

***REPSOL***  
**YPF**



***Repsol YPF:***  
***Activities in Argentina***

***September 2003***



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# ***1. ARGENTINA AND REPSOL YPF***



**Form of Government: Republican, representative and federal**

**Area: 2.8 MM km2 (continental)**

**Population: 37 million**

**G.N.P. (2002): us\$ 101,300 million**

**G.N.P. per head (2002): us\$ 2,750**

**Exports (2002): us\$ 25,709 million**

**Imports (2002): us\$ 8,470 million**



**Formed by Argentina, Brazil, Paraguay, Uruguay**

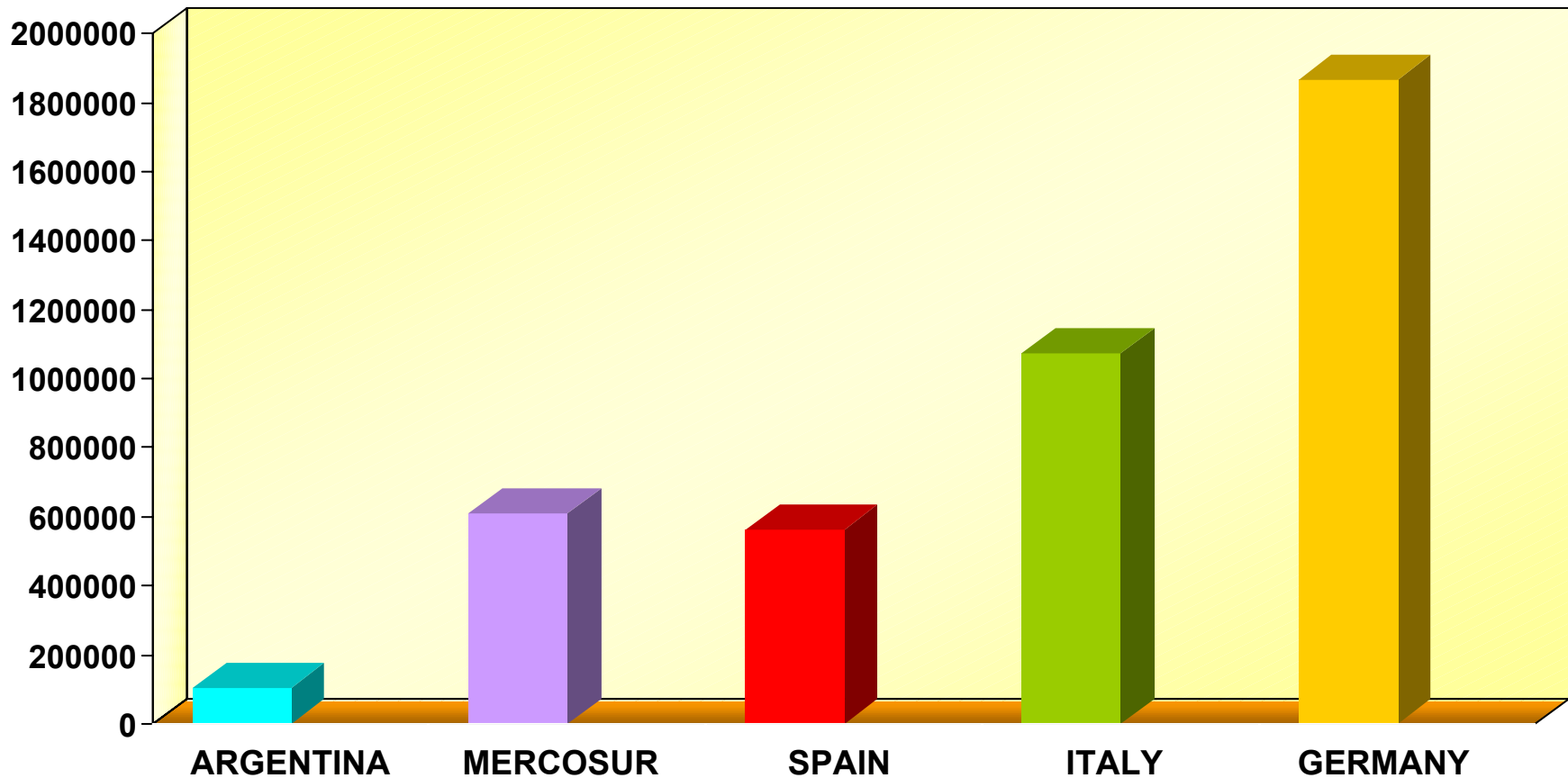
**Area: 11.9 MM km<sup>2</sup>**

**Population: 209 million**

**GNP: us\$ 633 billion**



## GNP 2002 (MMus\$)





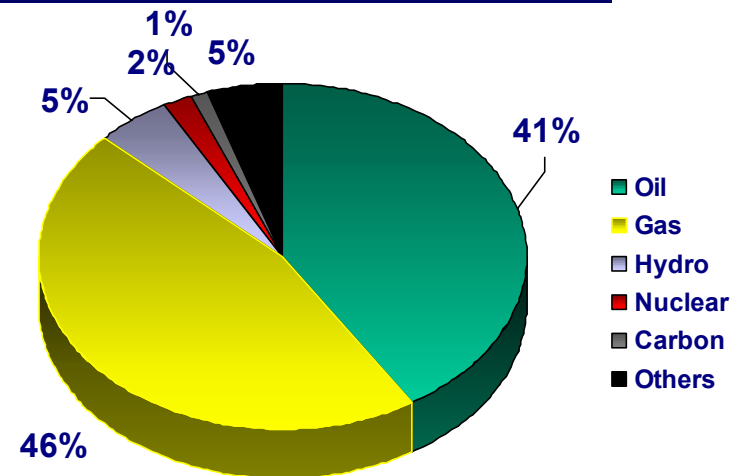
**Proven Oil Reserves: 2,821 MM bbls (as of 12/31/2002)**

**Proven Natural Gas Reserves: 664 billion m3 [23.3 Tcf] (as of 12/31/2002)**

**Oil Production: 0.75 MM bbl / d**

**Natural Gas Production: 125 MM m3 / d [1.6 Tcf/y]**

### Consumption of Primary Energy





**Oil Exports Year 2002: 2,156 MMus\$**

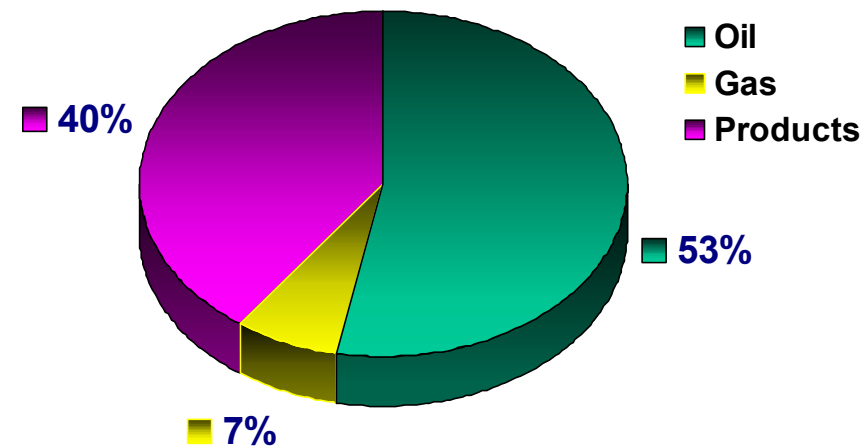
**Gas Exports Year 2002: 264 MMus\$**

**Products Exports Year 2002: 1,610 MMus\$**

**Hydrocarbon Exports Year 2002: 4,030 MMus\$**

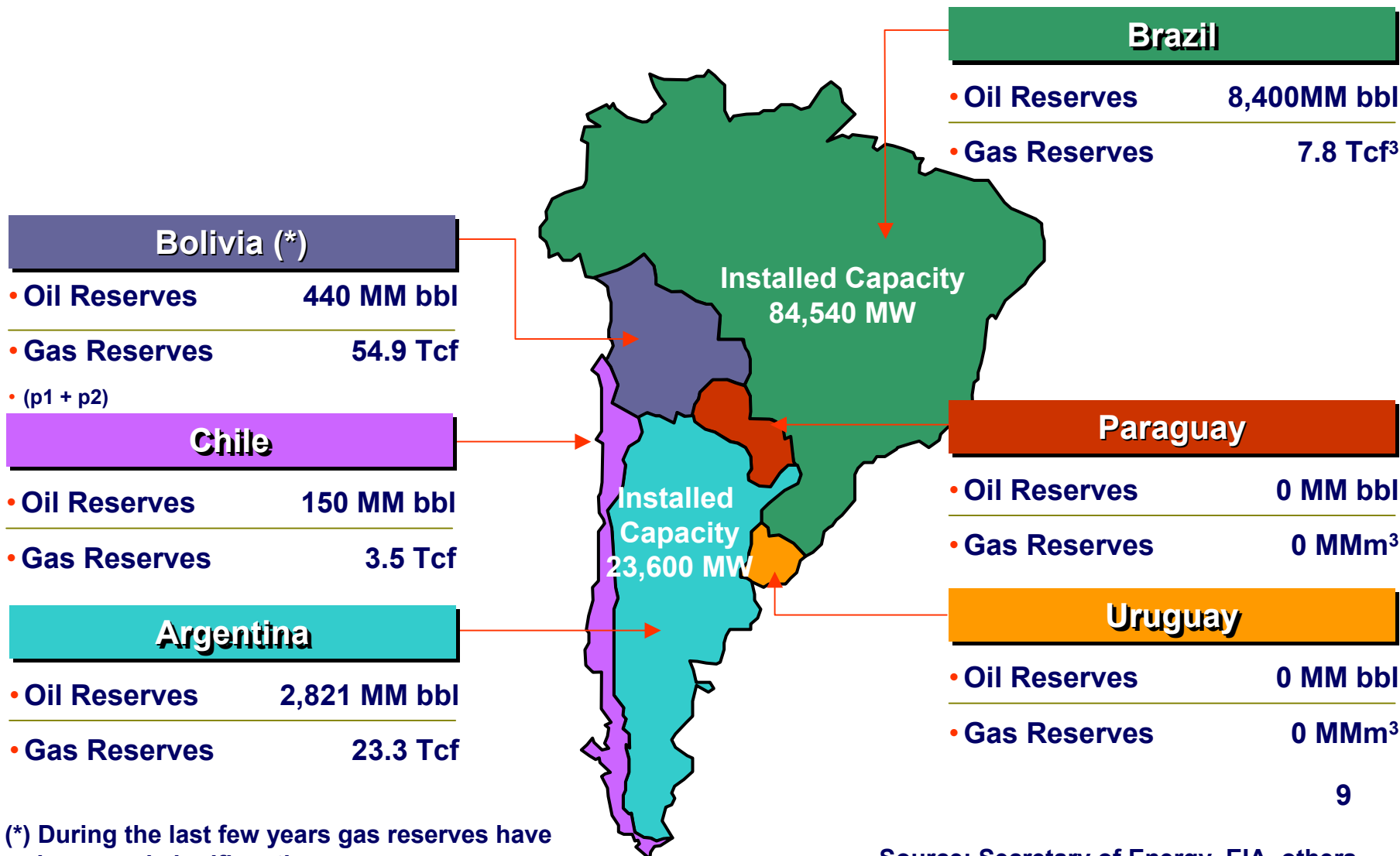
**Hydrocarbons Exports / Total Exports: 16%**

### Exports of Hydrocarbons





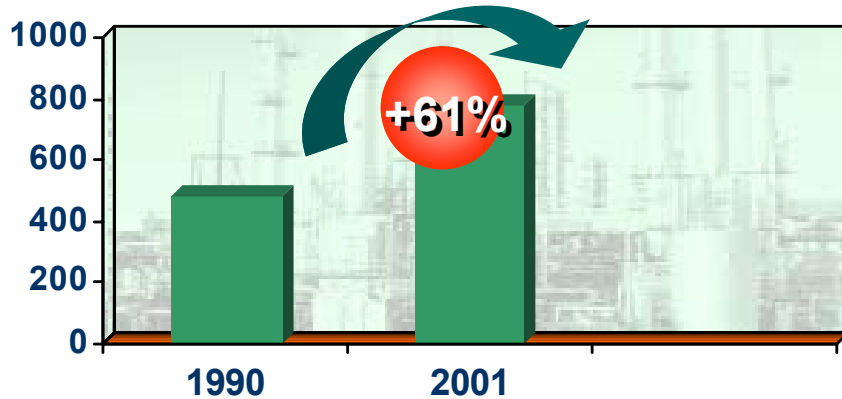
### Hydrocarbon Reserves (2001 2002)



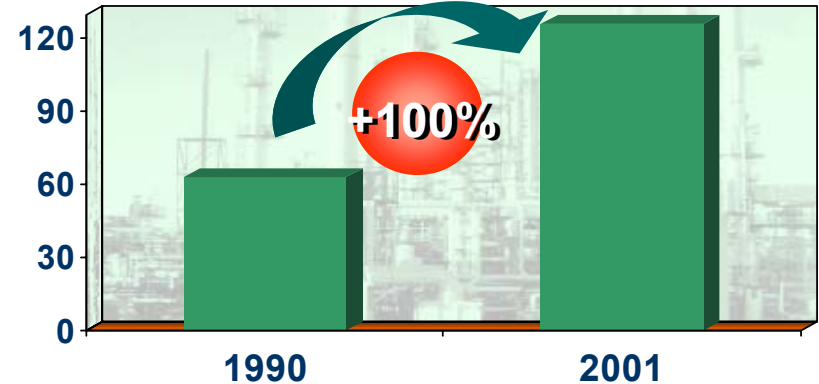


*Growth in the Energy Field was very high in the 1990 - 2001 period*

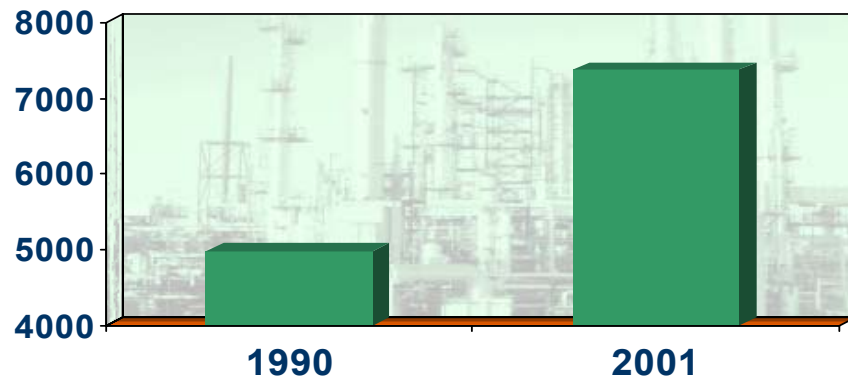
**Oil Production  
Mbb/d**



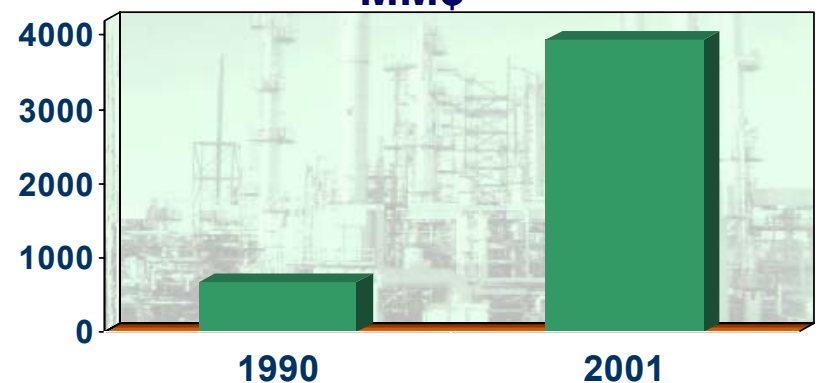
**Natural Gas Production  
MMm<sup>3</sup>/d**



**Proven Reserves  
MMBOE**



**Hydrocarbons Foreign Trade Balance  
MM\$**

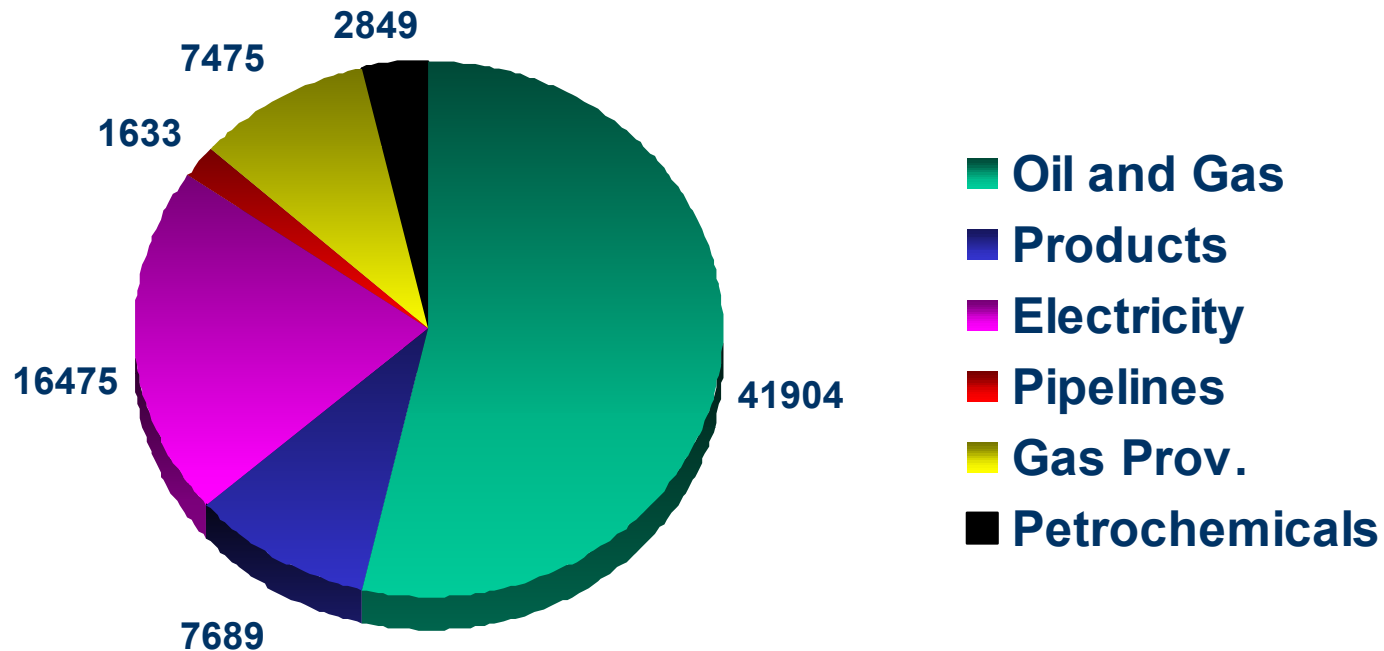


**Investments in Oil, Gas and Electricity 1990-2000: \$ 78,000 million**



*Growth in the Energy Field was very high in the 1990 – 2000 period*

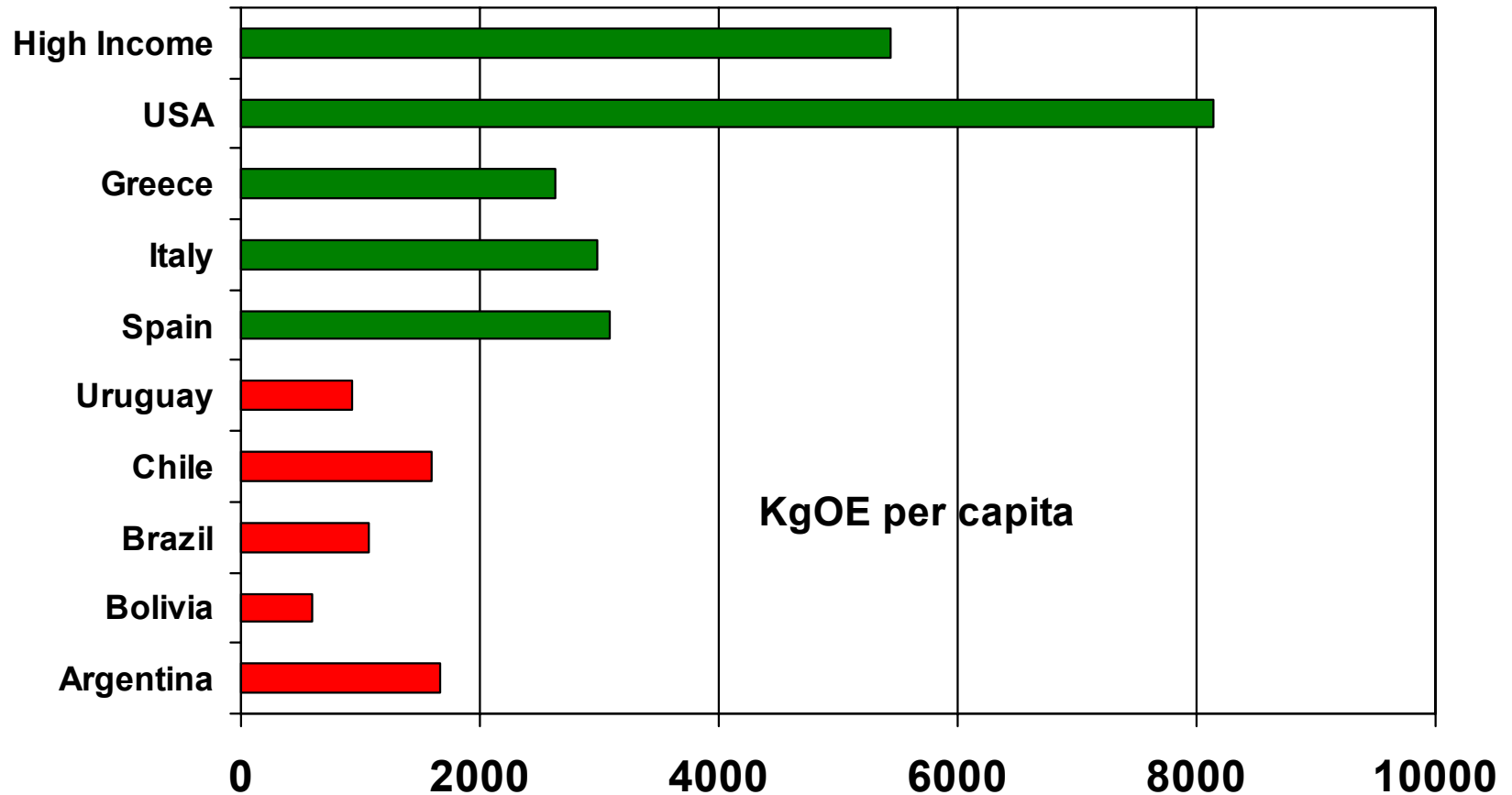
## Breakdown of Investments in Oil, Gas and Electricity 1990-2000 \$ MM





## Consumption of Energy

### Commercial Energy Use

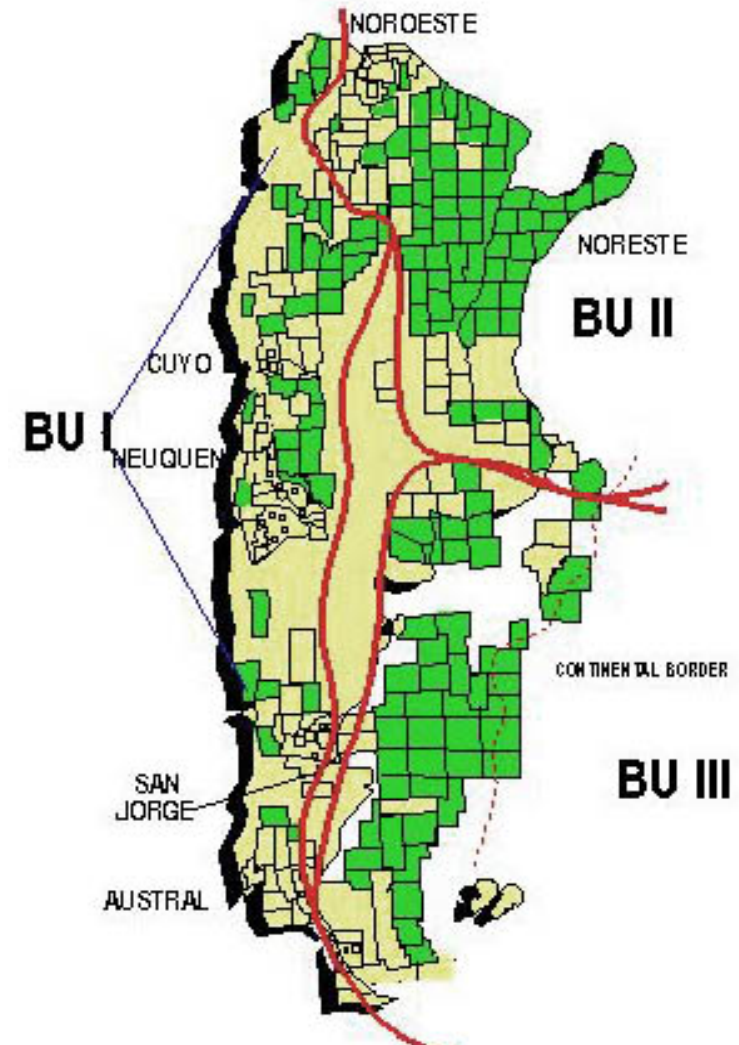


Source: World Development Indicators 2003, World Bank

## Potential Producing Basins



## Areas to bid



**1989**



***Deregulation starts in Argentina***

**1990/ 1991**



***Repsol purchases oil areas***

**1993**



***Privatization of YPF S.A.***

**1996**



***Repsol takes control of Astra C.A.P.S.A.***

**1999**



***Repsol takes control of YPF S.A., investing more than \$ 15 billion and becomes Repsol YPF***



| <b>E&amp;P</b>             | <b>R&amp;M</b>   | <b>LPG</b>    | <b>G&amp;E</b>       | <b>Chemicals</b> |
|----------------------------|------------------|---------------|----------------------|------------------|
| <b>Petrobras</b>           | <b>Esso</b>      | <b>Total</b>  | <b>Endesa</b>        | <b>Dow</b>       |
| <b>Pan American Energy</b> | <b>Shell</b>     | <b>Shell</b>  | <b>Perez Companc</b> | <b>Others</b>    |
| <b>Total</b>               | <b>Petrobras</b> | <b>Others</b> | <b>Capex</b>         |                  |
| <b>Chevron</b>             | <b>Others</b>    |               | <b>Others</b>        |                  |
| <b>Others</b>              |                  |               |                      |                  |

## ***2. EXPLORATION & PRODUCTION***

# EXPLORATION & PRODUCTION

## Argentina and Repsol YPF in E&P (Year 2002)

|                                | Argentina | Repsol YPF in Argentina | %  |
|--------------------------------|-----------|-------------------------|----|
| OIL PRODUCTION<br>M Bls/d      | 0.769     | 0.436                   | 57 |
| GAS PRODUCTION (Net)<br>M m3/d | 110       | 44                      | 40 |
| PRODUCTION<br>M BOE/d          | 1.461     | 0.716                   | 49 |
| OIL RESERVES<br>M Bls          | 2800      | 1400                    | 50 |
| GAS RESERVES<br>Billion m3     | 670       | 267                     | 40 |
| RESERVES<br>M BOE              | 7013      | 3081                    | 44 |

Source: Secretary of Energy and own data

# EXPLORATION & PRODUCTION

## Argentina and Repsol YPF in E&P (Year 2002)(cont.)

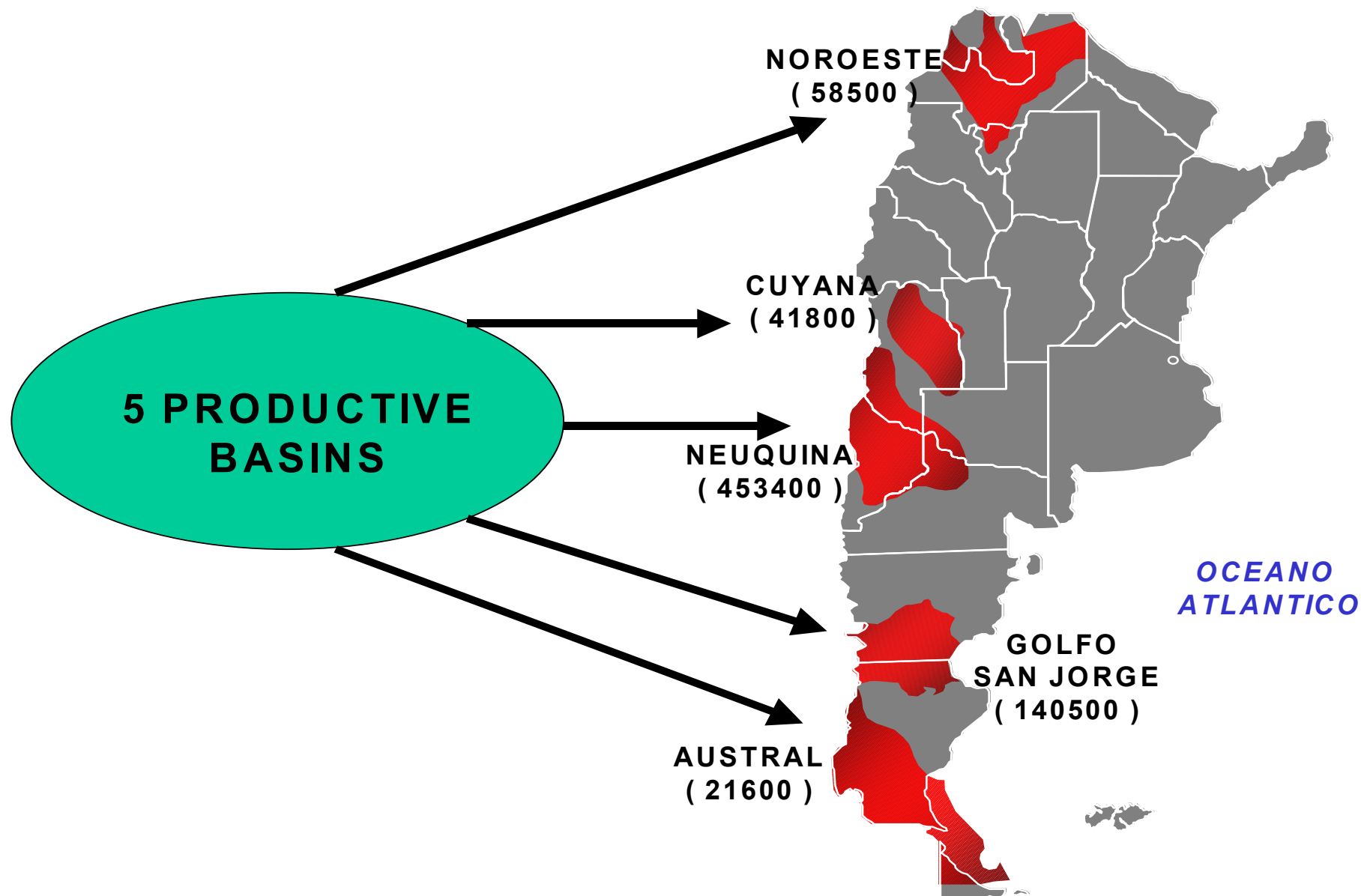


| <u>REPSOL YPF</u>              | World | Latin America | Argentina | % Argentina vs. World |
|--------------------------------|-------|---------------|-----------|-----------------------|
| OIL PRODUCTION<br>M Bls/d      | 0.584 | 0.471         | 0.436     | 75                    |
| GAS PRODUCTION (Net)<br>M m3/d | 66    | 51            | 44        | 67                    |
| PRODUCTION<br>M BOE/d          | 1.000 | 0.792         | 0.716     | 72                    |
| OIL RESERVES<br>M Bls          | 2019  | 1691          | 1400      | 69                    |
| GAS RESERVES<br>Billion m3     | 516   | 447           | 267       | 52                    |
| RESERVES<br>M BOE              | 5261  | 4501          | 3081      | 59                    |

Source: Repsol YPF – Year 2002

# EXPLORATION & PRODUCTION

*Repsol YPF in Argentina: Production per Basin (BOE per day-Year 2002)*



# EXPLORATION & PRODUCTION

## Argentina: Companies in Basins – Year 2002 -



| COMPANY           | NORTHWEST | CUYANA | NEUQUINA | SAN JORGE | AUSTRAL | % PROD (Oil+Gas) |
|-------------------|-----------|--------|----------|-----------|---------|------------------|
| <b>REPSOL YPF</b> | X         | X      | X        | X         | X       | 50,4%            |
| PAN AMERICAN      | X         |        | X        | X         | X       | 10,4%            |
| PETROBRAS         | X         |        | X        | X         | X       | 8,4%             |
| CHEVRON           |           |        | X        |           | X       | 5,1%             |
| PLUSPETROL        | X         |        | X        |           |         | 3,5%             |
| TOTAL             |           |        | X        |           | X       | 3,4%             |
| WINTERSHALL       |           |        | X        | X         | X       | 3,4%             |
| TECPETROL         | X         |        | X        | X         |         | 3,1%             |
| VINTAGE           |           | X      | X        | X         |         | 2,8%             |
| CAPSA CAPEX       |           |        | X        | X         |         | 1,8%             |
| PIONEER           |           |        | X        |           | X       | 1,7%             |
| SIPETROL          |           |        | X        | X         | X       | 1,5%             |
| Others            | X         | X      | X        | X         | X       | 4,5%             |



# ***3. REFINING AND MARKETING***



|                                     | Argentina      | Repsol YPF      | %          |
|-------------------------------------|----------------|-----------------|------------|
| <b>REFINERIES CAPACITY</b><br>bbl/d | <b>667,000</b> | <b>319,500</b>  | <b>48%</b> |
| <b>SALES OUTLETS</b>                | <b>6,096</b>   | <b>1,904(*)</b> | <b>31%</b> |

(\*) Includes 50% of Refinor Service Stations

As of June 30 2003

**Repsol YPF in:**

|                                      | <b>World</b>     | <b>Latin America</b> | <b>Argentina</b> | <b>Argentina<br/>vs<br/>World%</b> |
|--------------------------------------|------------------|----------------------|------------------|------------------------------------|
| <b>REFINERIES CAPACITY<br/>bbl/d</b> | <b>1,176,000</b> | <b>436,000</b>       | <b>319,500</b>   | <b>27%</b>                         |
| <b>SALES OUTLETS</b>                 | <b>6,636</b>     | <b>2,833</b>         | <b>1,904(*)</b>  | <b>28%</b>                         |

(\*) Includes 50% of Refinor Service Stations

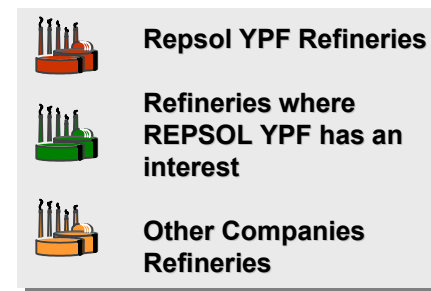
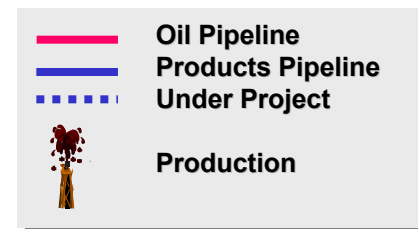
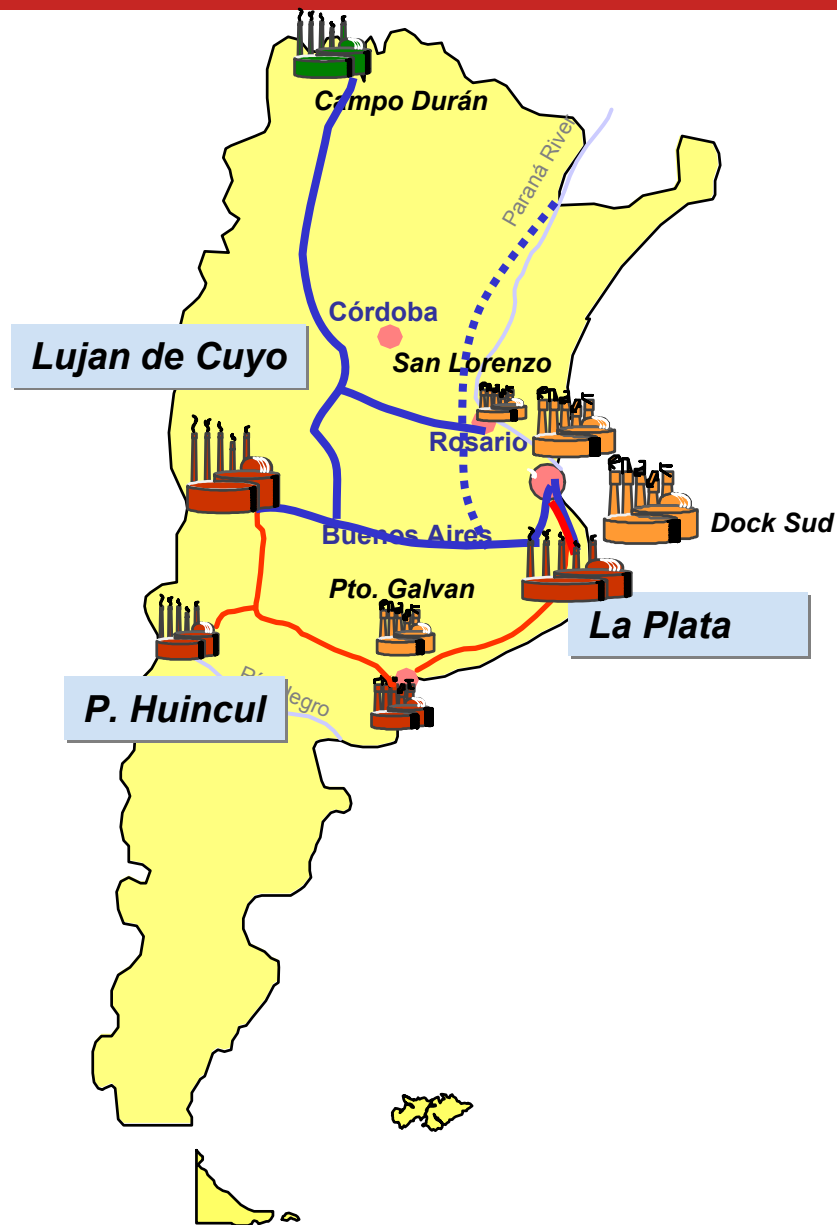
As of June 30 2003

23

Source: 20F Repsol YPF



| Refining Capacity<br>(Boe/day) |         |
|--------------------------------|---------|
| Luján de Cuyo                  | 120,000 |
| La Plata                       | 189,000 |
| P. Huincul                     | 25,000  |
| Bahía Blanca                   | 30,500  |
| Campo Durán                    | 28,000  |
| Dock sud                       | 122,000 |
| Campana                        | 88,000  |
| Pto. Galván                    | 19,000  |
| San Lorenzo                    | 39,000  |



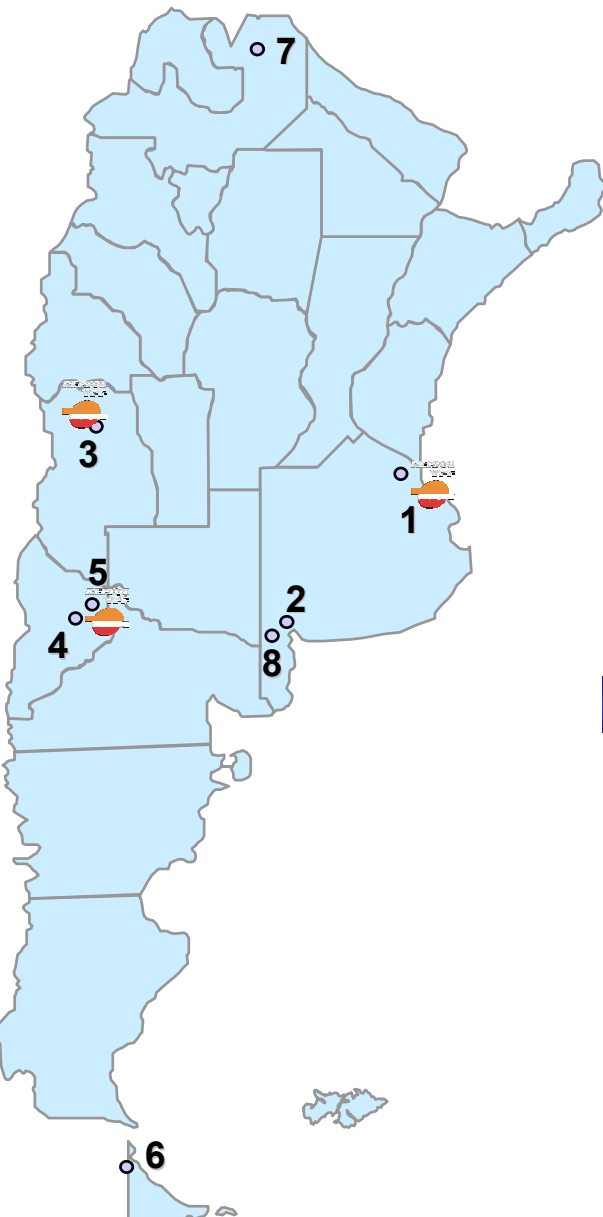
# REFINING AND MARKETING

## Location of Refineries and Logistics in Argentina (cont.)

REPSOL  
YPF



## ***4. LPG***



**REPSOL YPF PRODUCTION**

**838 Thousand MT**

**Domestic Market 33 %**

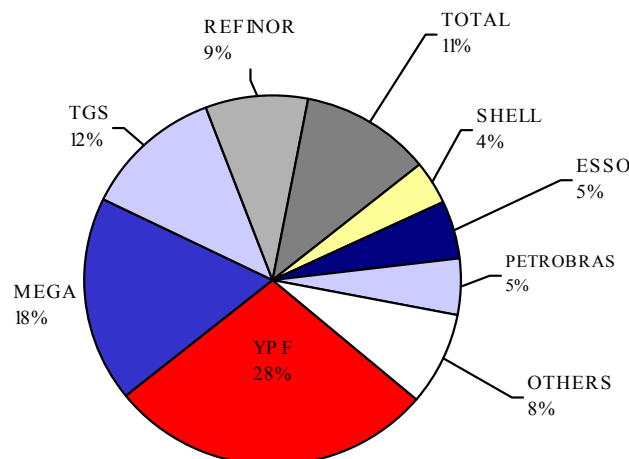
**Petrochemicals 28 %**

**Exports 39 %**

| <u>REF.</u> | <u>PLANT</u>                  | <u>PRODUCER</u> | <u>THOUSAND MT</u> |
|-------------|-------------------------------|-----------------|--------------------|
| 1           | LA PLATA + PLP                | YPF             | 491                |
| 2           | GRAL. CERRI                   | YPF             | 45                 |
| 3           | LUJAN DE CUYO                 | YPF             | 218                |
| 4           | LOMA LA LATA                  | YPF             | 19                 |
| 5           | F. MORADO                     | UTE             | 24                 |
| 6           | SAN SEBASTIAN                 | UTE S.SEBASTIAN | 15                 |
| 7           | C. DURAN                      |                 | 26                 |
|             | <b>TOTAL YPF + AFFILIATES</b> |                 | <b>838</b>         |
| 8           | MEGA                          |                 | 207 (*)            |

**ARGENTINA TOTAL PRODUCTION: 2,570 THOUSAND MT**

**2002**



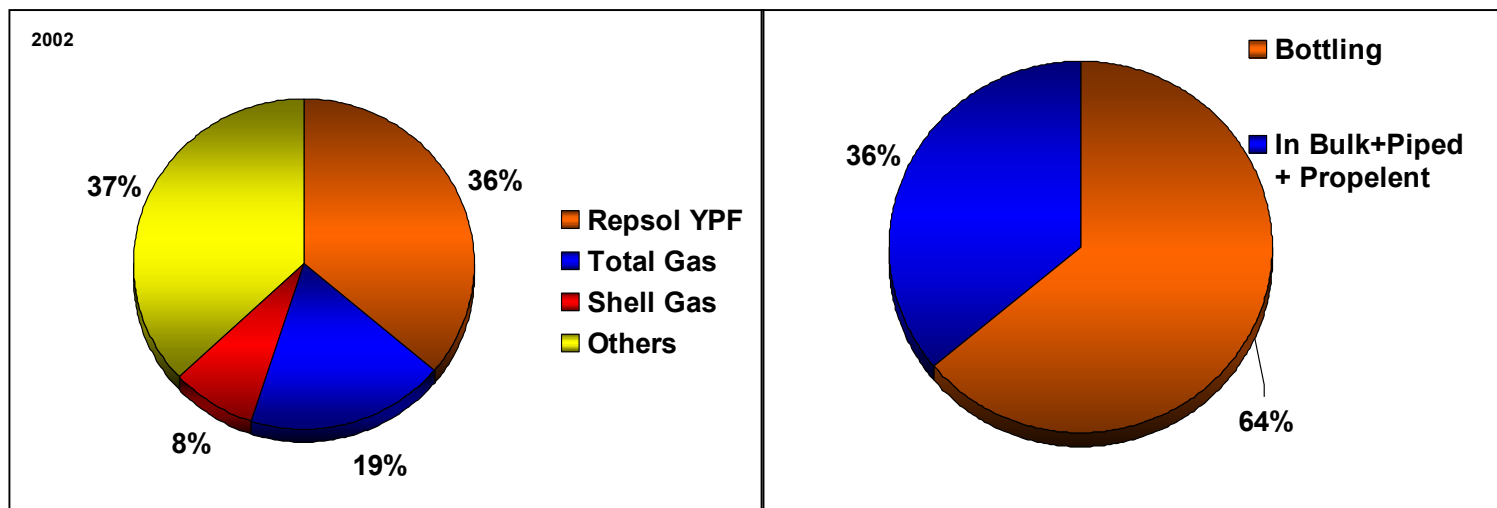
(\*)Not available for Repsol YPF marketing



**Retail Market (bottling + in bulk + piped)**

**Repsol YPF Gas (85% Repsol YPF, 15% Pluspetrol) – Trade Mark : YPF Gas**

|                                               | World | Latin America | Argentina | Argentina vs. World<br>% |
|-----------------------------------------------|-------|---------------|-----------|--------------------------|
| <b>Repsol YPF SALES</b><br>Thousand tn / year | 3,220 | 1,000         | 340       | 11 %                     |



**Total Argentina 970,000 tons / year**

**Bottling: Mature Market**

**In Bulk: Market with high growth potential**

**Piped: natural substitute for bottling**



## ***6. NATURAL GAS AND ELECTRICITY***

***Gas produced - Year 2002 (in thousand m3). Breakdown by destination***

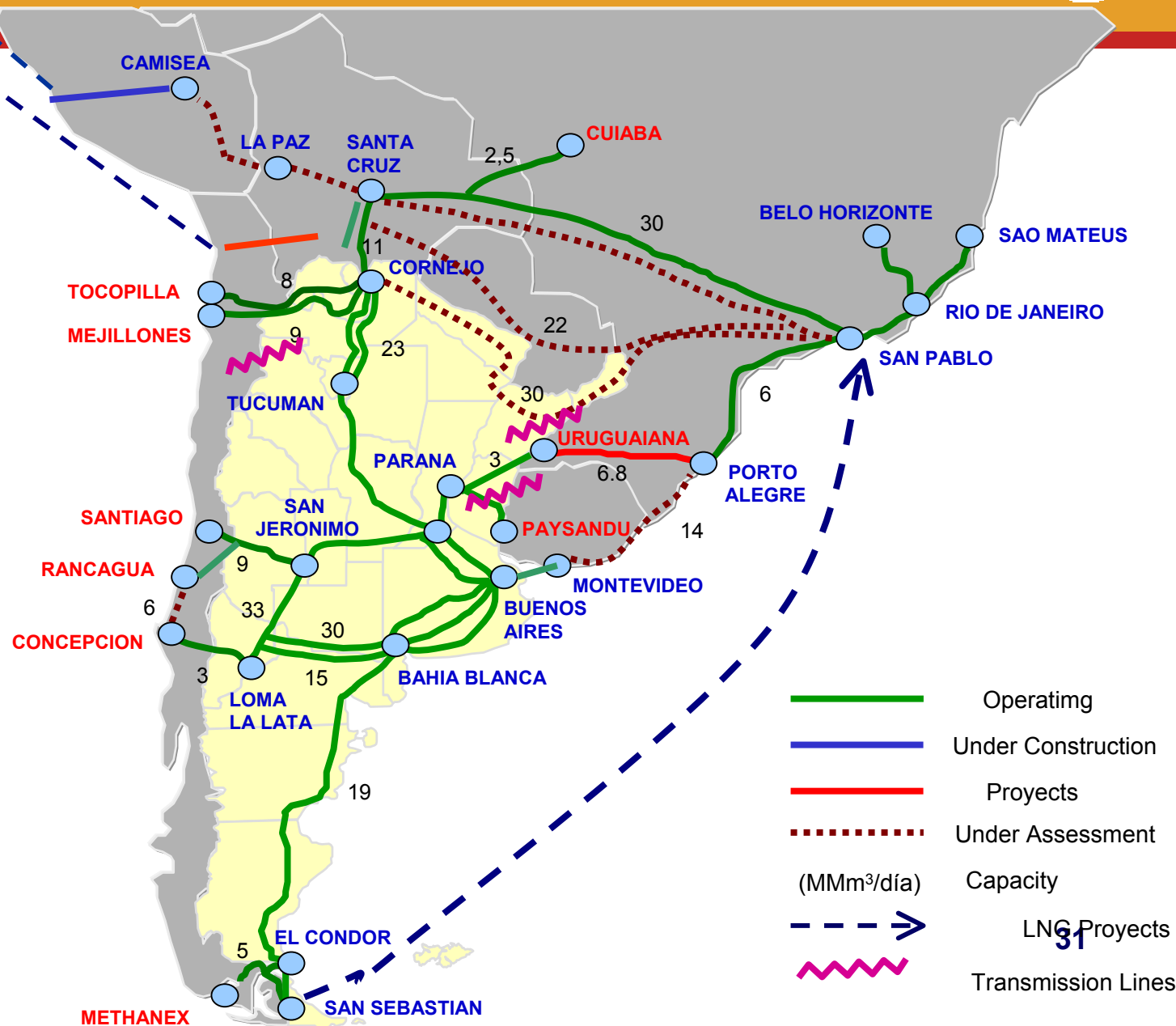
|                                   |                   |
|-----------------------------------|-------------------|
| <b>In Field Consumption</b>       | <b>3,833,319</b>  |
| <b>Delivered to Transcos</b>      | <b>32,282,870</b> |
| <b>Delivered to Third Parties</b> | <b>2,329,979</b>  |
| <b>Reinjected</b>                 | <b>3,516,716</b>  |
| <b>Withheld in Plants</b>         | <b>1,456,052</b>  |
| <b>Flared</b>                     | <b>846,558</b>    |
| <b>Exported</b>                   | <b>1,504,644</b>  |
| <b>TOTAL</b>                      | <b>45,770,138</b> |

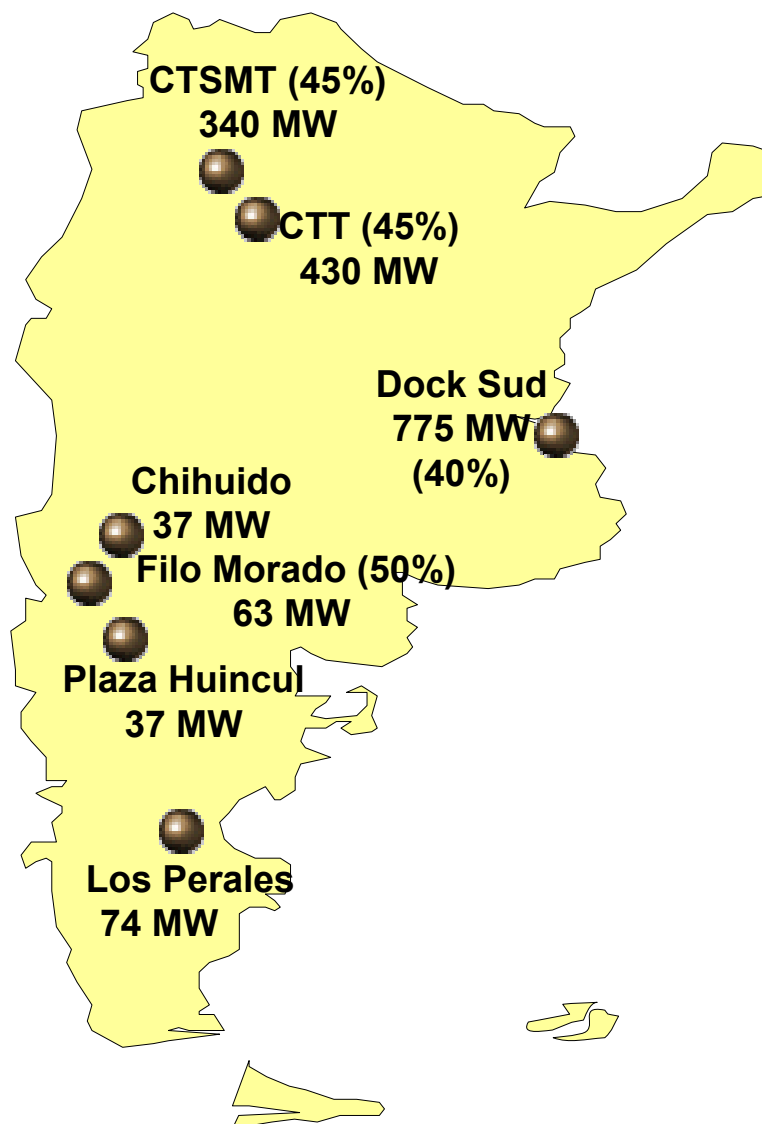
# NATURAL GAS AND ELECTRICITY

REPSOL  
YPF



## Gas Infrastructure







## ***7. CHEMICALS***



|                                         | World | Latin America | Argentina | Argentina<br>vs World<br>% |
|-----------------------------------------|-------|---------------|-----------|----------------------------|
| <b>PRODUCITON CAPACITY</b><br>tn / year | 6,551 | 2,551         | 2,551     | 39%                        |



- ▶ **Raw materials availability**
- ▶ **Deregulated economic background**
  - ▶ Sustained growth of all segments
  - ▶ Insufficient domestic productive capacity
  - ▶ High import increase
- ▶ **Share capital restructuring**
- ▶ **Regional Integration - MERCOSUR**



## ***7. OTHER ACTIVITIES***

**A company devoted to Construction and Services aiming mainly at the Oil, Gas and Petrochemical sectors.**

**Also, it is the only company in the market that integrates engineering and construction activities with the manufacturing of equipment for turn key plants.**

**Our activities:**

***AE* Integral Construction of Industrial Works and turn key plants**

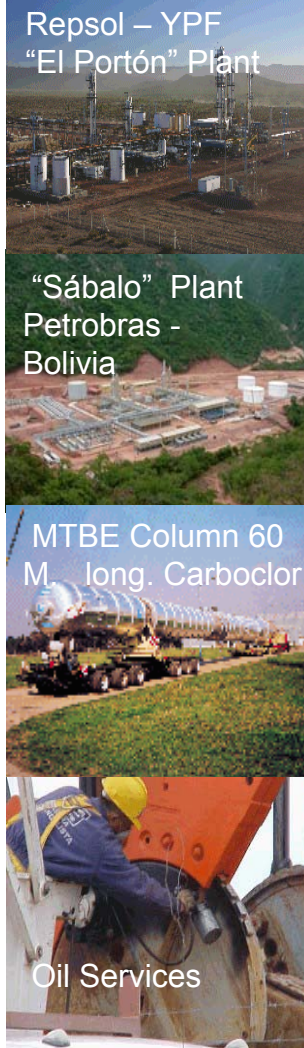
***AE* Equipment and process modules manufacturing**

***AE* Provision of Services for Oil and Gas Industries**

***AE* Operation and maintenance of Plants (Gas, compression, electricity generation, etc.**

**Shareholders: YPF S.A.**

**2002 Sales: 138 M. U\$S**





## ***8. HUMAN RESOURCES***



|                              |             |
|------------------------------|-------------|
| Upstream America             | 1230        |
| Downstream Latin America     | 4682        |
| Downstream LPG Latin America | 589         |
| Downstream Chemicals         | 425         |
| Gas Area                     | 13          |
| Astra Evangelista            | 1256        |
| Corporation                  | 634         |
| <b>TOTAL</b>                 | <b>8829</b> |



|                                 |             |
|---------------------------------|-------------|
| <b>Director</b>                 | <b>50</b>   |
| <b>Senior Technician</b>        | <b>685</b>  |
| <b>Semi Senior Technician</b>   | <b>1996</b> |
| <b>Junior Technician</b>        | <b>1036</b> |
| <b>Administrative personnel</b> | <b>916</b>  |
| <b>Operator</b>                 | <b>4146</b> |
| <b>TOTAL</b>                    | <b>8829</b> |



**Argentiniens abroad**

**136**

**Foreigners in Argentina**

**87**

***REPSOL***  
**YPF**



***Repsol YPF:***  
***Activities in Argentina***

***September 2003***



# ***10. APPENDIX***

# **EXPLORATION & PRODUCTION**

## **Northwestern Basin**

### **NW BASIN**

**Total Area: 158000 km<sup>2</sup>**

**Wells drilled: 970**

**Production Wells (2002): 89**

### **Repsol YPF - NW BASIN**

**Production: 59 k BOE/d**

**Oil Reserves: 59 M Bls**

**Gas Reserves: 49 B m<sup>3</sup>**

- **Mainly a gas basin**
- **Gas pipelines to Northern Chile and Buenos Aires**
- **Refinor Refinery**



# **EXPLORATION & PRODUCTION**

## ***Cuyana Basin***

### ***CUYANA BASIN***

***Total Area: 58000 km<sup>2</sup>***

***Wells drilled: 2440***

***Production Wells (2002): 934***

### ***Repsol YPF – CUYANA BASIN***

***Production: 42 k BOE/d***

***Oil Reserves: 150 M Bls***

***Gas Reserves: 0.4 B m<sup>3</sup>***

- ***Only Oil***
- ***Pipelines***
- ***Luján de Cuyo Refinery***



# **EXPLORATION & PRODUCTION**

## **Neuquina Basin**

### **NEUQUINA BASIN**

**Total Area: 125000 km<sup>2</sup>**

**Wells drilled: 12640**

**Production Wells (2002): 5460**

### **Repsol YPF - NEUQUINA BASIN**

**Production: 453 k BOE/d**

**Oil Reserves: 844 M Bls**

**Gas Reserves: 197 B m<sup>3</sup>**

- **Oil and Gas basin (The best)**
- **Gas pipelines to Chile and Bs.As.**
- **Mega**
- **Plaza Huincul Refinery**



# **EXPLORATION & PRODUCTION**

## ***Golfo San Jorge Basin***

### ***GOLFO SAN JORGE BASIN***

***Total Area: 92000 km<sup>2</sup>***

***Wells drilled: 29600***

***Production Wells (2002): 10030***

### ***Repsol YPF – GOLFO S.J. BASIN***

***Production: 141 k BOE/d***

***Oil Reserves: 332 M Bls***

***Gas Reserves: 8 B m<sup>3</sup>***

- ***Mainly an Oil basin***
- ***Low Recovery Factor***
- ***Recent Gas discovery***



# **EXPLORATION & PRODUCTION**

## **Austral Basin**

### **AUSTRAL BASIN**

**Total Area: 145000 km<sup>2</sup>**

**Wells drilled: 1820**

**Production Wells (2002): 450**

### **Repsol YPF – AUSTRAL BASIN**

**Production: 22 k BOE/d**

**Oil Reserves: 14 M Bls**

**Gas Reserves: 13 B m<sup>3</sup>**

- **Oil and Gas basin**
- **On Shore and Off Shore**
- **Gas pipelines to Chile and Bs.As.**



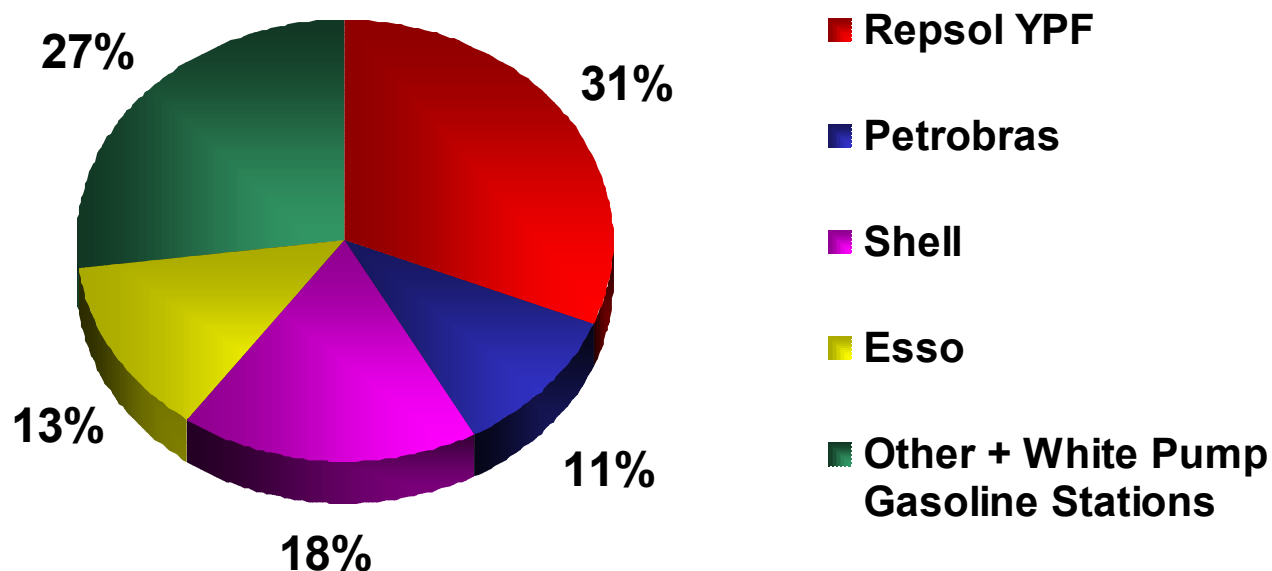


**Ships**  
**Railroad**  
**Pipelines**

Rosales - LP Q = 2150 m3/h  
Allen - Rosales Q = 1500 m3/h  
P.Hdez - LC Q = 400 m3/h  
P.Hdez - Chile Q = 750 m3/h



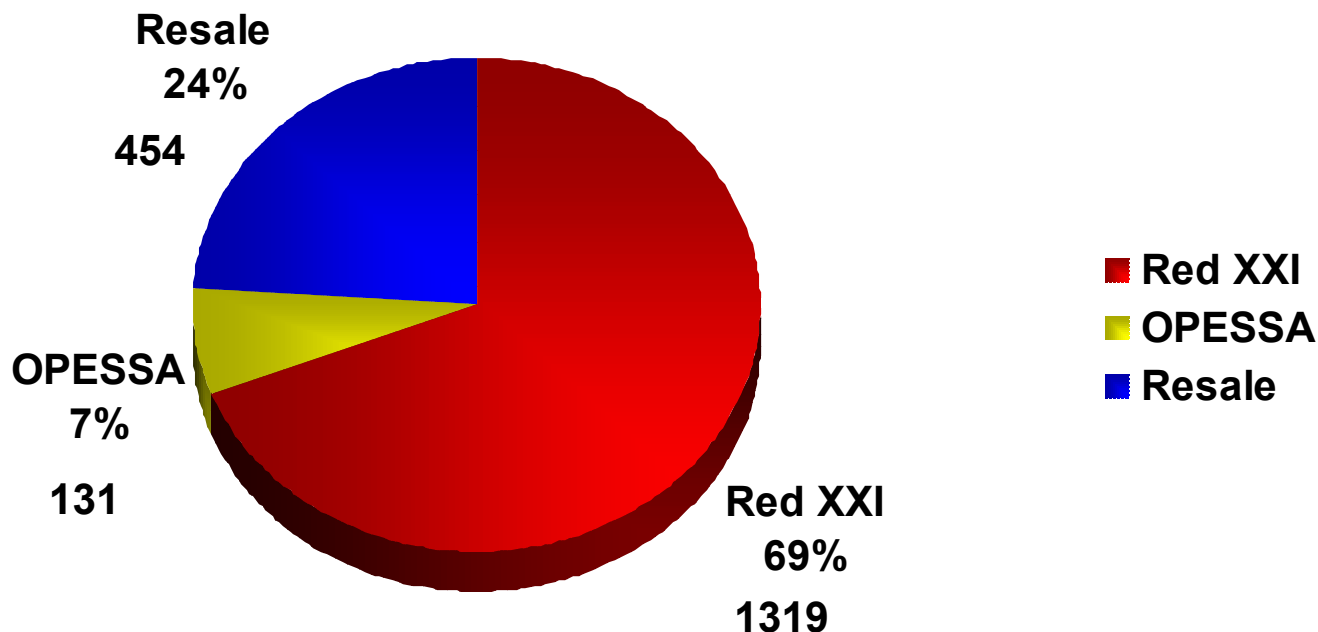
### Service Stations Distribution in Argentina



**Number of Service Stations: 6,096**



## Service Stations by Type of Operation



**Number of Service Stations: 1,904**

## Bottling

- Mature market with a low growth rate
- Very competitive market
- High negotiation power with distributor / retailer
- Plant Installed overcapacity
- Good product offer
- Inadequate regulations control
- Presence of small companies with high level of informality
- In the process towards formalization

## Bulk

- Recent development - 6 years
- Repsol YPF Gas is the leader in its development
- Repsol YPF Gas has 50,000 active clients
- Moderate entry barriers
- Main competitors: Shell Gas, TotalGaz, Extragas, Amarilla Gas, Areco Gas
- Regional competitiveness

**PRICES DEREGULATED THROUGHOUT THE WHOLE CHAIN**



|  | Argentina | Repsol YPF<br>in<br>Argentina | % |
|--|-----------|-------------------------------|---|
|--|-----------|-------------------------------|---|

|                                                      |     |     |     |
|------------------------------------------------------|-----|-----|-----|
| <b>PROVEN GAS RESERVES</b><br>Billion m <sup>3</sup> | 663 | 240 | 36% |
|------------------------------------------------------|-----|-----|-----|

|                                               |     |    |     |
|-----------------------------------------------|-----|----|-----|
| <b>GAS PRODUCTION</b><br>MM m <sup>3</sup> /d | 125 | 44 | 36% |
|-----------------------------------------------|-----|----|-----|

## OPERATIONS

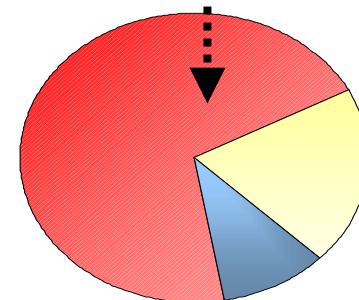
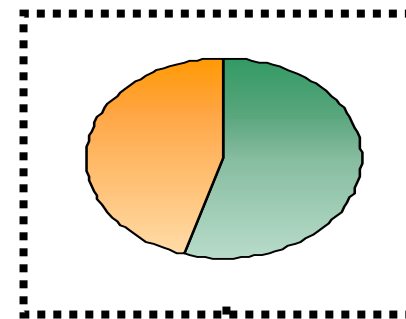
- Country's largest distributor
- Covered area: 2,150 km<sup>2</sup>
- 3 *City Gates*: Buchanan - Gutiérrez - Ezeiza
- Distribution network: 15,774 km
- Firm transportation capacity: 22.8 MM m<sup>3</sup>/day

## THE MARKET

- City of Buenos Aires and South of Greater Buenos Aires.
- Clients: 1.9 million
- Distributed gas volume: 5,755 MM m<sup>3</sup> (year 2002)
- Annual Revenues: 719 MM \$ (fiscal year 2002)

### GASA

- 54.67 % BG
- 45.33% Repsol YPF



### METROGAS

- 70% GASA
- 10% PPP
- 20% NYSE/BCBA

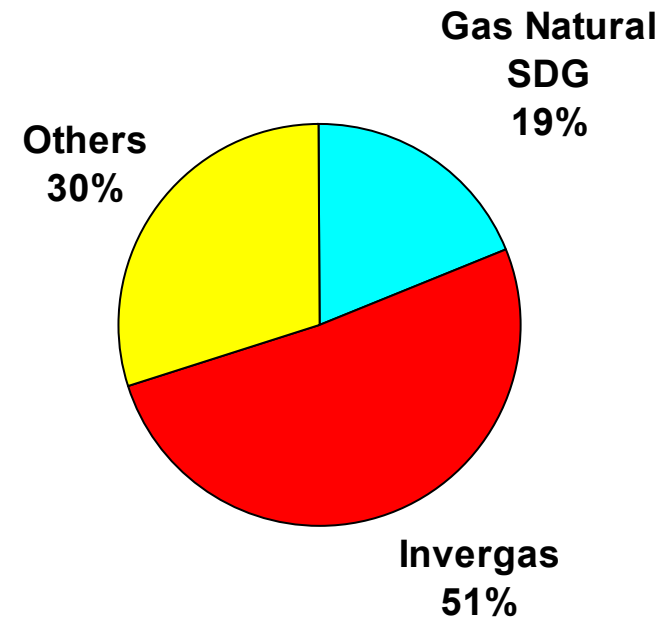
## OPERATIONS

- Country's highest growth distributor, second largest distributor.
- Covered area: 15,000 km<sup>2</sup>
- Distribution network: 20.369 km.

## THE MARKET

- North and West of Greater Buenos Aires and Province of Buenos Aires.
- Clients: 1.2 million
- Distributed gas volume: 3,300 MM m<sup>3</sup> (year 2002)
- Annual Revenues: 436 MM \$/year (fiscal year 2002)

GN Ban is a Gas Natural Group Company



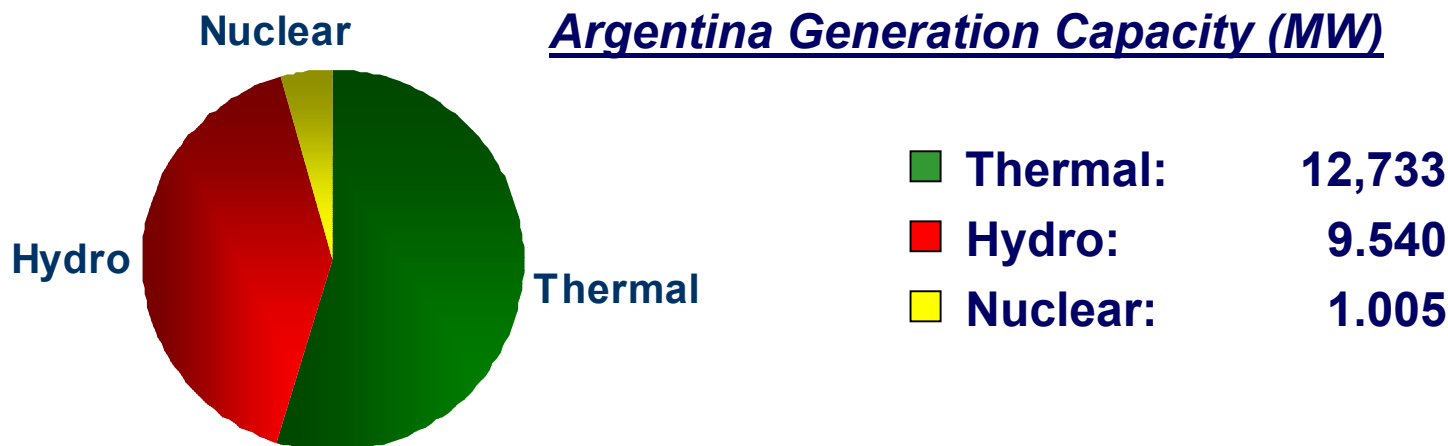
Invergas is a Gas Natural subsidiary



|                           | Argentina (1) | Repsol YPF | %    |
|---------------------------|---------------|------------|------|
| GENERATION CAPACITY<br>MW | 23,278        | 800 (1)    | 3,4% |
|                           |               | 1,800 (2)  | 7,7% |

(1) According to our interest in each project

(2) At 100% of the projects





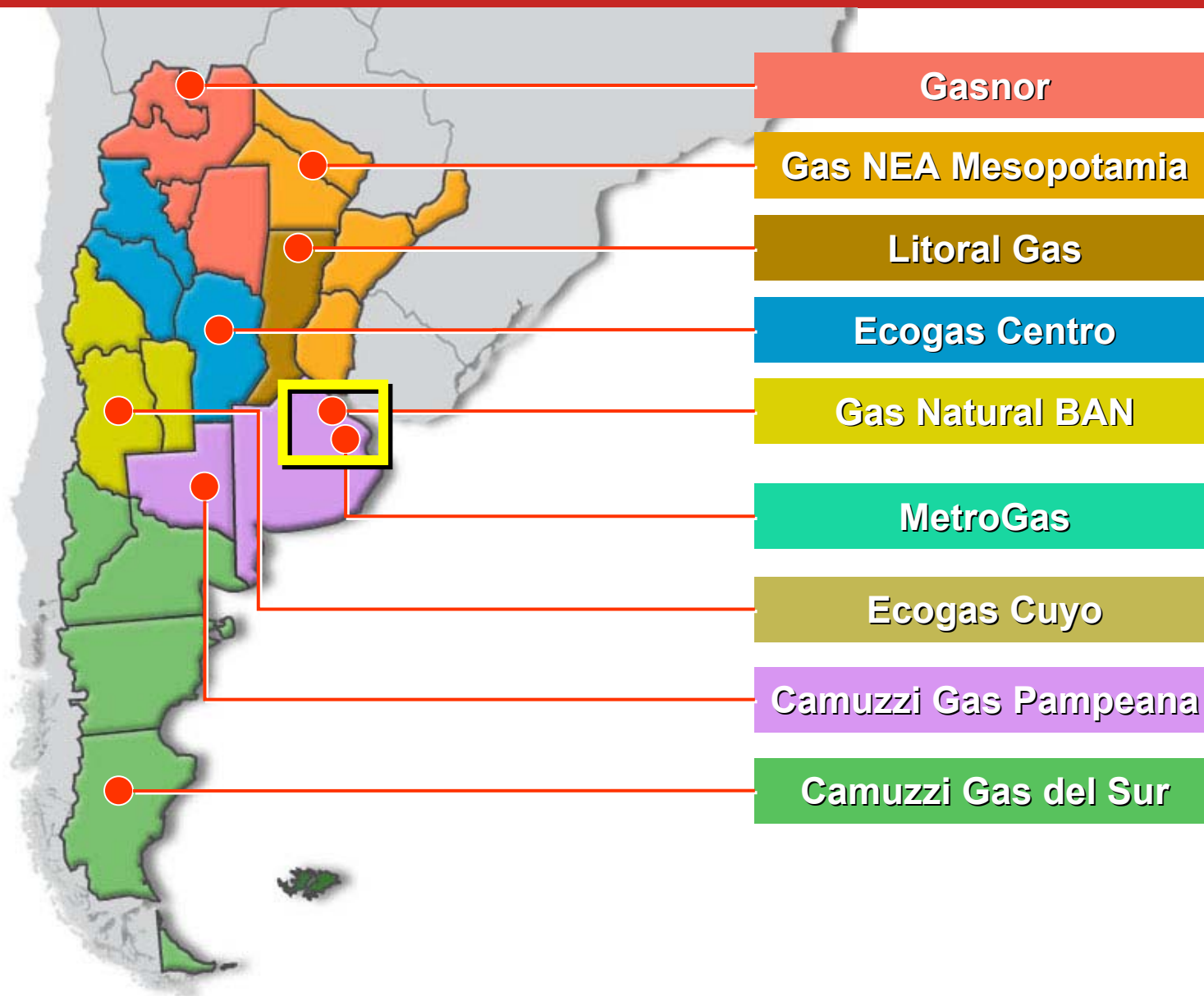
|                          | World | Latin American | Argentina | Argentina<br>vs the<br>World % |
|--------------------------|-------|----------------|-----------|--------------------------------|
| INSTALLED CAPACITY<br>MW | 1,130 | 800            | 800       | 71%                            |



|              | Power<br>MW | Energy<br>GWh/year | Gas<br>MMm3/d | %<br>Interest |
|--------------|-------------|--------------------|---------------|---------------|
| Filo Morado  | 63          | 450                | 0.8           | 50%           |
| CTT          | 430         | 3,200              | 2.0           | 45%           |
| CTSMT        | 340         | 2,500              | 1.6           | 45%           |
| CDS          | 775+70      | 6,000              | 3.0           | 40%           |
| Chihuido     | 37          | 310                | 0.3           | 100%          |
| Pza. Huincul | 37          | 270                | 0.3           | 100%          |
| Los Perales  | 74          | 550                | 0.6           | 100%          |

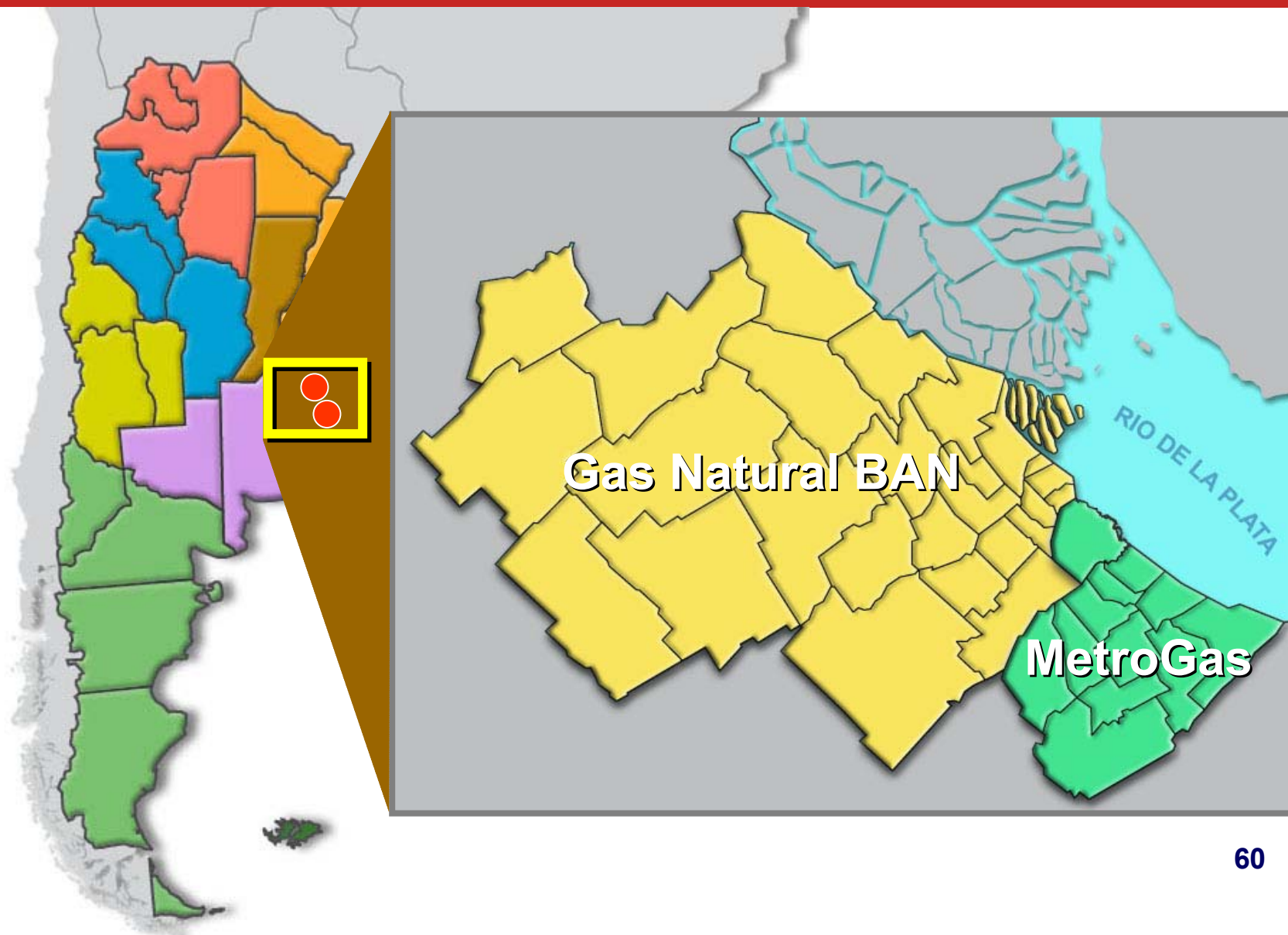


## Natural Gas Distribution Companies



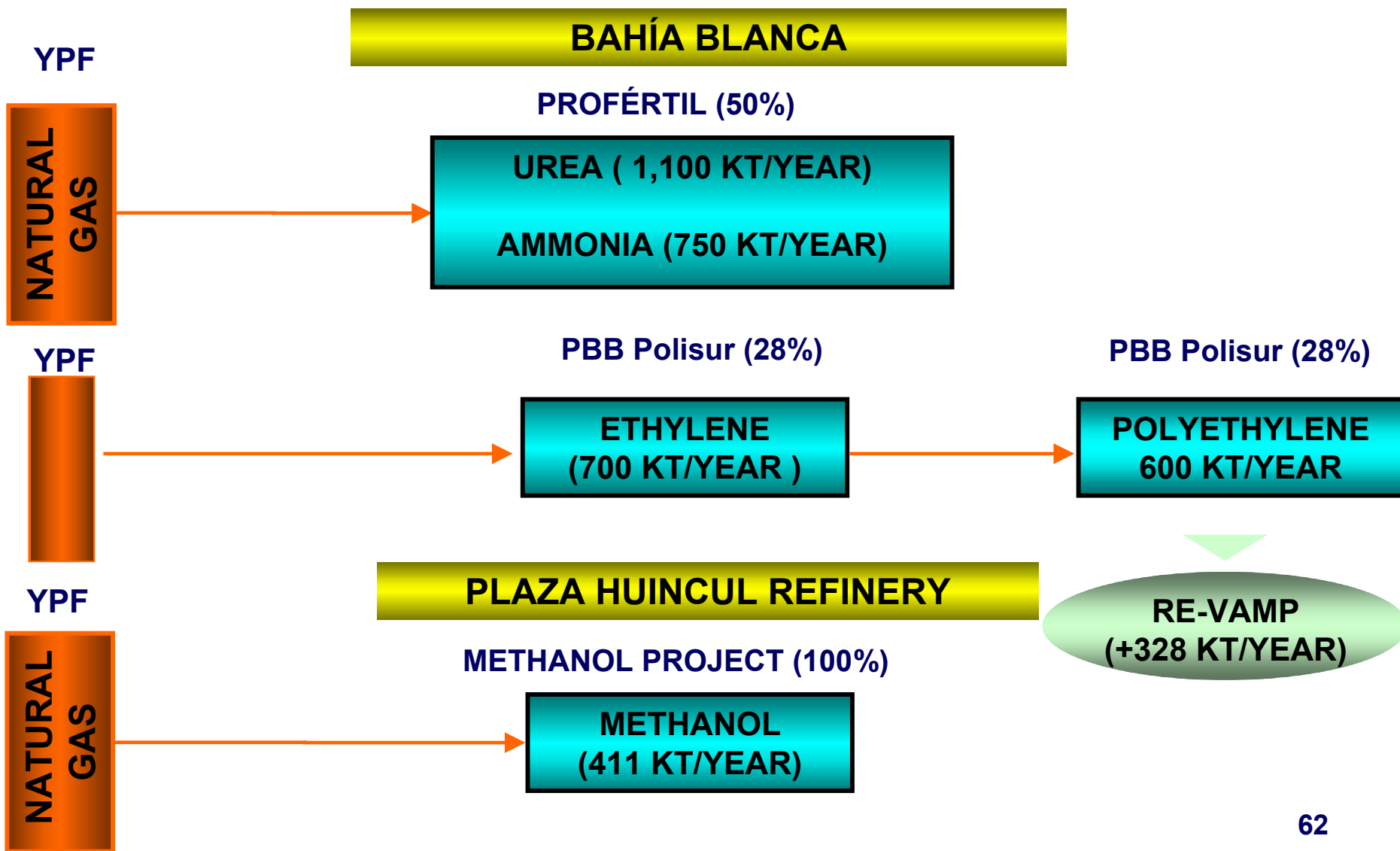


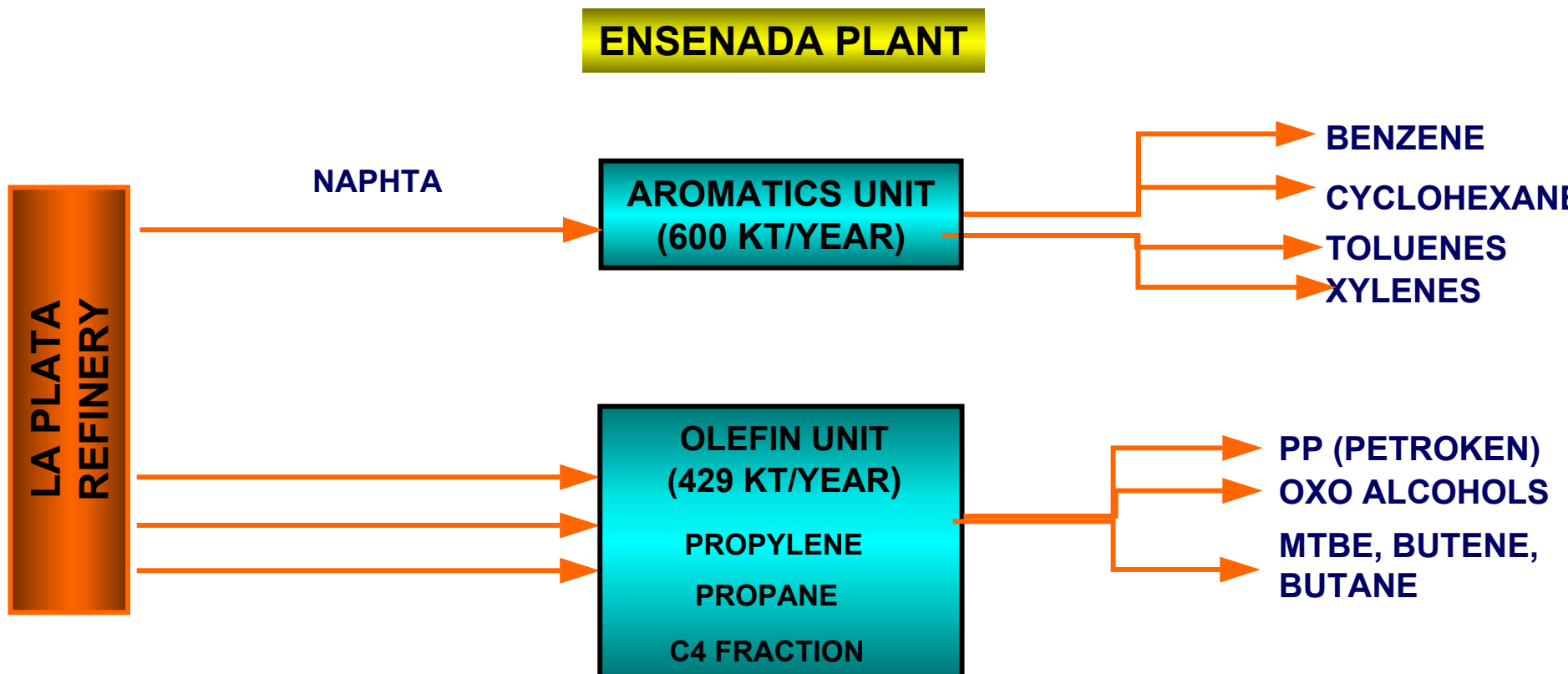
## Natural Gas Distribution Companies



*Petrochemical Investments in Argentina*

| PROJECT     | INVESTMENTS<br>MM US\$ | PRODUCTS                                             |
|-------------|------------------------|------------------------------------------------------|
| MEGA        | 690                    | Ethane, LPG, Gasoline                                |
| Profertil   | 680                    | Urea / Ammonia                                       |
| PBB Polisur | 875                    | Ethylene (Enlargement)<br>Polyethylene (Enlargement) |
| Metanol     | 140                    | Methanol                                             |





**MAXIMUM INTEGRATION BETWEEN REFINERIES AND  
BASE AND DERIVATIVE CHEMICALS**