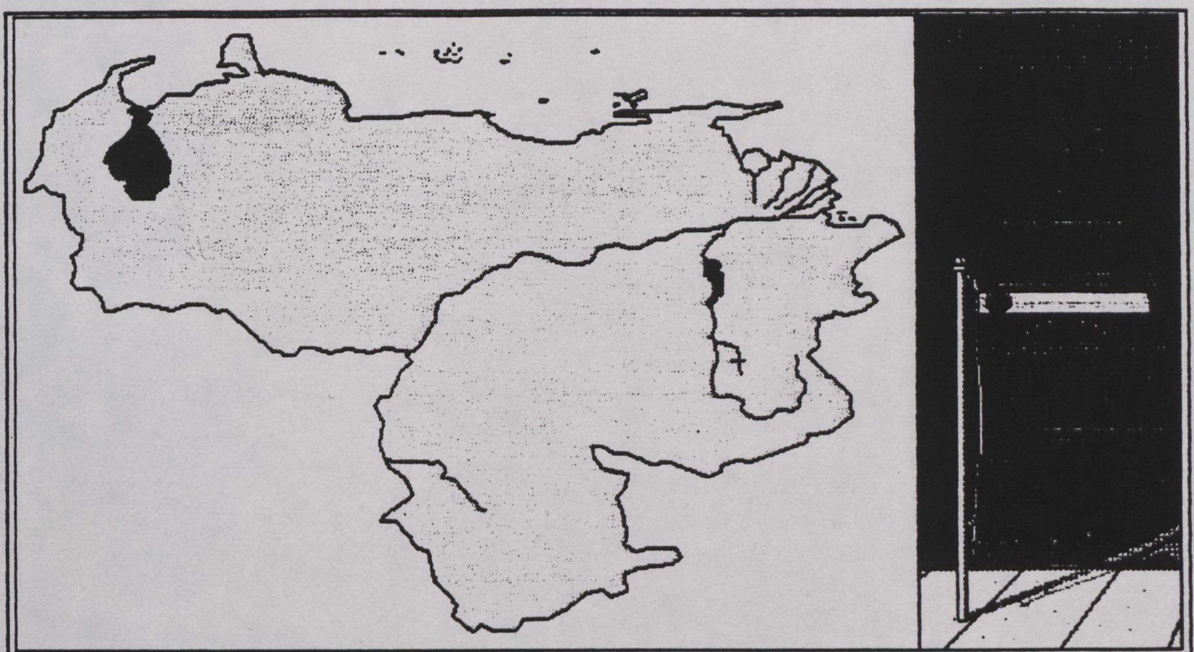
Survey of the Petroleum Industry in Venezuela: Opportunities for Canadian Suppliers and Investors



Commercial Division
Canadian Embassy
Caracas, Venezuela
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I. VENEZUELA AND THE CHANGING NATURE OF ITS PETROLEUM INDUSTRY

Venezuela, which is predominately an oil economy, has undergone enormous changes since 1989, many of which are having a profound impact on the way business is conducted. Like many other countries, Venezuela has undergone a major transformation as a result of the general liberalization of its economy, After many years of nationalistic and paternalistic government which was characterized by restrictive trade practices, domestic subsidies and closed foreign investment policies, Venezuela is undergoing a dramatic series of economic changes that is also creating some political and social instability in the short run.

Since 1989, the government has taken the following major steps to open up the economy.

* Joined GATT and implemented a reduction of import tariffs so that now the import taxes range from 5% to 20%.

* Begun to privatize more than 300 state owned companies in all major sectors.

* All sectors of the economy, with the exception of petroleum are 100% open to foreign ownership and no longer require prior approval by state regulators. In addition, foreign investors can now enjoy the same benefits and advantages as local investors.

* Income tax reforms were passed in 1991 with significant positive implications for business.

Petroleum Industry

The importance of oil to Venezuela cannot be understated. In 1991, the industry accounted for 22 % of GDP, 69% of total government revenues, and 81% of total export earnings. Net oil export revenues were $14.11 billion in 1991, down from 14.351(*) billion earned in 1990.

Venezuela is among the top five oil producing countries in the world with an average daily production of almost 2.5 million barrels per day. Petroleum resources in Venezuela are enormous, with proven reserves of more than 63 billion barrels(more than twice those of the U.S.) and the largest reserves of extra-heavy crude oil in the world. About 30% of Venezuela's proven oil reserves are made up of condensates and light and medium gravity crudes (higher than 22% API) which are processed in

(*) All Figures are in US$

conventional low conversion refineries. The remaining 70% are composed mainly of heavy and extra-heavy crudes of gravity (lower than 14% API) which require the use of high conversion refineries in order to obtain the larger proportion of lighter products which the market demands. It is anticipated that another 30 billion barrels of conventional condensate and light and medium crudes can be added through future exploration and enhanced oil recovery projects. Venezuela's frontier areas, known for containing some of the largest sedimentary deposits in the world will require special technologies to deal with problems such as deep formations, low permeability reservoirs and complex geological formations.

Venezuela has the world's largest reserves of extra-heavy crudes and bitumens. Approximately 1.25 billion barrels are estimated to be in place along the northern bank of the Orinoco river. With current technology it is believed that approximately 270 billion barrels are recoverable.

Venezuela also has 127 trillion cubic feet of proven natural gas reserves with the strong likelihood of further additions in the future.

Venezuela which until recently was primarily an exporter of crude oil, has been transforming itself into mainly a marketer of oil products, via domestic refineries and downstream investments in consuming countries. In addition, ambitious expansion plans will see a further transformation of the Venezuelan petroleum industry into a major processor of petrochemical products and a large scale exploitation and development of its natural gas and extra-heavy oil.

Current mid-term plans by Petroleos de Venezuela (PDVSA), the national oil company, call for $41 billion in investment over the next 5 years to increase production capacity by 25%, partly through secondary recovery programs of existing fields and partly through the development of the extra-heavy oil fields in the Orinoco. The plan also calls for new major refinery projects, petrochemical complexes and the development of a huge LNG facility for export.

Although still restricted from direct participation in exploration and production in Venezuela by legislation, foreign oil companies are now being invited to participate with PDVSA as service contractors(to develop marginal fields), joint venture partners for large scale projects in LNG and the extra-heavy oil development. In petrochemicals, where foreign ownership is permitted, a number of joint ventures have already been completed with PDVSA and several others are now in the development or planning stages.

In general, there is a growing consensus among Venezuelans that for the petroleum industry to continue to grow and prosper the country must continue to open up to foreign investment and technology. The combination of taxation reform, the general economic liberalization, low-input factors(i.e., labour and energy), good geographic location for export, a relatively well skilled work force,the availability of high-quality engineering and professional resources plus the existence of good local manufacturing facilities present a very positive environment for participation in the long-term development of the Venezuelan petroleum industry.

For Canadian suppliers of equipment and services in the petroleum sector, Venezuela must be considered seriously as a potential market or possible investment location. Significant opportunities are available in a wide variety of areas discussed in some detail below. However, to be successful in this market Canadian companies will have to take a long-term approach and most likely will need to consider local representation and possibly joint-venturing or licensing to be competitive.

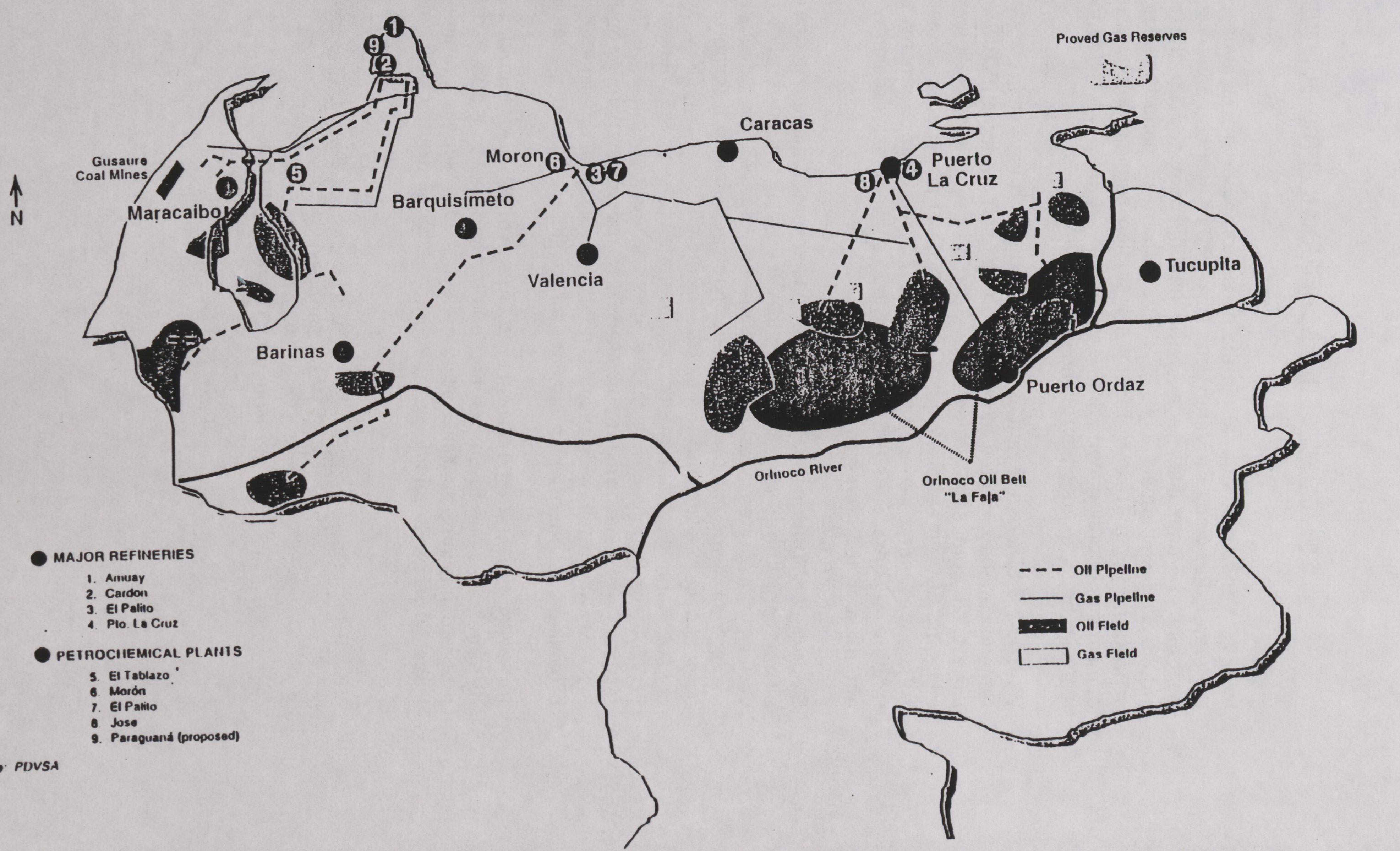
TABLE 1

Petroleum Analysis: Summary of Venezuela's Petroleum Status

	OIL (billion bbls.)	GAS (Trillion cubic ft.)
Cumulative Production	42.7	15.4
Proved Reserves		
Maracaibo Basin	22	-----
Eastern Venezuelan Basin	14.8	-----
Orinoco Heavy Oil Belt	26	-----
Others	0.5	
Proved Reserves Total	63.3	127
Inferred Reserves	20	
Undiscovered Resources (range)	17(12-38)	36(18-127)
Total Petroleum Endowment	138.2	152.2
1992 Production	0.866	0.741
Reserves Production Ratio (R:P)	93:1	11:2
Potential Production at Maximum Exploitation Rate (R:P = 9:1, Orinoco Oil R:P = 20:1)	4.911	11.2
Period to Which Current Production Can Be Sustained		
Without Orinoco reserves	2090-2095	
With Orinoco reserves	2125-2130	
Number of Producing Oil Wells	12,857	
Oil Production Per-Well	134.7 barrels per day	

Source: Exploration Opportunities in Latin America

PETROLEUM MAP
OF VENEZUELA



Source: PDVSA

II. STRUCTURE OF THE VENEZUELAN PETROLEUM INDUSTRY

In 1975 Venezuela nationalized the oil sector, reserving all hydrocarbon activities to the state. Petroleos de Venezuela, S.A.,(PDVSA) a company wholly owned by the Republic of Venezuela, became the holding company for the national petroleum industry. Since January 1, 1976, PDVSA has been responsible for coordinating most aspects of the petroleum industry, including administration, planning, operations, domestic and foreign marketing, pricing, and capital investment. PDVSA since 1978, has also been responsible for the petrochemical sector.

With $22.3 billion of revenues in 1991 and according to its reserves, production, and refining capacity, degree of integration and sales volume, PDVSA ranks as the third largest oil company worldwide. PDVSA has a well-established infrastructure, including 300 active oil fields, 27,465 miles of pipeline, 6 domestic refineries, and major investments in the oil sector in the U.S., Sweden, Germany, along with a leased refinery in Curaco. PDVSA is considered the most efficiently run state-owned enterprise in the hemisphere.

Since nationalization in 1975, PDVSA has absorbed the operations of 14 multinational oil companies that were operating in Venezuela, and currently works through three vertically integrated operating subsidiaries, Lagoven, Corpoven, and Maraven, that manage all of the exploration, production and refining, transportation and marketing activities in the country. (See the attached chart which shows the history of consolidation since nationalization). In addition, the other main operating entities of PDVSA are Pequiven, which manages the petrochemical business, INTEVEP, the research and development arm, BARIVEN, the international procurement subsidiary, PDV MARINA(marine transportation) and BITOR(Orimulsion). (See the attached organizational chart which includes all subsidiaries and overseas investment).

BARIVEN, the international procurement arm of PDVSA, maintains two offices outside of Venezuela, one in Europe and one in Houston, to aid in its offshore purchasing program. It is important that all potential Canadian suppliers register and liase with the Houston office, in addition to their normal in country marketing activity.

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PETROLEOS DE VENEZUELA, S.A.

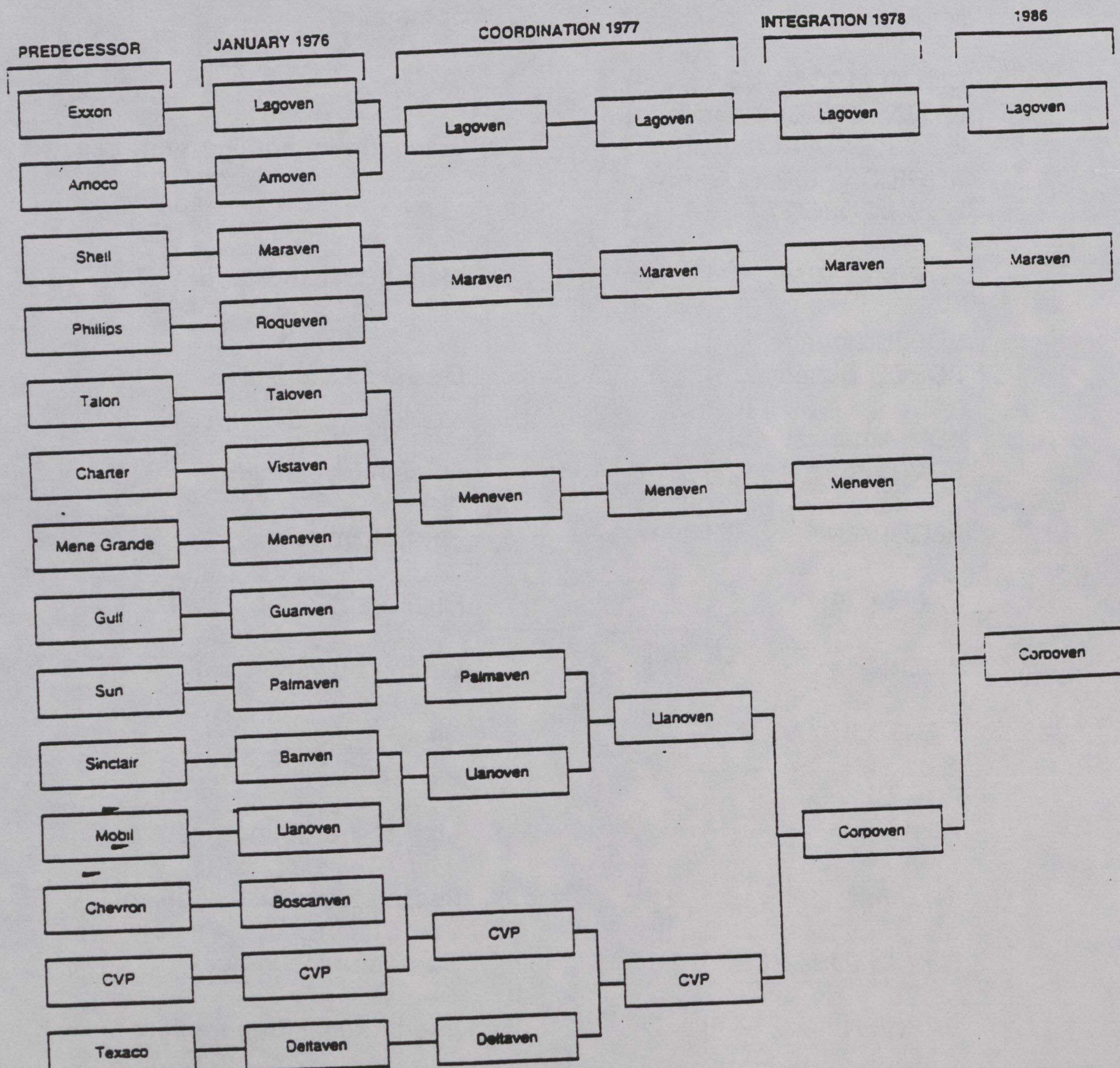
ORGANIZATIONAL STRUCTURE

PDVSA

CORPOVEN } LAGOVEN } MARAVEN }	Fully Integrated Venezuelan Oil Companies
CITGO (100%) USA } NYNAS (50%) Sweden } ISLA (LEASE) Curacao } RUHR OEL (50%) Germany } UNO-VEN (50%) USA }	Downstream Foreign Ventures
PDV-MARINA }	Marine Transportation
BOPEC Bonaire } BORCO Bahamas }	Overseas Storage
PDV America } PDV Europa }	Foreign Investments
PEQUIVEN }	Petrochemicals
PALMAVEN }	Fertilizer - Agribusiness
BITOR }	Bitumen (Orimulsion)
CARBOZULIA }	Coal
PDV UK } PDV USA }	Market intelligence
INTEVEP }	Research and Development
PDV INSURANCE }	Corporate Insurance
BARIVEN }	International Procurement
CEPET }	Training

IMPACT OF INDUSTRY CONSOLIDATION

Since the nationalization of Venezuela's petroleum industry on January 1, 1976, various consolidations have occurred as demonstrated below.



Source: PDVSA

III. OPPORTUNITIES FOR CANADIAN COMPANIES IN THE OIL AND GAS SECTOR

As the third largest integrated oil company in the world, after Saudi Aramco and Royal Dutch Shell, PDVSA procures an enormous variety of products and services. In 1992 PDVSA purchased in excess of $2.5 billion of which roughly half was sourced offshore through PDVSA's purchasing arm PDVSA Services. Approximately 70% of those purchases were from U.S. suppliers (includes local subsidiaries of US companies) with the remaining coming from Europe, Japan and Canada. APPENDIX B shows a breakdown of these purchases by import, national and by the general class of product or services.

Opportunities for selling to the oil industry in Venezuela include equipment such as oil well and field pumps, power valves and parts, turbines and parts, drilling and boring machines, geophysical instruments, air and gas compressors, environmental equipment, steam generation equipment, electric equipment, process equipment, laboratory equipment, measure and control equipment, telecommunication equipment, machine tools, firefighting equipment etc., and spare parts for all of the above. Engineering and construction services, maintenance and productivity and efficiency services are now all in growing demand in the Venezuelan oil and gas industry.

Although currently restricted from exploring or producing oil or gas, virtually all of the major multinational oil and gas and services companies have offices or representation in Venezuela and provide either equipment or service contracts to PDVSA. In addition, numerous local companies have grown up with the oil industry that have excellent capabilities especially in engineering, consulting, and in some manufacturing areas. The Law of Venezuelan Purchases requires PDVSA to purchase materials and supplies locally and will permit foreign purchases only if domestic suppliers cannot meet quality, quantity and delivery requirements. <u>Therefore, it is a prerequisite that to be successful selling into this market, at a minimum, some form of local presence is required.</u>

Canadian Performance

Canada has had modest success selling to the petroleum industry in Venezuela during the last three years. In 1990, Canadian companies sold $32 million of products and services to PDVSA giving Canada about 4.4% of the total purchases of PDVSA. In 1991, Canadian sales were substantially higher, totalling $65 million as a result of several large contracts associated with petrochemical facilities, gas turbines, and drilling equipment and computer systems. In addition, in 1991, two Canadian divisions of multinational companies were awarded contracts for a major portion of a plant to produce polypropylene at the El Tablazo complex in Zulia State. 1992 sales by Canada should be in about the same range as 1991.

The following is a listing of the major (only a partial list) Canadian companies and their products, that have been successful selling to PDVSA during the last five years.

SUPPLIERS	PRODUCTS
Rolls Royce	Gas Turbines and Accessories
Foster Wheeler Canada	Steam Generators and Accessaries
Sumitomo Canada	Steel and Tubing
Canada Wire and Cable	Cable
Babcock & Wilcox Canada	Steam Generators and Accessories
Dow Chemicals Canada	Process Technology
ABB-Lummus	Engineering
S.R. Telecom	Telecom Equipment
Sierra Drilling	Drilling Rigs
G. Failing Supply	Drilling Rigs
Zeton	Pilot Laboratories
Griffith Oil Tools	Various Oil Field Equip.
Systemhouse	Computer Systems
Tecsult	Management Consulting
Algoma Steel	Tubing
Dresser Canada	Pumps
Natco	Various Production Equip.
Stelco	Steel
Westinghouse	Gas Turbines and Accessories

Other Canadian companies have established or are in the process of establishing joint ventures in areas such as pipeline inspection and services, maintenance systems and services, drilling services, specialized field equipment and services, research and training, steam generator fabrication, gas processing equipment etc.

PDVSA'S INVESTMENT PLANS 1993-1998

TABLE 2

PDVSA INVESTMENTS
(Millions of bolivars)

	1988	1989	1990	1991	1992
Exploration	2,087	3,227	5,817	13,277	12,741
Production	16,927	30,714	63,176	112,596	162,502
Refining	2,811	7,094	12,009	20,447	53,685
Domestic Market	2,482	3,498	5,883	8,053	5,608
Marine Transport	119	85	1,180	2,373	785
Petrochemicals	2,759	13,940	23,351	24,652	26,622
Others	1,640	3,769	8,548	27,916	19,646
Total within Venezuela	28,825	62,327	119,964	209,314	281,589
Offshore Investment	587	41,605	78,490	55,054	84,278
Total Investments	29,412	103,931	198,454	262,368	365,867
EXPRESSED IN DOLLARS					
Investments within Venezuela	1,988	1,794	2,517	3,675	4,064
Total Investments	2,028	2,992	4,163	4,641	5,280
ADJUSTED FOR INFLATION - 1984 BOLIVARS					
Investments within Venezuela	13,986	16,393	22,432	29,165	29,851
Total Investments	4,271	27,336	37,108	36,835	38,786

Source: PDVSA Annual Reports and VenEconomy Estimates

Table 2, shows a breakdown of PDVSA investments by function between 1988-1992. In 1992, the company's total investments exceeded $5.0 billion with over 58% expended on production, 19% on refining and 7% on petrochemical and 4% on exploration.

In 1990, PDVSA announced a very ambitious program to invest $48 billion(1990 dollars) over six years with the main goal of raising production capacity to 3.5-4.0 million b/d and the construction of up to 1 million b/d of additional deep conversion refinery capacity in Venezuela and abroad. However, since then as a result of budget cuts, cash flow problems, low oil prices and an excessive taxation load, PDVSA has had to scale these plans down.

The target rate now, under the 1993-1998 strategic plan, for reaching 4.0 million b/d of production capacity has been pushed back to the year 2002. By 1998, PDVSA wants to raise production capacity to 3.5 billion b/d (enough to sustain 3.1 million b/d of production), not including 18.3 million mty of Orimu sion. PDVSA now plans to invest $41 billion (1992 dollars) through 1998. Table 3 outlines the main areas of investment for the plan.

TABLE 3

Plan 1993 - 1998 Total Investments - MMMBs.93	1993	1993-1998
Exploration	22	190
Production	165	1.117
Refining	69	312
Domestic Market	3	26
Others (Infra.,Marina,Intevep)	10	25
Petrochemicals	63	317
Coal	36	160
Orimulsion	12	140
Cristobal Colon	1	254
Strategic FPO Association	7	560
Total Investments	388	3.101
Source: PDVSA		

In dollar terms, exploration will account for about $2.5 billion; production, 14.5 billion; refining 4.1 billion; heavy oil conversion, 8.0 billion; petrochemicals, 4.1 billion; LNG, 3.3 billion; Orimulsion, 1.8 billion; coal 2.1 billion; and domestic marketing, .3 billion.

TABLE 4

Plan 1993-1998 Volumetric Objectives	1992	1998
Proven Reserves of Crude, MMMB	63,3	64,9
Potential Production of Crude, MBD	2.832	3.456
Production of Crude, MBD	2.371	3.131
Production of LGN, MBD	106	217
Refining, MBD		
National	1.092	1.205
International	600	800
Domestic Market, MBDPE	575	801
Gross Production of Petrochemicals, MMTM/Yr	4,6	15,2
Coal Production, MMTM/Yr	3,0	22,0
Orimulsion Production, MMTM/Yr	1,2	18,3
Source: PDVSA		

Critical to this plan is how these investments can be financed. PDVSA's borrowing capacity is limited at this point and its internal cash flow is insufficient. PDVSA will require important tax relief and political authorization to enter into joint ventures or strategic associations with foreign firms. The following is a more detailed review of PDVSA's investment plans in 1993 and for the mid term 1994-1998 highlighting specific areas where Canadian firms may have opportunities to participate either through investment or the supply of products and/or services.

A. EXPLORATION

During 1992 PDVSA's operating subsidiaries carried out an extensive exploration program in Venezuela both in traditional and in new high priority areas, aimed at increasing reserves of light and medium crudes in the areas of Lake Maracaibo, Apure, Anzoategui, and Northern Monagas. PDVSA drilled 21 exploratory wells adding 321 million of barrels of crude and 101.9 billion cubic meters of probable reserves of natural gas. PDVSA also shot 2,911 km of conventional seismic lines and 243 square kms of three dimensional lines. As of the 1st quarter of 1993 there were a total of 100 drilling rigs in Venezuela, 67 of them active and 33 idle. Among the foreign companies doing conventional vertical drilling in Venezuela now are: Atlantic Pacific, Dual. Ensco, Flint, Forwest, H+P, Loflland, Odecca, Rowan, Santa Fee, and Western O. PDVSA is beginning to experiment with slant hole drilling and several canadian rigs are now being operated by Precision Drilling of Calgary.

Because of Venezuela's huge existing heavy crude reserves and the OPEC quota system which limits its oil production, exploration has focused on higher-priced light and medium crudes(and condensates), and on-shore natural gas. This will continue to be the pattern for some years into the future.

PDVSA through its affiliates plans to spend over $2.5 billion between 1993 and 1998 on exploration. The goal is to discover about 8 billion barrels of light and medium crude and condensates. This will require approximately 47,000 kms of conventional seismic lines and 1,700 square kms of 3D seismic work along with 241 exploratory wells.(See Appendix C for more details). A significant portion of PDVSA's Exploration (geophysical and drilling) activities are subcontracted out to numerous petroleum service companies based in Venezuela. This trend is expected to continue in the 1993 - 1998 period.

TABLE 5

Exploration Plan - PDVSA-

	1993	1994	1995	1996	1997	1998	Total
Investments MMMBs.93	2,4	31,4	34,5	35,7	33,7	31,8	189,6
Reserves MMB	1,023	1,342	1,178	1,516	1,627	1,257	7,943
Seismic Kms	7.360	10.470	6.925	7.800	8.800	6.400	47.75
No. of Wells(*) Drilled	29	43	49	38	42	40	241
No. of Drills Prod/Yr	10,5	15,1	16,0	13,0	11,0	9,0	---
Expenses MMMBs.93	13,0	18,1	17,9	18,6	17,4	16,5	101,5

(*) Including 56 exploratory drills and 3 stratigraphic wells
Source: PDVSA

B. PRODUCTION

In 1992, the actual production of crude and condensates averaged 2,484,000 barrels per day sustained by a production capacity of 2,831,900 mb/d a similar level to that reached in 1991. Drilling actually slowed 13% from 662 holes in 1991 to 575 in 1992. The number of wells repaired rose 11% from 1,148 in 1991. PSDVSA's probable reserves are currently estimated at 63 billion barrels of oil and 127 trillion cubic feet of gas.

TABLE 6

Production of Crude, Condensates and Natural Gas (MBD) 1992

CRUDE	
light/condensates	924.4
medium	892.1
heavy and extra heavy	554.9
Total	2,371.4
LIQUID NATURAL GAS AND ETHANE	112.6
TOTAL PRODUCTION	2,484.0

PDVSA's new goal to increase it's crude production capacity to 3.5 million barrels per day by 1998 and 4.0 million b/d by 2002 will require a much more open investment strategy by PDVSA than in the past. Given PDVSA's current restricted investment ability, new forms of cooperation are now being followed by PDVSA to help them reach their production goals both in crude and natural gas. PDVSA has budgeted nearly $14.5 billion for investment in production over the next five years, but this will fall far short of the needs to meet the stated goals. The following is a brief description of the main areas that PDVSA is pursuing to help increase its production capacity.

REACTIVATION OF MARGINAL OIL FIELDS

One of the principal ways that PDVSA hopes to increase production is by opening up to foreign contractors inactive or "marginal fields" on a service contract basis. Venezuela has about 300 known oil field, ranging from giant to small. Between 100 and 150 of these fields are inactive or have low yields. About 26,500 oil wells in Venezuela are "capable of producing", while some 12,000 are currently active. The rest are closed awaiting overhaul and reactivation. In 1991, the Ministry of Energy Mines and Resources and PDVSA began the first stage of a program to offer to private bidders a total of 46 closed-in or low volume oil fields. Total recoverable oil from these fields has been estimated by official sources at between 500 million to 1 billion barrels. The fields are expected to produce between 150,000 and 200,000 b/d of light and medium crude, including some condensates, within three years of contract signing. Since the Venezuelan Constitution permits participation by private firms through service contracts, the reactivation of these fields will not require Congressional approval.

The first round of bidding offered nine units, which attracted a large number of international and domestic interest, including a few Canadian companies. However, after a long drawn out process which lasted for over two years of evaluations and negotiations, only three contracts have been signed.

* British Petroleum signed a contract for the Pedernales Unit in Amacuro State.

* Benton Oil and Gas(U.S)/Vincler C.A.(Venezuela) won the bid for the a units called Uracoa, Bompal and Tucupita.

* Teikoku Oil Co.(Japan) won the Guarico East unit.

In late 1992, a second round of marginal fields was offered to private bidders. This time 74 fields located in 13 production units have been offered in the states of Zulia, Falcon, Guarico, Anzoategui and Monagas. Over 280 companies originally expressed interest with about 80 companies formally applying to PDVSA with their technical and commercial capabilities. 8 of these companies are Canadian, the second highest national group after the U.S. These companies have until July 9th, 1993 to present their formal proposals and it is expected that contracts will be concluded by September or October 1993. PDVSA seems to have learned a great deal from the experience on the first round and has considerably improved technical and commercial conditions for the second group of fields.

Subsequent rounds for other marginal fields are expected in the future and Canadian companies have a good opportunity to participate in this program, an area that many Canadian producers excel (see Appendix F).

CAPACITY MAINTENANCE

Venezuela has many mature oil fields which contributes to a natural rate of decline in production capacity of over 500,000 b/d per year, or 22% The natural rate of decline in deposits was offset in 1991 by restoring approximately 736,000 b/d in production potential through drilling 662 advance and development wells and carrying out repairs and workovers on another 1,148 wells. PDVSA employed an average of 114 rigs throughout the year for drilling and repairs.

PDVSA also places a high priority on secondary recovery as a means of maintaining capacity. About 40% of current production capacity is subject to secondary gas, water or steam injection. Venezuela is a leader in steam injection because of the need to stimulate flow of its heavy crudes. Venezuela has technology exchange agreements with Canada, the U.S. and other countries, with a work program that includes enhanced oil recovery.

STRATEGIC ASSOCIATIONS - DEVELOPING THE ORINOCO HEAVY OIL BELT

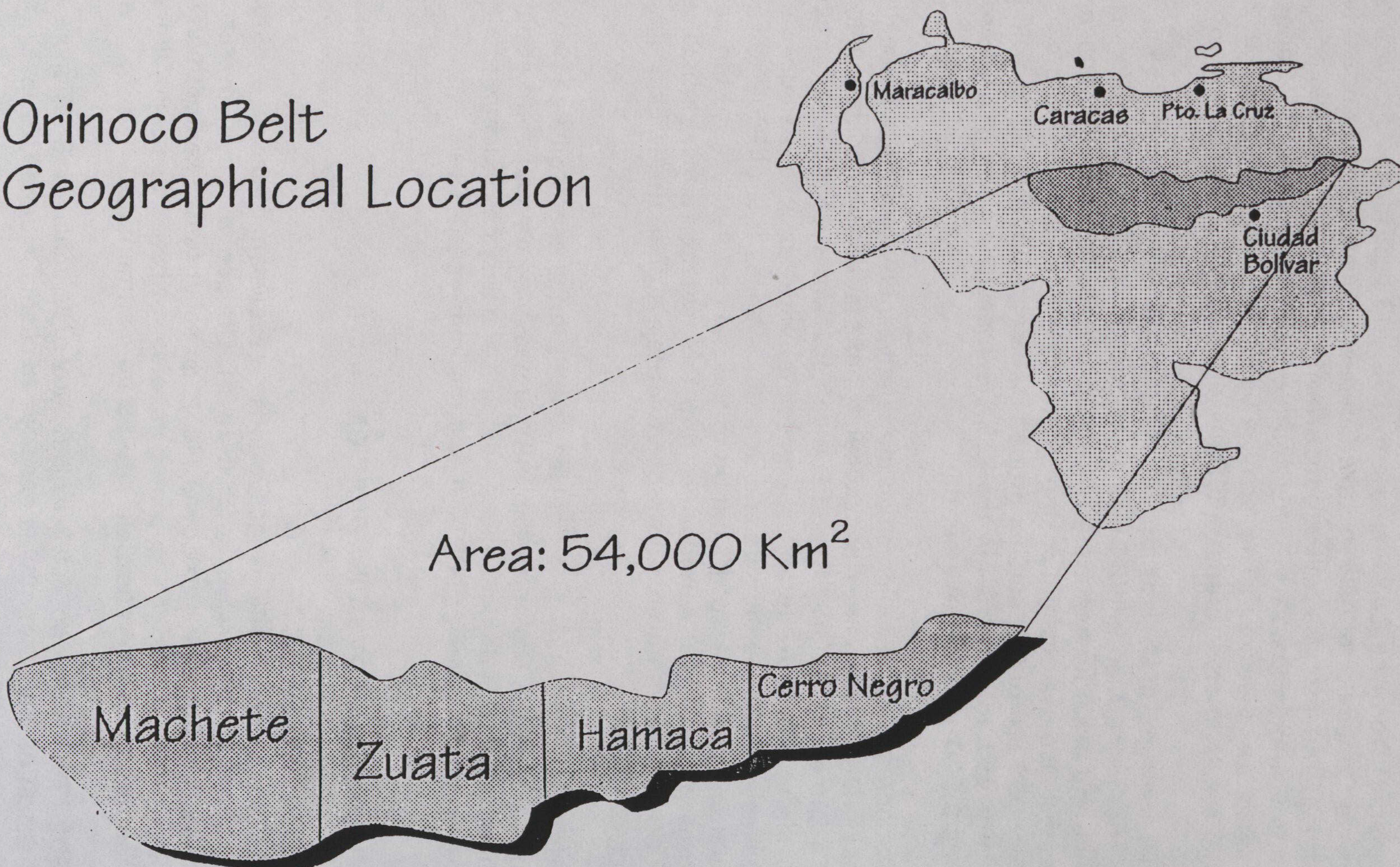
A critical component in PDVSA's strategy to reach its mid-term production goals and to ensure Venezuela's future place as a key player in the world-wide petroleum business, is the development of the Orinoco heavy and extra heavy oil deposits situated in a band on the north side of the Orinoco river in north-eastern Venezuela. The Orinoco belt is considered the world's largest single reservoir of hydrocarbons, with an estimated 1.2 trillion barrels of oil in place, of which 267 million barrels could be recoverable. Currently these crudes represent only about 20% of Venezuelan production.

Venezuela wants to increase significantly the heavy oil's share of the total production, particularly from the Orinoco Belt, and develop deep conversion technologies to make the crude more easily marketable. In 1988, PDVSA created a new subsidiary, Bitumenes del Orinoco S.A.(Bitor) with the responsibility of planning, developing and marketing the bituminous resources of the Belt. Bitor's production plan calls for staged increases from 1.74 million tons in 1991 to 41 million tons in 1996.

These ambitious goals will require huge investments and PDVSA is actively pursuing "Strategic Alliances" with several large multinationals which will include the production, upgrading and marketing of heavy and extra-heavy crudes. To date, PDVSA has signed eleven letters of intent (Veba, Elf, Aquitaine, BP, ENI, Amoco, Cheveron, Conoco, Mobil, Mitsubishi-Mitsui,Total, and C.Itoh-Marubeni). In March 1993, a detailed agreement with Conoco and Maraven was reached and has been referred to Congress for approval. Under Venezuela's Hydrocarbon Law each association will require political approval on a case by case basis. It is uncertain, given the current political problems and the upcoming Presidential elections in December that the deal will receive rapid approval. The Conoco deal will require investments of approximately $1.7 Billion. Based on a 20 year evaluation plan, the project is expected to generate pre-tax profit of $21 billion, $4.6 billion for each of the partners, plus 11.8 billion in taxes and royalties for the central government. These include a 30% income tax and a 16 2/3 royalty.

bitor

Orinoco Belt Geographical Location



When the Conoco project is approved, a Jose based refinery with a capacity of 120,000 b/d will be built using delayed coking technology to upgrade 9 API crude (3% sulphur) from the Zuata area into 102,000 b/d of 20 API synthetic crude for delivery to Conoco's refinery in Lake Charles, Louisiana and Ponca City, Oklahoma. In addition, the process will produce 3000 b/d of coke for export to Conoco's Louisiana Carbon subsidiary. This captive market is the key to Conoco's potential success in the venture. The plant plus installations, including a 210-kilometre pipeline, are estimated to cost $600 million.

Another venture, a $3.1 billion partnership between Maraven(35%), Total(France-40%) and Itochu/Marubeni(25%) has also received(June 1993) Venezuelan Cabinet approval and has now been referred for Congressional study and final approval. This project will also use delayed coking technology to refine 114,000 b/d of 9 degree API into 100,000 b/d of low sulphur crude of 31 degrees, that will be sold through long-term contracts to refineries in the U.S., Europe, and Japan. The project will also produce 3,000 tons of coke per day.

The Conoco and Total projects use the relatively low-tech delayed coking conversion process. Other companies are studying more sophisticated technologies, such as Veba's Combi-cracking(VCC) and France's low pressure hydro-treatment to upgrade the crude to 38-40 API(practically gasoline) with no coke residue. However, these processes are more expensive and at today's prices it is difficult to see these other associations really taking off until into the next century. In its ten-year $40 billion investment plan, PSVSA hopes to form three associations , which would support 360,000 b/d, or about an eighth of Venezuela's goal of 4 million b/d of production capacity by 2002.

Canada has had ongoing technical exchanges in the heavy oil area with Venezuela for a number of years. Canadian expertise in heavy oil development could be expanded into opportunities in engineering, equipment and services industry plant operations by marketing aggressively, to PDVSA and the joint venture partners

ORIMULSION - A PDVSA INNOVATION

PDVSA also has ambitious aspirations to develop capacity and markets for its trademark fuel Orimulsion, a mixture of Orinoco bitumen, water and chemical additives. It is being sold to power plants as boiler fuel in competition with coal, and is sold by the ton. Since Orimulsion competes with coal, its production and export are not counted towards Venezuela's OPEC commitments.

In 1992 PDVSA produced 1.7 million tons of Orimulsion, 94% more than in 1991. Almost half of this amount was exported to clients in Japan, Great Britain, Spain, and

Canada(N.B. Power). Currently PDVSA has medium term supply contracts to supply 8 million tons of Orimulsion and by 1998 would like to have commitments for 26 million tons. These ambitious numbers are questionable because of coal/Orimulsion competitiveness and politics especially in Europe surrounding coal and environmental concerns about Orimulsion. Most of the future development of Orimulsion will be carried out by joint ventures. It is expected that a long discussed negotiation with BP, Mitsubishi and Britain's Powergen and Bitor to form a joint venture to manufacture and market Orimulsion will be concluded before the end of 1993.

C. NATURAL GAS AND NATURAL GAS LIQUIDS

Most of Venezuela's proven reserves of natural gas are associated gas. However, huge non-associated discoveries notably off-shore north o the Paria Peninsula and on-shore in Guarico and Anzoategui States combined with proven associated gas give Venezuela an estimated 281.5 trillion cubic feet of reserves which would rank Venezuela in the top 5 countries worldwide.

Venezuela plans to fully develop this potential by steadily increasing local consumption, developing large LNG by mega-projects and expanding the petrochemical industry domestically and internationally. Significant investments have been made in the past few years to enable gas to substitute for oil, including new pipelines and connections to serve electric plants and consuming areas.

In 1992, production of natural gas was 116.3 million cubic meters of which 37.7 million was used for re-injection, 31.3 million used in operations and processes, 38.5 million was sold to the local commercial market. In addition, associated ethane production totalled 112,600 b/d.

Corpoven is PDVSA's main gas producer, transmission and distribution company. Construction of the Nurgas pipeline and planned development of major gas fields in eastern Venezuela will further enhance Corpoven's dominant role in natural gas. Corpoven is expected to develop non-associated gas production in Guarico State, plus further gas production in Anzoategui State, to feed into the Nurgas system.

CRISTOBAL COLON - GIANT LNG PROJECT

By far the biggest project currently being contemplated by PDVSA is the Cristobal Colon joint venture to extract, liquify and export natural gas off the Paria Peninsula coast. The $5 billion project is a joint venture between Lagoven(33%),Shell(30%), Exxon(29%), and Mitsubishi(8%) which has been in the negotiations stage for several years but has been delayed because of doubts about gas supply and market demand

and pricing. In March 1993, the partners finally signed the long-awaited formation agreement which was recently approved by Cabinet.

In 1991, the partners approved $30 million in expenditures after a joint feasibility study had been completed, which will see investments in geophysical, economic, financial, technical and environmental studies. Colon's production installations, liquefaction plant and tanker fleet are expected to cost $5 billion. The plant with a liquefaction capacity of 4.6 million tons of LNG per year is expected to account for about half the costs.

Once again, as required by Venezuela's Hydrocarbon Law, the Colon Project was submitted for Congressional approval in April 1993. Despite some political resistance and the current political instability, the Government hopes to push Colon, the Maraven-Conoco project(noted above) and a model production-sharing contract through Congress before the session ends in August. This could prove to be difficult given the political crisis and the fact that it is an election year.

D. REFINING

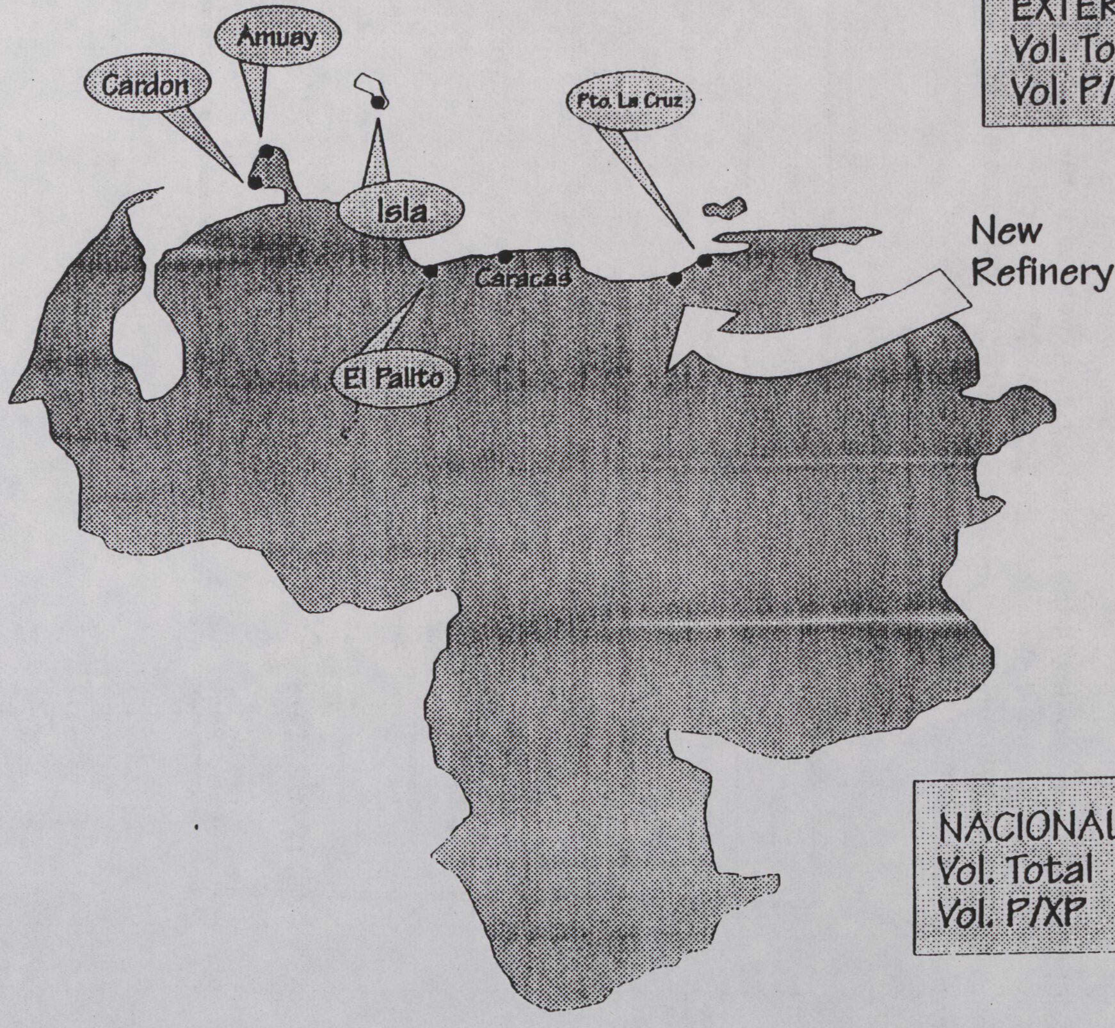
In 1992, PDVSA processed an average of 1.9 million b/d in its refineries in Europe and the United States, about the same as 1991. Of this about 1.6 million b/d were Venezuelan crudes. In domestic refineries, PDVSA processed an average of 949,000 b/d and 684,000 b/d in refineries abroad. In the leased Isla Refinery in Curacao, Pdvsa processed 186,000 b/d. This refinery's lease expires next year but is expected to be renewed and the new contract will provide for additional investment to upgrade the facility.

In 1992, investments were very high mainly because of the pressure to upgrade PDVSA's refineries to meet tougher environmental regulations especially in the U.S. About $650 million was spent on refining a 160% increase over 1991.

PDVSA is also seeking joint-venture partners for the stalled new refinery for eastern Venezuela in Jose which would require an investment of $3-4 billion. This refinery is strategically necessary because it would allow processing of greater volumes of heavy and extra heavy crudes.

At Maraven's Cardon Refinery, $1.9 billion has been budgeted to develop a delayed coker unit, a reformer unit, a naphtha hydrocraker and the required industrial services, all scheduled to start operation in 1996. Also for Cardon, another $50 million is being invested to produce oxygenates, such as MTBE and TAME, the environmentally preferred gasoline additives which are replacing those based on tetraethyl-lead in most of PDVSA's overseas markets, scheduled to come on stream in 1995.

Venezuelan Refining System



EXTERNA (MBD)	90	91	96
Vol. Total	580	625	800
Vol. P/PX	30	64	344

NACIONAL (MBD)	90	91	96	97
Vol. Total	1140	1190	1500	1700
Vol. P/XP	110	240	330	500

Lagoven's nearby interlinked Amuay Refinery has $300 million assigned for a delayed coker and industrial services, scheduled to be in operation in 1994.

Corpoven's El Palito Refinery on the north central coast is also scheduled to start up new oxygenates plants in 1994 at a cost of $50 Million.

(See Appendix C for more details)

E. PETROCHEMICALS

One of the most ambitious areas of planned development for PDVSA is in petrochemicals where Pequiven's (PDVSA'S integrated Petrochemical subsidiary) five year goal is to expand and diversify at a cost of $6-7 Billion. The program will use Venezuelan but primarily foreign capital and is intended to replace most imports as well as position the company to expand vigorously into international markets.

Originally set up as an operating company Pequiven's fundamental role is changing to that of promoting petrochemical investments, in which it may participate with a minority interest. Pequiven is now authorized to allow the creation of 100% privately owned petrochemical firms in all areas of the industry.

TABLE 7

PEQUIVEN PRODUCTION FACILITIES

COMPLEX/PLANT	CAPACITY th-tons/yr
MORON	200
* Ammonia	250
* Urea	80
* Ammonium sulphate	462
* Phosphoric acid	97
* Oleum	320 or 290
* NPK or DAP	
EL TABLAZO	660
* Ammonia	820
Urea	170/70
* Ethylene/Propylene	40/45
* Chlorine/Caustic soda	40
* Polyvinyl chloride	
EL PALITO REFINERY	59/18/48
* BTX	

Source: Pequiven

The company has long been involved in joint ventures with Venezuelan and overseas partners but always with the financial backing of PDVSA. Starting in 1994, Pequiven will become financially autonomous and the company is currently studying various mechanisms to facilitate this change. Current plans are to increase the number of joint ventures from 12 at present to more than 35 by 1996. Pequiven's share of participation in these joint ventures is expected to average 30%. New ventures are not limited to specific financing requirements. To date, $800 million has been raised through project financing, debt-to equity swaps and export credits. (See Appendix D for a list of existing joint ventures).

TABLE 8
PEQUIVEN JOINT VENTURES UNDER DEVELOPMENT OR PLANNED PROJECTS

COMPANY	PRODUCTS	CAPACITY th-tons/yr	PARTNERS	STARTUP DATE
EL TABLAZO				
Resilin	LLDPE	150	Pequiven Local Combust Eng. (USA)	1994
Estilago	Styrene	150	Pequiven (1)	1995
To be named	PVC	120	Pequiven (1)	1996
PUNTA CAMACHO (ZULIA STATE)				
Pralca	Ethylene Oxide/ Ethylene Glycol	16/ 66	Pequiven Local Olin Corp. (USA) IFC	1993
JOSE				
Super Methanol	Methanol	690	Pequiven Ecofuel (Italy) Financial Inst.	1995
Methanol de Oriente	Methanol	730	Pequiven Mitsubishi Corp. (Japan) Mitsubishi Gas Chem. (Japan) IFC Local	1994

(1) Partners to be defined

PEQUIVEN JOINT VENTURES UNDER DEVELOPMENT OR PLANNED PROJECTS (CON'T)

CARDON (FALCON STATES)				
Cerasol	Special Waxes	30	Pequiven Repsol Deriv. (Spain)	1994
To be named	White Oils Aliphatic Solvents	30/ 25	Pequiven Local	1995
To be named	Phase I		Pequiven (1)	1995
	Benzene	130		
	Toluene	380		
	Mixed xylenes	420		
To be named	Phase II		Pequiven (1)	1996
	Benzene (THDA)	310		
	Cumene	270		
	Cyclohexane	110		
To be named	Phase III Paraxylene	400	Pequiven (1)	1997
ZULIA STATE				
Produsal	Salt	500	Pequiven Local	1994
JOSE				
To be named	Methanol	730	Pequiven (1)	1996
To be named	Ethylene	400	Pequiven (1)	1997
To be named	Chlorine/ Caustic Soda	285 320	Pequiven (1)	1997
To be named	EDC	390	Pequiven (1)	1997
To be named	LLDPE	180	Pequiven (1)	1997
To be named	VCM PVC	210 200	Pequiven (1)	1997

(1) Partners to be defined

Major projects currently under development or in the construction stage include: two methanol plants, one of 750,000 tons/year and the other of 690,000 tons per year; a plant to produce ethylene oxide and ethylene glycols; a low density linear polyethylene plant; a styrene monomers plant; a specialized wax plant and a plant to produce 500 tons/year of industrial salt. These projects along with other smaller ventures will help increase Venezuelan petrochemical production from the current level of about 4 million tons to a planned 12 million by 1997.

TABLE 9

PEQUIVEN 100% OWNED PLANNED PROJECTS

LOCATION	PRODUCTS	CAPACITY	START-UP DATE
El Tablazo	ETHYLENE	70(*)	1993
	PROPYLENE	25	
El Palito	MTBE/TAME	50/65	1993
Paraguana (Cardon)	MTBE/TAME	70/80	1994
Paraguana (Amuay)	MTBE/TAME	160/110	1995
Paraguana	Aromatics Heart Cut	860	1995
	C_8 +	630	
Paraguana (Cardon)	Propylene (Chemicals grade)	200	1996

Source: Pequiven

(*) Debottlenecking

RESILIN PROJECT AND CANADA

A RECENT CANADIAN SUCCESS STORY IN THE VENEZUELAN PETROCHEMICAL INDUSTRY IS THE MAJOR ROLE BEING PLAYED BY CANADIAN DIVISIONS OF TWO INTERNATIONAL COMPANIES, ABB-LUMMUS CANADA AND DUPONT CANADA WHO ARE CURRENTLY PROVIDING KEY ENGINEERING, EQUIPMENT AND PROCESS TECHNOLOGY TO THE RESILIN JOINT VENTURE SET UP TO PRODUCE LOW-DENSITY POLYPROPYLENE AT THE EL TABLAZO COMPLEX IN ZULIA STATE IN NORTH-WESTERN VENEZUELA. THE PLANT WHEN COMPLETED IN 1994, WILL HAVE A CAPACITY OF 150 TONS PER DAY. THE CANADIAN COMPANIES INVOLVEMENT IS APPROXIMATELY $50 MILLION FINANCED BY THE EXPORT DEVELOPMENT CORPORATION OF A TOTAL PROJECT VALUE OF ABOUT $300 MILLION.

F. ENGINEERING AND MAINTENANCE

Significant opportunities exist for Canadian engineering firms in Venezuela, however it must be recognized that very strong local engineering firms have flourished during the last ten years and are particularly strong in the petroleum field. Most of the large Venezuelan firms have partnerships in functional areas or on a project basis with the large foreign firms like Bechtel, Flour Daniel, Kellogg etc. In addition PDVSA maintains a large group of its own engineers.

In 1991, PDVSA's projects required 14.1 million worker hours of engineering time. Of this PDVSA contracted out 6.4 million worker hours. 6,349 contracts were carried out during 1991 worth over $1.8 billion of which 88% were handled by local companies.

In 1991, maintenance and preventative maintenance programs required 17.6 million worker hours from the PDVSA's own personnel and 24.4 million worker hours of contracted labour. Spending on maintenance was $878 million with 70% going to preventative maintenance and efficiency improvement technology.

TABLE 10
ENGINEERING CONTRACTED (Employees-hours 000's)

	1987	1988	1989	1990	1991	1992
Foreign Companies	475	351	497	494	751	1,916
National Companies	2,460	3,531	3,431	4,124	5,598	4,784
TOTAL	2,935	3,882	3,928	4,618	6,349	6,700
Foreign Shares (%)	15	16	13	11	12	29
Venezuelan Share (%)	85	84	87	89	88	71

Source: PDVSA, Annual Report, 1992

G. TECHNOLOGY

Since nationalization, in 1976, Venezuela's oil industry has diversified its sources for technology. PDVSA has contracted with a growing number of local and foreign engineering firms for a variety of services, mostly oil field services. Many U.S., European, Japanese and a few Canadian firms are represented in Venezuela. Technical service agreements signed on a project specific basis with some of the multinational oil companies after nationalization, have in many cases ended. PDVSA has also entered into agreements with other state oil companies and government-supported research institutes in the U.S., Canada, France, West Germany, the United Kingdom and others. Recently, the activities of INTEVEP, PDVSA's research and development subsidiary, have been directed toward the development and application of new technology to make PDVSA's operating subsidiaries more competitive, and to comply with increasingly stringent environmental regulations.

H. OTHER OPPORTUNITIES

Several other areas are worthy of note where Canadian expertise and equipment may have opportunities in the Venezuelan petroleum industry.

Information Technology

PDVSA is a highly sophisticated organization and it continues to procure large quantities of computer hardware, telecommunication equipment and software. Canadian companies have made inroads in these areas and significant further opportunities exist.

Environment

PDVSA plans to invest $500 million during the nest 5 years to improve pollution prevention and control systems in Venezuela. Significant opportunities exist in oil spill cleanup technology, pollution control equipment and services, preventive maintenance programs, re-injection of production effluents, treatment and disposal of effluents in refineries and petrochemical plants, control of atmospheric emissions, treatment and disposal of toxic wastes, and technical environmental audits. In the refining sector PDVSA is looking for new technologies to produce cleaner products that will meet strict new worldwide environmental norms.

Training

The petroleum industry in Venezuela requires continuous training and human resource development. Canadian companies with leading edge training capabilities can approach the two major organizations supporting the oil industry training activities. One is CEPET-Centro de Formacion y Adiestramiento Petrolero y Petroquimico" a subsidiary of PDVSA, which is responsible for support and services to PDVSA for general management and technical programs.

The second is INPELUZ/FLSTP-Instituto de Investigaciones Petroleras de la Universidad del Zulia/Fundacion Laboratorio Servicios Tecnicos Petroleros, directed by the University of Zulia and PDVSA. This group's main objectives are to provide research and technical support to the petroleum industry and to develop training programs and specialized training for the professional and technical consulting services in the petroleum field. Specific training opportunities exist, for example, in advanced reservoir engineering and PVT analysis, advanced thermal recovery, geophysics and interpretation of 3D images etc.

Privatization Programs

PDVSA is considering selling, or having private companies develop, a number of facilities that are complementary to their intrinsic operations. Among these would be power stations, gas compression and water or steam injection plants.

Currently, for example, Maraven is conducting an evaluation of bids from private consortiums for a 300 MW plant to provide power to it's Cardon refinery in Zulia. Numerous international groups have bid to Maraven including one lead by a Canadian company.

IV. STRATEGIES FOR DOING BUSINESS IN THE VENEZUELAN PETROLEUM INDUSTRY

Section II above provided a description of the structure of the Venezuelan oil industry and PDVSA. The following is a brief overview of the various approaches to doing business with PDVSA. Before Canadian companies venture into this market, a careful assessment of the following factors should be considered.

*The Venezuelan petroleum sector is highly competitive and almost all of the major integrated oil companies and large Engineering and service companies are active either with local facilities, offices or effective representation. In addition, historically the Venezuelan industry has been dominated and continues to be heavily influenced by U.S. firms, and this dominance will not be easily broken without concerted effort. In addition, any sales effort should consider marketing to the international service companies in Venezuela or their head offices.

*Local engineering and manufacturing in many sectors of the petroleum business are strong and competitive, plus local preference is given by PDVSA to Venezuelan companies whether fully Venezuelan owned, or mixed capital companies. Strategic associations on a general or project basis should be considered with these local engineering firms and manufacturers where appropriate as a marketing strategy.

*The petroleum industry in Venezuela is very sophisticated and buying decisions often reflect a complex web of relationships between operating subsidiaries, field personnel, head office, and BARIVEN, the international purchasing arm of PDVSA. Therefore, selling goods and services usually requires a prolonged marketing effort and generally cannot be successful without frequent trips to the market. (See Appendix E for a directory of Venezuelan Government contacts in the petroleum sector).

*At a minimum a company interested in selling to this market should first undertake a preliminary marketing study. If the study shows good potential a local agent, representative or distributor should be considered to help organize a marketing and sales plan and provide concerted and consistent local presence. Depending on the particular product or service characteristics, the company may also wish to consider local fabrication either through joint venturing or licensing or setting up a local service capability.

*Recent trends in the industry in Venezuela have begun to see the opening up of major opportunities for potential investment participation in the marginal fields, in major projects related to heavy oil development, a giant LNG project, new refineries, petrochemicals and other areas such as independent power production for sale to PDVSA, gas compression business and pipeline construction. In addition, related to these developments significant opportunities are opening up to subcontractors and suppliers to the major projects being planned.

*PDVSA's current cash flow difficulties make it important that financing offers also be considered in any sales approach (See below for finance information)

V. ASSISTANCE TO CANADIAN COMPANIES IN VENEZUELA

*The commercial section of the Canadian Embassy in Caracas can provide information on many of the questions a new company to Venezuela may have. The embassy has good knowledge of the main players in PDVSA and other main oil companies, agents and representatives, engineering firms, contractors, consultants, local manufacturers, financing possibilities etc.

Canadian Embassy
Torre Europa, Piso 7
Av. Francisco de Miranda, Campo Alegre
Apartado 62.302
Caracas 1060-A, Venezuela
Tel: 951.61.66
Fax: 951.49.50
Telex: 23377 DOMCAN VE

*The Export Development Corporation(EDC) provides a number of financing and insurance facilities to Canadian exporters and investors in Venezuela. In addition to EDC's normal buyer and seller credits for capital goods and projects, EDC has in place several lines of credit that can be used for sales to the petroleum sector.

Export Development Corporation
Mexico and South America Export Development Corporation
151 O'Connor Street
Ottawa, Canada KIA IK3
Tel: (613) 598-2802
Fax: (613) 598-2504

Or contact the EDC office nearest you

Vancouver	(604) 666-6234
Calgary	(403) 292-6898
Winnipeg	(204) 983-5114
London	(519) 645-5828
Toronto	(416) 973-6211
Ottawa	(613) 598-2992
Montreal	(514) 283-3013
Halifax	(902) 429-0426

EDC Lines of Credit with Venezuela

Banco Mercantil
S.A.I.C.A.
US $10 million
John Fern
(Caracas, Venezuela)
Tel: 58-2-507-1137
Fax: 58-2-507-1191

Banco Provincial
US $10 million
Elenora Silva
(Caracas, Venezuela)
Tel: 58-2-501-4490
Fax: 58-2-574-2479

Bariven S.A.
PDVSA's Services, Inc.
(Houston, Texas)
US $25 million
Robert S. LeGrange
Tel: (713) 531-0004
Fax: (713) 588-6290

Corporacion Andina de Fomento
US $20 million
Efrain Cazar
(Caracas, Venezuela)
Tel: 58-2-283-3078
Fax: 58-2-284-5754

*The Canadian International Development Agency (CIDA) through its Industrial Cooperation Program, can provide funding for Canadian companies interested in establishing local partnership either for joint ventures, licensing or investing in local production. CIDA will provide seed money to undertake detailed market potential and/or feasibility studies if it can be shown that the venture will have significant benefits to Canada and Venezuela.

CIDA
Director Americas Industrial Cooperation Division
200 Promenade du Portage
Hull, Quebec
Canada K1A 0G4
Tel: (819) 997-0537 Telex: 053-4140

*External Affairs and International Trade Canada provides funding assistance to Canadian companies through the Program for Export Market Development (PEMD), for marketing exploration visits, incoming buyer visits and capital project bidding.

Contact the International Trade Centre nearest you:

Newfoundland	(709) 773-5511	Fax: (709) 772-2373
P.E.I	(902) 566-7400	Fax: (902) 566-7450
Nova Scotia	(902) 456-7540	Fax: (902) 426-2624
New Brunswick	(506) 851-6452	Fax: (506) 851-6429
Quebec	(514) 283-8185	Fax: (514) 283-8794
Ontario	(416) 973-5053	Fax: (416) 973-8161
Manitoba	(204) 983-4099	Fax: (204) 983-2187
Saskatchewan		
Saskatoon	(306) 975-5315	Fax: (306) 975-5334
Regina	(306) 780-5020	Fax: (306) 780-6679
Alberta		
Edmonton	(403) 495-2944	Fax: (403) 495-4507
Calgary	(403) 292-6660	Fax: (403) 292-4578
British Columbia	(604) 666-0434	Fax: (604) 666-8330

APPENDIX A
PETROLEUM STATISTICS IN VENEZUELA

CRUDE PRODUCTION BY GRAVITY AND BY COMPANY, 1992

	CORPOVEN	LAGOVEN	MARAVEN	TOTAL
Extra Heavy	-------	5,050,535	339,266	5,389,801
Heavy	40,808,664	75,322,003	110,383,518	226,514,185
Medium	125,130,361	220,350,411	24,228,914	369,709,686
Light	50,314,920	58,689,248	161,148,769	270,152,937
Total	216,253,945	359,412,197	296,100,467	871,766,609
AVG b/d	592,477	984,691	811,234	2,388,402
AVG. APT(1)	2.1°	24.5°	25.6°	25.8°

(1) Extra Heavy = 0.0° - 9.9° API
Heavy = 10.0° - 21.9° API
Medium = 22.0° - 29.9° API
Light = 30.0° API and above. Includes condensate
Source data in cubic meters (1 cubic meter - 6.28981 barrels).
Source: Ministry of Energy and Mines. Memoria y Cuenta, 1991. p.314

PRODUCTION OF CRUDE PETROLEUM AND CONDENSATE

YEAR	ANNUAL (BBLS)	AVG. B/D	PERCENT CHANGE	AVG. GRAVITY API DEGREE
1978	790,418,459	2,165,531	-3.2	25.0
1979	860,074,925	2,356.370	8.8	24.4
1980*	793,399,699	2,167,764	-8.0	24.0
1981	769,518,152	2,108,275	-2.7	23.5
1982	691,687,607	1,895,037	-10.1	23.5
1983	657,299,560	1,800,823	-5.0	23.3
1984*	659,945,508	1,803,131	0.1	23.2
1985	613,583,312	1,681,052	-6.8	24.2
1986	653,905,183	1,791,520	6.6	24.9
1987	664,105,185	1,819,466	1.5	25.4
1988*	690,916,689	1,892,922	4.0	25.7
1989	696,407,725	1,907,966	0.8	26.5
1990	779,339,046	2,135,175	11.9	25.9
1991	871,766,609	2,388,402	11.9	25.8
1992	864,854,000	2,363,000	0.9	25.2

Source: Ministry of Energy & Mines, Memoria y Cuenta, 1991, p. 314. Source data given in cubic meters (1 cubic meters = 6.28981 barrels)

EXPORT OF CRUDE & PRODUCTS BY DESTINATION (MB/D)

	1992	Percent	1976	Percent
United States (1)	1,341	65,3	818	38
Curacao & Aruba	–	–	538	25
Central Merica & Caribbean (2)	350	17,0	167	8
South America	69	3,4	84	4
Europe	241	11,7	232	11
Japan	6	0,3	7	–
Others	47	2,3	310	14
Total	2,054	100	2,156	100

(1) Includes Puerto Rico
(2) Excludes Puerto Rico
(3) Includes bunkers
Source: Petroleos de Venezuela, S.A. Annual Report, 1992

PRODUCTION DATA

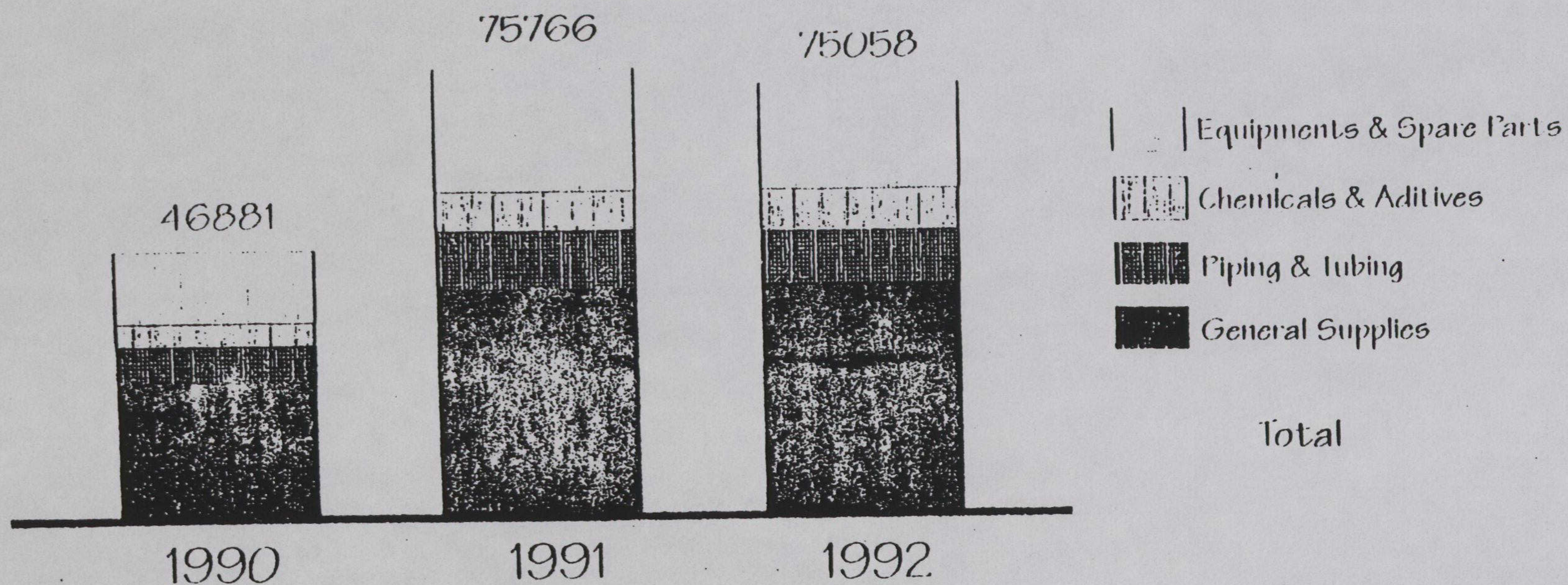
	1986	1987	1988	1989	1990	1991	1992
Crude Oils (a)							
Light	520	535	635	768	840	835	887
Medium	653	589	687	774	828	928	892
Heavy/Extra Heavy	472	410	393	295	430	575	555
Total Crude	1,645	1,534	1,715	1,747	2,098	2,338	2,334
Condensates (000 b/d)	142	165	188	160	37	37	37
Capacity (000 b/d)	2,562	2,568	2,670	2,753	2,779	2,833	
Natural Gas Liquids (000 b/d)	97	94	98	108	114	117	113
Gross Natural Gas (billion CF/D)	3.5	3.5	3.5	3.7	3.9	4.1	4.1
Gas Used (%)	93	90	90	93	92	92	92
Wells Drilled	236	124	187	182	287	662	575
Repairs/Work-overs	1,236	1,097	898	1,058	986	1,148	1,277
Investments (millions Bs)	8,800	11.354	16,927	30,714	63,176	112,596	171,195

(a) Light = 30° API and above
Medium = 22 - 29.9° API
Heavy/Extra heavy = below 22° API
Source: PDVSA, Annual Report, 1991

APPENDIX B
PROCUREMENT: STATISTICS FROM PDVSA

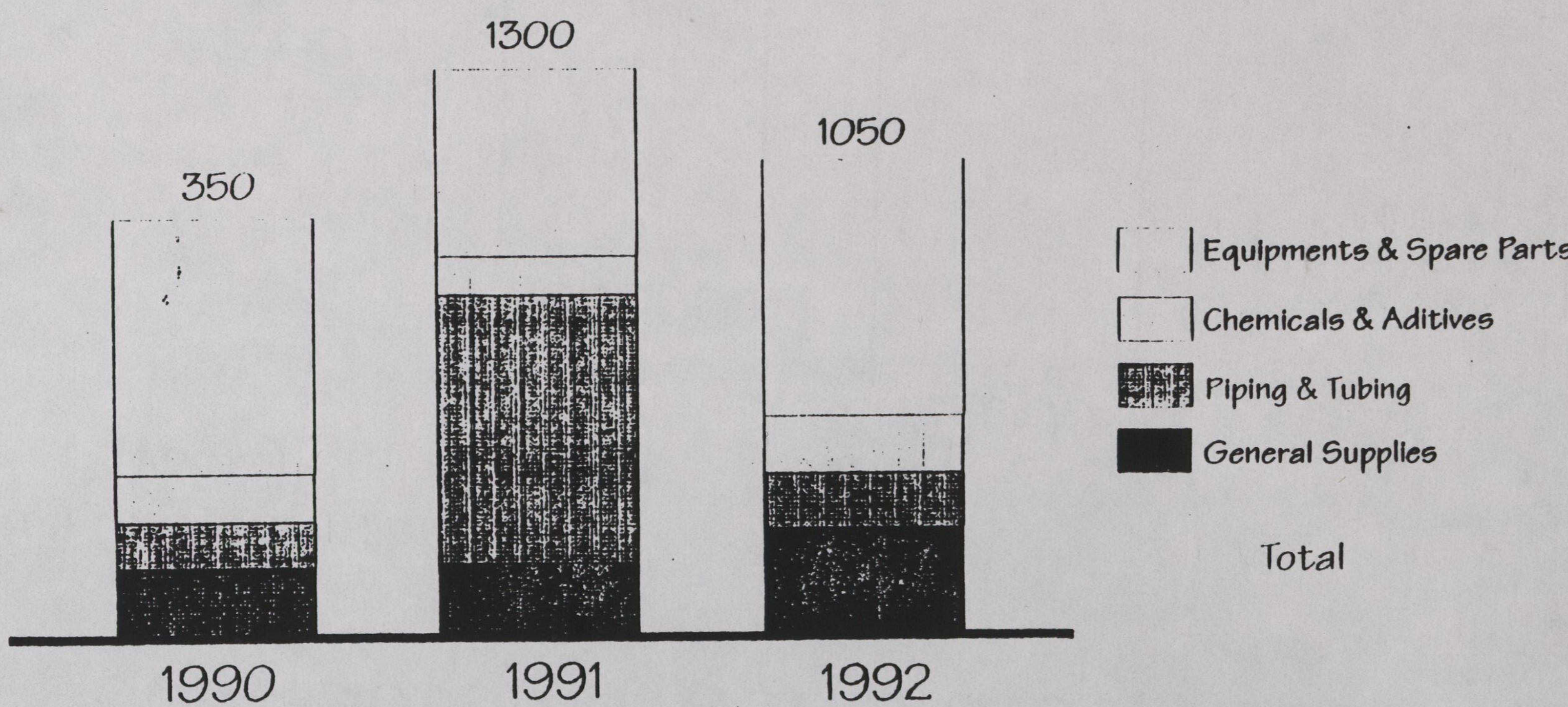
Materials & Equipment

National Purchases - MM Bs.

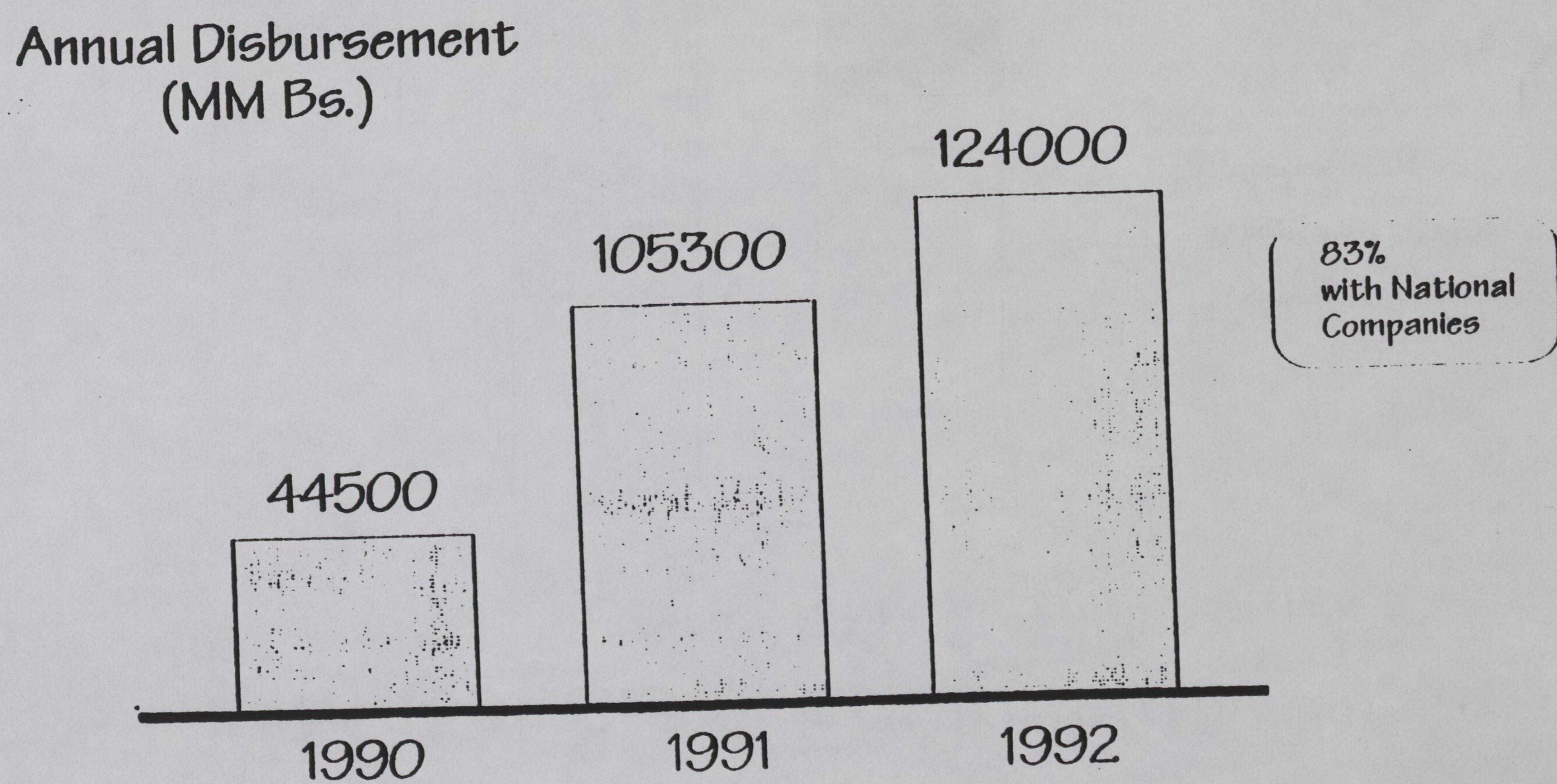


Materials & Equipment

Imports - MM Bs.



Contracts for Works & Services



APPENDIX C
PDVSA'S INVESTMENT PLAN FOR 1993 - 1998

PDVSA'S 1993 - 1998 INVESTMENT PLAN

Function	Purpose/Principle Projects and Programs	Expenditures 93 - 98 In Billions of Bs.93
Exploration	Discovery and incorporation of proven and probable reserves of 7.943 MMB of condensate, light and medium crude by means of 47.755km of seismic surveying, 1.730 kms^2 of 3D seismic and the drilling of 241 exploratory wells.	189.6
	-To confirm 3.374 MMB of condensate, light and medium crude reserves in new traditional areas in order to support the development of the areas potential: North of Monagas, Central Anzoategui, Maracaibo basin and North Barinas.	68.9
	-To identify the deposits estimated at 4.569 MMB of condensate, light and medium crudes in new, non traditional areas: Maracaibo/Falcon basin, Apure/Barinas, Central Monagas/North Anzoategui, East Maturin, Northern and Southern gradient, the Perija gradient, Eastern Zulia and North Paria.	120.7

Source: PDVSA

Function	Purpose/Principle Projects and Programs	Expenditures 93 - 98 In Billions of Bs.93
Production	To maintain the productive capacity and to increase the potential from 2,832 MBD to 3,456 MBD of better quality crude by 1998 (excluding the Orinico belt).	1,117.3
	POTENTIAL/ PRODUCTION	944.7
	* Maintenance/Generation of Potential	584.5
	* New Areas	70.3
	* Gas Compression	73.5
	* Environment/Security/Others	216.4
	SECONDARY RETRIEVAL	96.3
	PROCESSING NATURAL GAS	76.3
	PRINCIPLE PROJECTS	**EXPENDITURES FOR 1993**
	* Development of North Monagas (670 MBD)	179.5
	* Development of Rio Caribe (160 MMPCD of Gas and 20 MBD of condensates)	19.7
	* Secondary Retrieval Projects (3.120 MMD)	96.3
	* Exp. Cryogenic from the Oriente (Cryogas: 3ed and 4th Mills)	54.8

Source: PDVSA

Function	Purpose/Principle Projects and Programs	Expenditures 93 -98 In Billions of Bs.93
Cristobal Colon	Development of gas reserves in North Paria, via liquid natural gas for exportation (4.6 MMTM/LNG Year).	254.0
Bitumenes	To achieve a potential of 600 MBD of Orimulsion by 1998, through the development of the Cerro Negro and Zuata areas.	139.7
Domestic Market	To cover the internal market at medium and long improving the reliability and flexibility of supplies, and the transportation and distribution of products throughout the entire country	26.0

PRINCIPAL PROJECTS	Expenditures for 93
* SISCO: Central Western System	0.5
* GNV: Natural gas for vehicles	0.3
* Expansion of the Anaco-Pto. Ordaz System	7.5
* The Barbacoas-Pto. La Cruz Line	1.2
* The Barbacoas-Jose Line	0.9
* The Altagracia-Los Morros Line	0.7

Source: PDVSA

Function	Purpose/Principle Projects and Programs		Expenditures 93 - 98 In Billions of Bs.93
Refining	To upgrade the National Refineries in order to increase the level of refining medium and heavy crude, to adopt a production pattern in accordance to the new requirements of the market, to generate materials for the Petrochemical Sector and to contribute to the preservation of the environment.		311.5
	PRINCIPLE PROJECTS	**Starting Date**	**Expenditures for 1993**
	El Palito		
	* Oxygenated Production MTBE/TAME	1993	1.6
	* Upgrade the Gasoline System	1994	0.4
	* Use Central Plant Facilities	1994	1.7
	* Expand Industrial Services	1994	1.6
	* Hydrotreatment of VGO-Phase I	1996	2.3
	* Optimize Oxygenated Production	1996	0.5
	* New El Palito Wharf	1996	5.5
	* Hydrotreatment of VGO-Phase II	1999	20.9
	Amuay		
	* Delayed Cokification	1994	11.5
	* New Gas Turbogenerators	1994	3.6
	* Oxygenated Production MTBE/TAME	1995	11.0
	* Flexicoke Combustion	1995	7.6
	* Flexigas Cleaning	1995	3.3
	* Modification of New Sulphur Plant	95/98	5.2
	* Retrieval of Diesel	1996	2.6
	* Isomerization of Light Naphtha	1996	2.5
	* Handle Propane/Propylene	1997	3.2
	* Heavy Naphtha Upgrading Plant	1998	23.1

Source: PDVSA

Function	Purpose/Principle Projects and Programs	Starting Date	Expenditures 93 - 98 In Billions of Bs.93
	PRINCIPLE PROJECTS	**Starting Date**	**Expenditures for 1993**
	Cardon		
	* Renovation of Industrial Services	1993	1.8
	* Oxygenated Production MTBE/TAME	1994	3.3
	* Diesel Production 0,05% S	1994	1.2
	* Delayed Cokification	1996	49.0
	* HDT	1996	30.8
	* Upgrading Plant	1996	34.2
	* Hydrotreatment of Heavy Overhead Products	1997	28.0
	* Isomerization of Light Naphta	1997	6.5
	Oriente		
	* Optimization Paraffin Production of San Roque	1998	1.6

Source: PDVSA

Function	Purpose/Principle Projects and Programs	Expenditures 93 - 98 In Billions of Bs.93
Petrochemicals	Petrochemical by-products supplies and fertilizers required for domestic markets, reduction of imports, maximize joint enterprises and external financing, selective expansion and diversification of the exportation and industrialization capacity of natural gas. Increase gross production capacity from 4,6 MMTM in 1992 to 15,2 MMTM in 1998 including Pequiven, affiliates and mixed-capital companies.	317.0

Principle Projects	Location	Gross Cap. MTMA	Starting Date	Expenditures For 1993
FERTILIZERS				**17.0**
Pequiven				**17.0**
- Nitroven Rehab.	Zulia	175 (Urea) 210 (NH3)	1996	6.6
- Nitroven Oper.Project	Zulia	--------	95/98	4.5
- Increase Capital DAP	Moron	70	1993	0.1
- Low Solubility Fertilizer	Moron	240 (REG) 120 (RAP)		
* Phase I			1993	0.6
* Phase II			1994	1.3
* Phase III			1995	0.8
- Roca Riecito Transp.	Moron	---------	1993	0.5
- Minor Projects	Moron	---------	1993	2.3
- Informatics/Telec.	Moron	---------	1998	0.3

Source: PDVSA

Function	Purpose/Principle Projects and Programs			Expenditures 93 - 98 In Billions of Bs.93
Principle Projects	**Location**	**Gross Cap. MTMA**	**Starting Date**	**Expenditures for 1993**
				140.0
FINE OILS AND PLASTICS				
Pequiven				27.0
- Olefins Expansion	Zulia	70/25	1993	1.4
- Operational Projects	Zulia	------	1998	20.6
- Petroplas Operational Projects	Zulia	------	1993	1.0
- Informatics/Telec.	Zulia	------	1998	0.8
- P/P Splitter Gdo. Chemical	Paraguana	200	1995	3.2
				113.0
Mixed Enterprises				
- PELBD (Resilin)	Zulia	150	1994	6.2
- Expand Plastilago (PEAD)	Zulia	20	1994	0.8
- Expand Polilago (PEBD)	Zulia	60	1994	6.7
- Styrene (Estilago)	Zulia	150	1995	9.5
- PVC	Zulia	120	1996	10.0
- Ethylene	Oriente	400	1997	37.8
- PELBD	Oriente	180	1997	13.8
- MVC/PVC	Oriente	210/200	1999	28,2

Source: PDVSA

Function	Purpose/Principle Projects and Programs			Expenditures 93 - 98 In Billions of Bs.93
Principle Projects	**Location**	**Gross Cap. MTMA**	**Starting Date**	**Expenditures for 1993**
INDUSTRIAL PRODUCTS				160.0
Pequiven				7.0
- Separator/Delimiter	Paraguana	847(C7) 633(C8+)	1995	0.5
- Cardon Industrial Park	Paraguana		1994	1.0
- Anzoategui Operational Project	Oriente	------	1994	0.1
- Jose II Infrastructure	Oriente	------	1996	4.5
- Puerto Piritu Devel.	Oriente	------	1996	0.7
- Informatics/Telec.	Oriente	------	1998	0.2
Mixed Enterprises				153.0
- Salt mines Devel. (Produsal)	Los Olivitos	400	1994	2.3
- Special Waxes(Cerasol)	Paraguana	30	1994	3.7
- White Oils/Solvents	Paraguana	36	1995	2.0
- Cardon Aromatics	Paraguana	857	1996	19.0
- Paraxylene	Paraguane	400	1997	20.6
- Methanol I (Metor)	Oriente	730	1994	16.4
- Methanol II(Super)	Oriente	690	1995	25.5
- Methanol III	Oriente	730	1996	29.1
- Caustic-Soda/EDC	Oriente	280/320	1997	34.4

Source: PDVSA

Function	Purpose/Principle Projects and Programs	Expenditures 93 - 98 In Billions of Bs.93
Palmaven	Support PDVSA affiliates in agricultural and environmental matters, and the use of land in their areas of production through the promotion of private enterprises, and assist the farmers to increase the national agricultural productivity.	1.3

Principle Projects	Finishing Date	Expenditures for 1993
- Integrated Module of Agricultural Development (MIDA)	1998	0.5
- Agro-Industrial Projects (exp. fruits, plantations, petroleum areas projects)	1998	0.7

Function	Purpose/Principle Projects and Programs	Expenditures 93 - 98 In Billions of Bs.93
Carbozulia	Development of coal resources from Guasare at its maximum potential by means of mixed capital partnerships with national and foreign partners. Increase of production capacity from 3,0 MMTM in 1992 to 22,0 MMTM in 1998.	160.3

Principle Projects	Capacity MMMTY	Finishing Date	Expenditures for 1993
- Development of Paso Diablo Mine	10.0	1997	31.1
- Development of Norte Mine	2.0	1997	15.5
- Development of Cachiri Mine	2.0	1998	22.5
- Development of Socuy Mine	8.0	1998	35.4
- Transport and Port Infrastructure	--	1997	55.8

Source: PDVSA

Function	Purpose/Principle Projects and Programs	Expenditures 93 - 98 In Billions of Bs.93
Intevep	Development of Intevep own technology in priority areas.	
	To decrease external technological support , and to support its affiliates in their technological needs.	9.3
Others	PDV Marina. Development of Infrastructure Support	15.0
FPO Association	To develop and upgrade 380 MBD of crude from the Orinoco Oil Belt under association	623.0
	TOTAL ESTIMATION	3,164.0

APPENDIX D
PEQUIVEN JOINT VENTURES IN OPERATION

VALENCIA (CARABOBO STATE)

Oxidor	Phthalic Anhydride	18	Pequiven Local

JOSE

Superoctanos	MTBE	500	Pequiven Ecofuel (Italy)

COLUMBIA

Monomeros	Fertilizers	360	Pequiven
Colombo	Caprolactam	24	Palmaven
Venezolanos	Sodium Sulphate	23	IFI (Columbia) Ecopetrol (Columbia) DSM (Nertherlands)

Source: Pequiven

APPENDIX E
DIRECTORY OF KEY VENEZUELAN GOVERNMENT PETROLEUM CONTACTS

PEQUIVEN JOINT VENTURES IN OPERATION
EL TABLAZO

COMPANY	PRODUCTS	CAPACITY th-tons/yr	PARTNERS
Polilago	LDPE	63	Pequiven Local Atochem (France)
Plastilago	HDPE	100	Pequiven Local Atochem (France) Mitsui Petchem (Japan)
Propilven	Polypropylene	70	Pequiven Local MitsuiPetchem (Japan)
Estizulia	Polystyrene	70	Pequiven Local Dow Chemicals (USA)
Quimica Venoco	Propylene Tetramer Trimer	39/ 28	Pequiven Local Shell Quimica (Netherlands)
Indesca	R&D and technical assistance to clients	----	Pequiven Estizulila Polilago
Olefinas del Zulia	Ethylene Propylene	350 130	Pequiven Financial Inst.
Clorovinilodel Zulia	Chlorine Caustic Soda EDC VCM	120 134 260 130	Pequiven Financial Inst.

GUACARA

COMPANY	PRODUCTS	CAPACITY th-tons/yr	PARTNERS
Quimica Venoco	Dodecilbenzene Linear Alquibenzene	70	Pequiven Local Shell Quimica (Nertherlands)

MORON

Produven	Fluorocarbon	10	Pequiven Atochem (France)
Tripoliven	Sodium Tripoly-phosphate/ Pyrophosphates	18/ 20	Pequiven Local Foret (Spain)

MINISTER OF ENERGY AND MINES

Address: Avenida Lecuna, Parque Central, Torre Oeste, Piso 16 Caracas
Phone 02-507.60.82 and 507.70.80

NAME	TITLE	PHONE
Alirio A Parra	Minister	575.47.97
Rafeal Guevara	General Manager	575.46.86
Alicia Medina Torrealba	Legal Advisor	507.63.12
Pedro Luis Diaz	Hydrocarbons General Director	507.62.01
Miguel H. Cano de los Rios	Mines and Geology Director	507.54.01
Francisco Gutierrez	Energy General Director	507.67.01
Armando Melfan Collazo	Energy Planning Director	507.67.25
Jose Gregorio Puchi	Electricity, Coal & Other Energies Director	507.69.01
Abelardo Lopez Villegas	Nuclear Director	507.67.12
Ulises Ramires Olmos	Technology & Investment Promotion General Director	507.62.39

PETROLEOS DE VENEZUELA

Address: Avenida Libertador, La Campina, Edificio Petroleos de Venezuela, S.A., Torre Este, Caracas
Apartado 169, Caracas 1010-A
Phone 708.41.11. Fax: 708.46.61 708.46.62
Telex 21890 · 24477 (PDVSA VE)

NAME	TITLE	EXT	PHONE
BOARD OF DIRECTORS			
Gustavo Roosen	President		708.42.22
Mario Rodriguez	Vice-President		708.42.54
Frank Alcock	Vice-President		708.43.95
FUNCTIONAL COORDINATORS			
Juan Carlos Gomez	Planning		
Francisco Pradas	Exploration & Production		708.42.65
Humberto Vidat	Manufacturing		
Vicente Llatas	Commerce & Supplies		708.42.00
John Viney	Internal Marketing		
Alonso Velasco	Finance Control		708.42.27
Nelson Olmedillo	Human Resources		
Eduardo Santamaria	Technical Resources		

CORPORATE MANAGERS

Gabriel Paoli	Public Affairs	4268
Alfredo Anzola	Prevention & Loss Control	
Carlos Corrie	Integral Protection/Environment	

MARAVEN

Address: Avenida la Estancia, Edificio Maraven, Caracas 1060, Apartado 829 and 2074, Caracas 1010-A
Phone :908.21.11. Telex: 23535 and 23536

NAME	TITLE	EXT.	PHONE
BOARD OF DIRECTORS			
Eduardo Lopez Quevedo	President	4088	908.22.88
Luis Guisti	Vice-President	4071	908.27.84
GENERAL MANAGERS			
Jose R. Paz	Internal Marketing (Caracas)		908.25.06
David Escojido	Operation-Lagunillas		06553820
Javier Hernandez	Refinery Manager-Cardon		079-72080
Hans Krause	Exploration & Production		908.34.44
Cesar Medina	Orinoco Oil Belt		908.25.80
Aquiles Fernandez	Materials		908.20.74
Fernando Puig	Corporate Planning		908.26.52
Edgar Tellez	Manufacturing Panning		908.27.67
Gustavo Gutierrez	Integral Protection		908.22.96

CORPOVEN. S.A.

Address: Avenida Libertador, Edificio Petroleos de Venezuela, S.A. Torre Oeste, Sector La Campina
Phone : 708.11.11. Telex 21265; 21363 and 2146. Apartado Postal 61373, Caracas 1060-A Fax: 708.16.46

NAME	TITLE	EXT.	PHONE
BOARD OF DIRECTORS			
RobertoV. Mandini	President	1204	708.12.04
Claus H. Graf	Vice-President	1513	708.15.13

GENERAL MANAGERS

Juan Blyde	Contracts	1283	708.12.83
Edgar Parra	Gas	3010	708.30.10
Inaki Saizarbitoria	Geology	1530	708.15.30
Lionel Alessio	Engineering & Projects	3341	708.33.41
Edgar Rincon	Corporate Planning	1420	708.14.20
Frederick Klindt M.	Prevention & Loss Control	1070	708.10.70
Samuel Messulam	Production		
Luis Hernandez	Integral Protection		
Antonio Pietri	New Eastern Refinery		
Fernando Ale1zones	Refining	1463	708.14.63

DISTRICT MANAGERS

Winston Carrillo	Anaco
Ronald Leent	Barinas
Nelson Borjas	San Tome
Jesus Pietri	Puerto La Cruz

REFINERY MANAGERS

Winston Cadenas	El Palito
Angel Ceballos	Puerto La Cruz

LAGOVEN

Address: Avenida Leonardo Da Vinci, Los Chaguaramos, Apartado 890, Caracas 1010-A
Phone : 661.48.29 and 606.48.29. Telex: 22726 and 24474

NAME	TITLE	EXT.	PHONE
BOARD OF DIRECTORS			
Julius Trinkunas	President		
Luis Urdaneta	Vice-President		
DEPARTMENT MANAGERS			
Freddy Chiquito	Geology		
LuisJose Rangel	Materials		
Juan Felipe Servello	Corporate Planning		
Santos Gilarranz S.	Production		
Jose Gilberto Sandia B.	Integral Protection		
Ludovico Nicklas	Major Projects		
Heraldo Sifontes	Refining		
Jorge Astorga	Off Shore Gas Development		
Johann Litwinenko	"Cristobal Colon" Project		

OPERATING DIVISION

Fidias Chirinos	Western Division	061	21.30.26
Diego Silva	Western Division. Asst. Manager	061	21.30.26
Oscar Quinones	Eastern Division Manger	091	52.65.46
Tony Fagre	Eastern Division Asst. Manager	091	52.65.46
Heraldo Sifontes	Amuay Refinery Manager	069	45.11.12
Ivan Hernandez	Amuay Refinery Asst. Manager	069	45.11.12
Carlos Martinez	Amuay Refinery Major Projects Manager		

PETROQUIMICA DE VENEZUELA.S.A (PEQUIVEN)

Address: Sede Corporativa, Torre Pequiven, Av. Francisco de Miranda con calle San2 Ignacio de Loyola, Chacao, Estado Miranda. Apartado Postal 2066. Phone : 201.31.11 - 201.41.11. Fax: 208.33.06 Telex: 23206 - 21879 - 27141 POCCS VC.

NAME	TITLE	EXT.	PHONE
EXECUTIVES			
Arnold Volkenborn	President		208.32.00
Guillermo Archila	Vice-President		208.33.02
Luis Leonardi	Engineering & Project Manager		92.49.33
Edelberto Montiel	Materials Division Manager		92.49.33
Eduardo Praselj	Corporate Planning Manager		108.34.65
Freddy Rodriguez	Prevention & Loss Control Manager		92.49.33
Pablo Vergara	Integral Protection Division		
OLEFINS & PLASTICS BUSINESS UNIT			
Jose Hidalgo	Commerce Manager		(061)84423
Daniel Solorzano	Manufacturing Manager		(061)84422
Manuel Pacheco	Admin. & Services Manager		(061)84890
FERTILIZER BUSINESS UNIT "MORON" COMPLEX			
Alfredo Riera	Commerce Manager		(042)608301
Pedro Carrasco	Manufacturing Manager		(042)608304
Noe Herrera	Admin. & Services Manager		

INDUSTRIAL PRODUCTS BUSINESS UNIT PETROCHEMICAL COMPLEX "JOSE ANTONIO ANZOATEGUI & INDUSTRIAL

Jose Escorihuela	Commerce Manager	(081)708111
Edgar Olaizola	Eastern Devel. Manager	(081)709111
Conrado Arando	Admin. & Services Manager	
Ender Ocando	Paraguana Industrial Complex Devel.	

INTEVEP. S.A.

Address: Edificio Sede Central, Urbanizacion Santa Rosa, Los Teques, Estado Miranda
Phone : (032) 31.61.11, (02) 908.61.11. Oficinas de Caracas: Edificio Sucre, Piso 2, Oficina 224, Avenida Francisco de Miranda, Urbanizacion La Floresta Phone : (02) 284.24.65, 208.62.76. Apartado: 76343, Caracas 1070-A Telex: 37126 INTVP

NAME	TITLE	EXT.	PHONE
EXECUTIVES			
Gustavo Inciarte	President		908.63.03
Nestor Barroeta	Vice-President		908.63.09

BARIVEN

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NAME	TITLE	EXT.	PHONE
EXECUTIVES			
Alfredo Viso	President		201.47.86
Rafael Macia	Vice-President		201.47.01
Eduardo Santamaria	Director		201.47.88
Alonso Velazco	Director		201.47.89
Alfredo Tovar	Labour Director		
FUNCTIONAL MANAGERS			
Jose Gomez Pellicena	Manager		
Jose Gomez	Procurement		
Pedro Vegas	Planning and Marketing		

PALMAVEN

Address : Sede Principal: Av. Tamanaco, edificio Palmaven, El Rosal, Caracas
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NAME	TITLE	EXT.	PHONE
Alfredo Gruber	President	200	
Eddi Ramirez	Agricultural Devel.	222	

CENTRO DE FORMACION Y ADIESTRAMIENTO DE PETROLEOS DE VENEZUELA Y SUS FILIALES (CEPET)

Address: Universidad Simon Bolivar, Edificio Biblioteca Central (in front of Edificio del Rectorado), Piso 1, Carretera Hoyo de la Puerta, Sartenejas, Baruta, Apartado Postal: 52042, Caracas 1050
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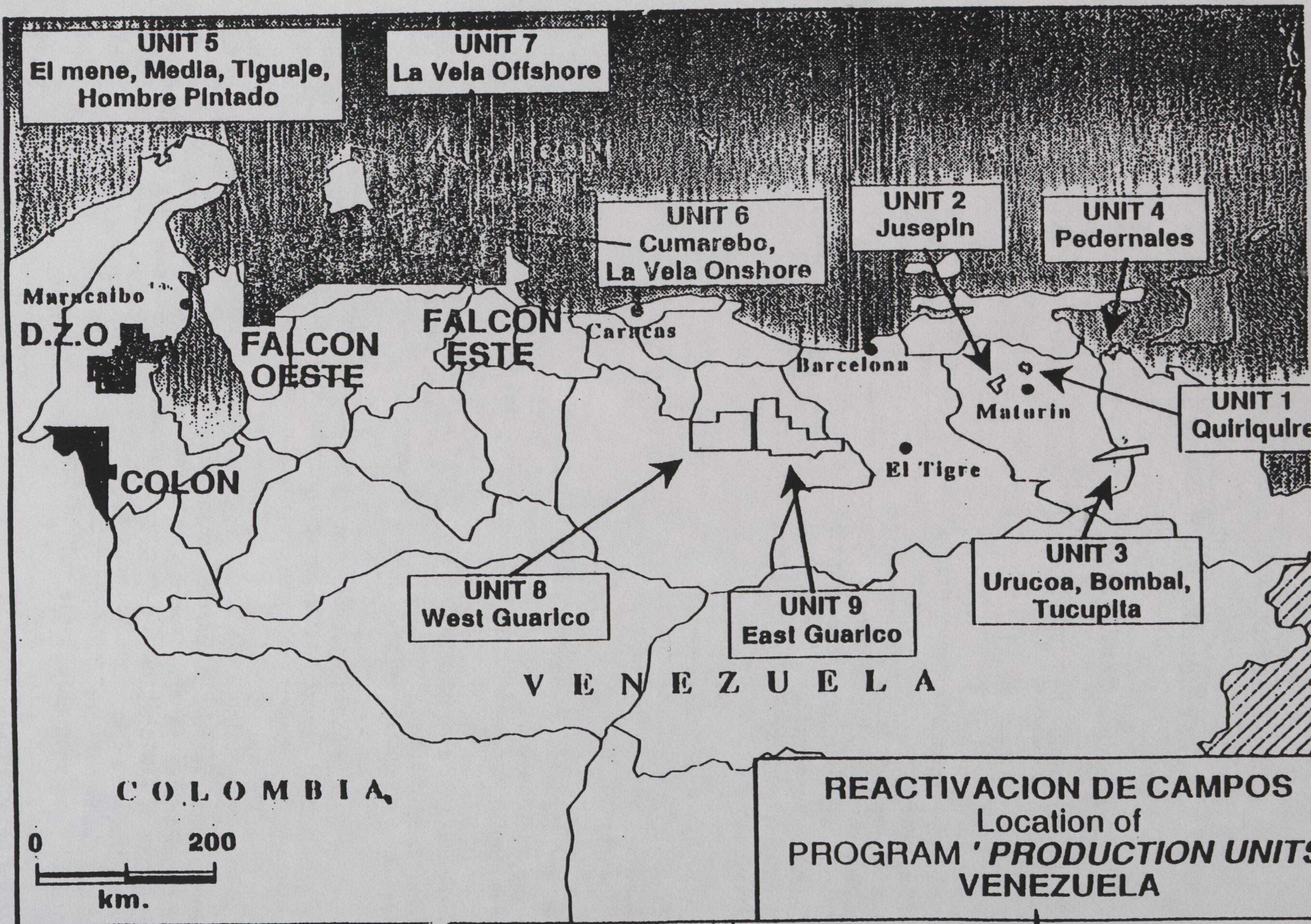
NAME	TITLE	EXT.	PHONE
REGIONAL MANAGERS			
Cristina Keusch	Cepet Metropolitan Region	216	
Jose Ferrer	Cepet/Cabimas		(064)403402
Antonio Cova	Cepet/Paraguana		(069)403402
Julio Cesar Parejo	Cepet/Oriente		(082)21254
Luis Viloria	Cepet/Central Region		(042)71311

APPENDIX F
PDVSA'S MARGINAL FIELDS
SECOND ROUND


UNIT 5
El mene, Media, Tiguaje, Hombre Pintado
UNIT 7
La Vela Offshore
UNIT 6
Cumarebo, La Vela Onshore
UNIT 2
Jusepin
UNIT 4
Pedernales
Maracaibo
D.Z.O
FALCON OESTE
FALCON ESTE
Caracas
Barcelona
Maturin
UNIT 1
Quiriquire
El Tigre
COLON
UNIT 3
Urucoa, Bombal, Tucupita
UNIT 8
West Guarico
UNIT 9
East Guarico
V E N E Z U E L A
C O L O M B I A
0 200
km.
REACTIVACION DE CAMPOS
Location of
PROGRAM ' PRODUCTION UNITS
VENEZUELA

THE MINISTRY OF ENERGY AND MINES

and

PETROLEOS DE VENEZUELA S.A.

extend an invitation to participate in the

REACTIVATION PROGRAM FOR MARGINAL OIL FIELDS

In compliance with Venezuelan governmental policy guidelines for the administration of hydrocarbon resources, the Ministry of Energy and Mines and Petróleos de Venezuela S.A. invite all international companies with a sound managerial, technical, operational and financial background, to the second phase of a selective bidding process for the reactivation and operation of a number of marginal oilfields through Operating Service Agreements. These fields (74) grouped in 13 units of production, are located in the states of Zulia, Falcón, Guárico, Anzoátegui and Monagas, and can be identified on the map below as:

Guárico Occidental (13)	Casma-Soledad (2)	Urdaneta Oeste-Sol (1)	Falcón Oeste (4)
Sanvi-Güere (15)	Jusepín (1)	Colón (6)	Falcón Este (2)
Oritupano-Leona (15)	Quiriquire (1)	D.Z.C. (7)	Falcón C.A. (1)
Quiamare-La Caiba (6)			

These areas are composed of several marginal fields of varying stages of depletion, thus allowing for the application of new technology in outposts and deeper horizons for the development and production of additional reserves.

Companies interested in participating should fax a written request to (58-2) 908.4006 and mail the same request, via courier, to Petróleos de Venezuela, Apartado 169, Caracas 1010-A, Venezuela, before January 15, 1993.

From the 15th of January 1993 onwards, the companies interested in participating will receive a promotional package with basic information concerning the fields included in this program, together with the regulations involved and a sample of the operational contract.

The companies interested in participating at this point, should complete the requirements contained in the "Formal Expression of Interest", and return these to the Coordination of Exploration and Production of Petróleos de Venezuela together with a summary of the most important aspects of their company that clearly demonstrates their legal, technical and financial capacity to carry out the program. This information will be used as a basis for selection.

The companies selected will be notified in writing by mail, before the 12th of April, and will be informed of the detailed conditions, place, date and time for the placement of bids. From the 13th of April to the 30th of the same month, the companies can then purchase the information packages that are of interest to them.

Corpoven

Unidad	Campos	Producción* Acumulada	Reservas* Remanentes	Tipo de crudos
Guárico-Oeste	Valle 11, 13, 15, La Pascua, Dakoa 16 Las Mercedes, Punzón, Piragua, Belén, Guavinita, Palacios, Zamoreña, Grico	135	29	Livianos
Sanvi Guere	Elotes Norte, Guárico 9-1, Guárico 10-13 Guárico 14, Ira, Iris, Juanita, Tagua, Los Mangos, Maguey, Sanvi, Mayorga, Guere, Rincón, Vargas, Rincón Largo, Cas-501x.	34	50	Livianos
Oritupano-Leona	Adrales, Adrales C, Adobe, Adobe C, Adm 101X, Junta, Lestes, Libro, Lobo, Lustro, Oritupano, Oritupano Sur, Pelayo, Leona, Bota.	255	169	Medianos
Quiamare-Caiba	Cerro Pelao, Quimare, La Vieja, La Caiba, Rosa, Santa Rosa Norte	71	119	Livianos
Casma-Soledad	Casma, Soledad	—	45	Med/pesados
	Total	495	412	

Maraven

Unidad	Campos	Producción* Acumulada	Reservas* Remanentes	Tipo de crudos
Falcón-Oeste	Tiguaje, Hombre Pintado El Mene, Media	50	2	Livianos
Falcón-Este	Cumarebo, La Vela Tierra	57	10	Livianos
Falcón-Costa Afuera	La Vela Costa Afuera	—	—	Livianos
Desarrollo Zulia-Oeste	Alpuf, Alturitas, San José Macoa, Machiques, Urdaneta García	24	426	Liv/Med/Pes
Colón	Casigua, Rosario, Tarra, Las Cruces, Tres Bocas, Los Manueles	267	134	Livianos
	Total	398	572	

Lagoven

Unidad	Campos	Producción* Acumulada	Reservas* Remanentes	Tipo de crudos
Jusepín	Jusepín	194	31	Livianos
Quiriquire	Quiriquire	757	94	Cond/pesados
Urdaneta-Oeste	Urdaneta-Oeste	32	110	Liv/med
	Total	983	235	

* Millones de barriles