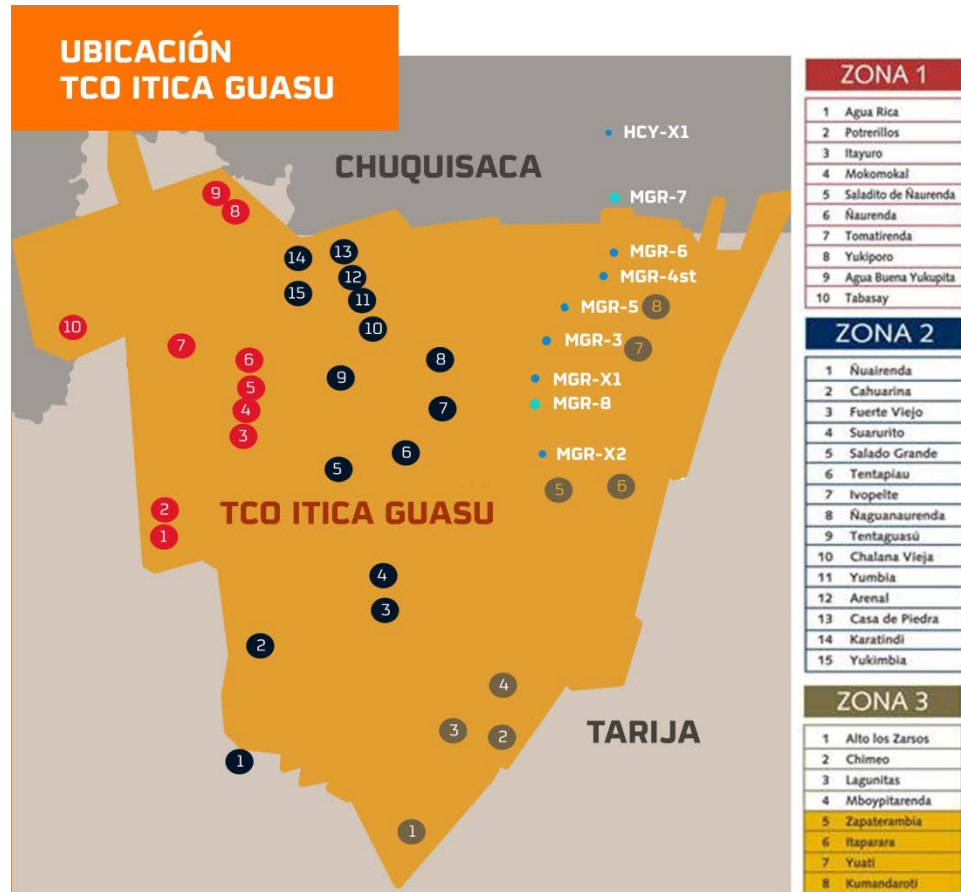




# Caipipendi

Area of influence of the Project/Division of the TCO IG

Within the area of influence of its operations, undertaken in the area of the Caipipendi Contract, the location of the Margarita and Huacaya fields, Repsol Bolivia currently has a relationship with indigenous and native communities.

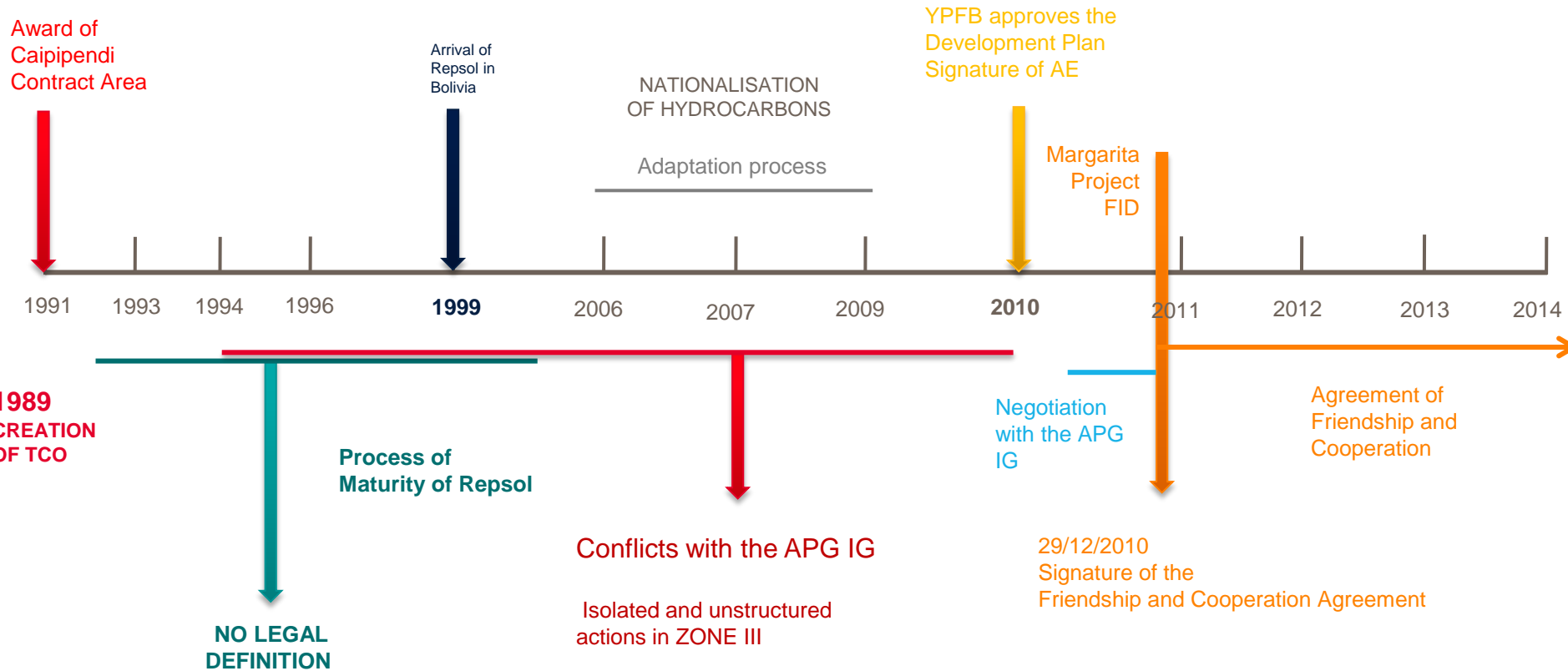






# Repsol - APG IG historic relationship

## Background



1989 - Approval of ILO Convention 169  
 1992 - Adhesion of Bolivia  
 2005 - Incorporation within the HC Act



## Identify the key

### Building Trust

Process of Consultation and Participation  
Projects locked in the hands of the "PIOs"\*  
No right of veto  
Regulations do not facilitate or develop the process

Outcome of the Consultation and Participation process:

- Identification of socio-environmental impacts not detected in the EIS
- Agreement validation process
  
- Negotiation of compensation/Intangibles/what is the value?

} State

} Company

Challengin process

Real objective of the "PIOs"

Social investment:

- Define their development model
- Achieve protagonism:
  - Define the programmes
  - Execute the programmes
  - Administer the funds

\* PIOs : Indigenous and original peoples



## Historical APG IG relationship

### Background of the Agreement

Difficulties were encountered at the outset of negotiations as there were issues pending resolution, while the future demands were not solidly established or structured. Action was furthermore expected in the area on the part of Repsol which was not appropriate for the company's role.

In May 2010, the APG IG showed more flexibility when Repsol presented a negotiation strategy suggesting that the issues be separated out into:

- 1) Pending Compensation, Indemnification and Remediation (CIR);
- 2) Process of Consultation and Participation (PCP) and
- 3) Friendship and Cooperation Agreement (AAC), during the Development Plan approved by YPFB.

In negotiating the agreement, the APG ING designated the international organisation Nizkor\* as legal and financial adviser of the APG IG for the negotiation and implementation of the Agreement, and for financial negotiation and implementation of the "Itika Guasu Investment Fund" resulting from it.

\*Nizkor is an international organisation working for the respect and promotion of human rights. Its involvement as legal and financial adviser is the consequence of a formal agreement between the APG IG and Equipo Nizkor in place since 2006, which was ratified and extended by the Assembly of 1 December 2010.

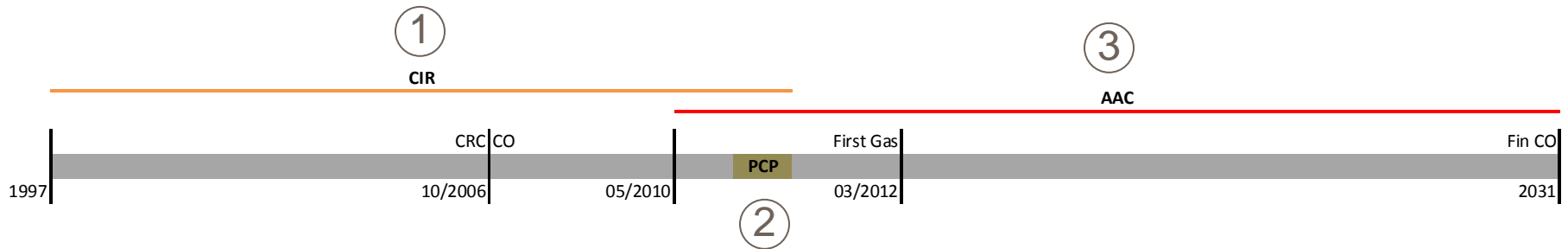




# Strategy

in accordance with the project timeline

1. Pending Compensation, Indemnification and Remediation (CIR).
2. Process of Consultation and Participation (PCP).
3. Friendship and Cooperation Agreement (AAC).



1. CIR and 2. PCP } Compensation  
Indemnification  
Remediation

3. AAC } Social Investment  
Part of the project  
investment budget



## Definition of a long-term agreement

### A milestone in the industry (20 years)

The agreement includes the following:

- Creation of a development fund for the APG IG (AAA +)
- Contribution of 13.5 M USD to the Development Fund
- Capital fixed for 10 years
- The interest accruing on the fund will be freely available to the APG IG and use will be allocated to development projects defined by the APG IG Council of Wise Men.
- The commitment in the Agreement on the part of the APG IG is to facilitate, promote and not interrupt operations for the development of the Contract Area.
- Additional payment of 2 M USD connected with compensation for the new environmental licensing (2 licenses) required by the project, and recognition of the 9 past licences already obtained, in which the APG IG complained that it had not been involved.
- Execution of an independent environmental audit to establish whether there were any tasks pending remediation, establishing the baseline for the future but not involving any further disbursements of monies in favour of the APG IG.
- Factor of 0.75% of the future investment to be made (if any) in social investment.



## Socio-environmental monitoring

### Management of the Agreement

- Within the plan for Repsol's relationship with the community, socio-environmental monitoring of the APG IG represents a forum for dialogue and permanent participation between the Guarani community and the company.
- Provided the safety requirements are fulfilled, the delegated APG IG monitors have unrestricted access to those areas where Repsol projects are being undertaken within the Itika Guassu TCO, in order to obtain first-hand information on the activities being performed.
- Periodic meetings are established between Repsol and the APG IG to consider observations and suggestions resulting from the monitoring, recorded in minutes.
- However, the work of the monitors is permanent, and they interact with the Repsol community relations team on a constant basis.
- This circumstance has served to address all concerns of the APG IG during Phase 1 of the Margarita Project, with all observations achieving satisfactory closure.





## Signature of the Agreement

Consolidation of a new relationship structure

On 29 December 2010 the Friendship and Cooperation Agreement was signed by the APG IG and Repsol Bolivia.





## Conclusions

The essential aspect to manage the relationships with the indigenous communities is trust. Such trust is built by:

- Permanent and direct dialogue
- Genuine interest to learn and understand the cultural differences
- Constitute teams with suitable members to carry forward the relationship processes.
- Company support at the highest levels of the organization:
  - » Policies and procedures to guide the action with communities
  - » Budget approval
  - » Proper human resources allocation to support the community relations structure.

**THANK YOU**

