ARGENTINA
HYDROCARBON SECTOR
PRIVATIZATION

by

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This document has been prepared as part of the Oil and Gas Division effort to disseminate information of potential interest to technical and policy personnel in developing countries. The paper embodies the views of its author and does not necessarily reflect the official position of the World Bank.
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This study gathers and puts together the wealth of experience in all facets of the privatization process of the hydrocarbon sector in Argentina. This process was possible only because it was consistent with the objectives of the Government of Argentina to establish an open and competitive market economy. The ingredients that made possible the painful transformation from a pervasive and rigid State intervention and control in the hydrocarbon sector were principally: the strong political framework and will, the constant dialogue with the vested interest groups, the quality and competence of the political and technical managers at the front line, the tremendous analytical effort that supported the process and the technical and financial support.

The first ideas about opening and deregulating the sector started during the Alfonsin government when I was invited (May 1988) to a seminar organized with the help of the World Bank in Mar del Plata. This seminar opened up the debate about the reorganization of State Oil Companies among YPF managers, government officials and the workers representatives. Since that time, many have contributed to the process and I have greatly benefited from their publications, experience and assistance in preparing this study and their critical review. I would like to thank and give due credit to all my colleagues at the World Bank who have been closely involved with the process and in particular Messrs. P. Scherer, Paul Meo, G. Khoury-Haddad, S. Alber and A. Dammert and our colleagues in Argentina Messrs. Luis Prol, J. Estenssoro, Raul Garcia, and P. Perkins who have had a critical role in carrying out the process to its completion. I would like to thank Messrs. D. Montamat who has written extensively on the issue and has kindly reviewed this report and A. Sanchez-Zinny, both ex-Directors and Managers of YPF during the Alfonsin administration.

Finally I would like to thank Messrs. H. Razavi and J. Bond from the World Bank and R. Pleasant, Consultant, for accepting the ungrateful task of peer reviewers.
This paper reviews the first experience in Argentina of private sector participation in two large and well established national oil and gas companies, Yacimientos Petrolíferos Fiscales (YPF) and Gas del Estado (GdE). The paper provides a background of past economic and hydrocarbon sector policies and reviews the enabling political and economic framework of the Menem government, the objectives sought by the Government of Argentina (GOA) in this radical reform of the hydrocarbon sector, the selected strategy to achieve a successful private sector participation, the legal and regulatory instruments that needed to underpin the process, the technical, legal and financial assistance and advice that were required by the GOA effort, the various challenges which the GOA had to overcome in the process and the results achieved in the privatization of the hydrocarbon sector.
2 INTRODUCTION

In oil producing developing countries, oil provided revenues for a few initially. Thereafter more revenues were needed as the state social welfare role expanded. The states then sought to exercise more control. Governments could have chosen to direct oil policy solely through a combination of legislation and regulatory bodies. But they also choose a direct role in the petroleum sector development and operations through a National Oil and Gas Company (NOC)\(^1\). Governments perceived the NOC as a natural extension of the state ownership of subsoil mineral rights, even in developed countries such as Canada, the United Kingdom and Norway.

The producing states were then confronted by the economic policy implications of the oil sector forward and backward linkages to their economy. For example Noreng\(^2\) identified six main policy concerns shared by Norway and the United Kingdom with respect to oil in terms of: (i) controlling its impact on economic growth, inflation and the balance of payments; (ii) maximizing public revenues; (iii) maximizing the positive spinoff effects of oil economic linkages with other sectors of the economy; (iv) ensuring a maximum share of the economic rents to nationals; (v) controlling the industry's impact on the national environment; and (vi) integrating the oil industry into the nation's energy policy.

In addition to economic policy concerns, oil was perceived as a strategic resource\(^3\) in some developing countries because of its relative importance in the economy, its large participation in trade and its perceived national security implications.

The earliest producer state NOCs include YPF (Yacimientos Petroliferos Fiscales) and PEMEX (Petroleos Mexicanos) founded in 1922 and 1938, respectively. By the mid-1970s, there were more than 90 NOCs throughout the world. 27 out of the top 50 oil and gas companies in the world are NOCs\(^4\), and 7 top NOCs are from Latin America.

The oil producing developing countries gave their NOCs conflicting political, social and economic objectives to pursue. NOCs were used as cash cows for furthering the government economic policies. As commercial entities, NOCs\(^5\) were not accountable for their performance to the government and were not free from the latter interferences.

The NOCs assumed policy and regulatory functions in addition to operating as a state company. The NOC operated under unpredictable and highly regulated local market conditions. The NOC had to contend with politically motivated pricing decisions on petroleum products and natural gas and legislation and regulations dealing with industry, labor, procurement and taxation which did not leave the state company any capacity to carry out substantial new investments and any incentive for improving performance.

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1. NOC stands for both Oil and Gas Companies in this paper.


With the advent of the economic and underlying debt crisis which swept the developing world in the 1980s, the governments geared themselves to respond to the major economic challenges and needed all the resources they could muster from the oil sector. Neither the governments nor the NOC concerned were able to respond then to the changing nature of the world oil market. Business practices and decision making processes designed for an earlier time when the market was less competitive and volatile became inefficient and costly for both the NOCs and their home countries.

The late 1980s saw the spread of democracy and the new political leadership in developing countries tried adopting a new economic policy to improve the social welfare of their society. The new orientation stressed the advantages of an open and competitive market as a signal to economic activity and a reduced direct role of the state in economic affairs. As a result, the developing countries started reevaluating the role of public sector enterprises and in particular that of the NOCs.

Several NOCs in the developed countries, British National Oil Company (BNOC) and British Gas (BG) in the United Kingdom, Petrogal in Portugal and Petrocanada in Canada, have or are being privatized. However, no developing country had until now considered the major step taken by Argentina in privatizing its hydrocarbon sector.
3 THE ENABLING POLITICAL AND ECONOMIC FRAMEWORK

3.1 PAST ECONOMIC POLICY

In the early 1900s, the primary engine of Argentina development was a large, agricultural-based export sector, selling principally to the European market. With the onset of the great 1930s economic depression, this policy proved unsustainable. The development strategy in the 1940s became inward-looking by transferring resources from the agricultural sector to newly created public enterprises and heavily protecting domestic industry.

A key feature of the Argentine economy during the past four decades has thus been characterized by the heavy reliance on the public enterprise (PE) sector as the engine of economic growth, despite some attempts to reduce the role of the state in the late 1950s and 1970s. The state was expanded through nationalization and creation of large public monopolies to provide basic infrastructure in support of industrialization. Resources which have been captured from the agricultural sector partly supported import substitution industries and partly limited private sector holding in so-called key strategic sectors. The PEs provided low-cost services and products mainly for the domestic market at the expense of cost recovery and profitability of enterprises.

While initially successful in promoting rapid industrialization, this development model started to be undermined towards the late 1940s. Exportable farm surpluses proved inadequate in meeting foreign exchange requirements of the imported inputs of the industry, increased spending by local and national government, burgeoning public sector enterprises deficits and ensuring controlled prices, credits and interest rates. Economic growth became more erratic.

After the mid-1970s, the economy turned sharply downward. The large and pervasive rents created through the government regulations and transfers were distorting the economic system and the development prospects of the country. Argentina, the most affluent Latin American country in 1962, fell to fourth place in 1989 after Brazil, Uruguay and Venezuela.

3.2 THE MENEM GOVERNMENT ECONOMIC POLICY

Until 1989, economic policies were based on a broad role of Government, relative protected economies, excessive regulations and large budgetary deficits. Starting in 1989 the Menem government emphasized smaller and more efficient governments, freer trade, competitive markets, fewer regulations, increased emphasis on broadening the opportunities for the less privileged and increased accent on the private sector. The reform of PEs was to be a centerpiece of the GOA's efforts to achieve a higher path of sustainable growth.

The reform objectives were to reduce the role of the State, to increase production and service levels, and to promote private sector investments. There was also a greater awareness of the relationship between the environment and economic development.

A tax reform has been implemented, expenditures cut and the fiscal deficit reduced sharply. The financial system has been gradually rehabilitated. In foreign trade, quantitative restrictions have largely been eliminated and the maximum tariff rate is now 24%. In industrial policy, the "Compre Argentino" law requiring to buy Argentinian-made goods and services, has been suspended. The exchange rate has been fixed by law while the interest rates are market-determined.

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In early 1991, new fiscal and monetary policies brought about large capital inflows, sharp deceleration in inflation, remonetization and, together with the fall of interest rates, an expansion in consumer credit. The economy grew by 8.5% in 1991 and was expected to exceed a 5% growth rate in 1992.

3.3 PUBLIC ENTERPRISE REFORM AND PRIVATIZATION

A key element in Argentina's program is private sector participation in a number of public enterprises supported by the "Ley de Reforma del Estado" (The Law for the Reform of the State). The GOA has already privatized the national airline, the telephone company, about 10,000 kms of trunkroads, 6,000 kms of railroads and TV stations. The program of privatization of the State Telecommunication company (ENTel) and the national airline in 1990 through debt equity conversions has reduced Argentina's debt by US$ 7 billion. This, together with another US$ 3 billion in debt swaps of debtors to official banks, represents more than 25 percent of commercial term debt. The ongoing privatization of the hydrocarbon sector (YPF and GdE) and the national railroads, will further reduce the debt.
4 OIL AND GAS SECTOR DEVELOPMENT

4.1 ENERGY RESOURCES

The potential energy resources of Argentina are abundant and diverse, including crude oil, natural gas, hydropower, biomass and coal. Argentina has essentially remained self-sufficient in hydrocarbons, importing and exporting some petroleum products on the margin. Technical evaluations carried out in 1989 indicated, however, that the hydrocarbon reserves were not as large as had been estimated. Thus, proved oil reserves had been revised downward in 1990, by 33% to 224 million m³ (1.41 billion barrels), and natural gas reserves have been revised downwards by 20% to 554 billion m³. At production rates of about 71,000 m³/day (447,000 B/D) for crude oil and 62 million m³/day for natural gas in 1989, the reserve/production ratio for crude oil was 8 years and for natural gas 20 years. Further exploration investments needed to be made in order to support the satisfaction of future demand for liquid hydrocarbons from known resources and confirm the apparent large potential for additional gas discoveries.

4.2 ENERGY DEMAND

Crude oil and natural gas accounted for 50% and 33%, respectively, of gross energy consumed in Argentina in 1989. Energy consumption growth in Argentina has been unusually high compared to other countries of similar GDP level and structure. Income elasticity of final demand was 1.5 in the 1960s and improved to 1.2 in the 1970s. During 1980-85, final energy consumption was stationary while GDP fell about 1.5% per year. Per capita energy consumption of 10 barrels of oil equivalent per year was almost double that of neighboring Chile and Uruguay. From 1970 to 1986, the share of consumption of energy for residential, agricultural and non energy uses increased, while industrial and transportation shares decreased.

As natural gas reserves have been discovered and developed, the patterns of energy consumption have changed, mainly towards certain refined products and natural gas. The share of natural gas in final energy consumption increased from 15% in 1970 to 28% in 1982 and 33% in 1988. Natural gas has essentially replaced fuel oil, both in general industry and in electricity generation.

As a result, the share of fuel oil in final energy consumption declined from almost 30% in 1970 to less than 8% by 1982, dropping to 4% in 1988. Meanwhile, participation of hydroelectricity increased from 8.5% in 1970 to 12% in 1982, while other petroleum products decreased approximately 2% over the same period – all of them remaining basically unchanged in their share of consumption from 1982 to 1988.

4.3 ROLE OF THE STATE

Until recently, the Argentine State was the predominant player in the hydrocarbon sector. The two key public enterprises were Yacimientos Petroliferos Fiscales (YPF) and Gas del Estado (GdE). YPF was established in 1922 as a Government department. In 1977, it was separated from the Ministry of Public Works and Services (MPWS) and converted to a State company. The main objective of the change in status of YPF was to encourage it to function more efficiently without being dependent on government budget support. GdE was established in 1946 as a government public service company to carry out natural gas distribution activities. In 1978, GdE's statutes were amended to allow it to operate as a state company.
YPF and GdE were regulated PEs under the law No. 20705 (1974) of "Sociedades del Estado" (State Companies) under which public law governs all public service activities and private law governs all commercial activities. The principal provision of this law requires these PEs to have a wholly government ownership of their stock. The latter may be divided or sold among different government entities (local governments, for example). However, the law prohibits private capital participation in the PEs or the transformation of the entity into a joint venture (public or private).

The State would approve all major managerial proposals. The members of the PEs board of directors were all public officials. The Subsecretariat of Fuels (SSF) within the Energy Secretariat (ES), now an entity within the Ministry of Economy (ME), was responsible for overseeing the PEs performance. The PEs were subject to audit control by the Central Accounting Office (known as SIGEP or "Sindicato General de Empresas Publicas"). Deficits of the PEs were automatically financed through the treasury. The PEs could not be declared bankrupt unless the bankruptcy is executed through an administrative liquidator;

4.4 ROLE OF YPF AND GdE

In November 1990, YPF accounted for (i) the quasi total control of oil reserves and production and the direct production of 65% of total crude oil (35% of the production was contracted under a service contract to private sector), (ii) more than 80% of natural gas reserves and production, (iii) all pipeline, storage, shipping, port and related hydrocarbon sector related infrastructure, (iv) about 70% of the country's refining capacity, the rest of the refining capacity being controlled by Exxon and Shell, (v) about 50% of petroleum product distribution and sales in Argentina, and (vi) all exports of crude oil and petroleum products (Map 1).

YPF has held the petroleum rights to most sedimentary areas of Argentina and has administered more than 80 contracts with private sector investors for exploration and production. Until recently, YPF was obligated to purchase all petroleum produced by its contractors and was obligated to supply crude to the private refiners at prices, often significantly below YPF's cost. YPF was required to sell all natural gas to GdE, generally below cost. Until recently before its privatization, GdE had a virtual monopoly on natural gas purchases from YPF and distribution to all consumers.

Initially, YPFs function was to develop Argentina's hydrocarbon resources to achieve and maintain the country's self-sufficiency, but it soon became a cash cow for the government and special interests groups. Firstly, the growth of some big private national firms is largely attributed to: (i) the special arrangements that have existed, in the form of contractual arrangements and subsidized input prices to downstream private industries; and (ii) the protection offered to private firms under the "Compre Argentino" for developing import substitution markets for both goods and services needed by the oil and gas industry.

Secondly, labor unions have extracted special privileges in PEs that extend far beyond common practices in the private sector. Thirdly, political parties have been using PEs appointments as rewards for loyal affiliations and as sources of financing. To reduce the state's vulnerability to these three powerful groups and promote the use of hydrocarbon sector economic rent for the social benefit of society as a whole, the Menem government concluded that a comprehensive PE reform needed to be implemented.

4.5 PERFORMANCE OF YPF AND GdE

YPF operations. YPF operated as a State company with the government as the only shareholder but with a corporate structure similar to that of a private corporation. YPF's annual gross sales, excluding excise taxes, were between US$ 4.0 and US$ 4.5 billion during the 1986 to 1988 period. Investments in exploration and oil and gas field development for the 1986-1989
period was set at US$ 3.7 billion, with 792 exploration wells planned; however, actual investment was limited to US$ 2.2 billion and only 387 exploratory wells were drilled. YPF played a dominant role in the refinery business accounting for 62% of topping capacity and 68% of bottom conversion capacity. Although YPF's refining operations have moved to higher value production, there is further scope to improve yields, efficiency and profitability. YPF's financial structure showed net fixed assets in operations of about US$ 7 billion in 1989. YPF had a financial debt of US$ 4.5 billion to foreign banks, most of which was incurred on behalf of the government for balance-of-payments purposes. This debt was offset in YPF's balance sheet by a government bond whose coupons are used to servicing this debt. Taking into account this government bond, YPF's debt-equity ratio had been under 0.11. YPF has been used as a source of treasury financing with disregard of the financial soundness of the company. In addition to taxes and royalties paid to the treasury, YPF has subsidized the operations of other PEs through government-controlled transfer prices. Including taxes and royalties, there was a net transfer of US$ 1 billion from YPF to other parts of the government in 1988.

GdE Operations. GdE purchases 90% of its natural gas from YPF in producing areas located primarily in the provinces of Neuquen, Chubut, Santa Cruz, Rio Negro, Salta, and the National Territory of Tierra del Fuego (Map 2 and Annex 5). The remainder of the natural gas requirements was imported from Bolivia. GdE processes the natural gas in the producing areas to remove hydrates and heavier liquids, and then transports the natural gas to consuming centers from where it is distributed to the individual end users. In addition to the sale of natural gas, GdE also produces and markets LPG (Propane and Butane) and subproducts such as Ethane and natural gasoline. GdE does not transform natural gas into other products. GdE had aggregate operating losses of about US$ 650 million in 1985-88, albeit with a declining trend. The company managed to keep its costs under control: calculated in US dollars, wages and benefits rose only 4% during 1985-1987, and costs of supplies and services were reduced by 40% in 1987/1988. GdE's net fixed assets increased by US$ 1.2 billion from 1985 to 1988 and long term debt rose from US$ 281 million in 1985 to over US$ 2 billion in 1988. This caused the debt-equity ratio to climb from 0.18 to 0.60. The current ratio improved from 0.28 to 0.59 between 1985 and 1988, but still remained unsatisfactory.
5 DIAGNOSTIC OF THE HYDROCARBON SECTOR

5.1 MAJOR ISSUES

Argentina was seen as running out of oil. The trend of declining production and reserves was seen to accelerate unless investment in hydrocarbon resources exploration and development were expanded sharply. If trends were to continue in the future, foreign exchange requirements from hydrocarbon imports would have accelerated rapidly. While proven natural gas reserves were considered adequate for the foreseeable future, regional supply shortages were predicted unless bottlenecks in transport and distribution systems were removed and waste in domestic consumption of energy was reduced. Because of distorting regulations, neither the public nor the private sectors have been in a position to invest as much as needed nor have they had the incentives to invest in the most efficient way.

The dilemmas that faced the petroleum sector have resulted from a combination of factors including: (i) sector regulations; (ii) government interference; (iii) petroleum products pricing; (iv) gas pricing; (v) taxes and royalty payments; (vi) trade regime; and (vii) lack of commercial orientation of YPF and GdE.

5.2 SECTOR REGULATIONS

Broad Monopoly of YPF and GdE. YPF and GdE have possessed broad monopolistic rights in the purchase, sale, transport and distribution of crude oil, petroleum products and natural gas. Until recently, YPF held the petroleum rights to most oil-likely areas of Argentina and private sector involvement was possible only as a service contractor to YPF. Private investments in exploration/production contained though many shortcomings such as: inflexible restrictions on disposition of crude production, subject to exclusive deliveries to YPF, barriers and rules for transfers of hard currencies, volatile and unpredictable tax rules, including federal, provincial (state), and municipal levies, unreasonable and highly volatile costs in oilfield services and equipment sector due to restrictive rulings like the "Compre Argentino" law, as well as cartel practices by suppliers, uncertainty caused by the prolonged economic crisis and stiff competition with other countries exploration contractual terms offering similar projects, some with more attractive conditions (e.g., Angola, Peru, China and more recently Russia and east block countries).

YPF and GdE as Regulators. YPF and GdE were not only considered to be the key participants in the sector, but also the regulators of their private sector competitors (e.g., YPF for selection and negotiation of contract areas of exploration and GdE for regulating the LPG market). These regulations have had no adverse effect on private sector profitability; just the reverse, they have resulted in a misallocation of resources. It is estimated that "Compre Argentino" has increased the costs of supplies and services provided by the local private sector to YPF by an aggregate of more than US$ 550 million a year in 1989.

Regulated Refinery Margins. Refinery margins have been set by the GOA, resulting in guaranteed profits for the private sector refiners and guaranteed losses for YPF. According to the crude allocation system called "Mesa de crudo" (crude table), YPF bought crude from producing contractors at internationally regulated prices then sold it to refiners which had about 31% of total refining capacity at prices below average cost of crude, using net back formulas that guaranteed margins for refiners.
In terms of marketing of petroleum products, the private refiners ended up with a larger market share than YPF for the high value products such as motor gasoline and diesel and a smaller market share than YPF for the low value fuel-oil in comparison with their respective refining capacities. YPF covered the most remote and unattractive retail market locations. The GOA froze the expansion of retail network. Due to the impossibility of price competition and fixed retail distribution margins, the retailers only managed to survive by offering a wider range of services than selling only petroleum products.

**Import/Export Regulations.** Import/export of crude oil and petroleum products has been highly regulated; duties and a 10% surcharge have made imports and exports of crude unattractive. Excise taxes on petroleum products and natural gas have been high and have resulted in high consumer prices.

As a result of GOA regulations, the private sector has been highly profitable but with limited scope for investment. On the other hand YPF has not had the funds to explore and develop properly the areas under its control.

### 5.3 GOVERNMENT INTERFERENCE

Various government agencies, sometimes with overlapping functions, oversaw the operations of YPF and GdE. Most financial and operational decisions affecting YPF and GdE were made at the political level outside the companies, based primarily on the GOA need for cash and pressure from special interest groups, including strong labor unions representing the employees. The government has required for example YPF to transfer funds to the provinces through royalty payments that were at a rate significantly higher than what was common internationally, and to subsidize the private sector refiners by selling them crude oil at less than YPF's cost and the natural gas sector by selling natural gas to GdE far below production cost. Likewise GdE has been forced to subsidize petrochemical manufacturers and domestic consumers of natural gas by selling them natural gas below opportunity cost. YPF has also undermined its international borrowing capacity by borrowing on behalf of the government for balance-of-payments purposes. Provincial governments have required YPF to carry out imprudent drilling campaigns just to generate work in their jurisdictions.

### 5.4 PETROLEUM PRICING

The GOA controlled crude oil and petroleum products prices by setting the crude transfer price to the refineries. For example the crude transfer price was set until January 1, 1990 at 80% of the international FOB price. However, the government use of out of date international base prices and delays in inflation/currency rate corrections resulted in frequent distortions in real terms.

Crude oil prices for private producers operating under risk service contracts were determined by contractual specific formulas, with the cost to YPF of such crude often being higher than the net price received by YPF, the loss having been borne by YPF.

Based on the transfer price, the government established several levels of petroleum products prices: (a) refinery (tank) product prices, which consisted of crude transfer price, plus the 10% refinery tax applied to the crude transfer price, plus the crude transport costs to the refinery and a refinery margin; (b) commercial prices (retention value), which are based on ex-refinery product prices, distribution costs, and dealer and retail marketing margins; and (c) consumer prices, based on commercial prices plus excise taxes (earmarked for energy and other investment funds, for subsidies to certain energy users, and for certain provinces and pension funds) that often exceeded 100% of the commercial price. A 15% value added tax (VAT) was added to commercial prices for fuel oil, diesel, lubricants and specialty products to arrive at a final consumer price for these items. No VAT was applied on gasolines, kerosene, or gas-oil.
5.5 GAS PRICES

The prices of natural gas and LPG were regulated. Each month the ES (the equivalent of today's Subsecretariat of Fuels, SSF) announced the transfer price of natural gas for sales from YPF to GdE (US$ 0.19 per m3 in 1988). This price was set without reference to the prices of alternative fuels or to YPF's cost of production or purchase from the private producing companies (average of US$ 0.46 per m3 in 1988). YPF's field prices for natural gas in August 1990 (US$ 0.17 per m3 compared to between US$ 0.34 to 0.51 per m3 in the USA) did not allow it to recover costs. Private producers under service contracts received somewhat higher prices ranging from US$ 0.34 to US$ 0.51 per m3. The difference in the transfer price was compensated by YPF.

The distribution price was based on the transfer price and a margin for natural gas processing in field facilities, gas pipeline transport and distribution. The final consumer price was based on the type of user, location, and volume and included 50% to 55% in taxes (VAT, National, Provincial, Municipal, and pension fund). The final consumer price to nonresidential users in August 1990 was less than 50% of comparable international prices and the final consumer in the residential sector was only about 20% of the international average. Social considerations and the intention to replace other fuels used by domestic consumers with natural gas motivated the GOA to set prices for those consumers well below the market value of substitute fuels. In an effort to offset the low price to domestic users, the price for industrial users was set at a level higher but still at about 75% of the fuel-oil equivalent.

LPG pricing provided low prices to LPG private sector distributors and very highly subsidized feedstock to petrochemical companies.

5.6 TAXES AND ROYALTY PAYMENTS

Indirect taxes on petroleum represented about 16.5% of total tax revenue of the government. The system was characterized by numerous taxes at various levels that influenced relative prices (e.g., the gasoline consumer price is nearly double that of kerosene and diesel oil). In instances where consumer prices were set by the government, YPF was not allowed to pass VAT on to the consumer. On the other hand, YPF was obligated to pay royalties to the provincial governments for crude and gas extracted in their territories, both for its own production and that of the private sector. Until 1989, the reference wellhead prices were based on the high 1988 world oil prices, adjusted upward for inflation. The difference between actual transfer price and the inflated reference price amounted to a royalty surcharge to YPF of US$ 135 million p.a. for crude and US$ 195 million p.a. for natural gas.

5.7 TRADE REGIME

Numerous restrictions constrained crude oil and refined products trade; for example, such products could not be freely imported or exported; there was a complex system of restrictions on refinery crude oil supply and products output for both private sector and YPF refineries. The protection for local products known as "Compre Argentino" affected the petroleum sector the hardest. (see para. 5.1.1 on sector regulations)

5.8 LACK OF COMMERCIAL ORIENTATION OF YPF AND GdE

Neither YPF nor GdE had been profit oriented, and neither company had access to sufficient financial resources to undertake investments (exploration, field development, enhanced and secondary recovery, and pipelines and other infrastructure) commensurate with their mandate and the potential of the sector. Cash accumulated by either company from operations was typically taken by the government. Neither company could predict access to funds since their respective annual budgets were not approved by the government until late in the year. Managements of the
companies have had virtually no authority, nor were they held accountable to the GOA for their performance. Management traditionally has been changed frequently (in the case of YPF, an average tenure of six months) and composed usually of appointees without management experience or knowledge of the petroleum business. Cost accounting was virtually nonexistent and records were distorted by currency devaluations.
6 THE HYDROCARBON SECTOR PRIVATIZATION

6.1 ROLE OF THE GOVERNMENT

The Argentine government has made the reform of public enterprises a centerpiece of its efforts to move Argentina to a higher path of sustainable economic growth by (i) reducing the role of the state, (ii) increasing production and improving quality of service, and (iii) promoting private sector investment.

The strategy consisted of (i) privatizing PEs whenever possible; (ii) strengthening the government's oversight as a shareholder and restructuring those PEs which cannot be privatized, (iii) setting clear rules of the game and transparency of control by establishing regulatory processes and agencies, and (iv) rationalizing labor management by reducing employment commensurate with efficient operations, eliminating antiproductivity provisions in labor contracts and practices, and limiting the role of labor unions in PE management. After first promulgating the basic legislation on reform of the State, the government issued specific decrees to establish the legal framework in each sector area.

6.2 GOVERNMENT OBJECTIVES AND STRATEGY

The Menem government concluded that the deregulation and privatization of the hydrocarbon sector was called for to mobilize the large amounts of investments required to reverse the decline in hydrocarbon production and reserves and ensure the expansion of the hydrocarbon sector infrastructure. The GOA adopted a four-pronged strategy as follows: (i) liberalize all hydrocarbon prices so as to allow supply/demand driven market prices for better decision making process across the entire business system; (ii) deregulate crude oil purchases and sales, including imports and exports, to foster competition and eliminate trade barriers so as to help integrate oil industry and Argentina into the global market, permit access to newer technology and optimize operations; (iii) enhance opportunities for private sector operations in exploration and producing areas held by YPF; and (iv) restructure/divest/privatize YPF and GdE. This strategy marked a drastic break with past practices. The government enacted legislation and issued successive decrees that covered in detail the various aspects of the reform (Summary of major legislation in Annex 4).

6.3 POLICY AND REGULATORY FRAMEWORK

The government's plan aimed at establishing an environment of open competition and equal opportunity for both public and private companies in all aspects of production, sales, and distribution of energy resources, while at the same time ensuring that national interests were protected with a minimum of regulations and controls. The government would thus limit its function to setting the general parameters for the development of the sector and to regulating its operation.

Policy Making. The government's decision to deregulate the sector, to allow prices to be established in a freely competitive environment, and to require PE's to function as profit oriented entities, meant its policy role would need to be clarified. Government policy decisions would be essentially limited to:

- establishment of taxes on petroleum products and natural gas, which in turn would have an influence on energy conservation and efficiency;
• promotion of exploration/production activities to both state enterprises and private concerns, negotiation and supervision of contracts with these entities; and
• development of an indicative national energy sector strategy.

**Regulatory functions.** The government, through various regulatory mechanisms and agencies would be responsible for:

- monitoring implementation of common carrier regulations when required;
- monitoring implementation of natural gas regulations when required;
- ensuring application of regulations on safety and environmental safeguards;
- monitoring compliance of all companies with their contractual commitments;
- regulating access and applicable tariffs to both owners and non owners to logistical infrastructure (transportation and shipping);
- ensuring that companies implement official standards in the design and construction of oil and gas installations and pipelines;
- certifying that installations after their completion meet the standards requirements; and
- ensuring public safety and environmental protection from hydrocarbon related activities.

The state enterprises would yield to the government their current regulatory roles such as: (i) YPF's upstream hydrocarbon sector policy role, promotion of exploration acreage, negotiation with private companies and control of their contractual commitments; and (ii) GdE's gas transportation and distribution policy and regulatory role including its role in setting norms and standards for gas related facilities. In addition, the government had decided to strengthen the functions of policymaker and regulator of its agencies for the hydrocarbon sector. The policy making and regulatory agencies would be organized and strengthened with the support of human, financial and logistical resources as well as with appropriate legislation and regulations to assume expanded responsibilities. Two studies of the organization and strengthening of the ES and the Natural Gas Regulatory Agency (NGRA) were carried out with the help of consultants. Their recommendations were later implemented. Technical assistance support has also been provided by consultants in day to day operations and training of new staff (Annex 1 & 3).

### 6.4 LIBERALIZATION OF CRUDE AND PRODUCTS PRICES

Three major decrees 1055/89, 1212/89 and 1589/89 summarized in Annex 4 were issued to provide for a comprehensive legal framework for the implementation of the government strategy. In terms of price liberalization, the decrees provided for deregulation of the crude oil and petroleum products market prices. They specified freeing of crude prices to equivalent level of export parity during a transition period until a competitive market is established; elimination of predetermined margins; consumer natural gas prices to reach by January 1992 90% of imported fuel oil equivalency for industrial consumers, with netback calculation procedures for determining the producers gas prices. Substantial increases were implemented in natural gas prices prior to the privatization of GdE in December 1992 and the freeing of all gas prices after a two year transition period.
6.5 DEREGULATION OF TRADE AND FOSTERING OF COMPETITION

Under the conditions of a deregulated market, petroleum producers, as well as YPF, can sell to the highest bidder and have the right to trade in crude oils. They have the right to import crude and products subject to general tariff policies. All production from whatever source would be freely disposable. All producers would have access to processing, transport, storage, and shipment infrastructure under control of YPF initially. Common carrier legislation decree 4/90 provides for oil pipeline transportation type tariff until competition is established in the transport business. New refineries and service stations may be opened and freely owned. It was expected that within 2 years the private sector would end up controlling 60% of the total production of crude once private companies (i) took over the operations in marginal fields sold by YPF, (ii) areas where initially they had service contracts with YPF but which were later converted into risk contracts, and (iii) central areas where they entered into joint ventures with YPF. The resulting diminished control of YPF over the crude oil market was important to ensure that the Government, or the future private owners of YPF, may not easily manipulate petroleum products prices through its/their control of YPF management decisions.

6.6 INCENTIVES FOR PRIVATE SECTOR

By end 1991, exploration/exploitation rights to YPF’s marginal producing areas had been awarded by the ES on the basis of an upfront cash-bonus payable to the treasury (with 4% to the province) resulting in US$ 266 million in revenues for 37 areas (Annex 2). Conversion of all existing exploitation service contracts (other than Houston plan related) have resulted in 9 contract areas under concession and 16 under association with YPF. In addition, joint venture participation by private companies in 4 YPF main producing areas resulted in an increase of the crude offered by the private sector to about 60% of the total market and generated an additional US$ 600 million to the treasury. Privately offered and controlled crude volume would increase over time as new exploration areas fell under private control and as YPF was being privatized (Annex 2).

6.7 TAX SYSTEM

All royalty reference prices for crude oil were set at between 80% and 100% of average official FOB sales prices for a basket of specified crude oils, thus reflecting allowance for costs between wellhead and point of sale. For natural gas, the royalty reference price was set at a maximum of 70% (on calorific equivalency basis) of the crude oil reference price. The tax on locally refined crude oil has been reduced from 10% to 0.1% of FOB value of the crude oil and eliminated for imported crude oil whose derivatives are fully exported. Also, private companies now bear and directly pay the royalty on the freely disposable petroleum they control. A Presidential Decree (2773/90) was issued defining the new tax regime for petroleum products (Annex 4).

6.8 MANAGEMENT OF PRIVATIZATION

To assist the Ministries to achieve their privatization objectives, the government had temporarily suspended the role of the Board of Directors of PEs and substituted them with a single chief executive called an "Interventor", a Trustee. These Trustees, who are similar to restructuring executives, are responsible for managing the transition of key strategic enterprises prior to their restructuring/privatizations. Only one Trustee was named for both YPF and GdE. Privatization units were set up within each of YPF and GdE to take charge of the day to day management of the process. The Director of the privatization unit was a competent and experienced professional from the hydrocarbon sector. He received advice and guidelines on major decisions from a top level coordinating committee composed of the Minister of Economy, the Secretary of Energy, the Subsecretary of Fuels and the Trustee. The latter became the President of YPF once it was converted into a Sociedad Anonima (S.A.).
6.9 YPF PRIVATIZATION

The government realized that for some time after deregulation of the sector, YPF would continue to control a significant share of petroleum production, refining, and distribution. To achieve the desired benefits of liberalization and deregulation and permit YPF to become an efficient competitor in an open and competitive market, the government evaluated with consultants assistance (Annex 1 & 3) the feasibility of divesting/privatizing certain non core business activities of YPF/GdE. As a result of these studies, the government approved a program of sales/participation to the private sector. YPF was transformed into a "Sociedad Anonima," a state company operating under private sector company law. YPF could thus be reorganized as a commercial integrated viable enterprise whose shares could be sold to the public.

A privatization law was passed by Congress for YPF (Annex 4). After restructuring YPF, the federal and the provincial governments as well as YPF employees would become the shareholders in the proportions of 55%, 35% and 10% respectively. The YPF law specifies that both the federal and provincial governments will sell up to 50% of their shares in the local and international stock markets within three years. The law allowed the State to ultimately own less than 20% of the YPF shares after approval of Congress. Another study recommended the organizational changes of YPF as a modern integrated oil company prior to its privatization.

6.10 GdE PRIVATIZATION

The government decided that GdE would be completely privatized. Studies were required to prepare and support the privatization of GdE. The first one evaluated the privatization options of GdE, for example whether it should be broken down and if so into how many companies, the regulatory framework and how to ensure competition where it was possible, a tariff study followed by a more detailed examination of the issues stemming from the interrelationship between tariffs levels for transmission and distribution, value of assets, price of gas and return to investor (Annex 1).

An important issue that was investigated in great details was whether producers and distributors would be allowed to own and control transmission companies. The gas regulations provide they can own a minority interest but not control transmission companies. Transmission companies would only have a service and not a merchant function. Large consumers could negotiate directly with producers the purchase of gas and have the option to bypass transmission and distribution companies.

Additional support was required to audit the physical condition of the transmission and distribution systems, evaluate the economic size of distribution systems and fit the results within the tariff recommendation, issue the privatization legislation and gas regulatory framework and regulations. Support was finally provided to the GdE privatization unit in terms of technical, legal and financial (Merchant banks) assistance in order to proceed with bid preparation, evaluation and negotiation for the sale of the gas systems.

Appropriate regulatory framework and legislation to privatize GdE were issued by Congress (Annex 4). GdE was to be offered as 2 competing gas transportation companies and 8 distribution companies. Buenos Aires area which provided 50% of the gas market was divided up into two areas thus allowing each transmission company a chance to compete in this market. The regulatory agency was in place and operational before new owners took over installations by end December 1992.
The Director of the privatization unit of GdE managed 5 groups dealing with gas transmission, distribution, processing plants, gathering/gas processing and LPG. The privatization team was assisted by investment bankers, technical consultants, external legal advisers and senior staff from GdE (Annex 1).

The role of each party involved in the privatization was as follows: The ME was responsible for the following up, obtaining consensus and passage of the legal/regulatory framework and the privatization law of GdE, the setting up and functioning of the regulatory body, and the basic rules regarding the financial aspects of the privatization. The SSF oversaw the entire process, handled relations with the legislative, executive and provincial bodies and coordinated the GdE privatization with that of YPF.

The Director of the privatization unit was in charge of executing the master plan of privatization, managed and coordinated the integration of the process, especially between the executive group and the external advisors, contacted potential investors and operators and recommended key decisions that affected the privatization process to the top level coordinating committee. The Director legal advisors provided legal coverage of the process such as terms of reference for consultants and contracting of external legal advisors, built relations with the legal departments of GdE and YPF and interfaced with external legal advisors concerning concessions award and contracts with new owners. The World Bank provided the financing of the necessary support and organization of the privatization process and overall technical advice.
7 CHALLENGES AND RESULTS

7.1 THE INGREDIENTS FOR A SUCCESSFUL PRIVATIZATION

The major ingredients for the successful privatization of the hydrocarbon sector in Argentina consisted of (i) a clear understanding of the policy makers of the issues and options in the hydrocarbon sector, (ii) clear objectives and strategy of the GOA in the hydrocarbon sector, (iii) the strong political will of the Menem government to proceed with largely economically based and justified proposals, (iv) a transparent and open process, (v) constant dialogue with vested interest groups and close cooperation with the legislative branch, (vi) appropriate legal and regulatory framework, (vii) carefully analyzed options and (viii) quality and competence of the political and technical managers as well as adequate financial and consultant support. The following describes how the GOA addressed the main challenges encountered in the privatization process and the results achieved.

7.2 RECONVERSION OF SERVICE CONTRACTS

During the year 1990, the GOA initiated a long and complicated negotiation to reconver 25 existing service contracts that existed between YPF and private companies to convert them into association or concession contracts where the private company would be required to take the price and marketing risks for crude. Negotiations were not completed before the deadline set in January 1991 for the deregulation of the sector because of the numerous negotiating parameters, the specificity of contract clauses and the sudden change of international crude prices due to the Gulf war crisis which started in August 1990. The GOA had underestimated the difficulty of the tasks at hand and their completion time despite considerable technical expertise support. The process took almost a year and a half to be completed.

7.3 LACK OF STRATEGIC PLAN FOR YPF

The lack of a strategic definition of the future of YPF was one of the most serious problems faced by the GOA just before the deregulation of the sector by end 1990. YPF appeared to transfer marginal oilfields and prepare for association contracts with private companies in four of its central areas without yet being clear on how it would proceed with its own restructuring/privatization. The hydrocarbon sector policy appeared to be determined by the GOA fiscal needs of the moment since the revenues from the sales of areas went to the Treasury to finance public expenditures.

The Menem government, through the first Trustee of YPF, appeared to favor a plan to strengthen the company through the sale of only marginal operations. At that time, the idea consisted of selling only certain service activities such as drilling, seismic and shipping carried out directly by YPF. Only an improvement of management of YPF was being considered. There was no mention of a strategic definition of YPF role in the future.

The guidelines of the Law providing for the reform of the State referred to the creation of a Federal Company of Hydrocarbons (FCH). The latter would have been a sort of a holding company controlling YPF, GdE and YCF (Yacimientos Carboniferos Fiscales), the National Coal Company. This project however remained on the drawing board. During the year 1990, there subsisted an inconsistency between the deregulation process of the industry and the lack of a vision for the transformation of YPF within an open and competitive petroleum market. It was generally felt that it would be impossible for the GOA to achieve the petroleum market deregulation objective by January 1991 deadline. The concern was reinforced by the fear that the Gulf crisis could end up into a war by that time.
However, starting in September 1990, the ME, the Secretariat of the Public Enterprises (SPE) (initially reported to the MPWS) and a new "interventor" who was designated, agreed on three decisions that resolved the issue. The first decision was a large increase of crude and petroleum products prices to put them at par with international market prices. The second was taken by the new "interventor" of YPF to prepare a strategic business plan of YPF and a draft of new statutes for the company within 90 days. Financial assistance was provided by the World Bank to support the work by consultants to help the GOA meet the deadline.

7.4 PETROLEUM PRODUCTS TAXATION LAW, OIL PIPELINES COMMON CARRIER REGULATIONS

The third decision was the preparation by the SPE of a draft Petroleum Products Taxation Law. Finally, the ES initiated the preparation of regulations of oil pipelines owned by YPF in order to allow their operations with third party access and internationally competitive transport tariffs. The new petroleum products taxation regime and the strategic business plan of YPF required approval by Congress. Since it was impossible to obtain the approval before the first of January 1991, the GOA decided to issue decisions through Executive Decrees as legal instruments. As a result, a few days before the end of 1990, three Executive Decrees were issued: (i) Decree 2278/90 transforming YPF from a State Company operation under public service law to that under private sector law, YPF, S.A.7 (Sociedad Anonima), (ii) Decree 44/90 regulating operations of oil pipelines still under the monopoly of YPF, and (iii) Decree 2773/90 providing for an excise and a value added tax on petroleum products but ensuring at the same time that GOA fiscal revenues are maintained at the same level as before deregulation.

7.5 THE GULF CRISIS TEST

The Gulf crisis was reaching the stage of war. The GOA was very concerned that a large increase of crude oil prices could jeopardize alignment of local prices with international prices. People generally felt deregulation could lead to lack of oil supplies in regions where marginal oilfields were located and to large variations in final consumer prices among different regions of the country. Under the previous regulated petroleum products pricing system, prices were uniform in the country. While the political establishment and oil industry experts believed it wise to maintain a while longer the regulated system, the GOA instead decided to comply with the deadline established in the deregulation decrees. As a result, the petroleum market in Argentina became completely deregulated on January 1, 1992.

7.6 FUNCTIONING OF DEREGULATION

The new system benefited from the full collaboration of all parties involved. While still controlling a major part of the crude production initially, YPF continued selling crude to the two private refiners, Exxon and Shell. These companies did not have any local production and had to purchase all their crude in the local market. There were concerns whether YPF would continue to be the swing producer in the supply of crude. YPF sold its crude at the export parity price. The petroleum products prices to the final consumers were at about the import parity levels. This led some to assume that the refiners had increased their margin, taking advantage of their oligopolical power in this sector in the country. In reality, the market involved very few transactions initially. The international reference prices for crude and products needed adjustment for quality specifications of the basket of Argentine petroleum products.

7. For simplicity the paper will continue to refer to YPF, S.A as YPF.
At about that time the reconversion of certain exploitation service contracts became effective (Figure 1). The crude coming from marginal areas also started to enter the market. In time the transaction numbers between producers and refiners multiplied. While initially the "spot market" type transaction predominated, thereafter the local market prices adjusted to international levels taking into account corrections for crude quality as contract negotiations between parties increased.

A major contribution to the functioning of the market was due to the reorganized SSF. The latter decided to eliminate the requirement of prior consultation with the SSF before authorizing import or export of crude and petroleum products. This action allowed the rapid integration of the local market with the international one.

The award of association contracts to private companies in four major YPF central production areas increased supply of privately owned crude and allowed the Treasury to collect US$ 600 million. Supply by the private companies became greater than that of YPF8 (Figure 1). This trend should continue as the SSF releases more marginal and exploration areas to a large number of private companies investing now in Argentina.

### 7.7 EVOLUTION OF PRICES

Freely negotiated prices between parties fell within the band comprising export and import price parity levels9 as shown in Figures 2 - 4. The way the refining sector did business changed over time. Initially, the refining companies purchased crude at a price close to export parity and sold their products to the final consumer at prices close to import parity10. Later ex-refinery petroleum products prices fell, resulting in shrinking refinery margins. Although this could have resulted from competition between refiners (YPF, Exxon and Shell), there were concerns that YPF was maintaining its ex-refinery prices low in order to (i) beat the competition and (ii) contribute to the economic stabilization program known as the "Plan de Convertibilidad." Could it be that YPF was being used by the GOA as a control company in a deregulated market? And if so, the market became very concerned about the level of GOA political interference with YPF management.

### 7.8 YPF AUTONOMY AND TRANSFORMATION!

YPF operating as a new legal entity, YPF, S.A., coincided with the deregulation of the petroleum industry. YPF legal status change through Decree 2778/90 was considered viable within the framework of the Law Reforming the State. However pressure from the workers union and the petroleum and gas producing provinces strongly opposed the proposed transformation of YPF. The workers union denounced the plan as "the dismembering" of YPF prior to its disappearance. The provinces complained they did not share in the revenues of the sales of marginal and central areas. The provinces claimed the GOA recognized them ownership over petroleum reserves in a pact that was signed with them in Lujan in 1990. The workers union and the provinces proposed and the GOA agreed to deal with the future of YPF within the framework of a new hydrocarbon law.

The Executive Branch submitted to the national Congress the transformation plan of YPF within the framework of a new law. The text that the executive sent to the House of Deputies of the Congress in April 1991 was based on Decree 2778/90. Other alternative texts were submitted such as that of Cassia & others, Osovnikar and Manzano. All projects had one thing in common: the

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A compromise was reached in which the petroleum and gas producing provinces could acquire up to 39% of the shares of the company. To buy the shares, these provinces would use credits for unpaid and contested royalty payments owed them by the Federal Government. The latter retained 51%. The employees had the option to purchase up to 10% of the shares in accordance with the program of ownership participation allowed by The State Reform Law. The national government and the provinces were obligated to sell at least 50% of their holdings in the new company through the stock market. The transformation plan of YPF includes the sales of certain assets and private participation through association with YPF in others. The transformation of YPF was considered critical for the functioning of an open and competitive market. YPF would operate as another company in a competitive market. Once under majority private ownership, its management could no longer be subject to political interferences. The sale of YPF shares in the capital markets would ensure that the company complies with the discipline of the market and its management is driven by commercial objectives.

7.9 EVOLUTION OF GdE PRIVATIZATION PROCESS

The Law Reforming the State had included the privatization of the distribution services of GdE. The MPWS claimed jurisdiction over the privatization of the gas distribution business. The ME argued for the need to restructure GdE before privatization. While the MPWS went ahead with the approval of a series of so-called "private initiatives"11, the study and the project of restructuring of GdE became the main focus under the leadership of the ME.

The executive decree 48/91 defined the restructuring plan of GdE and the strategic guidelines for the restructuring of the natural gas industry. It became evident that the approval of a regulatory framework for the gas industry would be a prerequisite for the restructuring of the industry. A follow up executive decree 631/91 resolved ambiguously the problem posed by the private initiatives, included the reconfiguration of gas distribution systems on technical and economic grounds and the authorization to privatize them on the basis of international competitive bidding. Two important decisions were made then: (i) one separating the responsibility for the process of privatization from the day to day management of GdE, and (ii) the other requesting Congress approval of a law including the gas regulatory framework and the complete privatization of GdE.

7.10 ROLE OF THE DIRECTOR OF GdE PRIVATIZATION UNIT

The marketing process was vital12. Many trips to the US, Europe, and elsewhere were made by the GdE privatization unit to contact bidders. Two major bidders from Europe disliked the regulatory framework and threatened not to bid. Both reversed their position later. The lesson for the GdE privatization unit was that it would have been even more aggressive in marketing, seeking out possible firms and selling them strongly, rather than awaiting expressions of interest before responding.

Flexibility in marketing was extremely important. Argentina shifted from allowing international consortia ownership of only 51% to 70% equity. This allowed the consortia to sell

11. According to which 21 natural gas distribution zones of GdE would be awarded as concessions to local private companies.
almost 20% of their own shares for a capital gain after a few years. This in turn greatly increased the interest of international firms in the process.

Consultants were hired to supervise the privatization process on behalf of the privatization unit. This did not work. The lesson was the process should be managed by government officials and own staff.

The team leader for a consulting firm is critical. The lesson was that the privatization unit should give extraordinary weight to the person who will be the full time team leader for the consulting firms and merchant banks. These did not always live up to their contractual commitments. An outstanding team leader could force his/her own firm to produce, fill the gaps and help out decisively. On the other hand, where the team leader was more junior, lack of performance became unresolved.

Supervision of consulting firms is crucial. Consulting firms are only as good as the supervision they get. Constant monitoring by the government is necessary.

7.11 ISSUES FACED BY GdE PRIVATIZATION LAW

Just like in the case of YPF privatization law, the executive branch proposed gas industry transformation law competed with other alternative texts submitted to Congress. The major concerns revolved around (i) the need to diversify natural gas supply sources, (ii) the tariff schemes that would be included in the bidding documents for the sale of GdE, and (iii) the role and functions of the NGRA.

The experts had a very difficult time, on the one hand, establishing transport and distribution tariffs that reconciled the need for investors to recover costs and be remunerated adequately while at the same time be competitive with international levels, and, on the other, articulating an industrial strategy. It was recognized that tariff levels would condition the sale price of the gas facilities and the viability of the gas system in the long term.

The creation of the NGRA, its role and functions, its financial autonomy and in particular its independence vis-a-vis the ME and Congress as well as the remuneration of its board members, had also been debated at length. While the gas supply would be diversified somewhat as YPF sells or associates itself in oil and gas fields, YPF would still remain the major producer of gas in the medium term, with a share of more than 66%. Gas from Bolivia and Chile could provide some competition but it still would have a marginal impact on supplies.

7.12 IMPACT OF MARKETS DEREGULATION

Open competition had the biggest impact in the local market. New retail stations were built and existing ones were modernized. Use of credit cards was introduced in retail marketing and minimarkets made their appearance in service stations. A greater differentiation in the quality of services was also introduced. The number of retail stations offering compressed natural gas (CNG) as fuel witnessed the largest growth despite that CNG continued to be capped in relation to gasoline price.

During the period 1990-1991, the rate of price increases of petroleum products to the final consumers kept below that of consumers price index (Figure 5).
In terms of petroleum trade, there was an increase in exportable surpluses, multiplication of supply sources and the consolidation of the Argentine petroleum products niche in markets in Chile, Uruguay, Paraguay, Colombia and Brazil. The balance of trade in the petroleum sector showed an increasing positive balance from 0 in 1988 to US$ 350 million in 1989 (when deregulation was initiated) to more than US$ 800 million in 1992.

7.13 CHANGES IN EXPLORATION AND PRODUCTION ACTIVITIES

While there were several private national oil companies such as Perez-Companc, Bridas and Pluspetrol and a handful of foreign oil companies such as Occidental and Amoco operating in exploration and production in Argentina in 1989, the sale of marginal fields, associations of YPF in the central fields, the sale of the south and northeast fields and the promotion of exploration under the "Argentina" plan attracted considerable interest. There are now 22 oil companies from the USA, 4 from the UK, 4 from Australia, 3 from Canada and 4 from other countries carrying out exploration and production operations in Argentina.

7.14 CHANGES IN COSTS OF GOODS TO THE SECTOR

The sector supplying goods and services (SGS) to the petroleum industry was invoicing about US$ 1,100 million per annum (p.a.), i.e., US$ 600 million in services and US$ 500 million in materials. The SGS satisfied a monopsonic demand of YPF and was dependent on the level of activity of the latter. There was no foreign competition. The SGS developed as an import substitution industry, enjoyed a high level of tariff and non tariff protection under the "Compre Argentino" law and supplied 90% of the market. The SGS used foreign technology under license agreement with foreign suppliers. The licenses agreement restricted the SGS sales to limited geographic areas.

Under the conditions of a deregulated market, the SGS faced more diversified and demanding clients. The SGS became exposed to competition from imports. The SGS faced an uncertain demand for its products and services due to the more pronounced impact of international oil price on the level of activities in Argentina now.

As a result of deregulation, well casing and tubing materials, which constitute a large percentage of well costs, decreased by 29%, the pumping rods by 25% and pumping units by 12%, over the 1988 to 1991 period (Figure 6).

7.15 STRENGTHENING OF THE REGULATORY FUNCTION

Strengthening the Government agencies managing the hydrocarbon sector to take over the regulatory role previously played by the NOCs was considered as an area of great importance for a sustainable privatization program. A study was commissioned to evaluate the organization, needs for staffing, technical assistance and training as well as operating systems for the NGRA. The same study assessed the data gathering and reporting needs and the administrative procedures of the NGRA in order for it to operate as a lean and efficient body meeting the sometimes conflicting needs of the industry, consumers and government. The same consultants are providing continued assistance to the NGRA during the difficult phase of start up of operations of the pipeline and distribution systems by the private sector.

Financial autonomy of the NGRA was assured by law. The NGRA funding was provided by charging a fee to transmission and distribution operators. Salaries of the members of the Board and staff were also to be competitive with comparable industry salary levels. The salary level of the board members is still being debated at this time by the executive and legislative branches of government. Finally continuity of the management of the NGRA was assured in the law through staggered nomination of the board members who can only be revoked for reasons of serious faults.
Staggering of nomination would prevent any one administration to change all board members at one time. Several seminars were also organized by the Argentine NGRA board members with experienced regulators from other countries such as the UK, Canada and the USA to learn firsthand from their experiences and develop procedures accordingly. It is not expected that the NGRA would run smoothly from the start. Only tests from actual cases to be decided by the NGRA would tell how well it would perform not only in relation to the industry and consumers but also more important in relation to the federal court system and antitrust legislation. This is the reason why assistance from specialized consultants would continue to be required and financing provided by the World Bank.
Argentina past economic policy has proven to be unsustainable in the long term. The policy stemmed from highly regulated economic activities where for a long time the agricultural sector provided the funding for transfers and subsidies to other activities and in particular supporting the role of the State in so-called key strategic areas, such as the oil and gas sector. In 1989, the Menem government decided on an economic policy based on a reduced role of the State, the centerpiece of which was the privatization of public enterprises, and a more pronounced participation of the private sector in an open and competitive market environment with the objective to increase and improve production and services. The new government resolutely implemented hydrocarbon sector policy measures and a legal and regulatory framework which made possible the successful privatization of the YPF and GdE.

Decisive actions were taken to create an open and competitive crude oil and petroleum products market by: (i) eliminating the monopoly of YPF and GdE in the import/export, production, transport, refining and distribution of crude and petroleum products, (ii) reducing the share of crude and petroleum products that YPF controlled either directly or indirectly through sales of oil and gas fields and refineries as well as retail stations to the private sector, (iii) privatizing completely the transmission and distribution activities of GdE, (iv) deregulating the crude and petroleum products market through free disposal of crude by private companies and complete liberalization of prices, (v) regulating only those activities in the gas sector that operate like monopolies (transmission and distribution) and letting where possible market competition operate such as in the purchase and sale of natural gas, and (vi) providing third party access at reasonable rates to oil pipelines initially controlled by YPF.

The government actions were underpinned by appropriate legal and regulatory instruments approved by Congress which authorized and ensured their sustainability. The major legal instruments were the privatization laws of YPF and GdE that were issued separately.

YPF now controls only 40% of the crude production and 50% of the products market and is required to compete in these markets. More than 22 international oil companies have initiated operations in exploration and production since 1989. Argentina is now exporting large volumes of crude and products to neighboring markets (about 10% of production). The sale of assets of YPF has brought in until now about US$ 1.4 billion in revenues to the government. The government is required to sell majority share ownership in YPF stock to the private sector within 3 years. GdE had been completely privatized on January 1, 1993, and since then private buyers have taken over the operations of the gas systems. Several experienced major gas business companies such as British Gas, Enron, Gas Natural and others have participated in the bidding for the purchase of assets of GdE. The sale of GdE (in some cases only 70% of the transmission and distribution companies were sold) brought about US$ 300 million in cash revenues and canceled about US$ 1.539 billion of debt at market prices.

The major ingredients for the successful private sector participation in the Argentine hydrocarbon sector were as follows: (i) a clear understanding of the issues and options of the hydrocarbon sector by the policy and decision makers within the government open economy framework, (ii) clear objectives and strategy of the GOA in the hydrocarbon sector, (iii) a strong political will of the Menem government to proceed with largely economically based and justified proposals, (iv) a transparent and open process of privatization, (v) maintaining a constant dialogue with vested interest groups and a close cooperation with the legislative branch, (vi) an appropriate legal and regulatory framework largely free from interferences of vested interest groups, (vii) a
careful analysis of options, and (viii) the quality and competence of the political and technical managers supported by adequate financial and consultancy resources.

While great achievements were made in establishing an open and competitive market in the hydrocarbon sector with a major private sector involvement, the government needs to continue to ensure that (i) competition is maintained in the petroleum products market and (ii) the NGRA fulfills its critical regulatory role in the natural gas sector.
Annex 1

SUPPORT BY CONSULTANTS

Consultant and Country of Origin

-----------------------------
De Golyer & McNaughton, USA
-Calcagno y asociados, Argentina

Deloitte & Touche, USA
and M.H. Azoulay, Argentina
Edgar Schlabach, USA

Gaffney, Cline & Associates, USA and
AICC Consultores S.A., Argentina

George M. Pomonick

HADCO International Inc. Appraisals and
consulting services, USA

James McIlvoy, USA

Lloyd's Register, UK (Marspec)

MacKinsey, USA

Morgan Stanley & Co., USA
Roberts Capital Markets

Pike Ships Sales Limited

Richard Wagner

Rotschild, UK Associated
with Goldman Sachs Co., USA
and Banco de Galicia, Spain
y BS.AS. S.A. and
Argenbur S.A.

Salomon Brothers Inc., USA
Merchant Bankers Asociados

Nature of Terms of Reference, (GdE or YPF)

Technical/Reserves Estimation, valuation and data room. (YPF)

Privatization Process Coordination. (GdE)
Technical, Pipeline (GdE)

Technical/Reserves estimation, valuation and data room, (YPF).

Technical, (GdE)

Technical, Drilling services Asset valuation, (YPF).

Technical, (YPF).

Technical, Shipping (YPF).

Technical, Divestiture Plan Business Units (YPF & GdE).

Technical (YPF)

Technical, (YPF)

Technical

Financial Investment Bankers (GdE)

Financial Merchant bankers (YPF)
Consultant and Country of Origin

Shea & Gould - Akin, Gump, Strauss, Hauer & Feld, USA, Estudio Zang, Mochon, Bergel y Vines - Estudio Dr Augustin Gordillo, Argentina

Stone & Webster, USA Associated with Arthur Andersen (Pistrelli, Diaz & Asoc.) Vogt & McGuire Limited

Booz Allen & Hamilton, USA

Arthur D. Little, USA

Mac Kinsey, USA

Estudio Marval, O'Farrell & Mañaril, Argentina with Andrews & Kurt, USA

Maciel, Norman & Asociados, F. Vinelli and C. Brierly (Argentina & UK)

Nature of Terms of Reference, (GdE or YPF)

Legal consultants (YPF)

Technical/Economic Business Units Sales Configuration (GdE) Technical, YPF

Natural Gas Regulatory Agency Study, (GdE).

Reorganization of YPF

Marketing Role of YPF Study.

Legal Advisors (GdE)

Regulatory Framework Natural Gas - GdE
### Annex 2

**PRIVATE PARTICIPATION RESULTS**

<table>
<thead>
<tr>
<th>Entity</th>
<th>Asset Description</th>
<th>Value US$ Million</th>
<th>Buyer(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>YPF S.A. Oil &amp; Gas Fields</td>
<td>Joint venture Tierra del Fuego Central area (Austral basin)</td>
<td>143.5</td>
<td>Ampolex Australia, CGC, Tecpetrol</td>
</tr>
<tr>
<td></td>
<td>Joint venture Santa Cruz II Central Area (Austral basin)</td>
<td>141.6</td>
<td>Noreen (Canada), Dong Won (Korea), CGC, Pluspetrol</td>
</tr>
<tr>
<td></td>
<td>Association in four central areas</td>
<td>600.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(El Huemul, Viscacheras, El Tordillo, Puesto Hernandez)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuels (Oil &amp; Gas Fields)</td>
<td>Concession of 28 Undersecretariat Marginal areas</td>
<td>238.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1st group)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concession of 28 Marginal areas</td>
<td>72.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2nd group)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YPF S.A. (Oil &amp; Gas Fields)</td>
<td>Aguargague Gas Field (sale of 70%) Petrobras</td>
<td>143.7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Palma Largo oil fields (sale of 70%)</td>
<td>36.0</td>
<td>Norcen (Canada), Dong Won (Korea), CGC, Pluspetrol</td>
</tr>
<tr>
<td>YPF S.A.</td>
<td>Condor Treatment Plant, Santa Cruz San Sebastian LPG Treatment Plant, Tierra del Fuego La Maggie-Pta Loyola Crude oil Pipeline, Santa Cruz, Punta Loyola distribution plant, Santa Cruz Cruz del sur distribution plant, Tierra del Fuego</td>
<td>8.0</td>
<td></td>
</tr>
<tr>
<td>Entity</td>
<td>Description</td>
<td>Value US$ Million</td>
<td>Buyer(s)</td>
</tr>
<tr>
<td>--------</td>
<td>-------------</td>
<td>-------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Campo duran Refinery, Salta, (sale of 70%), Campo duran-Monte Cristo Products pipeline, salta-Tucuman, Distribution plants, salta-Tucuman</td>
<td>64.6</td>
<td>Perez Companc Pluspetrol, Isaura, Astra</td>
<td></td>
</tr>
<tr>
<td>Allen Main gathering pipelines, Allen-puerto rosales Crude oil Pipeline.</td>
<td>90.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Puerto rosales marine terminal</td>
<td>15.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation and Industrial equipment and facilities sold to private operators and contractors, nation wide. First group</td>
<td>29.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second group</td>
<td>7.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aircraft and other transportation equipment, nation wide</td>
<td>6.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drilling equipment, nation wide</td>
<td>1.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil tankers (partial), Puerto Rosales</td>
<td>14.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dock Sud refinery, Buenos Aires</td>
<td>17.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation and industrial equipment, nation wide Third group</td>
<td>4.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GdE Transportadora de Gas del Sur, S.A. (sale of 70% only) Enron (operator)</td>
<td>356.0</td>
<td>Enron- Citicorp/ Perez Companc</td>
<td></td>
</tr>
<tr>
<td>Transportadora del Gas del Norte, S.A. (Sale of 70% only) Nova (operator)</td>
<td>210.0</td>
<td>Nova-CGC</td>
<td></td>
</tr>
<tr>
<td>Distribuidora de Gas Metropolitana, S.A. (sale of 70%) British Gas (operator)</td>
<td>300.0</td>
<td>British Gas/ Perez Companc</td>
<td></td>
</tr>
<tr>
<td>Entity</td>
<td>Asset Description</td>
<td>Value US$ Million</td>
<td>Buyer(s)</td>
</tr>
<tr>
<td>------------------------------</td>
<td>------------------------------------</td>
<td>-------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Distribuidora de Gas Bs As Norte, SA</td>
<td>(sale of 70%) Gas Natural (operator)</td>
<td>55.5</td>
<td>Gas Natural/ Discogas, Manta</td>
</tr>
<tr>
<td>Distribuidora de Gas Pampeana SA</td>
<td>(sale of 70%) Camuzzi (operator)</td>
<td>235.0</td>
<td>Camuzzi/ Gasometri &amp; CGA</td>
</tr>
<tr>
<td>Distribuidora de Gas Litoral SA</td>
<td>(sale of 90%) Tractebel (operator)</td>
<td>104.0</td>
<td>Tractebel- Garovaglio y Zorraquin-Iberdrola</td>
</tr>
<tr>
<td>Distribuidora de Gas Centro SA</td>
<td>(sale of 90%) Italgas (operator)</td>
<td>138.0</td>
<td>Sideco- Italgas</td>
</tr>
<tr>
<td>Distribuidora de Gas Cuyaba SA</td>
<td>(sale of 60%) Italgas (operator)</td>
<td>122.0</td>
<td>Sideco- Italgas</td>
</tr>
<tr>
<td>Distribuidora de Gas Noroeste SA</td>
<td>(sale of 90%) COGASCO (operator)</td>
<td>72.0</td>
<td>J. Cartellane COGASCO (Chile), Banco Frances</td>
</tr>
<tr>
<td>Distribuidora de Gas Sur SA</td>
<td>(sale of 90%) Camuzzi (Italy)</td>
<td>148.0</td>
<td>Camuzzi/ Gasometri CGA</td>
</tr>
</tbody>
</table>

Note: For the ten companies (2 transport and 8 distribution), the GOA received US$ 300 million in cash and canceled US$ 1539.6 million of debt at market prices (about US$ 3 billion face value). Some of the companies also assumed short term liabilities amounting to US$ 200 million approximately.
Annex 3

MAIN LIST OF WORK BY CONSULTANTS
AND BRIEF DESCRIPTION

1. Technical

1.1 Reserves estimation, valuation and data room

The consultants carried out oil and gas reserves, production forecast estimates and economic valuation. These served as a basis for requesting bids from interested investors. Thereafter, the consultants helped prepare the data room to facilitate access by private prospective buyers and worked closely with the merchant bankers hired as consultants in marketing the assets and deals.

1.2 Natural gas pipeline transmission physical condition valuation

The consultant carried out a physical and economic valuation of the assets which consisted of the transmission and distribution systems. This work was required for facilitating the configuration of business units and as a support to the tariff level that was sought.

1.3 Drilling equipment valuation

The consultants carried out a physical audit and valuation of the drilling equipment owned by YPF before inviting bids for their purchase.

1.4 Ships valuation

Same as above.

1.5 Transformation plan of YPF S.A.

The plan was developed on the basis that it would maximize the sale value of YPF's shares in the local and international financial markets. The plan recommended the sale of marginal and inefficient operations and assets that were not necessary for supporting the core activities of YPF.

1.6 Natural gas transmission and distribution systems configuration prior to sale

Several options were studied taking into account the need to keep the least economic southern gas pipeline operating after privatization of GdE, cost recovery and remuneration to private investors, competitive levels of tariffs to consumers and the need for long term expansion of the transmission and distribution systems. The distribution and transmission systems were configurated on the basis of technical and economic evaluations.

1.7 Natural gas regulatory agency organization and systems study and implementation

Given the gas regulatory framework and privatization law and the system configuration, the NGRA needed to be organized, staffed, equipped with adequate systems and trained to fulfill its responsibilities to the consumers, operators and government.
1.8 Reorganization of YPF S.A. under new statutes and market environment

YPF required a complete reorganization in light of the spinning of many oil and gas fields as well as surface facilities and the fact that YPF would now operate in an open and competitive market environment as one other company.

1.9 Restructuring of YPF S.A. petroleum products marketing activities

YPF marketing activities required to be streamlined, modernized and organized to be able to operate efficiently in a market driven environment.

2. Financial

2.1 Investment bank for promotion of sale of assets

Investment banks were contracted to help in the promotion and sales of assets. They worked closely with technical consultants for the sale of oil and gas fields, installations, pipelines and distribution systems.

3. Legal

3.1 Legal consultants for sales of assets

3.2 Legal consultants for stock exchange registration

In general the legal consultants worked on the various pieces of legislation with the support of local consultants who are more knowledgeable about the local legal culture. They helped the privatization units prepare the draft regulations, the bidding documents for the sale of assets or contracts on oil fields, evaluation of the bids and negotiation and signing of the sale contracts.
Annex 4

IMPORTANT LEGISLATION AND REGULATIONS

1. Decree 1055/89 (Decreto 1055/89)-Crude Oil Market Competition

Provides for an open and competitive market for crude oil by allowing concessions for marginal areas of YPF S.A., association in central areas with YPF S.A., free old concessions areas held by private companies from supplying crude oil to YPF S.A., and option of free disposal of crude produced from areas awarded under the fifth round of the Houston plan.

2. Decree 1212/89 (Decreto 1212/89)- Products Market Competition

Provides for transparent rules of the game during the transition until private sector participation becomes effective, deregulates all downstream activities, allows reconversion of old association and concession contracts from service to risk contracts, frees prices, eliminates the crude oil allocation system under the so-called "mesa de crudos," allows free construction and operation of refineries and free installation and ownership of service stations and authorizes the transformation of YPF S.A..

3. Decree 1589.89 (Decreto 1589/89)- Import/Export Trade Regime

Provides for the integration of the sector in the international market through free import and export of crude and petroleum products, elimination of tariffs and duties, and free disposal of crude for concessionaires under the Houston plan.

4. Executive Decree 2778/90 Transforming YPF into YPF S.A. (Sociedad Anonima)-YPF became Autonomous as YPF, S.A.

Issued on December 31, 1990, this decree provides for the elimination of all existing restrictions and limitations imposed on YPF in order to operate with full autonomy under private law as a state enterprise open to private capital in competition with other companies in the sector. The decree was then submitted to Congress for its approval.

5. Decree 44/90 Regulating Operation of Oil Pipelines still under a monopoly of YPF S.A.

Allows third party access at reasonable tariffs equal for all users.

6. Decree 2773/90 - New Taxation Regime for Petroleum Products

The decree provides for the imposition of an excise and a value added tax to deregulated petroleum products prices.


This Law, passed by Congress in its ordinary session number 589 of August 21, 1992, approved the Executive Decree 2778 of December 31, 1990 which transformed YPF to a State Company with Private Law Company (Sociedad Anonima) statutes. The major dispositions of this Law are the following.
Federalization of the Hydrocarbons. State ownership of the hydrocarbons reserves is passed on to those provinces in which those reserves are located. YPF, S.A. becomes the concessionaires of all areas under exploitation by this company as well as oil and products pipelines and other connected installations.

Transformation of YPF Status and Privatization of its Social Capital. YPF is transformed into a Private Law Company with the objective of operating as an integrated oil company, economically and financially balanced, profitable with an open capital structure. While the majority ownership is still held by the State and the Provinces, YPF, S.A. will not be subject to any legislation or administrative procedure which regulate the administration, management and control of companies in which the State has a participation.

The Social Capital of YPF, S.A. will be constituted by 4 classes of shares. Class "A" shares are owned by the State representing 51% of the total. Class "B" shares could be purchased by the oil producing Provinces which will have the first choice for up to 39% of the total. Class "C" shares could be purchased by YPF, S.A. personnel up to 10% of the total. Class "D" shares are those that the State and the Provinces sell to the private sector. The Provinces could exchange the debt owed them by the State for non payment of royalties to purchase their shares. If either or both Provinces and personnel do not exercise part of their shares purchase, the State will increase his participation in proportion of these non acquired shares converting them into Class "A" shares.

While Class "A" shares represent at least 20% of the Social Capital, their consenting vote are required for the following decisions: (i) a merger with other companies; (ii) an agreement that YPF, S.A. be subject to a friendly or hostile take over represented by a control of 51% of its capital through shares purchase in stock exchanges or financial markets; (iii) the transfer to third parties the exploitation rights of YPF, S.A. which result in the latter stopping all exploration and production activity; and (iv) the dissolution of YPF, S.A. The decisions on item (iii) and (iv) will in addition require issuing a law for their approval. Finally the reduction of the shareholding below 20% for Class "A" shares will also require issuing a law for approval.

Privatization of Assets and Shares of YPF. S.A. The State and the Provinces are required to jointly sell at least 50% YPF, S.A. capital within three years of the distribution of the shares. The Executive Branch will determine the appropriate conditions and volumes of shares for each offering, defining the maximum participation by large local and foreign investors and reserving a percentage to small Argentine investors. The Board of Directors will be composed of 7 members. While the State still controls at least 20% of the capital, the Class "A" shares will name 2 Directors following the proposal by the Congress and approval by the Executive Branch.

Annexes to the Law describe all areas under exploitation by YPF, S.A. and the list of assets to be sold or in which YPF, S.A. will keep a participation. The identification of these assets was the subject of a prior study by specialized consultants. The Law also creates a 9 member Privatization Commission of the assets to supervise the implementation of the Law. 3 members are designated by the Executive Branch, 2 Deputies, 2 senators and 2 retirees from the hydrocarbon sector entities. The Law allocates up to 10% of the results of the sales to compensate the personnel of YPF S.A. who are going to be affected by the assets sales. The Law transfers to YPF, S.A. all the land owned by either the State or the provinces and in which are located plants, depots or other installations now occupied by the company. The buyer of assets should not end up with a controlling position in the market. The privatization process will be monitored by a bicameral commission following up privatizations. The price at which the shares will be sold to the personnel and Provinces will be determined by the market.
8. **Executive Decree 48/91 Transforming Gas del Estado**

This decree included the idea of "private initiatives" proposed initially by the MPWS in 1990, under Law 17520 allowing concession of public works, consisting of 21 natural gas distribution zones reserved for Argentine private companies without international competitive bidding. However the decree provided for the privatization of the transmission pipelines and defined better guidelines for the strategic changes of the gas industry. It was decided to adopt the free access system in order to maximize competition between suppliers and buyers of gas. The gas sales purchase business would be completely free after a short transition period. The services of transportation by pipeline and distribution having the characteristics of a natural monopoly would be regulated. Tariffs would be based on cost recovery coupled with an incentive system.

9. **Executive decree 631/91 Guidelines for the Restructuring of the Gas Industry**

Provides guidelines for the restructuring of the gas industry and attempted to resolve in an ambiguous manner the problem posed by the private initiatives through a reconfiguration of the distribution areas following technical and economic criteria and proceed with their privatization through international competitive bidding.

10. **Privatization Law of GdE and Natural Gas Regulatory Framework**

**(Law 24076 of June 12, 1992)**

*Privatization of GdE.* The privatization of GdE would proceed by putting up for bids (i) the natural gas transmission assets divided into two competing networks and (ii) the natural gas distribution assets divided into areas coinciding with provincial boundaries. More than one province and zones under different jurisdiction may be put up for bids as one distribution area if economically justified.

*The Natural Gas Regulatory Framework.* The natural gas regulatory framework provides for the separation of the natural monopoly aspects of gas transport and distribution (moving gas from sellers to buyers) from the competitive aspects of the industry (buying and selling natural gas). As such it promotes competition between producers and consumers of natural gas for the selling and purchase of natural gas and regulates the transmission and distribution services ensuring that tariffs are fair and reasonable while promoting efficient and reliable operation of the natural gas transmission and distribution facilities on an open and non-discriminatory basis.

Transporters are not allowed to purchase or sell gas except for its own use. No producers, operators of storage facilities, distributors, large consumers or controlled or controlling companies thereof, shall own any controlling interest in transporting companies.

No consumers who directly acquire gas from producers may own any controlling interest in any distribution company operating in the same geographical area. No broker shall own any controlling interest in any transport or distribution company.

Minority holdings of companies operating in a sector of the gas industry in the stock of other companies operating in other sectors of that industry must be approved by the NGRB. Stock of companies which transport or distribute natural gas must be represented by non-endorsable nominative shares.

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Free imports of natural gas are allowed while exports requires the authorization of the Executive Branch within 60 days.

Private entities would be awarded a 35 year term concession (extendable for 10 more years) for the transmission and distribution of natural gas. Federal or provincial state-owned entities could provide such services if no private entity shows any interest.

Transporters and distributors of natural gas have the right to obtain easements for constructing their systems after due compensation to land owners. In case of disagreement over compensation, the Natural Gas Regulatory Board (NGRB) would arbitrate a fair compensation.

Transporters and distributors may not carry out unfair competition or abuse of a dominant position in the market as defined under the Anti-trust Law 22.262. They should allow free, non-discriminatory and non-preferential access to new users unless all capacity is already committed at the time. Request for new services must be answered within 30 days. Any disagreement would be submitted to the NGRB which will decide after due hearings are held.

**Tariffs.** The NGRB will approve tariffs to residential, commercial, industrial, electric power generation and transportation users. The tariff will be set according to principles laid down in the natural gas regulatory framework in order to provide the concessionaires with a reasonable rate of return comparable to those obtained in businesses of similar risks.

The bidding documents setting the terms and conditions for the sale of the concession contracts include the cap tariffs corresponding to each type of transportation and distribution service.

During the life of the concession contracts, tariffs will be adjusted by the NGRB pursuant to a formula established on the basis of international market indicators reflecting the change in the value of goods and services related to the concessionaires' activities. Such indicators will, in turn, be adjusted upward or downward by a factor intended to encourage efficiency in the rendering of services as well as investments in the construction, operation and maintenance of facilities. The formula will also reflect any change in the taxes levied on tariffs.

Transporters and distributors may decide to forego all or part of the rate of return contemplated in their price caps. Under no circumstance, however, may they fail to recover their costs. Other limitations are:

(i) costs attributed to services provided for one customer or category of customers may under no circumstances be recovered in the tariffs charged to other customers; and

(ii) no transporter or distributor may charge any difference in tariffs, services, or in any other respect, with the exception of cases where such differences may result from separate localities, classes of service or any other reasonable distinction approved by the NGRB.

The NGRB is granted the power to enact the rules and principles the concessionaires must adopt in their records of costs and accounting proceedings in order to make it possible for the Board to assess the progress of the business, the changes in assets and liabilities, investments made, depreciation criteria, the assignment of costs by activity, zone and type of users and any other factor the Board may deem appropriate to know for the better regulation of the activities carried out for the concessionaires.

Transporters and distributors must file with the Board the tariff schedule they propose and could request changes at any time. The tariffs are then given wide publicity to users. The board on the other hand may also decide changes after complaints and due hearing.
Users who acquire gas directly from producers are granted the right to negotiate freely with producers or brokers. Users may use the distributors facilities paying the required tariffs or may construct their own lateral lines.

Subsidies to tariffs may only be granted by Parliament and must be expressly identified within the national budget.

**The National Gas Regulatory Board.** The NGRB'S powers stem directly from Congress. The Board is an independent entity, free from undue political influence or special interest groups that will apply the law with objectivity and transparency.

The Board's five members will be appointed by the executive branch after agreement by Congress from among highly qualified people selected on the basis of their technical and professional backgrounds. They will hold office for five years and could be renewed indefinitely and may only be removed by means of a well founded decision of the executive branch, previously notified to Congress.

The Board has a broad authority that range from enacting technical and administrative regulations and procedures to formulating bases to calculate tariffs, from determining the basis and conditions to award transport and distribution concessions proposing to the executive branch the extension, termination or replacement of said concessions and from authorizing easements of access and rights of way, to establishing procedures.

The Board responsibilities are to safeguard property, the environment and public safety in the construction and operation of systems of transport and distribution of gas, the publication of its decisions with the facts and rationale on which the same are based, the preparation of its budget, balance sheet and annual report to be submitted to the Executive branch and congress.

**Procedures, infringements and penalties.** Should the board or its members undertake acts in excess of their powers, any party whose rights may be affected may take action before the Board or the federal Courts. Resolution of the board may also be appealed before the Federal courts.

Violations or defaults of the regulatory framework and related regulations are sanctioned with fines, suspensions and disqualifications of concessionaires and others suppliers of services and materials for the industry of natural gas.

11. **Decree No. 1738/92. Natural Gas Regulations of Law 24.076 (see above)**

The regulations which were issued on September 28, 1992 develop in greater details the application of the general principles already stated under the Natural Gas Law and Regulatory Framework No. 24.076. The regulations develop (i) the role of the NGRA in ensuring the protection of the consumer, free access to transmission facilities and competition in the gas, (ii) the conditions for import and export of natural gas market, and (iii) transmission and distribution ownership conditions.
Annex 5

GAS DEL ESTADO OPERATIONS AND ASSETS DESCRIPTION

The attached map shows the transportation system operated by GdE. The following table lists important information about GdE:

<table>
<thead>
<tr>
<th>Number of Customers in 1990</th>
<th>%</th>
<th>Annual Gas Consumption</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>4,023,889</td>
<td>94.6</td>
<td>4,346</td>
</tr>
<tr>
<td>Commercial</td>
<td>139,068</td>
<td>3.3</td>
<td>521</td>
</tr>
<tr>
<td>Industrial</td>
<td>24,266</td>
<td>0.6</td>
<td>6,114</td>
</tr>
<tr>
<td>Power Plants</td>
<td>47</td>
<td>1.5</td>
<td>5,319</td>
</tr>
<tr>
<td>Others</td>
<td>67,337</td>
<td></td>
<td>1,054</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>4,254,607</td>
<td><strong>100.0</strong></td>
<td>17,354</td>
</tr>
</tbody>
</table>

Note: Natural gas of 9,400 calories per m³

Total Sales, Million m³ by Distribution Area

1. Buenos Aires and Greater Metropolitan Area 7,124
2. Litoral 2,530
3. Salta 699
4. South 1,268
5. Cordoba 1,005
6. Cuyo 920
7. Neuquen-Rio Negro 678
8. Area South of Buenos Aires and La Pampa 1,121
9. Tucuman 754
10. La Plata 737
11. Mar del Plata 518

Total 17,354

Note: Area number 1 was split into 2 areas. The 12 distribution areas were then reconfigured into 8 areas prior to their sale.

Total Sales ($US Million)

<table>
<thead>
<tr>
<th>Year</th>
<th>1988</th>
<th>1989</th>
<th>1990</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,015</td>
<td>573</td>
<td>1,301</td>
<td></td>
</tr>
</tbody>
</table>

*Note: Figure for 1989 is low due to hyperinflation/exchange rate*

### Staff

<table>
<thead>
<tr>
<th>Category</th>
<th>Commercial</th>
<th>Technical/Operational</th>
<th>Administrative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Departments</td>
<td>4,032</td>
<td>975</td>
<td>13</td>
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<tr>
<td>Marketing</td>
<td>52</td>
<td>2,618</td>
<td>105</td>
</tr>
<tr>
<td>Others</td>
<td>308</td>
<td>6</td>
<td>989</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Informatics 119</td>
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<td></td>
<td></td>
<td>Planning 96</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Supplies 318</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Management 38</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Others 604</td>
</tr>
<tr>
<td>Total</td>
<td>4,392</td>
<td>3,599</td>
<td>2,282</td>
</tr>
</tbody>
</table>

Grand Total: 10,273

### The New Transportation Companies

Two transportation companies were set up prior to their sale: Transportation Company-Norte which owns the existing North and Centre-West pipeline system and Transportation Company-Sur which owns the existing South, West and Neuba II pipelines.

#### Assets

**Transportation Company-Norte**

   - Length 1744 Kms
   - Diameter 24/22" (Afl2"
   - Max. Capacity 14.2 MMm3/d

2. Midwest Pipeline
   - Length 1,123 Kms
   - Diameter 30"
   - Max. Capacity 11.4 MMm3/d

3. General San Martin Pipeline
   - Length 2,583 Kms
   - Diameter 30/24"
   - Max. Capacity 15.4 MMm3/d

**Transportation Company-Sur**

1. Neuba Pipe
   - Length 572 Kms
   - Diameter 24"
   - Max. Capacity 9.2 MMm3/d

2. Neuba II to Bahia Blanca-BA
   - Length 1,378 Kms
   - Diameter 36/30/24"
   - Max. Capacity 15.3 MMm3/d

*Note: Both transportation companies also own regional pipelines that serve major consuming centers*
Figure 1 - Structure of Crude Oil Market

**Supply**

- **1990**: Private 2.7%, YPF 97.3%
- **1991**: Private 22.8%, YPF 77.2%
- **JAN '92**: Private 44.7%, YPF 55.3%

**Demand**

Thousand barrels/day (MBD)

- **1990**: Private 3.5%, Refineries 69.0%, Export 28.5%
- **1991**: Private 1.1%, Refineries 65.5%, Export 28.7%
- **JAN '92**: Private 3.3%, Refineries 57.0%, Export 28.8%

SHELL CAPSA
Figure 2 - Evolution of Crude Prices

- Import Parity
- Crude in Refinery
- Crude in Caletas (FOB)
- Export Parity

$US/barrel

Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct
1991 1992
Figure 3 - Super Gasoline: Comparison with Spot Prices in New York

![Graph showing comparison of various gasoline prices over time.]
Figure 4 - Diesel: Comparison with Spot Prices in New York

$US/barrel

12
15
18
21
24
27
30
33

Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct
1991 1992

Wholesale (Diesel)
Export Parity
Import Parity
Heating Oil Spot N.Y.
Local Crude
Figure 5 - Evolution of Price Indices

Index

200
150
100
50
0

1990 1991 1992

Gasoline
Diesel Oil
CPI
Figure 6 - Evolution of Importation Costs

- Chemical Products
- Drilling Bits
- Pumps


Millions of US$
CUENCA NOROESTE
NORTHWEST BASIN

CUENCA CUYANA
CUYO BASIN

CUENCA NEUQUINA
NEUQUEN BASIN

CUENCA GOLFO DE SAN JORGE
GULF OF SAN JORGE BASIN

CUENCA AUSTRAL
AUSTRAL BASIN

PLANTAS COMPRESORAS / COMPRESSOR STATIONS:

PLANTAS DE TRATAMIENTO / TREATMENT STATIONS:
34 CANADON PIEDRAS - 35 CHIMEN AIKE - 36 RIO NEUQUEN - 37 EL MEDANITO - 38 SIERRA BARROSA - 39 CENTENARIO - 40 PLAZA HUINCUL

GASODUCTOS / MINE PIPELINE
1 DEL NORTE / NORTHERN
II DEL OESTE / WESTERN
III DEL OESTE / WESTERN
IV DEL SUR / SOUTHERN
V GASODUCTOS SECUNDARIOS / AUXILIARY PIPELINE

INSTALACIONES COMPLEMENTARIAS / AUXILIARY INSTALLATIONS
A PLANTAS COMPRESORAS / COMPRESSOR STATIONS
B PLANTAS EXTRACTORAS / EXTRACTION GAS STATIONS
C PLANTAS DE TRATAMIENTO / TREATMENT STATIONS