

Document
The World

FOR OFFICIAL

LN 3416-AR.

Report No. P-5614-AR

MEMORANDUM AND RECOMMENDATION
OF THE
PRESIDENT OF THE
INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
TO THE
EXECUTIVE DIRECTORS
ON A
PROPOSED LOAN OF US\$28.0 MILLION
TO
YPF SOCIEDAD ANONIMA
WITH THE GUARANTEE OF THE REPUBLIC OF ARGENTINA
FOR A
HYDROCARBON SECTOR ENGINEERING LOAN

OCTOBER 28, 1991

This document has a restricted distribution and may be used by recipients only in the performance of their official duties. Its contents may not otherwise be disclosed without World Bank authorization.

CURRENCY EQUIVALENTS

Currency Unit = Austral
US\$1.00 = 10,000 Australes

WEIGHTS AND MEASURES

Metric System

PRINCIPAL ABBREVIATIONS AND ACRONYMS USED

BANADE = Banco Nacional de Desarrollo
GdE = Gas del Estado (National Gas Company)
GOA = Government of Argentina
GUTA = Gas Utilization & Technical Assistance Project
PE = Public Enterprise
PERAL = Public Enterprise Reform Adjustment Loan
PEREL = Public Enterprise Reform Execution Loan
SC = Sub-secretaría de Combustible, Ministry of Economy
YPF = Yacimientos Petrolíferos Fiscales
(State Owned Corporation)
YPFSA = YPF Sociedad Anonima
(The incorporated entity which has replaced YPF)

FISCAL YEAR

January 1 - December 31

ARGENTINAHYDROCARBON SECTOR ENGINEERING PROJECTLOAN AND PROJECT SUMMARY

Borrower: Yacimiento Petrolíferos Fiscales Sociedad Anonima

Guarantor: Republic of Argentina

Beneficiaries: YPFSA, Fuels Subsecretariat, Ministry of Economy

Amount: US\$28.0 million

Terms: Repayable in 17 years, including a 5-year grace period, at the Bank's standard variable interest rate.

Financing Plan:

GOVERNMENT	US\$ 1.2 million
YPFSA	US\$10.9 million
IBRD	<u>US\$28.0 million</u>
Total	US\$40.1 million

Economic Rate of Return Not applicable

Staff Appraisal Report: None

Map: IBRD No. 22713

This report is based on an appraisal mission on June 18-27, 1991. The core team of the mission consisted of George Khoury-Haddad (Task Manager), Herman Nissenbaum (Country Officer), John Stoddart (Financial Analyst, Consultant), Fernando Zuniga-Rivero (Petroleum Engineer, Consultant). Supervising managers included Alain Thys (Chief, LA4IE), Katherine Sierra (LA4IE) and Ping-Cheung Loh (Director, LA4). Peer reviewers were Alain Barbu (EM2IE) and Chakib Khelil (LATIE).

MEMORANDUM AND RECOMMENDATION OF THE PRESIDENT
OF THE INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
TO THE EXECUTIVE DIRECTORS
ON A PROPOSED HYDROCARBON SECTOR ENGINEERING LOAN
TO ARGENTINA'S YPF SOCIEDAD ANONIMA

1. The following memorandum and recommendation on a proposed hydrocarbon sector engineering loan to Argentina's Yacimiento Petroliferos Fiscales Sociedad Anonima (YPFSA) for the equivalent of US\$28 million is submitted for approval. The proposed loan would be on standard IBRD terms repayable over 17 years, including 5 years grace, at the Bank's standard variable interest rate. In addition, YPFSA would pay a fee of 0.8 percent to the Government of Argentina to cover the latter's guarantee of the Bank loan. The loan would assist in YPFSA's restructuring and privatization by providing pre-investment and institutional strengthening support.

2. Background. Argentina's petroleum sector has long burdened the economy and needed fundamental improvements. Petroleum output declined during the 1980s, despite ample potential reserves, mainly because of lack of adequate Government investments. The reserve/production ratio has also been falling steadily and petroleum imports could be required in the immediate future. Much of the difficulty concerns the role of the former state company (YPF), on which the Government depended for the implementation of a petroleum self-sufficiency policy. As late as November 1990, YPF was responsible for about two-thirds of total crude oil output, and 70 percent of refining capacity, held rights to most prospecting areas and regulated private sector activity. YPF operating deficiencies mainly resulted from erratic pricing and taxation policies and inconsistent Government oversight.

3. To help secure future energy needs, in 1989 the current Government set out to reduce YPF's monopoly position and introduce major changes in sector policies. The Government deregulated crude oil and refined product prices and trade, opening competition at all levels and attracting private investors. Previously reserved exploration areas, as well as marginal producing areas, have been opened to private industry for direct acquisition, and the main producing areas will henceforth be subject to development by joint ventures. These transactions have attracted commitments of up to US\$1 billion from private petroleum firms. The Government also is moving to transform, restructure and privatize YPF while divesting some of its operations and plants. The old YPF has been transformed from a state enterprise into a shareholding corporation (YPFSA), with the view to its becoming commercially viable, financially self-sustaining, and, over the medium term, privately owned through the sale of its shares. YPFSA's business plan calls for it to reduce its staff substantially, shed loss-making activities, and through operational changes and investment enhance the value of its best assets, with the expectation that it will eventually be able to raise funds in the financial markets. This will require making the company more market-oriented, and shoring up key parts of YPFSA's aging, inefficient infrastructure. Simultaneously, the private sector needs further encouragement in the form of improved export infrastructure facilities, and the development of concrete investment opportunities in order to implement the Government's decision to rely more heavily on private enterprise. Finally, the Central Government's

new policy and regulatory role needs to be better established, a difficult task now when public administration is so weak.

4. Past Bank Lending and Lessons Learned. Since 1980, the Bank has financed three projects for YPF: (i) an engineering loan of US\$27.5 million for seismic work and gas fields delineations (Loan 1890-AR); (ii) a Refinery Conversion loan of US\$316.0 million (Loan 2032-AR); and (iii) a Gas Utilization and Technical Assistance loan of US\$180 million (Loan 2592-AR). A fourth project, for which a loan of US\$100 million was granted (Loan 2031-AR), consisted of a line of credit through the Government's development bank (BANADE) for financing private sector investments in the petroleum industry. While the physical implementation of these projects was successful, they suffered difficulties as a result of the country's sustained economic uncertainties and prolonged recession, exacerbated by inconsistent and inadequate sector policy direction. As a result, there was particularly limited progress in meeting the projects' objectives regarding product pricing and YPF institutional targets. The experience gained from these projects demonstrates that, in the absence of an appropriate sector policy framework, project sustainability cannot be achieved. In response, the proposed project has been designed to fit into a strategy, discussed below, of moving from sector work and projects that support sector reform to more specific projects that support operational, infrastructure, and institutional improvements, which are key to the sustainability of the reform program.

5. Rationale for Bank Involvement. The proposed Project is an integral part of the Bank strategy for supporting public enterprise reform in Argentina, without which the critical reforms recommended over the last few years would be less likely to proceed. The Argentina Energy Sector Study (Report No. 7993-AR) set the stage for Bank involvement in the sector, with its recommendations providing the approach for many of the aforementioned changes. The reform program is in turn being supported by the ongoing Public Enterprise Reform Adjustment Loan (PERAL, Loan 3291-AR) and the Public Enterprise Reform Execution Loan (PEREL, Loan 3292-AR), both approved in February 1991, and by the current Gas Utilization and Technical Assistance Project (GUTA, 2592-AR). The PERAL is linked to the broad strategic elements of the reform program: price liberalization; increased private sector participation in crude oil production; restructuring/privatization of YPFSA; and establishment of a suitable regulatory framework. The PEREL and GUTA are more specifically assisting YPFSA in moving towards becoming a private petroleum company by supporting the development of a strategic plan for YPFSA, organizing business units, defining new performance criteria, defining the needed changes in its legal regime for greater autonomy, defining the future reporting and control relationship with the Government, and advancing the privatization of redundant components. These loans should help shape its future role, structure, and ownership. The proposed Project would complement these efforts by supporting institutional development and pre-investment activities needed to help YPFSA's adaptation and to assist it in meeting over half of Argentina's petroleum requirements while awaiting the envisaged increased output from new private sector operations. The creation of opportunities for early additional private sector investment and the establishment of policy and regulatory institutions, which will help clarify the Government's role, are also important elements of Bank strategy in Argentina that would be supported by the proposed Project.

6. Project Objectives. The proposed Project aims to: (a) help YPFSA make an effective transition to its new commercial role and eventual privatization, and bring about improvements in the efficiency of its operations and capacity of export infrastructure; (b) expand opportunities for mobilizing greater private enterprise investment in the sector; (c) strengthen the Government's hydrocarbon policy-making and regulatory capabilities; and (d) support energy conservation and bolster the Government's efforts in developing and enforcing environmental and safety standards.

7. Project Description. To achieve these objectives, the proposed Project would support two main activities: (i) engineering studies and related pre-investment activities; and (ii) institutional strengthening. Technical assistance would be provided to prepare engineering designs and specifications to support YPFSA's and the Government's investment program in the areas of: (a) enhancement of primary, secondary and tertiary hydrocarbon recovery in YPFSA fields (base cost US\$6.1 million); (b) natural gas processing and storage facilities (US\$10.6 million) expected to be put in place by private investors who will operate distribution lines under YPFSA divestiture (para 8); and (c) improvement of YPFSA's petroleum processing and marketing in terms of dispatch centers and export infrastructure (US\$10.9 million). The institutional strengthening component would provide technical assistance to: (a) design and implement YPFSA's financial information, procurement, taxation and accounting systems to function as a private corporation, define environmental policies, and provide related staff training (US\$6.5 million); and (b) develop in the Combustibles Subsecretariat of the Ministry of Economy the capability to oversee sector policy and regulatory activities and negotiate contracts for exploration and production (US\$2.4 million).

8. Some of the pre-investment activities would lead to investment opportunities for the private sector, such as participation through joint ventures with YPFSA to increase production in present producing fields and enhanced recovery. In addition, the pre-investment studies related to the construction of natural gas storage facilities are designed to provide the technical confirmation of the sub-project's viability in anticipation of its subsequent development by the private sector. Private sector interest in developing the natural gas storage facility is expected to materialize as the gas distribution systems, currently controlled by Gas del Estado, are divested and privatized. Such privatization is expected to occur by 1993, and it would be important that the technical data to be collected under this sub-project be available to interested investors at that time. The proposed sub-project is based on the recommendations of a feasibility study carried out by international consultants, who rejected other alternative storage solutions. The eventual private sector investor would be required to reimburse the Government for the costs associated with the data collected under the sub-project (para 12).

9. The Project is estimated to cost US\$40.1 million equivalent with a foreign exchange component of US\$28.0 million. IBRD would finance the foreign exchange component, while the Government and YPFSA would finance all local expenditures. The detailed cost estimates and methods of procurement and disbursements are provided in Schedules A and B and discussed in Annex I. A timetable of key project processing events and the status of Bank group operations in Argentina are given in Schedules C and D, respectively. The

detailed project description, and project administration and implementation arrangements are given in Annex I. The TOR for all consultancies were agreed during appraisal and are available in the Project File.

10. Project Implementation. YPFSA's Project Administration Unit (PAU), which effectively directed the Refinery Conversion Project (Loan 2032-AR) and is in charge of the Gas Utilization and Technical Assistance Project (GUTA) (Loan 2592-AR) would have overall responsibility for the administration of the Project. This unit would be strengthened by the addition of engineers from a variety of fields, as well as finance and administration experts, seconded from concerned departments from YPFSA as the need arises. The PAU would act independently of the main body of YPFSA and report directly to the President of YPFSA. The Government's newly formed Combustibles Subsecretariat would be strengthened by the creation of a Hydrocarbons Development Promotion Team and an Environmental Unit. The Subsecretariat would be assisted by consultants in the creation and operation of those units including the training of their staff.

11. Environmental Aspects. The activities of the proposed Project (largely engineering studies) would have no adverse environmental effects. Similarly, it is not expected that any significant environmental problems would be associated with the execution of subsequent investments. However, to provide adequate security, the Project would include diagnostic studies to identify in greater depth any possible adverse ecological consequences of the potential investments. Also, the Project would strengthen the Combustibles Subsecretariat in setting sector standards for protecting the environment; three engineering studies would provide the basis for the planned improvements in energy conservation and pollution control at YPFSA's three largest refineries. The Combustibles Subsecretariat needs to be strengthened by the creation of a team to oversee environmental protection activities. The loan would assist the Government for these purposes, and consultants would be employed to assist the Subsecretariat in developing environmental protection manuals and in defining systems for monitoring compliance with standards.

12. During negotiations, it was agreed that: (a) the PAU would be kept intact throughout the life of the Project and it would continue to be adequately staffed and equipped; (b) the Government's Combustibles Subsecretariat would be strengthened by the creation, not later than July 31, 1992, of a Hydrocarbon Development Promotion Team and an Environmental Unit. By July 31, 1993, a staffing plan and compensation plan for the two Units would be presented to the Bank to demonstrate the sustainability of the critical functions of the Subsecretariat; (c) the private company which eventually develops the underground natural gas storage facility, on the basis of the data generated under the Project, would reimburse the Government for accumulated expenditures; (d) an annual review of Project implementation would be held on the basis of the performance targets outlined in Annex III. As a condition of effectiveness, the Combustibles Subsecretariat and YPFSA will have entered into a subsidiary agreement that provides for onlending of US\$11.5 million of the loan proceeds and defines the details for utilization of funds and the implementation of the Hydrocarbon Development Promotion Team and the Environmental Unit.

13. Benefits. The Project would provide a firm basis for the evaluation of future investment projects needed for the efficient implementation of YPFSA

as a private company and future private sector investments, which would be required to ensure that the sector reform program is successful and that hydrocarbon exports do not lag during the current sector transformation. The expected expanded hydrocarbon reserves and production output, coupled with the improvements in processing and export/import infrastructure, would contribute to increased productivity of the nation's resources, increasing the potential foreign exchange inflow. The Government's "seed capital" infusions for promoting early private sector investments in crude oil production and natural gas storage opportunities should facilitate greater participation by private foreign and local firms, would increase the number of hydrocarbon producers, and would thus ensure the success of price deregulation through increased competition. The institutional component would strengthen YPFSA's budget, accounting, finance and commercial departments to enable the company to raise funds on capital markets.

14. Risks. The main risk is associated with possible delays in Project execution due to uncertain implementation capacity in the Government and the new YPFSA. The Project would attempt to reduce these risks through training of the Government staff and strengthening of the PAU with YPF staff experienced with Bank-supported operations. A second risk relates to the lack of private sector participation in the natural gas storage investment. The need to proceed with basic data collection--which would be required by any interested investor so as to allow for timely development of the facility, once the gas distribution network is privatized--coupled with the verification in the feasibility study that no viable alternative solutions exist, would temper this risk.

15. Recommendation. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Bank and recommend that the Executive Directors approve it.

Lewis T. Preston
President

Attachments

Washington, D.C.
October 28, 1991

ARGENTINE REPUBLIC
HYDROCARBON ENGINEERING PROJECT
ESTIMATED COSTS AND FINANCING PLAN

ESTIMATED PROJECT COSTS

<u>PROJECT COMPONENTS</u>	<u>Local</u>	<u>Foreign</u>	<u>Total</u>
	<u>--US\$Million</u>	<u>Equivalent--</u>	
1. <u>Engineering Studies for Hydrocarbon Production Enhancement:</u>	<u>1.8</u>	<u>4.33</u>	<u>6.13</u>
(a) Hydrocarbon primary and secondary production recovery projects:	0.73	2.0	2.73
(b) Enhanced tertiary recovery projects:	1.07	2.33	3.4
2. <u>Engineering Studies for Natural Gas Processing and Storage</u>	<u>2.55</u>	<u>8.05</u>	<u>10.6</u>
(a) Natural gas processing facilities	0.45	1.05	1.5
(b) Underground storage facilities three dimensional seismic, lab tests, and pilot injection to confirm adequacy of structure	2.1	7.0	9.1
3. <u>Engineering Studies for Improving Crude Oil Processing, Marketing and Export Facilities</u>	<u>3.3</u>	<u>7.6</u>	<u>10.9</u>
(a) Enhancement of the quality of petroleum products for exports.	2.5	5.8	8.3
(b) Upgrading of port facilities for exports.	0.4	0.8	1.2
(c) Automation of marketing distribution.	0.4	1.0	1.4
SUBTOTAL ENGINEERING	<u><u>7.65</u></u>	<u><u>19.98</u></u>	<u><u>27.63</u></u>

<u>Project Components</u>	<u>Local</u>	<u>Foreign</u>	<u>Total</u>
	<u>--US Million Equivalent--</u>		
4. <u>Technical Assistance and Institutional Strengthening</u>	<u>2.95</u>	<u>5.95</u>	<u>8.9</u>
(a) Hydrocarbon development promotion (SC)	1.2	1.2	2.4
(b) Organization and financial systems (YPFSA)	1.75	3.25	5.0
(c) Environmental studies (YPFSA)	--	0.8	0.8
(d) Training of YPSFA technical personnel	--	0.7	0.7
 SUBTOTAL INSTITUTIONAL STRENGTHENING	 <u>2.95</u>	 <u>5.95</u>	 <u>8.9</u>
 Base Cost	 <u>10.6</u>	 <u>25.93</u>	 <u>36.53</u>
 Price contingency (5%)	 0.77	 1.03	 1.80
 Physical contingency (5%)	 0.76	 1.04	 1.80
 <u>TOTAL PROJECT COSTS</u>	 <u>12.13</u>	 <u>28.00</u>	 <u>40.13</u>
 <u>FINANCING PLAN</u>			
YPSFA	10.93	--	10.93
IBRD	--	28.00	28.00
GOA	1.20	--	1.20
 <u>TOTAL</u>	 <u>12.13</u>	 <u>28.00</u>	 <u>40.13</u>

ARGENTINE REPUBLIC
HYDROCARBON ENGINEERING PROJECT
PROCUREMENT METHOD & DISBURSEMENTS

PROCUREMENT METHOD

AMOUNTS AND PROCUREMENT METHODS^{1/}

	<u>ICB</u>	<u>Other^{2/}</u>	<u>Total</u>
1. <u>Engineering Studies for Hydro-Carbon Production Enhancement</u>			
(a) Hydrocarbon Primary & Secondary Recovery		2.73 (1.63)	2.73 (1.63)
(b) Enhanced Tertiary Recovery		3.4 (1.87)	3.4 (1.87)
2. <u>Engineering Studies for Natural Gas Processing & Storage</u>			
(a) Natural Gas Processing Facilities		1.5 (0.85)	1.5 (0.85)
(b) Underground Storage Facilities		9.1 (9.1) ^{3/}	9.1 (9.1)
3. <u>Engineering Studies for Improving crude oil processing, marketing & export facilities</u>			
(a) Enhancement petroleum products		8.3 (4.72)	8.3 (4.72)
(b) Upgrading of port facilities		1.2 (0.66)	1.2 (0.66)
(c) Automation of marketing plants		1.4 (0.82)	1.4 (0.82)
4. <u>Technical Assistance & Institutional Strengthening</u>			
(a) Hydrocarbon Dev. Promotion Unit		2.4 (2.4)	2.4 (2.4)
(b) MIS Systems		(5.0) (2.66)	(5.0) (2.66)
(c) Environmental Studies		0.8 (0.65)	0.8 (0.65)
(d) Training		0.7 (0.57)	0.7 (0.57)
	TOTAL^{4/}	36.53 (25.93)	36.53 (25.93)

- ^{1/} Figures in parentheses are the amounts financed by IBRD.
^{2/} Consultants' services according to Bank Guidelines.
^{3/} Includes \$7.1 million of services to be procured through LIB.
^{4/} Total excluding contingencies.

DISBURSEMENT

CATEGORY

TOTAL AMOUNT
(US\$ Million)

PERCENTAGE OF EXPENDITURE
TO BE FINANCED BY IBRD LOAN

1. Engineering studies for production enhancement (YPFSA)	3.50	82% of foreign expenditure
2. a. Engineering studies for natural gas processing and storage (YPFSA)	0.85	82% of foreign expenditure
b. Engineering studies for underground storage facilities (SC)	9.10	100% of total expenditure
3. Engineering studies for improving crude oil processing, marketing and export facilities (YPFSA)	6.20	82% of foreign expenditure
4. a. Technical assistance and institutional strengthening (SC)	2.40	100% of total expenditure
b. Technical assistance and institutional strengthening (YPFSA)	3.88	82% of foreign expenditure
5. Unallocated	<u>2.07</u>	
	28.00	

ESTIMATED IBRD DISBURSEMENTS

IBRD Fiscal Year

92 93 94 95
(US Million)

Annual
Cumulative

10 12 5 1
10 22 27 28

Schedule C

ARGENTINE REPUBLIC
HYDROCARBON SECTOR ENGINEERING LOAN
TIMETABLE OF KEY PROJECT PROCESSING EVENTS

- | | |
|------------------------------------|---|
| (a) Time taken to prepare: | Five months |
| (b) Prepared by: | IBRD & YPFSA with assistance from consultants |
| (c) First IBRD mission: | February 1991 |
| (d) Appraisal mission departure: | June 1991 |
| (e) Negotiations: | October 1991 |
| (f) Planned date of effectiveness: | February 1992 |
| (g) List of relevant documents: | PCR Loan 1880-AR (June 1990) |

THE STATUS OF BANK GROUP OPERATION
STATEMENT OF BANK LOANS
(As of September 30, 1991)

ARGENTINA

<u>Loan No.</u>	<u>Fiscal Year</u>	<u>Borrower</u>	<u>Purpose</u>	<u>Amount Less Cancellations US\$ million</u>	<u>Undisbursed</u>
Fully Disbursed Loans (29)					
2592	1985	Yacimientos Pet. Fiscales	Gas Utilization & Tech. Asst.	2915.7	70.9
2641	1986	Argentina	Water Supply	60.00	40.5
2751	1987	Argentina	Power Engineering	14.0	0.5
2793	1987	Argentina	Small & Med. Scale Cred.	125.0	62.4
2805	1987	Argentina	Port	50.0	42.8
2854	1987	Servicios Elec.	Power Dist.	276.0	197.8
2920	1988	Argentina	Municipal Dev.	120.0	109.6
2970	1988	Banco de la Nacion	Agric. Credit	106.5	5.4
2984	1989	Argentina	Social Sector	28.0	15.5
2997	1989	Argentina	Housing Sector	300.0	262.3
2998	1989	Argentina	Electric Power	252.0	2.0
3015	1989	Argentina	Tax Admin. T.A.	6.5	4.5
3280	1991	Argentina	Provincial Devel	200.0	198.5
3281 ^{1/}	1991	Argentina	Water Supply	100.0	100.0
3291	1991	Argentina	Public Enterprises Reform Adjust (PERAL)	300.0	148.4
3292	1991	Argentina	Public Ent. Reform (PEREL)	23.0	18.4
3297 ^{1/}	1991	Argentina	Agric. Services	33.5	33.5
3362 ^{1/}	1991	Argentina	Public Sector Reform T.A.	23.0	23.0
3394	1991	Argentina	Public Sector Reform	325.0	265.0
TOTAL				5,438.2	
of which has been repaid				<u>1,415.7</u>	
Total now outstanding				4,022.5	
Amount Sold				12.8	
of which has been repaid				12.8	
Total now held by Bank				4,009.7	
Total undisbursed					<u>1,598.0</u>

^{1/} Not yet effective.

STATEMENT OF IFC INVESTMENTS
(As of September 30, 1991)

Argentina

<u>Year</u>	<u>Obligor</u>	<u>Type of Business</u>	<u>Total</u>	<u>Equity</u>	<u>Loan</u>
1960	Acindar Industria Arg. S.A.s	Steel Products	3.7	-	3.7
1960	Papelera Rio Parana, S.A.s	Pulp and Paper	3.0	-	3.0
1961	Fadessa S.A.	Automotive	1.5	-	1.5
1962	Pasa		3.4	-	3.4
1965/72	Celulosa Argentina, S.A.	Pulp and Paper	12.5	-	12.5
1969/75	Dalmine Siderca, S.A.	Steel Products	17.0	-	17.0
1969	Editorial Codex, S.A.	Printing	10.5	2.0	8.5
1971/73	Calera Avellaneda, S.A.	Cement	5.5	-	5.5
1977/84 86/88	Alpargatas S.A.I.C.	Textiles & Fibers	50.5	5.0	45.5
1977/85	Soyex S.A.	Soybean Processing	21.0	-	21.0
1978/85 87/88/91	Massuh, S.A.	Pulp and Paper	31.7	4.2	27.5
1978/81 82/86	Juan Minetti, S.A.	Cement	104.0	-	104.0
1979/82 87/92	Ipako-Industrias	Chemicals	32.0	2.0	30.0
1988/89 /92	ASTRA	Petrochemicals	82.4	-	82.4
1979/83/84	Alpesca S.A.	Fisheries	6.8	1.6	5.2
1984/86	Petroquimica Cuyo S.A.I.C.	Petrochemicals	46.1	4.0	42.1
1986/87	BOPASA/SADICAR	Capital Markets	2.0	2.0	-
1986	Atanor S.A.W.	Chemicals	8.0	1.0	7.0
1987/90	Hidra Oil	Chemicals & Petrochem.	109.2	-	109.2
1987	Garavaglio/Zorraquin	Food & Food Proc.	13.0	-	13.0
1987/90 /91	Terminal 6	Port, Storage	12.5	-	12.5
1988	Bunge y Born	Food & Food Proc.	40.0	-	40.0
1988	Arcor	Food & Food Proc.	12.0	-	12.0
1988	BRLP	Dev. Finance	30.0	-	30.0
1988/92	Chirete	Chemicals	7.4	7.4	-
1988	Bridas	Chemicals	20.6	-	20.6
1988/89	Banco General de Negocios	Finance	20.0	-	20.0
1989	AIC	Capital Markets	2.0	2.0	-
1989	Chihuidos	Chem. & Petrochem.	5.0	5.0	-
1989	C.G.I.	Money & Cap. Markets	.1	.1	-
1989	Banco Frances	Dev. Finance	15.0	-	15.0
1986/89	BRSA	Money & Capital	26.0	-	26.0
1990/91	Petroken	Chemicals	31.0	-	31.0
1990	CIP Services		.1	.1	
1991	BCA	Capital Markets	10.0		10.0
1991	Banco Roberts-AG	Venture Capital	2.0	2.0	-
1992	MBA BOLSA	Pulp & Paper	.2	.2	-
1992	POLISUR	Chemicals	7.0	7.0	-
Total Gross Commitments			804.4	45.6	758.8
Less Cancellations, Terminations Repayments and Sales			438.5	3.9	442.4
Total Commitments now held by IFC			320.3	41.7	362.0
Total Undisbursed (IFC only)			39.5	11.2	50.7

ARGENTINA

HYDROCARBON SECTOR ENGINEERING PROJECT

Overview

1. Argentina's production of crude oil declined steadily in the 1980s despite the existence of substantial potential reserves. Although production increased in 1988 and again in 1990, the trend of declining production and diminishing proven reserves will return unless new investments in exploration and development of hydrocarbon are made. In addition, supply shortages of natural gas (with which Argentina is richly endowed) could occur unless transport and distribution bottlenecks are removed and energy consumption is moderated. However, neither the public nor the private sectors have had the incentives and capacity to invest as much as needed to expand supply in the most efficient way. If these trends continue, hydrocarbon import requirements will rapidly accelerate. Also, Argentina will not realize one of its best export possibilities.

2. This situation is particularly crucial because of the energy sector's impact on the economy in several respects--fiscal, investments, external and internal debt, balance of payments, etc. The sector's share of GDP was close to 7 percent in 1987, relatively large compared to other small oil exporters. It is projected to increase to 9 percent by the year 2000. The energy sector has commanded sizable financial resources over the last 20 years, during which its annual investments averaged increases of 2.7 percent in real terms. It accounted for 34 percent of public investment in 1971 and about 17% in the 1980s, or an average of 3 percent of GDP. Its share of public expenditures rose from 10 percent in 1970 to about 30 percent in 1985. The costs of developing energy resources have heavily burdened the country's finances, e.g., comprising 23 percent of total external debt at the end of 1988. The lack of efficiency in the sector was manifested in the steady fall of production since 1981, culminating in Argentina's becoming a net importer in 1987.

3. The foregoing problems, particularly affecting petroleum, have resulted from a combination of factors. Complex, distorted regulatory and investment policies in combination with inadequate pricing and taxation have compounded inefficiencies in the state energy institutions, notably the major sector entity, Yacimientos Petroliferos Fiscales (YPF). In addition, there have been problems in the definition of the Government's role vis a vis the private sector. Other difficulties ensued from Argentina's failure to promote energy conservation sufficiently in the wake of past crude oil price shocks. These and related problems were comprehensively described in the "Argentina Energy Sector Study" (Report No. 7993-AR, dated February 26, 1990). It is noteworthy though that there have been encouraging and important reforms and improvements on all these fronts recently, partly influenced by the Bank's findings and recommendations contained in the aforementioned report and other analyses, whose implementation the proposed Project is intended to advance.

A. SECTORAL CONTEXT

4. Resources. The potential energy resources of Argentina are abundant and diverse, including crude oil, natural gas, hydropower, biomass and coal. Recent technical evaluations indicate, however, that the hydrocarbons proven reserves are not as large as had been estimated. Proven oil reserve estimates have been revised downward by 20% to 265 million m³ (1.66 billion barrels), and natural gas reserves by 20% to 554 billion m³. At current production rates of about 71,000 m³/day (447,000 B/D) for crude oil and 62 million m³/day for natural gas, the reserve/production ratio for crude oil is 10 years and for natural gas 20 years. Further exploration needs to be promoted, and the infrastructure to handle increased production needs to be built, since it will become increasingly difficult to supply future demand for liquid hydrocarbons from known sources and the apparently large potential for additional natural gas discoveries needs to be confirmed.

5. Demand. Crude oil and natural gas account for about 44 percent and 39 percent, respectively, of gross energy consumed in Argentina. 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 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 crude oil equivalent per year is now almost double that of neighboring Chile and Uruguay, which have similar income levels. From 1970 to 1986, the share of consumption of energy for residential, agricultural, and non-energy uses increased, while the share for industrial and transport decreased. As natural gas reserves grew, the patterns of energy consumption have changed, mainly toward reducing consumption of certain refined products and increasing that of natural gas. The share of natural gas in final energy consumption increased from 15 percent in 1970 to 33 percent by 1988 with the help of highly subsidized natural gas prices. As a result, the share of fuel oil in final energy consumption declined from almost 30 percent in 1970 to 4 percent in 1988, while hydroelectricity's share increased from 8.5 percent in 1970 to 12 percent in 1982. The uses of other petroleum products remained basically unchanged over the same period. In the process, Argentina essentially has just been able to remain self-sufficient in hydrocarbons.

6. Dirigistic Policy. For many years, Argentine sector policy has been driven by the desire to ensure self-sufficiency in hydrocarbons through reliance on state entities. The predominant player has been YPF which operated in every branch of the industry save for the marketing of natural gas and LPG, the responsibility of Gas del Estado (GdE). YPF possessed broad monopolistic rights in the exploration, production, purchase, sale and transport of crude oil and natural gas. Until recently, it held the petroleum rights to the most promising hydrocarbons prospective areas of Argentina; private companies involvement was possible only as risk contractors to YPF. These contractors were obligated to sell all petroleum produced to the state company. Similarly, private refineries have been reliant on YPF for crude oil supplies. As late as November 1990, YPF accounted for: (i) production of 65 percent of total crude oil directly, and

controlled the rest being produced by the private sector, (ii) more than 80 percent of natural gas production directly, and controlled the rest through contracts with the private sector; (iii) all pipeline, storage, shipping, port and related infrastructure; (iv) about 70 percent of the country's refining capacity; and (v) about 60 percent of petroleum product distribution, and sales. Furthermore, GdE had a virtual total monopoly on transmission, distribution and sales of natural gas.

7. YPF and GdE also have been the regulators of their private sector counterparts rather than their competitors. This apparently inconsistent role, however, had no adverse effect on private sector profitability; just the reverse, it resulted in a misallocation of resources. This phenomenon was a consequence of arbitrary procurement restrictions, Government-guaranteed refinery margins, high excise taxes on petroleum products and natural gas, and high-cost exploitation contracts entered by YPF with private petroleum companies. It is estimated that Compre Argentino ("Buy Argentine") requirements (now suspended) increased the costs of supplies and services provided by the private sector to YPF by an aggregate amount of more than US\$550 million a year. Refinery margins set by the Government guaranteed profits for the private sector refiners and losses for YPF. Import/export of crude oil and petroleum products had been highly regulated, with export/import duties and a 10 percent surcharge making imports and exports of crude oil and petroleum products unattractive. Excise taxes on petroleum products and natural gas were very high, and resulted in high and very distorted consumer prices. At the same time though, while the private sector petroleum operations have been highly profitable under Government regulation, private companies had limited scope for investment.

8. Regulatory policies and the sector's institutional structure have resulted in overlapping responsibilities of many Government agencies involved in state energy operations. This has prevented the development of clear and consistent operational guidelines and discouraged both public and private entities from pursuing the most profitable activities. Even more importantly, there was no clear separation of the Government's role as policy maker and regulator from its role as owner of public energy enterprises. The lack of such clear institutional arrangements has prevented substantial improvement in the efficiencies of state enterprises, as well as mobilization of private sector resources for sector investments.

9. Numerous restrictions have constrained crude oil and refined products trade. Such products could not be freely imported or exported, because of complex restrictions on refinery crude oil supply and products output.

Pricing and Taxation

10. Prices for hydrocarbon fuels set by the Government were inconsistent with international prices, and the Government had been unduly responsive to continual pressures by many special interest groups (private companies, labor unions, the provinces, public companies, etc.) to charge favorable prices to resolve their financial problems. Unfortunately, Government attempts to accommodate these groups led to complex, distorted policies for pricing, regulation, and taxation.

11. Prices received by producers have not reflected real economic costs or been adequate to cover financial costs. Public companies have not been able to recover their capital investments, pay their operating costs, or receive a reasonable return on invested capital. While producer prices were low, the high level of energy taxation tended to force final consumer prices of petroleum products above their economic cost. Energy taxation has been characterized by high levels, a complex system of specific taxes, inflexible earmarked funds, and multiple taxation at many stages. This pricing and taxation system has created severe distortions for both producers and consumers, and financial problems for public energy companies.

Investments

12. Investments in crude oil and natural gas exploration and production have been distorted by misguided fiscal policies, which encouraged investment in other, less crucial sectors, and caused excessive fear over the possible depletion of proven hydrocarbon reserves.

YPF

13. YPF began exploration and production of crude oil and natural gas in 1922, and developed over time into Argentina's largest single enterprise and one of the largest oil companies in Latin America. Its annual gross sales (excluding excise taxes) totalled US\$4.0-4.5 billion in 1986-88. Its employment rose to 51,700 in 1976 and more recently still exceeded 32,000. Considered in its early years to be a leading, professionally advanced petroleum company, YPF's performance has lately deteriorated. This has been manifested in its declining productivity, e.g., crude oil output fell 17 percent from 1983-87 (before rising in 1990, as the deregulation of crude oil prices took effect). Worse still, its average production per well dropped some 27 percent from 1981-87, necessitating increasing investment levels to maintain the same output. And since 1981, hydrocarbon reserves have steadily declined for lack of effective exploration.

14. While internal inefficiency probably contributed to cause the above situation, YPF suffered substantially from erratic and inappropriate Government policies and lack of supervision. Because of fiscal constraints, the company's basically sound investment strategy involved a relatively short term approach, often internally inconsistent. Also, it has been heavily overtaxed and could not retain adequate funds for hydrocarbons exploration and production. Recently, it was forced to divert important resources to develop natural gas reservoirs, but it was inadequately reimbursed.

15. Over the past few years, different administrations have applied shifting pricing policies on refined petroleum products, ranging from sharp increases to deliberate delays in needed price adjustments (with consequent deterioration in real prices), because of anti-inflation tactics. As noted above, regulatory policies hurt YPF. Further, although YPF officially changed from a Government department in 1977 to a semi-independent industrial enterprise, it was still subject to considerable Government interference (e.g., its management, though strong at the moment, has mostly had minimal authority) but it also has displayed

little accountability and considerable internal instability. YPF's Board of Directors changed frequently during the few last years, on average every six months, and usually the directors were inexperienced in petroleum industry management.

16. As a result of these factors, YPF, which had a US\$2.4 billion net worth (inflation adjusted) at the end of 1980, was financially distressed. It was not profit-oriented, and cash accumulated from operations was largely taken away by the Government. The company could not predict access to funds since its annual budgets were not approved by the Government until late in the year, and its cost accounting was virtually nonexistent. In 1988, YPF registered an operating loss of US\$200 million on sales of US\$4.5 billion; but this figure does not account for the financial contribution the company made to the public and private sectors. It is estimated that YPF transferred a net US\$1 billion to the Treasury and other Public Enterprises on account of taxes, royalties, and controlled transfer prices in 1988. GdE had operating losses of US\$150 million per annum during the last five years. Financial management decisions affecting YPF and GdE were made outside the companies--e.g., high royalty payments to the provinces and GdE's obligation to subsidize petrochemical manufacturers and natural gas consumers.

B. NEW APPROACHES

17. In the mid-1980s, the Argentine authorities recognized the ominous implications of declining crude oil output, depletion of YPF's aging reservoirs, the company's deteriorating efficiency and inadequate investment levels. It set about, therefore, to obtain more private sector involvement in exploration and production. This approach recognized that YPF could not efficiently operate all producing fields directly, while managing an aggressive exploration program, especially because of its limited trained and motivated technical and managerial staff. Government fiscal needs would not permit increased YPF investments. Also, the private sector had more modern technology, more efficient management, and the capital for better and quicker results.

18. The first step was the 1985 "Houston Plan," under which the private sector was offered all the available prospective acreage, i.e., 165 exploration areas, under YPF contracts. Its most significant features included a guarantee that service payments for the crude oil produced would be made in exportable crude oil, if YPF were unable to make the required foreign exchange payments. This, and pricing improvements for the crude oil sold to YPF, provided an internationally competitive framework for future oil exploration and eventual development. However, despite widespread participation by international companies, the "Houston" and subsequent "Olivos" Plans were recognized to provide only limited prospects for resolving Argentina's hydrocarbon sector difficulties. This was caused mostly because crude oil and natural gas prices were set at only 80% and 34%, respectively, of international value, and contractors had no right of ownership of the crude oil or natural gas they produced.

19. Beginning in 1989, in consultation with the Bank, the Government recognized the need for more fundamental changes. These included: (1) increasing the prices to be paid at the wellhead for newly-found crude oil and natural gas,

as well as for any incremental production of these hydrocarbons; (ii) eliminating obstacles for more rapid approval of contracts for exploration and production under the "Houston Plan"; (iii) making exploration operations for new areas much easier by offering private firms additional technical information; (iv) awarding the private sector the right to acquire many of the marginal areas operated by YPF; (v) allowing free disposition of the crude oil and natural gas being produced by the private sector; (vi) making royalty payments to be based on market values of crude oil and natural gas; and (vii) allowing private sector participation in YPF's main producing fields.

20. The Menem Government, later in 1989, announced and began to implement a policy of deregulation and privatization of the hydrocarbon sector. The Government essentially focussed on (i) letting all hydrocarbons prices adjust automatically to their international opportunity costs; (ii) deregulation of crude oil purchases and sales, including imports and exports; (iii) restructuring/privatization of YPF and GdE; and (iv) establishment of an appropriate framework for effective regulation of natural monopolies, mainly for common carriers of all hydrocarbons. These measures have been substantially advanced in collaboration with the Bank under the Public Enterprise Reform Adjustment Loan (PERAL) (Loan 3291-AR) and the accompanying Public Enterprise Reform Execution Loan (PEREL) (Loan 3292-AR), approved in February 1991, and under the management improvement component of the Gas Utilization Technical Assistance Project (Loan 2592-AR), signed in May 1986.

21. The Government has taken other steps to motivate private sector investment in crude oil and natural gas production, particularly by permitting greater direct access to existing producing fields. Exploration/exploitation rights to YPF "marginal" producing areas have been awarded on the basis of an up-front cash bonus resulting in US\$250 million in revenues. Most existing exploitation service contracts (other than the Houston Plan), where the contractor was performing a service for YPF for a per barrel fee, have been converted to either the concession or association systems, where the contractors' agreement is with the Combustibles Subsecretariat and royalties and taxes are paid by the private operator, who has free disposal of the crude oil produced, which has resulted in 9 contract areas converted to concessions and 16 changed to association agreements. The private companies will be responsible for producing and freely disposing of about 8 million m³ per annum of crude oil, once they take full possession of the areas under the new contracts. Previously, Gas del Estado (GdE) had a monopoly on all sales of natural gas in Argentina and producers were obligated to sell their natural gas to GdE at uneconomic prices. In the future, GdE's preferential right will be subject to agreement with natural gas producers on the basis of a sales contract, which will become effective within 30 days after notice of the availability of natural gas for sale. Failing this the producer can sell its natural gas production on the open market.

22. Progress on all these new policies so far includes: (i) the award as concessions of marginal production areas (38 areas) with payments up-front totalling US\$250 million; (ii) renegotiation of production service contracts (representing 30% of the crude oil produced in Argentina) into concession or association agreements; and (iii) establishment of joint ventures with private sector companies in YPF's four main producing areas (representing at least 40% of

YPF's total production), with up-front payments in cash totalling about US\$309 million for three of the fields.

23. Liberalization of Prices. The Government has already enacted legislation and issued successive decrees that cover in detail the various aspects of price reform. They specify freeing of crude oil prices to their equivalent level of export parity^{1/}; elimination of predetermined refining and marketing margins; and allowing consumer natural gas prices to reach 90% of imported fuel oil equivalency by January 1992, for large industrial and power consumers, with net-back transportation costs for determining the producer's price for natural gas. In addition, hydrocarbons producers now have the right to retain all foreign exchange sales proceeds. In the event of local currency sales, they have access up to 70% to foreign exchange, plus the right to convert sales proceeds at a rate that most clearly reflects the real exchange relationship between US dollars and local currency. Prices of most petroleum products are already at about international parity prices, but substantial increases are needed for certain consumer natural gas prices. In this regard, with funding from the Japanese Grant facility, the Bank is conducting a study designed to assist the Government in the preparation of a "Natural Gas Code," which covers the establishment of a natural gas regulatory agency and the definition of rules for determining natural gas transmission and distribution tariffs based on sound economic and financial criteria. In the meantime, during a transition period, natural gas prices to consumers will be gradually increased during 1991 to reach about 90% of average FOB fuel oil price for industrial and power plant users, by January 1, 1992, and US\$6.00/MMBTU for residential consumers, by January 1, 1992. The wellhead price to YPFSA will be US\$1.50/MMBTU for natural gas, from the Neuquen fields, and US\$1.20/MMBTU for natural gas from other YPFSA fields, also effective January 1, 1992. All these conditions are contingent on exchange rate variations and fuel oil prices prevailing at these dates. After a transition period, whose duration will be decided by the Combustibles Subsecretariat, large buyers of natural gas will compete openly for available production. Also, preferential fuel oil or natural gas prices to electric power producers are to be eliminated.

24. Deregulation of Trade. Crude oil producers can now sell their production to the highest bidder, trade in crude oil, and have the right to import crude oil and refined products subject to general tariff policies. It is expected that within the next 18 months the private sector will eventually control more than 50 percent of the total production of crude oil, once private companies take over the operations of the marginal, service contract, and central areas. All producers would have access to treatment, transport, storage, and shipment infrastructure at a common-carrier-type tariff, until competition is established in the transport business. New refineries and service stations may be opened without requiring special permits and service stations can be freely owned. In the event of export restrictions (which must be announced at least 12 months before becoming

1/ As Argentina is a marginal exporter of crude oil and petroleum products, international parity is tested by comparing YPF prices to export prices in suitable reference markets (Houston for crude oil and Rotterdam for petroleum products).

effective), the domestic price for crude oil and petroleum products would be set at parity with imported similar crude oils or refined products. In the event of restrictions on the free availability of natural gas, the natural gas price to the producers would be set at the calorific equivalent of no less than 35 percent of the per barrel price of Arabian Light crude oil (FOB).

25. Regulatory and Policy Framework. The Argentine Authorities' plan aims at establishing an environment of open competition and equal opportunity for both public and private companies in the exploration, production, sales, and distribution of energy resources. The Government would limit its own function to setting the general parameters for the development of the sector and to regulating its operations, when necessary. Revised regulations for natural gas transportation and distribution, pipeline construction and operations, export infrastructure, transportation, tariffs, etc. need to be promulgated. A regulatory structure is required to ensure orderly implementation of privatization and operation by the private companies. The Central Government needs to prepare itself for: (i) establishment of ad-valorem taxes on petroleum products and natural gas (which should influence, positively, energy conservation); (ii) promotion of hydrocarbons exploration/production activities by both state enterprises and private concerns, and negotiation of contracts with these entities; and (iii) development of a national energy strategy. The state enterprises would terminate their current regulatory roles, such as YPF's monitoring of the work done by private oil companies and GdE's supervision of the design of natural gas pipeline and distribution systems. The policy-making and regulatory agencies will be strengthened in terms of organization and human, financial and logistical resources, as well as with appropriate legislation to assume those expanded responsibilities. The newly created Subsecretariat of Combustibles will be the arm of the GOA for the hydrocarbon sector. It will be responsible for the bidding on exploration areas, and for regulating the environmental policies in the exploration, production, and refining fields.

Privatization

26. YPF will ultimately become a private petroleum company, altering fundamentally its relationship with the Central Government, private producers, suppliers, and labor unions. Since February 1991, the new YPFSA has become a shareholding company (Sociedad Anonima) with the Government as the main shareholder and a corporate structure similar to a private corporation. With Bank assistance, studies have been completed under the Gas Utilization and Technical Assistance loan to define what business activities of YPFSA will be immediately sold. The PEREL will finance additional studies to examine strategic plans of the restructured YPF, to support the privatization of natural gas transmission and distribution systems, to define the needed changes in the legal regime to provide administrative and financial autonomy, and the future reporting and control relationship with the Government, as well as the privatization of redundant components. Under the proposed Project, the restructuring process would be assisted by development of improved commercial and management information and control systems to enable YPFSA to produce financial reports acceptable to the international stock exchanges and investment bankers.

C. ROLE OF THE BANK

27. Past Experience. The Bank's four past hydrocarbons sector loans, which totalled US\$623.5 million, were directed to support the integrated development of these energy resources. At the outset, these were mainly concerned with resource assessment and sector planning (Oil and Gas Engineering, Loan 1880-AR, whose PCR was issued in June 1990) and providing appropriate incentives to domestic producers (Oil and Gas Credit, Loan 2031). Subsequently, the Refinery Conversion Project (Loan 2032 and its supplement) was directed at converting low-value fuel oil into higher-value products. It enabled Argentina to reduce significantly light and middle distillate imports. The ongoing Gas Utilization and Technical Assistance Project (Loan 2592) is aimed at increasing the production of natural gas and associated liquids and expanding natural gas usage in industry. Its main components, installation of a new natural gas liquid recovery plant and removing bottlenecks from the existing Campo Duran treatment and refining facilities, are well advanced. The Project is scheduled to be completed in 1992. All of these projects proceeded satisfactorily in general, but suffered delays and financial difficulties as a result of the country's sustained economic uncertainties and prolonged recession, exacerbated by inconsistent and inadequate sector policy direction. These deficiencies, which are detailed in paras. 6 to 16 of this Annex, caused particularly limited progress in meeting the Bank projects' covenants regarding product pricing and YPF institutional targets. As a result of these difficulties, the Bank undertook an Energy Sector Study (ref. Report 7993-AR), where the systems of energy pricing and taxation were dealt with in detail and recommendations were made for significant reforms and further private sector participation. The understanding of the sector, resulting from these experiences, contributed substantially to the recent Government-Bank collaboration in the design of the aforementioned reforms in pricing, regulation, taxation and the role of the state enterprises, whose implementation are handled under the PERAL/PEREL loans.

28. Rationale for Bank Involvement. The Bank has played an active role in promoting public enterprise reform in Argentina over the last years, without which the critical reforms needed in the hydrocarbons sector would have been less likely to proceed. The PERAL/PEREL addressed, and should bring about, major changes in the policy and regulatory framework of the energy sector (a vital part of Argentina's economy), as well as in the role and institutional structure of YPFSA. To advance the process, complementary actions are needed to alter YPFSA's structure, fundamentally in its adaptation to a new role, and more basically, to help meet Argentina's hydrocarbons requirements more efficiently and effectively than in the past. Simultaneously, the private sector needs further encouragement in the form of improved export infrastructure facilities and the development of concrete investment opportunities to translate into reality the Government's decision to turn towards greater reliance on private enterprise participation. In addition, the Central Government's newly defined policies and regulatory role need to be established and firmly entrenched, a difficult task now when public administration is so weak. These requirements provide the foundation for the proposed loan.

D. PROJECT OBJECTIVES AND DESCRIPTION

29. The Project aims to: (a) help YPFSA make an effective transition to its new commercial role and eventual privatization, and bring about improvements in the efficiency of its operations and capacity of export infrastructure; (b) expand opportunities for mobilizing greater private enterprise investment in the sector; (c) strengthen the Government's hydrocarbon policy-making and regulatory capabilities; and (d) support energy conservation and bolster the Government's efforts in developing and enforcing environmental and safety standards.

30. The proposed Engineering Project would provide technical assistance to: (a) conduct engineering studies to obtain designs, specifications and drawings in sufficient detail to prepare sets of tender documents for: (i) enhancement of primary, secondary and tertiary hydrocarbon recovery in fields retained by YPFSA; (ii) improvement of natural gas processing plants and definition of the adequacy of storage facilities; and (iii) enhancement of crude oil petroleum processing, marketing, and export infrastructure; (b) appraise the environmental impact of the projects mentioned in (a) (i-iii); (c) develop in the Combustibles Subsecretariat, Ministry of Economy, the capability to oversee hydrocarbons sector activities, promote and negotiate contracts for hydrocarbons exploration-production, and monitor environmental policies; and (d) design and implement management information and accounting systems for YPFSA's transition from a state enterprise to a private corporation.

Components

31. **Production Enhancement.** The proposed technical assistance would provide studies for analyzing and identifying opportunities for significantly increasing YPFSA's natural gas and liquid hydrocarbons production and resource base. These activities are directly related to the Project's first objective, of readying YPFSA for eventual privatization through improvement of its assets. One strand of this would involve studies for expansion of the company's successful experience under the GUTA Project in initiating more advanced secondary and enhanced oil recovery operations. These studies would determine the feasibility of injecting water into four oil fields (Escalante-La Margarita, Desfiladero Bayo, Aguada Toledo and El Tordillo) in prospective "water flood" projects, to be possibly promoted as a joint venture with the private sector. Others would result in the design for construction of dew point plants to increase recovery of liquid hydrocarbons from the Loma de la Lata natural gas field, and also the preparation of pilot enhanced recovery projects.

32. In addition, a seismic survey, followed by a pilot natural gas storage test, would be made on two geological structures, located at the junction of the Center West-Mendoza/San Juan-Beazley/Buenos Aires natural gas pipelines, to evaluate the feasibility of using these structures as natural gas storage for peak shaving during the winter months. These activities are based on the recommendations of a feasibility study, prepared by international consultants, which assessed alternative storage solutions. The Government would carry out the proposed activities in order to provide the technical confirmation of the Project's viability. The Government is taking the lead in this, as private sector interest

is not expected to materialize until natural gas distribution systems are privatized (expected for 1993), and in this sub-project timing is important. The results of the study should be ready when the natural gas transportation systems were privatized, making it possible for private companies transporting natural gas to invest in the development of this storage, to allow its use by the different transporters either in associated ownership or on a storage fee basis. This activity is related to the Project's second objective, i.e., expanding private enterprise investment in the sector. Assurances were obtained during negotiations that these investors would reimburse YPFSA for the costs of all preparatory work. The base cost of the required consultants is estimated at US\$16.7 million.

33. Export and Marketing Enhancement. The proposed technical assistance would include studies for the improvement of crude oil processing and marketing facilities, as well as the related export infrastructure, which will be used as common storage and terminals by YPFSA, as well as by the private sector, until the private sector is ready to construct its own installations. These studies would cover basic and detailed design and engineering. They would address crude oil loading and dispatch installations at two marine terminals (Caleta Cordova and Caleta Olivia). In addition, the studies would examine the feasibility of upgrading the pumping installations at the Puerto Hernandez tank farm terminal to develop a more efficient crude oil transfer system. They also would determine the technical and economic viability of modernizing YPFSA's lube oil plant complex in relation to export (as well as domestic) market prospects. While these activities are primarily related to the Project's first objective of improving YPF's operations, the private sector is also expected to benefit from use of export facilities. The base cost of the required consultants is estimated at US\$7.3 million.

34. Energy Conservation and Environmental Protection. Related to the objective of improving YPF's operations, the proposed technical assistance would examine possible environmental problems and improvements in energy usage within YPFSA's operations. One component would consist of feasibility studies for upgrading the treatment and handling of effluents from YPFSA's refineries. This would concentrate on the La Plata refinery, which presently discharges effluents with hydrocarbon concentrations of 50 mg/l, substantially above the levels set by Argentine laws. Another component would provide diagnoses and the resulting action plans for reducing energy consumption in the company's main (Luyan de Cuyo and La Plata) refineries. They now consume some 1.7 million tons of fuel oil annually which, estimates show, could be reduced by almost 60 percent. The base cost of the required consultants is estimated at US\$3.6 million.

35. Institutional Strengthening. The Government's newly formed Combustibles Subsecretariat would be strengthened by the creation of a Hydrocarbon Development Promotion Team and an Environmental Unit, whose staff would be trained under the proposed Engineering Loan. In addition to its role in promoting hydrocarbons exploration and production activities, and participating in contract negotiations and awards, the Subsecretariat, under its general hydrocarbons sector oversight functions, would replicate the environmental protection work done in the power sector. This would involve developing environmental management manuals that would set the standards to be followed by YPFSA and all other operators for the

protection of the environment in all phases of petroleum operations - exploration, development, pipelines and storage facilities, marine terminals, and refineries. Consultants would be employed to assist the Subsecretariat in developing these manuals and in defining the system to be employed in monitoring the industry's compliance with the standards. The loan would finance consultants who would assist in the creation of these units and in carrying out their functions, including the training of counterpart staff. It is intended that consultants would be gradually phased out over a three year period. To ensure and demonstrate the sustainability of the critical functions of the Subsecretariat, a staffing plan and salary compensation plan for these units would be presented to the Bank within 12 months after the creation of these units, for which a deadline of July 31, 1992 has been set. In the interim, the Government would finance the "start up" expenses of these teams, estimated at US\$1.2 million over the Project's period.

36. Technical assistance will also be provided to the new YPFSA to help in its transformation from a state corporation into a shareholding company. Particular emphasis will be placed on improving accounting, budgeting, treasury functions, and financial information systems, and procurement procedures. The base cost of the required consultants is US\$8.9 million, both for the Combustibles Subsecretariat and YPFSA.

E. PROJECT COST ESTIMATE

37. The total cost of the components under the proposed Engineering Project is estimated at US\$40.1 million, including US\$28.0 million equivalent in foreign costs. IBRD financing for US\$28 million (70%) is proposed. YPFSA would meet the remaining project costs estimated at US\$12.1 million to cover all local costs. The Central Government would contribute US\$1.2 million equivalent for the Hydrocarbon Development Promotion Team and Environmental Unit; the remaining costs of this component and the natural gas storage would be provided by YPFSA under a Subsidiary Loan Agreement between YPFSA and the Government.

F. ENVIRONMENTAL ASPECTS

38. There is no adverse environmental impact associated with the proposed Engineering Project. However, the follow-up Hydrocarbon Sector Rehabilitation Project (to finance joint YPFSA private sector projects)--which includes increased crude oil production, through the application of secondary and enhanced recovery methods, the expansion and modernization of the export/import harbor infrastructure, as well as natural gas processing, transportation and storage facilities--could potentially impact on the environment through pollution of the River Plate due to: (a) crude oil spillage from the expanded import/export infrastructure, and (b) pollution of the area due to crude oil leaking into the refinery liquid's waste. The proposed Engineering Project would include diagnostic studies of these possibilities to examine any foreseeable adverse effects on the environment and what preventive steps should be taken. A positive impact of the Project on the environment would be the improvement in energy conservation and pollution control, which is planned for three of YPFSA's refineries, and also by reducing sulphur and lead pollution by the use of higher quality gasoline.

G. PROJECT EXECUTION

39. YPF's Project Administration Unit (PAU), which effectively directed the Refinery Conversion Project (Loan 2032-AR), and is currently in charge of the Gas Utilization and Technical Assistance Project (Loan 2592-AR) will have overall responsibility for the administration of the Project. This unit will be strengthened by the addition of engineers representing a variety of fields, as well as finance and administration experts seconded from concerned departments from YPFSA, as the need arises. The PAU will operate separately from the main body of YPFSA and report directly to the President of YPFSA. The unit has prepared the basis for the Terms of Reference for the consultants, who will prepare project design and engineering specifications, as well as tender documents for the implementation of the Project.

H. PROCUREMENT

40. Consultants and technical assistance services to be financed by the loan would be procured in accordance with Bank Guidelines for the use of consultants. The consultant to whom the natural gas storage facility will be awarded will subcontract the services for detailed seismic and corehole drilling under limited international bidding procedures acceptable to the Bank and with the approval of the borrower.

I. SPECIAL ACCOUNT

41. To expedite loan disbursement and payment of services, YPFSA would establish a Special Account in the Central Bank of Argentina, which will function as a Revolving Fund for IBRD's contributions. An initial deposit of US\$4 million would be made from the proceeds of the proposed loan upon effectiveness. This figure represents four months estimated average disbursements; and details of the establishment and operation of the special account and other disbursement procedures have been agreed. Statement of Expenditures will be used for contracts of less than US\$650,000.

J. DISBURSEMENT

42. Since the bulk of the Project is composed of short term technical assistance and training, disbursements would be made over four years, a somewhat shorter period than indicated in the average disbursement profile for technical assistance projects in the Latin America Region. This is justified by the good performance by YPF under the GUTA Project. The Closing Date of the proposed loan would be December 31, 1994.

K. MONITORING, REPORTING AND AUDITS

43. YPFSA would submit to the Bank monthly progress reports on all activities financed under the loan and quarterly reports on the implementation of the Project in a format acceptable to the Bank. After completion of the Project, YPFSA would submit a completion report no later than six months after the loan Closing Date. YPFSA would select an independent auditor, satisfactory to the Bank, to prepare

annual audits of the Project's accounts, including the Special Account. Audit reports will be due no later than six months after the end of each fiscal year. These would be reviewed on annual review meetings of Project implementation, based on the targets outlined in Annex III.

L. ACTIONS TAKEN AND AGREEMENTS REACHED

44. The following actions have already been taken by YPFSA:
- (a) reinforcement of the PAU engaged in the supervision and coordination of the GUTA Project (Loan 2592-AR) to cover the proposed Engineering Project; and
 - (b) all 31 draft Terms of Reference for the consultants to be hired for the Project have been reviewed and agreed with the Bank.
45. During negotiations, the following agreements were confirmed:
- (a) that the PAU would be kept intact throughout the life of the Project;
 - (b) that a subsidiary agreement will be entered for loan effectiveness between the Combustibles Subsecretariat and YPFSA to define the details for the use of funds for the implementation of both the Hydrocarbons Development Promotion Unit and of the Environmental Unit as well as for the execution of the natural gas underground storage study; and
 - (c) that the Government's newly formed Combustibles Subsecretariat would be strengthened by the creation, not later than July 31, 1992, of a Hydrocarbons Development Promotion Unit and an Environmental Unit, whose staff would be trained under the Project. Within 12 months after the establishment of the Unit or not later than the date mentioned above, a staffing plan and a salary compensation plan for these Units will be presented to the Bank to demonstrate the sustainability of the critical functions of the Subsecretariat.

Task Manager: Mr. George Khoury-Haddad
Peer Reviewers: Mr. Alain Barbu
Mr. Chakib Khelil

ARGENTINA

HYDROCARBON SECTOR ENGINEERING PROJECT

SUPERVISION PLAN

1. Bank Supervision Input for Key Activities

The staff input indicated in the table below is in addition to regular supervision needs for the review of program reports, procurement action, audit statements, correspondence, etc.

Bank Supervision Input for Key Activities

<u>Approximate Date</u>	<u>Activity</u>	<u>Expected Skill Requirements</u>	<u>Staff Input Staff Weeks</u>
09/25/91	<u>Supervision Mission</u> Start-up activities	Geologist Engineer Financial Analyst	4.0
12/02/91	<u>Supervision Mission</u> Review progress of engineering studies	Geologist Engineer Financial Analyst Environment Specialist	6.0
06/01/92	<u>Supervision Mission</u> Review progress and cost of the main components of Hydro-carbon Sector Rehabilitation loan.	Geologist Engineer Financial Analyst	4.0

**ARGENTINA
HYDROCARBON ENGINEERING LOAN
PROJECT TECHNICAL ACTIVITIES**

Main Government Objective	Project Component Activities	Institutional Arrangements	Output/Impact	Timing
A. Engineering Study for Production Enhancement				
1. Prepare feasibility study for optimization of natural gas and crude oil production for existing fields.	a. Design of Telemetric Control System for Production (TOR 2).	YPFSA	a. Proper control of field production and allocation.	Start: Nov. 1991 Complete: July 1992
	b. Design of secondary and tertiary recovery projects (TOR 1,3,7).	YPFSA	b. Optimization of crude oil recovery from producing fields.	Start: Nov. 1991 Complete: July 1993
	c. Improvement of liquid extraction efficiency in natural gas reservoirs to prevent flaring (TOR 4,5,6).	YPFSA	c. Optimization of natural gas liquid extraction and energy savings.	Start: Nov. 1991 Complete: July 1993
B. Engineering Studies for Natural Gas Processing and Storage				
1. Studies for maximizing liquid production from condensate fields.	1. Detailed engineering for dew point separators (TOR 8,9,10).	YPFSA	1. Increased production of condensate.	Start: Nov. 1991 Complete: end 1992
2. Detailed feasibility studies for underground storage (access to San Geronimo and Mendoza) for preparation of bidding package to the private sector.	2. Detailed geological, geophysical, and laboratory work for underground storage (TOR 11).	YPFSA and Subsecretariat de Combustibles	2. Determining adequacy of underground reservoir storage.	Start: Nov. 1991 Complete: end 1993
C. Engineering Studies for Improvement of Crude Oil Processing, Marketing and Exports				
1. Improvement of crude oil production of regional terminals.	1. Engineering studies in crude loading and dispatch terminals (TOR 12,13,14,15).	YPFSA	1. More efficient terminal traffic for both public and private sector association.	Start: Nov. 1991 Complete: mid-1993
2. Modernization studies for dispatch plants for petroleum products.	2. Engineering studies for automation storage and dispatch plants (TOR 21,22,23).	YPFSA	2. Assurance of accuracy of product stocks and sales for private and public sectors using storage and dispatch facilities.	Start: Nov. 1991 Complete: mid-1993
3. Improvement of energy efficiency in refineries and pollution control.	3. Engineering studies for improvement of energy efficiency and pollution control (air and effluents) (TOR 16,17,18,19,20).	YPFSA	3. Energy savings, product efficiency, marketability and pollution control.	Start: Nov. 1991 Complete: end 1993

Main Government Objective	Project Component Activities	Institutional Arrangements	Output/Impact	Timing
D. Institutional Strengthening				
1. Strengthening technical capability of Secretariat de Combustibles.	1. Setting up hydrocarbon promotion and exploration data bank (TOR 24,25).	YPFSA and Subsecretariat de Combustibles.	a. Setting up body to promote further exploration by packaging technical information on areas to be bidded out to the private sector. b. Monitoring the bidding process, award of exploration areas, signing of new contracts and overseeing new exploration activities by the private sector.	Start: Nov. 1991 Complete: mid-1994
2. Transforming YPF into a commercially-oriented company.	2. Improvement of economic data system for management of flow of funds, tax payments, and stock market (TOR 26,27,28,29,30).	YPFSA	2. Enabling YPFSA to facilitate privatization activities. a. Transformation of YPFSA into a private corporation. b. Allowing the sale of YPFSA shares to private owners. c. Opening of international markets to YPFSA.	Start: Nov. 1991 Complete: mid-1993
3. Development of environmental assessment and regulations.	3. Assessment of potential environmental impact of the future hydrocarbon project and preparation of Manual for Environmental Management (TOR 31).	Subsecretariat de Combustibles	3. Identifying effects of hydrocarbon sector project components on environment and dissemination of Manual for Environmental Management.	Start: Nov. 1991 Complete: end 1992

ARGENTINA
Hydrocarbon Engineering Project
List of
Terms of Reference
1 thru 31

I. Engineering Studies for Production Enhancement

IA. Hydrocarbon Primary & Secondary Recovery

Manpower

TOR1: 3 man-months	Secondary Recovery Project at the Escalante-La Margarita Oil Field
TOR2: 24 man-months	Implementation of Telemetry and Telecontrol Systems for Monitoring Production Operations
TOR3: 24 man-months	Construction and Erection of Secondary Recovery Water Injection Plants
TOR4: 3 man-months	Natural Gas Reinjection Project at the Filo Morado Gas Field
TOR5: 24 man-months	Improved Exploitation of Natural Gas Fields
TOR6: 12 man-months	The Re-Injection of Natural Gas in the Sierra Barrosa Field
TOR7: 40 man-months	Enhanced Recovery Pilot Projects

II. Engineering Studies for Natural Gas Processing and Storage

IIA. Natural Gas Processing Facilities

Man-power

TOR8: 4 man-months	Improvements at El Condór Natural Gas Treatment Plant
TOR9: 8 man-months	Natural Liquids Improved Recovery Construction of the Fifth Recovery Plant at the Lomas de la Lata field
TOR10: 8 man-months	Construction of a Natural Gas Treatment Plant at the fields Aguada La Pichana-Aguada del Rodeo

IIB. Underground Storage Facilities

TOR11: 36 man-months Underground Storage Facilities Project

**III. Engineering Studies for Improving
Crude Oil Processing, Marketing and Export Facilities**

IIIA. A Upgrading of Port Facilities for Export

Man-power

TOR12: 12 man-month Improvements in the Main Pumping
Station at the Puerto Hernández
Crude Oil Dispatch Terminal

TOR13: 10 man-months Enhancement of the Crude Oil Loading
and Dispatch System at the Caleta
Córdoba Terminal

TOR14: 11 man-months Enhancement of the Caleta Olivia Marine
Terminal for Dispatch and Loading of
Crude Oil

TOR15: 12 man-months Optimization of the Main Transport
and Evaluation System of the Chubut
Comodoro Rivadavia Region

IIIB. Enhancement of Petroleum Product Quality for Exports

TOR16: 60 man-months Remodelling of the Lube Oils Plant
Complex

TOR17: 30 man-months Improved Energy Efficiency
in the Refineries

TOR18: 24 man-months Integral Study of Refinery Effluents
Project

TOR19: 34 man-months Recovery of Coke Residues Project

TOR20: 35 man-months Ballast Water Treatment Project

IIIC. Automation of Marketing Plants

TOR21: 10 man-months Automation of the Storage and Dispatch
Plants for Light Petroleum Products

TOR22: 18 man-months	Construction of a New Distribution Plant at Comodoro Rivadavia
TOR23: 4 man-months	Installation of a Gasoline Dispatch and Storage Plant

IV. Technical Assistance and Institutional Strengthening

IVA. Hydrocarbon Development Promotion

Man-power

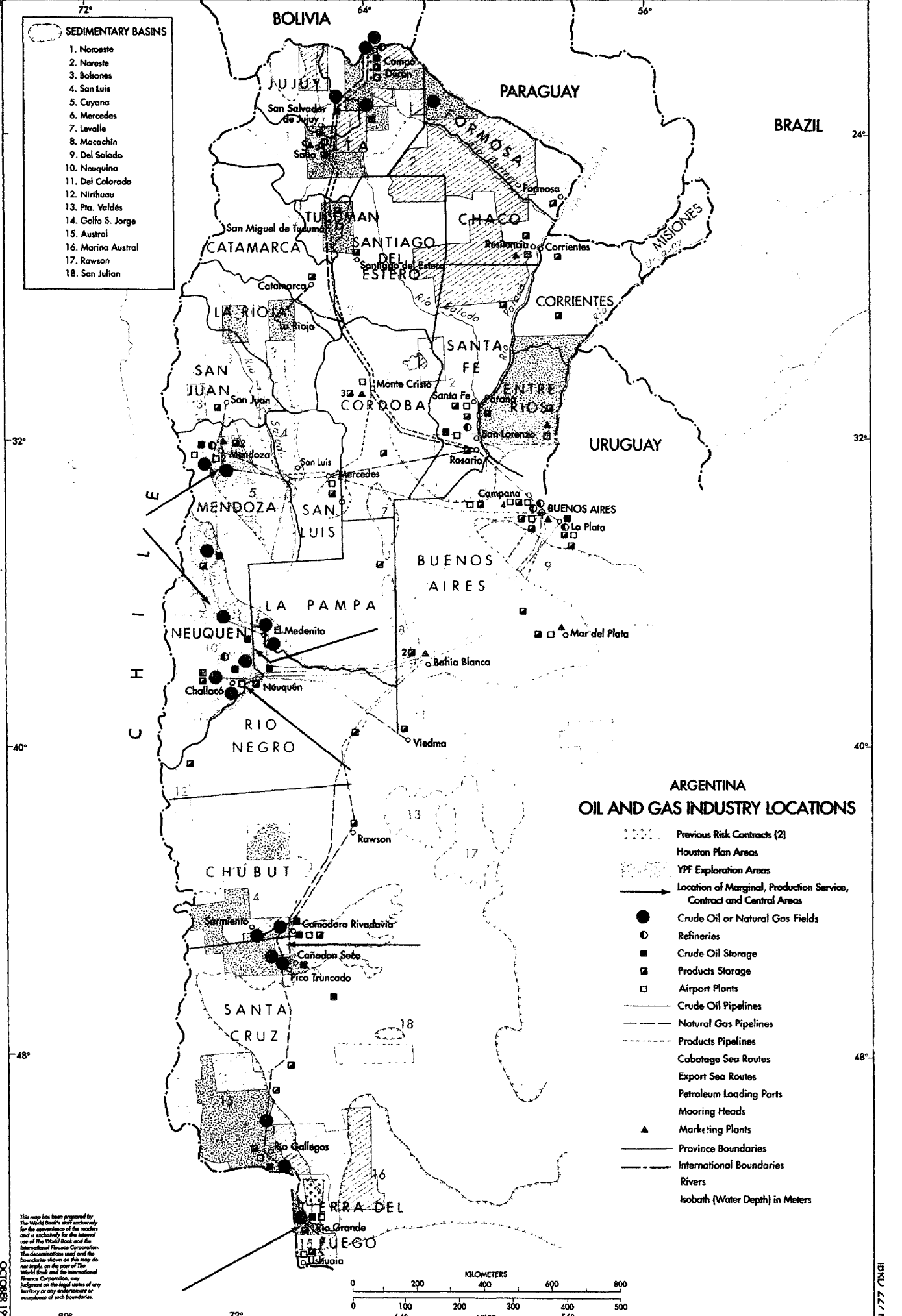
TOR24: 24 man-months	Hydrocarbon Development Promotion Unit at the SubSecretariat of Fuels
TOR25: 8 man-months	Exploration-Exploitation Data Bank Project

IVB Organisation & Information System.

TOR26: 4 man-months	Adaptation and Improvements of the Economic-Financial Data Systems
TOR27: 8 man-months	Development of a System for Managing the Flow of Funds
TOR28: 11 man-months	Development of a Tax Payment System
TOR29: 12 man-months	Development of a Procurement System
TOR30: 6 man-months	Procurement Specialist for Document Preparation

IVC Environmental Studies

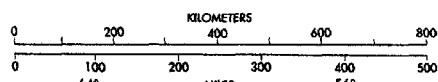
TOR31: 15 man-months	Environmental Diagnosis and Manual
----------------------	------------------------------------



- SEDIMENTARY BASINS**
1. Noroeste
 2. Noreste
 3. Bolsones
 4. San Luis
 5. Cuyana
 6. Mercedes
 7. Levalle
 8. Macachin
 9. Del Salado
 10. Neuquina
 11. Del Colorado
 12. Nirihuau
 13. Pta. Valdés
 14. Golfo S. Jorge
 15. Austral
 16. Marina Austral
 17. Rawson
 18. San Julian

**ARGENTINA
OIL AND GAS INDUSTRY LOCATIONS**

- ⋯⋯⋯ Previous Risk Contracts (2)
- ▨ Houston Plan Areas
- ▨ YPF Exploration Areas
- Location of Marginal, Production Service, Contract and Central Areas
- Crude Oil or Natural Gas Fields
- Refineries
- Crude Oil Storage
- ▣ Products Storage
- Airport Plants
- Crude Oil Pipelines
- - - Natural Gas Pipelines
- - - Products Pipelines
- - - Cabotage Sea Routes
- - - Export Sea Routes
- Petroleum Loading Ports
- Mooring Heads
- ▲ Marketing Plants
- Province Boundaries
- - - International Boundaries
- Rivers
- - - Isobath (Water Depth) in Meters



This map has been prepared by The World Bank's staff exclusively for the convenience of the reader and is not to be used for the internal use of The World Bank and the International Finance Corporation. The documentation used and the boundaries shown on this map do not imply, on the part of The World Bank and the International Finance Corporation, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries.