

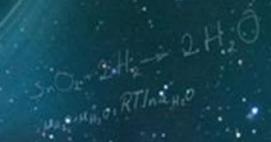


$$\frac{z_{12}^*(L, B)}{m} = \frac{1}{2\pi} \left[\frac{1}{1+c} - \frac{1}{1+c'} \right]$$
$$+ \frac{1}{\pi} [G_2(L, B) - 2G_2(L, 2A) - 2G_2(2L, B) + 4G_2(2L, 2A)]$$

Braskem

New ways to look at the world

International Business Unit Roberto Ramos



Agenda

- ▶ **International Business Unit**
- ▶ **Ethylene XXI Project**
- ▶ **Questions**

Agenda

- ▶ **International Business Unit**
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▶ Business

- ▶ To continuously evaluate the opportunities in countries wherever the feedstock is available under competitive conditions for the construction of Greenfield projects and to support Braskem growing strategy by mergers and acquisitions

▶ Main Targets

- ▶ Support Braskem long term growth strategy, towards new geographic frontiers
- ▶ Be present in new places wherever competitive feedstock is available and/or it is possible privileged access to relevant markets
- ▶ Focus on new projects in countries where Brazil's geopolitical influence allows the leverage of the opportunities
- ▶ Identify and prepare people with entrepreneurial skills and multicultural capability
- ▶ Ensure that new projects shall be aligned with Braskem's growing and sustainability strategies

Concentrations

▶ Mexico

- ▶ JV configuration: done (17 expatriates)
- ▶ Feedstock supply agreement: done
- ▶ Financial Advisor: done (Sumitomo)
- ▶ Basic Engineering: starting in Oct/2010
- ▶ Technology selection: virtually selected
- ▶ EPC Alliance Model: Under negotiation
- ▶ Financial Package: Preparation of information

Concentrations

▶ Venezuela

- ▶ Propilsur: PP alternative location → Under study
- ▶ Polimerica: Analyze alternatives in accessing new gas sources

▶ Peru

- ▶ Project Office: Already established
- ▶ Agenda with Petrobras and other suppliers of gas

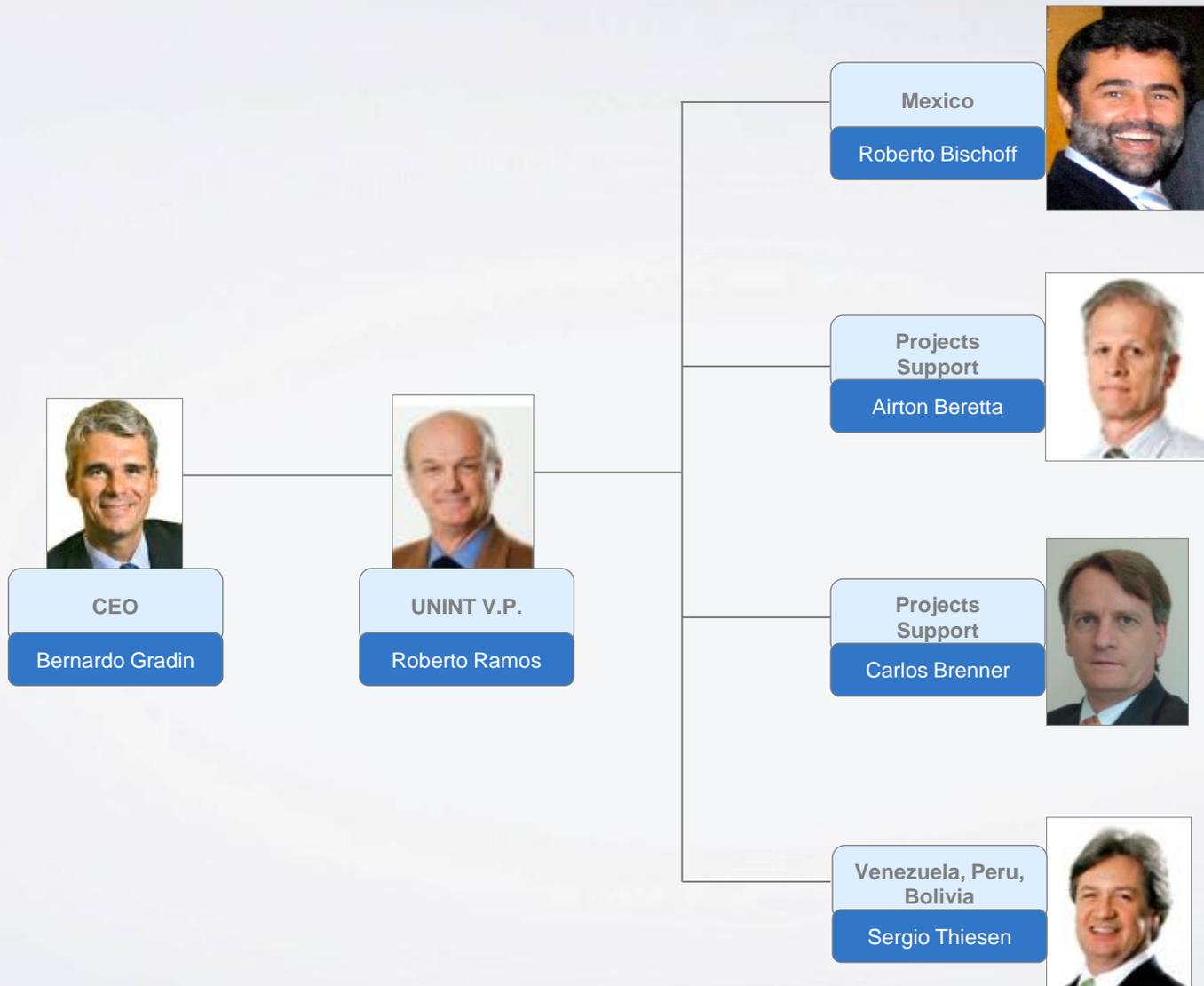
▶ Bolivia

- ▶ Government: Possible revision of the Hydrocarbon Law to attract new investments

▶ Colombia

- ▶ New opportunities under monitoring

Structure



Operation Areas

▶ Expansion in Americas

- ▶ Ensure regional positioning allowing the supply of the regional market from different production centers with more integrated approach and not restricted to Brazilian exports

▶ Greenfield Projects

- ▶ Mexico - Peru - Bolivia - Venezuela

▶ Commercial Offices

- ▶ Chile - USA - Argentina - Colombia - Singapore - Netherlands



Main Regional Front



- ▶ **Mexico:** Ongoing Project: Second largest Latin American plastics market and relevant feedstock producer.



- ▶ **Peru:** Boundary to Pacific coast with natural gas availability. Appropriate place for an Integrated Project. Relationship and feedstock solution under development.



- ▶ **Venezuela:** Largest Latin American feedstock reserves. Natural player for petrochemical development. Economic, social and politic environment demand continuously evaluation.



- ▶ **Bolivia:** Regional proximity with Brazilian and Argentinean markets, existing feedstock and production infrastructure to be developed. Networking under reconstruction.

Enlarge the Horizon



▶ Global Alliances and Partnership:

Continuously evaluate the new growth opportunities abroad

- ▶ Offices: Europe - Asia
- ▶ Projects: Africa, Europe, Asia



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Internationalization with Peopleware

- ▶ **Maturity**
- ▶ **Background**
- ▶ **Capability**
- ▶ **Partner Relationship**
- ▶ **Government Relationship**
- ▶ **Family**
- ▶ **Social and Cultural Integration**



Sustainability

- ▶ **Green Chemistry Technology**
 - ▶ Consolidate Brazilian development
 - ▶ Projects abroad



- ▶ **Up Dated Environmental Criteria**

- ▶ Minimized CO₂ emissions
- ▶ Maximize recycling such as process water
- ▶ Carry out all Greenfield Projects

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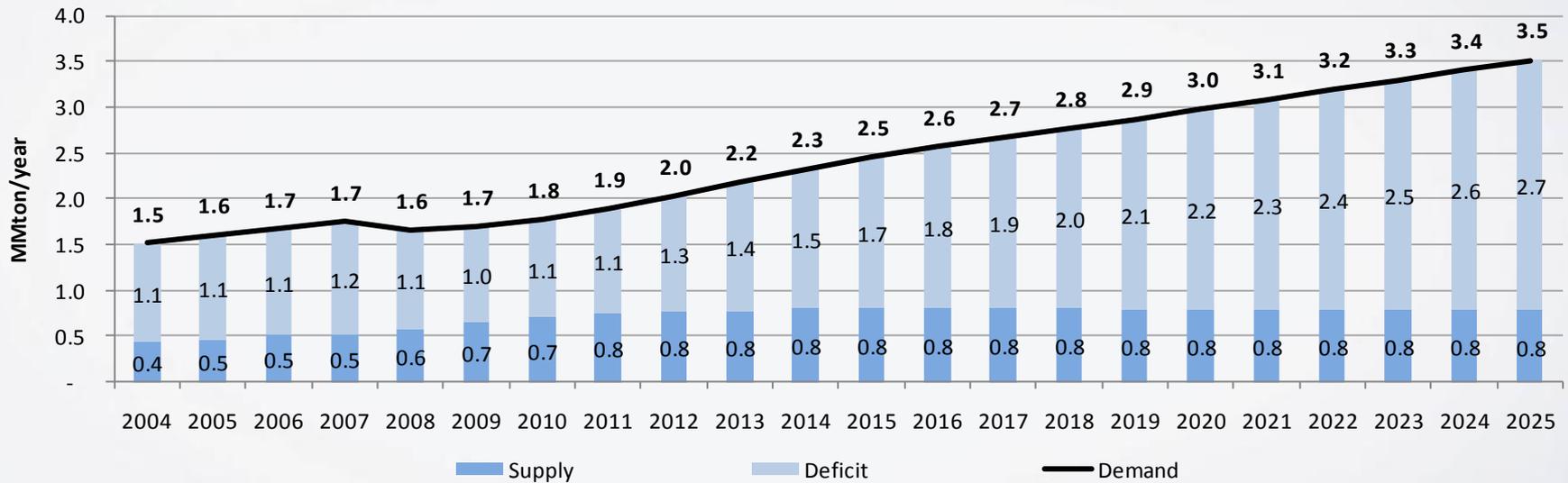
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Polyethylene Market

- ▶ Currently deficit above 1.1 MM ton (2010)
- ▶ Estimated deficit in 2015 (project start-up): 1.7 MM ton
- ▶ Annual Growing rate foreseen: 4.5 % (Period: 2010-2025)

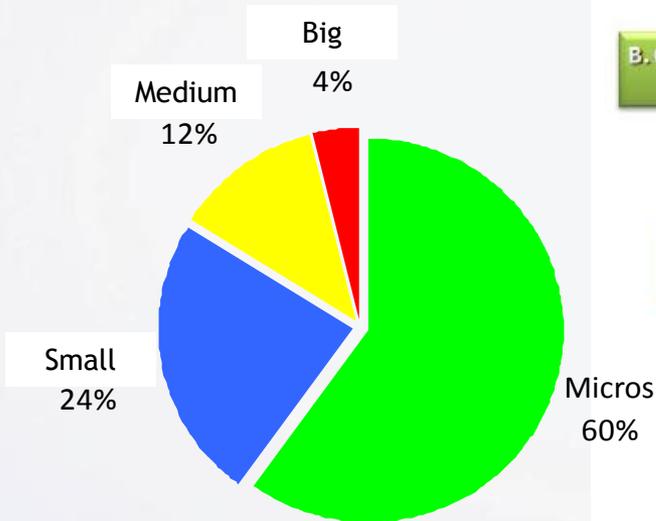
Polyethylene Mexican Market



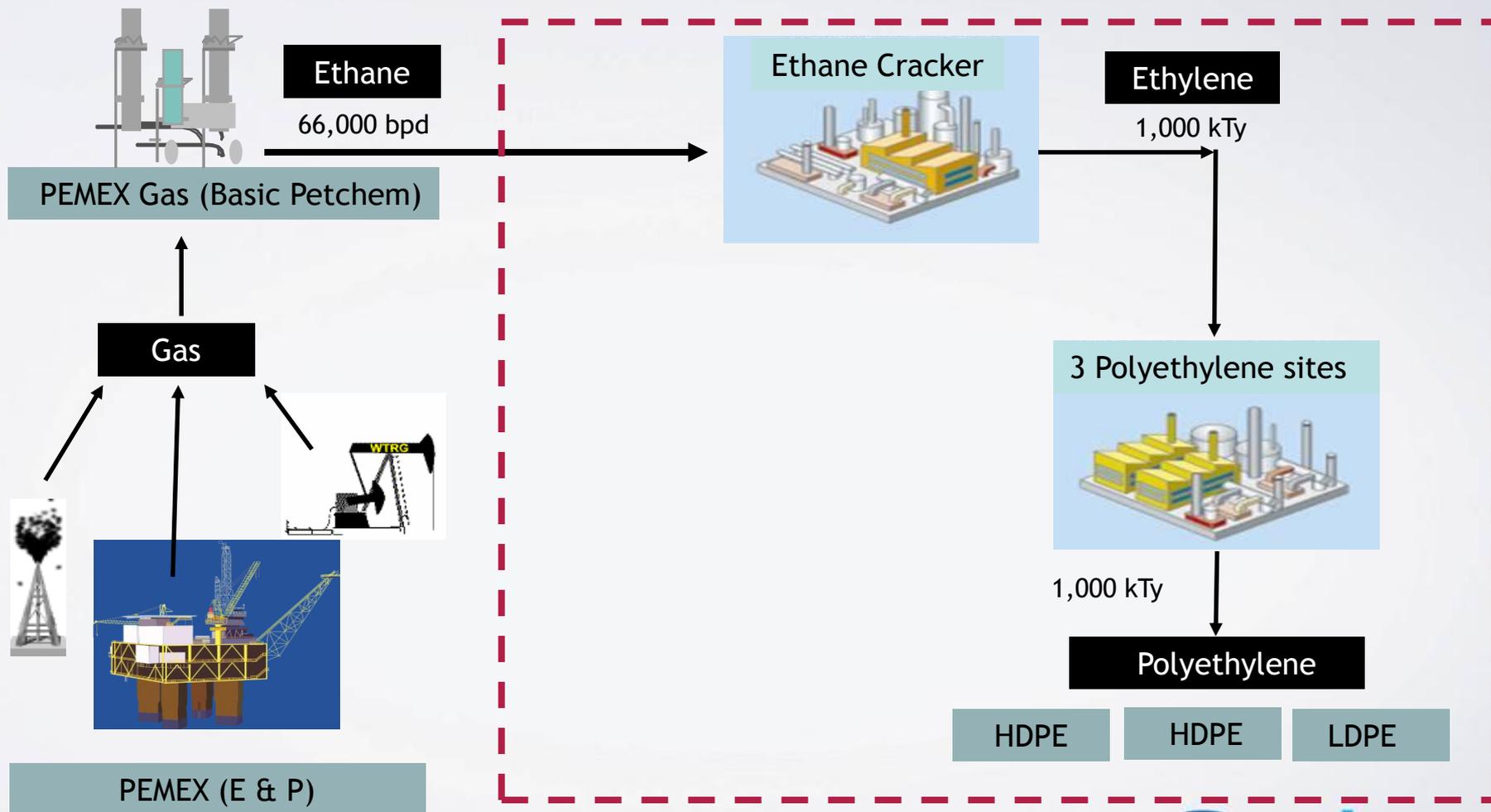
Mexican Converters Industry

- ▶ 3,500 plastics converters
- ▶ 84% small and micro companies
- ▶ More than 5 MM ton of plastics conversion, with 1.8 MM of Polyethylene
- ▶ Main application: Packaging (48% market)

Converters Profile



The Project



The Project

- ▶ Estimated investment: US\$ 2.5 billion
- ▶ Project Finance target: 70 % debt / 30% equity
- ▶ Estimated Jobs during the construction: around 8,000
- ▶ Estimated Jobs during operation: around 3,000 (direct and indirect)
- ▶ Localization: Coatzacoalcos (Veracruz State: Population: over 7 million)

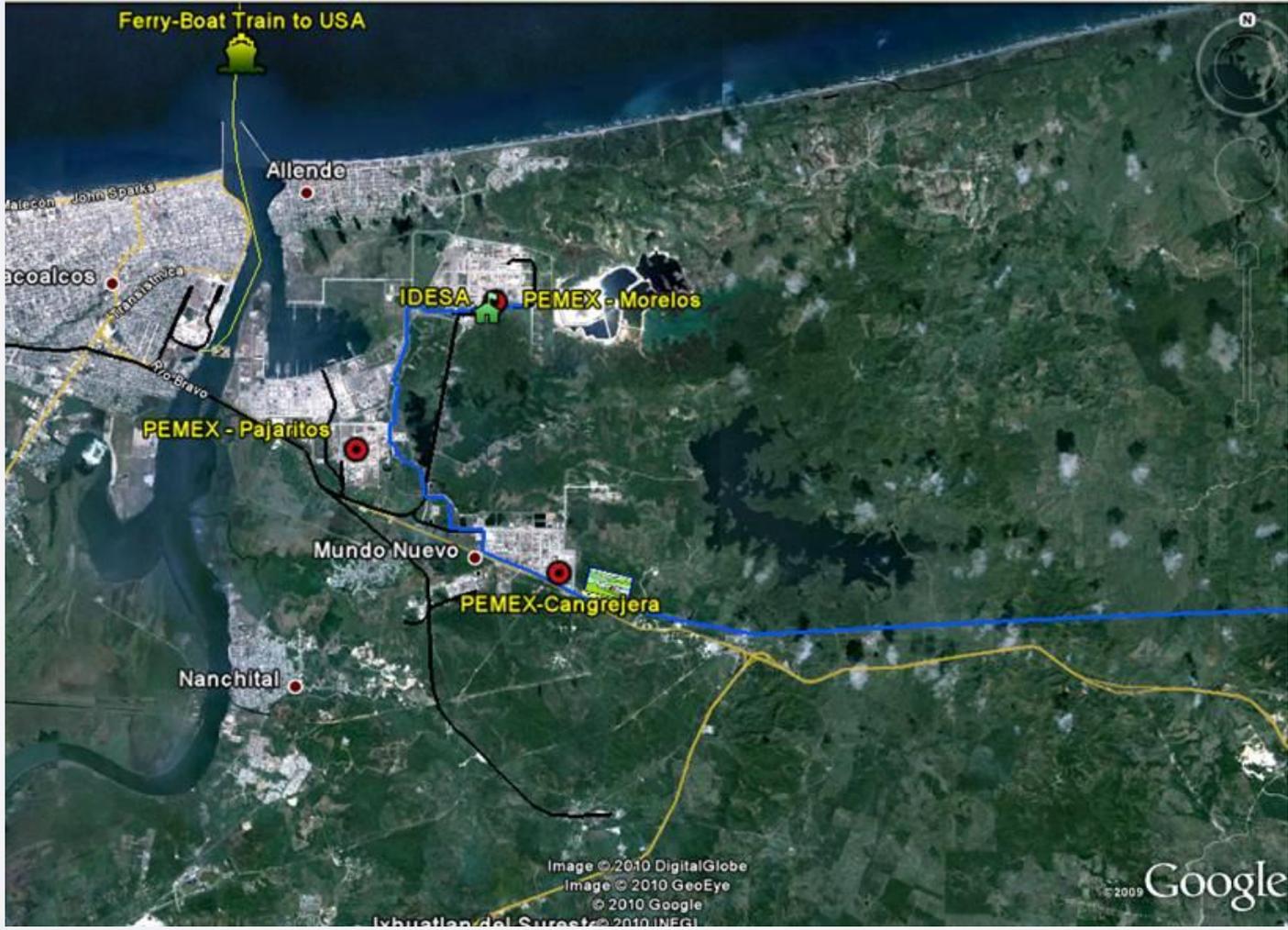


Video link



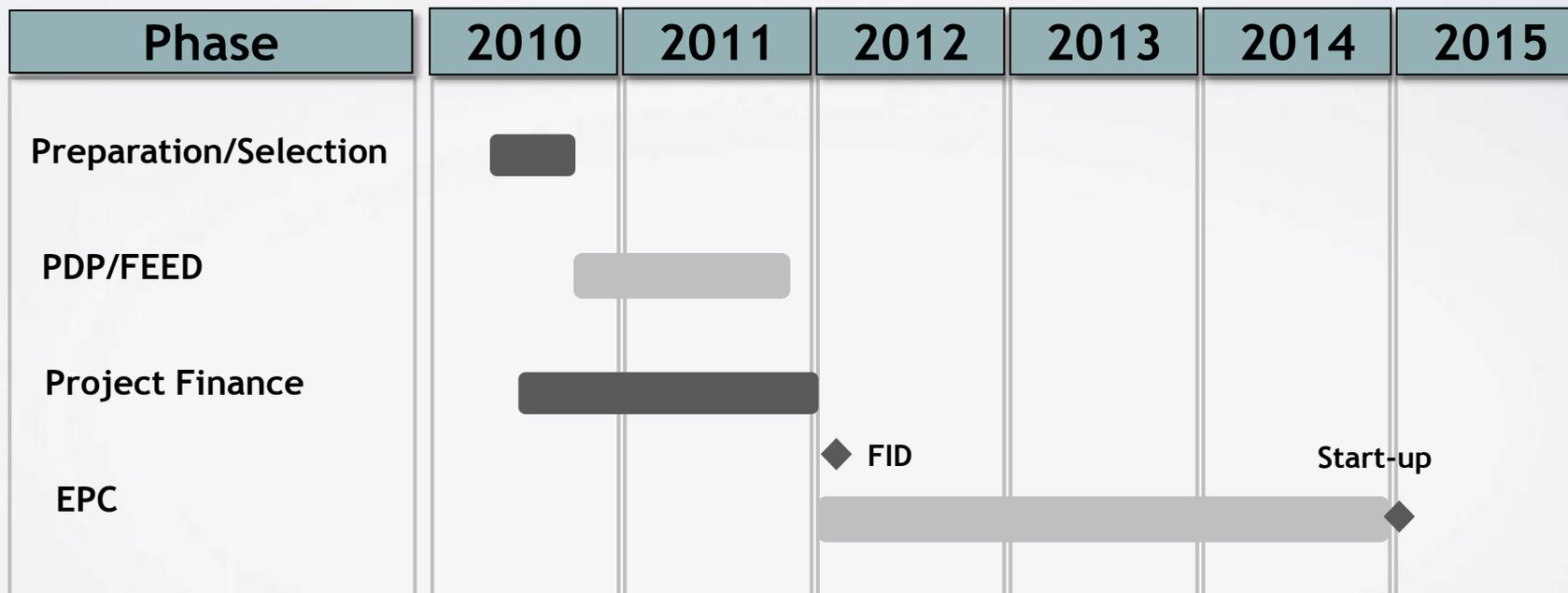
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Video



Schedule

- ▶ 50 month from the PDP/FEED until to Start-Up



Competitiveness Factors

- ▶ **Competitive feedstock**
- ▶ **State-of-the-art Ethylene and Polyethylene Technologies: focus on reduction of CO2 emissions**
- ▶ **Labor cost among of the world's most competitive (emphasis on detailing engineering and construction)**
- ▶ **Alliance Model: reduction of total cost and assurance of the schedule**
- ▶ **Braskem team with large project and Ethylene and Polyethylene operation background**
- ▶ **Excellent timing to project implantation**

Ethylene XXI

▶ Current Situation

- ▶ US\$ 138 MM of expenditures approved by shareholders until Dec/2011 - financial assistance done until Sept/2010 / Braskem team work already expatriated / technology: ongoing selection and acquisition and basic project phase
- ▶ Market study already done and Polyethylene technologies defined
- ▶ Cracker Technology: under definition
- ▶ Alliance Model Agreement: under negotiations
- ▶ Braskem and Idesa team mobilized for project management and follow-up
- ▶ Starting of Basic Engineering: Oct/2010
- ▶ Project Finance: under study supported by BNDES/BANCOMEXT

Agenda

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- ▶ Ethylene XXI Project
- ▶ **Questions**